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NASA THESAURUS

VOLUME 1

Hierarchical Listing With Definitions

April 2009

NASA STI Program ... in Profile

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The NASA STI program operates under the auspices of the Agency Chief Information Officer. It collects, organizes, provides for archiving, and disseminates NASA's STI. The NASA STI program provides access to the NASA Aeronautics and Space Database and its public interface, the NASA Technical Report Server, thus providing one of the largest collections of aeronautical and space science STI in the world. Results are published in both non-NASA channels and by NASA in the NASA STI Report Series, which includes the following report types:

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- **TECHNICAL MEMORANDUM.** Scientific and technical findings that are preliminary or of specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. Does not contain extensive analysis.
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- **SPECIAL PUBLICATION.** Scientific, technical, or historical information from NASA programs, projects, and missions, often concerned with subjects having substantial public interest.
- **TECHNICAL TRANSLATION.** English-language translations of foreign scientific and technical material pertinent to NASA's mission.

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Hierarchical Listing With Definitions:	

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

Volume 2 • Rotated Term Display

Introduction

The *NASA Thesaurus* contains the authorized subject terms by which the documents in the NASA Aeronautics and Space Database are indexed and retrieved. The *NASA Thesaurus* comprises two volumes: *Volume 1 – Hierarchical Listing With Definitions* and *Volume 2 – Rotated Term Display*.

The *Hierarchical Listing With Definitions* contains all subject terms and USE cross references currently approved for use, and displays the full hierarchical structure for each term along with a definition when available. In addition, the listing has been developed to serve as an orthographic authority for upper/lowercase forms of all terms and cross references. The **term-added date**, displayed for all terms added after April 1988, is also given. The listing includes terms appearing in the *NASA Thesaurus, Preliminary Edition* (December 1967), the *NASA Thesaurus Alphabetical Update* (September 1971), the *NASA Thesaurus* (1982, 1985, 1988, 1994, and 1998 editions), and other terms approved for use through the end of December 2008. Over 18,300 terms, 4,300 definitions, and approximately 4,500 USE references are contained in the *Hierarchical Listing With Definitions*.

The *Rotated Term Display* is a ready-reference tool that provides thousands of additional ‘access points’ to the thesaurus terminology. It contains the postable terms and nonpostable terms found in the *Hierarchical Listing* arranged in a KWIC (key-word-in-context) index. It is a useful companion to the *Volume 1* listing, containing more than 52,700 entries.

New editions of the *NASA Thesaurus* CD-ROM are produced annually. Monthly updates are posted on the Thesaurus information page of the NASA scientific and technical information Web site at <http://www.sti.nasa.gov/thesfrm1.htm>. Suggestions for term modification, deletion, and addition may be e-mailed to mgenuardi@sti.nasa.gov, or postal mailed to:

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The terminology of the earliest edition of the *NASA Thesaurus* was based in large part on the actual indexing vocabulary developed by NASA during the 1960s. Other thesauri, notably the DOD *Thesaurus of Engineering and Scientific Terms* (AD-672000), have provided additional candidate terms. The general guidelines for the initial creation of the *NASA Thesaurus* were based on the COSATI *Guidelines for the Development of Information Retrieval Thesauri* (1 September 1967). Continuing development of the *NASA Thesaurus* conforms to the thesaurus standard of the National Information Standards Organization (*Guidelines for the Construction, Format, and Management of Monolingual Controlled Vocabularies*, ANSI/NISO Z39.19-2005).

Nomenclature and Conventions

Postable Terms. Subject terms that have been approved for use in indexing, and thus can be ‘posted.’ In *Volume 1*, postable terms are shown in non-italic type.

Nonpostable Terms. Terms that are included for cross reference information and cannot be used for indexing. In *Volume 1*, nonpostable terms are set in italics.

Term Selection. Subject terms have been chosen on the basis of their significance and use in aerospace literature and their effectiveness in representing productive retrieval concepts. Particular consideration has been given to frequency of use in earlier NASA indexing and search vocabularies, to relationships with other terms in the vocabulary, and to precise scientific and technical usage.

Noun Usage. In general, subject terms are presented in the noun form.

Singular vs. Plural. The plural form has, in general, been used for subject terms. The singular form, however, is employed for non-count nouns (such as *snow*), terms that refer to unique entities such as *Mariner 10 Space Probe*, and terms related to specific processes, properties, and conditions.

Term Length. No more than 42 characters, including spaces, are used for any subject term. Various words in longer terms are sometimes truncated. Full expanded forms of such truncated terms are generally included in the scope notes.

Term Ambiguity. When subject terms have more than one meaning in aerospace usage, or where distinction between terms must be made, clarification is provided in one of two ways:

a) Parenthetical qualifying expressions or glosses are added, becoming part of the subject term. For example:

sizing (shaping)
sizing (surface treatment)

b) Scope notes are also added for explanation or definition; they do not become part of the subject term. For example:

rotational states
SN (LIMITED TO MOLECULAR ENERGY LEVELS — EXCLUDES
ROTATIONAL DYNAMICS OF VEHICLES OR OTHER BODIES)

Word Order. Subject terms that consist of more than one word are listed in *direct order*, i.e., in their natural word order rather than in an inverted form. (The *Rotated Term Display* can be used to access terms by embedded words.)

Abbreviations and Acronyms. Abbreviations and acronyms that are in common usage in the aerospace and general engineering communities are employed for some postable terms in this thesaurus. In most cases, USE cross references are made from the unabbreviated forms. For example:

Orbiting Solar Observatory
USE **OSO**

Synonyms. When candidate subject terms are true synonyms, one is chosen to be the valid, or postable term, and the other is provided with a USE cross reference. For example:

Columbium	niobium
USE niobium	UF columbium

Array Terms. Subject terms with meanings either too broad or ambiguous for effective indexing or retrieval of information, have been designated array terms and carry the following scope note (USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW). Relationships with other postable terms are shown by the Related Term (RT) reference only. For example:

∞ **beams**

SN	(USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW)
RT	beams (radiation) beams (supports)

An infinity symbol (∞) precedes an array term in each of its appearances in *Volume 1*.

Identifiers. In the *NASA Thesaurus*, identifiers (i.e., terms that designate unique entities) are treated as regular terms and are provided complete cross references. Most identifiers are proper nouns and many include a numeric or alphabetic designation for a particular model or item. As a general rule, identifiers are added to the thesaurus only if they have an important relation to the aerospace sciences.

F-111 aircraft

UF	LASV TFX aircraft
GS	attack aircraft . fighter aircraft . . F-111 aircraft General Dynamics aircraft . F-111 aircraft Grumman aircraft . F-111 aircraft jet aircraft . turbofan aircraft . . F-111 aircraft supersonic aircraft . F-111 aircraft
RT ∞	aircraft mission adaptive wings variable sweep wings

Cross Reference Structure

Cross reference relationships in the *Hierarchical Listing With Definitions* are shown as follows:

Cross References	Notation
Broader Term	GS
Narrower Term	GS
Related Term	RT
Use	USE
Used For	UF

These cross references have the following applications:

Broader Term. This reference indicates that the term represents a more inclusive concept. In the Generic Structure (GS), the broader terms appear above and to the left of the term referenced. For example:

reentry communication
GS telecommunication
 . space communication
 . . spacecraft communication
 . . . **reentry communication**

The terms *telecommunication*, *space communication*, and *spacecraft communication* are broader terms to *reentry communication*.

Narrower Term. This reference indicates that the term represents a more specific concept. In the Generic Structure (GS), the narrower terms appear below and to the right (indented) of the term referenced. For example:

GS **scanners**
 . Coastal Zone Color Scanner
 . horizon scanners
 . infrared scanners
 . ocean color scanner
 . optical scanners
 . . flying spot scanners
 . . multispectral band scanners
 . . . Thematic Mappers (Landsat)
 . ultrasonic scanners

The terms *Coastal Zone Color Scanner*, *horizon scanners*, *infrared scanners*, *ocean color scanners*, *optical scanners*, and *ultrasonic scanners* are narrower terms to *scanners*. The terms *flying spot scanners*, *multispectral band scanners*, and *Thematic Mappers (Landsat)* are narrower to both *optical scanners* and *scanners*.

The number of narrower terms is not limited. For example, *artificial satellites* has nearly 500 narrower terms.

Related Terms (RT). This reference indicates that the two terms are conceptually associated, but not equivalent or generically related. The RT relationship is reciprocal, as illustrated in the following example:

radar equipment	radio equipment
RT radio equipment	RT radar equipment

Use (USE). This reference indicates that the listed term is not ‘postable,’ i.e., not a valid term, and that the term or terms adjacent to the USE indicator should be used instead. Note that all nonpostable terms are set in italics. For example:

jet airstreams
USE **jet streams (meteorology)**

Used For (UF). This relation is the reciprocal of the USE cross reference and indicates that the term listed above the UF indicator is a valid or ‘postable’ term, and term or terms adjacent to the UF indicator are nonpostable. For example:

jet streams (meteorology)
UF *jet airstreams*

Filing Order

The ordering of subject terms into an alphabetical arrangement can be accomplished in several ways. The most commonly used methods are the letter-by-letter, word-by-word, and the computer sorting order. In the absence of any universal agreement on a standardized approach, a word-oriented modification of the computer sorting technique has been adopted in this thesaurus.

A special feature has been added to this technique to sort numeric designations in natural ascending order. Non-alphanumeric characters contained within terms are sorted prior to alphanumeric characters. In *Volume 2*, non-alphanumerics are ignored altogether for the general KWIC sort. Thus, embedded parentheses are filed before the alphabet in *Volume 1*, but are ignored for filing in *Volume 2*. Hyphens, slashes and periods follow blank spaces.

Retrospective Indexing

Between 1984 and 1993, all terms added to the *NASA Thesaurus* were retrospectively assigned to past database records using a method that combined advanced search strategies and manual review. Most of the terms for which this procedure was carried out can be identified by checking the **term-added date** that appears directly below the term in *Volume 1*. Term-added dates are provided for all terms added to the *NASA Thesaurus* after April 1988.

Thesaurus Term Definitions

Definitions are given for most terms added since 1976 as well as for many earlier terms. Definitions of more common or general scientific terms are given a NASA slant if one exists. Certain terms are not defined as a matter of policy: common place names, chemical elements, specific models of computers, and non-technical terms. Other terms lack definitions because the *NASA Thesaurus* predates by a number of years the systematic effort to define terms. Nevertheless, definitions of older terms are continually being added.

Many of the definitions contained in the *Thesaurus* were constructed by lexicographers at the NASA Center for AeroSpace Information, who rely on the following sources for their information: experts in the field, literature searches from the NASA STI databases, and specialized references. Other definitions were obtained from the following sources:

AGI. *Glossary of Geology*, 3rd edition. Alexandria, VA, American Geological Institute, 1987.

ASTM. *Compilation of ASTM Standard Definitions*, 6th edition. Philadelphia, PA, ASTM, 1986. Copyright, the American Society for Testing and Materials (ASTM). All rights reserved. Used with the permission of ASTM. The original definitions appeared in the *Annual Book of ASTM Standards*.

DOE. *Energy Data Base Subject Thesaurus* (DOE/TIC-7000-R7). Oak Ridge, TN, Department of Energy, 1987.

IEEE. *Standard Dictionary of Electrical and Electronics Terms*, Fourth ed., New York, NY, IEEE, 1988.

SP-7. *Dictionary of Technical Terms for Aerospace Use*, NASA SP-7. Washington, DC, NASA, 1965.

In some cases, definitions from these sources have been subjected to minor editorial alterations; for example, to make a definition agree in number with the NASA form of the term.

Historical Printed Editions

NASA Thesaurus; Subject Terms for Indexing Scientific and Technical Information. Preliminary Edition, 1967. NASA SP-7030. 3 Vols., *Vol. 1, Alphabetical Listing, A-L; Vol. 2, Alphabetical Listing, M-Z; Vol. 3, Appendixes.*

NASA Thesaurus Alphabetical Update, 1971. NASA SP-7040.

NASA Thesaurus. 1976 Edition. NASA SP-7050. 2 Vols., *Vol. 1, Alphabetical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1982 Edition. NASA SP-7051. 2 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1985 Edition. NASA SP-7053. 2 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1988 Edition. NASA SP-7064. 3 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary; Vol. 3, Definitions.*

NASA Thesaurus. 1994 Edition. NASA SP-7096. 3 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary; Vol. 3, Definitions.*

NASA Thesaurus, 1998 Edition, NASA/SP-1998-7501, 2 Vols., *Vol. 1, Hierarchical Listing With Definitions; Vol. 2, Rotated Term Display.*

Typical Hierarchical Listing With Definition

- ① **microbursts (meteorology)**
- ② *(added January 1993)*
- ③ SN (EXCLUDES IONOSPHERIC RADIATION MICROBURSTS)
- ④ DEF A strong, localized downdraft that strikes the ground creating an outflow of severe winds near the ground that diverge radially from the impact point.
- ⑤ UF *bow echo microburst events*
- ⑥ GS meteorology
 - . micrometeorology
 - . . **microbursts (meteorology)**
 - storms
 - . storms (meteorology)
 - . . downbursts
 - . . . **microbursts (meteorology)**
- ⑦ RT aviation meteorology
 - flight hazards
 - thunderstorms
 - vertical air currents
 - wind shear

Key

1. Postable Term
2. Date Added
3. Scope Note
4. Definition
5. Used For Term
6. Generic Structure
7. Related Term

Typical USE Cross Reference

- ① *vacuum ultraviolet radiation*
- ② USE **far ultraviolet radiation**

Key

1. Nonpostable Term
2. Postable Note

Typical Array Term Listing

- ① ∞ **fields**
- ② SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- ③ RT boson fields
 - electric fields
 - field of view
 - field theory (algebra)
 - field theory (physics)
 - gravitational fields
 - magnetic fields
 - military air facilities
 - self consistent fields
 - visual fields

Key

1. Array Term
2. Scope Note
3. Related Term

NASA THESAURUS

VOLUME 1

HIERARCHICAL LISTING WITH DEFINITIONS

NUMERALS

2001 Mars Odyssey

(added May 2001)

DEF Mars orbiter mission designed to make global observations of Mars to improve our understanding of the Martian climate and geologic history, including the search for liquid water and evidence of past life. The three primary instruments carried onboard are THEMIS (Thermal Emission Imaging System), GRS (Gamma Ray Spectrometer), and MARIE (Mars Radiation Environment Experiment). Launched April 2001.

GS space missions
 . Mars missions

. . . **2001 Mars Odyssey**

RT gamma ray spectrometers

Mars (planet)

Mars exploration

Mars surface

Mars Surveyor 2001 Mission

A

A stars

GS celestial bodies

. stars

. . . early stars

. . . . hot stars

. . . . **A stars**

RT

blue stars

peculiar stars

Wolf-Rayet stars

A-1 aircraft

UF *Skyraider aircraft*

GS attack aircraft

. **A-1 aircraft**

McDonnell Douglas aircraft

. Douglas aircraft

. . . **A-1 aircraft**

monoplanes

. **A-1 aircraft**

RT ∞ aircraft

A-2 aircraft

UF *Savage aircraft*

GS attack aircraft

. bomber aircraft

. . . **A-2 aircraft**

jet aircraft

. **A-2 aircraft**

monoplanes

. **A-2 aircraft**

North American aircraft

. **A-2 aircraft**

RT ∞ aircraft

A2F aircraft

USE **A-6 aircraft**

A-3 aircraft

UF *A3D aircraft*

Skywarrior aircraft

GS attack aircraft

. bomber aircraft

. . . **A-3 aircraft**

jet aircraft

. **A-3 aircraft**

McDonnell Douglas aircraft

. Douglas aircraft

. . . **A-3 aircraft**

monoplanes

. **A-3 aircraft**

RT ∞ aircraft

A3D aircraft

USE **A-3 aircraft**

A3J aircraft

USE **A-5 aircraft**

A-4 aircraft

UF *A4D aircraft*

Skyhawk aircraft

GS attack aircraft

. bomber aircraft

. . . **A-4 aircraft**

jet aircraft

. **A-4 aircraft**

McDonnell Douglas aircraft

. Douglas aircraft

. . . **A-4 aircraft**

monoplanes

. **A-4 aircraft**

RT ∞ aircraft

J-65 engine

A4D aircraft

USE **A-4 aircraft**

A-5 aircraft

UF *A3J aircraft*

Vigilante aircraft

GS attack aircraft

. bomber aircraft

. . . **A-5 aircraft**

jet aircraft

. **A-5 aircraft**

monoplanes

. **A-5 aircraft**

North American aircraft

. **A-5 aircraft**

supersonic aircraft

. **A-5 aircraft**

RT ∞ aircraft

A-6 aircraft

UF *A2F aircraft*

Intruder aircraft

GS attack aircraft

. bomber aircraft

. . . **A-6 aircraft**

Grumman aircraft

. **A-6 aircraft**

jet aircraft

. **A-6 aircraft**

monoplanes

. **A-6 aircraft**

RT ∞ aircraft

A-7 aircraft

UF *Corsair aircraft*

GS attack aircraft

. **A-7 aircraft**

jet aircraft

. turbofan aircraft

. . . **A-7 aircraft**

Ling-Temco-Vought aircraft

. **A-7 aircraft**

monoplanes

. **A-7 aircraft**

RT ∞ aircraft

A-9 aircraft

GS attack aircraft

. **A-9 aircraft**

Northrop aircraft

. **A-9 aircraft**

reconnaissance aircraft

. **A-9 aircraft**

RT ∞ aircraft

A-10 aircraft

GS attack aircraft

. **A-10 aircraft**

Republic aircraft

. **A-10 aircraft**

RT ∞ aircraft

A-11 satellite

USE **Echo 1 satellite**

A-12 satellite

USE **Echo 2 satellite**

A-37 aircraft

GS attack aircraft

. **A-37 aircraft**

Cessna aircraft

. **A-37 aircraft**

monoplanes

. **A-37 aircraft**

RT ∞ aircraft

∞ military aircraft

T-37 aircraft

A-300 aircraft

GS commercial aircraft

. European Airbus

. . . **A-300 aircraft**

jet aircraft

. European Airbus

. . . **A-300 aircraft**

passenger aircraft

. European Airbus

. . . **A-300 aircraft**

transport aircraft

. European Airbus

. . . **A-300 aircraft**

RT ∞ aircraft

international cooperation

A-310 aircraft

GS commercial aircraft

. European Airbus

. . . **A-310 aircraft**

jet aircraft

. European Airbus

. . . **A-310 aircraft**

passenger aircraft

. European Airbus

. . . **A-310 aircraft**

transport aircraft

. European Airbus

. . . **A-310 aircraft**

RT

international cooperation

A-320 aircraft

GS commercial aircraft

. European Airbus

. . . **A-320 aircraft**

jet aircraft

. European Airbus

. . . **A-320 aircraft**

passenger aircraft

. European Airbus

. . . **A-320 aircraft**

transport aircraft

. European Airbus

. . . **A-320 aircraft**

RT

international cooperation

A-330 aircraft

(added September 1994)

GS commercial aircraft

. European Airbus

. . . **A-330 aircraft**

jet aircraft

. European Airbus

. . . **A-330 aircraft**

passenger aircraft

. European Airbus

. . . **A-330 aircraft**

transport aircraft

. European Airbus

. . . **A-330 aircraft**

RT ∞ aircraft

international cooperation

A-340 aircraft

(added September 1994)

GS commercial aircraft

. European Airbus

. . . **A-340 aircraft**

jet aircraft

. European Airbus

. . . **A-340 aircraft**

passenger aircraft

. European Airbus

. . . **A-340 aircraft**

transport aircraft

A-380 aircraft

- . European Airbus
- . . **A-380 aircraft**
- RT ∞ aircraft
- international cooperation

A-380 aircraft

(added June 2005)

- GS commercial aircraft
- . European Airbus
- . . **A-380 aircraft**
- jet aircraft
- . European Airbus
- . . **A-380 aircraft**
- passenger aircraft
- . European Airbus
- . . **A-380 aircraft**
- transport aircraft
- . European Airbus
- . . **A-380 aircraft**
- RT civil aviation
- international cooperation

AABNCP

- USE **E-4A aircraft**

AAP 1 mission

- RT Apollo applications program
- Apollo project
- Skylab program

AAP 2 mission

- RT Apollo applications program
- Apollo project
- Skylab program

AAP 3 mission

- RT Apollo applications program
- Apollo project
- Skylab program

AAP 4 mission

- RT Apollo applications program
- Apollo project
- Skylab program

abbreviations

(added December 1994)

- UF *acronyms*
- initialisms*
- RT alphabets
- coding
- dictionaries
- symbols
- terminology
- words (language)

abdomen

- GS anatomy
- . **abdomen**
- RT digestive system
- gastrointestinal system
- intestines
- peritoneum
- stomach
- ventral sections
- viscera

Abel function

- GS analysis (mathematics)
- . real variables
- . . **Abel function**
- functions (mathematics)
- . **Abel function**
- RT series (mathematics)

aberration

DEF In astronomy, the apparent angular displacement of the position of a celestial body in the direction of motion of the observer, caused by the combination of the velocity of the observer and the velocity of light. In optics, a specific deviation from perfect imagery, as, for example: spherical aberration, coma, astigmatism, curvature of field, and distortion.

- RT abnormalities
- anisoplanatism
- asphericity
- blurring
- ∞ coma
- crystal optics

- deviation
- distortion
- grazing incidence
- spatial filtering

abilities

- UF *proficiency*
- skills*
- GS **abilities**
- . aptitude
- RT effort
- human performance
- intelligence
- intelligence tests
- mental performance
- psychomotor performance
- transfer of training

abiogenesis

DEF The development of living organisms from lifeless matter.

- GS evolution (development)
- . biological evolution
- . . **abiogenesis**
- RT autocatalysis
- chemical evolution
- life sciences
- panspermia
- protobiology
- self assembly
- spermatogenesis

ablated *nosetips*

- USE **PANT program**

ablation

DEF The removal of surface material from a body by vaporization, melting, chipping, or other erosive process; specifically, the intentional removal of material from a nose cone or spacecraft during high speed movement through a planetary atmosphere to provide thermal protection to the underlying structure.

- GS **ablation**
- . laser ablation
- RT ablative materials
- ablative nose cones
- aerodynamic heat transfer
- aerodynamic heating
- aerothermochemistry
- atmospheric entry
- burnthrough (failure)
- charring
- cooling
- decomposition
- erosion
- gas-metal interactions
- heat shielding
- impingement
- jet impingement
- mass transfer
- melting
- pyrolysis
- reentry
- reentry effects
- reentry physics
- reentry shielding
- sublimation
- temperature effects
- thermal absorption
- thermal decomposition
- vaporizing

ablative materials

DEF Materials, especially coating materials, designed to provide thermal protection to a body in a fluid stream through the loss of mass.

- RT ablation
- carbon-phenolic composites
- cooling
- heat shielding
- heat sinks
- ∞ materials
- nose cones
- nozzle inserts
- pyrolytic materials
- refractory materials
- temperature
- thermal control coatings

thermal protection

ablative nose cones

- GS cones
- . nose cones
- . . **ablative nose cones**
- forebodies
- . noses (forebodies)
- . . nose cones
- . . . **ablative nose cones**
- RT ablation
- heat shielding
- reentry shielding
- reentry vehicles
- rocket nose cones
- shielding

Ablestar launch vehicle

- GS launch vehicles
- . **Ablestar launch vehicle**
- rocket vehicles
- . multistage rocket vehicles
- . . **Ablestar launch vehicle**
- RT liquid propellant rocket engines

ABM

- USE **apogee boost motors**

abnormalities

- RT aberration
- deviation
- distortion
- eccentricity
- irregularities
- uniqueness

aborigines

- RT anthropology
- human beings
- inhabitants

abort apparatus

- UF *flight termination systems*
- GS safety devices
- . **abort apparatus**
- RT aborted missions
- aircraft safety
- arresting gear
- ∞ barriers
- brakes (for arresting motion)
- drag devices
- ejection seats
- ∞ equipment
- escape capsules
- escape rockets
- flying ejection seats

abort trajectories

- GS trajectories
- . **abort trajectories**
- RT aborted missions
- emergency landing
- MATTS (systems)

aborted missions

- RT abort apparatus
- abort trajectories
- destruction
- engine failure
- escape capsules
- escape rockets
- failure
- malfunctions
- ∞ missions

abrasion

DEF The surface loss of a material due to frictional forces.

- RT abrasives
- chipping
- cleaning
- cutting
- dry friction
- erosion
- files (tools)
- friction
- grinding (material removal)
- lesions
- metallography
- polishing

scoring
soil erosion
tribology
wear
wear resistance

abrasion resistance

GS mechanical properties
. wear resistance
. . **abrasion resistance**
RT hardness
∞ resistance
toughness

abrasives

DEF Rocks, minerals, or other substances that, owing to their superior hardness, toughness, consistency, or other properties, are suitable for grinding, cutting, polishing, scouring, or similar use.

RT abrasion
aluminum oxides
Carborundum (trademark)
ceramics
diamonds
grit
paint removal
pumice
quartz
silicon carbides

Abrikosov theory

RT crystal structure
electromagnetic fields
horseshoe vortices
superconductivity
superconductors (materials)
∞ theories
vortices

abscisic acid

(added August 2004)

DEF Abscission-accelerating plant growth substance isolated from young cotton fruit, leaves of sycamore, birch, and other plants, and from potatoes, lemons, avocados, and other fruits.

GS acids
. carboxylic acids
. . **abscisic acid**
organic compounds
. carboxylic acids
. . **abscisic acid**
plant growth regulators
. **abscisic acid**
terpenes
. **abscisic acid**
RT plant physiology
plants (botany)

absolute zero

DEF Temperature of -273. 16 deg. C or -459. 69 deg. F or 0 deg. K at which molecular motion vanishes and a body has no heat energy.

GS temperature
. **absolute zero**
RT cryogenic temperature
cryogenics
subzero temperature
temperature effects
temperature scales
zero point energy

absorbents

UF *molecular sieves*
GS sorbents
. **absorbents**
RT ∞ absorbers
absorbents (equipment)
absorbents (materials)
adsorbents
air conditioning equipment
desiccants
low density materials
material absorption
∞ materials

∞ absorbers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT absorbents
absorbents (equipment)
absorbents (materials)
attenuators
cleaners
oscillation dampers
shock absorbers
vibration isolators

absorbents (equipment)

SN (EXCLUDES EQUIPMENT FOR ABSORBING ENERGY)
RT absorbents
∞ absorbers
absorbents (materials)
air conditioning equipment
cleaners
columns (process engineering)
condensers (liquefiers)
cooling systems
degassing
drying apparatus
∞ equipment
material absorption
refrigerating machinery
shock absorbers

absorbents (materials)

SN (EXCLUDES ABSORBENTS--LIMITED TO MATERIALS FOR ABSORBING RADIATION RATHER THAN OTHER MATERIALS)
GS **absorbents (materials)**
. neutron absorbers
. radar absorbers
. . antiradar coatings
. solar energy absorbers
RT absorbents
∞ absorbers
absorbents (equipment)
acoustic retrofitting
attenuators
cleaners
electromagnetic absorption
electromagnetic wave filters
energy absorption
∞ filters
heat sinks
insulation
jackets
low density materials
∞ materials
radiation shielding
refrigerants
shielding
sinks
stopping power
suppressors

absorptance

DEF The ratio of the radiant flux absorbed by a body to that incident upon it.

GS electromagnetic properties
. optical properties
. . **absorptance**

RT albedo
capture effect
cosmic ray albedo
density (mass/volume)
Earth albedo
electromagnetic absorption
light transmission
lunar albedo
microwave absorption
opacity
reflectance
surface properties
transmission
transmissivity
transmittance
transparency
turbidity

∞ absorption

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The process by which radiant energy is absorbed and converted into other forms of energy. In general, the taking up or assimilation of one substance by another. In vacuum technology, gas entering the interior of a solid.

RT absorption cooling
absorption cross sections
absorption spectra
absorption spectroscopy
absorptivity
activated carbon
adsorption
atomic collisions
attenuation
auroral absorption
beneficiation
capture effect
collision parameters
cosmic ray albedo
damping
desorption
diffusion
drying
electromagnetic absorption
energy absorption
energy absorption films
gamma ray absorption
infrared absorption
infrared spectra
material absorption
materials recovery
microwave absorption
moderation (energy absorption)
molecular absorption
multiphoton absorption
permeating
photoabsorption
planetary atmospheres
polar cap absorption
radiation absorption
self absorption
sorption
sound transmission
thermal absorption
ultraviolet absorption
visible spectrum
x ray absorption

absorption bands

USE **absorption spectra**

absorption coefficient

USE **absorptivity**

absorption cooling

DEF Refrigeration in which cooling is effected by the expansion of liquid ammonia into gas and the absorption of the gas by water. The ammonia is reused after the water evaporates.

GS cooling
. **absorption cooling**

RT ∞ absorption
ammonia
magnetic cooling
refrigerants

absorption cross sections

DEF In radar, cross sections characterized by the amount of power removed from a beam by absorption of radio energy by a target in the beam in the beam incident upon the target. Used for capture cross sections.

UF *capture cross sections*
RT ∞ absorption
∞ cross sections
ionization cross sections
neutron cross sections
radiation absorption
scattering cross sections
stopping power

absorption spectra

DEF The arrays of absorption lines and absorption bands which result from the passage of radiant energy from a continuous source through a selectively absorbing medium cooler than the source. Used for absorption bands and spectral absorption.

UF *absorption bands*
spectral absorption
spectra
. radiation spectra
. . **absorption spectra**
. . . Fraunhofer lines
. . . Herzberg bands

absorption spectroscopy

. . . telluric lines
. . . spectral bands
. . . **absorption spectra**
. . . Fraunhofer lines
. . . Herzberg bands
. . . telluric lines

RT ∞ absorption
Balmer series
∞ bands
blue shift
continuous radiation
D lines
differential absorption lidar
electromagnetic absorption
electromagnetic spectra
electron spectroscopy
electronic spectra
emission spectra
energy spectra
Fraunhofer line discriminators
galactic nuclei
gamma ray absorptiometry
H alpha line
H beta line
H gamma line
H lines
ionizing radiation
K lines
laser spectrometers
line spectra
microwave absorption
microwave spectra
molecular spectra
molecular spectroscopy
oscillator strengths
paramagnetic resonance
Paschen series
photoacoustic spectroscopy
photoluminescent bands
photon absorptiometry
Raman spectra
rotational spectra
Rydberg series
Schumann-Runge bands
self absorption
solar spectra
solar spectrometers
spectrum analysis
spin temperature
stellar spectra
symbiotic stars
ultraviolet spectra
visible spectrum

absorption spectroscopy

GS spectroscopy
. **absorption spectroscopy**
. . . optogalvanic spectroscopy
RT ∞ absorption
Fraunhofer lines
infrared spectroscopy
laser-induced breakdown spectroscopy
optical equipment
optical measuring instruments
ultraviolet spectroscopy

absorptive index

USE **absorptivity**

absorptivity

DEF The capacity of a material to absorb incident radiant energy, measured as the absorptance of a specimen of material thick enough to be completely opaque, and having an optically smooth surface. Used for absorption coefficient and absorptive index.

UF *absorption coefficient*
absorptive index

GS electromagnetic properties
. optical properties
. . **absorptivity**

RT ∞ absorption
Beer law
Bouguer law
density (mass/volume)
electromagnetic absorption
Kirchhoff law of radiation
microwave absorption
opacity

oscillator strengths
photoacoustic spectroscopy
scattering coefficients
self absorption
transmissivity
transparence

abstracts

GS documents
. **abstracts**
summaries
. **abstracts**
RT annotations
bibliographies
indexes (documentation)
information retrieval
technical writing

abundance

DEF The mean concentration of an element in a geochemical reservoir, e.g., the abundance of Ni in meteorites or the crustal abundance of oxygen. Also used for the relative average content, e.g., the order of abundance of elements in the Earth's crust is O, Si, AL, Fe, Ca, etc. Used for element abundance.

UF *element abundance*
RT availability
energy policy
geochemistry
metallic stars
metallicity
reserves
resources
stellar composition

AC (current)

USE **alternating current**

AC generators

DEF Generators for the production of alternating-current power. Used for alternating current generators and alternators (generators).

UF *alternating current generators*
alternators (generators)
GS electric generators
. **AC generators**
. . linear alternators
. . static alternators
RT compulsators
free-piston engines
∞ generators
rotating generators
turbogenerators

AC-1 aircraft

USE **DHC 4 aircraft**

accelerated life tests

DEF Methods designed to approximate, in a short time, the deteriorating effects under normal long-term service conditions.

RT acceptability
evaluation
fatigue life
life (durability)
performance tests
quality control
service life
∞ tests

accelerating agents

RT ∞ accelerators
admixtures
∞ agents
catalysts
retardants

∞ acceleration

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The time rate of change of velocity.
RT acceleration (physics)
acceleration protection
acceleration stresses (physiology)
∞ accelerators
angular acceleration
catalysis
electromagnetic acceleration
electron acceleration

gravimetry
high acceleration
high gravity environments
human tolerances
impact acceleration
particle acceleration
physiological acceleration
plasma acceleration
transverse acceleration

acceleration (physics)

DEF The rate of change of velocity. The act or process of accelerating or the state of being accelerated. Used for boost and G force.

UF *boost*
G force

GS rates (per time)

. **acceleration (physics)**

. . angular acceleration
. . deceleration
. . . spin reduction
. . electron acceleration
. . high acceleration
. . high gravity environments
. . impact acceleration
. . particle acceleration
. . plasma acceleration
. . transverse acceleration

RT ∞ acceleration

acceleration measurement
acceleration stresses (physiology)
accelerometers
body kinematics
expulsion
flight stress (biology)
∞ force
kinematics
kinetics
mechanical shock
∞ motion
physiological acceleration
stress (physiology)
thrust
thrust-weight ratio
velocity

acceleration measurement

(added April 1997)

SN (LIMITED TO TECHNIQUES AND INSTRUMENTATION FOR DETERMINING THE DIRECTION AND MAGNITUDE OF ACCELERATION; USE TERMS FROM THE "ACCELERATION (PHYSICS)" HIERARCHY TO INDICATE THE DATA OBTAINED FROM MEASUREMENT)

RT acceleration (physics)
accelerometers
angular acceleration
inertial navigation
∞ measurement
robot sensors
transverse acceleration
velocity measurement

acceleration protection

GS protection
. **acceleration protection**
RT ∞ acceleration
embedding
supine position

acceleration stresses (physiology)

GS stress (biology)
. **acceleration stresses (physiology)**
. . centrifuging stress
stress (physiology)
. **acceleration stresses (physiology)**
. . centrifuging stress

RT ∞ acceleration

acceleration (physics)
aerospace medicine
artificial gravity
body kinematics
dizziness
gravitational effects
gravitational physiology
gravity perception
head movement
high acceleration
lower body negative pressure
motion sickness

physiological acceleration
transverse acceleration

acceleration tolerance

- SN (LIMITED TO ABILITY OF ORGANISMS TO WITHSTAND ACCELERATION--FOR EFFECTS ON EQUIPMENT, USE SHOCK RESISTANCE AND MECHANICAL SHOCK)
- GS tolerances (physiology)
- . **acceleration tolerance**
- RT blackout (physiology)
blackout prevention
centrifuging stress
gravitational effects
gravity perception
high acceleration
human centrifuges
human tolerances
∞ resistance

∞ **accelerators**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Machines that ionize gases and electrically accelerate the ions onto targets.
- RT accelerating agents
∞ acceleration
coaxial plasma accelerators
cyclic accelerators
Cyclops plasma accelerator
electron accelerators
geocyclotrons
Hall accelerators
hypervelocity guns
ion accelerators
linear accelerators
mass drivers
Nimrod accelerator
particle accelerator targets
particle accelerators
plasma accelerators
racetracks (particle accelerators)
railgun accelerators
ram accelerators
SEPAC (payload)
storage rings (particle accelerators)
synchrophasotrons
Van de Graaff accelerators

accelerometers

- DEF Transducers which measure acceleration or gravitational forces capable of imparting acceleration.
- GS measuring instruments
. **accelerometers**
. . strain gage accelerometers
- RT acceleration (physics)
acceleration measurement
gravimeters
gravimetry
gyroscopic pendulums
mechanical measurement
pendulums
seismographs
shock measuring instruments
speed indicators
thrust measurement
velocity measurement
vibration meters

acceptability

- UF *acceptance*
- RT accelerated life tests
compatibility
evaluation
examination
figure of merit
inspection
performance tests
proving
quality control
rejection
reliability
risk
samples
standards
suitability
∞ tests
tolerances (mechanics)
total quality management

validity

acceptance

USE **acceptability**

acceptor materials

- GS semiconductors (materials)
- . **acceptor materials**
- RT carrier density (solid state)
electrons
holes (electron deficiencies)
∞ materials

access control

- DEF Hardware or software features, operating procedures, or management procedures designed to permit authorized access to a computer system.
- RT communication networks
computer information security
computer security
∞ control
data transmission
firewalls (computers)
intrusion detection (computers)
multiple access
multiplexing
radio communication
telecommunication

access time

- GS time
. **access time**
- RT data processing
rates (per time)
time constant
∞ time response
transmission rate (communications)

accessories

- UF *attachments*
- RT ∞ components
extensions
fittings
inserts
subassemblies

accident investigation

- GS investigation
. **accident investigation**
. . aircraft accident investigation
- RT accidents
automobile accidents
lessons learned
wreckage

accident prevention

- UF *precautions*
- GS prevention
. **accident prevention**
- RT accidents
aerospace safety
air bag restraint devices
automobile accidents
avoidance
fire prevention
hazards
lessons learned
protection
risk management
safety
safety devices
safety management
situational awareness
warning
warning systems

accident proneness

- RT safety devices
safety factors

accidents

- GS **accidents**
. aircraft accidents
. . bird-aircraft collisions
. automobile accidents
. loss of coolant
- RT accident investigation
accident prevention
air bag restraint devices

crash injuries
crashes
destruction
disasters
emergencies
explosions
fires
first aid
hazards
industrial safety
injuries
lessons learned
sabotage
safety
safety devices
traffic
wreckage

acclimatization

- DEF The adjustments of a human body or other organism to a new environment; the bodily changes which tend to increase efficiency and reduce energy loss. Used for deacclimatization.
- UF *deacclimatization*
- GS adaptation
. **acclimatization**
. . altitude acclimatization
. . cold acclimatization
. . heat acclimatization
- RT homeostasis
liquid breathing
stress (biology)
stress (physiology)
tolerances (physiology)

accommodation

- RT adaptation
correction
eye (anatomy)
focusing
visual accommodation

accommodation coefficient

- DEF The ratio of the average energy actually transferred between a surface and impinging gas molecules which are scattered by the surface to the average energy which would theoretically be transferred if the impinging molecules reached complete thermal equilibrium with the surface before leaving the surface. Used for thermal accommodation coefficients.
- UF *thermal accommodation coefficients*
- GS coefficients
. **accommodation coefficient**
- RT heat transfer coefficients

accounting

- DEF The practice and system of recording and summarizing business and financial transactions, and reporting as well as verifying and analyzing their results.
- RT budgeting
costs
finance

accretion

USE **deposition**

accretion disks

- DEF Rotation disks of matter surrounding an astronomical object, such as a star, galactic nucleus, black hole, etc., which is accumulated gravitationally by the object.
- RT astrophysics
binary stars
black holes (astronomy)
blazars
cooling flows (astrophysics)
disks (shapes)
eclipsing binary stars
galactic nuclei
gravitational binding energy
protoplanetary disks
rotating disks
stellar mass accretion
superhumps (astronomy)
x ray binaries

accumulations

- RT acquisition

accumulators

agglomeration
assemblies
coagulation
collection
concentrating
deposition
filling
growth
increasing
input
nucleation
settling
stockpiling

accumulators

DEF Devices or apparatus that accumulate or store. Used for collectors.

UF *collectors*

GS **accumulators**
. accumulators (computers)
. dust collectors
. solar collectors

RT anodes
concentrators
entrapment
fuel systems
pressure vessels
pressurizing

accumulators (computers)

DEF In computer technology, devices which store a number and upon receipt of another number add it to the number already stored and store the sum.

GS accumulators
. **accumulators (computers)**
computer components
computer storage devices
. . . registers (computers)
. . . **accumulators (computers)**

RT adding circuits
counters
∞ equipment

accuracy

DEF The degree of agreement of the measurements with the true value of the magnitude of the quantity measured. Used for error band and fidelity.

UF *error band*
fidelity

GS **accuracy**
. geodetic accuracy
. geometric accuracy

RT angular resolution
calibrating
consistency
correction
definition
drift (instrumentation)
dynamic characteristics
errors
high resolution
hysteresis
linearity
∞ measurement
miss distance
precision
quality
range errors
reliability
resolution
sequential control
standards
surveys
∞ tests
tolerances (mechanics)
validity
virtual properties

ACE satellite

(added December 1999)

USE **Advanced Composition Explorer**

ACEE program

DEF A NASA program started in 1975 to reduce fuel consumption for transport aircraft through the study of structural and aerodynamic energy efficiency as well as engine energy efficiency consisting of engine component improve-

ment, new energy efficient engines, and advanced turbopropellers. The acronym stands for aircraft energy efficiency. Used for Aircraft Energy Efficiency program and energy efficiency transport program.

UF *Aircraft Energy Efficiency program*
Energy Efficiency Transport program

GS programs
. NASA programs
. . . **ACEE program**
RT aircraft engines
combustion efficiency

acetaldehyde

GS aldehydes
. **acetaldehyde**

acetals

GS ethers
. **acetals**

acetanilide

UF *phenacetin*
GS nitrogen compounds
. amides
. . . **acetanilide**

acetates

GS **acetates**
. cobalt acetates
. lead acetates
. sodium chlorodifluoroacetates
. triacetin
RT acetic acid
acetylsalicylic acid
esters
ethylenediaminetetraacetic acids

acetation

USE **acetylation**

acetazolamide

GS nitrogen compounds
. amides
. . . **acetazolamide**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . azoles
. . . . **acetazolamide**
RT carbonic anhydrase
diuretics

acetic acid

GS acids
. carboxylic acids
. . . fatty acids
. . . . **acetic acid**
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
organic compounds
. carboxylic acids
. . . fatty acids
. . . . **acetic acid**
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
RT acetates
acetyl compounds
triacetin

acetone

GS ketones
. **acetone**
RT acetylacetone
pentanone

acetonitrile

UF *ethane nitrile*
methyl cyanide
GS cyanides
. **acetonitrile**
methyl compounds
. **acetonitrile**
nitrogen compounds
nitriles
. . . **acetonitrile**
organic compounds
. nitriles

. . . **acetonitrile**

acetyl compounds

GS organic compounds
. **acetyl compounds**
. . . acetylacetone
. . . acetylsalicylic acid
RT acetic acid
acetylation
aldehydes
∞ chemical compounds
esters

acetylacetone

GS ketones
. **acetylacetone**
organic compounds
. **acetyl compounds**
. . . **acetylacetone**
RT acetone
pentanone

acetylation

DEF Substitution of an acetyl radical for an active hydrogen. Specifically, formation of cellulose acetate from cellulose. Used for acetation.
UF *acetation*
GS chemical reactions
. acylation
. . . **acetylation**
RT acetyl compounds

acetylcholine

(added August 2004)

DEF A major neurotransmitter in vertebrates at neuromuscular junctions, autonomic ganglia, parasympathetic effector junctions, a subset of sympathetic effector junctions, and at many sites in the central nervous system.

GS neurotransmitters
. **acetylcholine**
organic compounds
. amines
. . . **acetylcholine**
RT neuromuscular transmission
synapses
vasodilator agents

acetylene

GS organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . alkynes
. . . . **acetylene**
RT cyanoacetylene
hydrocarbon fuels
oxyacetylene

acetylsalicylic acid

UF *ASA*
GS acids
. carboxylic acids
. . . fatty acids
. . . . **acetylsalicylic acid**
organic compounds
. acetyl compounds
. . . **acetylsalicylic acid**
. carboxylic acids
. . . fatty acids
. . . . **acetylsalicylic acid**
RT acetates
salicylates

achievement

RT completeness
goals
learning

achondrites

GS celestial bodies
. meteorites
. . . stony meteorites
. . . . **achondrites**
. . . . Bondoc meteorite
. . . . chassignites
. . . . Kapoeta achondrite
. . . . nakhlites
. . . . Norton County achondrite
. . . . shergottites
. . . . SNC meteorites

- ureilites
- RT chondrites
- iron meteorites
- acid base equilibrium**
- GS chemical equilibrium
- . **acid base equilibrium**
- RT ∞ equilibrium
- homeostasis
- pH
- pH factor
- stabilization
- thermodynamic equilibrium
- acid rain**
- DEF Low pH rainfall resulting from atmospheric reactions of aerosols containing chlorides and sulfates (or other negative ions).
- GS precipitation (meteorology)
- . rain
- . . . **acid rain**
- RT air pollution
- atmospheric chemistry
- atmospheric moisture
- clouds (meteorology)
- dew
- meteorology
- pH
- rainstorms
- snow
- sulfur oxides
- acidity**
- GS chemical properties
- . **acidity**
- RT hydrogen ions
- ion concentration
- pH
- titration
- acidosis**
- DEF Reduction of alkali reserves due to an excess of acid metabolites.
- RT alkalosis
- hyperventilation
- pH
- pH factor
- toxicity
- acids**
- GS **acids**
- . amino acids
- . . alanine
- . . . phenylalanine
- . . aspartic acid
- . . cysteine
- . . dopa
- . . folic acid
- . . glutamic acid
- . . glutamine
- . . glycine
- . . hippuric acid
- . . histidine
- . . leucine
- . . . norleucine
- . . lysine
- . . melanoidin
- . . methionine
- . . thyroxine
- . . tryptophan
- . . tyrosine
- . amobarbital
- . ascorbic acid
- . boric acids
- . butyric acid
- . carbonic acid
- . carboxylic acids
- . . acrylic acid
- . . alanine
- . . . phenylalanine
- . . aspartic acid
- . . citric acid
- . . dicarboxylic acids
- . . fatty acids
- . . . acetic acid
- ethylenediaminetetraacetic acids
- iodoacetic acid
- . . . acetylsalicylic acid
- . . . benzoic acid
- benzilic acid
- benzoic acid
- . . . lipoic acid
- . . . oleic acid
- . . . palmitic acid
- . . . propionic acid
- . . . sebamic acid
- . . . valeric acid
- . . . abscisic acid
- . . folic acid
- . . formhydroxamic acid
- . . formic acid
- . . Hexogenes (trademark)
- . . lactic acid
- . . lysine
- . . nicotinic acid
- . . oxalic acid
- . . oxamic acids
- . . tryptophan
- . chromic acid
- . cyanuric acid
- . cytidylic acid
- . hydrazoic acid
- . hydrobromic acid
- . hydrochloric acid
- . hydrocyanic acid
- . hydrofluoric acid
- . nitric acid
- . nucleic acids
- . . deoxyribonucleic acid
- . . . complementary DNA
- . . ribonucleic acids
- . indoleacetic acids
- . oxidase
- . perchloric acid
- . phosphoric acid
- . sulfonic acid
- . sulfuric acid
- . thymidine
- . thymine
- . uric acid
- . uridylic acid
- . xanthic acids
- RT adrenocorticotropin (ACTH)
- anhydrides
- hydrogen compounds
- inorganic compounds
- ∞ oxygen compounds
- acoustic attenuation**
- GS attenuation
- . wave attenuation
- . . **acoustic attenuation**
- . . . shock wave attenuation
- RT acoustic coupling
- acoustics
- anechoic chambers
- atmospheric attenuation
- bioacoustics
- grazing flow
- noise reduction
- sound amplification
- wave propagation
- zero sound
- acoustic combustion*
- USE **combustion stability**
- acoustic coupling**
- (added September 1988)
- GS coupling
- . **acoustic coupling**
- RT acoustic attenuation
- acoustic excitation
- acoustics
- energy transfer
- sound waves
- wave interaction
- acoustic delay lines**
- DEF Devices used in a communications link or a computer memory in which the signal is delayed by the propagation of sound waves.
- Used for sonic waveguides.
- UF *sonic waveguides*
- GS delay lines
- . **acoustic delay lines**
- RT computer storage devices
- delay circuits
- surface acoustic wave devices
- transmission lines
- acoustic detection*
- USE **sound detecting and ranging**
- acoustic ducts**
- GS ducts
- . **acoustic ducts**
- RT grazing flow
- noise reduction
- spatial marching
- acoustic emission**
- DEF The stress and pressure waves generated during dynamic processes in materials and used in assessing structural integrity in machined parts.
- GS emission
- . **acoustic emission**
- RT acoustic measurement
- crack propagation
- failure analysis
- fatigue testing machines
- nondestructive tests
- stress waves
- acoustic excitation**
- DEF The process of inducing vibration in a structure by exposure to sound waves.
- GS excitation
- . wave excitation
- . . **acoustic excitation**
- RT acoustic coupling
- acoustic resonance
- acoustics
- sound amplification
- surface noise interactions
- thermoacoustic effects
- acoustic fatigue**
- UF *sonic fatigue*
- GS fatigue (materials)
- . **acoustic fatigue**
- RT acoustics
- acoustic frequencies**
- UF *sound frequencies*
- GS frequencies
- . **acoustic frequencies**
- . . audio frequencies
- . . . quefrequencies
- . . screech tones
- RT acoustic measurement
- acoustic properties
- acoustic resonance
- acoustics
- frequency ranges
- noise spectra
- pressure oscillations
- resonant frequencies
- sound waves
- subaudible frequencies
- ultrasonic radiation
- whispering gallery modes
- acoustic generators*
- USE **sound generators**
- acoustic imaging**
- (added February 1993)
- GS imaging techniques
- . **acoustic imaging**
- . . acoustical holography
- RT acoustic measurement
- acoustic scattering
- nondestructive tests
- ultrasonic flaw detection
- acoustic impedance**
- GS acoustic properties
- . **acoustic impedance**
- impedance
- . **acoustic impedance**
- RT acoustics
- evanescent waves
- grazing flow
- acoustic instability**
- GS acoustic properties
- . **acoustic instability**

acoustic levitation

stability
. **acoustic instability**
RT signal fading
thermoacoustic effects

acoustic levitation

DEF Method by which molten materials in space are suspended during processing experiments in the low gravity environment. Also, the use of very intense sound waves to keep a body suspended, thereby eliminating any container contact.

GS levitation
. **acoustic levitation**
RT buoyancy
space processing

acoustic measurement

SN (MEASUREMENT OF PROPERTIES, QUANTITIES OR CONDITIONS ASSOCIATED WITH ELASTIC WAVES)
DEF Measurement of properties, quantities, or conditions of acoustical, i.e., mechanical waves. Used for sound measurement.

UF *sound measurement*
GS **acoustic measurement**
. noise measurement
RT acoustic emission
acoustic frequencies
acoustic imaging
ambience
anechoic chambers
audio frequencies
audiometry
cepstral analysis
effective perceived noise levels
frequency measurement
grazing flow
∞ measurement
mechanical measurement
noise meters
reverberation chambers
seismographs
sound pressure
sound waves
ultrasonic tests

acoustic microscopes

DEF Instruments which use acoustic radiation at microwave frequencies to allow visualization of microscopic detail exhibited in elastic properties of objects. Used for scanning laser acoustic microscope (SLAM).

UF *scanning laser acoustic microscope (SLAM)*
GS microscopes
. **acoustic microscopes**
RT acoustic propagation
imaging techniques
microwave frequencies
optical equipment
photoacoustic microscopy
wave propagation

acoustic nozzles

RT ∞ nozzles
sonic nozzles
sound generators

acoustic propagation

GS transmission
. wave propagation
. . . **acoustic propagation**
. . . . sound propagation
RT acoustic microscopes
acoustical holography
acoustics
elastic waves
∞ propagation
whispering gallery modes

acoustic properties

GS **acoustic properties**
. acoustic impedance
. acoustic instability
. acoustic scattering
. . . reverberation
. acoustic velocity
. sound intensity
. . . zero sound
RT acoustic frequencies

field strength
grazing flow
Lamb waves
mechanical properties
∞ physical properties
∞ properties
∞ resistance
sound waves
wave dispersion

acoustic radiation

USE **sound waves**

acoustic resonance

(added June 1997)
GS resonance
. **acoustic resonance**
RT acoustic excitation
acoustic frequencies
acoustics
resonant frequencies
resonant vibration

acoustic retrofitting

DEF Modification, especially of aircraft, to effect noise reduction; specifically, the introduction of absorber materials and jet noise silencers.

GS retrofitting
. **acoustic retrofitting**
RT absorbers (materials)
aerodynamic noise
aircraft design
aircraft noise
jet aircraft noise
mufflers
noise reduction
propeller noise
vibration isolators

acoustic scattering

GS acoustic properties
. **acoustic scattering**
. . . reverberation
scattering
. wave scattering
. . . **acoustic scattering**
. . . . reverberation
RT acoustic imaging
acoustic sounding
acoustics
deep scattering layers
reciprocity theorem
sodar
sound detecting and ranging
surface noise interactions
underwater acoustics

acoustic simulation

GS simulation
. environment simulation
. . . **acoustic simulation**
RT elastic waves
flight simulation
reverberation chambers

acoustic sounding

GS sounding
. **acoustic sounding**
RT acoustic scattering
acoustics
Earth atmosphere
meteorology
rocket sounding
rocket vehicles
sounding rockets
ultrasonic tests
underground acoustics
upper atmosphere

acoustic stability

USE **frequency stability**

acoustic streaming

DEF Unidirectional flow currents in a fluid that are due to the presence of sound waves.

RT fluid flow
fluid switching elements
fragmentation
sound waves

streamlining

acoustic velocity

DEF The speed of propagation of sound waves. Used for sonic speed, sound barrier, and sound velocity.

UF *sonic speed*
sound barrier
sound velocity
GS acoustic properties
. **acoustic velocity**
rates (per time)
. **acoustic velocity**
velocity
RT ∞ barriers
exhaust velocity
Gutenberg zone
Mach cones
Mach number
sonic booms
sound pressure
subsonic speed
supersonic speed
transonic speed

acoustic vibrations

USE **sound waves**

acoustical holography

UF *sonoholography*
sound holography
GS imagery
. photography
. . . holography
. . . **acoustical holography**
imaging techniques
. acoustic imaging
. . . **acoustical holography**
RT acoustic propagation
imaging techniques
sound waves
wave front reconstruction

acoustics

DEF The study of sound, including its production, transmission, and effects. Those qualities of an enclosure that together determine its character with respect to distinct hearing. Used for sound.

UF *sound*
GS **acoustics**
. aeroacoustics
. . . computational aeroacoustics
. bioacoustics
. electroacoustics
. geometrical acoustics
. magnetoacoustics
. microsonics
. psychoacoustics
. underwater acoustics
RT acoustic attenuation
acoustic coupling
acoustic excitation
acoustic fatigue
acoustic frequencies
acoustic impedance
acoustic propagation
acoustic resonance
acoustic scattering
acoustic sounding
anechoic chambers
architecture
audio tapes
auditory perception
auditory stimuli
auditory tasks
comfort
earphones
echoes
effective perceived noise levels
elastic waves
harmonic excitation
harmonic generations
harmonic oscillation
harmonics
hum
infrasonic frequencies
Lamb waves
Lame wave equations

- loudness
noise (sound)
noise pollution
noise propagation
noise reduction
octaves
opacity
phonetics
power spectra
∞ science
simple harmonic motion
sonic anemometers
sound amplification
sound fields
sound propagation
sound transmission
sound waves
speech
stereophonics
thermoacoustic effects
ultrasonic cleaning
ultrasonic scanners
ultrasonics
verbal communication
vibration
vibration damping
voice communication
zero sound
- acousto-optics**
RT Bragg cells
crystal optics
electro-optics
geometrical optics
imagery
light modulators
magneto-optics
optical properties
optical switching
∞ optics
photoacoustic microscopy
photoacoustic spectroscopy
thermoacoustic effects
tunable filters
- ACPL (Spacelab)*
USE **Atmospheric Cloud Physics Lab (Spacelab)**
- acquired immunodeficiency syndrome**
(added August 1991)
DEF A condition caused by the human immunodeficiency virus (HIV) attacking the human body's T-cells, thereby rendering an infected individual defenseless against diseases.
UF *AIDS (disease)*
GS diseases
. infectious diseases
. . . viral diseases
. . . **acquired immunodeficiency syndrome**
signs and symptoms
. **acquired immunodeficiency syndrome**
RT antibodies
hepatitis
human immunodeficiency virus
immune systems
immunology
interferon
meningitis
physiological defenses
pneumonia
vaccines
- acquisition**
GS **acquisition**
. data acquisition
. target acquisition
RT accumulations
collection
detection
documentation
∞ receiving
recognition
- acriflavine**
GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
- . . . **acriflavine**
RT antiseptics
dyes
- acrobatics (aircraft)*
USE **aerobatics**
- acroleins**
GS aldehydes
. **acroleins**
RT toxicity and safety hazard
- acronyms*
USE **abbreviations**
- ACRV*
USE **Assured Crew Return Vehicle**
- acrylates**
GS esters
. **acrylates**
RT resins
- acrylic acid**
GS acids
. carboxylic acids
. . . **acrylic acid**
organic compounds
. carboxylic acids
. . . **acrylic acid**
- acrylic resins**
UF *methacrylate resins*
polyacrylates
GS plastics
. synthetic resins
. . . addition resins
. . . **acrylic resins**
resins
. synthetic resins
. . . addition resins
. . . **acrylic resins**
RT latex
polyacrylonitrile
thermoplastic resins
- acrylonitriles**
UF *vinyl cyanide*
GS nitrogen compounds
. nitriles
. . . **acrylonitriles**
. . . polyacrylonitrile
organic compounds
. nitriles
. . . **acrylonitriles**
. . . polyacrylonitrile
RT plastics
- ACTH*
USE **adrenocorticotropin (ACTH)**
- actinide series**
DEF The series of elements beginning with actium, Element No. 89, and continuing through lawrencium, Element No. 103.
GS chemical elements
. **actinide series**
. . . actinium
. . . radium
. . . radium isotopes
. . . . radium 226
. . . thorium
. . . thorium isotopes
. . . transuranium elements
. . . americium
. . . . americium isotopes
. americium 241
. berkelium
. californium
. californium isotopes
. curium
. curium isotopes
. curium 242
. curium 244
. einsteinium
. fermium
. lawrencium
. mendelevium
. neptunium
. neptunium isotopes
- . . . nobelium
. . . plutonium
. plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
. sergenium
. . . uranium
. . . uranium isotopes
. uranium 232
. uranium 233
. uranium 234
. uranium 235
. uranium 238
metals
. **actinide series**
. . . actinium
. . . radium
. radium isotopes
. radium 226
. . . thorium
. . . thorium isotopes
. . . transuranium elements
. americium
. americium isotopes
. americium 241
. berkelium
. californium
. californium isotopes
. curium
. curium isotopes
. curium 242
. curium 244
. einsteinium
. fermium
. lawrencium
. mendelevium
. neptunium
. neptunium isotopes
- RT radioactive isotopes
radioactive materials
transition metals
- actinide series compounds**
GS **actinide series compounds**
. californium compounds
. curium compounds
. einsteinium compounds
. neptunium compounds
. plutonium compounds
. plutonium fluorides
. plutonium oxides
. thorium compounds
. thorium fluorides
. thorium oxides
. uranium compounds
. uranium carbides
. uranium fluorides
. uranium oxides
RT ∞ chemical compounds
∞ Group 3B compounds
- actinium**
GS chemical elements
. actinide series
. . . **actinium**
metals
. actinide series

actinometers

.. **actinium**

actinographs
 USE **actinometers**

actinometers
 DEF The general name for instruments used to measure the intensity of radiant energy, particularly that of the sun. Used for actinographs and emissographs.
 UF *actinographs*
emissographs
 GS measuring instruments
 . radiation measuring instruments
 . . **actinometers**
 . . . infrared spectrometers
 filter wheel infrared spectrometers
 pyranometers
 radiometers
 Dicke radiometers
 infrared detectors
 FLIR detectors
 infrared radiometers
 Advanced Very High Resolution Radiometer
 infrared scanners
 visible infrared spin scan radiometer
 quantum well infrared photodetectors
 microwave radiometers
 Advanced Microwave Sounding Unit
 passive L-band radiometers
 pressure modulator radiometers
 spectroradiometers
 MISR (radiometry)
 MODIS (radiometry)
 solar spectrometers
 spectroheliographs
 spectrophotometers
 infrared spectrophotometers
 ultraviolet spectrophotometers
 ultraviolet detectors
 ultraviolet spectrometers
 high dispersion spectrographs
 Total Ozone Mapping Spectrometer
 ultraviolet spectrophotometers
 x ray detectors
 RT dosimeters
 Fabry-Perot spectrometers
 field intensity meters
 spectrometers

actinomycetes
 GS microorganisms
 . bacteria
 . . **actinomycetes**

actinomycin
 GS drugs
 . antibiotics
 . . **actinomycin**

activated carbon
 GS charcoal
 . **activated carbon**
 RT ∞ absorption
 carbon
 filtration
 hemoperfusion
 water treatment

activated sludge
 DEF A semiliquid mass removed from the liquid flow of sewage and subjected to aeration and aerobic microbial action. The end product is dark to golden brown, partially decomposed, granular and flocculent, and has an earthy odor when fresh.
 GS sludge
 . **activated sludge**
 RT biodegradation
 human wastes
 metabolic wastes
 sewage

wastes

activation
 RT activation
 catalysis
 deactivation
 electromagnetic absorption
 excitation
 flotation
 initiation
 ionization potentials
 irradiation
 microwave absorption
 sensitizing
 starting
 stimulation

activation (biology)
 RT activation energy
 ∞ biology
 ∞ cells
 enzymes
 stimulation

activation analysis
 DEF A method of chemical analysis, especially for small traces of materials, based on the detection of characteristic radiations following a nuclear bombardment.
 GS **activation analysis**
 . neutron activation analysis
 RT ∞ analyzing

activation energy
 RT activation (biology)
 binding energy
 Damkohler number
 electron energy
 ∞ energy
 heat
 nuclear binding energy
 nuclear capture
 proton energy
 rotors
 surface energy

active control
 DEF The automatic activation of various control surface functions in aircraft.
 GS automatic control
 . adaptive control
 . . **active control**
 RT aeroservoelasticity
 aircraft control
 ∞ control
 interactive control
 piezoelectric actuators
 self adaptive control systems
 self alignment
 servomechanisms
 smart structures

active galactic nuclei
 GS galactic nuclei
 . **active galactic nuclei**
 RT active galaxies
 blazars
 galactic radiation
 ∞ nuclei
 quasars
 radio galaxies
 Seyfert galaxies

active galaxies
 GS celestial bodies
 . galaxies
 . . **active galaxies**
 . . . Markarian galaxies
 . . . radio galaxies
 . . . Seyfert galaxies
 RT active galactic nuclei
 blazars
 galactic nuclei
 galactic radiation

quasars

active glaciers
 USE **glaciers**

Active Magneto Particle Tracer Explorers
 USE **AMPTE (satellites)**

active satellites
 DEF Satellites which transmit a signal, in contrast to passive satellites.
 GS artificial satellites
 . **active satellites**
 . . SYNCOM satellites
 . . . Early Bird satellites
 . . . SYNCOM 1 satellite
 . . . SYNCOM 2 satellite
 . . . SYNCOM 3 satellite
 . . . SYNCOM 4 satellite
 RT Advent Project
 Explorer 29 satellite
 Explorer 36 satellite
 geodetic satellites
 GEOS 1 satellite
 GEOS 2 satellite
 GEOS 3 satellite
 navigation satellites
 NAVSTAR satellites
 passive satellites
 synchronous satellites

active sites (chemistry)
(added August 2004)
 DEF The reactive parts of a molecule that directly participate in its specific combination with another molecule.
 UF *binding sites*
catalytic sites
reactive centers
 RT binding energy
 catalytic activity
 chemical bonds
 enzyme inhibitors

active volcanoes
 USE **volcanoes**

∞ **activity**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT activity (biology)
 extravehicular activity
 faculae
 intravehicular activity
 radioactivity
 solar activity

activity (biology)
 UF *biological activity*
 RT ∞ activity
 biological effects
 ∞ biology
 catalytic activity

activity cycles (biology)
 GS cycles
 . **activity cycles (biology)**
 RT ∞ biology
 circadian rhythms
 phenology
 photoperiod
 rhythm (biology)
 zeitgebers

ACTS
 SN (ADVANCED COMMUNICATIONS TECHNOLOGY SATELLITE)
 UF *Advanced Communications Technology Sat*
 GS artificial satellites
 . communication satellites
 . . **ACTS**
 RT extremely high frequencies
 microwave transmission
 satellite communication

actuation
 RT activation
 actuators
 excitation

initiation
 notation
 sensitizing
 starting
 stimulation

actuator disks

GS disks (shapes)
 . **actuator disks**
 RT ∞ disks
 ∞ fans
 propellers

actuators

DEF Mechanisms to activate process control equipment, e.g., valves. Used for cartridge actuated devices, hydraulic actuators, and triggers.

UF *cartridge actuated devices*
hydraulic actuators
triggers
 GS **actuators**
 . piezoelectric actuators
 RT actuation
 aeroservoelasticity
 aircraft hydraulic systems
 automatic control valves
 cams
 control valves
 controllers
 ∞ effectors
 electroactive polymers
 explosive devices
 ∞ instruments
 microoptoelectromechanical systems
 missile control
 propellant actuated instruments
 regulators
 servomechanisms
 servomotors
 shape control
 smart materials
 solenoids
 starters
 stepping motors
 torque motors

acuity

DEF The keenness of ability to detect and discriminate.

GS **acuity**
 . visual acuity
 . . hyperopia
 RT adaptation
 discrimination
 frequency response
 perception
 sensitivity
 thresholds (perception)

acylation

GS chemical reactions
 . **acylation**
 . . acetylation
 RT Friedel-Craft reaction

AD/I B

USE **Explorer 25 satellite**

AD/I satellite

USE **Explorer 24 satellite**

Ada (programming language)

DEF A programming language based on PASCAL, originally developed on behalf of the US Department of Defense for use in embedded computer systems. It is named Ada in honor of Augusta Ada Byron, countess of Lovelace, primarily due to the fact that she was the assistant and patron of Charles Babbage and is considered the world's first programmer.

GS languages
 . programming languages
 . . high level languages
 . . . **Ada (programming language)**
 RT computer programming
 embedded computer systems

object-oriented programming

AD-A satellite

USE **Explorer 19 satellite**

adaptation

DEF The adjustment, alteration or modification of an organism to fit it more perfectly for existence in its environment.

GS **adaptation**
 . acclimatization
 . . altitude acclimatization
 . . cold acclimatization
 . . heat acclimatization
 . desert adaptation
 . retinal adaptation
 . . dark adaptation
 . . light adaptation
 RT accommodation
 acuity
 correction
 fitting
 hibernation
 homeostasis
 perception
 reaction time
 retraining
 sensitivity
 thresholds (perception)
 vision

adapters

DEF Devices or contrivances used or designed primarily to fit or adjust one thing to another. Devices, appliances or the like used to alter something so as to make it suitable for a use for which it was not originally designed.

GS **adapters**
 . multiple docking adapters
 RT connectors
 extensions
 fittings
 joints (junctions)

adaptive control

UF *adaptive control systems*
 GS automatic control
 . **adaptive control**
 . . active control
 . . model reference adaptive control
 . . self adaptive control systems
 RT automata theory
 ∞ autonomy
 ∞ control
 control theory
 cybernetics
 dynamic control
 feedback control
 feedforward control
 machine learning
 mission adaptive wings
 optimal control
 robot control
 sampled data systems
 self alignment
 smart structures

adaptive control systems

USE **adaptive control**

adaptive filters

RT bandpass filters
 bandstop filters
 electric filters
 electromagnetic wave filters
 ∞ filters
 IIR filters
 linear filters
 optical filters
 space-time adaptive processing
 tracking filters
 tunable filters

adaptive optics

DEF Real-time optical correction for atmospheric perturbations and other system error sources.

RT anisoplanatism
 atmospheric optics
 computer techniques

deformable mirrors
 feedback control
 honeycomb mirrors
 imaging techniques
 instrument compensation
 laser guide stars
 optical correction procedure
 optical transfer function
 ∞ optics
 segmented mirrors
 self adaptive control systems

adatoms

(added September 2002)

DEF Atoms adsorbed on a solid surface. Adatoms and their associated properties are often exploited in the development of microelectronic and nanoelectronic structures.

UF *adsorbed atoms*
 GS atoms
 . **adatoms**
 RT adsorption
 atomic clusters
 chemisorption
 metal surfaces
 molecular electronics
 nanostructures (devices)
 nanotechnology
 surface diffusion

adders (circuits)

USE **adding circuits**

adding circuits

UF *adders (circuits)*
binary summaters
 GS circuits
 . **adding circuits**
 . computer components
 . **adding circuits**
 RT accumulators (computers)
 binary integration
 logic circuits

addition

RT addition theorem
 amount
 arithmetic
 computation
 number theory
 restoration

addition resins

SN (CARBON CHAIN POLYMERS--FOR HETEROATOM CHAIN POLYMERS, USE POLYETHER RESINS)
 GS plastics
 . synthetic resins
 . . **addition resins**
 . . . acrylic resins
 . . . vinyl copolymers
 resins
 . synthetic resins
 . . **addition resins**
 . . . acrylic resins
 . . . vinyl copolymers
 RT crosslinking
 polybutadiene
 polyethylene terephthalate
 polyethylenes
 polyisobutylene
 polypropylene
 polystyrene
 polyvinyl alcohol
 polyvinyl chloride
 synthesis (chemistry)
 synthetic fibers
 vulcanized elastomers

addition theorem

GS number theory
 . **addition theorem**
 theorems
 . **addition theorem**
 RT addition

additives

DEF Materials or substances added to something else for a specific purpose. Used for doping (additives).

addressing

UF *doping (additives)*
GS **additives**
. admixtures
. antifreezes
. antiicing additives
. antiknock additives
. antioxidants
. oil additives
. opacifiers
. plasticizers
. propellant additives
. . . propellant binders
. . . solid rocket binders
RT ∞ agents
alloying
antimisting fuels
binders (materials)
carrier injection
catalysts
coatings
diluents
dopes
doping (materials)
fillers
high energy fuels
inhibitors
interstitials
lubricants
majority carriers
minority carriers
modulation doping
neutralizers
neutron transmutation doping
pigments
preservatives
retardants
solvents
stabilizers (agents)
suppressors
tetrahydrofuran
thickeners (materials)
traveling solvent method
vinyl copolymers

addressing

RT coding
computer programming

adducts

DEF Chemical compounds with weak bonds, e.g., occlusive or Van der Waal bonds.
RT ∞ chemical compounds

Aden

USE **Southern Yemen**

adenines

GS bases (chemical)
. **adenines**
organic compounds
. carbohydrates
. . . glucosides
. . . nucleosides
. . . . **adenines**
. cyclic compounds
. . heterocyclic compounds
. . . purines
. . . . **adenines**
. nucleotides
. . **adenines**
phosphorus compounds
. phosphates
. . **adenines**
RT ribonucleic acids

adenosine diphosphate

UF *ADP*
GS organic compounds
. coenzymes
. . **adenosine diphosphate**
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . **adenosine diphosphate**
. nucleotides
. . adenosines
. . . **adenosine diphosphate**
phosphorus compounds
. phosphates
. . diphosphates

. . . **adenosine diphosphate**

adenosine monophosphate

(added August 2004)
DEF Adenine nucleotide containing one phosphate group.
UF *adenylic acid*
AMP (biochemistry)
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . **adenosine monophosphate**
. nucleotides
. . adenosines
. . . **adenosine monophosphate**
phosphorus compounds
. phosphates
. . **adenosine monophosphate**
RT adenosine triphosphate
cyclic AMP
deoxyribonucleic acid
metabolism

adenosine triphosphate

UF *ATP*
GS organic compounds
. coenzymes
. . **adenosine triphosphate**
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . **adenosine triphosphate**
. nucleotides
. . adenosines
. . . **adenosine triphosphate**
phosphorus compounds
. phosphates
. . **adenosine triphosphate**
RT adenosine monophosphate
amino acids
myosins

adenosines

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **adenosines**
. . . . adenosine diphosphate
. . . . adenosine monophosphate
. . . . adenosine triphosphate
. . . . cyclic AMP
. nucleotides
. . **adenosines**
. . . adenosine diphosphate
. . . adenosine monophosphate
. . . adenosine triphosphate
. . . cyclic AMP
RT oligonucleotides

adenosinetriphosphatase

(added August 2004)
RT myosins

adenoviruses

GS microorganisms
. viruses
. . **adenoviruses**

adenylic acid

(added December 2004)
USE **adenosine monophosphate**

adequacy

RT quality
validity

adherometers

USE **adhesion tests**

adhesion

GS surface properties
. **adhesion**
. . stiction
RT adhesion tests
adhesive bonding
agglutination
bonding
cold welding
fusion (melting)

interfacial energy
internal pressure
∞ joining
metal bonding
peeling
sealing
spreading
tackiness
traction
wettability

adhesion tests

UF *adherometers*
Fokker bond testers
RT adhesion
bonding
nondestructive tests
∞ tests
wettability

adhesive bonding

GS bonding
. **adhesive bonding**
RT adhesion
agglutination
bonded joints
cementation
fiber pullout
∞ joining
metal bonding
metal-metal bonding
resin bonding
sealing

adhesives

UF *binders (adhesives)*
GS **adhesives**
. glues
. pastes
. . tetraethyl orthosilicate
RT agglutination
alkyd resins
binders (materials)
cements
epoxy resins
fasteners
furan resins
joints (junctions)
metal-metal bonding
phenolic epoxy resins
plastic tapes
sealers
seams (joints)
∞ tapes

ADI methods

USE **alternating direction implicit methods**

adiabatic conditions

GS conditions
. **adiabatic conditions**
RT Carnot cycle
compressing
enthalpy
environments
expansion
isentropes
isoenergetic processes
isothermal processes
polytropic processes
temperature
thermal environments
thermodynamic cycles
thermodynamic equilibrium

adiabatic demagnetization cooling

DEF Use of paramagnetic salts cooled to the boiling point of helium in a strong magnetic field, then thermally isolated and removed from the field to demagnetize the salts and attain temperatures of 10(-3) K.
RT magnetic cooling

adiabatic equations

RT ∞ equations
equations of state
heat transmission
nonadiabatic theory

- shock waves
- adiabatic flow**
GS fluid flow
. **adiabatic flow**
RT stagnation temperature
- adipose tissues**
GS tissues (biology)
. connective tissue
. . **adipose tissues**
RT fats
- Adiprene (trademark)**
GS elastomers
. rubber
. . synthetic rubbers
. . . **Adiprene (trademark)**
- Adirondack Mountains (NY)**
GS landforms
. mountains
. . **Adirondack Mountains (NY)**
RT New York
- adjoints**
GS algebra
. vector spaces
. . matrices (mathematics)
. . . **adjoints**
RT data processing
numerical analysis
- adjusting**
UF *adjustment*
readjustment
RT alignment
clearances
collimation
correction
fitting
focusing
leveling
matching
optical correction procedure
positioning
revisions
∞ setting
smoothing
- adjustment*
USE **adjusting**
- administration*
USE **management**
- admittance*
USE **electrical impedance**
- admixtures**
GS additives
. **admixtures**
mixtures
. **admixtures**
RT accelerating agents
catalysts
∞ combination
concretes
formulations
ingredients
mixers
mortars (material)
surfactants
- adobe flats*
USE **flats (landforms)**
- ADP**
USE **adenosine diphosphate**
- Adrastea**
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 129,980 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Adrastea**
- RT Jupiter (planet)
- adrenal gland**
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **adrenal gland**
RT adrenocorticotropin (ACTH)
epinephrine
glucocorticoids
- adrenal metabolism**
GS metabolism
. **adrenal metabolism**
RT aldosterone
corticosteroids
cortisone
hydroxycorticosteroid
- adrenaline*
USE **epinephrine**
- adrenergics**
UF *sympathomimetics*
GS drugs
. **adrenergics**
RT antiadrenergics
anticoagulants
cyclic AMP
- adrenocorticotropin (ACTH)**
UF *ACTH*
GS secretions
. endocrine secretions
. . hormones
. . . pituitary hormones
. . . . **adrenocorticotropin (ACTH)**
RT acids
adrenal gland
amino acids
proteins
- Adriatic Sea**
GS seas
. Mediterranean Sea
. . **Adriatic Sea**
RT Italy
Yugoslavia
- adsorbed atoms*
(added September 2002)
USE **adatoms**
- adsorbents**
DEF Materials which take up gases by adsorption.
GS sorbents
. **adsorbents**
RT adsorbents
adsorption
air conditioning equipment
charcoal
desiccants
hemoperfusion
- adsorption**
DEF The adhesion of a thin film of liquid or gas to the surface of a solid substance. The solid does not combine chemically with the adsorbed substance.
GS sorption
. **adsorption**
. . chemisorption
RT ∞ absorption
adatoms
adsorbents
adsorptivity
beneficiation
bioavailability
chromatography
concentrating
desorption
diffusion
electrostatic precipitators
elution
gas chromatography
gas-metal interactions
Gibbs adsorption equation
hydrophobicity
∞ separation
- water treatment
- adsorptivity**
GS surface properties
. **adsorptivity**
RT adsorption
chemical properties
chemisorption
∞ physical properties
- adults**
(added August 2004)
DEF A person having attained full growth or maturity.
RT children
demography
females
males
parents
populations
youth
- Advanced Airborne Command Post*
USE **E-4A aircraft**
- Advanced Communications Technology Sat*
USE **ACTS**
- Advanced Composition Explorer**
(added December 1999)
DEF Explorer spacecraft (launched August 25, 1997) carrying six high-resolution sensors and three monitoring instruments for sampling low-energy particles of solar origin and high-energy galactic particles. From a vantage point approximately 1/100 of the distance from the Earth to the Sun, the Advanced Composition Explorer (ACE) can perform measurements over a wide range of energy and nuclear mass, under all solar wind flow conditions and during both large and small particle events including solar flares. When reporting space weather ACE can provide an advance warning of geomagnetic storms.
UF *ACE satellite*
Explorer 71 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Advanced Composition Explorer**
RT energetic particles
galactic cosmic rays
interplanetary medium
solar corpuscular radiation
solar cosmic rays
solar wind
space weather
- Advanced EVA Protection Systems*
USE **AEPS**
- Advanced Launch System (STS)**
(added October 1989)
UF *ALS (launch system)*
GS transportation
. space transportation
. . space transportation system
. . . **Advanced Launch System (STS)**
RT heavy lift launch vehicles
launch vehicle configurations
launch vehicles
NASA programs
NASA space programs
payload delivery (STS)
reusable launch vehicles
Shuttle Derived Vehicles
space shuttles
spacecraft design
- Advanced Microwave Sounding Unit**
(added July 1997)
DEF A line-scan instrument on the Advanced TIROS-N (ATN) NOAA K-N series of operational meteorological satellites. The AMSU consists of two functionally independent units, AMSU-A and AMSU-B. The AMSU-A is designed to measure scene radiance in 15 channels, ranging from 23. 8 to 89 GHz, to derive

Advanced Range Instrumentation Aircraft

atmospheric temperature profiles from the Earth surface to about 3 millibar pressure height. The AMSU-B is designed to measure scene radiance in five channels, ranging from 89 GHz to 183 GHz for the computation of atmospheric water vapor profiles.

UF *AMSU (radiometer)*

GS measuring instruments
. microwave sensors

. . . Advanced Microwave Sounding Unit

. radiation measuring instruments
. actinometers
. . . radiometers

. . . . microwave radiometers

. Advanced Microwave Sounding Unit

. satellite-borne instruments

. . . Advanced Microwave Sounding Unit

microwave equipment
. microwave radiometers

. . . Advanced Microwave Sounding Unit

RT atmospheric moisture
atmospheric sounding
atmospheric temperature
Earth Observing System (EOS)
microwave sounding
NOAA satellites
remote sensors
satellite sounding
TIROS N series satellites

Advanced Orbiting Solar Observatory

USE **AOSO**

Advanced Range Instrumentation Aircraft

DEF An EC-135 aircraft configured for reception recording and real-time relay of telemetry data.

RT airborne equipment

∞ aircraft

Apollo project
C-135 aircraft
data acquisition
telemetry

Advanced Range Instrumentation Ship

UF *ARIS instrumentation ship*

GS water vehicles
. ships

. . . Advanced Range

Instrumentation Ship

RT ∞ instruments

manned space flight network
spacecraft tracking
tracking networks

Advanced Recon Electric Spacecraft

UF *ARES (spacecraft)*

GS interplanetary spacecraft
. Mars probes

. . . Advanced Recon Electric Spacecraft

unmanned spacecraft

. space probes
. . Mars probes

. . . . Advanced Recon Electric Spacecraft

RT ∞ spacecraft

advanced sodium cooled reactor

UF *ASCR reactor*

GS nuclear reactors

. liquid cooled reactors

. . liquid metal cooled reactors

. . . advanced sodium cooled reactor

Advanced Solid Rocket Motor (STS)

(added October 1989)

UF *ASRM (STS)*

GS engines

. rocket engines

. . booster rocket engines

. . . Space Shuttle Boosters

. . . . Advanced Solid Rocket Motor (STS)

. . solid propellant rocket engines

. . . Space Shuttle Boosters

. . . . Advanced Solid Rocket Motor (STS)

RT Space Shuttle Ascent Stage
space transportation system

advanced tactical fighter

USE **F-22 aircraft**

Advanced Technology Laboratory

DEF An all-pallet payload utilizing the Space Shuttle and the European Spacelab and designed to accommodate 8 to 15 experiments per mission.

GS laboratories

. space laboratories

. . Advanced Technology Laboratory

payloads

. Space Shuttle payloads

. . Advanced Technology Laboratory

RT Spacelab

Advanced Technology Light Twin aircraft

USE **ATLIT project**

advanced test reactors

UF *ATR reactor*

GS nuclear reactors

. nuclear research and test reactors

. . advanced test reactors

Advanced Very High Resolution Radiometer

(added July 1988)

DEF A five channel scanning instrument that quantitatively measures electromagnetic radiation.

UF *AVHRR*

GS measuring instruments

. radiation measuring instruments

. . actinometers

. . . radiometers

. . . . infrared detectors

. infrared radiometers

. Advanced Very High Resolution Radiometer

. . infrared instruments

. . . infrared detectors

. . . . infrared radiometers

. Advanced Very High Resolution Radiometer

. satellite-borne instruments

. . Advanced Very High Resolution Radiometer

RT infrared instruments

NOAA 6 satellite

NOAA 7 satellite

NOAA 8 satellite

NOAA 11 satellite

NOAA 12 satellite

remote sensors

TIROS N series satellites

Advanced Vidicon Camera System (AVCS)

UF *AVCS*

GS communication equipment

. Advanced Vidicon Camera System (AVCS)

television systems

. Advanced Vidicon Camera System (AVCS)

RT ∞ systems

video equipment

vidicons

Advanced X Ray Astrophysics Facility

USE **X Ray Astrophysics Facility**

advancing glaciers

USE **glaciers**

advancing shorelines

USE **beaches**

advection

DEF The process of transport of an atmospheric property solely by the mass motion of the atmosphere; also, the rate of change of the value of the advected property at a given point.

RT atmospheric circulation
convection
heat transfer
mixing layers (fluids)
Peclet number

Advent Project

GS programs

. projects

. . . Advent Project

RT active satellites
communication satellites
Courier satellite
Relay satellites

AE-A satellite

USE **Explorer 17 satellite**

AE-B satellite

USE **Explorer 32 satellite**

AE-C satellite

USE **Explorer 51 satellite**

AE-D satellite

USE **Explorer 54 satellite**

AE-E satellite

USE **Explorer 55 satellite**

aeolian tones

RT elastic waves
frequencies
Karman vortex street
noise (sound)
sound waves
wind (meteorology)

aeotropism

GS tropism

. **aeotropism**

RT anisotropy

AEPS

UF *Advanced EVA Protection Systems*

GS support systems

. life support systems

. . emergency life sustaining systems

. . . **AEPS**

. . . portable life support systems

. . . **AEPS**

RT Columbus space station
extravehicular activity
lunar bases
Mars landing
oxygen supply equipment
space shuttles
space stations
survival equipment

aeration

RT agitation
beneficiation
blowing
bubbles
corrosion prevention
degassing
dissolved gases
dissolving
entrainment
mixers
mixing
oxygenation
purification
∞ separation
spraying
stirring
suspending (mixing)
water treatment

aerial acrobatics

USE **aerobatics**

aerial explosions

SN (LIMITED TO EXPLOSIONS OCCURRING AT HEIGHTS LESS THAN 50 KM)

UF *air blasts*

GS explosions

. **aerial explosions**

RT blast loads
chemical explosions

- nuclear explosions
- thermonuclear explosions
- aerial imagery*
- USE **aerial photography**
- aerial photography**
 - UF *aerial imagery*
 - GS imagery
 - . photography
 - . . **aerial photography**
 - RT astronomical photography
 - change detection
 - cloud photographs
 - cloud photography
 - color photography
 - Earth observations (from space)
 - Earth Resources Survey aircraft
 - forest fire detection
 - geographic information systems
 - gray scale
 - ground truth
 - ice mapping
 - image motion compensation
 - infrared photography
 - orthophotography
 - photogeology
 - photogrammetry
 - photointerpretation
 - photomapping
 - photomaps
 - pixels
 - plant stress
 - rocket-borne photography
 - satellite-borne photography
 - sea truth
 - spaceborne photography
 - stereophotography
 - timber inventory
 - ultraviolet photography
- aerial reconnaissance**
 - GS reconnaissance
 - . **aerial reconnaissance**
 - . . Airborne Integrated Reconnaissance System
 - RT aeromagnetism
 - change detection
 - Earth Resources Survey aircraft
 - ground truth
 - HS-801 aircraft
 - infrared radiometers
 - meteorological flight
 - photoreconnaissance
 - reconnaissance aircraft
 - reconnaissance spacecraft
 - thermal mapping
 - unmanned aircraft systems
- aerial rudders**
 - GS airfoils
 - . **aerial rudders**
 - control surfaces
 - . rudders
 - . . **aerial rudders**
 - RT fins
 - horizontal tail surfaces
 - marine rudders
 - stabilizers (fluid dynamics)
 - tabs (control surfaces)
 - tail assemblies
- aeroacoustics**
 - GS acoustics
 - . **aeroacoustics**
 - . . computational aeroacoustics
 - RT aerodynamics
 - ∞ aeronautics
 - aircraft noise
 - Flowcs Williams-Hawkings equation
 - flow noise
 - grazing flow
 - noise prediction (aircraft)
 - propeller noise
 - ∞ science
 - screech tones
 - space-time CE/SE method
- surface noise interactions
- aeroassist**
 - DEF Changing orbit size by utilizing aerobraking, aerocapture, or aeromaneuvering.
 - RT aerobraking
 - aerocapture
 - aeromaneuvering
 - atmospheric entry
 - interplanetary transfer orbits
 - transfer orbits
- aerobatics**
 - UF *acrobatics (aircraft)*
 - aerial acrobatics*
 - stunt flying*
 - RT flight control
 - formation flying
 - maneuvers
- Aerobee rocket vehicle**
 - GS rocket vehicles
 - . sounding rockets
 - . . **Aerobee rocket vehicle**
- aerobes**
 - RT anaerobes
 - bacteria
 - microorganisms
 - sewage treatment
- aerobiology**
 - DEF The study of the distribution of living organisms freely suspended in the atmosphere.
 - RT air pollution
 - airborne infection
 - ∞ biology
 - environment pollution
 - pollen
- aerobraking**
 - DEF Changing orbit size by using the upper atmosphere to create drag.
 - RT aeroassist
 - aerocapture
 - aeromaneuvering
 - interplanetary transfer orbits
 - transfer orbits
- aerocapture**
 - DEF Making use of the atmosphere of a planet or planetary satellite by capturing the object and reducing the orbit size so that it remains in orbit or lands on the body.
 - RT aeroassist
 - aerobraking
 - aeromaneuvering
 - atmospheric entry
 - interplanetary transfer orbits
 - transfer orbits
- aerodontalgia*
- USE **tooth diseases**
- aerodynamic axis*
- USE **aerodynamic balance**
- aerodynamic balance**
 - UF *aerodynamic axis*
 - aerodynamic center*
 - drag balance*
 - trim (balance)*
 - GS aerodynamic characteristics
 - . **aerodynamic balance**
 - balance
 - . **aerodynamic balance**
 - RT aircraft stability
 - dynamic characteristics
 - horizontal flight
 - lift drag ratio
 - mass distribution
 - spacecraft motion
 - spacecraft stability
 - static aerodynamic characteristics
 - turning flight
- aerodynamic brakes**
 - GS brakes (for arresting motion)
 - . **aerodynamic brakes**
 - . . ballutes
 - . . drag chutes
- . . split flaps
- . . wing flaps
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- drag devices
- . **aerodynamic brakes**
- . . ballutes
- . . drag chutes
- . . split flaps
- . . wing flaps
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- RT aircraft brakes
- control surfaces
- flaperons
- flaps (control surfaces)
- parachutes
- parafoils
- retractable equipment
- spoilers
- aerodynamic buzz*
- USE **flutter**
- aerodynamic center*
- USE **aerodynamic balance**
- aerodynamic characteristics**
 - GS **aerodynamic characteristics**
 - . aerodynamic balance
 - . aerodynamic drag
 - . . supersonic drag
 - . aerodynamic stability
 - . interference drag
 - . lift
 - . . interference lift
 - . . jet lift
 - . . rotor lift
 - . . zero lift
 - . static aerodynamic characteristics
 - RT aerodynamic noise
 - angle of attack
 - aspect ratio
 - ∞ characteristics
 - cross flow
 - dynamic characteristics
 - engine airframe integration
 - flight envelopes
 - induced drag
 - rotor body interactions
 - under surface blowing
 - unsteady aerodynamics
 - upper surface blowing
 - wind tunnel tests
- aerodynamic chords*
- USE **airfoil profiles**
- chords (geometry)**
- aerodynamic coefficients**
 - DEF Any nondimensional coefficients relating to aerodynamic forces or moments, such as a coefficient of drag, a coefficient of lift, etc. Used for lift coefficients.
 - UF *lift coefficients*
 - GS coefficients
 - . **aerodynamic coefficients**
 - RT ∞ drag coefficients
 - flow coefficients
 - flow distortion
 - force distribution
 - lift
 - lift drag ratio
 - pitching moments
 - pressure distribution
 - rolling moments
 - yawing moments
- aerodynamic configurations**
 - SN (LIMITED TO AERODYNAMIC VEHICLE SHAPES--FOR LIFTING OR THRUSTING SURFACES USE AIRFOILS)
 - GS **aerodynamic configurations**
 - . body-wing and tail configurations
 - . body-wing configurations
 - . blended-wing-body configurations
 - . aeroshells

aerodynamic drag

- . canard configurations
- . drooped airfoils
- . waveriders
- . wing nacelle configurations
- RT aircraft configurations
- aircraft design
- airfoils
- blunt bodies
- bodies of revolution
- channel wings
- cones
- ∞ configurations
- control surfaces
- ∞ design
- disks (shapes)
- drag
- engine airframe integration
- fairings
- finned bodies
- half cones
- ∞ hemispheres
- intake systems
- launch vehicle configurations
- lift
- lifting bodies
- missile configurations
- monoplanes
- nacelles
- nose tips
- oblique wings
- propulsion system configurations
- protuberances
- pylon mounting
- Reynolds equation
- ring structures
- rotor body interactions
- satellite configurations
- scale models
- semispan models
- slender bodies
- slender cones
- spacecraft configurations
- spheres
- strakes
- streamlined bodies
- three dimensional bodies
- wedges
- wind tunnel models
- wing roots

aerodynamic drag

- GS aerodynamic characteristics
- . **aerodynamic drag**
- . . . supersonic drag
- aerodynamic forces
- . **aerodynamic drag**
- . . . supersonic drag
- dynamic characteristics
- . drag
- . . friction drag
- . . . **aerodynamic drag**
- supersonic drag
- friction
- . flow resistance
- . . friction drag
- . . . **aerodynamic drag**
- supersonic drag
- . skin friction
- . . friction drag
- . . . **aerodynamic drag**
- supersonic drag

RT

- ballistics
- base pressure
- ∞ drag coefficients
- drag measurement
- drag reduction
- ground effect (aerodynamics)
- hypersonic forces
- induced drag
- lift
- lift drag ratio
- orbit decay
- pressure drag
- ∞ resistance
- satellite drag
- turbulence
- vortex flaps

aerodynamic forces

DEF The force exerted by a moving gas-

eous fluid upon a body completely immersed in it. Used for Glauert coefficient.

UF *Glauert coefficient*

GS **aerodynamic forces**

- . aerodynamic drag
- . . supersonic drag
- . aerodynamic interference
- . aerodynamic loads
- . . blast loads
- . . gust loads
- . hypersonic forces
- . lift
- . . interference lift
- . . jet lift
- . . rotor lift
- . . zero lift
- . wing loading

RT ∞ force

- leading edge thrust
- thrust distribution
- unsteady aerodynamics

aerodynamic heat transfer

- GS transmission
- . heat transmission
- . . heat transfer
- . . . **aerodynamic heat transfer**
- hypersonic heat transfer
- supersonic heat transfer

RT

- ablation
- aerothermodynamics
- turbulent heat transfer

aerodynamic heating

DEF The heating of a body produced by the passage of air or other gases over its surface.

GS heating

- . kinetic heating
- . . **aerodynamic heating**
- . . . shock heating

RT

- ablation
- aerodynamics
- aerothermochemistry
- aerothermodynamics
- atmospheric entry
- boundary layer plasmas
- compressible fluids
- convective heat transfer
- hypersonic reentry
- reentry
- reentry effects
- reentry shielding
- skin friction
- skin temperature (non-biological)
- temperature sensitive paints
- transient heating
- uncontrolled reentry (spacecraft)

aerodynamic interference

- GS aerodynamic forces
- . **aerodynamic interference**

RT

- aerodynamics
- air flow
- aircraft configurations
- aircraft structures
- airfoil profiles
- control surfaces
- ∞ interference
- protuberances
- rotor stator interactions
- turbulent flow
- wing profiles

aerodynamic lift

USE **lift**

aerodynamic loads

- GS aerodynamic forces
- . **aerodynamic loads**
- . . blast loads
- . . gust loads
- loads (forces)
- . dynamic loads
- . . **aerodynamic loads**
- . . . blast loads
- . . . gust loads
- RT axial compression loads
- axial loads
- compression loads
- critical loading

- edge loading
- force distribution
- loading moments
- pressure distribution
- shock loads
- static loads
- structural design criteria
- thrust loads
- transient loads
- vibratory loads
- wing loading

aerodynamic moments

USE **stability derivatives**

aerodynamic noise

- UF *boundary layer noise*
- GS elastic waves
- . sound waves
- . . noise (sound)
- . . . flow noise
- **aerodynamic noise**
- blade slap noise
- propeller noise
- screech tones
- RT acoustic retrofitting
- aerodynamic characteristics
- aeroelasticity
- aircraft noise
- computational aeroacoustics
- Ffowcs Williams-Hawkings equation
- flutter
- jet aircraft noise
- noise measurement
- noise reduction
- panel flutter
- shock waves
- sonic booms
- surface noise interactions

aerodynamic stability

- UF *flying platform stability*
- GS aerodynamic characteristics
- . **aerodynamic stability**
- dynamic characteristics
- . dynamic stability
- . . motion stability
- . . . **aerodynamic stability**
- stability
- . dynamic stability
- . . motion stability
- . . . **aerodynamic stability**
- RT aeroelasticity
- aircraft stability
- airfoil oscillations
- attitude stability
- ballast (mass)
- boundary layer stability
- buffeting
- directional stability
- dynamic tests
- flight envelopes
- flight stability tests
- flow stability
- flutter
- ground resonance
- helicopter performance
- hovering
- lateral stability
- liquid sloshing
- longitudinal stability
- low speed stability
- mass distribution
- pilot induced oscillation
- pressure distribution
- reentry
- Richardson number
- spacecraft motion
- spacecraft stability
- stability augmentation
- static aerodynamic characteristics
- turbulence effects
- unsteady aerodynamics
- vortex avoidance
- wind tunnel stability tests
- wing oscillations
- wing rock

yaw

aerodynamic stalling

- RT aircraft performance
- aircraft spin
- airspeed
- angle of attack
- boundary layer separation
- lift drag ratio
- low speed stability
- rotating stalls
- ∞ stalling
- sweep angle
- zero lift

aerodynamic vehiclesUSE **aircraft****aerodynamics**

DEF The science that deals with the motion of air and other gaseous fluids, and the forces acting on bodies when the bodies move through such fluids, or when such fluids move against or around the bodies. Used for hydroaeromechanics.

- UF *hydroaeromechanics*
- GS mechanics (physics)

- . fluid mechanics
- . fluid dynamics
- . . . gas dynamics
- **aerodynamics**
- aerothermodynamics
- hypersonics
- rotor aerodynamics
- supersonics
- unsteady aerodynamics

- RT aeroacoustics
- aerodynamic heating
- aerodynamic interference
- aeroelasticity
- aeronautical engineering
- ∞ aeronautics
- ∞ aerospace sciences
- ∞ aircraft
- airfoils
- blunt bodies
- bodies of revolution
- boundary layer control
- compressible flow
- control surfaces
- drag
- ∞ dynamics
- ∞ flight
- flight characteristics
- flight mechanics
- ∞ flow
- flow theory
- free wing aircraft
- ground effect (aerodynamics)
- hypersonic flight
- hypersonic flow
- incompressible flow
- inviscid flow
- laminar flow
- lift
- Mach number
- Mach-Zehnder interferometers
- reentry
- ∞ science
- slender bodies
- subsonic flow
- supersonic flow
- thermodynamics
- transonic flow
- turbulent flow
- uniform flow
- unsteady flow
- viscous flow
- wind measurement
- wind tunnels

aeroelastic research wings

DEF Wings that are designed with less than normal stiffness to test devices that suppress flutter.

- GS airfoils
- . wings
- . . **aeroelastic research wings**
- RT aircraft design
- flutter

flutter analysis
structural design
wing oscillations

aeroelasticity

DEF The study of the response of structurally elastic bodies to aerodynamic loads.

- GS mechanical properties
- . elastic properties
- . . **aeroelasticity**
- . . . aeroservoelasticity
- . . . aerothermoelasticity
- RT aerodynamic noise
- aerodynamic stability
- aerodynamics
- aerothermodynamics
- aircraft structures
- airfoil oscillations
- DAST program
- flutter
- influence coefficient
- panel flutter
- rigid wings
- thermoelasticity
- unsteady aerodynamics
- wing loading

aeroembolism

DEF The formation or liberation of gases in the blood vessels of the body, as brought on by a too-rapid change from a high, or relatively high, atmospheric pressure to a lower one.

- GS embolisms
- . **aeroembolism**
- RT altitude sickness
- decompression sickness
- fat embolisms
- stress (physiology)

aerogels

(added June 1990)

- RT foams
- gels
- porous materials
- silica gel
- xerogels

aerogyro helicoptersUSE **XH-51 helicopter****aerology**

DEF The study of the free atmosphere throughout its vertical extent, as distinguished from studies confined to the layer of the atmosphere adjacent to the Earth's surface.

- GS meteorology
- . **aerology**
- RT Atmospheric & Oceanographic Inform Sys
- Global Atmospheric Research Program
- meteorological parameters
- polar meteorology
- sea breeze
- wind (meteorology)

aeromagnetism

- RT aerial reconnaissance
- geomagnetism
- magnetic anomalies
- magnetic surveys
- magnetic variations
- remote sensing

aeromagneto flutterUSE **flutter****aeromaneuvering**

DEF Changing orbit size or plane or both by entering the upper atmosphere to create drag or lift or both.

- RT aeroassist
- aerobraking
- aerocapture
- aeroshells
- atmospheric entry
- interplanetary transfer orbits

transfer orbits

Aeromaneuvering Orbit to Orbit Shuttle

DEF Proposed reusable upper stage for the Space Shuttle superseded by the orbit transfer vehicle. Used for AMOOS.

- UF *AMOOS*
- GS orbit transfer vehicles
- . **Aeromaneuvering Orbit to Orbit Shuttle**
- RT Orbit Maneuvering Engine (Space Shuttle)
- orbital mechanics
- reusable launch vehicles
- space shuttles

aeronautical engineering

- GS aerospace engineering
- . **aeronautical engineering**
- RT aerodynamics
- ∞ aeronautics
- ∞ aircraft
- aircraft design
- aircraft industry
- auxiliary propulsion
- compound helicopters
- ∞ engineering
- functional design specifications
- mechanical engineering
- propulsion
- structural engineering

aeronautical satellites

- GS artificial satellites
- . communication satellites
- . . **aeronautical satellites**
- . . . Aerosat satellites
- RT ∞ aeronautics
- air traffic control
- aircraft approach spacing
- aircraft communication
- ground-air-ground communication
- rescue operations
- satellite networks

∞ aeronautics

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *aviation*
- RT aeroacoustics
- aerodynamics
- aeronautical engineering
- aeronautical satellites
- aerospace engineering
- ∞ aerospace sciences
- air law
- ∞ aircraft
- airports
- avionics
- civil aviation
- ∞ flight
- general aviation aircraft
- human factors engineering
- ∞ military aviation
- ∞ science
- TACT program

aeronomy

DEF The study of the upper regions of the atmosphere where ionization, dissociation, and chemical reactions take place.

- RT airglow
- Alpine meteorology
- atmospheric composition
- atmospheric physics
- auroras
- DIAL satellite
- field aligned currents
- flux transfer events
- geophysics
- magnetosphere-ionosphere coupling
- mesometeorology
- meteorology
- Nozomi Mars Orbiter
- polar cusps

aeroquatic vehicles

upper atmosphere

aerophysics

USE **atmospheric physics**

aeroquatic vehicles

RT aircraft design
attack aircraft
∞ military vehicles
underwater propulsion
underwater vehicles

AEROS satellite

GS artificial satellites
. meteorological satellites
. . **AEROS satellite**
. synchronous satellites
. . **AEROS satellite**

Aerosat satellites

GS artificial satellites
. communication satellites
. . aeronautical satellites
. . . **Aerosat satellites**
. ESA satellites
. . **Aerosat satellites**
. navigation satellites
. . **Aerosat satellites**
. synchronous satellites
. . **Aerosat satellites**
ESA spacecraft
. ESA satellites
. . **Aerosat satellites**
RT European space programs
satellite networks

aeroservoelasticity

(added September 1993)

UF **ASE (aerodynamics)**

GS mechanical properties
. elastic properties
. . aeroelasticity
. . . **aeroservoelasticity**

RT active control
actuators
airfoil oscillations
dynamic control
dynamic response
dynamic structural analysis
flutter
servocontrol
unsteady aerodynamics

aeroshells

(added May 1999)

DEF Aerodynamic structural shells that attach to, or comprise a portion of, the exterior of an aerospace vehicle or space probe; especially such structures that support atmospheric entry, aerobraking, aeroassist, or hypersonic flight.

GS aerodynamic configurations
. **aeroshells**

RT aeromaneuvering
nose cones
reentry vehicles
spacecraft design
spacecraft shielding
spacecraft structures

aerosinusitis

GS diseases
. respiratory diseases
. . **aerosinusitis**

RT aerospace medicine
altitude sickness

aerosols

DEF Dispersions of solid or liquid particles in gaseous media.

GS mixtures
. dispersions
. . colloids
. . . **aerosols**
. . . . fog
. . liquid-gas mixtures
. . . **aerosols**
. . . . fog
particles
. **aerosols**
. . fog

RT air pollution
Aitken nuclei
atmospheric effects
atomizing
CALIPSO (Pathfinder satellite)
CloudSat
condensation nuclei
crop dusting
dust
entrainment
environment pollution
environmental surveys
exhaust clouds
fog dispersal
fumes
gas atomization
Glory Mission satellite
MISR (radiometry)
mist
mixers
particulates
photophoresis
pollution transport
SAGE satellite
smoke
smoke abatement
spraying
thermophoresis

aerospace engineering

UF *space systems engineering*

GS **aerospace engineering**
. aeronautical engineering

RT ∞ aeronautics
∞ aerospace sciences
∞ aircraft
∞ engineering
mechanical engineering
missile design
structural engineering

aerospace environments

SN (EXCLUDES SPACECRAFT
INTRAVEHICULAR ENVIRONMENTS)

UF *space environment*

GS environments
. **aerospace environments**
. . cislunar space
. . deep space
. . . interplanetary space
. . . interstellar space
. . Earth orbital environments

RT ∞ aerospace sciences
argon-oxygen atmospheres
∞ astronautics
bioastronautics
bioprocessing
biosatellites
cosmic rays
Earth atmosphere
electromagnetic radiation
exobiology
extraterrestrial environments
extraterrestrial life
extraterrestrial radiation
extravehicular activity
geophysical fluid flow cells
hazardous material disposal (in space)
helium-oxygen atmospheres
Jupiter atmosphere
life support systems
lunar environment
manned space flight
Mars atmosphere
Neptune atmosphere
panspermia
planetary environments
radiation belts
solar radiation
space exploration
space flight
space habitats
space manufacturing
space weather
space weathering
spaceborne experiments
spacecraft cabin simulators
thermal environments
Uranus atmosphere

vacuum
Venus atmosphere

aerospace industry

GS industries
. **aerospace industry**
. . aircraft industry
RT ∞ aircraft
commercial spacecraft
space commercialization

aerospace medicine

DEF That branch of medicine dealing with the effects of flight through the atmosphere or in space upon the human body and with the prevention or cure of physiological or psychological malfunctions arising from these effects.

UF *space medicine*

GS medical science
. **aerospace medicine**
. . aviation psychology
. . space psychology
RT acceleration stresses (physiology)
aerosinusitis
∞ aerospace sciences
altitude sickness
bioastronautics
biofeedback
∞ biology
biomedical data
Chlorella
closed ecological systems
electrolyte metabolism
fasting
flight fatigue
fluid shifts (biology)
gravitational physiology
gravity perception
head down tilt
head movement
head up tilt
hindlimb suspension
∞ medicine
mobile quarantine facility
motion sickness
radiology
∞ science
space adaptation syndrome
spacecraft environments
sports medicine
telemedicine
tilt-table test
weightlessness

aerospace planes

GS aerospace vehicles
. **aerospace planes**
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . VentureStar launch vehicle
. . X-30 vehicle
. . X-37 vehicle
. . X-40A vehicle
maneuverable spacecraft
. **aerospace planes**
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . VentureStar launch vehicle
. . X-30 vehicle
. . X-37 vehicle
. . X-40A vehicle
reentry vehicles
. recoverable spacecraft
. reusable spacecraft
. . **aerospace planes**
. . . HOPE aerospace plane
. . . HOTOL launch vehicle
. . . VentureStar launch vehicle
. . . X-30 vehicle
. . . X-37 vehicle
. . . X-40A vehicle
soft landing spacecraft
. **aerospace planes**
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . VentureStar launch vehicle
. . X-30 vehicle
. . X-37 vehicle
. . X-40A vehicle
RT ∞ aircraft

Astro vehicle
 boostglide vehicles
 Buran space shuttle
 Delta Clipper
 gliders
 hypersonic aircraft
 hypersonic gliders
 launch vehicles
 lifting reentry vehicles
 liquid air cycle engines
 military spacecraft
 National Aerospace Plane Program
 research aircraft
 rocket planes
 Saenger space transportation system
 transatmospheric vehicles
 X-20 aircraft

aerospace safety

DEF The engineering assessment and analysis of systems, subsystems, and functions of spacecraft, missiles, advanced aircraft and ground support in order to identify hazards associated with such systems and to design procedures that eliminate those hazards or determine tolerable safety levels.

GS safety
 . **aerospace safety**
 RT accident prevention
 aircraft safety
 flight safety
 range safety
 runway incursions
 safety factors
 safety management
 space weather

∞ aerospace sciences

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *space sciences*
 RT aerodynamics
 ∞ aeronautics
 aerospace engineering
 aerospace environments
 aerospace medicine
 aerospace systems
 astronomy
 Committee on Space Research
 environmental engineering
 extraterrestrial radiation
 International Space Year
 space laboratories

aerospace systems

RT ∞ aerospace sciences
 control systems design
 missile systems
 ∞ systems
 systems engineering

aerospace technology transfer

DEF Technology transfer germane to aircraft and space vehicles, their propulsion, guidance, etc.

GS technology transfer
 . **aerospace technology transfer**
 RT Canadian space program
 information flow
 reports
 technological forecasting
 technology utilization

aerospace vehicles

DEF Vehicles capable of flight within and outside the sensible atmosphere.

GS **aerospace vehicles**
 . aerospace planes
 . . HOPE aerospace plane
 . . HOTOL launch vehicle
 . . VentureStar launch vehicle
 . . X-30 vehicle
 . . X-37 vehicle
 . . X-40A vehicle
 . flexible spacecraft
 . X-43 vehicle
 RT ∞ aircraft
 commercial spacecraft
 ∞ spacecraft

transatmospheric vehicles

aerospike engines

(added July 1997)

DEF Rocket engines incorporating a radial in-flow (aerospike) nozzle for altitude compensation. Since the nozzle is open to the ambient atmosphere, the plume compensates for decreasing atmospheric pressure as the vehicle ascends.

GS engines
 . rocket engines
 . . **aerospike engines**
 RT nozzle design
 plug nozzles
 propulsion system configurations
 rocket engine design
 rocket exhaust
 rocket nozzles
 spike nozzles
 VentureStar launch vehicle

aerostatics

GS statics
 . **aerostatics**
 RT buoyancy
 ∞ dynamics
 ∞ equilibrium
 fluid mechanics
 hydrostatics

aerostats

USE **airships**

aerothermochemistry

GS environmental chemistry
 . **aerothermochemistry**
 thermochemistry
 . **aerothermochemistry**
 RT ablation
 aerodynamic heating
 aerothermodynamics
 atmospheric chemistry
 chemical engineering
 ∞ chemistry
 nozzle flow
 physical chemistry
 pyrometallurgy
 reentry physics
 reentry shielding
 reentry vehicles

aerothermodynamics

DEF The study of aerodynamic phenomena at sufficiently high gas velocities that thermodynamic properties of the gas are important.

GS mechanics (physics)
 . fluid mechanics
 . . fluid dynamics
 . . . gas dynamics
 aerodynamics
 **aerothermodynamics**
 thermodynamics
 . **aerothermodynamics**
 RT aerodynamic heat transfer
 aerodynamic heating
 aeroelasticity
 aerothermochemistry
 ASSET project
 boundary layer plasmas
 ∞ chemistry
 combustion physics
 ∞ dynamics
 hypersonic heat transfer
 hypersonic reentry
 hypersonics
 Rankine-Hugoniot relation
 reentry
 reentry physics
 ∞ science
 skin temperature (non-biological)
 supersonics
 thermoelasticity

aerothermoelasticity

DEF The study of the response of elastic structures to the combined effects of aerodynamic heating and loading.

GS mechanical properties
 . elastic properties

. . aeroelasticity
 . . . **aerothermoelasticity**
 . . thermoelasticity
 . . . **aerothermoelasticity**

aerozine

DEF A rocket fuel consisting of a mixture of hydrazine and unsymmetrical dimethylhydrazine (UDMH).

GS propellants
 . rocket propellants
 . . liquid rocket propellants
 . . . **aerozine**
 RT dimethylhydrazines
 hydrazines

AFC (control)

USE **automatic frequency control**

AFCS (control system)

USE **automatic flight control**

affects

USE **effects**

afferent nervous systems

GS anatomy
 . nervous system
 . . **afferent nervous systems**
 RT sensorimotor performance
 ∞ systems

affinity

GS **affinity**
 . electron affinity
 . negative electron affinity
 RT attraction
 chemical compatibility
 compatibility

Afghanistan

GS nations
 . **Afghanistan**
 RT Asia

AFM (microscopy)

USE **atomic force microscopy**

Africa

GS continents
 . **Africa**
 RT African rift system
 Algeria
 Angola
 Arcomsat
 Benin
 Botswana
 Burkina
 Burundi
 Cameroon
 Cape Verde
 Central African Republic
 Chad
 Congo (Brazzaville)
 Cote d'Ivoire
 Democratic Republic of Congo
 Djibouti
 Egypt
 Ethiopia
 Gabon
 Gambia
 Ghana
 Guinea
 Kalahari Basin (Africa)
 Kenya
 Lesotho
 Liberia
 Libya
 Libyan desert
 Madagascar
 Malawi
 Mali
 Mauritania
 Mauritius
 Middle East
 Morocco
 Mozambique
 Namibia
 nations
 Niger

African rift system

Nigeria
 Red Sea
 Republic of South Africa
 Rwanda
 Sahara Desert (Africa)
 Senegal
 Seychelles
 Sierra Leone
 Somalia
 Spanish Sahara
 Sudan
 Swaziland
 Tanzania
 Togo
 Tunisia
 Uganda
 Zambia
 Zimbabwe

African rift system

GS geological faults
 . **African rift system**
 RT Africa
 ∞ systems

afterbodies

DEF Companion bodies that trail satellites. Sections or pieces of rockets or spacecraft that enter the atmosphere unprotected behind nose cones or other bodies that are protected for entry. Afterparts of vehicles. Used for cylindrical afterbodies and sterns.

UF *cylindrical afterbodies*
sterns
 RT aircraft structures
 base heating
 boattails
 ∞ bodies
 centerbodies
 conical bodies
 cylindrical bodies
 flared bodies
 forebodies
 skirts
 swing tail assemblies
 tail assemblies

afterburners

USE **afterburning**

afterburning

DEF Irregular burning of fuel left in the firing chamber of a rocket after cutoff. The function of an afterburner, a device for augmenting the thrust of a jet engine by burning additional fuel in the uncombined oxygen in the gases from the turbine. Used for afterburners.

UF *afterburners*
 GS combustion
 . **afterburning**
 RT burners
 exhaust systems
 infrared suppression
 internal combustion engines
 J-57 engine
 jet engines
 thrust augmentation

afterglows

DEF Broad, high arches of radiance or glow seen occasionally in the western sky above the highest clouds in deepening twilight, caused by the scattering effect of very fine particles of dust suspended in the upper atmosphere. Also, the transient decay of a plasma after the power has been turned off.

GS **afterglows**
 . helium afterglow
 . oxygen afterglow
 RT atmospheric ionization
 gas discharges
 gas ionization
 light scattering
 luminescence
 phosphorescence
 plasma decay
 Swift observatory

afterimages

GS images

. afterimages

RT critical flicker fusion
 illusions
 psychological effects
 sensory perception
 visual perception

AGB stars

USE **asymptotic giant branch stars**

AGC (control)

USE **automatic gain control**

age determination

USE **chronology**

age factor

RT aging (biology)
 gerontology
 life span

age hardening

USE **precipitation hardening**

Agena A rocket vehicle

GS rocket vehicles
 . single stage rocket vehicles
 . . Agena rocket vehicles
 . . . **Agena A rocket vehicle**
 RT Discoverer satellites
 Thor Agena launch vehicle

Agena B Ranger Program

GS programs
 . NASA programs
 . . NASA space programs
 . . . Ranger project
 **Agena B Ranger Program**
 . projects
 . . Ranger project
 . . . **Agena B Ranger Program**
 . space programs
 . . NASA space programs
 . . . Ranger project
 **Agena B Ranger Program**
 RT Thor Agena launch vehicle

Agena B rocket vehicle

GS rocket vehicles
 . single stage rocket vehicles
 . . Agena rocket vehicles
 . . . **Agena B rocket vehicle**
 RT Discoverer satellites
 Echo satellites
 EGO
 Gemini project
 Mariner program
 OAO
 POGO
 Ranger project

Agena C rocket vehicle

GS rocket vehicles
 . single stage rocket vehicles
 . . Agena rocket vehicles
 . . . **Agena C rocket vehicle**

Agena D rocket vehicle

GS rocket vehicles
 . single stage rocket vehicles
 . . Agena rocket vehicles
 . . . **Agena D rocket vehicle**

Agena rocket vehicles

GS rocket vehicles
 . single stage rocket vehicles
 . . **Agena rocket vehicles**
 . . . Agena A rocket vehicle
 . . . Agena B rocket vehicle
 . . . Agena C rocket vehicle
 . . . Agena D rocket vehicle
 RT Atlas Agena B launch vehicle
 Atlas Agena launch vehicles
 Discoverer satellites
 Echo satellites
 Gemini project
 Mariner program
 Ranger project

Thor Agena launch vehicle

∞ agents

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT accelerating agents
 additives
 anticoagulants
 antifouling
 antioxidants
 diluents
 neutralizers
 opacifiers
 oxidizers
 penetrants
 preservatives
 stabilizers (agents)
 surfactants

agglomeration

RT accumulations
 atomic clusters
 cementation
 clumps
 coagulation
 coalescing
 compacting
 concentrating
 crystallization
 densification
 flocculating
 galactic clusters
 lumping
 metal clusters
 micelles
 molecular clusters
 plugging
 precipitation (chemistry)
 ∞ separation
 settling
 sintering
 Virgo galactic cluster

agglutination

GS bonding
 . **agglutination**
 RT adhesion
 adhesive bonding
 adhesives
 cementation
 chemical bonds
 cohesion

aggregates

RT concrete structures
 concretes
 ∞ construction materials
 dolomite (mineral)
 gravels
 lava
 limestone
 micelles
 rocks
 sands
 slags

∞ aging

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT aging (biology)
 aging (materials)
 aging (metallurgy)
 radioactive age determination

aging (biology)

RT age factor
 ∞ aging
 ∞ biology
 geriatrics
 gerontology
 life sciences
 life span
 mortality
 physiology

aging (materials)

GS **aging (materials)**
 . aging (metallurgy)
 RT ∞ aging

- hardening (materials)
 - ∞ materials
 - mechanical properties
 - microstructure
 - strain hardening
- aging (metallurgy)**
 - GS aging (materials)
 - . **aging (metallurgy)**
 - RT ∞ aging
 - hardening (materials)
 - heat treatment
 - microstructure
 - solid solutions
 - strain hardening
 - supercooling
 - time temperature parameter
- agitation**
 - GS **agitation**
 - . ultrasonic agitation
 - RT
 - aeration
 - blowing
 - chemical reaction control
 - coalescing
 - colloiding
 - dispersing
 - disposal
 - homogenizing
 - mixers
 - mixing
 - ∞ separation
 - settling
 - shaking
 - sizing screens
 - splashing
 - suspending (mixing)
 - swirling
 - turbulent mixing
 - vortices
 - water treatment
- agreements**
 - RT
 - contracts
 - conventions
 - insurance (contracts)
 - subcontracts
- agricultural aircraft**
 - DEF Light aircraft specially equipped for agricultural applications such as crop dusting.
 - UF *Snow aerial applicator aircraft S-2B*
Snow S-2 aircraft
 - GS general aviation aircraft
 - . **agricultural aircraft**
 - RT agriculture
 - ∞ aircraft
 - AN-2 aircraft
 - crop dusting
 - light aircraft
 - swath width
- agriculture**
 - GS **agriculture**
 - . aquiculture
 - . silviculture
 - RT
 - agricultural aircraft
 - AgRISTARS project
 - agroclimatology
 - agrometeorology
 - agrophysical units
 - alfalfa
 - barley
 - ∞ biology
 - botany
 - citrus trees
 - conservation
 - corn
 - crop dusting
 - crop growth
 - crop identification
 - crop inventories
 - crop vigor
 - ∞ crops
 - farm crops
 - farmlands
 - fruits
 - genetically modified plants
 - grasslands
 - Great Plains Corridor (North America)
- halophiles
- hay
- hydrocarbon fuel production
- hydroponics
- irrigation
- Large Area Crop Inventory Experiment
- leguminous plants
- oats
- orchards
- plant diseases
- plant stress
- planting
- plants (botany)
- plowing
- plows
- rural areas
- rural land use
- soil science
- sorghum
- sugar beets
- sugar cane
- sunflowers
- tomatoes
- tractors
- vegetation growth
- vineyards
- AgRISTARS project**
 - DEF A multiagency program utilizing Landsat remote sensing data to predict crop yields, land use, and detect pollution. Used for Crop Inventories by Remote Sensing.
 - UF *Crop Inventories by Remote Sensing*
 - GS programs
 - . projects
 - . . **AgRISTARS project**
 - RT
 - agriculture
 - agrophysical units
 - crop inventories
 - farm crops
 - fresh water
 - land use
 - Landsat satellites
 - meteorological satellites
 - NASA programs
 - remote sensors
 - vegetative index
- agroclimatology**
 - GS climatology
 - . **agroclimatology**
 - RT
 - agriculture
 - agrometeorology
 - hydroclimatology
 - meteorological parameters
 - meteorology
 - microclimatology
- agrometeorology**
 - GS meteorology
 - . **agrometeorology**
 - RT
 - agriculture
 - agroclimatology
 - hydrometeorology
 - micrometeorology
 - thermal resources
 - tropical meteorology
- agrophysical units**
 - DEF Geographic areas defined for statistical purposes by AgRISTARS personnel whose boundaries are based on natural rather than political lines for the purpose of comparing similar agricultural regions.
 - RT
 - agriculture
 - AgRISTARS project
 - farmlands
 - Large Area Crop Inventory Experiment
- AGT
- USE **automated guideway transit vehicles**
- AH-1G helicopter**
 - DEF US Army designation for the Bell Model 209 Hueycobra attack helicopter powered by a single Avco Lycoming T53-L-13 turboshaft engine.
- GS
 - attack aircraft
 - . **AH-1G helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . . helicopters
 - military helicopters
 - **AH-1G helicopter**
 - RT ∞ military aircraft
- AH-1S helicopter**
 - (added April 1997)
 - GS
 - attack aircraft
 - . **AH-1S helicopter**
 - Bell aircraft
 - . **AH-1S helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . . helicopters
 - military helicopters
 - **AH-1S helicopter**
 - RT ∞ aircraft
 - ∞ military aircraft
- AH-1W helicopter**
 - (added April 1997)
 - UF *SuperCobra*
 - GS
 - attack aircraft
 - . **AH-1W helicopter**
 - Bell aircraft
 - . **AH-1W helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . . helicopters
 - military helicopters
 - **AH-1W helicopter**
 - RT ∞ aircraft
 - ∞ military aircraft
- AH-63 helicopter**
 - GS
 - attack aircraft
 - . **AH-63 helicopter**
 - Bell aircraft
 - . **AH-63 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . . helicopters
 - military helicopters
 - **AH-63 helicopter**
 - RT ∞ military aircraft
- AH-64 helicopter**
 - GS
 - attack aircraft
 - . **AH-64 helicopter**
 - Hughes aircraft
 - . **AH-64 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . . helicopters
 - military helicopters
 - **AH-64 helicopter**
 - RT ∞ military aircraft
- ∞ **aids**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT
 - landing aids
 - navigation aids
 - visual aids
- AIDS (disease)*
- USE **acquired immunodeficiency syndrome**
- aileron**
 - GS
 - airfoils
 - . **aileron**
 - . . . flaperons
 - . . . spoiler slot ailerons
 - control surfaces
 - . **aileron**
 - . . . flaperons
 - . . . spoiler slot ailerons
 - RT
 - elevators (control surfaces)
 - elevons
 - lateral control

air

tabs (control surfaces)

AIMP-1
USE **Explorer 33 satellite**

AIMP-2
USE **Explorer 35 satellite**

AIMP-D
USE **Explorer 33 satellite**

AIMP-E
USE **Explorer 35 satellite**

air
DEF The mixture of gases comprising the Earth's atmosphere.
GS gases
. gas mixtures
. . **air**
. . . alveolar air
. . . compressed air
. . . expired air
. . . high temperature air
. . . liquid air
mixtures
. solutions
. . gas mixtures
. . . **air**
. . . . alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air
. . . . liquid air
RT air data systems
∞ atmospheres
atmospheric composition
Earth atmosphere
environments
middle atmosphere

air bag restraint devices
GS bags
. **air bag restraint devices**
expandable structures
. inflatable structures
. . **air bag restraint devices**
safety devices
. **air bag restraint devices**
RT accident prevention
accidents
automobiles
collisions
crashes
∞ devices
highways
pneumatic equipment
safety

air bearings
USE **gas bearings**

air blasts
USE **aerial explosions**

air breathing boosters
DEF Boosters which are possible substitutes for rocket engines and which have inlets for oxygen sources for their engines rather than carrying their own oxygen as in a conventional rocket.
RT air breathing engines
booster rocket engines
∞ boosters
rocket-based combined-cycle engines

air breathing engines
GS engines
. **air breathing engines**
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . T-58 engine
. . . ramjet engines
. . . . integral rocket ramjets
. . . . low volume ramjet engines
. . . . pulsejet engines
. . . . supersonic combustion ramjet engines
. . . . turboramjet engines

. . . . turbojet engines
. Bristol-Siddeley Olympus 593 engine
. Bristol-Siddeley Viper engine
. . . . ducted fan engines
. J-33 engine
. J-34 engine
. J-47 engine
. J-52 engine
. J-57 engine
. J-58 engine
. J-65 engine
. J-69-T-25 engine
. J-71 engine
. J-73 engine
. J-75 engine
. J-79 engine
. J-85 engine
. J-93 engine
. RA-28 engine
. turbofan engines
. Bristol-Siddeley BS 53 engine
. CF-700 engine
. convertible fan-shaft engines
. J-97 engine
. TF-30 engine
. TF-34 engine
. TF-41 engine
. turboprop engines
. T-34 engine
. T-38 engine
. T-53 engine
. T-55 engine
. T-56 engine
. T-63 engine
. T-64 engine
. T-74 engine
. T-76 engine
. T-78 engine
. turboramjet engines
RT air breathing boosters
pulse detonation engines
rocket-based combined-cycle engines

air cargo

UF *air freight*
GS cargo
. **air cargo**
. . air mail
RT airdrops
airfield surface movements
airline operations
baggage
cargo aircraft
ground handling
heavy lift helicopters

air conditioning

DEF The simultaneous control of all, or at least three, of those factors affecting both the physical and chemical conditions of the atmosphere within any structure. These factors include temperature, humidity, motion, distribution, dust, bacteria, odor, and toxic gases.
RT blowers
comfort
condensers (liquefiers)
controlled atmospheres
coolants
coolers
cooling
cooling systems
∞ diffusers
exhaust systems
freon
heat pumps
heating
heating equipment
humidity
infiltration
life support systems
Modular Integrated Utility System
refrigerants
refrigerating
refrigerating machinery
space heating (buildings)
temperature
temperature control
temperature distribution

thermal insulation
∞ treatment
ventilation

air conditioning equipment

RT absorbents
absorbers (equipment)
adsorbents
blowers
compressors
condensers (liquefiers)
coolers
cooling systems
∞ diffusers
∞ equipment
evaporators
∞ fans
heat pumps
heating equipment
oxygen supply equipment
refrigerating machinery

air conductivity

RT atmospheric conductivity
electrical resistivity
thermal conductivity

air cooling

SN (COOLING WITH AIR)
GS cooling
. **air cooling**
RT coolants
coolers
cooling systems
liquid cooling
refrigerating
ventilation

air currents

GS fluid flow
. gas flow
. . air flow
. . . **air currents**
. . . . jet streams (meteorology)
. . . . meridional flow
. . . . vertical air currents
RT atmospheric circulation
barotropic flow
boundary layer flow
boundary layer transition
Brunt-Vaisala frequency
convection clouds
convection currents
∞ currents
ground wind
lee waves
sea breeze
upstream
wind (meteorology)
windpower utilization
zonal flow (meteorology)

air cushion landing systems

DEF Landing systems based on the ground effect principle whereby a stratum of air is utilized as the aircraft ground contacting medium (in place of landing gear).
RT aircraft landing
cushions
ground effect (aerodynamics)
skid landings
∞ systems

air cushion vehicles

USE **ground effect machines**

air data systems

SN (LIMITED TO FLIGHT DATA SYSTEMS)
DEF Sets of aerodynamic and thermodynamic sensors, and a computer which provide flight characteristics such as airspeed, static pressure, air temperature and Mach number.
GS data systems
. **air data systems**
RT air
∞ aircraft
∞ spacecraft
tables (data)

wind tunnel tests

air defense

- GS **air defense**
 - . antimissile defense
 - . SAGE air defense system
- RT antiradiation missiles
 - Ballistic Missile Early Warning System
 - camouflage
 - civil defense
 - deception
- ∞ defense
 - defense program
 - DMSP satellites
 - early warning systems
 - electronic warfare
 - jammers
 - optical countermeasures
 - sabotage
 - space surveillance (ground based)
 - space surveillance (spaceborne)
 - weapons delivery

Air Density Explorer A
USE **Explorer 19 satellite**

Air Density/Injun Explorer B
USE **Explorer 25 satellite**

air drop operations

- RT bailout
 - ballutes
 - cargo
 - delivery
 - free fall
- ∞ operations
 - parachutes
 - parawings

air ducts

- GS ducts
 - . **air ducts**
- RT annular ducts
 - blowers
 - exhaust nozzles
- ∞ fans
 - gas flow
 - ventilators

air filters

- GS cleaners
 - . **air filters**
 - separators
 - . fluid filters
 - . . **air filters**
- RT cooling systems
 - dust collectors
- ∞ filters
 - precipitators
 - ventilation

air flow

- GS fluid flow
 - . gas flow
 - . . **air flow**
 - . . . air currents
 - jet streams (meteorology)
 - meridional flow
 - vertical air currents
- RT aerodynamic interference
 - atmospheric boundary layer
 - barotropic flow
 - Brunt-Vaisala frequency
 - compressible flow
- ∞ currents
 - duct geometry
 - ducted flow
 - streamlining
 - streams
 - ventilation

air freight
USE **air cargo**

air inlets
USE **air intakes**

air intakes

- UF *air inlets*
- GS intake systems

- . **air intakes**
 - . . engine inlets
 - . . hypersonic inlets
 - . . inlet airframe configurations
 - . . supersonic inlets
- RT bypass ratio
 - conical inlets
 - cowlings
 - inlet nozzles
 - inlet temperature
 - internal compression inlets
 - manifolds
 - nacelles
 - nose inlets
 - plenum chambers
 - scoops
 - side inlets
 - superchargers
 - supersonic diffusers
 - ventilation
 - ventilators
- ∞ water intakes

air jets

- GS fluid flow
 - . jet flow
 - . . **air jets**
 - fluid jets
 - . **air jets**
- RT gas flow
 - gas jets
 - jet streams (meteorology)
- ∞ jets
 - vapor jets

air land interactions

- RT atmospheric boundary layer
 - atmospheric circulation
 - Earth cryosphere
 - gas-solid interactions
- ∞ interactions
 - land surface temperature
 - meteorology

air launching

- GS launching
 - . **air launching**
- RT multistage rocket vehicles
 - Pegasus air-launched booster
 - piggyback systems
 - X-34 reusable launch vehicle

air law

- DEF The body of domestic and/or international laws dealing with regulations and liabilities in civil or military aviation.
- GS law (jurisprudence)
 - . international law
 - . . **air law**
- RT ∞ aeronautics
 - airspace
 - civil aviation
 - conventions
 - insurance (contracts)
 - legal liability
 - liabilities
- ∞ military aviation
 - National Airspace Utilization System
 - penalties
 - politics
 - public law
 - regulations
 - space law

air locks

- DEF A stoppage or diminution of flow in a fuel system, hydraulic system, or the like, caused by pockets of air or vapor. Also chambers capable of being hermetically sealed that provide for passage between two places of different pressure as between an altitude chamber and the outside atmosphere.
- GS compartments
 - . **air locks**
 - . . airlock modules
- RT doors
 - egress
 - enclosures
 - hatches
 - ingress (spacecraft passageway)

- ∞ locks
 - pressure chambers
 - seals (stoppers)

air mail

- GS cargo
 - . air cargo
 - . . **air mail**

air masses

- DEF Large widespread volumes of air having particular characteristics of temperature and moisture content that were acquired at its source region and are modified as they move away from their source.
- RT anticyclones
 - atmospheric circulation
 - Brunt-Vaisala frequency
 - cold fronts
 - fronts (meteorology)
 - meteorology
 - synoptic meteorology
 - warm fronts
 - weather forecasting
 - windpower utilization

air navigation

- DEF The art, science, or action of plotting and directing the course of an aircraft through the air from one place to another.
- GS navigation
 - . **air navigation**
 - . . all-weather air navigation
 - . . area navigation
 - . . . nap-of-the-earth navigation
 - . . . terrain following
- RT astronavigation
 - boresight error
 - celestial navigation
 - celestial reference systems
 - collision avoidance
- ∞ control
 - dead reckoning
 - digital navigation
 - Doppler navigation
 - flight instruments
 - flight management systems
 - flight paths
 - flight plans
 - flight rules
 - formation flying
 - guidance (motion)
 - hyperbolic navigation
 - inertial navigation
 - instrument flight rules
 - loran
 - loran C
 - loran D
 - National Airspace Utilization System
 - navigation aids
 - Omega Navigation System
 - polar navigation
 - radar navigation
 - radio navigation
 - Shoran
 - solar compasses
 - space navigation
 - Tacan
 - VHF omnirange navigation
 - visual flight

air piracy

- UF *hijacking*
- GS crime
 - . **air piracy**
- RT aircraft safety
 - airport security
 - flight hazards
 - flight safety
 - operational hazards
 - terrorism

air pollution

- DEF The presence of unwanted material in the air. The term "unwanted material" here refers to material in sufficient concentrations, present for a sufficient time, and under circumstances to interfere significantly with comfort, health, or welfare of persons, or with the full use

air purification

and enjoyment of property. Used for atmospheric impurities.

UF *atmospheric impurities*

GS pollution

. environment pollution

. . **air pollution**

. . . global air pollution

. . . indoor air pollution

RT

acid rain

aerobiology

aerosols

ashes

atmospheric chemistry

atmospheric composition

atmospheric density

atmospheric effects

biomass burning

chlorofluorocarbons

chlorofluoromethane

clean energy

climate change

combustion products

contamination

diffusion

drops (liquids)

dust

Earth atmosphere

Earth environment

effluents

environment effects

environment protection

environmental chemistry

environmental quality

environmental surveys

environments

exhaust gases

exhaust systems

fallout

flue gases

fly ash

forest fires

Global Air Sampling Program

haze

human wastes

metabolic wastes

middle atmosphere

mixing height

mutagens

nitrous acid

odors

organic peroxides

oxidizers

ozone depletion

particles

particulates

photochemical oxidants

pollen

pollution monitoring

pollution transport

polynuclear organic compounds

smog

smoke

smoke abatement

soot

temperature inversions

volatile organic compounds

waste disposal

wastes

wind (meteorology)

air purification

GS purification

. **air purification**

RT

carbon dioxide concentration

carbon dioxide removal

decontamination

electrostatic precipitators

Hopcalite (trademark)

rebreathing

sterilization

ventilation

air quality

GS quality

. environmental quality

. . **air quality**

RT

Earth atmosphere

environments

indoor air pollution

particulates

pollution control

pollution monitoring

volatile organic compounds

air sampling

GS sampling

. **air sampling**

RT

electrostatic precipitators

environment pollution

gas analysis

Global Air Sampling Program

indoor air pollution

ozonesondes

particulates

smog

air sea ice interactions

GS gas-liquid interactions

. air water interactions

. . **air sea ice interactions**

RT ∞ interactions

polynyas

sea ice

air sea interactions

USE **air water interactions**

air showers

(added August 1997)

USE **cosmic ray showers**

air sickness

USE **motion sickness**

air slew missiles

DEF Solid propellant rockets utilizing thrust

vector control.

GS missiles

. **air slew missiles**

RT

maneuverability

∞ rockets

solid propellant rocket engines

thrust vector control

air start

UF *engine relight (in-flight)*

in-flight starting

GS

starting

. **air start**

RT

aircraft control

aircraft engines

engine control

flight tests

air to air missiles

UF *air to air rockets*

GS

missiles

. **air to air missiles**

. . Falcon missile

. . Matra missile

. . Sidewinder missiles

. . Sparrow missiles

. . . Sparrow 2 missile

. . . Sparrow 3 missile

RT

antiaircraft missiles

ramjet missiles

SIAM missiles

space weapons

surface to air missiles

air to air refueling

GS refueling

. **air to air refueling**

RT

tanker aircraft

air to air rockets

USE **air to air missiles**

air to surface missiles

GS missiles

. **air to surface missiles**

. . Bullpup missiles

. . Condor missile

. . Harpoon missile

. . Hound Dog missile

. . Maverick missiles

. . quail missile

. . Shrike missile

RT

miss distance

ordnance

surface to air missiles

surface to surface missiles

∞ surfaces

weapon systems

air traffic

GS traffic

. **air traffic**

RT

aircraft hazards

airline operations

airspace

collision avoidance

flight hazards

flight paths

flight plans

National Airspace Utilization System

National Aviation System

air traffic control

DEF A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic.

GS ground based control

. **air traffic control**

. . automated en route ATC

. . radar approach control

traffic control

. **air traffic control**

. . automated en route ATC

. . radar approach control

RT

aeronautical satellites

airborne radar approach

aircraft approach spacing

aircraft communication

aircraft guidance

aircraft safety

airport surface detection equipment

airport towers

airports

airspace

approach

approach control

approach indicators

attitude control

automated pilot advisory system

automated radar terminal system

Beacon Collision Avoidance System

collision avoidance

collisions

∞ control

discrete address beacon system

flight altitude

flight control

flight management systems

flight paths

flight plans

flight rules

flight safety

flight time

ground support equipment

ground-air-ground communication

heliports

instrument flight rules

instrument landing systems

landing

landing aids

landing instruments

landing radar

LOCATES system

microwave landing systems

midair collisions

military air facilities

National Airspace System

National Airspace Utilization System

National Aviation System

navigation aids

∞ operations

radar navigation

radio navigation

routes

situational awareness

solar compasses

surveillance radar

takeoff

taxiing

towers

tracking (position)

transponders

vortex advisory system

- vortex avoidance
- air traffic controllers (personnel)**
 GS personnel
 . **air traffic controllers (personnel)**
 RT airport towers
 ground based control
 landing aids
 traffic control
- air transportation**
 DEF The conveyance of cargo and passengers by means of airplanes, helicopters, and other airborne vehicles.
 GS transportation
 . **air transportation**
 RT airline operations
 commercial aircraft
 commuter aircraft
 compound helicopters
 general aviation aircraft
 marine transportation
 National Aviation System
 passenger aircraft
 rapid transit systems
 short haul aircraft
 transport aircraft
- air water interactions**
 UF *air sea interactions*
 GS gas-liquid interactions
 . **air water interactions**
 . . air sea ice interactions
 RT Atmospheric & Oceanographic Inform Sys
 Earth cryosphere
 el Nino
 gyres
 hydrological cycle
 ∞ interactions
 liquid-gas mixtures
 liquid-vapor interfaces
 Madden-Julian Oscillation
 ocean dynamics
 ocean models
 sea surface temperature
 water tunnel tests
- airborne equipment**
 GS onboard equipment
 . **airborne equipment**
 . . airborne/spaceborne computers
 . . Light Airborne Multipurpose System
 . . TERCOM
 RT Advanced Range Instrumentation Aircraft
 airborne radar
 aircraft communication
 aircraft equipment
 Astroplane
 automatic landing control
 avionics
 balloon-borne instruments
 cockpit weather information systems
 ∞ electric equipment
 ∞ equipment
 flight instruments
 hydraulic equipment
 Kuiper Airborne Observatory
 map matching guidance
 MATTS (systems)
 radar equipment
 radio equipment
 SOFIA (airborne observatory)
 vacuum arc switches
- airborne infection**
 GS diseases
 . infectious diseases
 . . **airborne infection**
 RT aerobiology
 parasitic diseases
- Airborne Integrated Reconnaissance System**
 DEF Aerial reconnaissance system incorporating various modes of detection. Used for AIRS (reconnaissance sys).
 UF *AIRS (reconnaissance sys)*
- GS reconnaissance
 . aerial reconnaissance
 . . **Airborne Integrated Reconnaissance System**
- RT ground truth
 photoreconnaissance
 ∞ systems
 targets
- airborne lasers**
 GS onboard equipment
 . **airborne lasers**
 stimulated emission devices
 . lasers
 . . **airborne lasers**
 RT laser applications
 laser ranger/tracker
 remote sensors
 spaceborne lasers
- airborne radar**
(added August 1992)
 GS radar
 . **airborne radar**
 . . airborne surveillance radar
 RT airborne equipment
 clutter
 digital radar systems
 Doppler radar
 radar echoes
 radar equipment
 radar imagery
 radar maps
 radar receivers
 radar targets
 remote sensing
 remote sensors
 side-looking radar
 space based radar
 space-time adaptive processing
 synthetic aperture radar
- airborne radar approach**
 DEF The use of airborne radar for helicopter approach control -- the radar cursor technique.
 GS approach
 . **airborne radar approach**
 RT air traffic control
 aircraft approach spacing
 helicopter control
 helicopters
 landing aids
 radar approach control
- airborne range and orbit determination**
 UF *AROD (range-orbit determination)*
 GS orbit determination
 . **airborne range and orbit determination**
 rangefinding
 . **airborne range and orbit determination**
 RT ∞ measurement
 orbits
- airborne surveillance radar**
 GS radar
 . airborne radar
 . . **airborne surveillance radar**
 . surveillance radar
 . . **airborne surveillance radar**
 RT aircraft instruments
 display devices
 onboard equipment
- Airborne Warning and Control System*
 USE **AWACS aircraft**
- airborne/spaceborne computers**
 UF *flight computers*
onboard computers
spacecraft computers
 GS data processing equipment
 . computers
 . . embedded computer systems
 . . . **airborne/spaceborne computers**
 onboard equipment
 . airborne equipment
 . . **airborne/spaceborne computers**
- RT data processing
 flight management systems
 highly maneuverable aircraft
 minicomputers
 onboard data processing
 spacecraft components
 spacecraft electronic equipment
 systems integration
- Airbus*
 USE **European Airbus**
- ∞ **aircraft**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *aerodynamic vehicles*
 RT A-1 aircraft
 A-2 aircraft
 A-3 aircraft
 A-4 aircraft
 A-5 aircraft
 A-6 aircraft
 A-7 aircraft
 A-9 aircraft
 A-10 aircraft
 A-37 aircraft
 A-300 aircraft
 A-330 aircraft
 A-340 aircraft
 Advanced Range Instrumentation Aircraft
 aerodynamics
 aeronautical engineering
 ∞ aeronautics
 aerospace engineering
 aerospace industry
 aerospace planes
 aerospace vehicles
 agricultural aircraft
 AH-1S helicopter
 AH-1W helicopter
 air data systems
 aircraft accident investigation
 aircraft accidents
 aircraft antennas
 aircraft approach spacing
 aircraft brakes
 aircraft carriers
 aircraft communication
 aircraft compartments
 aircraft configurations
 aircraft construction materials
 aircraft control
 aircraft design
 aircraft detection
 aircraft engines
 aircraft equipment
 aircraft fuel systems
 aircraft fuels
 aircraft guidance
 aircraft hazards
 aircraft hydraulic systems
 aircraft industry
 aircraft instruments
 aircraft lights
 aircraft maintenance
 aircraft maneuvers
 aircraft noise
 aircraft parts
 aircraft performance
 aircraft pilots
 aircraft production
 aircraft production costs
 aircraft reliability
 aircraft runup
 aircraft safety
 aircraft specifications
 aircraft spin
 aircraft stability
 aircraft structures
 aircraft survivability
 aircraft tires
 aircraft wakes
 airships
 Aladin 2 aircraft
 Alouette helicopters
 Alpha jet aircraft
 amphibious aircraft
 AN-2 aircraft

aircraft

AN-22 aircraft
AN-24 aircraft
antisubmarine warfare aircraft
Antonov aircraft
Argosy MK-1 aircraft
ASSET gliders
ATLIT project
ATR-72 aircraft
attack aircraft
AVRO 707 aircraft
AWACS aircraft
B-1 aircraft
B-2 aircraft
B-26 aircraft
B-47 aircraft
B-50 aircraft
B-52 aircraft
B-57 aircraft
B-58 aircraft
B-66 aircraft
B-70 aircraft
BAC 111 aircraft
BAC aircraft
balloons
Beagle aircraft
Beech 99 aircraft
Beechcraft 18 aircraft
Beechcraft aircraft
Bell 214A helicopter
Bell aircraft
biplanes
bird-aircraft collisions
Boeing 707 aircraft
Boeing 717 aircraft
Boeing 720 aircraft
Boeing 727 aircraft
Boeing 733 aircraft
Boeing 737 aircraft
Boeing 747 aircraft
Boeing 757 aircraft
Boeing 767 aircraft
Boeing 777 aircraft
Boeing 2707 aircraft
Boeing aircraft
Bolkow aircraft
bomber aircraft
boostglide vehicles
Breguet 940 aircraft
Breguet 941 aircraft
Breguet 1150 aircraft
Breguet aircraft
Buccaneer aircraft
C-1A aircraft
C-2 aircraft
C-5 aircraft
C-8A augmentor wing aircraft
C-9 aircraft
C-15 aircraft
C-17 aircraft
C-33 aircraft
C-35 aircraft
C-46 aircraft
C-47 aircraft
C-54 aircraft
C-118 aircraft
C-119 aircraft
C-121 aircraft
C-123 aircraft
C-124 aircraft
C-130 aircraft
C-131 aircraft
C-133 aircraft
C-135 aircraft
C-140 aircraft
C-141 aircraft
C-160 aircraft
Canadair aircraft
Canberra aircraft
cargo aircraft
ceiling (aircraft capability)
Cessna 172 aircraft
Cessna 205 aircraft
Cessna 402B aircraft
Cessna aircraft
Cessna L-19 aircraft
Chance-Vought aircraft
Chinese aircraft
CL-41 aircraft
CL-44 aircraft
CL-84 aircraft
CL-600 challenger aircraft
CL-823 aircraft
COIN aircraft
Comet 4 aircraft
commercial aircraft
commuter aircraft
compound helicopters
Concorde aircraft
Curtiss-Wright aircraft
CV-340 aircraft
CV-440 aircraft
CV-880 aircraft
CV-990 aircraft
D-558 aircraft
Dassault aircraft
DC 3 aircraft
DC 7 aircraft
DC 8 aircraft
DC 9 aircraft
DC 10 aircraft
de Havilland aircraft
DH 112 aircraft
DH 115 aircraft
DH 121 aircraft
DH 125 aircraft
DHC 2 aircraft
DHC 4 aircraft
DHC 5 aircraft
DO-27 aircraft
DO-28 aircraft
DO-31 aircraft
DO-328 aircraft
Dornier aircraft
Douglas aircraft
drone aircraft
E-2 aircraft
E-3A aircraft
E-4A aircraft
Earth Resources Survey aircraft
EH-101 helicopter
Electra aircraft
electronic aircraft
European Airbus
F-2 aircraft
F-4 aircraft
F-5 aircraft
F-8 aircraft
F-9 aircraft
F-14 aircraft
F-15 aircraft
F-16 aircraft
F-17 aircraft
F-18 aircraft
F-22 aircraft
F-27 aircraft
F-28 transport aircraft
F-84 aircraft
F-86 aircraft
F-89 aircraft
F-94 aircraft
F-100 aircraft
F-101 aircraft
F-102 aircraft
F-104 aircraft
F-105 aircraft
F-106 aircraft
F-111 aircraft
F-117A aircraft
Fairchild-Hiller aircraft
Fairey aircraft
fan in wing aircraft
FD 2 aircraft
Fiat aircraft
fighter aircraft
Firebee 2 target drone aircraft
flight test vehicles
flying platforms
Fokker aircraft
Folding Fin aircraft rocket vehicle
free wing aircraft
FV-12A aircraft
G-1 aircraft
G-91 aircraft
G-95/4 aircraft
G-222 aircraft
GA-5 aircraft
general aviation aircraft
General Dynamics aircraft
GETOL aircraft
gliders
ground effect machines
Grumman aircraft
Gyrodyne aircraft
H-17 helicopter
H-19 helicopter
H-43 helicopter
H-53 helicopter
H-54 helicopter
H-56 helicopter
H-60 Helicopter
H-126 aircraft
Hamburger aircraft
Handley Page aircraft
hang gliders
Harrier aircraft
Hawker Siddeley aircraft
heavy lift helicopters
Heinkel aircraft
helicopters
Helo aircraft
HFB-320 aircraft
HH-65 helicopter
highly maneuverable aircraft
Hiller aircraft
hovercraft ground effect machines
HP-115 aircraft
HS-748 aircraft
HS-801 aircraft
Hughes aircraft
hypersonic aircraft
hypersonic gliders
IL-14 aircraft
IL-62 aircraft
IL-76 aircraft
IL-86 aircraft
IL-96 aircraft
Ilyushin aircraft
inflatable gliders
Jaguar aircraft
JAS-39 aircraft
jet aircraft
jet aircraft noise
jet provost aircraft
Jetstream aircraft
Jindivik target aircraft
Kaman aircraft
Kawasaki aircraft
L-1011 aircraft
L-2000 aircraft
Lear jet aircraft
lifting reentry vehicles
light aircraft
light helicopters
light intratheater transport
light transport aircraft
Ling-Temco-Vought aircraft
Lockheed aircraft
Lockheed model 18 aircraft
∞ low wing aircraft
man powered aircraft
Martin aircraft
McDonnell aircraft
McDonnell Douglas aircraft
MD 11 aircraft
MD 80 aircraft
Mercure aircraft
meteorological research aircraft
MH-262 aircraft
MiG aircraft
Mil aircraft
military air facilities
∞ military aircraft
military helicopters
monoplanes
MRCA aircraft
multiengine vehicles
Mystere 50 aircraft
Navion aircraft
night flights (aircraft)
Nihon aircraft
noise prediction (aircraft)
Nord 1500 aircraft
Nord aircraft
North American aircraft
Northrop aircraft
nuclear propelled aircraft
observation aircraft

onboard equipment
 OV-1 aircraft
 OV-10 aircraft
 P-3 aircraft
 P-51 aircraft
 P-160 aircraft
 P-166 aircraft
 P-308 aircraft
 P-1127 aircraft
 P-1154 aircraft
 PA-34 Seneca aircraft
 passenger aircraft
 PD-808 aircraft
 Piaggio aircraft
 Piasecki aircraft
 pilotless aircraft
 Piper aircraft
 planetary aerial vehicles
 Potez aircraft
 powered lift aircraft
 propulsion
 Questol aircraft
 reconnaissance aircraft
 remotely piloted vehicles
 Republic aircraft
 research aircraft
 rigid rotor helicopters
 rocket planes
 rotary wing aircraft
 rotor systems research aircraft
 Ryan aircraft
 S-2 aircraft
 S-3 aircraft
 S-61 helicopter
 S-67 helicopter
 SA-321 helicopter
 SA-330 helicopter
 Saab 37 aircraft
 Saab 105 aircraft
 Saab aircraft
 SC-1 aircraft
 SC-5 aircraft
 SC-7 aircraft
 Schleicher aircraft
 Scimitar aircraft
 SE-210 aircraft
 short haul aircraft
 short takeoff aircraft
 Siebel aircraft
 Sikorsky aircraft
 Sikorsky Whirlwind helicopter
 single engine aircraft
 solar powered aircraft
 spanloader aircraft
 SR-71 aircraft
 submersible aircraft
 ∞ subsonic aircraft
 Sud Aviation aircraft
 Sukhoi aircraft
 supersonic aircraft
 supersonic cruise aircraft research
 T-2 aircraft
 T-28 aircraft
 T-33 aircraft
 T-37 aircraft
 T-38 aircraft
 T-39 aircraft
 TACT program
 tailless aircraft
 tandem rotor helicopters
 tandem wing aircraft
 tanker aircraft
 target drone aircraft
 test vehicles
 tilt rotor aircraft
 Tilt Rotor Research Aircraft Program
 tilt wing aircraft
 training aircraft
 transatmospheric vehicles
 transport aircraft
 TS-11 aircraft
 TSR-2 aircraft
 TU-104 aircraft
 TU-124 aircraft
 TU-134 aircraft
 TU-144 aircraft
 TU-154 aircraft
 TU-204 aircraft
 Tupolev aircraft

turbofan aircraft
 turboprop aircraft
 U-2 aircraft
 U-10 aircraft
 ultralight aircraft
 unidentified flying objects
 utility aircraft
 V-22 aircraft
 V/STOL aircraft
 Valiant aircraft
 Vampire MK 35 aircraft
 VATOL aircraft
 VC-10 aircraft
 vertical takeoff aircraft
 Victor MK-1 aircraft
 Viscount aircraft
 VJ-101 aircraft
 Vulcan aircraft
 VZ-2 aircraft
 VZ-8 aircraft
 water takeoff and landing aircraft
 weapons delivery
 weather reconnaissance aircraft
 Weser aircraft
 Westland aircraft
 Westland ground effect machines
 Westland Whirlwind helicopter
 wing nacelle configurations
 ∞ winged vehicles
 X-1 aircraft
 X-2 aircraft
 X-3 aircraft
 X-5 aircraft
 X-13 aircraft
 X-14 aircraft
 X-15 aircraft
 X-19 aircraft
 X-20 aircraft
 X-21 aircraft
 X-21A aircraft
 X-22 aircraft
 X-22A aircraft
 X-24 aircraft
 X-29 aircraft
 X-31 aircraft
 X-36 aircraft
 XC-142 aircraft
 XV-3 aircraft
 XV-4 aircraft
 XV-5 aircraft
 XV-8A aircraft
 XV-9A aircraft
 XV-11A aircraft
 XV-15 aircraft
 Yak 40 aircraft
 Yakovlev aircraft
 YC-14 aircraft
 YF-12 aircraft

aircraft accident investigation

GS investigation
 . accident investigation
 . . **aircraft accident investigation**
 RT ∞ aircraft
 aviation meteorology
 insurance (contracts)

aircraft accidents

GS accidents
 . **aircraft accidents**
 . . bird-aircraft collisions
 RT ∞ aircraft
 aircraft safety
 aviation meteorology
 collisions
 crash landing
 crashes
 crashworthiness
 ditching (landing)
 emergency landing
 flight hazards
 flight safety
 human factors engineering
 insurance (contracts)
 malfunctions
 midair collisions
 pilot error
 runway incursions

weather

aircraft antennas

GS antennas
 . **aircraft antennas**
 RT ∞ aircraft
 loop antennas
 microwave antennas
 missile antennas
 protuberances
 radar antennas
 radio antennas

aircraft approach spacing

GS spacing
 . **aircraft approach spacing**
 RT aeronautical satellites
 air traffic control
 airborne radar approach
 ∞ aircraft
 aircraft safety
 airspace
 approach
 approach control
 collision avoidance
 flight safety
 glide paths
 ground based control
 instrument approach
 National Airspace Utilization System
 National Aviation System
 vortex advisory system
 vortex avoidance

aircraft bases

USE **military air facilities**

aircraft brakes

GS brakes (for arresting motion)
 . **aircraft brakes**
 . . split flaps
 . . wing flaps
 . . . leading edge flaps
 . . . leading edge slats
 . . . trailing edge flaps
 . . . vortex flaps
 RT aerodynamic brakes
 ∞ aircraft
 antiskid devices
 ballutes
 drag chutes
 drag devices
 thrust reversal
 towed bodies
 wheel brakes

aircraft cabins

USE **aircraft compartments**

aircraft carriers

GS surface vehicles
 . **aircraft carriers**
 water vehicles
 . ships
 . . **aircraft carriers**
 RT ∞ aircraft
 arresting gear
 ∞ carriers
 military air facilities
 ∞ military aircraft
 ∞ military vehicles
 navy
 nuclear powered ships

aircraft communication

DEF The conveyance of information to or from aircraft by radio or other signals.
 GS communicating
 . **aircraft communication**
 telecommunication
 . **aircraft communication**
 RT aeronautical satellites
 air traffic control
 airborne equipment
 ∞ aircraft
 approach control
 avionics
 ground-air-ground communication
 radar beacons
 radio communication

aircraft compartments

wireless communication

aircraft compartments

- UF *aircraft cabins*
aircraft interiors
- GS compartments
 - . **aircraft compartments**
- RT ∞ aircraft
 - bays (structural units)
 - cabin atmospheres
- ∞ cabins
 - cockpits
 - gondolas
 - pressurized cabins
 - windshields

aircraft configurations

- UF *fixed-wing aircraft*
- GS **aircraft configurations**
 - . drooped airfoils
- RT aerodynamic configurations
 - aerodynamic interference
- ∞ aircraft
 - blended-wing-body configurations
 - compound helicopters
- ∞ configurations
 - control configured vehicles
 - flared bodies
- ∞ flight vehicles
 - joined wings
- ∞ low wing aircraft
 - missile configurations
 - propulsion system configurations
 - spacecraft configurations
 - under surface blowing
 - upper surface blowing
 - wing roots

aircraft construction

- USE **aircraft structures**

aircraft construction materials

- DEF A general term designating the materials used in manufacturing an aircraft.
- GS **aircraft construction materials**
 - . airframe materials
- RT ∞ aircraft
 - airframes
 - aluminum-lithium alloys
 - ceramic matrix composites
 - composite materials
- ∞ construction materials
 - functionally gradient materials
 - fuselages
 - lithium alloys
- ∞ materials
 - materials selection
 - plastic aircraft structures
 - skin (structural member)
 - structural members
 - wings

aircraft control

- DEF To direct the movements of an aircraft with particular reference to changes in attitude and speed.
- UF *flap control*
- GS **aircraft control**
 - . helicopter control
- RT active control
 - air start
- ∞ aircraft
 - attitude control
 - automatic control
 - automatic flight control
- ∞ control
 - control equipment
 - control simulation
 - control stability
 - control sticks
 - controllability
 - DAST program
 - directional control
 - engine control
 - flight control
 - flight envelopes
 - flight instruments
 - fly by light control
 - fly by tube control
 - fly by wire control

ground based control
in-flight simulation
lateral control
longitudinal control
maneuverability
manual control
minor circle turning flight
pilot induced oscillation
radio control
remote control
stability augmentation
turbojet engine control
visual control

aircraft design

DEF The act of conceiving and planning the structure, systems, and performance characteristics of an aircraft vehicle or any other apparatus, machine or contrivance intended to be borne up either by dynamic action of the air upon the object's surfaces, or by the object's own buoyancy.

GS aircraft design

- . helicopter design
- acoustic retrofitting
- aerodynamic configurations
- aeroelastic research wings
- aeronautical engineering
- aeroquatic vehicles

∞ aircraft

- airfoils
 - blended-wing-body configurations
 - channel wings
 - compound helicopters
 - computer aided design
 - control configured vehicles
 - DAST program
- ∞ design
- design optimization
 - engine airframe integration
 - engine design
 - flight tests
 - free wing aircraft
 - induced drag
 - lofting
 - missile design
 - multidisciplinary design optimization
 - product development
 - rotor systems research aircraft
 - shape optimization
 - short haul aircraft
 - streamlining
 - structural design
 - systems engineering
 - Terminal Configured Vehicle Program
 - transatmospheric vehicles
 - vortex sheets
 - weight reduction
 - YF-12 aircraft

aircraft detection

- GS detection
 - . **aircraft detection**

RT ∞ aircraft

- ∞ detectors
 - F-117A aircraft
 - IFF systems (identification)
 - infrared suppression
 - tracking (position)

Aircraft Energy Efficiency program

- USE **ACEE program**

aircraft engines

- UF *aircraft power sources*
- GS engines
 - . **aircraft engines**
 - . . convertible fan-shaft engines
 - . . helicopter engines
 - . . J-52 engine
 - . . J-58 engine
 - . . J-97 engine
 - . . T-34 engine
 - . . T-38 engine
 - . . T-55 engine
 - . . T-63 engine
 - . . T-76 engine
 - . . T-78 engine
 - . . TF-30 engine
 - . . TF-34 engine

- . . TF-41 engine
 - . . variable cycle engines
 - . . variable stream control engines
- RT ACEE program
- air start
- ∞ aircraft
- engine airframe integration
 - gas turbine engines
 - hydrogen engines
 - infrared suppression
 - internal combustion engines
 - jet engines
 - jet propulsion
 - laser propulsion
 - nuclear propulsion
 - piston engines
- ∞ power supplies
- quiet engine program
 - rocket engines
 - rotary engines
 - T-58 engine
 - topping cycle engines
 - turbine engines
 - Wankel engines

aircraft equipment

- GS onboard equipment
 - . **aircraft equipment**
 - . . bombing equipment
 - . . ejection seats
 - . . flying ejection seats
 - . . TERCOM
- RT airborne equipment
 - ∞ aircraft
 - aircraft hydraulic systems
 - aircraft lights
 - aircraft power supplies
 - aircraft tires
 - automatic landing control
 - automatic pilots
 - avionics
 - commonality
 - display devices
 - ∞ equipment
 - flight instruments
 - landing aids
 - landing instruments
 - Light Airborne Multipurpose System
 - navigation aids
 - navigation instruments
 - radio direction finders

aircraft fuel systems

- GS fuel systems
 - . **aircraft fuel systems**
- RT ∞ aircraft
 - fuel pumps
 - fuel tank pressurization
 - fuel tanks
 - fuel valves
- ∞ systems

aircraft fuels

- GS fuels
 - . **aircraft fuels**
- RT ∞ aircraft
 - antimisting fuels
 - automobile fuels
 - hydrocarbon fuels
 - jet engine fuels
 - liquid fuels
 - liquid rocket propellants
 - monopropellants
 - slurry propellants
 - solid propellants
 - tanker aircraft

aircraft guidance

- GS guidance (motion)
 - . **aircraft guidance**
- RT air traffic control
 - ∞ aircraft
 - approach control
 - automated en route ATC
 - collision avoidance
 - ∞ indicators
 - instrument landing systems
 - radar approach control
 - radar navigation
 - radarscopes

radio navigation

aircraft hangars
 USE **hangars**

aircraft hazards
 GS hazards
 . **aircraft hazards**
 . . runway incursions
 RT air traffic
 ∞ aircraft
 aircraft icing
 aviation meteorology
 bird-aircraft collisions
 birds
 collisions
 crash landing
 crashes
 flight hazards
 flight safety
 foreign bodies
 human factors engineering
 malfunctions
 midair collisions
 noise (sound)
 operational hazards
 refueling
 threat evaluation
 toxic hazards
 weather

aircraft hydraulic systems
 GS hydraulic equipment
 . **aircraft hydraulic systems**
 RT actuators
 ∞ aircraft
 aircraft equipment
 servocontrol
 servomechanisms
 ∞ systems

aircraft icing
 (*added August 1991*)
 DEF Accumulation of ice on aircraft external surfaces, propellers and engine inlets from freezing rain or flight through inclement weather.
 UF *wing icing*
 GS ice formation
 . **aircraft icing**
 RT aircraft hazards
 aircraft safety
 aviation meteorology
 deicers
 deicing
 flight conditions
 flight hazards
 flight safety
 ice prevention

aircraft industry
 GS industries
 . aerospace industry
 . . **aircraft industry**
 RT aeronautical engineering
 ∞ aircraft
 aircraft production costs

aircraft instruments
 DEF Any electronic or mechanically-based instrument or instrument system designed for detecting, measuring, displaying, recording, telemetering, processing, or analyzing different values or quantities encountered in the flight of an aircraft; often supporting the general control of the aircraft.
 GS **aircraft instruments**
 . approach indicators
 . automatic pilots
 . flight recorders
 . . flight load recorders
 . rate of climb indicators
 RT airborne surveillance radar
 ∞ aircraft
 altimeters
 anemometers
 attitude indicators
 automatic flight control
 avionics
 compasses
 display devices

flight control
 flight instruments
 flight paths
 flight test instruments
 I2S cameras
 indicating instruments
 instrument approach
 instrument landing systems
 ∞ instruments
 landing aids
 landing instruments
 laser altimeters
 light emitting diodes
 ∞ measurement
 measuring instruments
 monitors
 navigation aids
 navigation instruments
 position indicators
 radar
 radio altimeters
 recording instruments
 speed indicators
 tachometers

aircraft interiors
 USE **aircraft compartments**

aircraft landing
 GS landing
 . **aircraft landing**
 RT air cushion landing systems
 all-weather landing systems
 blind landing
 ceilings (meteorology)
 crashworthiness
 emergency landing
 enhanced vision
 glide landings
 hard landing
 instrument landing systems
 landing aids
 landing mats
 landing radar
 low visibility
 microwave landing systems
 runway alignment
 soft landing
 spacecraft landing
 touchdown
 vertical landing
 vortex avoidance
 water landing

aircraft launching devices
 UF *takeoff systems*
 GS launchers
 . **aircraft launching devices**
 . . JATO engines
 RT catapults

aircraft lights
 GS lighting equipment
 . luminaires
 . . **aircraft lights**
 RT ∞ aircraft
 aircraft equipment
 beacons

aircraft maintenance
 GS maintenance
 . **aircraft maintenance**
 RT ∞ aircraft
 checkout
 flight operations
 ground support equipment
 logistics
 preventive maintenance

aircraft maneuvers
 GS maneuvers
 . **aircraft maneuvers**
 RT ∞ aircraft
 approach control
 flight characteristics
 flight envelopes
 flight paths
 formation flying
 highly maneuverable aircraft
 maneuverability

obstacle avoidance
 trajectory optimization
 transition flight
 turning flight
 X-31 aircraft

aircraft models
 GS models
 . **aircraft models**
 RT dynamic models
 mathematical models
 powered models
 scale models
 semispan models
 spacecraft models
 wind tunnel models

aircraft noise
 GS elastic waves
 . sound waves
 . . noise (sound)
 . . . **aircraft noise**
 blade slap noise
 jet aircraft noise
 propeller noise
 sonic booms
 RT acoustic retrofitting
 aeroacoustics
 aerodynamic noise
 ∞ aircraft
 coaxial nozzles
 engine noise
 Ffowcs Williams-Hawkins equation
 footprints
 jet aircraft
 mufflers
 noise intensity
 noise measurement
 noise prediction (aircraft)
 noise reduction
 synchrophasing

aircraft noise prediction
 USE **noise prediction (aircraft)**

aircraft parts
 RT ∞ aircraft
 airfoils
 airframes
 channel wings
 control surfaces
 fuselages
 landing gear
 oblique wings
 protuberances
 swing tail assemblies
 swing wings
 tail assemblies
 wings

aircraft performance
 DEF The manner or effectiveness with which an aircraft vehicle or any airborne structure, machine, or contrivance functions while in operation.
 GS **aircraft performance**
 . helicopter performance
 RT aerodynamic stalling
 ∞ aircraft
 aircraft spin
 airspeed
 controllability
 Cooper-Harper ratings
 distance
 flight characteristics
 flight envelopes
 maneuverability
 minimum drag
 payloads
 ∞ performance
 pilot performance
 pilot ratings
 specifications
 takeoff runs

aircraft pilots
 UF *aviators*
copilots
jet pilots
 GS personnel

aircraft power supplies

- . flying personnel
 - . . . pilots (personnel)
 - **aircraft pilots**
 - test pilots
 - . operators (personnel)
 - . . . pilots (personnel)
 - **aircraft pilots**
 - test pilots
- RT ∞ aircraft
aviation psychology
flight crews
∞ pilots

aircraft power sources

- USE **aircraft engines**

aircraft power supplies

DEF Electric power sources for the normal operation of aircraft.

- GS electric power supplies
. **aircraft power supplies**
- RT aircraft equipment
auxiliary power sources
electric generators
∞ power supplies

aircraft production

- UF *fuselage mounting*
- RT ∞ aircraft
costs
equipment specifications
product development
∞ production
production engineering

aircraft production costs

- GS costs
. production costs
. . . **aircraft production costs**
- RT ∞ aircraft
aircraft industry
cost estimates
efficiency
∞ engineering
financial management
industries
manufacturing
production engineering
production management
productivity

aircraft reliability

- UF *airworthiness*
airworthiness requirements
- GS reliability
. **aircraft reliability**
- RT ∞ aircraft
certification
circuit reliability
component reliability
helicopter performance
quality control
structural reliability
total quality management
vulnerability

aircraft runup

- DEF Final engine check prior to takeoff.
- GS preflight operations
. **aircraft runup**
- RT ∞ aircraft
engine noise
engine tests
ground tests
jet aircraft noise

aircraft safety

DEF Techniques used to prevent aircraft failures or accidents; the degree to which an aircraft is free of the risk of malfunction or accidents.

- GS safety
. **aircraft safety**
- RT abort apparatus
aerospace safety
air piracy
air traffic control
∞ aircraft
aircraft accidents
aircraft approach spacing

- aircraft icing
- aircraft spin
- all-weather landing systems
- arresting gear
- Beacon Collision Avoidance System
- collision avoidance
- collisions
- crash landing
- crashes
- crashworthiness
- ejection seats
- emergency landing
- flight hazards
- flight safety
- flying ejection seats
- landing aids
- landing radar
- microwave landing systems
- midair collisions
- National Airspace System
- navigation aids
- runway incursions
- safety devices
- solar compasses
- terrorism
- threat evaluation
- weather
- wheel brakes

aircraft specifications

- GS specifications
. **aircraft specifications**
- RT ∞ aircraft
airspeed
ceiling (aircraft capability)
controllability
distance
flight characteristics
payloads

aircraft spin

DEF A prolonged stall in fixed-wing aircraft characterized by a sustained spiral descent, usually with the nose down.

- RT aerodynamic stalling
∞ aircraft
aircraft performance
aircraft safety
control stability
controllability
crash landing
flight hazards
flight safety
hazards
maneuvers
spin dynamics

aircraft stability

DEF The property of an aircraft to maintain its attitude or to resist displacement, and if displaced, to develop forces and moments tending to restore the original condition.

- GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **aircraft stability**
. . . . hovering stability
stability
. dynamic stability
. . motion stability
. . . **aircraft stability**
. . . . hovering stability
- RT aerodynamic balance
aerodynamic stability
∞ aircraft
attitude stability
buffeting
control stability
controllability
counterbalances
directional stability
flight envelopes
horizontal flight
lateral stability
liquid sloshing
longitudinal stability
low speed stability
pilot induced oscillation
static stability
structural stability

- turning flight
- upper surface blown flaps
- wind tunnel stability tests
- wing rock

aircraft structures

- UF *aircraft construction*
- GS **aircraft structures**
. airframes
. fuselages
- RT . plastic aircraft structures
aerodynamic interference
aeroelasticity
afterbodies
∞ aircraft
airfoils
boron-epoxy composites
canard configurations
canopies
centerbodies
channel wings
control surfaces
fairings
forebodies
hulls (structures)
interference fit
leading edge flaps
noses (forebodies)
oblique wings
pylon mounting
shells (structural forms)
spacecraft structures
streamlining
∞ structures
swing tail assemblies
swing wings
tail assemblies
wings

aircraft survivability

- RT ∞ aircraft
combat
∞ construction materials
durability
flight control
helicopters
life (durability)
∞ military aircraft
plastic aircraft structures
reinforced plastics
reliability
spacecraft survivability
survival
survival equipment
vulnerability

aircraft tires

- GS tires
. **aircraft tires**
- RT ∞ aircraft
aircraft equipment
landing gear
vehicle wheels

aircraft wakes

- GS wakes
. **aircraft wakes**
. . helicopter wakes
. . slipstreams
. . . propeller slipstreams
- RT ∞ aircraft
hypersonic wakes
laminar wakes
supersonic wakes
turbulent wakes
vortex advisory system
vortex alleviation

aircrews

- USE **flight crews**

airdrops

- RT air cargo
cargo
delivery
drag chutes
parachutes

- parafoils
- airfield surface movements**
 - RT air cargo
 - airports
 - hangars
 - materials handling
 - mobile lounges
 - runway incursions
 - runways
 - ∞ surfaces
 - taxiing
- airfields*
- USE **airports**
- airfoil characteristics*
- USE **airfoils**
- airfoil fences**
 - GS airfoils
 - . **airfoil fences**
 - RT boundary layer control
 - ∞ fences
 - vortex generators
 - wings
- airfoil oscillations**
 - DEF Periodic motions experienced by airfoils in aerodynamic conditions.
 - GS oscillations
 - . **airfoil oscillations**
 - . . wing oscillations
 - . . . wing rock
 - RT aerodynamic stability
 - aeroelasticity
 - aeroservoelasticity
 - flapping
 - flutter
 - flutter analysis
 - rotary stability
 - structural vibration
 - undamped oscillations
 - vibration
 - vibration mode
- airfoil profiles**
 - UF *aerodynamic chords*
 - airfoil sections*
 - airfoil thickness*
 - Clark Y airfoil*
 - GS **airfoil profiles**
 - . wing profiles
 - . . wing span
 - RT aerodynamic interference
 - airfoils
 - blade tips
 - ∞ cross sections
 - Joukowski transformation
 - Kutta-Joukowski condition
 - Lighthill method
 - nose tips
 - ∞ profiles
 - shape optimization
 - streamlining
 - supercritical airfoils
 - Theodorsen transformation
 - thickness
 - thickness ratio
 - thin airfoils
 - thin wings
 - tips
 - wedges
 - wing tips
 - airfoil sections*
 - USE **airfoil profiles**
 - airfoil thickness*
 - USE **airfoil profiles**
 - airfoils**
 - DEF Structures, pieces, or bodies, originally likened to foils or leaves in being wide and thin, designed to obtain a useful reaction on themselves in their motion through the air. Used for airfoil characteristics.
 - UF *airfoil characteristics*
 - GS **airfoils**
 - . aerial rudders
 - . ailerons
 - . . flaperons
 - . . spoiler slot ailerons
 - . airfoil fences
 - . circulation control airfoils
 - . . circulation control rotors
 - . drooped airfoils
 - . elevators (control surfaces)
 - . elevons
 - . flaps (control surfaces)
 - . . externally blown flaps
 - . . . upper surface blown flaps
 - . flaperons
 - . . jet flaps
 - . . split flaps
 - . . wing flaps
 - . . . leading edge flaps
 - . . . leading edge slats
 - . . . trailing edge flaps
 - . . . vortex flaps
 - . horizontal tail surfaces
 - . laminar flow airfoils
 - . propeller blades
 - . spoilers
 - . supercritical airfoils
 - . . supercritical wings
 - . supersonic airfoils
 - . tabs (control surfaces)
 - . thin airfoils
 - . . thin wings
 - . . . infinite span wings
 - . wings
 - . . aeroelastic research wings
 - . . cambered wings
 - . . caret wings
 - . . channel wings
 - . . cruciform wings
 - . . fixed wings
 - . . flexible wings
 - . . . parawings
 - . . . GAW-1 airfoil
 - . . . GAW-2 airfoil
 - . . joined wings
 - . . low aspect ratio wings
 - . . . delta wings
 - . . . trapezoidal wings
 - . . mission adaptive wings
 - . . oblique wings
 - . . rigid wings
 - . . rotary wings
 - . . . circulation control rotors
 - . . . lifting rotors
 - . . . bearingless rotors
 - . . . rigid rotors
 - . . . tilting rotors
 - . . . tip driven rotors
 - . . . x wing rotors
 - . . slender wings
 - . . infinite span wings
 - . . supercritical wings
 - . . swept wings
 - . . . swept forward wings
 - trapezoidal wings
 - sweptback wings
 - arrow wings
 - delta wings
 - trapezoidal wings
 - . . . swing wings
 - . . thin wings
 - . . . infinite span wings
 - . . . twisted wings
 - . . uncambered wings
 - . . . ring wings
 - . . . unswept wings
 - . . . infinite span wings
 - . . . rectangular wings
 - . . . ring wings
 - . . . variable sweep wings
 - RT aerodynamic configurations
 - aerodynamics
 - aircraft design
 - aircraft parts
 - aircraft structures
 - airfoil profiles
 - aspect ratio
 - ∞ blades
 - blade-vortex interaction
 - blunt leading edges
 - blunt trailing edges
- body-wing configurations
- camber
- control surfaces
- deicers
- deicing
- fins
- ∞ foils
 - foils (materials)
 - guide vanes
 - hydrofoils
 - interactional aerodynamics
 - jet vanes
 - leading edge thrust
 - leading edges
 - lift
 - lifting bodies
 - Lighthill method
 - monoplanes
 - rotor blades (turbomachinery)
 - rotors
 - rudders
 - sharp leading edges
 - stabilizers (fluid dynamics)
 - streamlined bodies
 - streamlining
 - tail assemblies
 - trailing edges
 - turbomachine blades
 - vanes
 - waveriders
 - wedges
- airframe materials**
 - GS aircraft construction materials
 - . **airframe materials**
 - RT airframes
 - aluminum-lithium alloys
 - composite materials
 - ∞ construction materials
 - functionally gradient materials
 - glass fiber reinforced plastics
 - ∞ materials
 - materials selection
 - structural design
 - structural members
- airframes**
 - DEF The assembled structural and aerodynamic components of an aircraft or rocket vehicle that support the different systems and subsystems integral to the vehicle.
 - GS aircraft structures
 - . **airframes**
 - frames
 - . **airframes**
 - RT aircraft construction materials
 - aircraft parts
 - airframe materials
 - bays (structural units)
 - canopies
 - control surfaces
 - engine airframe integration
 - fins
 - fuselages
 - landing gear
 - missile bodies
 - missile structures
 - nacelles
 - protuberances
 - tail assemblies
 - wing nacelle configurations
 - wings
- Airgeep aircraft*
- USE **VZ-8 aircraft**
- airglow**
 - DEF The quasi-steady radiant emission from the upper atmosphere as distinguished from the sporadic emission of the auroras. Used for atmospheric emission.
 - UF *atmospheric emission*
 - GS atmospheric radiation
 - . sky radiation
 - . . **airglow**
 - . . . geocoronal emissions
 - . . . nightglow
 - . . . twilight glow
 - electromagnetic radiation

airline operations

- . light (visible radiation)
- . . . sky radiation
- **airglow**
- geocoronal emissions
- nightglow
- twilight glow

RT

- aeronomy
- atmospheric ionization
- auroras
- chemiluminescence
- Earth atmosphere
- emission
- Fabry-Perot spectrometers
- light emission
- night sky
- oxygen spectra
- radiative recombination
- Rayleigh scattering
- sky brightness

airline operations

RT

- air cargo
- air traffic
- air transportation
- civil aviation
- commercial aircraft
- operating costs
- operational problems
- ∞ operations
- passengers
- short haul aircraft

airlock modules

DEF Modular chambers capable of being hermetically sealed that provide for passage between two places of different pressure as between an altitude chamber and the outside atmosphere.

GS

- compartments
- . air locks
- . . **airlock modules**
- modules
- . **airlock modules**

RT

- Apollo applications program
- multiple docking adapters
- Saturn 1 workshop
- Saturn 5 workshop
- Saturn workshops
- Skylab 1
- Skylab 2
- Skylab 3
- Skylab 4
- Skylab program
- space station modules
- spacecraft docking modules

airport beacons

GS

- landing aids
- . **airport beacons**
- . . discrete address beacon system
- navigation aids
- . beacons
- . . **airport beacons**
- . . . discrete address beacon system

RT

- radio beacons
- solar compasses

airport lights

GS

- landing aids
- . **airport lights**
- . . runway lights
- lighting equipment
- . luminaires
- . . **airport lights**
- . . . runway lights

RT

- searchlights

airport planning

GS

- planning
- . **airport planning**

RT

- ground support equipment
- heliports
- land use
- sites

airport security

DEF Organization of trained security personnel, surveillance and screening devices, and procedures used for the protection of airport and airline property, aircraft, passengers, employ-

ees, and visitors from injury, air piracy, and other unauthorized acts.

GS

- security
- . **airport security**

RT

- air piracy
- airports
- explosives detection
- ion mobility spectroscopy
- protection
- terrorism
- vulnerability

airport surface detection equipment

UF *ASDE*

RT

- air traffic control
- ∞ equipment
- ground based control
- radar equipment
- runway incursions
- search radar
- ∞ surfaces
- surveillance radar

airport towers

GS

- towers
- . **airport towers**

RT

- air traffic control
- air traffic controllers (personnel)
- airports
- ground based control
- heliports
- landing aids
- traffic control

airports

DEF An area of land or water that is used, or intended to be used, for the landing and takeoff of aircraft, including buildings and facilities, if any.

UF *airfields*

GS

- airports**
- . heliports

RT

- ∞ aeronautics
- air traffic control
- airfield surface movements
- airport security
- airport towers
- ∞ facilities
- hangars
- instrument landing systems
- landing aids
- landing mats
- military air facilities
- mobile lounges
- mooring
- National Airspace System
- navigation aids
- ∞ ports
- runways
- site selection
- ∞ strip

AIRS (reconnaissance sys)

USE **Airborne Integrated Reconnaissance System**

airships

DEF Propelled and steerable dirigibles dependent on gases for flotation. Used for aerostats and dirigibles.

UF *aerostats*
dirigibles

GS

- airships**
- . heavy lift airships

RT

- ∞ aircraft
- balloons
- gondolas
- inflatable structures
- ∞ military aircraft

airspace

DEF The atmosphere above a particular portion of the earth, usually defined by the boundaries of an area on the surface projected perpendicularly upward.

RT

- air law
- air traffic
- air traffic control
- aircraft approach spacing
- boundaries
- collision avoidance

flight paths
National Airspace System
National Airspace Utilization System

airspeed

GS

- rates (per time)
- . **airspeed**
- velocity
- . **airspeed**

RT

- aerodynamic stalling
- aircraft performance
- aircraft specifications
- boundary layer separation
- flight characteristics
- ground speed
- high speed
- low speed
- Mach number
- wind velocity

airworthiness

USE **aircraft reliability**

airworthiness requirements

USE **aircraft reliability**

Airy function

GS

- analysis (mathematics)
- . complex variables
- . . **Airy function**
- functions (mathematics)
- . **Airy function**

RT

- cylindrical bodies
- differential equations
- elastic properties
- harmonic functions
- Poisson ratio
- stress analysis

Aitken nuclei

DEF Microscopic particles in the atmosphere which serve as condensation nuclei for droplet growth during the rapid adiabatic expansion produced by an Aitken dust counter.

GS

- condensation nuclei
- . **Aitken nuclei**

RT

- aerosols
- atmospheric chemistry
- atmospheric composition
- cloud physics
- coagulation
- condensates
- crystal growth
- dust
- ice nuclei
- nucleation
- ∞ nuclei
- supercooling

AJ-10 engine

GS

- engines
- . rocket engines
- . . booster rocket engines
- . . . **AJ-10 engine**
- . . . liquid propellant rocket engines
- . . . **AJ-10 engine**

RT

- tartar missile

AJ-1000 engine

USE **M-1 engine**

Akebono satellite

USE **EXOS-D satellite**

akermanite

DEF A mineral of the melilite group. It is isomorphous with gehlenite.

GS

- calcium compounds
- . calcium carbonates
- . . **akermanite**
- . calcium oxides
- . . **akermanite**
- carbon compounds
- . carbonates
- . . calcium carbonates
- . . . **akermanite**
- chalcogenides
- . oxides
- . . metal oxides
- . . . alkaline earth oxides

- calcium oxides
- **akermanite**
- magnesium oxides
- **akermanite**
- magnesium compounds
- . magnesium oxides
- . . **akermanite**
- minerals
- . **akermanite**
- RT silicates
- silicon compounds
- silicon oxides
- Alabama**
- GS nations
- . United States
- . . **Alabama**
- RT Gulf of Mexico
- Tennessee Valley (AL-KY-TN)
- Aladin 2 aircraft**
- GS transport aircraft
- . **Aladin 2 aircraft**
- V/STOL aircraft
- . short takeoff aircraft
- . . **Aladin 2 aircraft**
- RT ∞ aircraft
- Alais meteorite**
- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- **Alais meteorite**
- chondrites
- carbonaceous chondrites
- **Alais meteorite**
- alanine**
- GS acids
- . amino acids
- . . **alanine**
- . . . phenylalanine
- . . . carboxylic acids
- . . . **alanine**
- . . . phenylalanine
- organic compounds
- . amino acids
- . . **alanine**
- . . . phenylalanine
- . . . carboxylic acids
- . . . **alanine**
- . . . phenylalanine
- RT proteins
- alarms*
- USE **warning systems**
- Alaska**
- GS nations
- . United States
- . . **Alaska**
- RT Aleutian Islands (US)
- Beaufort Sea (North America)
- Chena River Basin (AK)
- Cook Inlet (AK)
- Gulf of Alaska
- Prince William Sound (AK)
- Wrangell Mountains (AK)
- Albania**
- GS nations
- . **Albania**
- RT Europe
- albedo**
- DEF The ratio of the amount of electromagnetic radiation reflected by a body to the amount incident upon it. It is often expressed as a percentage, as, the albedo of the Earth is 34 percent.
- GS **albedo**
- . cosmic ray albedo
- . Earth albedo
- . lunar albedo
- RT absorptance
- cosmic rays
- Earth radiation budget experiment
- MISR (radiometry)
- optical properties
- planetary radiation
- reflectance
- solar radiation
- surface properties
- Alberta**
- GS nations
- . Canada
- . . **Alberta**
- albinism**
- GS diseases
- . **albinism**
- RT pigments
- skin (anatomy)
- albumins**
- GS biopolymers
- . proteins
- . . **albumins**
- organic compounds
- . proteins
- . . **albumins**
- RT elastin
- alcoholates*
- USE **alkoxides**
- alcohols**
- GS hydroxyl compounds
- . **alcohols**
- . . ethyl alcohol
- . . glycols
- . . isopropyl alcohol
- . . methyl alcohol
- . . phenols
- . . bisphenols
- . . cresols
- . . phloroglucinol
- . . thymol
- . . polyvinyl alcohol
- . . triols
- . . cyanuric acid
- RT alkoxides
- carbohydrates
- gasohol (fuel)
- glycerols
- hydroxyl radicals
- methoxy systems
- organic compounds
- thiols
- aldehydes**
- DEF Carbonyl groups to which a hydrogen atom is attached; the first stage of an alcohol; -CHO.
- GS **aldehydes**
- . acetaldehyde
- . acroleins
- . chloral
- . formaldehyde
- RT acetyl compounds
- furfuryl alcohol
- organic compounds
- retinene
- aldolase**
- GS biopolymers
- . proteins
- . . enzymes
- . . . **aldolase**
- organic compounds
- . proteins
- . . enzymes
- . . . **aldolase**
- RT muscles
- aldosterone**
- GS organic compounds
- . lipids
- . . steroids
- . . . corticosteroids
- **aldosterone**
- secretions
- . endocrine secretions
- . . hormones
- . . . corticosteroids
- **aldosterone**
- RT adrenal metabolism
- electrolyte metabolism
- alertness**
- RT arousal
- attention
- situational awareness
- wakefulness
- Aleutian Islands (US)**
- GS landforms
- . islands
- . . **Aleutian Islands (US)**
- RT Alaska
- archipelagoes
- island arcs
- United States
- alexandrite**
- (added November 1992)
- DEF A transparent variety of chrysoberl that has a grass-green or emerald green color in daylight and wine-red to brownish-red color by transmitted or incandescent artificial light.
- GS aluminum compounds
- . aluminum oxides
- . . **alexandrite**
- . . beryl
- . . . **alexandrite**
- beryllium compounds
- . beryl
- . . **alexandrite**
- . . beryllium oxides
- . . . **alexandrite**
- chalcogenides
- . oxides
- . . metal oxides
- . . . alkaline earth oxides
- beryllium oxides
- **alexandrite**
- aluminum oxides
- **alexandrite**
- minerals
- . beryl
- . . **alexandrite**
- silicon compounds
- . silicates
- . . beryl
- . . . **alexandrite**
- RT laser materials
- alfalfa**
- GS farm crops
- . **alfalfa**
- plants (botany)
- . **alfalfa**
- RT agriculture
- blight
- botany
- crop growth
- crop vigor
- ∞ crops
- curing
- Earth resources
- ∞ food
- grasses
- irrigation
- seeds
- Alfven waves*
- USE **magnetohydrodynamic waves**
- Al/GaAs*
- USE **aluminum gallium arsenides**
- algae**
- DEF Any plants of a group of unicellular and multicellular primitive organisms that include the Chlorella, Scenedesmus, and other genera. Used for algal bloom.
- UF *algal bloom*
- diatoms (unicellular plants)*
- GS plants (botany)
- . **algae**
- . . blue green algae
- . . . anabaena
- . . . Microcystis
- . . . Nostoc
- . . Chlorella
- . . Dunaliella
- . . porphyra

algebra

. . . scenedesmus
RT biochemical oxygen demand
bioconversion
chlorophylls
Euglena
lichens
marine biology
microorganisms
photosynthesis
phytoplankton
plankton
plastids
thermophiles
thermophilic plants
water pollution

algal bloom
USE **algae**

algebra
GS **algebra**
. binomial theorem
. current algebra
. determinants
. group theory
. homomorphisms
. . . automorphisms
. . . monoids
. . . subgroups
. lie groups
. spinor groups
. linear equations
. . Frowcs Williams-Hawkings equation
. linear evolution equations
. . Riccati equation
. linear transformations
. nonlinear equations
. . cubic equations
. . Duffing differential equation
. . Monge-Ampere equation
. . nonlinear evolution equations
. . quadratic equations
. . quartic equations
. polynomials
. . binomials
. . dyadics
. . Hermitian polynomial
. tensors
. . stress tensors
. vector spaces
. . Banach space
. . . Hilbert space
. . . . Sobolev space
. . matrices (mathematics)
. . . adjoints
. . . canonical forms
. . . eigenvalues
. . . eigenvectors
. . . Hessian matrices
. . . Jordan form
. . . stiffness matrix
. . Stokes theorem (vector calculus)
. U spin space
. vectors (mathematics)
. . . eigenvectors
. . . state vectors
. . . vorticity
RT analysis (mathematics)
∞ analyzing
Boolean algebra
coordinates
functions (mathematics)
homotropy
∞ mathematics
Schwartz inequality
∞ science
semimpiirical equations
∞ space
sums
uniqueness theorem

Algeria

GS nations
. **Algeria**
RT Africa

ALGOL

UF *algorithmic oriented language*
GS languages

. programming languages
. . **ALGOL**
RT computer programming
machine oriented languages

Algol engine

GS engines
. rocket engines
. . booster rocket engines
. . . **Algol engine**
. . solid propellant rocket engines
. . . **Algol engine**
RT Blue Scout rocket vehicle
Little Joe 2 launch vehicle
Scout launch vehicle

algorithmic oriented language

USE **ALGOL**

algorithms

DEF Special mathematical procedures for solving a particular type of problem.
GS mathematical logic
. **algorithms**
. . backpropagation (artificial intelligence)
. . genetic algorithms
. . greedy algorithms
. . parsing algorithms
. . simplex method
. . sorting algorithms
RT computer programming
computer programs
computer systems programs
computerized simulation
conjugate gradient method
data conversion routines
differential analyzers
factorization
fuzzy sets
fuzzy systems
Hessian matrices
mean square values
numerical analysis
numerical differentiation
parameterization
robustness (mathematics)
state estimation
systolic arrays

alignment

GS **alignment**
. self alignment
RT adjusting
bearing (direction)
clearances
collimation
correction
directivity
fitting
horizontal orientation
instrument orientation
look angles (electronics)
∞ orientation
ply orientation
polarization (spin alignment)
positioning
vertical orientation

∞ aliphatic compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aliphatic hydrocarbons
amines
fatty acids
molecular chains
organic compounds

aliphatic hydrocarbons

GS organic compounds
. hydrocarbons
. . **aliphatic hydrocarbons**
. . . alkanes
. . . . butanes
. . . . cetane
. . . . ethane
. . . . heptanes
. . . . methane
. . . . nitropropane
. . . . nonanes

. . . . octanes
. . . . paraffins
. ceresin
. pentanes
. neopentane
. . . . propane
. . . alkenes
. . . . butenes
. . . . ethylene
. . . . vinylidene
. . . . hexenes
. . . . propylene
. . . . trienes
. . . alkynes
. . . . acetylene
. . . . oxyacetylene
. . . dienes
. . . . butadiene
. . . . heptadiene
. . . . hexadiene
. . . . polybutadiene
. . . carotenoids
RT ∞ aliphatic compounds
terpenes

alkali halides

GS halogen compounds
. halides
. . metal halides
. . . **alkali halides**
. . . . cesium halides
. cesium bromides
. cesium fluorides
. cesium iodides
. . . . potassium iodides
. . . . sodium bromides
. . . . sodium chlorides
. . . . sodium fluorides
. . . . sodium iodides

∞ alkali metal compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *Group 1A compounds*
RT cesium compounds
∞ chemical compounds
fullerides
lithium compounds
∞ metal compounds
potassium compounds
rubidium compounds
sodium compounds

alkali metals

DEF Metals in group IA of the periodic system; namely, lithium, sodium, potassium, rubidium, cesium, and francium.

GS chemical elements
. **alkali metals**
. . cesium
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . cesium vapor
. . francium
. . lithium
. . . liquid lithium
. . . lithium isotopes
. . . potassium
. . . liquid potassium
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
. . rubidium
. . . rubidium isotopes
. . . . rubidium 86
. . sodium
. . . liquid sodium
. . . sodium isotopes
. . . . sodium 22
. . . . sodium 24
. . . sodium vapor
metals
. **alkali metals**
. . cesium
. . . cesium isotopes

- cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - . . cesium vapor
 - . . francium
 - . . lithium
 - . . liquid lithium
 - . . lithium isotopes
 - . . potassium
 - . . liquid potassium
 - . . potassium isotopes
 - potassium 38
 - potassium 39
 - potassium 40
 - . . rubidium
 - . . rubidium isotopes
 - rubidium 86
 - . . sodium
 - . . liquid sodium
 - . . sodium isotopes
 - sodium 22
 - sodium 24
 - sodium vapor
 - RT cesium alloys
 - metal vapors
- alkali vapor lamps**
- DEF Lamps in which light is produced by an electric discharge between electrodes in an alkali vapor at low or high pressures.
 - GS lighting equipment
 - . luminaires
 - . flash lamps
 - . . . **alkali vapor lamps**
 - RT lasers
 - luminescence
 - metal vapors
 - rare earth elements
- alkalies**
- UF *caustics*
 - GS bases (chemical)
 - . **alkalies**
 - . lithium hydroxides
 - . potassium hydroxides
 - . sodium hydroxides
 - RT alkalinity
 - carbonates
 - hydroxides
- alkaline batteries**
- GS electric generators
 - . direct power generators
 - . primary batteries
 - . . . **alkaline batteries**
 - electrochemical cells
 - . electric batteries
 - . primary batteries
 - . . . **alkaline batteries**
 - RT storage batteries
 - thermal batteries
- ∞ **alkaline earth compounds**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *Group 2A compounds*
 - RT alkaline earth metals
 - alkaline earth oxides
 - barium compounds
 - beryllium compounds
 - calcium compounds
 - ∞ chemical compounds
 - magnesium compounds
 - strontium compounds
 - strontium oxides
- alkaline earth metals**
- GS chemical elements
 - . **alkaline earth metals**
 - . barium isotopes
 - metals
 - . **alkaline earth metals**
 - . barium isotopes
 - RT ∞ alkaline earth compounds
- alkaline earth oxides**
- GS chalcogenides
 - . oxides
 - . metal oxides
- . . . **alkaline earth oxides**
 - barium oxides
 - beryllium oxides
 - alexandrite
 - calcium oxides
 - akermanite
 - magnesium oxides
 - akermanite
 - periclase
 - RT ∞ alkaline earth compounds
- alkalinity**
- DEF The state of being alkaline.
 - RT alkalies
 - bases (chemical)
 - chemical analysis
 - chemical composition
 - pH
 - salinity
 - soil sampling
 - water pollution
 - water quality
- alkaloids**
- GS bases (chemical)
 - . **alkaloids**
 - . atropine
 - . betaines
 - . caffeine
 - . colchicine
 - . ergotamine
 - . hyoscyne
 - . lysergine
 - . morphine
 - . nicotinamide
 - . nicotine
 - . pilocarpine
 - . reserpine
 - . strychnine
 - . tropanyl compounds
 - nitrogen compounds
 - . **alkaloids**
 - . atropine
 - . betaines
 - . caffeine
 - . colchicine
 - . ergotamine
 - . hyoscyne
 - . lysergine
 - . morphine
 - . nicotinamide
 - . nicotine
 - . pilocarpine
 - . reserpine
 - . strychnine
 - . tropanyl compounds
 - organic compounds
 - . cyclic compounds
 - . heterocyclic compounds
 - . . . **alkaloids**
 - atropine
 - betaines
 - caffeine
 - colchicine
 - ergotamine
 - hyoscyne
 - lysergine
 - morphine
 - nicotinamide
 - nicotine
 - pilocarpine
 - reserpine
 - strychnine
 - tropanyl compounds
 - organic compounds
 - . cyclic compounds
 - . heterocyclic compounds
 - . . . **alkaloids**
 - atropine
 - betaines
 - caffeine
 - colchicine
 - ergotamine
 - hyoscyne
 - lysergine
 - morphine
 - nicotinamide
 - nicotine
 - pilocarpine
 - reserpine
 - strychnine
 - tropanyl compounds
 - RT curare
 - drugs
 - marijuana
 - quinoline
- alkalosis**
- RT acidosis
 - hyperventilation
 - pH
 - pH factor
 - toxicity
- alkanes**
- UF *saturated hydrocarbons*
 - GS organic compounds
 - . hydrocarbons
- . . aliphatic hydrocarbons
 - . . . **alkanes**
 - butanes
 - cetane
 - ethane
 - heptanes
 - methane
 - nitropropane
 - nonanes
 - octanes
 - paraffins
 - ceresin
 - pentanes
 - neopentane
 - propane
 - RT hydrocarbon fuels
 - waxes
- alkenes**
- UF *olefins*
 - GS organic compounds
 - . hydrocarbons
 - . aliphatic hydrocarbons
 - . . **alkenes**
 - butenes
 - ethylene
 - vinylidene
 - hexenes
 - propylene
 - trienes
 - RT alkynes
 - oxetane polymers
 - terpenes
- alkoxides**
- (added January 1995)
 - UF *alcoholates*
 - GS chalcogenides
 - . oxides
 - . . **alkoxides**
 - RT alcohols
 - organometallic compounds
 - sol-gel processes
- alkyd resins**
- GS resins
 - . **alkyd resins**
 - RT adhesives
 - protective coatings
- alkyl compounds**
- GS **alkyl compounds**
 - . alkylidene
 - . cetyl compounds
 - . dibutyl compounds
 - . hexyl compounds
 - . isopropyl nitrate
 - . methyl nitrate
 - . propyl nitrate
 - . tetrabutyls
 - . triethyl compounds
 - . trimethyl compounds
 - RT ∞ chemical compounds
 - organic compounds
- alkylates**
- GS esters
 - . **alkylates**
 - RT alkylation
- alkylation**
- UF *oxyalkylation*
 - GS chemical reactions
 - . **alkylation**
 - RT alkylates
 - Friedel-Craft reaction
 - methylation
 - refining
- alkylferrocene**
- GS iron compounds
 - . ferrocenes
 - . . **alkylferrocene**
 - organometallic compounds
 - . ferrocenes
 - . . **alkylferrocene**
- alkylidene**
- GS alkyl compounds

alkynes

- . alkylidene
- alkynes**
 - GS organic compounds
 - . hydrocarbons
 - . . . aliphatic hydrocarbons
 - **alkynes**
 - acetylene
 - oxyacetylene
 - RT alkenes
 - . cyclic AMP
 - . cyclic hydrocarbons

- all sky photography**
 - GS imagery
 - . photography
 - . . . **all sky photography**
 - RT black and white photography
 - . cloud photographs
 - . cloud photography
 - . wide angle lenses

- Allegheny Plateau (US)**
 - GS land
 - . **Allegheny Plateau (US)**
 - . landforms
 - . . . terraces (landforms)
 - . . . plateaus
 - **Allegheny Plateau (US)**
 - RT Maryland
 - . Pennsylvania
 - . Virginia
 - . West Virginia

- Allende meteorite**
 - GS celestial bodies
 - . meteorites
 - . . . stony meteorites
 - carbonaceous meteorites
 - carbonaceous chondrites
 - **Allende meteorite**
 - . . . chondrites
 - carbonaceous chondrites
 - **Allende meteorite**

- allergic diseases**
 - RT anaphylaxis
 - . contact dermatitis
 - . immunology

- allocations**
 - UF *assignment*
 - GS **allocations**
 - . resource allocation
 - RT allowances
 - . budgeting
 - . commercial energy
 - . cost effectiveness
 - . distributing
 - ∞ distribution
 - . domestic energy
 - . economic analysis
 - . economic factors
 - . engineering management
 - . estimates
 - . federal budgets
 - . financial management
 - . industrial energy
 - . matrix management
 - . procurement management
 - . project planning
 - . research management
 - . revenue
 - . transportation energy

- allotropy**
 - RT austenite
 - . crystal structure
 - . polymorphism

- allowances**
 - RT allocations
 - . clearances
 - ∞ compensation
 - . precision
 - . productivity
 - . regulations
 - . reliability
 - . sampling

tolerances (mechanics)

- alloxan**
 - GS organic compounds
 - . cyclic compounds
 - . . . heterocyclic compounds
 - pyrimidines
 - **alloxan**
 - RT thymidine
 - . thymine
 - . uracil
 - . uric acid

- alloying**
 - RT additives
 - . alloys
 - . aluminum-lithium alloys
 - . bimetals
 - . binary alloys
 - . eutectic alloys
 - . eutectics
 - . intermetallics
 - ∞ metallurgy
 - . mischmetal
 - . powder metallurgy
 - . pyrometallurgy
 - . quaternary alloys
 - . solid solutions
 - . ternary alloys

alloys
 DEF Substances having metallic properties and being composed of two or more chemical elements of which at least one is an elemental metal.

- GS **alloys**
 - . antimony alloys
 - . . . babbitt metal
 - . . . arsenic alloys
 - . . . barium alloys
 - . . . bearing alloys
 - . . . binary alloys
 - . . . bismuth alloys
 - . . . boron alloys
 - . . . cadmium alloys
 - . . . cast alloys
 - . . . cesium alloys
 - . . . chromium alloys
 - . . . Astroloy (trademark)
 - . . . chrominum steels
 - . . . Rene 41
 - . . . Rene 63
 - . . . Rene 77
 - . . . Rene 95
 - . . . cobalt alloys
 - . . . Astroloy (trademark)
 - . . . Rene 41
 - . . . Rene 63
 - . . . Rene 77
 - . . . Rene 95
 - . . . constantan
 - . . . copper alloys
 - . . . babbitt metal
 - . . . brasses
 - . . . bronzes
 - . . . Manganin (trademark)
 - . . . eutectic alloys
 - . . . gallium alloys
 - . . . germanium alloys
 - . . . gold alloys
 - . . . hafnium alloys
 - . . . heat resistant alloys
 - nimonic alloys
 - refractory metal alloys
 - molybdenum alloys
 - Rene 41
 - Rene 63
 - Rene 77
 - Rene 95
 - . . . niobium alloys
 - . . . osmium alloys
 - . . . rhenium alloys
 - . . . tantalum alloys
 - . . . tungsten alloys
 - . . . Udimet alloys
 - Waspaloy
 - high strength alloys
 - Astroloy (trademark)
 - high strength steels
 - maraging steels

- . indium alloys
- . iridium alloys
- . iron alloys
 - . . . steels
 - bainitic steel
 - carbon steels
 - low carbon steels
 - chromium steels
 - Croloy
 - high strength steels
 - maraging steels
 - nickel steels
 - stainless steels
 - austenitic stainless steels
 - ferritic stainless steels
 - martensitic stainless steels
 - . Kovar (trademark)
 - . lead alloys
 - . light alloys
 - . . . aluminum alloys
 - aluminum-lithium alloys
 - beryllium alloys
 - magnesium alloys
 - . . . liquid alloys
 - . . . lithium alloys
 - aluminum-lithium alloys
 - manganese alloys
 - Manganin (trademark)
 - mercury alloys
 - mercury amalgams
 - monotectic alloys
 - mulberry (alloy)
 - nickel alloys
 - Astroloy (trademark)
 - Hastelloy (trademark)
 - Inconel (trademark)
 - kamacite
 - Monel (trademark)
 - Nichrome (trademark)
 - nitinol alloys
 - Rene 41
 - Rene 63
 - Rene 77
 - Rene 95
 - Udimet alloys
 - Waspaloy
 - palladium alloys
 - Permalloys (trademark)
 - platinum alloys
 - plutonium alloys
 - potassium alloys
 - quaternary alloys
 - rare earth alloys
 - erbium alloys
 - gadolinium alloys
 - lanthanum alloys
 - mischmetal
 - neodymium alloys
 - rhodium alloys
 - ruthenium alloys
 - selenium alloys
 - shape memory alloys
 - nitinol alloys
 - silicon alloys
 - silver alloys
 - sodium alloys
 - solders
 - syntectic alloys
 - tellurium alloys
 - ternary alloys
 - Astroloy (trademark)
 - thallium alloys
 - thorium alloys
 - tin alloys
 - babbitt metal
 - titanium alloys
 - nitinol alloys
 - uranium alloys
 - vanadium alloys
 - wrought alloys
 - yttrium alloys
 - zinc alloys
 - zirconium alloys
 - Zircaloy (trademark)
 - Zircaloy 2 (trademark)
 - . RT alloying
 - . bimetals
 - . binary systems (materials)
 - . dispersion strengthening

embedded atom method
 eutectic composites
 eutectics
 ferrous metals
 hardeners
 heat treatment
 intermetallics
 Kondo effect
 Laves phases
 liquid phases
 metallography
 metalloids
 ∞ metallurgy
 metals
 mixtures
 oxide dispersion strengthening
 phase diagrams
 powder metallurgy
 precipitates
 rheocasting
 solid solutions
 stress relieving
 ternary systems

alluvium

DEF Soil, the constituents of which have been transported in suspension by flowing water and subsequently deposited by sedimentation.
 GS soils
 . **alluvium**
 RT clays
 deltas
 fans (landforms)
 floods
 gravels
 hydrology
 mud
 rivers
 sands
 sedimentary rocks
 sediments
 streams
 water flow

all-weather air navigation

GS navigation
 . air navigation
 . . **all-weather air navigation**
 RT Doppler navigation
 inertial navigation
 navigation aids
 radar navigation
 radio navigation
 solar compasses
 Tacan

all-weather landing systems

GS landing aids
 . instrument landing systems
 . . **all-weather landing systems**
 RT aircraft landing
 aircraft safety
 flight safety
 low visibility
 ∞ systems

allyl compounds

RT ∞ chemical compounds
 diallyl compounds

almucantar

USE **elevation angle**

Aloha system

DEF A multiple random access communications scheme in which there is a nonfixed allocation of channel capacity, so that the channel is available to any terminal whenever it has a packet ready for transmission.
 GS networks
 . communication networks
 . . **Aloha system**
 telecommunication
 . multiple access
 . . **Aloha system**
 . packet transmission
 . . **Aloha system**
 transmission
 . signal transmission
 . . data transmission

. . . multiple access
 **Aloha system**
 . . . packet transmission
 **Aloha system**
 RT channel capacity
 channel noise
 code division multiple access
 computer networks
 frequency division multiple access
 packets (communication)
 random access
 satellite transmission
 ∞ systems
 time division multiple access
 transmission efficiency
 VSAT (network)

Alouette 1 satellite

UF *S-27 satellite*
 GS artificial satellites
 . Alouette satellites
 . . **Alouette 1 satellite**
 Canadian spacecraft
 . Alouette satellites
 . . **Alouette 1 satellite**
 RT ionospheric sounding

Alouette 2 satellite

GS artificial satellites
 . Alouette satellites
 . . **Alouette 2 satellite**
 . ISIS satellites
 . . **Alouette 2 satellite**
 Canadian spacecraft
 . Alouette satellites
 . . **Alouette 2 satellite**
 RT ionospheric sounding

Alouette 3 helicopter

USE **SE-3160 helicopter**

Alouette B satellite

GS artificial satellites
 . Alouette satellites
 . . **Alouette B satellite**
 Canadian spacecraft
 . Alouette satellites
 . . **Alouette B satellite**
 RT ISIS-X

Alouette helicopters

GS Sud Aviation aircraft
 . **Alouette helicopters**
 . . SA-330 helicopter
 . . SE-3160 helicopter
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **Alouette helicopters**
 SA-330 helicopter
 SE-3160 helicopter
 RT ∞ aircraft

Alouette project

GS programs
 . projects
 . . **Alouette project**
 . space programs
 . . Canadian space program
 . . . **Alouette project**
 RT cosmic noise
 data acquisition
 ionospheric sounding
 ISIS-A

Alouette satellites

GS artificial satellites
 . **Alouette satellites**
 . . Alouette 1 satellite
 . . Alouette 2 satellite
 . . Alouette B satellite
 Canadian spacecraft
 . **Alouette satellites**
 . . Alouette 1 satellite
 . . Alouette 2 satellite
 . . Alouette B satellite
 RT ISIS satellites

alpha decay

DEF The radioactive transformation of a nu-

clide by alpha-particle emission.
 GS decay
 . radioactive decay
 . . **alpha decay**
 nuclear reactions
 . radioactive decay
 . . **alpha decay**
 RT fine structure
 selection rules (nuclear physics)

Alpha jet aircraft

GS attack aircraft
 . fighter aircraft
 . . **Alpha jet aircraft**
 jet aircraft
 . **Alpha jet aircraft**
 training aircraft
 . **Alpha jet aircraft**
 RT ∞ aircraft
 ∞ military aircraft

Alpha Magnetic Spectrometer

(added June 1998)
 UF *AMS (spectrometer)*
 GS measuring instruments
 . spectrometers
 . . **Alpha Magnetic Spectrometer**
 RT antimatter
 Cerenkov counters
 cosmic rays
 dark matter
 International Space Station
 interstellar matter
 magnetic spectroscopy
 space station payloads
 spaceborne astronomy

alpha particles

SN (EMITTED BY NUCLEI)
 DEF Positively charged particles emitted from the nuclei of certain atoms during radioactive disintegration. Used for alpha radiation.
 UF *alpha radiation*
 GS ionizing radiation
 . **alpha particles**
 particles
 . charged particles
 . . energetic particles
 . . . nuclei (nuclear physics)
 **alpha particles**
 . corpuscular radiation
 . . energetic particles
 . . . nuclei (nuclear physics)
 **alpha particles**
 . elementary particles
 . . bosons
 . . . **alpha particles**
 . nuclear particles
 . . bosons
 . . . **alpha particles**
 RT alphas
 corpuscular radiation
 cosmic rays
 deuteron irradiation
 deuterons
 flux density
 helium
 helium ions
 ions
 nuclear radiation
 nucleons
 protons
 ∞ radiation
 radioactivity
 solar wind velocity
 tritons

alpha plasma devices

GS plasma accelerators
 . **alpha plasma devices**
 RT ∞ devices
 Hall accelerators
 magnetohydrodynamics
 plasma physics
 plasmas (physics)

alpha radiation

USE **alpha particles**

alphabets

RT abbreviations

alphanumeric characters

alphanumeric characters
coding
languages
symbols

alphanumeric characters

DEF Characters in a set that contain both letters and digits, but they usually also contain other characters such as punctuation symbols.

GS symbols
. alphanumeric characters
. . . digits
. . . . binary digits
RT alphabets
instruction sets (computers)
light emitting diodes
∞ numbers

alphatrons

GS measuring instruments
. pressure gages
. . . vacuum gages
. . . . ionization gages
. . . . **alphatrons**
vacuum apparatus
. vacuum gages
. . . ionization gages
. . . **alphatrons**
RT alpha particles

Alpine meteorology

DEF Wind, precipitation, atmospheric physics, and other climatological phenomena peculiar to the Alps and/or other similar mountainous areas.

GS meteorology
. **Alpine meteorology**
RT aeronomy
clouds (meteorology)
nephanalysis
precipitation (meteorology)
storms (meteorology)
weather
wind (meteorology)

Alps Mountains (Europe)

GS landforms
. mountains
. . **Alps Mountains (Europe)**
RT Austria
Europe
Italy
Switzerland
West Germany

ALS (launch system)

USE **Advanced Launch System (STS)**

ALSEP

USE **Apollo Lunar Surface Experiments Package**

Altair engine

USE **X-248 engine**

Altair Lunar Lander

(added November 2008)

DEF The lunar landing module of the Constellation program. The lander is capable of landing four astronauts on the moon, providing life support and a base for weeklong initial surface exploration missions, and returning the crew to the Orion spacecraft that will return them to Earth.

GS lunar spacecraft
. lunar landing modules
. . **Altair Lunar Lander**
manned spacecraft
. **Altair Lunar Lander**
modules
. spacecraft modules
. . . landing modules
. . . . lunar landing modules
. . . . **Altair Lunar Lander**
soft landing spacecraft
. landing modules
. . lunar landing modules
. . . **Altair Lunar Lander**
spacecraft components
. spacecraft modules

. . landing modules
. . . lunar landing modules
. . . . **Altair Lunar Lander**
RT Ares 5 cargo launch vehicle
Constellation program
lunar bases
lunar exploration
lunar landing
lunar logistics

alteration

USE **revisions**

alternating current

UF **AC (current)**
GS electric current
. **alternating current**
electricity
. **alternating current**
RT current converters (AC to DC)
direct current
induction motors
inverted converters (DC to AC)
voltage converters (AC to AC)

alternating current generators

USE **AC generators**

alternating direction implicit methods

UF **ADI methods**
GS problem solving
. **alternating direction implicit methods**
RT differential equations
numerical analysis
partial differential equations

alternations

GS variations
. periodic variations
. . **alternations**
RT cycles
intervals
rhythm (biology)

alternatives

RT options
substitutes
variations

alternators (generators)

USE **AC generators**

altimeters

DEF Instruments for measuring height above a reference datum.
GS measuring instruments
. distance measuring equipment
. . **altimeters**
. . . laser altimeters
. . . . radio altimeters
RT aircraft instruments
altimetry
altitude
approach indicators
astrolabes
barometers
flight instruments
hypsonometers
landing instruments
navigation aids
navigation instruments
position indicators
range finders
rate of climb indicators
satellite altimetry

altimetry

GS **altimetry**
. satellite altimetry
RT altimeters
altitude
elevation
geodesy
geoids
radar measurement
topography

altitude

DEF In astronomy, angular displacement

above the horizon. Also height, especially radial distance as measured above a given datum, as average sea level.

GS **altitude**
. flight altitude
. high altitude
. low altitude
. midaltitude
. sea level
RT altimeters
altimetry
apexes
azimuth
distance
elevation
elevation angle
height
position (location)

altitude acclimatization

DEF A physiological adaptation to reduced atmospheric and oxygen pressure.

GS adaptation
. acclimatization
. . **altitude acclimatization**
RT mountain inhabitants

altitude control

RT ∞ control
laser altimeters
lateral control
longitudinal control
spacing

altitude sickness

DEF In general, any sickness brought on by exposure to reduced oxygen tension and barometric pressure.

GS sicknesses
. **altitude sickness**
RT aeroembolism
aerosinusitis
aerospace medicine
decompression sickness

altitude simulation

UF **simulated altitude**
GS simulation
. environment simulation
. . **altitude simulation**
RT computerized simulation
flight simulation
high altitude environments
hypobaric atmospheres
landing simulation
space environment simulation
thermal simulation
training devices
vacuum chambers

altitude tests

GS **altitude tests**
. high altitude tests
RT engine tests
flight tests
full scale tests
high altitude environments
test vehicles
∞ tests

altitude tolerance

GS tolerances (physiology)
. **altitude tolerance**
RT high altitude breathing
high altitude environments
high altitude pressure
hypobaric atmospheres
low pressure

ALU (computer components)

USE **arithmetic and logic units**

alum

GS aluminum compounds
. **alum**
potassium compounds
. **alum**
sulfur compounds
. sulfates

- . . **alum**
- alumina*
- USE **aluminum oxides**
- aluminates**
 - GS aluminum compounds
 - . **aluminates**
 - RT aluminum oxides
 - ∞ oxygen compounds
 - spinel
- aluminides**
 - DEF Intermetallic compounds of aluminum and a transition metal.
 - GS aluminum compounds
 - . **aluminides**
 - . . iron aluminides
 - . . nickel aluminides
 - . . titanium aluminides
 - RT aluminum alloys
 - aluminum coatings
 - heat resistant alloys
 - intermetallics
 - nickel alloys
 - protective coatings
 - titanium alloys
- aluminizing*
- USE **aluminum coatings**
- aluminum**
 - GS chemical elements
 - . **aluminum**
 - . . aluminum isotopes
 - . . . aluminum 26
 - . . . aluminum 27
 - metals
 - . **aluminum**
 - . . aluminum isotopes
 - . . . aluminum 26
 - . . . aluminum 27
 - RT aluminum alloys
 - Boral
 - Borsic (tradename)
 - cryolite
 - dawsonite
 - powdered aluminum
 - reaction bonding
 - sialon
 - sintered aluminum powder
- aluminum 26**
 - GS chemical elements
 - . aluminum
 - . . aluminum isotopes
 - . . . **aluminum 26**
 - . nuclides
 - . . isotopes
 - . . . aluminum isotopes
 - **aluminum 26**
 - metals
 - . aluminum
 - . . aluminum isotopes
 - . . . **aluminum 26**
- aluminum 27**
 - GS chemical elements
 - . aluminum
 - . . aluminum isotopes
 - . . . **aluminum 27**
 - . nuclides
 - . . isotopes
 - . . . aluminum isotopes
 - **aluminum 27**
 - metals
 - . aluminum
 - . . aluminum isotopes
 - . . . **aluminum 27**
- aluminum alloys**
 - GS alloys
 - . light alloys
 - . . **aluminum alloys**
 - . . . aluminum-lithium alloys
 - RT aluminides
 - aluminum
 - bearing alloys
 - friction stir welding
 - gallium alloys
- indium alloys
- iron aluminides
- lamella (metallurgy)
- lithium alloys
- mischmetal
- silicon alloys
- vanadium alloys
- aluminum antimonides**
 - GS aluminum compounds
 - . **aluminum antimonides**
 - antimony compounds
 - . antimonides
 - . . **aluminum antimonides**
- aluminum arsenides**
 - DEF Binary compounds of aluminum with negative, trivalent arsenic.
 - GS aluminum compounds
 - . **aluminum arsenides**
 - . . aluminum gallium arsenides
 - . . indium aluminum arsenides
 - arsenic compounds
 - . arsenides
 - . . **aluminum arsenides**
 - . . . aluminum gallium arsenides
 - . . . indium aluminum arsenides
 - RT semiconductors (materials)
- aluminum borohydrides**
 - GS aluminum compounds
 - . aluminum hydrides
 - . . **aluminum borohydrides**
 - boron compounds
 - . borohydrides
 - . . **aluminum borohydrides**
 - . boron hydrides
 - . . **aluminum borohydrides**
 - hydrogen compounds
 - . hydrides
 - . . borohydrides
 - . . . **aluminum borohydrides**
 - . boron hydrides
 - . . . **aluminum borohydrides**
 - . metal hydrides
 - . . . aluminum hydrides
 - **aluminum borohydrides**
- aluminum boron composites**
 - DEF Structural materials composed of aluminum alloys reinforced with boron fibers (filaments).
 - GS composite materials
 - . boron reinforced materials
 - . . **aluminum boron composites**
 - . metal matrix composites
 - . . **aluminum boron composites**
 - RT boron fibers
 - fiber composites
- aluminum carbides**
 - GS aluminum compounds
 - . **aluminum carbides**
 - carbon compounds
 - . carbides
 - . . **aluminum carbides**
- aluminum chlorides**
 - GS aluminum compounds
 - . **aluminum chlorides**
 - halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **aluminum chlorides**
 - . halides
 - . . chlorides
 - . . . **aluminum chlorides**
 - . metal halides
 - . . . **aluminum chlorides**
- aluminum coatings**
 - UF *aluminizing*
 - GS coatings
 - . metal coatings
 - . . **aluminum coatings**
 - RT aluminides
- aluminum compounds**
 - GS **aluminum compounds**
 - . alum
- . aluminates
- . aluminides
- . . iron aluminides
- . . nickel aluminides
- . . titanium aluminides
- . aluminum antimonides
- . aluminum arsenides
- . . aluminum gallium arsenides
- . . indium aluminum arsenides
- . aluminum carbides
- . aluminum chlorides
- . aluminum fluorides
- . aluminum hydrides
- . . aluminum borohydrides
- . aluminum nitrides
- . aluminum oxides
- . . alexandrite
- . . sapphire
- . aluminum perchlorates
- . aluminum silicates
- . . andesite
- . . feldspars
- . . gehlenite
- . . kaolinite
- . . montmorillonite
- . . pyrophyllite
- . . . plagioclase
- . beryl
- . . alexandrite
- . cordierite
- . cryolite
- . lithium aluminum hydrides
- . muscovite
- . nepheline
- . nephelite
- . organic aluminum compounds
- . spodumene
- . tourmaline
- RT ∞ chemical compounds
- ∞ Group 3A compounds
- ∞ metal compounds
- metal fuels
- metal propellants
- aluminum fluorides**
 - GS aluminum compounds
 - . **aluminum fluorides**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **aluminum fluorides**
 - . halides
 - . . fluorides
 - . . . metal fluorides
 - **aluminum fluorides**
 - . metal halides
 - . . . metal fluorides
 - **aluminum fluorides**
- aluminum gallium arsenide lasers**
(added November 1991)
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **aluminum gallium arsenide lasers**
 - . . solid state lasers
 - . . . **aluminum gallium arsenide lasers**
 - stimulated emission devices
 - . lasers
 - . . semiconductor lasers
 - . . . **aluminum gallium arsenide lasers**
 - . . solid state lasers
 - . . . **aluminum gallium arsenide lasers**
 - RT gallium arsenide lasers
 - injection lasers
 - waveguide lasers
- aluminum gallium arsenides**
 - DEF Compounds exhibiting characteristics suitable for use in laser devices, light-emitting diodes, solar cells, etc. Used for AlGaAs.
 - UF AlGaAs
 - GS aluminum compounds
 - . aluminum arsenides

aluminum graphite composites

. . . aluminum gallium arsenides

arsenic compounds

. arsenides

. . . aluminum arsenides

. . . . **aluminum gallium arsenides**

. . . gallium arsenides

. . . . **aluminum gallium arsenides**

gallium compounds

. gallium arsenides

. . . **aluminum gallium arsenides**

RT MODFETS

negative resistance devices

aluminum graphite composites

DEF Structural materials composed of aluminum alloys reinforced with graphite.

GS composite materials

. metal matrix composites

. . . **aluminum graphite composites**

RT fiber composites

graphite

aluminum hydrides

GS aluminum compounds

. **aluminum hydrides**

. . aluminum borohydrides

hydrogen compounds

. hydrides

. . metal hydrides

. . . **aluminum hydrides**

. . . . aluminum borohydrides

aluminum isotopes

GS chemical elements

. aluminum

. . **aluminum isotopes**

. . . aluminum 26

. . . aluminum 27

. nuclides

. . isotopes

. . . **aluminum isotopes**

. . . . aluminum 26

. . . . aluminum 27

metals

. aluminum

. . **aluminum isotopes**

. . . aluminum 26

. . . aluminum 27

aluminum nitrides

GS aluminum compounds

. **aluminum nitrides**

nitrogen compounds

. nitrides

. . metal nitrides

. . . **aluminum nitrides**

aluminum oxides

UF *alumina*

corundum

GS aluminum compounds

. **aluminum oxides**

. . alexandrite

. . sapphire

chalcogenides

. oxides

. . metal oxides

. . . **aluminum oxides**

. . . . alexandrite

. . . . sapphire

RT

abrasives

aluminates

bauxite

energy absorption films

gehlenite

kaolinite

nanocomposites

plagioclase

pyrophyllite

ruby

thermites

aluminum perchlorates

GS aluminum compounds

. **aluminum perchlorates**

halogen compounds

. chlorine compounds

. . perchlorates

. . . aluminum perchlorates

aluminum silicates

GS aluminum compounds

. **aluminum silicates**

. . andesite

. . feldspars

. . gehlenite

. . kaolinite

. . montmorillonite

. . pyrophyllite

. . . plagioclase

silicon compounds

. silicates

. . **aluminum silicates**

. . . andesite

. . . feldspars

. . . gehlenite

. . . kaolinite

. . . montmorillonite

. . . pyrophyllite

. . . . plagioclase

RT minerals

mullites

aluminum-lithium alloys

(added August 1991)

DEF Light alloys consisting primarily of aluminum and lithium.

GS alloys

. light alloys

. . aluminum alloys

. . . **aluminum-lithium alloys**

. . lithium alloys

. . **aluminum-lithium alloys**

RT aircraft construction materials

airframe materials

alloying

copper alloys

high strength alloys

magnesium alloys

alveolar air

DEF The respiratory air in the alveoli (air sacs) deep within the lungs.

GS gases

. gas mixtures

. . air

. . . **alveolar air**

mixtures

. solutions

. . gas mixtures

. . . air

. . . . **alveolar air**

RT exhalation

expired air

lungs

alveoli

DEF The terminal air sacs deep within the lungs.

GS anatomy

. respiratory system

. . lungs

. . . **alveoli**

RT lung morphology

pulmonary circulation

pulmonary functions

respiration

AM (modulation)

USE **amplitude modulation**

AM-1 (EOS) spacecraft

(added June 1999)

USE **Terra spacecraft**

amalgams

USE **mercury amalgams**

Amalthea

DEF Innermost satellite of Jupiter.

GS celestial bodies

. natural satellites

. . Jupiter satellites

. . . **Amalthea**

RT Jupiter (planet)

solar system

Amazon region (South America)

GS regions

. tropical regions

. . **Amazon region (South America)**

RT Brazil

forests

river basins

rivers

Amberlite (trademark)

RT asbestos

thermal insulation

ambience

RT acoustic measurement

environmental monitoring

environments

noise (sound)

pollution monitoring

ambient temperature

DEF Temperature of surrounding medium.

Used for environmental temperature.

UF *environmental temperature*

GS temperature

. **ambient temperature**

RT atmospheric temperature

operating temperature

room temperature

satellite temperature

ambiguity

RT intelligibility

positioning

ambipolar diffusion

GS diffusion

. **ambipolar diffusion**

RT electron diffusion

electron mobility

ionic diffusion

ionic mobility

plasma diffusion

ambit

USE **field theory (physics)**

ambulances

RT medical services

∞ military vehicles

safety devices

American Indians

RT anthropology

culture (social sciences)

ethnic factors

minorities

races (anthropology)

americium

GS chemical elements

. actinide series

. . transuranium elements

. . . **americium**

. . . . americium isotopes

. americium 241

. nuclides

. . isotopes

. . . radioactive isotopes

. . . . transuranium elements

. **americium**

. americium isotopes

. americium 241

metals

. actinide series

. . transuranium elements

. . . **americium**

. . . . americium isotopes

. americium 241

americium 241

GS chemical elements

. actinide series

. . transuranium elements

. . . americium

. . . . americium isotopes

. **americium 241**

. nuclides

. . isotopes

- . . . radioactive isotopes
- transuranium elements
- americium
- americium isotopes
- **americium 241**
- metals
- . actinide series
- . . transuranium elements
- . . . americium
- americium isotopes
- **americium 241**
- americium isotopes**
- GS chemical elements
- . actinide series
- . . transuranium elements
- . . . americium
- **americium isotopes**
- americium 241
- . nuclides
- . . isotopes
- . . . radioactive isotopes
- transuranium elements
- americium
- **americium isotopes**
- americium 241
- metals
- . actinide series
- . . transuranium elements
- . . . americium
- **americium isotopes**
- americium 241
- amidase**
- GS biopolymers
- . proteins
- . . enzymes
- . . . **amidase**
- organic compounds
- . proteins
- . . enzymes
- . . . **amidase**
- RT amino acids
- amides**
- GS nitrogen compounds
- . **amides**
- . . acetanilide
- . . acetazolamide
- . . carbamides
- . . cyanamides
- . . formhydroxamic acid
- . . nicotinamide
- . . oxamic acids
- . . polyimides
- . . . bismaleimide
- . . . Kapton (trademark)
- . . succinimides
- . . ureas
- . . . difluorourea
- . . . thioureas
- . . . thiuronium
- RT imides
- phthalimides
- amines**
- GS organic compounds
- . **amines**
- . . aminophylline
- . . amphetamines
- . . . methamphetamine
- . . aniline
- . . catecholamine
- . . . epinephrine
- . . . norepinephrine
- . . cysteamine
- . . diamines
- . . . ethylenediamine
- . . . guanidines
- guanethidine
- triaminoguanidinium azide
- . . difluorourea
- . . dimenhydrinate
- . . dimethylhydrazines
- . . diphenyl hydantoin
- . . ergotamine
- . . fluoroamines
- . . . nitrofluoroamines
- . . . trifluoroamine oxide
- . . gallamine triethiodide
- . . hexamethylenetetramine
- . . histidine
- . . hydroxylamine sulfate
- . . hyoscine
- . . mecamylamine
- . . melamine
- . . methylene diamine
- . . monoethanolamine (MEA)
- . . nitroamines
- . . nitrosamine
- . . promethazine
- . . tetrafluorohydrazine
- . . tetryl
- . . thiuronium
- . . trinitramine
- . . tryptamines
- . . . melatonin
- . . . serotonin
- . . . acetylcholine
- RT ∞ aliphatic compounds
- histamines
- hydrazines
- hydrocarbon fuels
- imines
- Lewis base
- nitrosyls
- phenolic epoxy resins
- rhodamine
- amino acids**
- GS acids
- . **amino acids**
- . . alanine
- . . . phenylalanine
- . . aspartic acid
- . . cysteine
- . . dopa
- . . folic acid
- . . glutamic acid
- . . glutamine
- . . glycine
- . . hippuric acid
- . . histidine
- . . leucine
- . . . norleucine
- . . lysine
- . . melanoidin
- . . methionine
- . . thyroxine
- . . tryptophan
- . . tyrosine
- organic compounds
- . **amino acids**
- . . alanine
- . . . phenylalanine
- . . aspartic acid
- . . cysteine
- . . dopa
- . . folic acid
- . . glutamic acid
- . . glutamine
- . . glycine
- . . hippuric acid
- . . histidine
- . . leucine
- . . . norleucine
- . . lysine
- . . melanoidin
- . . methionine
- . . thyroxine
- . . tryptophan
- . . tyrosine
- RT adenosine triphosphate
- adrenocorticotropin (ACTH)
- amidase
- aspartates
- cyclic AMP
- cysteamine
- lipids
- peptides
- polypeptides
- protoproteins
- synthetic food
- uridylic acid
- zwitterions
- amino radical**
- GS hydrogen compounds
- . hydrides
- . . nitrogen hydrides
- . . . **amino radical**
- nitrogen compounds
- . nitrogen hydrides
- . . **amino radical**
- radicals
- . **amino radical**
- RT ammonia
- anions
- free radicals
- molecular ions
- reaction kinetics
- aminophylline**
- GS diuretics
- . **aminophylline**
- drugs
- . **aminophylline**
- organic compounds
- . amines
- . . **aminophylline**
- RT stimulants
- ammeters**
- DEF An instrument for measuring the magnitude of an electric current.
- GS measuring instruments
- . **ammeters**
- . . micromillimeters
- . . . thermoelement ammeters
- RT coulometers
- electric current
- electrical measurement
- galvanometers
- voltmeters
- ammines**
- RT ammonia
- ∞ chemical compounds
- copper
- intermetallics
- ∞ metal compounds
- ammonia**
- GS gases
- . **ammonia**
- . . liquid ammonia
- inorganic compounds
- . **ammonia**
- . . liquid ammonia
- nitrogen compounds
- . **ammonia**
- . . liquid ammonia
- RT absorption cooling
- amino radical
- ammines
- ammonium compounds
- ammonolysis
- atmospheric energy sources
- cultivation
- fertilizers
- Kjeldahl method
- nitrogen hydrides
- refrigerants
- ammonium bromides**
- GS ammonium compounds
- . **ammonium bromides**
- halogen compounds
- . bromine compounds
- . . bromides
- . . . **ammonium bromides**
- . . halides
- . . bromides
- . . . **ammonium bromides**
- ammonium chlorides**
- GS ammonium compounds
- . **ammonium chlorides**
- halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **ammonium chlorides**
- . . halides
- . . chlorides
- . . . **ammonium chlorides**
- ammonium compounds**
- GS **ammonium compounds**
- . ammonium bromides

ammonium nitrates

- . ammonium chlorides
- . ammonium nitrates
- . ammonium perchlorates
- . ammonium phosphates
- . ammonium picrates
- . ammonium sulfates
- . hydroxylammonium perchlorates
- RT ammonia
- ∞ chemical compounds
- hexamethonium

ammonium nitrates

- GS ammonium compounds
- . **ammonium nitrates**
- nitrogen compounds
- . nitrates
- . . inorganic nitrates
- . . . **ammonium nitrates**
- RT cultivation
- fertilizers

ammonium perchlorates

- GS ammonium compounds
- . **ammonium perchlorates**
- halogen compounds
- . chlorine compounds
- . . perchlorates
- . . . **ammonium perchlorates**
- RT solid rocket propellants

ammonium phosphates

- GS ammonium compounds
- . **ammonium phosphates**
- phosphorus compounds
- . phosphates
- . . **ammonium phosphates**

ammonium picrates

- GS ammonium compounds
- . **ammonium picrates**
- nitrogen compounds
- . nitro compounds
- . . picrates
- . . . **ammonium picrates**
- RT explosives

ammonium sulfates

- GS ammonium compounds
- . **ammonium sulfates**
- sulfur compounds
- . sulfates
- . . **ammonium sulfates**

ammonolysis

- GS chemical reactions
- . **ammonolysis**
- decomposition
- . **ammonolysis**
- RT ammonia
- cracking (chemical engineering)
- hydrolysis

ammunition

- GS **ammunition**
- . incendiary ammunition
- RT blanks
- bombs (ordnance)
- case bonded propellants
- explosive devices
- explosives
- fuses (ordnance)
- grenades
- guns (ordnance)
- igniters
- magazines (supply chambers)
- mines (ordnance)
- missiles
- ordnance
- projectiles
- propellants
- pyrotechnics
- ∞ rockets
- shaped charges
- ∞ shot
- torpedoes
- ∞ tracers
- warheads

weapons

amobarbital

- GS acids
- . **amobarbital**
- RT central nervous system depressants

amoeba

- GS animals
- . protozoa
- . . **amoeba**
- . . . pelomyxa
- microorganisms
- . protozoa
- . . **amoeba**
- . . . pelomyxa
- RT parasitic diseases

AMOOS

USE **Aeromaneuvering Orbit to Orbit Shuttle**

Amor asteroid

- DEF One group of Earth-approaching asteroids with orbits between the planets Mars and Jupiter. Used for Minor Planet 1221.
- UF *Minor Planet 1221*
- GS celestial bodies
- . asteroids
- . . **Amor asteroid**
- RT asteroid belts
- astronomy
- Jupiter (planet)
- Mars (planet)
- planetary orbits
- solar system

amorphous materials

- GS **amorphous materials**
- . amorphous silicon
- RT asphalt
- carbon nitrides
- crystallinity
- glass
- graphoepitaxy
- grout
- ∞ materials
- spin glass

amorphous semiconductors

- GS semiconductors (materials)
- . **amorphous semiconductors**
- . . amorphous silicon
- RT semiconducting films

amorphous silicon

- GS amorphous materials
- . **amorphous silicon**
- chemical elements
- . metalloids
- . . silicon
- . . . **amorphous silicon**
- semiconductors (materials)
- . amorphous semiconductors
- . . **amorphous silicon**
- RT diamond films
- photovoltaic cells
- semiconducting films
- silicon films
- silicon junctions
- solar cells
- thin films

amount

- UF *quantity*
- RT addition
- sums
- value

AMP (biochemistry)

(added December 2004)
USE **adenosine monophosphate**

amperage

USE **electric current**

amphetamines

- GS organic compounds
- . amines
- . . **amphetamines**
- . . . methamphetamine

RT central nervous system stimulants

amphibia

- GS animals
- . vertebrates
- . . **amphibia**
- . . . frogs
- RT poikilothermia

amphibious aircraft

- GS amphibious vehicles
- . **amphibious aircraft**
- RT ∞ aircraft
- seaplanes
- water takeoff and landing aircraft

amphibious vehicles

- GS **amphibious vehicles**
- . amphibious aircraft
- RT boats
- ∞ military vehicles
- seaplanes
- ships
- surface vehicles
- ∞ vehicles
- water vehicles

amphiboles

DEF A group of dark, rock-forming, ferromagnesian silicate minerals closely related in crystal form and composition.

- GS minerals
- . **amphiboles**
- RT calcium silicates
- silicates

Amphitrite asteroid

- GS celestial bodies
- . asteroids
- . . **Amphitrite asteroid**
- RT asteroid belts
- Galileo project

amplidynes

- GS electric generators
- . rotating generators
- . . **amplidynes**
- RT amplifiers
- electric motors
- power amplifiers
- servomotors

amplification

- UF *amplification factor*
- gain (amplification)*
- intensification*
- GS **amplification**
- . antenna gain
- . high gain
- . power gain
- . sound amplification
- . wave amplification
- RT amplifiers
- amplitudes
- dynamic characteristics
- dynamic range
- dynamic response
- fluid amplifiers
- fluidics
- magnification
- positive feedback
- sensitivity
- stability
- transfer functions
- transient response

amplification factor

USE **amplification**

amplifier design

- RT amplifiers
- computer aided design
- ∞ design
- logic design
- operational amplifiers
- product development
- traveling wave amplifiers

amplifiers

DEF Devices which enable an input signal

to control a source of power whose output is an enlarged reproduction of the essential characteristics of the signal. Used for electronic amplifiers.

UF *electronic amplifiers*

GS **amplifiers**

- . beam plasma amplifiers
- . broadband amplifiers
- . carcinotrons
- . current amplifiers
- . . . photomultiplier tubes
- . . . frequency modulation photomultipliers
- . differential amplifiers
- . distributed amplifiers
- . feedback amplifiers
- . fluid amplifiers
- . . jet amplifiers
- . intermediate frequency amplifiers
- . light amplifiers
- . limiter amplifiers
- . linear amplifiers
- . magnetic amplifiers
- . magnetostatic amplifiers
- . microwave amplifiers
- . . . crossed field amplifiers
- . . . cyclotron resonance devices
- . . . planotrons
- . cascode devices
- . operational amplifiers
- . parametric amplifiers
- . postamplifiers
- . power amplifiers
- . preamplifiers
- . push-pull amplifiers
- . quantum amplifiers
- . servoamplifiers
- . transistor amplifiers
- . traveling wave amplifiers
- . voltage amplifiers

RT **amplidyne**

amplification
amplifier design

∞ boosters

capacitors

circuits

dynamic range

∞ electric cells

electric choppers

image intensifiers

intensifiers

klystrons

laser cavities

lasers

linear circuits

masers

modulators

multivibrators

oscillators

receivers

repeaters

solid state devices

stimulated emission devices

transformers

traveling wave masers

amplitrons (trademark)

USE **planotrons**

amplitude distribution analysis

UF *amplitude probability analysis*

GS statistical analysis

. **amplitude distribution analysis**

RT photopeak

pulse amplitude

signal to noise ratios

signatures

amplitude modulation

DEF In general, modulation in which the amplitude of a wave is the characteristic subject to variation.

UF *AM (modulation)*

GS coding

. signal encoding

. . **amplitude modulation**

. . . quadrature amplitude modulation modulation

. **amplitude modulation**

. . quadrature amplitude modulation

RT Bragg cells
demodulation
demodulators
frequency modulation
light modulation
modulators
P.A.C.M. telemetry
phase modulation
pulse modulation
single sideband transmission

amplitude probability analysis

USE **amplitude distribution analysis**

amplitudes

DEF The maximum value of the displacement of a wave or other periodic phenomenon from a reference position. Also, angular distance north or south of the prime vertical; the arc of the horizon, or the angle at the zenith between the prime vertical and a vertical circle, measured north or south from the prime vertical to the vertical circle.

GS **amplitudes**

. pulse amplitude

. scattering amplitude

RT amplification

cycles

dimensions

displacement

frequencies

∞ intensity

level (quantity)

magnitude

oscillations

phase deviation

picosecond pulses

pulses

standing wave ratios

vibration

ampoules

DEF Glass containers designed to be filled and sealed by fusion of the glass neck.

RT ∞ containers

laboratory equipment

vacuum systems

AMPS (satellite payload)

UF *Atmospheric and Magnetospheric Payload*

plasmas-in-space payload

GS measuring instruments

. satellite-borne instruments

. . **AMPS (satellite payload)**

payloads

. Spacelab payloads

. . **AMPS (satellite payload)**

RT instrument packages

AMPTE (satellites)

SN (ACTIVE MAGNETOSPHERIC PARTICLE TRACER EXPLORERS)

UF *Active Magneto Particle Tracer Explorers*

GS artificial satellites

. scientific satellites

. . **AMPTE (satellites)**

RT Earth magnetosphere

European space programs

satellite-borne instruments

solar wind

space plasmas

spaceborne experiments

AMS (spectrometer)

(added June 1998)

USE **Alpha Magnetic Spectrometer**

AMSU (radiometer)

(added July 1997)

USE **Advanced Microwave Sounding Unit**

AMTV

USE **automated mixed traffic vehicles**

AN-2 aircraft

GS Antonov aircraft

. **AN-2 aircraft**

biplanes

. **AN-2 aircraft**

transport aircraft

. **AN-2 aircraft**

RT agricultural aircraft

∞ aircraft

AN-22 aircraft

UF *Antheus aircraft*

Antonov AN-22 aircraft

Cock aircraft

GS Antonov aircraft

. **AN-22 aircraft**

jet aircraft

. turboprop aircraft

. . **AN-22 aircraft**

monoplanes

. **AN-22 aircraft**

transport aircraft

. **AN-22 aircraft**

RT ∞ aircraft

passenger aircraft

AN-24 aircraft

UF *Antonov AN-24 aircraft*

Coke aircraft

GS Antonov aircraft

. **AN-24 aircraft**

jet aircraft

. turboprop aircraft

. . **AN-24 aircraft**

monoplanes

. **AN-24 aircraft**

transport aircraft

. **AN-24 aircraft**

RT ∞ aircraft

passenger aircraft

anabaena

GS plants (botany)

. algae

. . blue green algae

. . . **anabaena**

. thermophilic plants

. . blue green algae

. . . **anabaena**

anaerobes

RT aerobes

bacteria

microorganisms

sewage treatment

analgesia

RT anesthesia

drugs

pain

analog circuits

GS circuits

. **analog circuits**

RT data converters

operational amplifiers

rheoelectrical simulation

analog computers

DEF Computers that work on the principle of measuring, as distinguished from counting, in which the input data is analogous to a measurement continuum such as linear lengths, voltages, or resistances which can be manipulated by the computer.

GS data processing equipment

. computers

. . **analog computers**

. . . EAI 680 computer

. . . Honeywell 600/6000 computer

. . . SIGMA 5 computer

. . . Univac 1100 series computers

. . . . Univac 1105 computer

. . . . Univac 1106 computer

. . . . Univac 1107 computer

. . . . Univac 1108 computer

. . . . Univac 1110 computer

RT

differential amplifiers

differential analyzers

digital computers

discriminators

functional integration

hybrid computers

missile control

analog data

- operational amplifiers
- resolvers
- signal analyzers
- spectral resolution

analog data

- RT binary data
- ∞ data
 - data converters
 - data processing
 - digital data
- ∞ measurement
 - video compression
 - video data

analog simulation

- GS models
 - mathematical models
 - analog simulation**
- simulation
 - computerized simulation
 - analog simulation**
- RT computer systems simulation
- digital simulation
- flight simulation
- rheoelectrical simulation
- systems simulation

analog to digital converters

DEF Devices for converting non-digital information into digits. Used for digitizers.

- UF *digitizers*
- GS data converters
 - analog to digital converters**
- RT coders
 - coding
- ∞ converters
 - data acquisition
 - digital computers
 - digital electronics
 - digital systems
 - digital to analog converters
 - Illiac 3 computer
 - Illiac 4 computer
 - peripheral equipment (computers)
 - plotting

analogies

- UF *similarities*
- GS **analogies**
 - Earth analogs
 - hydraulic analogies
- RT comparison
- homology
- simulation

analogous

- RT models
- simulators

analysis

USE **analyzing**

analysis (mathematics)

DEF That part of the field of mathematics which arises from the calculus and which deals primarily with functions.

- GS **analysis (mathematics)**
 - aperiodic functions
 - calculus
 - continuity (mathematics)
 - differential calculus
 - Fourier-Bessel transformations
 - Graeff calculus
 - integral calculus
 - limits (mathematics)
 - series (mathematics)
 - asymptotic series
 - Campbell-Hausdorff series
 - cosine series
 - Fourier series
 - Pade approximation
 - power series
 - Taylor series
 - MacLaurin series
 - progressions
 - Prony series
 - sine series
 - vector analysis
 - collinearity

- coplanarity
- curl (vectors)
- vorticity
- combinatorial analysis
- binomial coefficients
- combinations (mathematics)
- factorials
- partitions (mathematics)
- permutations
- complex variables
- Airy function
- analytic functions
 - entire functions
 - Bessel functions
 - Hankel functions
 - Cauchy integral formula
 - conformal mapping
 - conjugates
 - conjugate points
 - exponential functions
 - logarithms
 - gamma function
 - harmonic functions
 - hyperbolic functions
 - hypergeometric functions
 - Laguerre functions
 - Legendre functions
 - Liouville theorem
 - Mathieu function
 - meromorphic functions
 - elliptic functions
 - rational functions
 - nonholonomic equations
 - orthogonal functions
 - Walsh function
 - Schwarz-Christoffel transformation
 - singularity (mathematics)
 - naked singularities
 - spherical harmonics
 - dependent variables
 - Fourier analysis
 - Fourier series
 - function space
 - Banach space
 - Hilbert space
 - Sobolev space
 - convolution integrals
 - harmonic analysis
 - tesseral harmonics
 - zonal harmonics
 - integral equations
 - Fredholm equations
 - J integral
 - singular integral equations
 - Volterra equations
 - Wiener Hopf equations
 - integral transformations
 - Fourier transformation
 - fast Fourier transformations
 - Fourier-Bessel transformations
 - Hilbert transformation
 - Laplace transformation
 - half planes
 - half spaces
 - Hill determinant
 - numerical analysis
 - approximation
 - Born approximation
 - Born-Oppenheimer approximation
 - Chebyshev approximation
 - Eddington approximation
 - essentially non-oscillatory schemes
 - finite difference theory
 - finite difference time domain method
 - finite element method
 - Hartree approximation
 - least squares method
 - mean square values
 - Milne method
 - multigrad methods
 - Newton methods
 - Newton-Raphson method
 - boundary element method

- discretization (mathematics)
- numerical differentiation
- Oseen approximation
- Pade approximation
- particle in cell technique
- Pohlhausen method
- predictor-corrector methods
- Rayleigh-Ritz method
- relaxation method (mathematics)
- Reynolds averaging
- Ritz averaging method
- Schwartz method
- Sommerfeld approximation
- TVD schemes
- upwind schemes (mathematics)
- vortex in cell technique
- Trefftz method
- computational mechanics
- meshfree methods
- boundary integral method
- computational astrophysics
- computational chemistry
- computational electromagnetics
- computational fluid dynamics
- difference equations
- error analysis
- finite volume method
- Godunov method
- flux difference splitting
- flux vector splitting
- Glimm method
- Graeff calculus
- interpolation
- iteration
- conjugate gradient method
- iterative solution
- Newton methods
- Newton-Raphson method
- predictor-corrector methods
- Monte Carlo method
- nomographs
- numerical integration
- Runge-Kutta method
- computational aeroacoustics
- direct numerical simulation
- space-time CE/SE method
- truncation errors
- Pfaff equation
- phase-space integral
- real variables
- Abel function
- asymptotes
- Bessel functions
- Hankel functions
- Bethe-Salpeter equation
- calculus of variations
- composite functions
- delta function
- differential equations
 - Blasius equation
 - Chandrasekhar equation
 - cosine series
 - Duffing differential equation
 - Falkner-Skan equation
 - hyperbolic differential equations
 - Lame wave equations
 - partial differential equations
 - biharmonic equations
 - Burger equation
 - Cauchy-Riemann equations
 - elliptic differential equations
 - Monge-Ampere equation
 - Euler-Cauchy equations
 - Fowcs Williams-Hawkings equation
 - Fokker-Planck equation
 - Gauss equation
 - Helmholtz vorticity equation
 - Liouville equations
 - parabolic differential equations
 - Poisson equation
 - vlasov equations
 - Riccati equation
 - vorticity equations
 - Helmholtz vorticity equation
 - Einstein equations
- existence theorems
- extremum values
- limits (mathematics)

- . . . maxima
- . . . minima
- Cramer-Rao bounds
- . . . Fourier-Bessel transformations
- . . . Green's functions
- . . . hyperbolic functions
- . . . hyperplanes
- . . . Jacobi integral
- . . . Jacobi matrix method
- . . . kernel functions
- . . . Liapunov functions
- . . . linear equations
- Flowcs Williams-Hawkins equation
- linear evolution equations
- Riccati equation
- . . . Lipschitz condition
- . . . measure and integration
- binary integration
- Borel sets
- functional integration
- integral calculus
- J integral
- Lebesgue theorem
- numerical integration
- Runge-Kutta method
- Stieltjes integral
- weighting functions
- . . . Neumann problem
- . . . nonlinear equations
- cubic equations
- Duffing differential equation
- Monge-Ampere equation
- nonlinear evolution equations
- quadratic equations
- quartic equations
- numerical differentiation
- periodic functions
- trigonometric functions
- cosine series
- sine series
- tangents
- series (mathematics)
- asymptotic series
- Campbell-Hausdorff series
- cosine series
- Fourier series
- Pade approximation
- power series
- Taylor series
- MacLaurin series
- progressions
- Prony series
- sine series
- . . . Sturm-Liouville theory
- . . . vector analysis
- collinearity
- coplanarity
- curl (vectors)
- vorticity
- . . . Weierstrass functions
- . . . Whittaker functions
- . . . frequency domain analysis
- . . . time domain analysis
- . . . finite difference time domain method
- RT algebra
- ∞ analyzing
- ∞ applications of mathematics
- ∞ discontinuity
- ∞ equilibrium equations
- ∞ geometry
- ∞ mathematics
- ∞ monotone functions
- ∞ space
- ∞ trees (mathematics)
- ∞ vector spaces
- ∞ Venn diagrams

analysis of variance

DEF A systematic statistical procedure for determining the sources and the magnitudes of the errors present in a measurement process, and for assessing the significance of differences between materials, processes, or test methods under study.

- GS statistical analysis
- . variance (statistics)
- . . **analysis of variance**

RT ∞ variance

analytic functions

- UF *holomorphism*
- GS analysis (mathematics)
- . complex variables
- . . **analytic functions**
- . . . entire functions
- . . . functions (mathematics)
- . . **analytic functions**
- . . . entire functions
- RT Cauchy-Riemann equations
- isoperimetric problem
- nonholonomic equations
- power series

analytic geometry

- GS geometry
- . Euclidean geometry
- . . **analytic geometry**
- . . . catenaries
- . . . circumferences
- . . . conics
- ellipses
- hyperbolas
- parabolas
- cycloids
- epicycloids
- loci
- . . . Mercator projection
- quadrants
- S curves
- Gompertz curves
- spheroids
- oblate spheroids
- prolate spheroids
- tangents
- toruses
- trigonometry
- RT annuli
- asymptotes
- calculus
- coordinates
- curves (geometry)
- ∞ cylinders
- descriptive geometry
- differential geometry
- polytopes
- projective geometry

analytical chemistry

- RT chemical analysis
- ∞ chemistry
- inorganic chemistry
- qualitative analysis
- quantitative analysis
- volumetric analysis

analyzers

- SN (EXCLUDES DEVICES FOR PERFORMING MATHEMATICAL ANALYSIS)
- GS measuring instruments
- . **analyzers**
- . . engine analyzers
- . . signal analyzers
- RT controllers
- ∞ detectors
- monitors
- selectors
- ∞ test equipment

∞ **analyzing**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *analysis*
- instrumental analysis*
- RT activation analysis
- algebra
- analysis (mathematics)
- chemical analysis
- combinatorial analysis
- cost analysis
- creep analysis
- design analysis
- diagnosis
- differential geometry
- duality principle
- error analysis
- evaluation

- examination
- failure analysis
- figure of merit
- forecasting
- management analysis
- multivariate statistical analysis
- network analysis
- numerical analysis
- photointerpretation
- postflight analysis
- prediction analysis techniques
- preflight analysis
- reliability analysis
- sensitivity analysis
- signal analysis
- signature analysis
- spectrum analysis
- statistical analysis
- stress analysis
- structural analysis
- systems analysis
- terrain analysis
- thermal analysis
- training analysis
- trajectory analysis
- trend analysis
- weight analysis
- x ray analysis

anaphylaxis

- GS sensitivity
- . **anaphylaxis**
- RT allergic diseases
- antigens
- immunology
- sensitizing

anastigmatism

- RT optometry
- vision

anatase

- UF *octahedrite*
- GS chalcogenides
- . oxides
- . . metal oxides
- . . . titanium oxides
- **anatase**
- minerals
- . **anatase**
- titanium compounds
- . titanium oxides
- . . **anatase**
- RT pigments
- rutile

anatomy

- SN (LIMITED TO ANIMAL ANATOMY)
- GS **anatomy**
- . abdomen
- . chest
- . . breast
- . . . mammary glands
- . . circulatory system
- . . cardiovascular system
- . . . blood vessels
- arteries
- aorta
- arterioles
- capillaries (anatomy)
- glomerulus
- veins
- . . . heart
- cardiac auricles
- cardiac ventricles
- epicardium
- heart conduction system
- myocardium
- . . digestive system
- . . . esophagus
- . . . gastrointestinal system
- appendix (anatomy)
- intestines
- rectum
- stomach
- mouth
- lips (anatomy)
- . . . pancreas
- . . . salivary glands
- . . . teeth

anchors (fasteners)

- . . tongue
- . face (anatomy)
- . . chin
- . . forehead
- . . mouth
- . . . lips (anatomy)
- . . nose (anatomy)
- . genitourinary system
- . . bladder
- . . kidneys
- . . . glomerulus
- . . reproductive systems
- . . . sex glands
- gonads
- ovaries
- testes
- . . . prostate gland
- . . . uterus
- . glands (anatomy)
- . . endocrine glands
- . . . adrenal gland
- . . . gonads
- ovaries
- testes
- . . . hypothalamus
- . . . pancreas
- . . . parathyroid gland
- . . . pineal gland
- . . . pituitary gland
- . . . thymus gland
- . . . thyroid gland
- . . mammary glands
- . . salivary glands
- . . sebaceous glands
- . . sex glands
- . . . gonads
- ovaries
- testes
- . . . prostate gland
- . head (anatomy)
- . . skull
- . . . cranium
- intracranial cavity
- . . . mastoids
- . human body
- . limbs (anatomy)
- . . arm (anatomy)
- . . . elbow (anatomy)
- . . . forearm
- . . hand (anatomy)
- . . . fingers
- . . leg (anatomy)
- . . . feet (anatomy)
- . . . knee (anatomy)
- . . . thigh
- . . liver
- . lumbar region
- . musculoskeletal system
- . . bones
- . . . femur
- . . . pelvis
- . . . scapula
- . . . skull
- cranium
- intracranial cavity
- mastoids
- . . . spine
- vertebrae
- . . . sternum
- . . . tibia
- . . . ulna
- . . joints (anatomy)
- . . . elbow (anatomy)
- . . . knee (anatomy)
- . . . wrist
- . . muscles
- . . . constrictors
- . . . diaphragm (anatomy)
- . . . flexors
- . . . myocardium
- . . . skeletal muscle
- . . . smooth muscle
- . . . tendons
- . . cartilage
- . neck (anatomy)
- . nervous system
- . . afferent nervous systems
- . . autonomic nervous system
- . . . sympathetic nervous system

- . . central nervous system
- . . . brain
- brain stem
- cerebellum
- cerebral ventricles
- cerebrum
- cerebral cortex
- occipital lobes
- diencephalon
- hypothalamus
- pineal gland
- thalamus
- hippocampus
- . . . spinal cord
- . . efferent nervous systems
- . . nerves
- . . . ganglia
- . . . myelin sheath
- . . . nerve fibers
- . . . oculomotor nerves
- . . peripheral nervous system
- . . peritoneum
- . . pleurae
- . . respiratory system
- . . bronchi
- . . diaphragm (anatomy)
- . . larynx
- . . . glottis
- . . . vocal cords
- . . lungs
- . . . alveoli
- . . nose (anatomy)
- . . paranasal sinuses
- . . pharynx
- . . trachea
- . . sciatic region
- . . sense organs
- . . . chemoreceptors
- . . ear
- . . . eardrums
- . . . eustachian tubes
- . . . labyrinth
- cochlea
- Corti organ
- otolith organs
- semicircular canals
- vestibules
- . . . middle ear
- . . eye (anatomy)
- . . . choroid membranes
- . . . conjunctiva
- . . . cornea
- . . . oculomotor nerves
- . . . pupils
- . . . retina
- fovea
- . . . gravireceptors
- . . . otolith organs
- . . baroreceptors
- . . mechanoreceptors
- . . photoreceptors
- . . proprioceptors
- . . thermoreceptors
- . skin (anatomy)
- . . epidermis
- . . immune systems
- . . thorax
- . . torso
- . . lymphatic system
- . . . spleen
- . . . thymus gland

RT

- appendages
- bifurcation (biology)
- biodynamics
- ∞ biology
- ∞ cells (biology)
- ∞ differentiation
- differentiation (biology)
- dorsal sections
- epithelium
- exoskeletons
- hepatitis
- morphology
- organs
- posterior sections
- tissues (biology)
- vestibular nystagmus

viscera

anchors (fasteners)

GS fasteners

- . **anchors (fasteners)**

RT ∞ bands

- bolts
- brackets
- clips
- couplings
- guy wires
- holders
- mooring
- nuts (fasteners)
- screws
- straps
- studs (structural members)
- tetherlines

Andes Mountains (South America)

GS landforms

- . mountains
- . . **Andes Mountains (South America)**

RT South America

andesite

DEF Volcanic rock composed essentially of andesine and one or more mafic constituents.

GS aluminum compounds

- . aluminum silicates
- . . **andesite**
- rocks
- . **andesite**
- silicon compounds
- . silicates
- . . aluminum silicates
- . . . **andesite**

RT feldspars

- igneous rocks
- minerals
- soils

Andorra

GS nations

- . **Andorra**

RT Europe

- France
- Pyrenees Mountains (Europe)
- Spain

∞ Andromeda

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT Andromeda Constellation

- Andromeda Galaxy

Andromeda Constellation

GS constellations

- . **Andromeda Constellation**

RT ∞ Andromeda

- Andromeda Galaxy

Andromeda Galaxy

GS celestial bodies

- . galaxies
- . . spiral galaxies
- . . . **Andromeda Galaxy**

RT ∞ Andromeda

- Andromeda Constellation
- local group (astronomy)

anechoic chambers

DEF Enclosures especially designed with boundaries that absorb sufficiently well the sound incident thereon to create an essentially field-free condition in the frequency ranges of interest.

GS compartments

- . test chambers
- . . **anechoic chambers**
- test facilities
- . **anechoic chambers**

RT acoustic attenuation

- acoustic measurement
- acoustics
- ∞ chambers

- zero sound
- anelasticity**
 GS mechanical properties
 . elastic properties
 . . **anelasticity**
 RT creep properties
 internal friction
 modulus of elasticity
 stress relaxation
- anemias**
 GS diseases
 . **anemias**
 RT blood
 blood cell count
 blood cells
 hematocrit ratio
 hemoglobin
 ischemia
 occupational diseases
- anemometers**
 DEF Instruments used to measure the speed of air currents, usually measured from the rotation of wind driven cups or from wind pressure through a tube pointed into the wind.
 GS measuring instruments
 . **anemometers**
 . . drag force anemometers
 . . hot-film anemometers
 . . hot-wire anemometers
 . . laser anemometers
 . . sonic anemometers
 RT aircraft instruments
 flow measurement
 meteorological instruments
 speed indicators
 velocity measurement
 wind (meteorology)
 wind measurement
 wind vanes
 wind velocity
 wind velocity measurement
- anemometry*
 USE **velocity measurement**
- anesthesia**
 GS **anesthesia**
 . electroanesthesia
 RT analgesia
 hypnosis
 sensory perception
 unconsciousness
- anesthesiology**
 GS medical science
 . **anesthesiology**
 RT chloroform
 clinical medicine
 depressants
 diagnosis
 drugs
 pharmacology
- anesthetics**
 GS drugs
 . **anesthetics**
 . . chloroform
 . . cyclopropane
 . . methyl chloride
 . . novocain
 RT ethers
- angels (radar)**
 DEF Echos of false radar targets caused by atmospheric inhomogeneity, atmospheric refraction, insects, birds, or unknown phenomena.
 GS echoes
 . radar echoes
 . . **angels (radar)**
 RT glint
 radar cross sections
 radio echoes
- angina pectoris**
 GS diseases
 . heart diseases
 . . **angina pectoris**
- RT anoxia
 arteriosclerosis
 coronary artery disease
 emotional factors
 heart function
 heart rate
 myocardium
 physical exercise
 stress (physiology)
- angiogenesis**
(added June 2004)
 DEF The development of new blood vessels.
 UF *neovascularization*
 RT blood vessels
 cardiovascular system
 ∞ development
 growth
 hematopoietic system
- angiography**
 GS imagery
 . radiography
 . . **angiography**
 RT brain
 cardiology
 cardiovascular system
- angiosperms**
 RT grains (food)
 nuts (fruits)
 plants (botany)
 vegetables
- angiotensins**
(added August 2004)
 DEF Oligopeptides ranging in size from angiotensin precursors with 14 amino acids to the active vasoconstrictor angiotensin II with 8 amino acids, or their analogs or derivatives. The amino acid content varies with the species and changes in that content produce antagonistic or inactive compounds.
 GS organic compounds
 . peptides
 . . polypeptides
 . . . **angiotensins**
 RT neurotransmitters
 renin
 vasoconstriction
 vasoconstrictor drugs
- angle of attack**
 DEF The angle between a reference line fixed with respect to an airframe and a line in the direction of movement of the body.
 GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . **angle of attack**
 zero angle of attack
 RT aerodynamic characteristics
 aerodynamic stalling
 ∞ attack
 boundary layer separation
 lift
 sweep angle
 wing rock
- angles (geometry)**
 DEF The inclination to each other of two intersecting lines, measured by the arc of a circle intercepted between the two lines forming the angle, the center of the circle being the point of intersection.
 GS geometry
 . Euclidean geometry
 . . **angles (geometry)**
 . . . angle of attack
 zero angle of attack
 . . . Bragg angle
 . . . Brewster angle
 . . . dihedral angle
 . . . elevation angle
 . . . look angles (electronics)
 . . . look angles (tracking)
 . . . sweep angle
 sweepback
 leading edge sweep
- RT angular resolution
 apsides
 azimuth
 complements (mathematics)
 corners
 elongation
 goniometers
 ∞ grade
 gradients
 grazing incidence
 incidence
 obliqueness
 phase shift
 photogoniometers
 pitch (inclination)
 ∞ profiles
 protractors
 reciprocal theorems
 slopes
 triangulation
 trigonometry
- Angola**
 GS nations
 . **Angola**
 RT Africa
- angular acceleration**
 DEF The rate of change of angular velocity.
 GS rates (per time)
 . acceleration (physics)
 . . **angular acceleration**
 RT ∞ acceleration
 acceleration measurement
 centrifugal force
 centripetal force
 deceleration
 rotation
 spin reduction
 transverse acceleration
 yo-yo devices
- angular correlation**
 GS correlation
 . **angular correlation**
 RT data correlation
 MATTS (systems)
 view effects
- angular distribution**
 GS distribution (property)
 . **angular distribution**
 RT electron density profiles
 elementary particle interactions
 flux density
 force distribution
 mass distribution
 moment distribution
 nuclear scattering
 star distribution
- angular momentum**
 GS momentum
 . **angular momentum**
 RT classical mechanics
 Clebsch-Gordan coefficients
 electron spin
 kinetics
 moments of inertia
 particle spin
 quantum numbers
 quantum theory
 quenching (atomic physics)
 Racah coefficient
 Regge poles
 spin
 spin tests
 stellar rotation
 transverse momentum
 Wigner coefficient
- angular motion*
 USE **angular velocity**
- angular resolution**
 DEF Specifically, the ability of a radar to distinguish between two targets solely by the measurement of angles.
 GS resolution
 . **angular resolution**

angular velocity

- RT accuracy
- angles (geometry)
- high resolution
- ∞ optics
- radar resolution

angular velocity

DEF The change of angle per unit time; specifically, in celestial mechanics, the change in angle of the radius vector per unit time. Used for angular motion.

- UF *angular motion*
- GS rates (per time)
 - . **angular velocity**
 - velocity
 - . **angular velocity**
- RT gyration
- orbital velocity
- proper motion
- revolving
- rotation
- rotor speed
- Sagnac effect
- tachometers
- tip speed

anhydrides

- GS chalcogenides
 - . oxides
 - . . . **anhydrides**
 - . . . peroxides
 - inorganic peroxides
 - hydrogen peroxide
 - organic peroxides
 - potassium peroxides
 - sodium peroxides
- RT acids
- bases (chemical)

Anik 1

- UF *Anik A*
Telesat Canada A
- GS artificial satellites
 - . synchronous satellites
 - . . Anik satellites
 - . . . **Anik 1**
 - Canadian spacecraft
 - . Anik satellites
 - . . **Anik 1**
- RT Canada
- Canadian space program
- Delta launch vehicle
- international cooperation

Anik 2

- UF *Anik B*
Telesat Canada B
- GS artificial satellites
 - . synchronous satellites
 - . . Anik satellites
 - . . . **Anik 2**
 - Canadian spacecraft
 - . Anik satellites
 - . . **Anik 2**
- RT Canada
- Canadian space program
- Delta launch vehicle
- international cooperation

Anik 3

- UF *Anik C*
Telesat Canada 3
Telesat Canada C
- GS artificial satellites
 - . synchronous satellites
 - . . Anik satellites
 - . . . **Anik 3**
 - Canadian spacecraft
 - . Anik satellites
 - . . **Anik 3**
- RT Canada
- Canadian space program

international cooperation

Anik A
USE **Anik 1**

Anik B
USE **Anik 2**

Anik C
USE **Anik 3**

Anik satellites

DEF A series of geostationary communication satellites operated by Telesat which is partly owned by the Canadian government and partly owned by private enterprise. The name "Anik" is derived from an Eskimo word meaning "brother." It was so designated because of its partial use in the Far North.

- GS artificial satellites
 - . synchronous satellites
 - . . **Anik satellites**
 - . . . Anik 1
 - . . . Anik 2
 - . . . Anik 3
 - Canadian spacecraft
 - . **Anik satellites**
 - . . Anik 1
 - . . Anik 2
 - . . Anik 3

RT Canadian space program
Delta launch vehicle
international cooperation

aniline

- GS organic compounds
 - . amines
 - . . **aniline**
- RT dyes

animal models

(added July 2008)

DEF Non-human animals, selected because of specific characteristics, for use in experimental research, teaching, or testing.

- GS models
 - . **animal models**
 - . . knockout mice
- RT animals
- bioassay
- bioastronautics
- cytology
- diseases
- in vivo methods and tests
- mice
- pathology
- rats

animals

- UF *fauna*
metazoa
- GS **animals**
 - . homeotherms
 - . invertebrates
 - . . arthropods
 - . . . artemia
 - . . . crabs
 - . . . insects
 - bees
 - bollworms
 - chironomus flies
 - cockroaches
 - Coleoptera
 - beetles
 - tribolia
 - boll weevils
 - crickets
 - Drosophila
 - fireflies
 - grasshoppers
 - locusts
 - moths
 - silkworms
 - spiders
 - . . . mollusks
 - . . . cephalopods
 - octopuses
 - . . . snails
 - . . Rotifera
 - . . sea urchins

- . . worms
- . . . flatworms
- . . livestock
- . . poikilothermia
- . . protozoa
- . . amoeba
- . . . pelomyxa
- . . Flagellata
- . . . Euglena
- . . . trypanosome
- . . paramecia
- . . vertebrates
- . . . amphibia
- . . . frogs
- . . . birds
- chickens
- pigeons
- turkeys
- waterfowl
- . . . fishes
- schools (fish)
- . . . sharks
- . . mammals
- . . . bats
- . . . bears
- . . . cats
- . . . cattle
- calves
- deer
- caribous
- . . . goats
- . . . horses
- . . . marine mammals
- dolphins
- manatees
- porpoises
- seals (animals)
- whales
- . . . moles
- . . . primates
- apes
- chimpanzees
- baboons
- human beings
- monkeys
- . . . rodents
- guinea pigs
- hamsters
- mice
- jerboas
- knockout mice
- pocket mice
- rabbits
- rats
- squirrels
- ground squirrels
- . . . dogs
- . . . sheep
- . . . swine
- . . . wolves
- . . reptiles
- . . . lizards
- . . . snakes
- . . . turtles
- . . wildlife
- . . zooplankton
- RT animal models
- ∞ biology
- biomass
- carbon cycle
- census
- endangered species
- food chain
- grazing
- habitats
- heterotrophs
- larvae
- microorganisms
- organisms
- parasites
- plankton
- plants (botany)
- predators
- viability
- wildlife radiolocation
- ∞ zoology

animation

- GS arts

- . graphic arts
- .. **animation**
- ... computer animation
- RT cinematography
- motion pictures
- anions**
- GS ions
- . negative ions
- .. **anions**
- RT amino radical
- anodes
- cations
- cell anodes
- electrode materials
- electron affinity
- ionic mobility
- anisole**
- GS ethers
- . **anisole**
- organic compounds
- . cyclic compounds
- .. heterocyclic compounds
- ... **anisole**
- anisoplanatism**
- (added May 1999)
- DEF In adaptive optics (AO) systems, a performance-degrading effect that arises whenever light from the wave-front sensor beacon and light from the target object sample different volumes of optical turbulence. This effect results in an increased value of the aperture-averaged residual phase variance after AO compensation, which causes an exponential decrease in system performance.
- RT aberration
- adaptive optics
- atmospheric correction
- atmospheric optics
- image resolution
- optical correction procedure
- phase error
- telescopes
- anisotropic fluids**
- GS media
- . anisotropic media
- .. **anisotropic fluids**
- RT anisotropy
- ∞ fluids
- invariant imbeddings
- isotropy
- liquid crystals
- Newtonian fluids
- anisotropic media**
- GS media
- . **anisotropic media**
- .. anisotropic fluids
- RT anisotropy
- birefringence
- birefringent coatings
- functionally gradient materials
- homogeneity
- isotropic media
- ∞ materials
- polarization (waves)
- anisotropic plates**
- UF *nonisotropic plates*
- GS structural members
- . plates (structural members)
- .. **anisotropic plates**
- RT cantilever plates
- end plates
- perforated plates
- reinforced plates
- anisotropic shells**
- GS shells (structural forms)
- . **anisotropic shells**
- RT corrugated shells
- elastic shells
- reinforced shells
- anisotropy**
- DEF Having different properties in different directions. Used for nonisotropy, onisotropy, photothermotropism, and thermotropism.
- UF *nonisotropy*
- anisotropy*
- photothermotropism*
- thermotropism*
- GS **anisotropy**
- . plastic anisotropy
- .. elastic anisotropy
- RT aeotropism
- anisotropic fluids
- anisotropic media
- birefringence
- crystal structure
- crystals
- directivity
- isotropy
- mechanical properties
- metallography
- polarization (spin alignment)
- polarization (waves)
- spatial distribution
- Sunyaev-Zeldovich effect
- Anna hurricane**
- GS storms
- . storms (meteorology)
- .. cyclones
- ... hurricanes
- **Anna hurricane**
- .. tropical storms
- ... hurricanes
- **Anna hurricane**
- ANNA satellites**
- GS artificial satellites
- . geodetic satellites
- .. **ANNA satellites**
- RT Explorer 29 satellite
- Explorer 36 satellite
- GEOS 1 satellite
- GEOS 2 satellite
- GEOS 3 satellite
- annealing**
- DEF Application of heat energy to a material cooling at a suitable rate to relieve stresses, change certain properties, improve machinability, or for realignment of atoms in a distorted lattice as caused, for example, by radiation damage.
- GS heat treatment
- . **annealing**
- .. laser annealing
- ... pulse heating
- RT combustion synthesis
- graphitization
- hardening (materials)
- heating
- normalizing (heat treatment)
- recrystallization
- simulated annealing
- softening
- stress relieving
- tempering
- annihilation reactions**
- GS **annihilation reactions**
- . positron annihilation
- RT antiparticles
- electron-positron pairs
- high energy interactions
- matter-antimatter propulsion
- photons
- proton-antiproton interactions
- proton-proton reactions
- annotations**
- RT abstracts
- information
- summaries
- annual variations**
- UF *interannual variations*
- seasonal variations*
- GS variations
- . periodic variations
- .. **annual variations**
- RT atmospheric circulation
- brown wave effect
- cycles
- green wave effect
- intraseasonal variations
- Madden-Julian Oscillation
- magnetic variations
- meteorological parameters
- meteorology
- monsoons
- quasi-biennial oscillation
- seasons
- temporal distribution
- weather
- wind variations
- zonal flow (meteorology)
- annular core pulse reactors**
- GS nuclear reactors
- . **annular core pulse reactors**
- RT ∞ nuclear energy
- nuclear fuel elements
- nuclear fuels
- reactor cores
- reactor design
- reactor materials
- reactor physics
- reactor safety
- reactor technology
- ∞ reactors
- annular ducts**
- DEF Ring-shaped openings for the passage of fluids (gases, etc.) designed for optimum aerodynamic flow properties for the application involved.
- GS ducts
- . **annular ducts**
- RT air ducts
- duct geometry
- ducted bodies
- fluid flow
- intake systems
- nose inlets
- openings
- orifices
- vents
- annular flow**
- GS fluid flow
- . axisymmetric flow
- .. **annular flow**
- RT annuli
- axial flow
- channel flow
- coaxial flow
- Couette flow
- ∞ flow
- flow geometry
- heat transmission
- nozzle flow
- one dimensional flow
- turbulent flow
- annular nozzles**
- RT annuli
- coaxial flow
- conical nozzles
- exhaust nozzles
- inlet nozzles
- ∞ nozzles
- plug nozzles
- rocket nozzles
- shrouded nozzles
- spray nozzles
- annular plates**
- GS structural members
- . plates (structural members)
- .. **annular plates**
- RT annuli
- circular plates
- flat plates
- annular suspension and pointing system**
- DEF In the Shuttle era, high accuracy pointing and stabilization of an experiment payload.
- GS pointing control systems
- . **annular suspension and pointing system**
- RT magnetic suspension
- payloads
- space shuttles

annuli

space transportation system
Spacelab
Spacelab payloads
∞ systems

annuli

RT analytic geometry
annular flow
annular nozzles
annular plates
flow measurement
∞ rings

anodes

DEF The positive poles or electrodes of electron emitters, such as electron tubes or electric cells.

GS electrodes
. **anodes**
. . cell anodes
. . shell anodes
. . tube anodes
RT accumulators
anions
cathodes
electrode materials
multi-anode microchannel arrays

anodic coatings

GS coatings
. inorganic coatings
. . **anodic coatings**
. protective coatings
. . **anodic coatings**
RT anodizing
cathodic coatings
electrode materials
oxides

anodic stripping

DEF The removal of metal coatings.

RT cladding
coating
debonding (materials)
delaminating
metal coatings
plating
removal
∞ stripping

anodizing

DEF An electrolytic oxidation process in which the surface of a metal, when anodic, is converted to a coating having desirable protective, decorative, or functional properties.

GS coating
. **anodizing**
deposition
. **anodizing**
RT anodic coatings
passivity
protective coatings
surface treatment

anolytes

GS conductors
. electrolytes
. . **anolytes**
RT catholytes
cell anodes

anomalies

DEF In general, deviations from the norm.

GS **anomalies**
. geothermal anomalies
. gravity anomalies
. magnetic anomalies
. . geomagnetic hollow
RT anomalous temperature zones
Southern Oscillation

anomalous temperature zones

RT anomalies
geysers
stratospheric warming
temperature measurement
temperature measuring instruments
temperature scales

temperature sensors

anorthosite

DEF A group of essentially monomineralic plutonic igneous rocks composed almost entirely of plagioclase feldspar.

GS rocks
. igneous rocks
. . **anorthosite**
RT feldspars
gabbro
soils

anoxia

DEF A complete lack of oxygen available for physiological use within the body.

RT angina pectoris
asphyxia
hypoxia
stress (physiology)

ANS

USE **Astronomical Netherlands Satellite**

Antarctic environment

USE **ice environments**

Antarctic Ocean

GS oceans
. **Antarctic Ocean**
RT Antarctic regions

Antarctic regions

DEF The areas surrounding and including the continent of Antarctica. Used for Antarctica.

UF *Antarctica*
GS regions
. polar regions
. . **Antarctic regions**
. . . McMurdo sound
. . . Ross ice shelf
. remote regions
. . **Antarctic regions**
. . . McMurdo sound
. . . Ross ice shelf
Southern Hemisphere
. **Antarctic regions**
. . McMurdo sound
. . Ross ice shelf
RT Antarctic Ocean
climatology
continents
land ice
ozone depletion
polar caps
polynyas
Total Ozone Mapping Spectrometer

Antarctica

USE **Antarctic regions**

Antares rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . **Antares rocket vehicle**
. sounding rockets
. . **Antares rocket vehicle**
RT atmospheric ionization
solid propellant rocket engines
X-254 engine

Antelope missile

GS missiles
. **Antelope missile**

antenna arrays

DEF Systems of antennas coupled together to obtain directional effects, or to increase sensitivity.

GS arrays
. **antenna arrays**
. . linear arrays
. . . endfire arrays
. . . . Yagi antennas
. . . multispectral linear arrays
. . steerable antennas
. . . inertialless steerable antennas
. . turnstile antennas
RT antennas
beamforming

Cobra Dane (radar)
dipole antennas
directional antennas
log periodic antennas
microwave antennas
patch antennas
phased arrays
retroreflection
space based radar
Very Large Array (VLA)
Very Long Baseline Array (VLBA)

antenna components

GS **antenna components**
. antenna couplers
. . duplexers
. . directional couplers
. antenna feeds
. parasitic elements (antennas)
. . directors (antenna elements)
RT communication equipment
∞ components
couplers
electronic equipment
∞ spinners

antenna couplers

GS antenna components
. **antenna couplers**
. . duplexers
. . directional couplers
couplers
. **antenna couplers**
. . duplexers
. . directional couplers
RT antennas
couples
coupling
coupling circuits
energy transfer
impedance matching
microwave coupling
transmission lines

antenna design

RT antennas
backlobes
Cassegrain antennas
delta antennas
∞ design
dipole antennas
gravitational wave antennas
Gregorian antennas
helical antennas
horn antennas
lens antennas
∞ lobes
log periodic antennas
maypole antennas
microstrip antennas
monopole antennas
parabolic antennas
parasitic elements (antennas)
patch antennas
pencil beams
plasma antennas
product development
rhombic antennas
sidelobes
slot antennas
space technology experiments
spiral antennas
Yagi antennas

antenna feeds

GS antenna components
. **antenna feeds**
RT Gregorian antennas
reflector antennas
strip transmission lines
transmission lines
waveguides

antenna fields

USE **antenna radiation patterns**

antenna gain

(added June 1998)
GS amplification
. **antenna gain**

RT antennas
 automatic gain control
 directional antennas
 effectiveness
 high gain
 signal reception

antenna radiation patterns
 UF *antenna fields*
 GS distribution (property)
 . radiation distribution
 . . **antenna radiation patterns**
 . . . sidelobes

RT antennas
 backfire antennas
 backlobes
 beam steering
 beamforming
 cylindrical antennas
 directional antennas
 ∞ fans
 far fields
 field theory (physics)
 footprints
 Fresnel region
 Gregorian antennas
 ∞ lobes
 near fields
 parasitic elements (antennas)
 pencil beams
 plasma antennas
 ∞ radiation
 reflector antennas
 rosette shapes
 Schelkunoff principle
 Sommerfeld approximation
 support interference
 synthetic arrays

antennas
 DEF Conductors or systems of conductors for radiating or receiving radio waves.
 GS **antennas**
 . aircraft antennas
 . backfire antennas
 . Cassegrain antennas
 . cylindrical antennas
 . delta antennas
 . directional antennas
 . . dipole antennas
 . . helical antennas
 . . horn antennas
 . . lens antennas
 . . log periodic antennas
 . . loop antennas
 . . radar antennas
 . . . radant
 . . reflector antennas
 . . . parabolic antennas
 . . . two reflector antennas
 . . rhombic antennas
 . . slot antennas
 . . steerable antennas
 . . . inertialess steerable antennas
 . . Yagi antennas
 . furlable antennas
 . gravitational wave antennas
 . . LIGO (observatory)
 . . LISA (observatory)
 . Gregorian antennas
 . high resolution coverage antennas
 . hoop column antennas
 . maypole antennas
 . microstrip antennas
 . missile antennas
 . monopulse antennas
 . multibeam antennas
 . multiple beam interval scanners
 . omnidirectional antennas
 . . monopole antennas
 . . . whip antennas
 . . turnstile antennas
 . parasitic elements (antennas)
 . . directors (antenna elements)
 . plasma antennas
 . radio antennas
 . . microwave antennas
 . . . horn antennas
 . . . lens antennas

. . . rectennas
 . . . spacetennas
 . satellite antennas
 . Schwarzschild antennas
 . spacecraft antennas
 . spherical antennas
 . spiral antennas
 . . log spiral antennas
 . waveguide antennas
 . . horn antennas
 . patch antennas

RT antenna arrays
 antenna couplers
 antenna design
 antenna gain
 antenna radiation patterns
 arrays
 conductors
 corners
 current sheets
 electromagnetic radiation
 folding structures
 inflatable space structures
 near fields
 radiation hardening
 ∞ radiators
 radio equipment
 radio telescopes
 reflectors
 slewing
 space technology experiments
 telecommunication
 telescopes
 towers
 transmitters

Antheus aircraft
 USE **AN-22 aircraft**

anthracene
 GS organic compounds
 . cyclic compounds
 . . cyclic hydrocarbons
 . . . **anthracene**
 . hydrocarbons
 . . cyclic hydrocarbons
 . . . **anthracene**

RT anthraquinones
 phenanthrene

anthracite
 DEF Coal of the highest metamorphic rank, in which fixed-carbon content is between 92 percent and 98 percent (on a dry, mineral-matter-free basis). It is hard and black, and has a semimetallic luster and semiconchoidal fracture. Anthracite ignites with difficulty and burns with a short blue flame, without smoke. Used for hard coal.
 UF *hard coal*
 GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . fossil fuels
 coal
 **anthracite**
 resources
 . Earth resources
 . . fossil fuels
 . . . coal
 **anthracite**
 rocks
 . sedimentary rocks
 . . carbonaceous rocks
 . . . coal
 **anthracite**

RT mineral exploration
 mining

anthraquinones
 GS ketones
 . **anthraquinones**

RT anthracene
 dyes

anthropology
 DEF The study of the interrelations of biological, cultural, geographical, and historical aspects of man.
 RT aborigines

American Indians
 anthropometry
 archaeology
 artifacts
 case histories
 cities
 culture (social sciences)
 Eskimos
 human beings
 minorities
 museums
 race factors
 races (anthropology)
 ∞ science
 social factors
 sociology

anthropometry
 GS bioengineering
 . biometrics
 . . body measurement (biology)
 . . . **anthropometry**

RT anthropology
 body size (biology)
 ∞ engineering
 human factors engineering

antiadrenergics
 GS drugs
 . **antiadrenergics**

RT adrenergics

antiaircraft missiles
 GS missiles
 . **antiaircraft missiles**
 . . BOMARC missiles
 . . . BOMARC A missile
 . . . BOMARC B missile
 . . Falcon missile
 . . Mauler missile
 . . Nike-Ajax missile
 . . Nike-Hercules missile
 . . Redeye missile
 . . SIAM missiles
 . . Sidewinder missiles
 . . tartar missile
 . . terrier missile

RT air to air missiles
 antimissile missiles
 Nike missiles
 ramjet missiles
 surface to air missiles

antibiotics
 GS drugs
 . **antibiotics**
 . . actinomycin
 . . penicillin
 . . pleurotin
 . . streptomycin
 . . tetracyclines

RT antiinfectives and antibacterials
 microorganisms
 steroids

antibodies
 GS **antibodies**
 . gamma globulin

RT acquired immunodeficiency syndrome
 antisera
 biocompatibility
 human immunodeficiency virus
 immune systems
 immunology
 inoculum
 lymphatic system
 physiological defenses
 vaccines

anticholinergics
 UF *cholinergic blocking agents*
 GS drugs
 . cholinergics
 . . **anticholinergics**

RT curare

anticlines
 DEF Geologic formations characterized by folds, the core of which contain stratigraphically

anticoagulants

older rocks; they convex upward. Used for anticlinoria.

- UF *anticlinoria*
- RT domes (geology)
geosynclines
∞ layers
strata
stratification
stratigraphy
synclines

anticlinoria

USE **anticlines**

anticoagulants

- RT adrenergics
- ∞ agents
heparins
preservatives
stabilizers (agents)

anticoincidence detectors

(added August 2000)

DEF Detectors and related systems that differentiate ambient background noise from signals of interest by identifying unwanted input signals that co-occur in time with other signals. Often used with gamma-ray detection systems.

- UF *anticoincidence shields*
- RT background radiation
coincidence circuits
comparators
counting circuits
∞ detectors
discriminators
gamma ray spectrometers
hodoscopes
particle telescopes
proportional counters
radiation counters
scintillation counters
signal detectors
trigger circuits

anticoincidence shields

(added August 2000)

USE **anticoincidence detectors**

anticonvulsants

- GS drugs
. **anticonvulsants**
- RT hexamethonium

anticyclones

- RT air masses
atmospheric pressure
cyclones
high pressure
meteorology
synoptic meteorology

antidetection technology

(added November 2001)

USE **stealth technology**

antidiuretics

- GS drugs
. **antidiuretics**
- RT urine

antidotes

- GS drugs
. **antidotes**
- RT inhibitors

antiemetics and antinauseants

- GS drugs
. **antiemetics and antinauseants**
- RT nausea

antiferroelectricity

- GS electrical properties
. **antiferroelectricity**
- RT dielectric properties
ferroelectricity
hysteresis
∞ polarization

antiferromagnetism

- GS magnetic properties
. **antiferromagnetism**

- RT ferromagnetism
hysteresis
Ising model
magnetic switching
magnons
neel temperature
paramagnetism

antifouling

DEF Measures taken to prevent corrosion or the accumulation of organic or other residues or growths on operating mechanisms, especially in underwater environments.

- GS fouling
. **antifouling**
- RT ∞ agents
cleaning
contamination
corrosion prevention
inhibitors
sterilization

antifreezes

- GS additives
. **antifreezes**
- RT antiicing additives
freezing

antifriction bearings

- GS bearings
. **antifriction bearings**
. . ball bearings
. . roller bearings
. . . needle bearings
- RT friction reduction
gas bearings
journal bearings
rolling contact loads
thrust bearings

antigens

- RT anaphylaxis
biocompatibility
immune systems
immunoassay
immunology
inoculum
physiological defenses
radioimmunoassay
Rhesus factor
vaccines

antigravity

DEF A hypothetical effect that would arise from cancellation by some energy field of the effect of the gravitational field of the earth or other body.

- RT gravitation
microgravity

Antigua and Barbuda

(added February 1989)

- GS landforms
. islands
. . West Indies
. . . **Antigua and Barbuda**
nations
. **Antigua and Barbuda**
- RT Caribbean region

antihistaminics

- GS drugs
. **antihistaminics**
. . dimenhydrinate
. . diphenyl hydantoin
. . promethazine
- RT decongestants
histamines

antihypertensive agents

- GS drugs
. **antihypertensive agents**
- RT reserpine

antiicing additives

- GS additives
. **antiicing additives**
- RT antifreezes
deicers
deicing

- fuel contamination
ice prevention
inhibitors
propellant additives
retardants

antimicrobials and antibacterials

- GS drugs
. **antimicrobials and antibacterials**
- RT antibiotics
antiseptics
bactericides
contamination
fungicides

antiknock additives

- GS additives
. **antiknock additives**
- RT automobile fuels
gasoline
∞ octane
octanes
retardants

antimatter

- GS **antimatter**
. antiparticles
. . antineutrinos
. . antinucleons
. . antiprotons
. . positrons
- RT Alpha Magnetic Spectrometer
degenerate matter
matter (physics)
matter-antimatter propulsion
negative matter

antimissile defense

- SN (PROTECTION AGAINST MISSILE ATTACK)
- GS air defense
. **antimissile defense**
- RT antiradiation missiles
civil defense
∞ defense
defense industry
defense program
military technology
missile defense
missiles
optical countermeasures
Safeguard system
Sentinel system
space surveillance (ground based)
space surveillance (spaceborne)

antimissile missiles

- GS missiles
. **antimissile missiles**
. . Mauler missile
. . Nike-Zeus missile
. . Spartan missile
. . Sprint missile
- RT antiaircraft missiles
ballistic missiles
infrared tracking
missile defense
Nike missiles
Nike X systems
Sentinel system
SIAM missiles
space weapons
surface to air missiles

antimisting fuels

- DEF Fuels which have an additive to reduce misting and thus create safer fuels.
- GS fuels
. chemical fuels
. . liquid fuels
. . . **antimisting fuels**
- RT additives
aircraft fuels
flame retardants
jet engine fuels
kerosene

antimonides

- GS antimony compounds
. **antimonides**

- . . aluminum antimonides
 - . . cadmium antimonides
 - . . cesium antimonides
 - . . gallium antimonides
 - . . germanium antimonides
 - . . indium antimonides
 - . . zinc antimonides
- antimony**
- GS chemical elements
 - . metalloids
 - . . **antimony**
 - RT metals
- antimony alloys**
- GS alloys
 - . **antimony alloys**
 - . . babbitt metal
 - RT bismuth alloys
 - mulberry (alloy)
- antimony compounds**
- GS **antimony compounds**
 - . antimonides
 - . . aluminum antimonides
 - . . cadmium antimonides
 - . . cesium antimonides
 - . . gallium antimonides
 - . . germanium antimonides
 - . . indium antimonides
 - . . zinc antimonides
 - . . antimony fluorides
 - RT ∞ chemical compounds
 - ∞ Group 5A compounds
 - ∞ metal compounds
- antimony fluorides**
- GS antimony compounds
 - . **antimony fluorides**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **antimony fluorides**
 - . halides
 - . . fluorides
 - . . . **antimony fluorides**
- antimony isotopes**
- GS chemical elements
 - . metalloids
 - . . **antimony isotopes**
 - . nuclides
 - . . isotopes
 - . . . **antimony isotopes**
 - metals
 - . **antimony isotopes**
- antineutrinos**
- GS antimatter
 - . antiparticles
 - . . **antineutrinos**
 - particles
 - . elementary particles
 - . . antiparticles
 - . . . **antineutrinos**
 - . . fermions
 - . . . leptons
 - **antineutrinos**
 - . nuclear particles
 - . . antiparticles
 - . . . **antineutrinos**
 - RT charged particles
 - neutrinos
- antinodes**
- DEF Either of the two points on an orbit where a line in the orbit plane, perpendicular to the line of nodes and passing through the focus intersects the orbit. Also a point, line, or surface in a standing wave where some characteristic of the wave field has maximum amplitude.
 - RT nodes (standing waves)
 - rarefaction
 - resonant frequencies
 - standing waves
 - vibration
 - wavelengths
- antinucleons**
- GS antimatter
- . antiparticles
 - . . **antinucleons**
 - particles
 - . elementary particles
 - . . antiparticles
 - . . . **antinucleons**
 - . nuclear particles
 - . . antiparticles
 - . . . **antinucleons**
 - nucleons
- antioxidants**
- DEF Compounding ingredients used to retard deterioration caused by oxidation.
 - GS additives
 - . **antioxidants**
 - RT ∞ agents
 - corrosion prevention
 - corrosion resistance
 - inhibitors
 - melatonin
 - preservatives
 - propellant additives
 - retardants
 - stabilizers (agents)
- antiparticles**
- DEF Particles with a charge of opposite signs to the same particles in normal matter.
 - GS antimatter
 - . **antiparticles**
 - . . antineutrinos
 - . . antinucleons
 - . . antiprotons
 - . . positrons
 - particles
 - . elementary particles
 - . . **antiparticles**
 - . . . antineutrinos
 - . . . antinucleons
 - . . . antiprotons
 - . . . positrons
 - . nuclear particles
 - . . **antiparticles**
 - . . . antineutrinos
 - . . . antinucleons
 - . . . antiprotons
 - . . . positrons
 - RT annihilation reactions
 - charged particles
 - hyperons
 - Pomeranchuk theorem
 - positron annihilation
- antiphase boundaries**
- (added March 1998)
 - UF *antiphase domains*
 - APB (materials)
 - GS boundaries
 - . **antiphase boundaries**
 - RT binary alloys
 - crystal dislocations
 - crystal lattices
 - crystal structure
 - grain boundaries
 - interfacial energy
 - intermetallics
 - microstructure
 - order-disorder transformations
 - solid solutions
 - solid-solid interfaces
 - superlattices
 - ternary alloys
- antiphase domains*
- (added March 1998)
 - USE **antiphase boundaries**
- antipodes**
- DEF Anything exactly opposite to something else. Particularly, that point on the Earth 180 deg. from a given place.
 - RT apsides
 - ionospheric propagation
 - propagation modes
 - radio transmission
 - zenith
- antiprotons**
- GS antimatter
- . antiparticles
 - . . **antiprotons**
 - particles
 - . charged particles
 - . . **antiprotons**
 - . elementary particles
 - . . antiparticles
 - . . . **antiprotons**
 - . nuclear particles
 - . . antiparticles
 - . . . **antiprotons**
 - proton-antiproton interactions
 - protons
- antiquities**
- DEF Man-made objects or surviving parts or fragments from the past.
 - RT artifacts
 - tools
 - weapons
- antiradar coatings**
- GS absorbers (materials)
 - . radar absorbers
 - . . **antiradar coatings**
 - coatings
 - . **antiradar coatings**
 - countermeasures
 - . electronic countermeasures
 - . . **antiradar coatings**
 - RT electronic warfare
 - inorganic coatings
 - metal coatings
 - plastic coatings
 - ∞ ram
 - stealth technology
- antiradiation drugs**
- UF *radioprotective agents*
 - GS drugs
 - . **antiradiation drugs**
 - . . cysteamine
 - RT nuclear medicine
 - pharmacology
 - radiation protection
 - radiation sickness
 - radiobiology
 - radiopathology
- antiradiation missiles**
- DEF Missiles that attack radiating targets such as radar transmitters, etc.
 - GS missiles
 - . **antiradiation missiles**
 - RT air defense
 - antimissile defense
 - countermeasures
 - digital radar systems
 - military technology
 - missile defense
 - remote control
- antireflection coatings**
- DEF Thin dielectric or metallic films applied to an optical surface to reduce the reflectance and thereby increase the transmittance. Note: The ideal value of the reactive index of a single layered film is the square root of the product of the refractive indices on either side of the film, the ideal optical thickness being one quarter of a wavelength.
 - GS coatings
 - . **antireflection coatings**
 - RT lens design
 - optical coatings
 - optical reflection
 - optical thickness
 - solar cells
- antiseptics**
- UF *disinfectants*
 - RT acriflavine
 - antiinfectives and antibacterials
 - bactericides
 - chemical sterilization
 - chemotherapy
 - cleaning
 - decontamination
 - environmental control
 - fumigation

antiserums

infectious diseases
purification
sterilization

antiserums

RT antibodies
immunology
serums
vaccines

antiship missiles

GS missiles
. **antiship missiles**
RT cruise missiles
sea launching
ships
submarines
weapon systems

antiship warfare

GS warfare
. **antiship warfare**
RT missiles
sea launching
ships
submarines
warheads
weapons

antisite defects

(added July 1997)

DEF Point defects occurring in crystalline compounds where an atom of one atomic species occupies an atomic site that is allocated to a different atomic species (e.g., in GaAs, an arsenic atom may sit on a site allocated to a gallium atom). If the nearest neighbor sites are occupied with the correct species for their sites (e.g., an arsenic antisite atom surrounded by arsenic atoms), the antisite atom is then bonded to four like atoms (rather than four Ga atoms). Such a configuration is not electrically neutral, but acts as a double donor. An "antisite pair" occurs if two adjacent atoms have simply been interchanged.

GS defects
. crystal defects
. . . point defects
. . . **antisite defects**
RT donor materials
gallium arsenides
interstitials
semiconductors (materials)
vacancies (crystal defects)

antiskid devices

RT aircraft brakes
arresting gear
automobiles
brakes (for arresting motion)
∞ devices
landing aids
safety devices
trucks
wheel brakes

antistatic devices

USE **static dischargers**

antisubmarine warfare

GS warfare
. **antisubmarine warfare**
RT ASROC engine
military technology
sonobuoys
submarines
torpedoes
underwater explosions
underwater trajectories

antisubmarine warfare aircraft

GS **antisubmarine warfare aircraft**
. Breguet 1150 aircraft
. CL-84 aircraft
. P-3 aircraft
. S-2 aircraft
. S-3 aircraft
. SH-3 helicopter
. SH-4 helicopter
RT ∞ aircraft

attack aircraft
bomber aircraft
drone aircraft
H-25 helicopter
∞ military aircraft
observation aircraft
P-531 helicopter
reconnaissance aircraft
S-61 helicopter
submersible aircraft
V/STOL aircraft
water takeoff and landing aircraft

antisymmetry

RT asymmetry
chirality
symmetry

antitank missiles

GS missiles
. surface to surface missiles
. . . **antitank missiles**
. . . Shillelagh missiles
. . . tow missiles

Antonov aircraft

GS **Antonov aircraft**
. AN-2 aircraft
. AN-22 aircraft
. AN-24 aircraft
RT ∞ aircraft

Antonov AN-22 aircraft

USE **AN-22 aircraft**

Antonov AN-24 aircraft

USE **AN-24 aircraft**

anvil clouds

GS clouds (meteorology)
. convection clouds
. . . cumulonimbus clouds
. . . **anvil clouds**
. . . cumulus clouds
. . . **anvil clouds**
RT atmospheric moisture
climatology
cloud cover
fog
meteorology
nephelometry
precipitation (meteorology)
thunderstorms
weather

anvils

RT compressing
tools

anxiety

DEF Nervous or fear reaction to a perception of danger.
RT detachment
fear
fear of flying
phobias
stress (biology)
Taylor manifest anxiety scale

AO-1 aircraft

USE **OV-1 aircraft**

AOIPS

USE **Atmospheric & Oceanographic Inform Sys**

aorta

GS anatomy
. circulatory system
. . . cardiovascular system
. . . blood vessels
. . . . arteries
. . . . **aorta**
RT heart

AOSO

UF *Advanced Orbiting Solar Observatory*
GS artificial satellites
. geophysical satellites
. . . OSO
. . . **AOSO**

. scientific satellites
. . . astronomical satellites
. . . . OSO
. . . . **AOSO**
observatories
. astronomical observatories
. . . astronomical satellites
. . . OSO
. . . . **AOSO**
. . . solar observatories
. . . OSO
. . . . **AOSO**
. . . geophysical observatories
. . . OSO
. . . . **AOSO**
RT sun

Apache rocket vehicle

GS rocket vehicles
. sounding rockets
. . . **Apache rocket vehicle**
RT sondes

apatites

USE **calcium phosphates minerals**

APB (materials)

(added March 1998)

USE **antiphase boundaries**

aperiodic functions

GS analysis (mathematics)
. **aperiodic functions**
functions (mathematics)
. **aperiodic functions**
RT complex variables
real variables

apertures

GS openings
. **apertures**
. . . irises (mechanical apertures)
. . . numerical aperture
. . . synthetic apertures
RT apodization
cavities
doors
gates (openings)
infrared windows
louvers
orifices
outlets
pinhole cameras
ports (openings)
slits
synthetic arrays
vents
VSAT (network)
windows (apertures)

apes

GS animals
. vertebrates
. . . mammals
. . . . primates
. . . . **apes**
. chimpanzees

apexes

UF *vertices*
RT altitude
aphelions
apogees
maxima
orbits
∞ peaks
plateaus
trajectories
zenith

aphelions

GS apsides
. **aphelions**
RT apexes
elliptical orbits
orbits
perihelions

- solar orbits
- API (computers)
(added June 2003)
USE **application programming interface**
- APL (programming language)**
DEF "A Programming Language" is a high level interactive computer language primarily designed for mathematical applications. It was developed by Kenneth Iverson in 1962. It is characterized by extensive operators and array handling capability. NASA Goddard was one of the first users and was instrumental in introducing APL to the computer community.
GS languages
. programming languages
. . . **APL (programming language)**
RT computer programming
- apnea
USE **respiration**
- apodization**
(added October 2002)
DEF The elimination or smoothing of sharp discontinuities in an image, electrical signal, or mathematical function; as in the modification of lens design to reduce diffraction fringes, or the mathematical processing of interferograms to suppress sidelobes.
RT apertures
Bragg gratings
gratings (spectra)
imaging techniques
optical filters
sidelobe reduction
wave diffraction
- apogee boost motors**
UF *ABM*
apogee kick motors
GS engines
. rocket engines
. . booster rocket engines
. . . **apogee boost motors**
. . solid propellant rocket engines
. . . **apogee boost motors**
RT ∞ boosters
motors
- apogee kick motors*
USE **apogee boost motors**
- apogees**
DEF Those orbital points farthest from the Earth, when the Earth is the center of attraction.
GS apsides
. **apogees**
RT apexes
Earth orbits
elliptical orbits
orbits
perigees
- Apollo 5 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 5 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
lunar spacecraft
moon-Earth trajectories
- Apollo 6 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 6 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
- Apollo 7 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 7 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 8 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 8 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 9 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 9 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
- Apollo 10 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 10 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 11 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 11 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 12 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 12 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
- lunar launch
Lunar Module
lunar spacecraft
moon-Earth trajectories
- manned spacecraft
moon-Earth trajectories
- Apollo 13 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 13 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 14 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 14 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 15 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 15 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
SIM
- Apollo 16 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 16 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 17 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 17 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo applications program**
GS programs
. NASA programs
. . NASA space programs
. . . **Apollo applications program**
. space programs
. . NASA space programs
. . . **Apollo applications program**
RT AAP 1 mission
AAP 2 mission
AAP 3 mission

Apollo asteroids

- AAP 4 mission
- airlock modules
- Earth Resources Program
- Earth Resources Survey Program
- Saturn 1 workshop
- Saturn 5 workshop
- Saturn project
- Saturn workshops
- Skylab program

Apollo asteroids

DEF Earth grazing asteroids in orbits between Mars and Jupiter, and crossing the Earth's orbit. This group contains 19 known asteroids.

- GS celestial bodies
 - . asteroids
 - . . **Apollo asteroids**
- RT asteroid belts
- astronomy
- Chiron
- Earth orbits
- Jupiter (planet)
- Mars (planet)
- planetary orbits
- solar system

Apollo extension system

- RT exobiology
- extravehicular activity
- lunar landing modules
- manned space flight
- NASA programs
- orbital workshops
- ∞ systems

Apollo flights

- GS space flight
 - . manned space flight
 - . . **Apollo flights**
 - . . . Apollo 5 flight
 - . . . Apollo 6 flight
 - . . . Apollo 7 flight
 - . . . Apollo 8 flight
 - . . . Apollo 9 flight
 - . . . Apollo 10 flight
 - . . . Apollo 11 flight
 - . . . Apollo 12 flight
 - . . . Apollo 13 flight
 - . . . Apollo 14 flight
 - . . . Apollo 15 flight
 - . . . Apollo 16 flight
 - . . . Apollo 17 flight
- RT Skylab program

Apollo lunar experiment module

- GS lunar spacecraft
 - . Apollo spacecraft
 - . . **Apollo lunar experiment module**
 - . . lunar landing modules
 - . . Lunar Module
 - . . . **Apollo lunar experiment module**
 - maneuverable spacecraft
 - . Apollo spacecraft
 - . . **Apollo lunar experiment module**
 - manned spacecraft
 - . Apollo spacecraft
 - . . **Apollo lunar experiment module**
 - . Lunar Module
 - . . **Apollo lunar experiment module**
 - modules
 - . spacecraft modules
 - . . landing modules
 - . . . lunar landing modules
 - Lunar Module
 - **Apollo lunar experiment module**
 - reentry vehicles
 - . recoverable spacecraft
 - . . Apollo spacecraft
 - . . . **Apollo lunar experiment module**
 - soft landing spacecraft
 - . Apollo spacecraft
 - . . **Apollo lunar experiment module**
 - . landing modules
 - . . lunar landing modules
 - . . . Lunar Module

- **Apollo lunar experiment module**
- spacecraft components
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- Lunar Module
- **Apollo lunar experiment module**
- RT lunar exploration
- lunar landing

Apollo Lunar Surface Experiments Package

- UF *ALSEP*
- GS packages
 - . instrument packages
 - . . **Apollo Lunar Surface Experiments Package**
- RT ∞ instruments
- lunar exploration
- lunar retroreflectors
- payloads
- ∞ surfaces

Apollo project

- GS programs
 - . lunar programs
 - . . **Apollo project**
 - . NASA programs
 - . . NASA space programs
 - . . . **Apollo project**
 - . projects
 - . . **Apollo project**
 - . space programs
 - . . NASA space programs
 - . . . **Apollo project**
- RT AAP 1 mission
- AAP 2 mission
- AAP 3 mission
- AAP 4 mission
- Advanced Range Instrumentation Aircraft
- command service modules
- LSSM
- lunar exploration
- Lunar Exploration System for Apollo
- lunar mobile laboratories
- lunar probes
- manned spacecraft
- Marquardt R4D engine
- Mercury project
- Saturn 1 workshop
- Saturn 5 workshop
- Saturn launch vehicles
- Saturn workshops
- SIM
- site data processors
- Skylab program
- soft landing spacecraft

Apollo short stack

- RT spacecraft configurations

Apollo Soyuz test project

- UF *ASTP*
- GS programs
- . projects
- . . **Apollo Soyuz test project**
- RT international cooperation
- international relations
- manned spacecraft
- rendezvous
- Soyuz spacecraft
- space flight
- space missions
- space programs
- space rendezvous
- spacecrew transfer
- U.S.S.R. space program

Apollo spacecraft

- GS lunar spacecraft
 - . **Apollo spacecraft**
 - . . Apollo lunar experiment module
 - maneuverable spacecraft
 - . **Apollo spacecraft**
 - . . Apollo lunar experiment module
 - manned spacecraft
 - . **Apollo spacecraft**
 - . . Apollo lunar experiment module

- reentry vehicles
- . recoverable spacecraft
- . . **Apollo spacecraft**
- . . . Apollo lunar experiment module
- soft landing spacecraft
- . **Apollo spacecraft**
- . . Apollo lunar experiment module
- RT command modules
- landing modules
- Lunar Module
- Lunar Module 5
- Lunar Module 7
- manned orbital laboratories
- Saturn project
- service modules
- Skylab program
- unified S band

Apollo telescope mount

- GS telescopes
- . manned orbital telescopes
- . . **Apollo telescope mount**
- RT Skylab program

apoptosis

(added October 2000)

DEF One of the two mechanisms by which cell death occurs (the other being the pathological process of NECROSIS). Apoptosis is the mechanism responsible for the physiological deletion of cells and appears to be intrinsically programmed. It is characterized by distinctive morphologic changes in the nucleus and cytoplasm, chromatin cleavage at regularly spaced sites, and the endonucleolytic cleavage of genomic DNA at internucleosomal sites. This mode of cell death serves as a balance to mitosis in regulating the size of animal tissues and in mediating pathological processes associated with tumor growth.

- UF *programmed cell death*
- GS physiological effects
- . **apoptosis**
- RT biological effects
- cells (biology)
- cytology
- death
- deoxyribonucleic acid
- necrosis
- radiation effects

Appalachian Mountains (North America)

- GS landforms
- . mountains
- . . **Appalachian Mountains (North America)**
- RT North America

apparatus

- USE **equipment**

appearance

- RT imagery
- quality
- visibility

appendages

- GS **appendages**
- . arm (anatomy)
- . . elbow (anatomy)
- . . forearm
- . . hand (anatomy)
- . . fingers
- . . leg (anatomy)
- . . feet (anatomy)
- . . knee (anatomy)
- . . thigh
- RT anatomy
- human body
- limbs (anatomy)

appendix (anatomy)

- GS anatomy
- . digestive system
- . . gastrointestinal system
- . . . **appendix (anatomy)**

- RT intestines
- application*
USE **utilization**
- application programming interface**
(added June 2003)
DEF An interface between a software or hardware system and an application program which allows the application program to communicate with, and to access services from the software or hardware system
UF *API (computers)*
RT computer systems programs
- application specific integrated circuits**
(added May 1989)
UF *ASIC*
custom integrated circuits
GS circuits
. integrated circuits
. . . **application specific integrated circuits**
RT chips (electronics)
large scale integration
systems-on-a-chip
very large scale integration
- Applications Explorer Satellites**
GS artificial satellites
. scientific satellites
. . . Explorer satellites
. . . **Applications Explorer Satellites**
RT Heat Capacity Mapping Mission
- ∞ **applications of mathematics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *mathematical analysis*
RT analysis (mathematics)
approximation
combinatorial analysis
computation
dimensional analysis
dynamic programming
econometrics
error analysis
finite element method
fractals
functions (mathematics)
information theory
Kalman-Schmidt filtering
linear programming
mathematical models
nonlinear programming
numerical analysis
operational calculus
operations research
optimization
parameterization
probability theory
statistical analysis
stochastic processes
time series analysis
- applications programs (computers)**
DEF Software designed to fulfill specific needs of a user; for example, software for navigation, payroll, or process control.
GS computer programs
. **applications programs (computers)**
. . . NASTRAN
. . . spreadsheets
. . . web services
RT computers
software development tools
- Applications Technology Satellites*
USE **ATS**
- approach**
GS **approach**
. airborne radar approach
. instrument approach
RT air traffic control
aircraft approach spacing
arrivals
descent
flight paths
flight plans
ground based control
guidance (motion)
landing
landing aids
passageways
touchdown
- approach and landing tests (STS)**
DEF A series of flight maneuvers involving the Space Shuttle.
RT evaluation
horizontal spacecraft landing
landing
manned spacecraft
space shuttles
space transportation system
spacecraft landing
∞ tests
touchdown
- approach control**
DEF The control process which delivers aircraft to the final approach course or landing system properly spaced for their landing.
GS **approach control**
. radar approach control
RT air traffic control
aircraft approach spacing
aircraft communication
aircraft guidance
aircraft maneuvers
automated en route ATC
collision avoidance
∞ control
flight paths
glide paths
ground based control
instrument approach
instrument flight rules
instrument landing systems
landing aids
landing radar
microwave landing systems
night flights (aircraft)
runway lights
tracking (position)
traffic control
visual control
- approach indicators**
GS aircraft instruments
. **approach indicators**
display devices
. **approach indicators**
flight instruments
. **approach indicators**
landing aids
. landing instruments
. . . **approach indicators**
measuring instruments
. indicating instruments
. . . **approach indicators**
RT air traffic control
altimeters
blind landing
glide paths
instrument approach
instrument landing systems
microwave scanning beam landing system
navigation aids
radar approach control
solar compasses
speed indicators
- appropriations**
RT budgeting
cost estimates
federal budgets
grants
- approximation**
UF *approximation methods*
nominal values
truncation (mathematics)
GS analysis (mathematics)
. numerical analysis
. . . **approximation**
. . . Born approximation
. . . Born-Oppenheimer approximation
. . . Chebyshev approximation
. . . Eddington approximation
. . . essentially non-oscillatory schemes
. . . finite difference theory
. . . finite difference time domain method
. . . finite element method
. . . Hartree approximation
. . . least squares method
. . . mean square values
. . . Milne method
. . . multigrid methods
. . . Newton methods
. . . Newton-Raphson method
. . . boundary element method
. . . discretization (mathematics)
. . . numerical differentiation
. . . Oseen approximation
. . . Pade approximation
. . . particle in cell technique
. . . Pohlhausen method
. . . predictor-corrector methods
. . . Rayleigh-Ritz method
. . . relaxation method (mathematics)
. . . Reynolds averaging
. . . Ritz averaging method
. . . Schwartz method
. . . Sommerfeld approximation
. . . TVD schemes
. . . upwind schemes (mathematics)
. . . vortex in cell technique
. . . Trefftz method
. . . computational mechanics
. . . meshfree methods
RT ∞ applications of mathematics
censored data (mathematics)
difference equations
∞ equations
form factors
Glauber theory
Godunov method
∞ methodology
minimax technique
numerical stability
problem solving
∞ relationships
spline functions
static models
statistical analysis
- approximation methods*
USE **approximation**
- apsidal angles*
USE **apsides**
- apsides**
UF *apsidal angles*
GS **apsides**
. aphelions
. apogees
. perigees
. perihelions
. perilunes
RT angles (geometry)
antipodes
elliptical orbits
orbital elements
orbital mechanics
- APT (picture transmission)*
USE **automatic picture transmission**
- aptitude**
GS abilities
. **aptitude**
RT learning
personnel selection
- Aqua spacecraft**
(added May 2005)
DEF Second in a series of EOS (Earth Observing System) spacecraft developed to advance the understanding of the ways that the Earth's lands, oceans, air, ice, and life function as a total environmental system. Aqua studies the Earth's water cycle, including evaporation from the oceans, water vapor in the atmosphere,

Aquarid meteoroids

clouds, precipitation, soil moisture, sea ice, land ice, and snow cover on the land and ice. The spacecraft carries six instruments: the Atmospheric Infrared Sounder (AIRS), the Advanced Microwave Sounding Unit (AMSU-A), the Humidity Sounder for Brazil (HSB), the Advanced Microwave Scanning Radiometer for EOS (AMSR-E), the Moderate Resolution Imaging Spectroradiometer (MODIS), and Clouds and the Earth's Radiant Energy System (CERES).

UF *EOS PM (satellite)*

GS artificial satellites
. scientific satellites

.. **Aqua spacecraft**

Earth Observing System (EOS)

. **Aqua spacecraft**

RT Aura spacecraft

CALIPSO (Pathfinder satellite)

CERES (experiment)

CloudSat

data products

Earth observations (from space)

MODIS (radiometry)

remote sensing

Terra spacecraft

Aquarid meteoroids

GS celestial bodies

. meteoroid showers

.. **Aquarid meteoroids**

. meteoroids

.. **Aquarid meteoroids**

RT Orionid meteoroids

aquatic plants

DEF Plants growing in or on water.

GS plants (botany)

. **aquatic plants**

.. phytoplankton

RT aquaculture

hydroponics

marine biology

aqueous solutions

GS mixtures

. solutions

.. **aqueous solutions**

RT hydrates

solvation

aquiculture

DEF The cultivation (breeding, raising, and harvesting) of fish, mollusks, shellfish, and/or other aquatic life as sources of food.

GS agriculture

. **aquiculture**

RT aquatic plants

fisheries

fishes

hydroponics

marine biology

marine environments

marine resources

marine technology

∞ nutrients

tidal flats

aquifers

DEF Bodies of rock that contain sufficient saturated permeable material to conduct ground water and to yield economically significant quantities of ground water to wells and springs.

GS resources

. Earth resources

.. water resources

... **aquifers**

RT fresh water

gravels

ground water

hydrogeology

hydrology

hydrothermal systems

lakes

limnology

oases

permeability

ponds

porosity

rain

sands

springs (water)

streams

water

water tables

wells

Arabian commercial satellite

USE **Arcomsat**

Arabian Sea

GS seas

. **Arabian Sea**

RT Indian Ocean

Arabsat

GS artificial satellites

. **Arabsat**

RT international cooperation

Saudi Arabian space program

aragonite

DEF A white, yellowish, or gray orthorhombic mineral, that contains calcium carbonate.

GS calcium compounds

. calcium carbonates

.. **aragonite**

carbon compounds

. carbonates

.. calcium carbonates

... **aragonite**

minerals

. **aragonite**

silicon compounds

. silicates

.. **aragonite**

RT calcite

aramid fiber composites

(added May 1992)

SN (ARAMID FIBER UTILIZATION IN COMPOSITES. FOR PROPERTIES OF ARAMID FIBERS THEMSELVES USE 'ARAMID FIBERS'.)

GS composite materials

. fiber composites

.. **aramid fiber composites**

RT aramid fibers

epoxy matrix composites

Kevlar (trademark)

metal matrix composites

polyamide resins

polymer matrix composites

reinforced plastics

whisker composites

aramid fibers

(added May 1992)

SN (PROPERTIES OF ARAMID FIBERS THEMSELVES. FOR ARAMID FIBER UTILIZATION IN COMPOSITES USE 'ARAMID FIBER COMPOSITES'.)

GS fibers

. reinforcing fibers

.. **aramid fibers**

... Kevlar (trademark)

. synthetic fibers

.. **aramid fibers**

... Kevlar (trademark)

RT aramid fiber composites

composite materials

epoxy matrix composites

fiber composites

fiber orientation

fiber strength

lay-up

plastics

polyamide resins

reinforced plastics

reinforcing materials

resin matrix composites

arc chambers

RT ∞ chambers

electric arcs

plasma generators

thrust chambers

arc clouds

GS clouds (meteorology)

. convection clouds

.. **arc clouds**

RT cyclogenesis

fronts (meteorology)

mesoscale phenomena

meteorology

observation aircraft

satellite observation

thunderstorms

arc discharges

GS electric current

. electric discharges

.. **arc discharges**

RT electric arcs

arc generators

RT electric arcs

electric generators

electrostatic generators

∞ generators

∞ induction

inductors

plasma generators

spark gaps

spark plugs

voltage generators

arc heating

UF *Gerdien arc heaters*

GS heating

. **arc heating**

RT gas heating

image furnaces

plasma heating

resistance heating

Saha equations

arc jet engines

DEF Electrothermal rocket engines that produce thrust by expanding a hot gas in an appropriate nozzle to a high velocity. The propellant is heated to a higher temperature than can be obtained through combustion processes resulting in higher exhaust velocities and better propellant efficiency.

GS engines

. rocket engines

.. electric rocket engines

... electrothermal engines

... **arc jet engines**

... pulsed jet engines

RT

electric propulsion

electrostatic engines

magnetoplasmadynamic thrusters

plasma engines

resistojet engines

arc lamps

GS lighting equipment

. luminaires

.. **arc lamps**

RT

carbon arcs

light sources

mercury arcs

searchlights

xenon lamps

arc melting

GS phase transformations

. melting

.. **arc melting**

RT

drop transfer

electroslag refining

vacuum melting

zone melting

arc spraying

UF *plasma arc spraying*

GS spraying

. **arc spraying**

RT

metal spraying

arc welding

GS welding

. fusion welding

.. electric welding

... **arc welding**

... gas tungsten arc welding

... plasma arc welding

RT

electron beam welding

heat affected zone

pressure welding

- spot welds
sputtering
- Arcas rocket vehicles**
GS rocket vehicles
. single stage rocket vehicles
. . . **Arcas rocket vehicles**
. sounding rockets
. . . **Arcas rocket vehicles**
RT radiosondes
solid propellant rocket engines
∞ vehicles
- archaeobacteria**
DEF Organisms belonging to the taxonomic kingdom of the same name which are characterized by distinct t- and r-RNAs, the absence of peptidoglycan cell walls and their possible replacement by a proteinaceous coat, ether-linked lipids from phytanyl chains, and occurrence in unusually harsh habitats, e.g., methane, halide and thermoacidic environments. These hardy bacteria are significant in the study of the origin of life.
GS microorganisms
. bacteria
. . . **archaeobacteria**
RT bacteriology
biological evolution
paleobiology
paleontology
- archaeology**
RT anthropology
cultural resources
fossils
ground penetrating radar
paleomagnetism
- archaeomagnetism*
(added April 1999)
USE **paleomagnetism**
- arches**
RT perforated shells
rigid structures
shells (structural forms)
trusses
- archipelagoes**
DEF Seas or areas in seas that contain numerous islands; also the island groups themselves.
RT Aleutian Islands (US)
islands
landforms
seas
Spitsbergen (Norway)
Virgin Islands
- architecture**
RT acoustics
buildings
construction
∞ construction materials
human factors engineering
illuminating
plant design
Starsite program
structural design
∞ structures
- architecture (computers)**
DEF The design of system and logic organization and information flow relationships in a computer rather than the circuit and component features.
UF *computer architecture*
GS **architecture (computers)**
. service oriented architecture
RT client server systems
computer components
computer design
concurrent processing
Connection Machine
distributed memory
distributed processing
hypercube multiprocessors
local area networks
logic circuits
- logic design
massively parallel processors
memory (computers)
MIMD (computers)
modularity
multidisciplinary design optimization
programmable logic devices
relational data bases
RISC processors
SIMD (computers)
software development tools
supercomputers
systolic arrays
transputers
very large scale integration
- Arcomsat**
UF *Arabian commercial satellite*
GS artificial satellites
. communication satellites
. . . **Arcomsat**
RT Africa
international cooperation
Saudi Arabian space program
Symphonie satellites
synchronous satellites
- Arcon rocket vehicle**
GS rocket vehicles
. **Arcon rocket vehicle**
RT ∞ vehicles
- ∞ **arcs**
SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT auroral arcs
curves (geometry)
electric arcs
island arcs
magnetic annular arc
plasma jets
red arcs
- Arctic environments*
USE **ice environments**
- Arctic Ocean**
GS oceans
. **Arctic Ocean**
RT Barents Sea
Beaufort Sea (North America)
Greenland
polynyas
Spitsbergen (Norway)
- Arctic regions**
GS Northern Hemisphere
. **Arctic regions**
. . subarctic regions
regions
. polar regions
. . . **Arctic regions**
. . . subarctic regions
. remote regions
. . . **Arctic regions**
. . . subarctic regions
RT Chukchi Sea
climatology
geography
muskegs
nunataks
ozone depletion
polar caps
Siberia
tundra
- area**
RT ∞ cross sections
geometry
integral calculus
line of sight
∞ sectors
∞ surfaces
volume
- area navigation**
DEF A method of navigation that permits aircraft operation on any desired course within the coverage of station-referenced navigation
- signals or within the limits of self-contained system capability.
GS navigation
. air navigation
. . **area navigation**
RT flight paths
ground tracks
- Arend-Roland comet**
GS celestial bodies
. comets
. . **Arend-Roland comet**
RT solar system
- Ares 1 first stage**
(added November 2006)
DEF A single, five-segment reusable solid rocket booster derived from the Space Shuttle Program's reusable solid rocket motor.
GS launch vehicles
. Ares 1 launch vehicle
. . **Ares 1 first stage**
rocket vehicles
. multistage rocket vehicles
. . Ares 1 launch vehicle
. . . **Ares 1 first stage**
RT booster rocket engines
- Ares 1 launch vehicle**
(added November 2006)
DEF An in-line, two-stage rocket configuration topped by the Orion crew exploration vehicle, a service module, and a launch abort system.
GS launch vehicles
. **Ares 1 launch vehicle**
. . Ares 1 first stage
. . Ares 1 upper stage
rocket vehicles
. multistage rocket vehicles
. . **Ares 1 launch vehicle**
. . . Ares 1 first stage
. . . Ares 1 upper stage
RT Ares 5 cargo launch vehicle
Constellation program
Crew Exploration Vehicle
- Ares 1 upper stage**
(added November 2006)
DEF Second stage of the Ares 1 launch vehicle incorporating a J-2X liquid oxygen/hydrogen main engine.
GS launch vehicles
. Ares 1 launch vehicle
. . **Ares 1 upper stage**
rocket vehicles
. multistage rocket vehicles
. . Ares 1 launch vehicle
. . . **Ares 1 upper stage**
RT Crew Exploration Vehicle
J-2 engine
upper stage rocket engines
- Ares 5 cargo launch vehicle**
(added November 2006)
DEF A two-stage heavy-lift launch vehicle comprised of a first stage having two five-segment reusable rocket boosters and a single liquid-fueled core propulsion booster; and an upper stage (Earth Departure Stage) propelled by a J-2X main engine.
GS launch vehicles
. heavy lift launch vehicles
. . **Ares 5 cargo launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . **Ares 5 cargo launch vehicle**
RT Altair Lunar Lander
Ares 1 launch vehicle
booster rocket engines
Constellation program
J-2 engine
- ARES (spacecraft)*
USE **Advanced Recon Electric Spacecraft**
- Argentina**
GS nations
. **Argentina**

Argentine space program

RT Argentine space program
South America

Argentine space program
(added May 1989)

GS programs
. space programs
. . **Argentine space program**

RT Argentina

Argo rocket vehicles

GS rocket vehicles
. multistage rocket vehicles
. . **Argo rocket vehicles**

RT Honest John rocket vehicle
Javelin rocket vehicle
Nike-Ajax missile
solid propellant rocket engines
sounding rockets
∞ vehicles

argon

GS chemical elements
. rare gases
. . **argon**
. . . argon isotopes
gases
. rare gases
. . **argon**
. . . argon isotopes

RT radiation trapping

argon isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **argon isotopes**
. rare gases
. . argon
. . . **argon isotopes**
gases
. rare gases
. . argon
. . . **argon isotopes**

argon lasers

GS stimulated emission devices
. lasers
. . **argon lasers**

RT chemical lasers
continuous wave lasers
gas masers
infrared lasers
Mach-Zehnder interferometers
molecular oscillations
pulsed lasers
Q switched lasers
stimulated emission

argon plasma

GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **argon plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **argon plasma**

RT helium plasma
hydrogen plasma
oxygen plasma

argon-oxygen atmospheres

GS controlled atmospheres
. **argon-oxygen atmospheres**

RT aerospace environments
∞ atmospheres
∞ breathing
gas mixtures
portable life support systems
underwater breathing apparatus

Argos system

GS networks
. satellite networks
. . **Argos system**

RT data collection platforms
data transmission
ocean data acquisitions systems

satellite doppler positioning

Argosy MK-1 aircraft

GS Hawker Siddeley aircraft
. **Argosy MK-1 aircraft**
jet aircraft
. turboprop aircraft
. . **Argosy MK-1 aircraft**
monoplanes
. **Argosy MK-1 aircraft**
transport aircraft
. **Argosy MK-1 aircraft**

RT ∞ aircraft

arguments (mathematics)

USE **independent variables**

Argus project

GS programs
. projects
. . **Argus project**

RT thermonuclear explosions

Ariane 4 launch vehicle
(added April 1995)

GS launch vehicles
. Ariane launch vehicle
. . **Ariane 4 launch vehicle**

RT European space programs
space commercialization

Ariane 5 launch vehicle
(added April 1995)

GS launch vehicles
. Ariane launch vehicle
. . **Ariane 5 launch vehicle**

RT Automated Transfer Vehicle
European space programs
space commercialization

Ariane launch vehicle

GS launch vehicles
. **Ariane launch vehicle**
. . Ariane 4 launch vehicle
. . Ariane 5 launch vehicle

RT Eldo launch vehicle
Europa launch vehicles
European Space Agency
European space programs
Geosari project

arid lands

GS land
. **arid lands**

RT barren land
Death Valley (CA)
desertification
desertline
deserts
drought
Earth environment
Earth resources
equatorial regions
Gobi desert
Mojave Desert (CA)
oases
Sahara Desert (Africa)
soils
steppes
wadis

Ariel

DEF A satellite of Uranus orbiting at a mean distance of 192,000 kilometers.

GS celestial bodies
. natural satellites
. . icy satellites
. . . **Ariel**
. . Uranus satellites
. . . **Ariel**

RT Uranus (planet)

Ariel 1 satellite

UF *S-51 satellite*

GS artificial satellites
. Ariel satellites
. . **Ariel 1 satellite**

Ariel 2 satellite

UF *S-52 satellite*

GS artificial satellites
. Ariel satellites
. . **Ariel 2 satellite**

Ariel 3 satellite

GS artificial satellites
. Ariel satellites
. . **Ariel 3 satellite**

Ariel 4 satellite

GS artificial satellites
. Ariel satellites
. . **Ariel 4 satellite**
scientific satellites
. . UK satellites
. . . **Ariel 4 satellite**

RT ionospheric electron density
ionospheric sounding

Ariel 5 satellite

DEF One in a series of artificial satellites launched for Britain by the United States.

GS artificial satellites
. Ariel satellites
. . **Ariel 5 satellite**
scientific satellites
. . UK satellites
. . . **Ariel 5 satellite**

Ariel satellites

GS artificial satellites
. **Ariel satellites**
. . Ariel 1 satellite
. . Ariel 2 satellite
. . Ariel 3 satellite
. . Ariel 4 satellite
. . Ariel 5 satellite

RT geophysical satellites
Thor Delta launch vehicle

Aries constellation

GS constellations
. **Aries constellation**

RT celestial bodies
celestial sphere
stars

Aries sounding rocket

DEF The largest in terms of weight and volume of the sounding rockets. It has a 44 inch payload capacity.

GS rocket vehicles
. sounding rockets
. . **Aries sounding rocket**

Arietid meteoroids

GS celestial bodies
. meteoroid showers
. . **Arietid meteoroids**
. meteoroids
. . **Arietid meteoroids**

ARIP (impact prediction)

USE **computerized simulation impact prediction**

ARIS instrumentation ship

USE **Advanced Range Instrumentation Ship**

arithmetic

GS number theory
. **arithmetic**
. . double precision arithmetic
. . fixed point arithmetic
. . floating point arithmetic

RT addition
calculators
computation
dividing (mathematics)
exponents
integers
multiplication
subtraction
sums

arithmetic and logic units

UF *ALU (computer components) logic units*

GS computer components
. central processing units

- . . arithmetic and logic units
 RT computers
 double precision arithmetic
 logic circuits
- Arizona**
 GS nations
 . United States
 . . **Arizona**
 RT Colorado Plateau (US)
 Colorado River (North America)
 Grand Canyon (AZ)
 Phoenix (AZ)
 Phoenix quadrangle (AZ)
- Arkansas**
 GS nations
 . United States
 . . **Arkansas**
- arm (anatomy)**
 GS anatomy
 . limbs (anatomy)
 . . **arm (anatomy)**
 . . . elbow (anatomy)
 . . . forearm
 appendages
 . **arm (anatomy)**
 . . elbow (anatomy)
 . . forearm
 RT humerus
 scapula
 ulna
 wrist
- ARMA (mathematics)*
 (added October 1997)
 USE **autoregressive moving average**
- armatures**
 RT commutators
 electric generators
 electric motors
 electric relays
 induction motors
 ∞ rotating electrical machines
 rotors
- armed forces**
 GS **armed forces**
 . armed forces (foreign)
 . armed forces (United States)
 . navy
 RT ∞ military aircraft
 ∞ military aviation
 military spacecraft
 ∞ military vehicles
 tanks (combat vehicles)
- armed forces (foreign)**
 GS armed forces
 . **armed forces (foreign)**
 RT disarmament
 enemy personnel
 ∞ military aircraft
 military technology
 ∞ military vehicles
 weapons
- armed forces (United States)**
 GS armed forces
 . **armed forces (United States)**
 RT defense program
 disarmament
 ∞ military aircraft
 military technology
 ∞ military vehicles
 weapons
 weapons industry
- Armenia**
 (added August 1993)
 GS nations
 . **Armenia**
 RT Asia
 Europe
- armor**
 RT helmets
 metal plates
- ordnance
 protective clothing
 shielding
- arms (robotics)*
 USE **robot arms**
- Army-Navy instrumentation program**
 GS programs
 . **Army-Navy instrumentation program**
 RT logistics
 military technology
- AROD (range-orbit determination)*
 USE **airborne range and orbit determination**
- ∞ **aromatic compounds**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *aryl compounds*
 RT ∞ chemical compounds
 chloroaromatics
 furfuryl alcohol
 hydrocarbons
 methylidyne
 organic compounds
 polycyclic aromatic hydrocarbons
- Aroos meteorite**
 GS celestial bodies
 . meteorites
 . . iron meteorites
 . . . **Aroos meteorite**
- arousal**
 RT alertness
 electroencephalography
 ∞ stimuli
- ARPA computer network**
 DEF The "Advanced Research Projects Agency" of the Department of Defense nationwide computer network incorporating digital communication between large numbers of dissimilar computers as well as direct access to programs, data, storage, etc. shared by all terminals.
 GS networks
 . communication networks
 . . internets
 . . . **ARPA computer network**
 . computer networks
 . . internets
 . . . **ARPA computer network**
 RT computer techniques
 queueing theory
 satellite communication
 spacecraft communication
 switching circuits
 telecommunication
 VSAT (network)
- ARQ (communication)*
 USE **automatic repeat request**
- arrays**
 GS **arrays**
 . antenna arrays
 . . linear arrays
 . . . endfire arrays
 Yagi antennas
 . . . multispectral linear arrays
 . . steerable antennas
 . . . inertialess steerable antennas
 . . turnstile antennas
 . large aperture seismic array
 . laser arrays
 . multi-anode microchannel arrays
 . phased arrays
 . solar arrays
 . . solar blankets
 . synthetic arrays
 . systolic arrays
 RT antennas
 focal plane devices
 matrices (mathematics)
 photomasks
 pushbroom sensor modes
- ranking
 ∞ statistics
- ∞ **arresters**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT arresting gear
 blocking
 brakes (for arresting motion)
 gaps
 lightning
- arresting gear**
 GS landing aids
 . **arresting gear**
 safety devices
 . **arresting gear**
 RT abort apparatus
 aircraft carriers
 aircraft safety
 antiskid devices
 ∞ arresters
 ∞ barriers
 brakes (for arresting motion)
 crash landing
 ∞ gear
- arrhythmia**
 DEF Absence of rhythm, as, for example, in heart beat.
 GS rates (per time)
 . heart rate
 . . **arrhythmia**
- arrivals**
 RT approach
 landing
- arrow wings**
 DEF Aircraft wings of V-shaped planform, either tapering or of constant chord, suggesting a stylized arrowhead.
 GS airfoils
 . wings
 . . swept wings
 . . . sweptback wings
 **arrow wings**
 planforms
 . wing planforms
 . . sweptback wings
 . . . **arrow wings**
 RT caret wings
 delta wings
 variable sweep wings
- arroyos**
 GS landforms
 . **arroyos**
 RT canyons
 drainage patterns
 erosion
 limnology
 rain impact damage
 water
 water currents
 water erosion
- arsenates**
 GS arsenic compounds
 . **arsenates**
 RT arsenides
 ∞ oxygen compounds
- arsenic**
 GS chemical elements
 . metalloids
 . . **arsenic**
 . . . arsenic isotopes
 RT metals
- arsenic alloys**
 GS alloys
 . **arsenic alloys**
 RT metalloids
- arsenic compounds**
 GS **arsenic compounds**
 . arsenates
 . arsenides
 . . aluminum arsenides

arsenic isotopes

- . . . aluminum gallium arsenides
- . . . indium aluminum arsenides
- . . . gallium arsenides
- . . . aluminum gallium arsenides
- . . . indium gallium arsenides
- . . . indium arsenides
- . . . indium aluminum arsenides
- . . . indium gallium arsenides
- . . . proustite

RT ∞ chemical compounds
∞ Group 5A compounds

arsenic isotopes

GS chemical elements
. metalloids
. arsenic
. . . **arsenic isotopes**
. nuclides
. isotopes
. . . **arsenic isotopes**

RT metals
radioactive isotopes

arsenides

GS arsenic compounds
. **arsenides**
. . . aluminum arsenides
. . . aluminum gallium arsenides
. . . indium aluminum arsenides
. . . gallium arsenides
. . . aluminum gallium arsenides
. . . indium gallium arsenides
. . . indium arsenides
. . . indium aluminum arsenides
. . . indium gallium arsenides
. . . proustite

RT arsenates
intermetallics

artemia

GS animals
. invertebrates
. . . arthropods
. . . **artemia**

arteries

GS anatomy
. circulatory system
. . . cardiovascular system
. . . blood vessels
. . . . **arteries**
. aorta
. arterioles

RT arteriosclerosis
bifurcation (biology)
carotid sinus body
carotid sinus reflex
phonoarteriography
sphygmography
veins

arterioles

(added August 2004)
DEF The smallest divisions of the arteries located between the muscular arteries and the capillaries.

GS anatomy
. circulatory system
. . . cardiovascular system
. . . blood vessels
. . . . arteries
. **arterioles**

RT arteriosclerosis
bifurcation (biology)
capillaries (anatomy)

arteriosclerosis

UF *atherosclerosis*
GS diseases
. **arteriosclerosis**

RT angina pectoris
arteries
arterioles
cholesterol
circulatory system
coronary artery disease
myocardial infarction

arthritis

GS diseases

. **arthritis**

RT bones
calcification
joints (anatomy)
rheumatic diseases

arthropods

GS animals
. invertebrates
. . . **arthropods**
. . . artemia
. . . crabs
. . . insects
. . . . bees
. . . . bollworms
. . . . chironomus flies
. . . . cockroaches
. . . . Coleoptera
. . . . beetles
. tribolia
. boll weevils
. . . . crickets
. . . . Drosophila
. . . . fireflies
. . . . grasshoppers
. . . . locusts
. . . . moths
. . . . silkworms
. . . spiders

RT exoskeletons
larvae

articulation (speech)

GS speech
. **articulation (speech)**

RT languages
speech defects

artifacts

RT anthropology
antiquities
culture (social sciences)
museums

artificial cardiac pacemaker

GS medical equipment
. **artificial cardiac pacemaker**

RT biotechnology
blood circulation
cardiology
circulatory system
heart
heart conduction system
pulmonary circulation

artificial clouds

GS clouds (meteorology)
. **artificial clouds**
. . . chemical clouds
. . . barium ion clouds

RT weather modification

artificial ears

GS medical equipment
. prosthetic devices
. . . **artificial ears**

RT ear

artificial gravity

DEF A simulated gravity established within a space vehicle by rotation or acceleration.

GS gravitation
. **artificial gravity**

RT acceleration stresses (physiology)
∞ astronautics
environmental control
gravity gradient satellites
human centrifuges
life support systems
lower body negative pressure
rotating environments
spin dynamics
weightlessness

artificial harbors

GS waterways
. harbors
. . . **artificial harbors**

RT cargo ships
deepwater terminals

dredging
marine technology
oceanography
offshore docking
offshore platforms
ship terminals
tanker ships
tanker terminals
∞ tankers
terminal facilities
transportation

artificial heart valves

GS medical equipment
. **artificial heart valves**
valves
. heart valves
. . . **artificial heart valves**

RT biotechnology
blood circulation
blood pumps
heart
heart implantation

artificial intelligence

DEF A discipline concerned with the development of computer and extended-robotic systems that can exhibit intelligent action. May also be defined as a subfield of computer science concerned with concepts and methods of symbolic inference by a computer and the symbolic representation of the knowledge to be used in making inferences.

UF *machine recognition*
GS intelligence
. **artificial intelligence**

RT automata theory
backpropagation (artificial intelligence)
belief networks
bionics
character recognition
cognition
computer vision
computers
decision support systems
depersonalization
expert systems
genetic algorithms
hypertext
information processing (biology)
intellect
knowledge based systems
knowledge bases (artificial intelligence)
knowledge representation
∞ logic
logic programming
machine learning
natural language processing
perception
pilot support systems
predicate calculus
predicate logic
Prolog (programming language)
robotics
robots
self organizing systems
theorem proving
voice data processing

artificial radiation belts

GS particles
. charged particles
. . . magnetically trapped particles
. . . radiation belts
. . . . **artificial radiation belts**
. corpuscular radiation
. . . radiation belts
. . . . **artificial radiation belts**
. . . trapped particles
. . . magnetically trapped particles
. . . radiation belts
. . . . **artificial radiation belts**

RT inner radiation belt
nuclear explosions
outer radiation belt

- ∞ radiation
- artificial respiration
- USE **resuscitation**
- artificial satellites**
 - DEF Man-made satellites.
 - GS **artificial satellites**
 - . active satellites
 - . . . SYNCOM satellites
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . Alouette satellites
 - . . Alouette 1 satellite
 - . . Alouette 2 satellite
 - . . Alouette B satellite
 - . Arabsat
 - . Ariel satellites
 - . . Ariel 1 satellite
 - . . Ariel 2 satellite
 - . . Ariel 3 satellite
 - . . Ariel 4 satellite
 - . . Ariel 5 satellite
 - . BESS (satellite)
 - . biosatellites
 - . . Biosatellite 1
 - . . Biosatellite 2
 - . . Biosatellite 3
 - . . Orbiting Frog Otolith
 - . . Sputnik 2 satellite
 - . communication satellites
 - . . ACTS
 - . . aeronautical satellites
 - . . . Aerosat satellites
 - . . Arcomsat
 - . . Communications Technology Satellite
 - . . . ComStar C
 - . . . NATO 3B satellite
 - . . ComStar satellites
 - . . direct broadcast satellites
 - . . European Communications Satellite
 - . . Intelsat satellites
 - . . low frequency transionospheric satellites
 - . . L-Sat
 - . . Marecs maritime satellites
 - . . Marots (ESA)
 - . . Molniya satellites
 - . . MSAT
 - . . Palapa satellites
 - . . . Palapa 2 satellite
 - . . Raduga satellite
 - . . RCA Satcom satellites
 - . . Relay satellites
 - . . . Relay 1 satellite
 - . . . Relay 2 satellite
 - . . Symphonie satellites
 - . . SYNCOM satellites
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . . TDR satellites
 - . . Westar satellites
 - . . COSPAS
 - . . Courier satellite
 - . . Diademe satellites
 - . . Discoverer satellites
 - . . Dodge satellite
 - . . EROS (satellites)
 - . . ESA satellites
 - . . . Aerosat satellites
 - . . . COS-B satellite
 - . . . ERS-1 (ESA satellite)
 - . . . ERS-2 (esa satellite)
 - . . . ESRO 1 satellite
 - . . . ESRO 2 satellite
 - . . . ESRO 4 satellite
 - . . European Communications Satellite
 - . . Exosat satellite
 - . . GEOS satellites (ESA)
 - . . HEOS satellites
 - . . . HEOS A satellite
 - . . . HEOS B satellite
 - . . Hipparcos satellite
 - . . . Infrared Space Observatory (ISO)
 - . . L-Sat
 - . . Magellan ultraviolet astronomy satellite
 - . . Marecs maritime satellites
 - . . Marots (ESA)
 - . . METEOSAT satellite
 - . . . OTS (ESA)
 - . . TD satellites
 - . . . TD-1 satellite
 - . . Envisat-1 satellite
 - . . XMM-Newton telescope
 - . . European 1 spacecraft
 - . . evasive satellites
 - . . French satellites
 - . . D-1 satellite
 - . . D-2 satellites
 - . . EOLE satellites
 - . . FR-1 satellite
 - . . GEOLE satellites
 - . . PEOLE satellites
 - . . Poseidon satellite
 - . . SPOT (French satellite)
 - . . SRET satellites
 - . . . SRET 1 satellite
 - . . . SRET 2 satellite
 - . . geodetic satellites
 - . . ANNA satellites
 - . . Explorer 29 satellite
 - . . Explorer 36 satellite
 - . . GEOLE satellites
 - . . GEOS 1 satellite
 - . . GEOS 2 satellite
 - . . GEOS 3 satellite
 - . . Geosat satellites
 - . . LARGOS satellite
 - . . PAGEOS satellite
 - . . Vanguard 1 satellite
 - . . geophysical satellites
 - . . . Cosmos satellites
 - . . . Cosmos 2 satellite
 - . . . Cosmos 3 satellite
 - . . . Cosmos 5 satellite
 - . . . Cosmos 6 satellite
 - . . . Cosmos 14 satellite
 - . . . Cosmos 44 satellite
 - . . . Cosmos 54 satellite
 - . . . Cosmos 71 satellite
 - . . . Cosmos 110 satellite
 - . . . Cosmos 137 satellite
 - . . . Cosmos 144 satellite
 - . . . Cosmos 149 satellite
 - . . . Cosmos 166 satellite
 - . . . Cosmos 186 satellite
 - . . . Cosmos 188 satellite
 - . . . Cosmos 206 satellite
 - . . . Cosmos 213 satellite
 - . . . Cosmos 224 satellite
 - . . . Cosmos 225 satellite
 - . . . Cosmos 381 satellite
 - . . . Cosmos 954 satellite
 - . . . Cosmos 1129 satellite
 - . . Intercosmos satellites
 - . . Explorer 6 satellite
 - . . Explorer 10 satellite
 - . . Explorer 12 satellite
 - . . Explorer 45 satellite
 - . . OGO
 - . . . EGO
 - . . . OGO-3
 - . . . OGO-5
 - . . . OGO-A
 - . . . POGO
 - OGO-4
 - OGO-6
 - OGO-C
 - OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - Polar/GGS spacecraft
 - . . . Radiation and Meteoroid satellite
 - . . . Sputnik 3 satellite
 - . . . Vanguard 3 satellite
 - . . . Wind/GGS spacecraft
 - . . GEOS-D satellite
 - . . gravity gradient satellites
 - . . . ATS
 - ATS 1
 - ATS 2
 - ATS 3
 - ATS 4
 - ATS 5
 - ATS 6
 - ATS 7
 - ATS 8
 - . . . ORBIS CAL satellite
 - . . GREB satellites
 - . . Helios satellites
 - . . . Helios 1
 - . . . Helios 2
 - . . . Helios A
 - . . . Helios B
 - . . Injun satellites
 - . . . Explorer 25 satellite
 - . . . Injun 1 satellite
 - . . . Injun 3 satellite
 - . . . Injun 4 satellite
 - . . INMARSAT satellites
 - . . Inspector satellite
 - . . IRIS satellites
 - . . ISIS satellites
 - . . . Alouette 2 satellite
 - . . . ISIS-A
 - . . . ISIS-B
 - . . . ISIS-X
 - . . Landsat satellites
 - . . . Landsat 1
 - . . . Landsat 2
 - . . . Landsat 3
 - . . . Landsat 4
 - . . . Landsat 5
 - . . . Landsat 6
 - . . . Landsat 7
 - . . . Landsat E
 - . . . Landsat F
 - . . Lincoln Experimental Satellites
 - . . lunar satellites
 - . . . Explorer 18 satellite
 - . . . Explorer 28 satellite
 - . . . IMP
 - . . Lunar Orbiter
 - . . . Lunar Orbiter 1
 - . . . Lunar Orbiter 2
 - . . . Lunar Orbiter 3
 - . . . Lunar Orbiter 4
 - . . . Lunar Orbiter 5
 - . . Lunar Prospector
 - . . . orbiting lunar stations
 - . . Mapsat
 - . . Marisat satellites
 - . . . Marisat 1 satellite
 - . . maritime satellites
 - . . . ERS-1 (ESA satellite)
 - . . Marecs maritime satellites
 - . . . Marots (ESA)
 - . . meteorological satellites
 - . . AEROS satellite
 - . . . Cosmos 144 satellite
 - . . D-2 satellites
 - . . DMSP satellites
 - . . Elektron satellites
 - . . . Elektron 1 satellite
 - . . . Elektron 2 satellite
 - . . . Elektron 4 satellite
 - . . EOLE satellites
 - . . ESSA satellites
 - . . . ESSA 1 satellite
 - . . . ESSA 2 satellite
 - . . . ESSA 3 satellite
 - . . . ESSA 4 satellite
 - . . . ESSA 5 satellite
 - . . . ESSA 6 satellite
 - . . . ESSA 7 satellite
 - . . . ESSA 8 satellite
 - . . . ESSA 9 satellite
 - . . Explorer 9 satellite
 - . . Explorer 17 satellite

artificial satellites

- .. Explorer 19 satellite
- .. GEOLE satellites
- .. GOES satellites
 - ... GOES 1
 - ... GOES 2
 - ... GOES 3
 - ... GOES 4
 - ... GOES 5
 - ... GOES 6
 - ... GOES 7
 - ... GOES 8
 - ... GOES 9
 - ... GOES 10
 - ... GOES 13
- .. METEOSAT satellite
- .. Nimbus satellites
 - ... Nimbus 1 satellite
 - ... Nimbus 2 satellite
 - ... Nimbus 3 satellite
 - ... Nimbus 4 satellite
 - ... Nimbus 5 satellite
 - ... Nimbus 6 satellite
 - ... Nimbus 7 satellite
- .. NOAA satellites
 - ... NOAA 2 satellite
 - ... NOAA 3 satellite
 - ... NOAA 4 satellite
 - ... NOAA 5 satellite
 - ... NOAA 6 satellite
 - ... NOAA 7 satellite
 - ... NOAA 8 satellite
 - ... NOAA 9 satellite
 - ... NOAA 10 satellite
 - ... NOAA 11 satellite
 - ... NOAA 12 satellite
 - ... NOAA 14 satellite
- .. San Marco satellites
 - ... San Marco 1 satellite
 - ... San Marco 2 satellite
 - ... San Marco 3 satellite
- .. SEOCS (satellite)
- .. SIRS B satellite
- .. Sputnik 1 satellite
- .. Sputnik 2 satellite
- .. Sputnik 3 satellite
- .. SRET satellites
 - ... SRET 1 satellite
 - ... SRET 2 satellite
- .. Synchronous Earth Observatory satellite
 - ... SMS 1
 - ... SMS 2
- .. Synchronous Meteorological Satellite
 - ... SMS 1
 - ... SMS 2
- .. TIROS satellites
 - ... ITOS satellites
 - ITOS 1
 - ITOS 2
 - ITOS 3
 - ITOS 4
 - ... TIROS 1 satellite
 - ... TIROS 2 satellite
 - ... TIROS 3 satellite
 - ... TIROS 4 satellite
 - ... TIROS 5 satellite
 - ... TIROS 6 satellite
 - ... TIROS 7 satellite
 - ... TIROS 8 satellite
 - ... TIROS 9 satellite
 - ... TIROS 10 satellite
 - ... TIROS M
 - ... TIROS N series satellites
 - NOAA 6 satellite
- .. TRMM satellite
- .. Vanguard 2 satellite
- .. Midas satellites
 - ... Midas 2 satellite
 - ... Midas 3 satellite
 - ... Midas 4 satellite
 - ... Midas 5 satellite
 - ... Midas 6 satellite
 - ... Midas 7 satellite
- .. Multispectral Resource Sampler navigation satellites
 - ... Aerosat satellites
 - ... Explorer 22 satellite
 - ... navigation technology satellites
- .. NAVSTAR satellites
- .. Nova satellites
- .. Refsat
 - ... Transit Attitude Control satellite
- .. Transit satellites
 - ... orbital workshops
 - ... Saturn workshops
 - Saturn 1 workshop
 - Saturn 5 workshop
 - ... Skylab 1
 - ... Skylab 2
 - ... Skylab 3
 - ... Skylab 4
- .. PAS
 - ... passive satellites
 - ... Beacon satellites
 - Beacon Explorer A
 - Explorer 22 satellite
 - ... Echo satellites
 - Echo 1 satellite
 - Echo 2 satellite
 - ... LAGEOS (satellite)
 - ... PAGEOS satellite
 - ... Pegasus satellites
 - ... Polyot satellites
 - ... ROSAT mission
 - ... SAGE satellite
 - ... Samos
 - ... SarSat
 - ... scientific satellites
 - ... AMPTE (satellites)
 - ... astronomical satellites
 - Astronomical Netherlands Satellite
 - Gamma Ray Observatory
 - Ginga satellite
 - HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - HEAO 4
 - Hubble Space Telescope
 - Infrared Astronomy Satellite
 - Infrared Space Observatory (ISO)
 - IUE
 - Large Deployable Reflector
 - Magellan ultraviolet astronomy satellite
 - ... OAO
 - OAO 1
 - OAO 2
 - OAO 3
 - ... OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - ... Quasat
 - ... SAS
 - Explorer 53 satellite
 - SAS-1
 - SAS-2
 - SAS-3
 - ... Constellation-X
 - ... Fermi Gamma-ray Space Telescope
 - ... James Webb Space Telescope
 - ... LISA (observatory)
 - ... Space Infrared Telescope Facility
 - ... Spartan satellites
 - ... Submillimeter Wave Astronomy Satellite
 - ... Swift observatory
 - ... Tenma satellite
 - ... X Ray Astrophysics Facility
 - .. XMM-Newton telescope
 - .. ATS
 - ... ATS 1
 - ... ATS 2
 - ... ATS 3
 - ... ATS 4
 - ... ATS 5
 - ... ATS 6
 - ... ATS 7
 - ... ATS 8
 - .. Azur satellite
 - .. Cannonball 2 satellite
 - .. CRRES (satellite)
 - .. DIAL satellite
 - .. Environmental Research Satellites
 - ... ERS 17
 - ... ERS 18
 - ... Intasat satellite
 - .. EXOS satellites
 - ... EXOS-A satellite
 - ... EXOS-B satellite
 - ... EXOS-C satellite
 - ... EXOS-D satellite
 - .. Exosat satellite
 - .. Explorer satellites
 - ... Applications Explorer Satellites
 - ... Cosmic Background Explorer satellite
 - Dual Air Density Explorer
 - ... Dynamics Explorer satellites
 - Dynamics Explorer 1 satellite
 - Dynamics Explorer 2 satellite
 - ... Explorer 1 satellite
 - ... Explorer 2 satellite
 - ... Explorer 3 satellite
 - ... Explorer 4 satellite
 - ... Explorer 5 satellite
 - ... Explorer 6 satellite
 - ... Explorer 7 satellite
 - ... Explorer 8 satellite
 - ... Explorer 9 satellite
 - ... Explorer 10 satellite
 - ... Explorer 11 satellite
 - ... Explorer 12 satellite
 - ... Explorer 14 satellite
 - ... Explorer 15 satellite
 - ... Explorer 16 satellite
 - ... Explorer 17 satellite
 - ... Explorer 18 satellite
 - ... Explorer 19 satellite
 - ... Explorer 20 satellite
 - ... Explorer 21 satellite
 - ... Explorer 22 satellite
 - ... Explorer 23 satellite
 - ... Explorer 24 satellite
 - ... Explorer 25 satellite
 - ... Explorer 26 satellite
 - ... Explorer 27 satellite
 - ... Explorer 28 satellite
 - ... Explorer 29 satellite
 - ... Explorer 30 satellite
 - ... Explorer 31 satellite
 - ... Explorer 32 satellite
 - ... Explorer 33 satellite
 - ... Explorer 34 satellite
 - ... Explorer 35 satellite
 - ... Explorer 36 satellite
 - ... Explorer 37 satellite
 - ... Explorer 38 satellite
 - ... Explorer 39 satellite
 - ... Explorer 40 satellite
 - ... Explorer 41 satellite
 - ... Explorer 43 satellite
 - ... Explorer 44 satellite
 - ... Explorer 45 satellite
 - ... Explorer 46 satellite
 - ... Explorer 47 satellite
 - ... Explorer 48 satellite
 - ... Explorer 49 satellite
 - ... Explorer 50 satellite
 - ... Explorer 51 satellite
 - ... Explorer 52 satellite
 - ... Explorer 53 satellite
 - ... Explorer 54 satellite
 - ... Explorer 55 satellite
 - ... Extreme Ultraviolet Explorer satellite
 - ... Far UV Spectroscopic Explorer
 - ... IMP
 - ... International Magnetospheric Explorer
 - ... International Sun Earth Explorers
 - International Sun Earth Explorer 1
 - International Sun Earth Explorer 2

- International Sun Earth Explorer 3
- Advanced Composition Explorer
- IMAGE satellite
- Micrometeoroid Explorer satellites
- Radio Astronomy Explorer satellite
- Solar Mesosphere Explorer
- Submillimeter Wave Astronomy Satellite
- Transition Region and Coronal Explorer
- Uhuru satellite
- X Ray Timing Explorer
- Geopotential Research Mission
- Hawkeye satellites
- Long Duration Exposure Facility
- LZEEBE satellite
- MagSat satellites
- MagSat 1 satellite
- Magsat A satellite
- MagSat B satellite
- ORBIS
- ORBIS CAL satellite
- OV-1 satellites
- OV-2 satellites
- OV-3 satellites
- OV-4 satellites
- OV-5 satellites
- SCATHA satellite
- small scientific satellites
- Submillimeter Wave Astronomy Satellite
- Transition Region and Coronal Explorer
- UK satellites
- Ariel 4 satellite
- Ariel 5 satellite
- Miranda satellite
- UK 4 satellite
- Aqua spacecraft
- Aura spacecraft
- CALIPSO (Pathfinder satellite)
- CloudSat
- Glory Mission satellite
- Ice, Cloud and Land Elevation Satellite
- Polar/GGS spacecraft
- QuikSCAT satellite
- TRMM satellite
- Upper Atmosphere Research Satellite (UARS)
- Wind/GGS spacecraft
- SCORE satellite
- SEASAT satellites
- SEASAT 1
- SEASAT-B satellite
- Shuttle pallet satellites
- Skynet satellites
- Snapshot satellite
- solar power satellites
- Solar Radiation 1 satellite
- Solar Radiation 3 satellite
- Soviet satellites
- Cosmos 782 satellite
- Cosmos 936 satellite
- Cosmos satellites
- Cosmos 2 satellite
- Cosmos 3 satellite
- Cosmos 5 satellite
- Cosmos 6 satellite
- Cosmos 14 satellite
- Cosmos 44 satellite
- Cosmos 54 satellite
- Cosmos 71 satellite
- Cosmos 110 satellite
- Cosmos 137 satellite
- Cosmos 144 satellite
- Cosmos 149 satellite
- Cosmos 166 satellite
- Cosmos 186 satellite
- Cosmos 188 satellite
- Cosmos 206 satellite
- Cosmos 213 satellite
- Cosmos 224 satellite
- Cosmos 225 satellite
- Cosmos 381 satellite
- Cosmos 954 satellite
- Cosmos 1129 satellite

- Interkosmos satellites
- Granat satellite
- Molniya satellites
- Prognoz satellites
- Proton satellites
- Proton 1 satellite
- Proton 2 satellite
- Proton 3 satellite
- Proton 4 satellite
- Raduga satellite
- Sputnik satellites
- Sputnik 1 satellite
- Sputnik 2 satellite
- Sputnik 3 satellite
- Sputnik 4 satellite
- Sputnik 5 satellite
- Venera satellites
- Venera 2 satellite
- Venera 3 satellite
- Venera 4 satellite
- Venera 5 satellite
- Venera 6 satellite
- Venera 7 satellite
- Venera 8 satellite
- Venera 9 satellite
- Venera 10 satellite
- Venera 11 satellite
- Venera 12 satellite
- space stations
- Automatic Universal Orbiting Stations
- Columbus space station
- Halo Orbit space station
- International Space Station
- man tended free flyers
- Mir space station
- orbiting lunar stations
- Salyut space station
- Skylab 1
- Skylab 2
- Skylab 3
- Skylab 4
- Space Operations Center (NASA)
- Space Station Freedom
- space station polar platforms
- synchronous satellites
- AEROS satellite
- Aerosat satellites
- Anik satellites
- Anik 1
- Anik 2
- Anik 3
- GOES satellites
- GOES 1
- GOES 2
- GOES 3
- GOES 4
- GOES 5
- GOES 6
- GOES 7
- GOES 8
- GOES 9
- GOES 10
- GOES 13
- Miranda satellite
- SIRIO satellite
- StormSat satellite
- Synchronous Earth Observatory satellite
- SMS 1
- SMS 2
- Synchronous Meteorological Satellite
- SMS 1
- SMS 2
- SYNCOM satellites
- Early Bird satellites
- SYNCOM 1 satellite
- SYNCOM 2 satellite
- SYNCOM 3 satellite
- SYNCOM 4 satellite
- TD satellites
- TD-1 satellite
- Telstar satellites
- Telstar 1 satellite
- Telstar 2 satellite
- tethered satellites
- Vanguard satellites
- Vanguard 1 satellite

- . . . Vanguard 2 satellite
- . . . Vanguard 3 satellite
- . . . Engineering Test Satellites
- . . . microsattelites
- . . . nanosatellites
- . . . Terra spacecraft
- . . . Vela satellites
- RT flexible spacecraft
- inflatable spacecraft
- interplanetary spacecraft
- lunar orbits
- lunar spacecraft
- maneuverable spacecraft
- manned spacecraft
- military spacecraft
- National Oceanic Satellite System
- natural satellites
- observatories
- orbits
- reconnaissance spacecraft
- satellite sounding
- ∞ satellites
- space capsules
- space laboratories
- Telstar project
- unmanned spacecraft

artillery

- GS weapons
- . guns (ordnance)
- . . . **artillery**
- . . . howitzers
- . . . precision guided projectiles
- RT gun launchers
- gunnery training
- missiles
- rifles
- Sabot projectiles

artillery fire

- RT ∞ barrages
- gunfire

arts

- GS **arts**
- . graphic arts
- . . animation
- . . . computer animation
- RT creativity
- music

Aryabhata

- USE **Indian spacecraft**

aryl compounds

- USE **aromatic compounds**

ASA

- USE **acetylsalicylic acid**

asbestos

- GS minerals
- . **asbestos**
- RT Amberlite (trademark)
- electrical insulation
- insulation
- nonflammable materials
- serpentine
- thermal insulation

ascent

- GS **ascent**
- . climbing flight
- RT balloons
- descent
- Lunar Module Ascent Stage
- takeoff

ascent propulsion systems

- GS propulsion
- . **ascent propulsion systems**
- propulsion system configurations
- . **ascent propulsion systems**
- RT Lunar Module
- missiles
- propellants
- rocket propellants
- space flight
- Space Shuttle Ascent Stage

ascent trajectories

∞ systems

ascent trajectories

GS trajectories
 . **ascent trajectories**
 RT ballistic trajectories
 climbing flight
 coasting flight
 descent trajectories
 flight mechanics
 guidance (motion)
 injection guidance
 lofting
 Lunar Module Ascent Stage
 midcourse trajectories
 missile trajectories
 orbit insertion
 parabolic flight
 post boost propulsion system
 rendezvous trajectories
 spacecraft trajectories

ascorbic acid

UF *vitamin C*
 GS acids
 . **ascorbic acid**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **ascorbic acid**
 vitamins
 . **ascorbic acid**

ascorbic acid metabolism

GS metabolism
 . **ascorbic acid metabolism**
 RT vitamins

ASCR reactor

USE **advanced sodium cooled reactor**

ASDE

USE **airport surface detection equipment**

ASE (aerodynamics)

USE **aeroservoelasticity**

ashes

GS **ashes**
 . fly ash
 RT air pollution
 coal
 combustion products
 cultivation
 fertilizers
 fire damage
 forest fires
 lignite
 reaction products
 residues

Asia

GS continents
 . **Asia**
 RT Afghanistan
 Armenia
 Azerbaijan
 Bangladesh
 Brunei
 Burma
 Cambodia
 China
 Commonwealth of Independent States
 Georgia (Eurasia)
 Himalayas
 Hong Kong
 India
 Iran
 Iraq
 Israel
 Japan
 Kazakhstan
 Kuwait
 Kyrgyzstan
 Laos
 Lebanon
 Malaysia
 Middle East

Mongolia
 nations
 Nepal
 North Korea
 Pakistan
 Papua New Guinea
 Qatar
 Red Sea
 Russian Federation
 Saudi Arabia
 Sea of Japan
 Siberia
 Sikkim
 Singapore
 South Korea
 Southeast Asia
 Southern Yemen
 Sri Lanka
 Syria
 Taiwan
 Tajikistan
 Thailand
 Tibet
 tundra
 Turkmenistan
 U.S.S.R.
 Uzbekistan
 Vietnam
 Yemen

ASIC

USE **application specific integrated circuits**

aspartates

GS biopolymers
 . proteins
 . . **aspartates**
 esters
 . **aspartates**
 organic compounds
 . proteins
 . . **aspartates**
 RT amino acids
 aspartic acid

aspartic acid

GS acids
 . amino acids
 . . **aspartic acid**
 . carboxylic acids
 . . **aspartic acid**
 organic compounds
 . amino acids
 . . **aspartic acid**
 . carboxylic acids
 . . **aspartic acid**
 RT aspartates
 peptides

aspect ratio

DEF In general, the ratio of one dimension to another. In aeronautics, the ratio of the square of the span of an airfoil to the total airfoil area, or the ratio of its span to its mean chord.

UF *slenderness ratio*

GS ratios
 . **aspect ratio**
 . . fineness ratio
 . . high aspect ratio
 . . low aspect ratio
 . . thickness ratio

RT aerodynamic characteristics
 airfoils
 dimensional analysis
 dimensional stability
 lift
 ∞ span
 structural stability
 wings

Aspergillus

GS plants (botany)
 . fungi
 . . **Aspergillus**
 RT infectious diseases
 ∞ mold

asphalt

DEF A dark brown to black cementitious

material, in which the predominating constituents are bitumens which occur in nature or are obtained in petroleum processing.

GS products
 . petroleum products
 . . **asphalt**
 RT amorphous materials
 pavements
 pitch (material)
 tars

asphaltenes

DEF Components of bitumens that are soluble in carbon disulphide but not in paraffin naphtha, constitute the solid dispersed particles of the bitumens, and consist of high molecular weight hydrocarbons.

RT coal
 coal derived liquids
 coal liquefaction
 hydrogenation

aspheres

USE **aspheric optics**

aspheric optics

(added June 1995)

DEF Lenses whose surfaces are custom tuned to specific applications, thereby correcting aberrations in an optical system.

UF *aspheres*
asymmetrical optics
nonspherical optics

GS lenses
 . **aspheric optics**

RT asphericity
 laser fusion
 lens design
 optical materials
 ∞ optics

asphericity

RT aberration
 aspheric optics
 geometrical optics
 ∞ optics
 refraction
 spheres

asphyxia

RT anoxia
 respiration
 signs and symptoms

aspiration

USE **vacuum**

ASRM (STS)

USE **Advanced Solid Rocket Motor (STS)**

ASROC engine

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **ASROC engine**
 RT antisubmarine warfare
 torpedoes

Assateague Island (MD-VA)

GS landforms
 . islands
 . . **Assateague Island (MD-VA)**
 RT Atlantic Ocean
 Maryland
 Virginia

assaulting

USE **attacking (assaulting)**

assaying

RT chemical analysis
 immunoassay
 Mars surface samples
 particulate sampling
 radioimmunoassay
 sampling

assembler routines

GS computer programming
 . **assembler routines**

computer programs
 . computer systems programs
 . . **assembler routines**

RT compilers
 disk operating system (DOS)
 operating systems (computers)

assemblies

GS **assemblies**
 . subassemblies
 . tail assemblies
 . . horizontal tail surfaces
 . . sweptback tail surfaces
 . . swing tail assemblies
 . . T tail surfaces
 . . trapezoidal tail surfaces

RT accumulations
 assembling

∞ assembly
 collocation

∞ components
 fabrication
 mosaics
 strings

assembling

GS **assembling**
 . orbital assembly
 . self assembly

RT assemblies

∞ assembly
 ∞ attachment
 clean rooms
 collection
 construction
 fabrication
 fitting
 installing

∞ joining
 mounting
 preparation
 rigging
 space manufacturing

∞ **assembly**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT assemblies
 assembling
 collocation
 self assembly

Assembly language

GS languages
 . programming languages
 . . **Assembly language**
 . . . autocoders
 . . . COMPASS (programming language)
 . . . MAP (programming language)

RT computer programming
 computer programs
 computer systems programs
 machine oriented languages

Assess program

UF *Spacelab simulation flights*

GS programs
 . NASA programs
 . . **Assess program**

RT space shuttles

assessments

GS **assessments**
 . damage assessment
 . risk assessment
 . technology assessment

RT evaluation
 pilot ratings
 ratings
 revenue
 value

ASSET gliders

GS gliders
 . **ASSET gliders**

RT ∞ aircraft
 hypersonic gliders

lifting reentry vehicles

ASSET project

GS programs
 . projects
 . . **ASSET project**

RT aerothermodynamics
 environmental tests

assignment

USE **allocations**

assimilation

RT dispersing
 distributing
 ∞ distribution
 material absorption

association reactions

DEF Gas phase chemical processes in which two molecular species A and B react to form a larger molecule AB. In astrophysics these processes are involved in the "condensation" of small gaseous molecules into larger species.

GS chemical reactions
 . **association reactions**
 gas-gas interactions
 . **association reactions**

RT astrophysics
 chemical equilibrium
 condensing
 endothermic reactions
 exothermic reactions
 interstellar chemistry
 molecular gases
 molecular interactions
 oxidation
 photochemical reactions
 photooxidation
 reaction kinetics
 vapor phases

associations

USE **organizations**

associative memory
(added December 1999)

DEF A method or device for data storage in which data is identified by a part or properties of its content, rather than by an address or relative position.

UF *associative storage*
content-addressable memory

GS memory (computers)
 . **associative memory**

RT associative processing (computers)
 computer storage devices
 neural nets
 optical memory (data storage)

associative processing (computers)

DEF Byte-variable computer processing with multifield search, arithmetic, and logic capability.

GS data processing
 . **associative processing (computers)**

RT associative memory
 digital computers
 multiprocessing (computers)
 parallel processing (computers)
 pipelining (computers)
 ∞ processing

associative storage
(added December 1999)

USE **associative memory**

assumptions

RT hypotheses
 inference
 risk
 simplification
 ∞ theories

assurance

RT insurance (contracts)
 quality control
 redundancy

reliability

Assured Crew Return Vehicle
(added September 1995)

DEF An aerospace vehicle designed to return space station crews to Earth quickly (less than 24 hours) in the event of crew illness/injury, space station catastrophe/failure, or transportation element catastrophe/failure.

UF *ACRV*

GS recovery vehicles
 . **Assured Crew Return Vehicle**

RT emergency life sustaining systems
 escape capsules
 International Space Station
 lifeboats
 rescue operations
 return to Earth space flight
 safety management
 Soyuz spacecraft
 survival equipment
 X-38 crew return vehicle

astatine

GS chemical elements
 . halogens
 . . **astatine**
 metals
 . **astatine**

astatine isotopes

GS chemical elements
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 **astatine isotopes**
 metals
 . **astatine isotopes**

ASTEC solar turboelectric generator

GS auxiliary power sources
 . solar auxiliary power units
 . . **ASTEC solar turboelectric generator**
 electric generators
 . rotating generators
 . . turbogenerators
 . . . **ASTEC solar turboelectric generator**
 . solar generators
 . . solar auxiliary power units
 . . . **ASTEC solar turboelectric generator**
 turbomachinery
 . turbogenerators
 . . **ASTEC solar turboelectric generator**

RT Rankine cycle
 sun
 thermoelectric generators

asteroid belts

DEF The location of the orbits of most of the minor planets (estimated at a half million asteroids) between Mars and Jupiter; about 2000 asteroids have been assigned numbers and names.

GS celestial bodies
 . **asteroid belts**
 . . Toro asteroid

RT Amor asteroid
 Amphitrite asteroid
 Apollo asteroids
 asteroid collisions
 asteroids
 ∞ belts
 Ceres asteroid
 Chiron
 Gaspra asteroid
 Icarus asteroid
 Ida asteroid
 meteorite parent bodies
 meteoroids
 Quaoar
 regions
 solar system
 space debris
 Toutatis asteroid

asteroid capture

Vesta asteroid

asteroid capture

DEF The transfer of an asteroid or comet from the influence of a planet into that of another planet or neutral satellite.

RT asteroids
celestial bodies
containment
enclosures
payloads
retaining
solar system

asteroid collisions

(added July 1997)

GS collisions
. **asteroid collisions**

RT asteroid belts
asteroid detection
cometary collisions
craters
Earth (planet)
hypervelocity impact
meteorite collisions
near Earth objects

asteroid detection

(added July 1997)

GS detection
. **asteroid detection**

RT asteroid collisions
asteroids
sky surveys (astronomy)
space observations (from Earth)
space surveillance (ground based)
stellar occultation

asteroid missions

DEF Space missions for the study of asteroids and related celestial bodies.

GS space missions
. **asteroid missions**
.. Comet Rendezvous Asteroid Flyby Mission
.. Near Earth Asteroid Rendezvous Mission
.. Rosetta mission

RT asteroids
Clementine spacecraft
Deep Space 1 Mission
flyby missions
interplanetary flight
∞ missions
New Horizons mission
space exploration

asteroids

DEF Small celestial bodies revolving around the sun, most having orbits between those of Mars and Jupiter.

UF *minor planets*
GS celestial bodies
. **asteroids**
.. Amor asteroid
.. Amphitrite asteroid
.. Apollo asteroids
.. Ceres asteroid
.. Chiron
.. EROS asteroid
.. Gaspra asteroid
.. Icarus asteroid
.. Ida asteroid
.. Quaoar
.. Toro asteroid
.. Toutatis asteroid
.. Trojan asteroids
.. Vesta asteroid

RT asteroid belts
asteroid capture
asteroid detection
asteroid missions
dwarf planets
Kuiper belt
meteorite parent bodies
meteoroids
near Earth objects
solar system
space debris

trans-Neptunian objects

asteroseismology

(added March 2001)

DEF Study of stellar oscillations as a means to probing the internal structure and dynamics of stars.

UF *stellar seismology*
GS seismology
. **asteroseismology**
.. helioseismology
RT astrometry
astronomical photometry
astrophysics
starquakes
stellar evolution
stellar interiors
stellar oscillations
stellar physics

asthenopia

GS diseases
. eye diseases
.. **asthenopia**
RT fatigue (biology)

asthenosphere

(added August 1994)

DEF Layer or shell of the Earth below the lithosphere which is weak and in which isostatic adjustments take place, magmas may be generated, and seismic waves are strongly attenuated.

RT boundary layers
Earth mantle
Earth planetary structure
lithosphere
planetary structure
seismology
tectonics

asthma

GS diseases
. respiratory diseases
.. **asthma**

astigmatism

DEF A defect of an optical system in consequence of which rays from a point fail to meet in a focal point resulting in a blurred and imperfect image.

GS diseases
. eye diseases
.. **astigmatism**
RT distortion
focusing
geometrical optics
haplosopes
lenses
∞ optics
refraction
stigmatism

ASTP

USE **Apollo Soyuz test project**

astrionics

DEF Astronautical electronics, particularly the development and use of electronic equipment and systems for space vehicles and platforms.

RT ∞ astronautics
avionics
∞ control
∞ electronics
guidance (motion)
satellite communication
single event upsets
spacecraft communication
spacecraft electronic equipment
spacecraft instruments
∞ test equipment

Astro missions (STS)

GS payloads
. Space Shuttle payloads
.. **Astro missions (STS)**
RT ∞ missions
spaceborne astronomy
spaceborne telescopes

Spacelab payloads

Astro vehicle

SN (EXCLUDES STS)
GS maneuverable spacecraft
. **Astro vehicle**
manned spacecraft
. **Astro vehicle**
reentry vehicles
. recoverable spacecraft
.. **Astro vehicle**
soft landing spacecraft
. **Astro vehicle**
RT aerospace planes
boostglide vehicles
ferry spacecraft
lifting reentry vehicles
∞ spacecraft

Astrobee 1500 rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
.. Astrobee rocket vehicles
.. **Astrobee 1500 rocket vehicle**
. sounding rockets
.. Astrobee rocket vehicles
.. **Astrobee 1500 rocket vehicle**
RT solid propellant rocket engines

Astrobee rocket vehicles

GS rocket vehicles
. multistage rocket vehicles
.. **Astrobee rocket vehicles**
.. Astrobee 1500 rocket vehicle
. sounding rockets
.. **Astrobee rocket vehicles**
.. Astrobee 1500 rocket vehicle
RT Genie rocket vehicle
solid propellant rocket engines
∞ vehicles

astrobiology

USE **exobiology**

astrodynamics

DEF The practical application of celestial mechanics, astrobballistics, propulsion theory, and allied fields to the problem of planning and directing the trajectories of space vehicles.

GS mechanics (physics)
. classical mechanics
.. space mechanics
.. **astrodynamics**
RT ∞ astronautics
astronomical observatories
celestial bodies
celestial mechanics
∞ dynamics
interplanetary flight
orbital mechanics
orbital resonances (celestial mechanics)
orbits
∞ science
space exploration
space flight
space navigation
∞ spacecraft
trajectory analysis

astrography

SN (EXCLUDES ASTRONOMICAL PHOTOGRAPHY)
RT astronomical maps
mapping
planetary mapping

Astroguide Navigation System

GS navigation
. celestial navigation
.. **Astroguide Navigation System**
. inertial navigation
.. **Astroguide Navigation System**
RT inertial coordinates
star trackers
∞ systems

astrolabes

DEF Instruments designed to observe the positions and measure the altitudes of celestial bodies.

- GS measuring instruments
 - . indicating instruments
 - . . **astrolabes**
- RT altimeters
 - astrometry
 - astronomical observatories
 - astronomy
 - celestial bodies
 - position (location)
 - position errors
 - solar position
 - star distribution
 - star trackers
 - stars
- Astroloy (trademark)**
 - GS alloys
 - . chromium alloys
 - . . **Astroloy (trademark)**
 - . cobalt alloys
 - . . **Astroloy (trademark)**
 - . high strength alloys
 - . . **Astroloy (trademark)**
 - . nickel alloys
 - . . **Astroloy (trademark)**
 - . ternary alloys
 - . . **Astroloy (trademark)**
- astromasts*
 - USE **longerons**
- astrometry**
 - RT asteroseismology
 - astrolabes
 - astronomical maps
 - astronomical photography
 - astronomical polarimetry
 - astronomy
 - double stars
 - Hipparcos satellite
 - ∞ measurement
 - parallax
 - planet detection
 - proper motion
 - solar diameter
 - stellar parallax
- Astron thermonuclear reactor**
 - GS nuclear reactors
 - . **Astron thermonuclear reactor**
 - RT relativistic plasmas
 - thermonuclear power generation
 - thermonuclear reactions
- astronaut locomotion**
 - GS locomotion
 - . **astronaut locomotion**
 - RT extravehicular activity
 - extravehicular mobility units
 - intravehicular activity
 - life support systems
 - man operated propulsion systems
 - manned maneuvering units
 - orbital workers
- astronaut maneuvering equipment**
 - GS **astronaut maneuvering equipment**
 - . manned maneuvering units
 - RT Crew Equipment Translation Aid (ISS)
 - extravehicular activity
 - extravehicular mobility units
 - human factors engineering
 - IMLSS
 - intravehicular activity
 - self maneuvering units
 - walking machines
- astronaut performance**
 - GS human performance
 - . **astronaut performance**
 - . . blackout prevention
 - RT confinement
 - confining
 - human factors engineering
 - intravehicular activity
 - man machine systems
 - operator performance
 - ∞ performance
 - physiological factors
 - pilot performance
- psychological factors
 - space psychology
 - spacecraft performance
 - weightlessness
- astronaut training**
 - GS education
 - . flight training
 - . . space flight training
 - . . . **astronaut training**
 - learning
 - . **astronaut training**
 - RT ejection training
 - pilot training
 - space maintenance
 - space psychology
 - training simulators
- ∞ **astronautics**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF The science of space flight including the design, construction, and operation of spacecraft.
 - RT aerospace environments
 - artificial gravity
 - astrionics
 - astrodynamics
 - astronauts
 - astronomy
 - auxiliary propulsion
 - avionics
 - bioastronautics
 - Biosatellite 3
 - cosmonauts
 - Earth-Venus trajectories
 - human factors engineering
 - lunar bases
 - propulsion
 - soft landing
 - space exploration
 - space flight
 - space maintenance
 - space navigation
 - spacecraft docking
 - weightlessness
- astronauts**
 - GS personnel
 - . flying personnel
 - . . **astronauts**
 - . . . orbital workers
 - RT ∞ astronautics
 - awards
 - cosmonauts
 - crew experiment stations
 - crew observation stations
 - crew workstations
 - crews
 - pilots (personnel)
 - spacecrews
- astronavigation**
 - GS navigation
 - . celestial navigation
 - . . **astronavigation**
 - RT air navigation
 - interplanetary navigation
 - interstellar travel
 - radio navigation
 - space navigation
- astronomical catalogs**
 - UF *star catalogs*
 - GS documents
 - . catalogs (publications)
 - . . **astronomical catalogs**
 - RT ∞ catalogs
 - classifications
 - ephemerides
 - northern sky
 - sky surveys (astronomy)
 - Southern sky
 - tables (data)
- astronomical coordinates**
 - DEF Coordinates defining a point on the surface of the Earth, or of the geoid, in which the local direction of gravity is used as a reference.
 - GS coordinates
 - . **astronomical coordinates**
- RT azimuth
 - celestial reference systems
 - cylindrical coordinates
 - geocentric coordinates
 - northern sky
 - planetocentric coordinates
 - planispheres
 - polar coordinates
 - proper motion
 - reference stars
 - solar longitude
 - spherical coordinates
- astronomical interferometry**
 - (added June 1993)
 - GS interferometry
 - . **astronomical interferometry**
 - RT astronomy
 - etalons
 - infrared interferometers
 - interferometers
 - LIGO (observatory)
 - LISA (observatory)
 - planet detection
 - radio astronomy
 - Sagnac effect
 - space observations (from Earth)
 - spaceborne astronomy
 - very long base interferometry
- astronomical maps**
 - GS maps
 - . **astronomical maps**
 - . . planispheres
 - RT astrography
 - astrometry
 - celestial reference systems
 - celestial sphere
 - lunar maps
- astronomical models**
 - UF *orreries*
 - GS models
 - . **astronomical models**
 - . . density wave model
 - . . stellar models
 - RT big bang cosmology
 - corotation
 - cosmology
 - Earth analogs
 - mathematical models
 - molecular clouds
 - planetariums
 - Reissner-Nordstrom solution
 - solar neutrinos
 - solar oscillations
 - stellar oscillations
- Astronomical Netherlands Satellite**
 - UF *ANS*
 - GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Astronomical Netherlands Satellite**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Astronomical Netherlands Satellite**
 - observatories
 - . Netherlands
 - Netherlands space program
- astronomical observatories**
 - GS observatories
 - . **astronomical observatories**
 - . . astronomical satellites
 - . . . Astronomical Netherlands Satellite
 - . . . Gamma Ray Observatory
 - . . . Ginga satellite
 - . . . HEAO
 - . . . HEAO 1
 - . . . HEAO 2
 - . . . HEAO 3
 - . . . HEAO 4
 - . . . Hubble Space Telescope
 - . . . Infrared Astronomy Satellite
 - . . . Infrared Space Observatory (ISO)

astronomical photography

- ... IUE
- ... Large Deployable Reflector
- ... Magellan ultraviolet astronomy satellite
- ... OAO
 - ... OAO 1
 - ... OAO 2
 - ... OAO 3
- ... OSO
 - ... AOSO
 - ... OSO-1
 - ... OSO-2
 - ... OSO-3
 - ... OSO-4
 - ... OSO-5
 - ... OSO-6
 - ... OSO-7
 - ... OSO-8
 - ... OSO-C
- ... Quasat
- ... SAS
 - ... Explorer 53 satellite
 - ... SAS-1
 - ... SAS-2
 - ... SAS-3
- ... Constellation-X
- ... Fermi Gamma-ray Space Telescope
- ... James Webb Space Telescope
- ... LISA (observatory)
- ... Space Infrared Telescope Facility
- ... Spartan satellites
- ... Submillimeter Wave Astronomy Satellite
- ... Swift observatory
- ... Tenma satellite
- ... X Ray Astrophysics Facility
- ... XMM-Newton telescope
- ... Astroplane
- ... ROSAT mission
- ... SOFIA (airborne observatory)
- ... solar observatories
- ... OSO
 - ... AOSO
 - ... OSO-1
 - ... OSO-2
 - ... OSO-3
 - ... OSO-4
 - ... OSO-5
 - ... OSO-6
 - ... OSO-7
 - ... OSO-8
 - ... OSO-C
- ... Pinhole Occulter Facility
- ... STEREO (observatory)
- ... European Southern Observatory
- ... LIGO (observatory)

RT

- astrodynamics
- astrolabes
- astronomy
- celestial bodies
- geophysical observatories
- honeycomb mirrors
- Jodrell Bank Observatory
- lunar observatories
- Next Generation Space Telescope project
- northern sky
- observation scheduling
- radio astronomy
- seeing (astronomy)
- segmented mirrors
- Southern sky
- spaceborne telescopes
- telescopes

astronomical photography

- GS imagery
 - ... photography
 - ... **astronomical photography**
- RT aerial photography
- astrometry
- astronomy
- atmospheric windows
- Baker-Nunn camera
- black and white photography
- coronagraphs
- diffraction limited cameras
- electro-optical photography

- faint object camera
- infrared astronomy
- infrared photography
- Lallemant cameras
- lunar photographs
- lunar photography
- reference stars
- rocket-borne photography
- satellite-borne photography
- Schmidt cameras
- Southern sky
- spaceborne photography
- spaceborne telescopes

astronomical photometry

- GS optical measurement
 - ... photometry
 - ... **astronomical photometry**
 - ... stellar spectrophotometry
- RT asteroseismology
- atmospheric windows
- blinking
- cometary atmospheres
- DIAL satellite
- infrared photometry
- planet detection
- spectrophotometry
- superhumps (astronomy)
- telephotometry

astronomical polarimetry

(added July 1991)

- DEF The measurement of electromagnetic radiation from celestial bodies by polarimeters.
- GS optical measurement
 - ... polarimetry
 - ... **astronomical polarimetry**
- RT astrometry
- astronomy
- polarimeters

astronomical satellites

- GS artificial satellites
 - ... scientific satellites
 - ... **astronomical satellites**
 - ... Astronomical Netherlands Satellite
 - ... Gamma Ray Observatory
 - ... Ginga satellite
 - ... HEAO
 - ... HEAO 1
 - ... HEAO 2
 - ... HEAO 3
 - ... HEAO 4
 - ... Hubble Space Telescope
 - ... Infrared Astronomy Satellite
 - ... Infrared Space Observatory (ISO)
 - ... IUE
 - ... Large Deployable Reflector
 - ... Magellan ultraviolet astronomy satellite
 - ... OAO
 - ... OAO 1
 - ... OAO 2
 - ... OAO 3
 - ... OSO
 - ... AOSO
 - ... OSO-1
 - ... OSO-2
 - ... OSO-3
 - ... OSO-4
 - ... OSO-5
 - ... OSO-6
 - ... OSO-7
 - ... OSO-8
 - ... OSO-C
 - ... Quasat
 - ... SAS
 - ... Explorer 53 satellite
 - ... SAS-1
 - ... SAS-2
 - ... SAS-3
 - ... Constellation-X
 - ... Fermi Gamma-ray Space Telescope
 - ... James Webb Space Telescope
 - ... LISA (observatory)
 - ... Space Infrared Telescope Facility
 - ... Spartan satellites
 - ... Submillimeter Wave Astronomy Satellite
 - ... Swift observatory
 - ... Tenma satellite
 - ... X Ray Astrophysics Facility
 - ... XMM-Newton telescope
- RT ROSAT mission
- spaceborne astronomy

astronomical spectroscopy

- GS spectroscopy
 - ... **astronomical spectroscopy**
 - ... stellar spectrophotometry
- RT astronomy
- blue shift
- continuous spectra
- electromagnetic spectra
- infrared spectroscopy
- Kuiper Airborne Observatory
- laboratory astrophysics
- organic solids
- radial velocity
- radiation spectra
- radio astronomy
- radio spectroscopy
- Raman spectroscopy
- solar spectra
- Southern sky
- spectra
- spectroscopic telescopes
- stellar spectra
- ultraviolet spectroscopy
- visible spectrum

- x ray spectroscopy
- astronomical telescopes*
USE **telescopes**
- astronomy**
DEF The science that treats of the location, magnitudes, motions, and constitution of celestial bodies and structures. Used for celestial observation.
UF *celestial observation*
GS **astronomy**
. gamma ray astronomy
. infrared astronomy
. radar astronomy
. radio astronomy
. spaceborne astronomy
. ultraviolet astronomy
. x ray astronomy
RT ∞ aerospace sciences
Amor asteroid
Apollo asteroids
astrolabes
astrometry
∞ astronautics
astronomical interferometry
astronomical observatories
astronomical photography
astronomical polarimetry
astronomical spectroscopy
astrophysics
celestial bodies
celestial mechanics
Earth limb
halos
infrared sources (astronomy)
infrared telescopes
mass to light ratios
meteoroid showers
missing mass (astrophysics)
∞ physical sciences
relic radiation
∞ science
seeing (astronomy)
selenology
sidereal time
sky surveys (astronomy)
solar neighborhood
solar parallax
Southern sky
spaceborne telescopes
stellar magnitude
stellar models
stellar oscillations
telescopes
- astrophysics**
DEF Study of the physical characteristics and processes associated with celestial bodies and interstellar space. The application of the laws of physics to the study of the celestial bodies and astronomical phenomena such as luminosity, size, mass, density, temperature, and chemical composition. Used for geoastronomy.
UF *geoastronomy*
GS **astrophysics**
. computational astrophysics
. nuclear astrophysics
. stellar physics
. . solar physics
. laboratory astrophysics
RT accretion disks
association reactions
asteroseismology
astronomy
brightness distribution
brightness temperature
celestial bodies
celestial mechanics
cosmology
dark energy
degenerate matter
dense plasmas
disk galaxies
galactic evolution
gamma ray astronomy
geophysics
grand unified theory
gravitational binding energy
- gravitational collapse
gravitational instability
helioseismology
interstellar extinction
magnetic field configurations
mass to light ratios
Michelson interferometers
missing mass (astrophysics)
naked singularities
Orion nebula
∞ physics
planetary rotation
radio interferometers
radio jets (astronomy)
relic radiation
∞ science
solar neutrinos
Spartan satellites
spin temperature
star formation
stellar cores
stellar envelopes
stellar evolution
stellar interiors
stellar oscillations
theoretical physics
Wolf-Rayet stars
X Ray Astrophysics Facility
x ray binaries
- Astroplane**
SN (LIMITED TO THE EUROPEAN AIRBORNE ASTRONOMICAL OBSERVATORY)
GS observatories
. astronomical observatories
. **Astroplane**
RT airborne equipment
infrared telescopes
- asymmetrical optics*
USE **aspheric optics**
- asymmetry**
UF *dissymmetry*
RT antisymmetry
deviation
distortion
eccentricity
shapes
skewness
symmetry
variations
- asymptotes**
GS analysis (mathematics)
. real variables
. . **asymptotes**
functions (mathematics)
. **asymptotes**
RT analytic geometry
asymptotic properties
asymptotic series
calculus
numerical analysis
- asymptotic giant branch stars**
UF *AGB stars*
GS celestial bodies
. stars
. . giant stars
. . . **asymptotic giant branch stars**
RT carbon stars
color-magnitude diagram
Hertzsprung-Russell diagram
late stars
M stars
Mira variables
red giant stars
S stars
stellar evolution
stellar mass ejection
- asymptotic methods**
GS problem solving
. **asymptotic methods**
RT asymptotic properties
iterative solution
learning curves
- ∞ methodology
- asymptotic properties**
DEF Properties of any mathematical relation or corresponding physical system characterized by an approach to a given value as an expression, containing a variable, tends to infinity.
RT asymptotes
asymptotic methods
asymptotic series
attractors (mathematics)
differential equations
integral equations
mathematical models
normality
- asymptotic series**
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **asymptotic series**
. real variables
. . series (mathematics)
. . . **asymptotic series**
RT asymptotes
asymptotic properties
series expansion
- asynchronous motors**
GS electromechanical devices
. electric motors
. . **asynchronous motors**
motors
. electric motors
. . **asynchronous motors**
RT induction motors
synchronous motors
- asynchronous transfer mode**
(added January 1997)
UF *ATM (data transmission)*
RT broadband
channels (data transmission)
communication networks
data transfer (computers)
data transmission
optical switching
packet switching
packet transmission
- ATARS*
USE **automatic traffic advisory and resolution**
- ataxia**
GS diseases
. **ataxia**
RT muscles
- ataxite**
GS rocks
. **ataxite**
RT breccia
soils
- Atchafalaya River Basin (LA)**
GS landforms
. structural basins
. . river basins
. . . **Atchafalaya River Basin (LA)**
RT Louisiana
rivers
- atelectasis**
DEF Collapsed or airless state of all or part of the lung.
GS diseases
. **atelectasis**
RT lungs
- ATF*
USE **F-22 aircraft**
- Athena rocket vehicle**
GS rocket vehicles
. multistage rocket vehicles
. . **Athena rocket vehicle**
RT BE-3 engine
reentry vehicles

athletes

solid propellant rocket engines

atherosclerosis
USE **arteriosclerosis**

athletes
RT competition
physical exercise
physical fitness
sports medicine

athodyds
USE **ramjet engines**

Atlanta (GA)
GS cities
. **Atlanta (GA)**
RT Georgia

Atlantic aircraft
USE **Breguet 1150 aircraft**

Atlantic Ocean
GS oceans
. **Atlantic Ocean**
RT Assateague Island (MD-VA)
Azores
Bermuda
Block Island Sound (RI)
Cape Hatteras (NC)
Cape Verde
Delaware Bay (US)
English Channel
GARP Atlantic Tropical Experiment
Gulf Stream
Lesser Antilles
Lomonosov current
Long Island (NY)
mid-ocean ridges
Outer Banks (NC)
Sargasso Sea
Wallops Island
West Indies

Atlantis (orbiter)
UF *Space Shuttle Orbiter 104*
GS manned spacecraft
. space shuttles
. . . Space Shuttle orbiters
. . . **Atlantis (orbiter)**
reentry vehicles
. recoverable spacecraft
. reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. . . . **Atlantis (orbiter)**
RT manned space flight
Space Shuttle mission 51-H
Space Shuttle mission 51-J
Space Shuttle mission 61-B
∞ spacecraft

Atlas Able 5 launch vehicle
GS launch vehicles
. Atlas launch vehicles
. . **Atlas Able 5 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . **Atlas Able 5 launch vehicle**
RT lunar probes
space probes

Atlas Agena B launch vehicle
GS launch vehicles
. Atlas launch vehicles
. . **Atlas Agena B launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . **Atlas Agena B launch vehicle**
RT Agena rocket vehicles
Mariner 2 space probe
Midas satellites
Ranger 4 lunar probe
Ranger lunar probes

Atlas Agena launch vehicles
GS launch vehicles
. Atlas launch vehicles

. . **Atlas Agena launch vehicles**
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . **Atlas Agena launch vehicles**
RT Agena rocket vehicles
Environmental Research Satellites
ERS 17
ERS 18
Mariner 5 space probe
Mariner 6 space probe
Mariner program
OGO-A
∞ vehicles

Atlas Centaur launch vehicle
GS launch vehicles
. Atlas launch vehicles
. . **Atlas Centaur launch vehicle**
. Centaur launch vehicle
. . **Atlas Centaur launch vehicle**
rocket vehicles
. Centaur launch vehicle
. . **Atlas Centaur launch vehicle**
multistage rocket vehicles
. Atlas launch vehicles
. . . **Atlas Centaur launch vehicle**
RT Centaur project
OAO 1
OAO 2
OAO 3
RL-10 engines
Space Shuttle upper stage A
Surveyor 1 lunar probe
Surveyor 2 lunar probe
Surveyor 3 lunar probe
Surveyor 4 lunar probe
Surveyor 5 lunar probe
Surveyor 6 lunar probe
Surveyor 7 lunar probe
Surveyor project

Atlas D ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas D ICBM**
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas D ICBM**
RT Centaur launch vehicle
Standard Launch Vehicles
Vega launch vehicle

Atlas E ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas E ICBM**
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas E ICBM**

Atlas F ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas F ICBM**
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas F ICBM**

Atlas ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . **Atlas ICBM**
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. surface to surface missiles
. . intercontinental ballistic missiles
. . . **Atlas ICBM**
. . . . Atlas D ICBM

. . . . Atlas E ICBM
. . . . Atlas F ICBM
RT MA-2 engine
MA-3 engine

Atlas launch vehicles
UF *SM-65 missile*
GS launch vehicles
. **Atlas launch vehicles**
. . Atlas Able 5 launch vehicle
. . Atlas Agena B launch vehicle
. . Atlas Agena launch vehicles
. . Atlas Centaur launch vehicle
. . Atlas SLV-3 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . **Atlas launch vehicles**
. . . Atlas Able 5 launch vehicle
. . . Atlas Agena B launch vehicle
. . . Atlas Agena launch vehicles
. . . Atlas Centaur launch vehicle
. . . Atlas SLV-3 launch vehicle
RT EGO
Gemini project
MA-5 engine
Mariner program
Mercury flights
Mercury MA-1 flight
Mercury MA-2 flight
Mercury MA-3 flight
Mercury MA-4 flight
Mercury MA-5 flight
Mercury MA-6 flight
Mercury MA-7 flight
Mercury MA-8 flight
Mercury MA-9 flight
Mercury project
Nomad launch vehicle
OAO
orbital rendezvous
Ranger project
∞ vehicles

Atlas SLV-3 launch vehicle
UF *standard launch vehicle 3*
GS launch vehicles
. Atlas launch vehicles
. . **Atlas SLV-3 launch vehicle**
. Standard Launch Vehicles
. . **Atlas SLV-3 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . **Atlas SLV-3 launch vehicle**
. Standard Launch Vehicles
. . **Atlas SLV-3 launch vehicle**
RT liquid propellant rocket engines
MA-5 engine

ATLIT project
UF *Advanced Technology Light Twin aircraft*
GS programs
. NASA programs
. . **ATLIT project**
. projects
. . **ATLIT project**
RT ∞ aircraft
GAW-1 airfoil
PA-34 Seneca aircraft

ATM (data transmission)
(added January 1997)
USE **asynchronous transfer mode**

Atmosphere Explorer A
USE **Explorer 17 satellite**

Atmosphere Explorer B
USE **Explorer 32 satellite**

Atmosphere Explorer C
USE **Explorer 51 satellite**

Atmosphere Explorer D
USE **Explorer 54 satellite**

Atmosphere Explorer E
USE **Explorer 55 satellite**

∞ **atmospheres**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF (1) The mixture of gases surrounding the Earth or filling the habitable volume or a spacecraft. (2) The pressure exerted by a column of mercury 760 mm high at 1G, equal to 101.329 kilopascals.

- RT air
 - argon-oxygen atmospheres
 - atmospheric pressure
 - cabin atmospheres
 - cometary atmospheres
 - controlled atmospheres
 - Earth atmosphere environments
 - equatorial atmosphere
 - gas mixtures
 - gases
 - helium-oxygen atmospheres
 - hypobaric atmospheres
 - life support systems
 - meteorology
 - middle atmosphere
 - Neptune atmosphere
 - neutral atmospheres
 - nongray atmospheres
 - nongray gas
 - planetary atmospheres
 - planetary ionospheres
 - primitive Earth atmosphere
 - satellite atmospheres
 - solar atmosphere
 - stellar atmospheres
 - Uranus atmosphere

Atmospheric & Oceanographic Inform Sys

- SN (ATMOSPHERIC & OCEANOGRAPHIC INFORMATION SYSTEMS)
- DEF A data system designed primarily for the interactive manipulation of meteorological satellite images. Capabilities include displaying, analyzing, storing, and manipulating digital data in the field of meteorology and Earth resources. Used for AOIPS.
- UF AOIPS
- GS information systems
 - . **Atmospheric & Oceanographic Inform Sys**
- RT aerology
 - air water interactions
 - data processing
 - data systems
 - imagery
 - isotherms
 - meteorological parameters
 - meteorology
 - minicomputers
 - oceanographic parameters
 - oceanography
 - ∞ systems
 - weather

atmospheric absorption
USE **atmospheric attenuation**

Atmospheric and Magnetospheric Payload
USE **AMPS (satellite payload)**

atmospheric attenuation

- UF *atmospheric absorption*
- GS attenuation
 - . **atmospheric attenuation**
 - . . auroral absorption
- RT acoustic attenuation
 - atmospheric lasers
 - cosmic ray albedo
 - electromagnetic absorption
 - electromagnetic scattering
 - electromagnetic wave transmission
 - infrared absorption
 - microwave absorption
 - molecular absorption
 - planetary atmospheres
 - radar attenuation
 - radar transmission
 - radiation absorption
 - radio attenuation
 - radio transmission
 - shock wave attenuation
 - shock wave propagation
 - thermal absorption
 - transmission

- vegetative index
- wave attenuation
- wave propagation

atmospheric boundary layer

- GS boundary layers
 - . **atmospheric boundary layer**
- RT air flow
 - air land interactions
 - boundary layer flow
 - Ekman layer
 - ∞ layers
 - mixing layers (fluids)
 - planetary boundary layer
 - primitive equations

atmospheric chemistry

- DEF Study of the production, transport, modification, and removal of atmospheric constituents in the troposphere and stratosphere.
- GS environmental chemistry
 - . **atmospheric chemistry**
- RT acid rain
 - aerothermochemistry
 - air pollution
 - Aitken nuclei
 - atmospheric effects
 - ∞ chemistry
 - formyl ions
 - middle atmosphere
 - nitrous acid
 - photochemical oxidants
 - photochemical reactions
 - physical chemistry
 - satellite atmospheres

atmospheric circulation

- DEF Global or hemispheric air movements which can be treated by equations of motion in contrast to atmospheric diffusion which is small random movement not amenable to treatment by these equations. Used for wind circulation.
- UF *wind circulation*
- GS circulation
 - . **atmospheric circulation**
 - . . zonal flow (meteorology)
- RT advection
 - air currents
 - air land interactions
 - air masses
 - annual variations
 - Atmospheric General Circulation Experiment
 - Atmospheric General Circulation Models
 - baroclinic instability
 - Brunt-Vaisala frequency
 - circulation distribution
 - circumpolar westerlies
 - climatology
 - convection cells
 - cyclogenesis
 - Earth atmosphere
 - ground wind
 - horizontal distribution
 - intertropical convergent zones
 - intraseasonal variations
 - jet streams (meteorology)
 - Kelvin waves
 - Madden-Julian Oscillation
 - meridional flow
 - middle atmosphere
 - mixing height
 - monsoons
 - planetary meteorology
 - planetary waves
 - pollution transport
 - quasi-biennial oscillation
 - sea breeze
 - Southern Oscillation
 - superrotation
 - tornadoes
 - TRMM satellite
 - tropical storms
 - turbopause
 - typhoons
 - upwelling water
 - vertical air currents
 - vorticity
 - wind (meteorology)

- wind direction
- wind profiles
- windpower utilization

Atmospheric Cloud Physics Lab (Spacelab)

- DEF A NASA Spacelab mission involving cloud physics experiments in zero gravity environment. Also known as ACPL. Used for ACPL (Spacelab) and zero-g ACPL (Spacelab).
- UF ACPL (Spacelab)
 - zero-g ACPL (Spacelab)
- GS laboratories
 - . space laboratories
 - . . **Atmospheric Cloud Physics Lab (Spacelab)**
- payloads
 - . Spacelab payloads
 - . . **Atmospheric Cloud Physics Lab (Spacelab)**
- RT cloud physics
 - meteorological parameters
 - nephelanalysis
 - spacecraft instruments

atmospheric composition

- GS composition (property)
 - . **atmospheric composition**
 - . . atmospheric moisture
 - . . ionospheric composition
- RT aeronomy
 - air
 - air pollution
 - Aitken nuclei
 - carbon dioxide concentration
 - chemical composition
 - climate change
 - Earth atmosphere
 - electron density (concentration)
 - equatorial atmosphere
 - Gaia hypothesis
 - gas composition
 - horizontal distribution
 - in situ measurement
 - isotope ratios
 - LACATE (experiment)
 - middle atmosphere
 - mixing ratios
 - moisture content
 - ozone depletion
 - particulates
 - planetary atmospheres
 - primitive Earth atmosphere
 - radio occultation
 - radioactive contaminants
 - satellite atmospheres
 - Saturn atmosphere
 - Solar Mesosphere Explorer
 - Titan

atmospheric conditions
USE **meteorology**

atmospheric conductivity

- GS transport properties
 - . **atmospheric conductivity**
 - . . ionospheric conductivity
- RT air conductivity
 - ∞ conductivity
 - electrical resistivity
 - thermal conductivity

atmospheric correction

- DEF Removal of the effects of the intervening atmosphere from satellite imagery.
- GS correction
 - . **atmospheric correction**
- RT anisoplanatism
 - atmospheric effects
 - clouds (meteorology)
 - geometric rectification (imagery)
 - image classification
 - image processing
 - infrared radiometers
 - radiative transfer
 - satellite imagery
 - spatial resolution

atmospheric density

- GS density (mass/volume)
 - . **atmospheric density**

atmospheric diffusion

RT air pollution
Boltzmann distribution
∞ density
density (number/volume)
electron density (concentration)
humidity
ion density (concentration)
magnetospheric electron density
magnetospheric ion density
magnetospheric proton density
meteorology
particle density (concentration)
planetary atmospheres
plasma density
proton density (concentration)
space density

atmospheric diffusion

GS diffusion
. **atmospheric diffusion**
RT Boltzmann distribution
molecular diffusion
pollution transport
radio scattering
turbulent diffusion

atmospheric effects

RT aerosols
air pollution
atmospheric chemistry
atmospheric correction
∞ effects
erosion
exposure
rusting
seeing (astronomy)
soil erosion
turbulence
vegetative index
wind effects
wind erosion

atmospheric electricity

DEF Electrical phenomena, regarded collectively, which occur in the Earth's atmosphere. Also the study of electrical processes occurring within the atmosphere.

GS electricity
. **atmospheric electricity**
. . . ionospheric currents
. . . Birkeland currents
. . . electrojets
. . . . auroral electrojets
. . . . equatorial electrojet
. . . Pedersen currents
RT atmospherics
ball lightning
cloud physics
dust storms
Earth atmosphere
electric corona
electron density profiles
elves
field aligned currents
lightning
lightning suppression
primitive Earth atmosphere
ring currents
sprites (atmospheric physics)
static electricity
telluric currents

atmospheric emission

USE **airglow**

atmospheric energy sources

RT ammonia
atmospheric heat budget
atmospheric heating
atmospheric physics
energy budgets
∞ energy sources
ethyl alcohol
planetary atmospheres

atmospheric entry

DEF The penetration of any planetary atmosphere by any object from outer space; specifically, the penetration of the Earth's atmosphere by a manned or unmanned capsule or space-

craft. Used for planetary entry.

UF *planetary entry*
GS **atmospheric entry**
. reentry
. . . hyperbolic reentry
. . . hypersonic reentry
. . . uncontrolled reentry (spacecraft)
. . . manned reentry
. . . spacecraft reentry
. . . uncontrolled reentry (spacecraft)
RT ablation
aeroassist
aerocapture
aerodynamic heating
aeromaneuvering
bolides
descent trajectories
Earth atmosphere
∞ entry
entry guidance (STS)
falling
Galileo project
gas guns
orbit decay
space flight
spacecraft breakup

atmospheric entry simulation

GS simulation
. **atmospheric entry simulation**
RT environment simulation
flight simulators
landing simulation
space environment simulation

Atmospheric General Circulation

Experiment

DEF Model experiment of the Earth's atmospheric circulation as proposed for a Spacelab flight on which a liquid contained between two concentric spheres is subjected to rotation. The thermal driving force will be a stable radial temperature gradient and an unstable latitudinal gradient.

GS payloads
. Space Shuttle payloads
. . **Atmospheric General Circulation Experiment**
. Spacelab payloads
. . **Atmospheric General Circulation Experiment**
RT atmospheric circulation
Atmospheric General Circulation
Models
Earth atmosphere
space transportation system

Atmospheric General Circulation Models

(added March 1989)
GS models
. atmospheric models
. . **Atmospheric General Circulation Models**
RT atmospheric circulation
Atmospheric General Circulation
Experiment
climatology
long range weather forecasting
numerical weather forecasting

atmospheric heat budget

GS energy budgets
. heat budget
. . **atmospheric heat budget**
RT atmospheric energy sources
Earth radiation budget
greenhouse effect
heat balance
heat transfer
stratospheric warming

atmospheric heating

SN (EXCLUDES AERODYNAMIC HEATING)
GS heating
. **atmospheric heating**
. . global warming
. . stratospheric warming
RT atmospheric energy sources

bolides

atmospheric impurities

USE **air pollution**

atmospheric ionization

UF *meteoritic ionization*
GS ionization
. gas ionization
. . **atmospheric ionization**
. . . auroral ionization
RT afterglows
airglow
Antares rocket vehicle
Earth ionosphere
electron density profiles
elves
photoionization
plasmasphere
radio meteors
riometers
sprites (atmospheric physics)

atmospheric lasers

DEF The theoretical phenomena whereby the upper atmosphere is used as the lasing medium.

GS stimulated emission devices
. lasers
. . **atmospheric lasers**
RT atmospheric attenuation
atmospheric optics
atmospheric scattering
laser outputs
TEA lasers

atmospheric loading

USE **pollution transport**

atmospheric models

GS models
. **atmospheric models**
. . Atmospheric General Circulation Models
. . reference atmospheres
RT baroclinic instability
Chapman-Ferraro problem
climate models
environment models
environment simulation
horizontal distribution
intraseasonal variations
large eddy simulation
Madden-Julian Oscillation
mathematical models
numerical weather forecasting
ocean models
primitive Earth atmosphere
solar oscillations
stellar oscillations
Venus clouds
weather forecasting

atmospheric moisture

GS composition (property)
. atmospheric composition
. . **atmospheric moisture**
. . concentration (composition)
. . moisture content
. . . **atmospheric moisture**
moisture
. **atmospheric moisture**
RT acid rain
Advanced Microwave Sounding Unit
anvil clouds
cap clouds
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
dew point
humidity
hydrometeors
mixing ratios
precipitation (meteorology)
psychrometers

water vapor

atmospheric noise

USE **atmospherics**

atmospheric optics

DEF The study of the optical characteristics of the atmosphere and of the optical phenomena produced by the atmosphere's suspensoids and hydrometeors. It embraces the study of refraction, reflection, diffraction, scattering, and polarization of light, but is not commonly regarded as including the study of any other kinds of radiation.

RT adaptive optics
anisoplanatism
atmospheric lasers
clarity
haze
infrared absorption
light transmission
opacity
∞ optics
seeing (astronomy)
thermal lensing
transparence
vegetative index

atmospheric physics

UF *aerophysics*

GS **atmospheric physics**

. cloud physics

RT aeronomy
atmospheric energy sources
Brunt-Vaisala frequency
dust storms
Earth sciences
International Magnetospheric Study
magnetosphere-ionosphere coupling
meteorology
neutral sheets
∞ physics
planetary meteorology
satellite atmospheres
∞ science
secular variations
turbopause

atmospheric pressure

DEF The pressure at any point in an atmosphere due solely to the weight of the atmospheric gases above the point concerned. Used for barometric pressure.

UF *barometric pressure*

GS pressure

. **atmospheric pressure**

RT anticyclones
∞ atmospheres
cyclogenesis
cyclones
gas pressure
geopotential height
high altitude pressure
isobars (pressure)
isostatic pressure
meteorological parameters
pressure gradients
radio occultation
Southern Oscillation
weather

atmospheric radiation

DEF Infrared radiation emitted by or being propagated through the atmosphere.

GS **atmospheric radiation**

. auroras
. . auroral arcs
. . . red arcs
. . radio auroras
. dawn chorus
. ionospheric noise
. . whistlers
. sky radiation
. . airglow
. . . geocoronal emissions
. . . nightglow
. . . twilight glow
. . dayglow
. . elves
. . sprites (atmospheric physics)

. stratosphere radiation
. tropospheric radiation
RT corpuscular radiation
Earth radiation budget
electromagnetic radiation
extraterrestrial radiation
greenhouse effect
ionospheric heating
light (visible radiation)
∞ radiation
∞ rays
secondary cosmic rays
terrestrial radiation
VLF emission recorders

atmospheric refraction

DEF Refraction resulting when a ray of radiant energy passes obliquely through an atmosphere.

GS refraction

. **atmospheric refraction**

. . radio wave refraction
RT electromagnetic radiation
light transmission
refractivity
solar radiation
wave dispersion

atmospheric scattering

GS scattering

. wave scattering
. . **atmospheric scattering**
. . . tropospheric scattering
RT atmospheric lasers
circumsolar radiation
diffraction
diffusion
electromagnetic scattering
halos
light scattering
microwave scattering
radio scattering
signal fading
vegetative index

atmospheric seeing

USE **seeing (astronomy)**

atmospheric shells

USE **atmospheric stratification**

atmospheric sounding

DEF Measurement of atmospheric phenomena generally with instruments carried aloft by spacecraft, rockets, etc.

GS sounding

. **atmospheric sounding**

RT Advanced Microwave Sounding Unit
balloon sounding
differential absorption lidar
in situ measurement
ionospheric sounding
rocket sounding
satellite sounding
sodar
visible infrared spin scan radiometer

atmospheric stratification

DEF The presence of strata or layers in the Earth's atmosphere. Used for atmospheric shells.

UF *atmospheric shells*

GS stratification

. **atmospheric stratification**

RT Brunt-Vaisala frequency
mixing layers (fluids)
plasma layers
surface layers

atmospheric temperature

GS temperature

. **atmospheric temperature**

. . auroral temperature
. . ionospheric temperature
RT Advanced Microwave Sounding Unit
ambient temperature
climate change
Gaia hypothesis
gas temperature
global warming

isotherms

LACATE (experiment)
land surface temperature
meteorological parameters
planetary atmospheres
planetary temperature
quasi-biennial oscillation
radio occultation
sound detecting and ranging
stratospheric warming
subzero temperature
temperature gradients
temperature inversions
thermal resources
weather

atmospheric tides

DEF Defined in analogy to the oceanic tide as an atmospheric motion on a worldwide scale, in which vertical accelerations are neglected (but compressibility is taken into account).

GS tides

. **atmospheric tides**

RT Earth tides
lunar tides

atmospheric turbulence

GS turbulence

. **atmospheric turbulence**

. . clear air turbulence
. . gusts
. . low level turbulence
RT aviation meteorology
dissipation
gust loads
homogeneous turbulence
isotropic turbulence
laminar flow
meteorological parameters
meteorology
seeing (astronomy)
sodar
tephigrams
turbopause
turbulent diffusion
turbulent flow
wind variations

atmospheric windows

DEF Wavelength intervals at which the atmosphere transmits the most electromagnetic radiation.

RT astronomical photography
astronomical photometry

atmospherics

DEF The radiofrequency electromagnetic radiations originating, principally, in the irregular surges of charge in thunderstorm lightning discharges. Atmospherics are heard as a quasi-steady background of crackling noise (static) in ordinary amplitude modulated radio receivers. Used for atmospheric noise and sferics.

UF *atmospheric noise*
sferics

GS electromagnetic interference

. radio frequency interference

. . electromagnetic noise

. . . **atmospherics**

. . . . ionospherics

. . . . dawn chorus

. . . . hiss

. . . . sudden enhancement of

. . . . atmospherics

. . . . whistlers

RT atmospheric electricity
blackout (propagation)
electromagnetic compatibility
radio meteorology
radio waves
static electricity
thunderstorms
VLF emission recorders

atoll reefs

USE **coral reefs**

atolls

DEF Coral reefs appearing in plan view as roughly circular (though sometimes elliptical or

atom concentration

horseshoe-shaped), and surmounted by a chain or ring of closely spaced low coral inlets that encircle a shallow lagoon in which there is no pre-existing land or islands of non-coral origin; the reefs are surrounded by deep water of the open sea, either oceanic or continental shelves. Atolls range in diameter from 1 km to more than 130 km, and are especially common today in the western and central Pacific Ocean. Atoll is derived from the native name in the Maldives Islands (Indian Ocean) which are typical examples of this structure.

- GS landforms
 - . islands
 - . . **atolls**
- RT coral reefs
- lagoons
- reefs

atom concentration

- GS composition (property)
 - . concentration (composition)
 - . . **atom concentration**
- RT chemical composition
 - ∞ density
 - electron density (concentration)
 - flux density
 - gas composition
 - gas density
 - ion density (concentration)
 - ionospheric composition
 - plasma composition
 - plasma density
 - proton density (concentration)

atom optics

(added January 2002)

DEF Field of study addressing the manipulation of atomic beams in a way that is analogous to the manipulation of light by conventional optics. Reflection, diffraction, and focusing of the atoms is typically carried out through interaction with lasers tuned to the atomic resonances.

- RT atomic beams
- beam interactions
- Bose-Einstein condensates
- electron optics
- four-wave mixing
- ion optics
- laser cooling
- ∞ optics
- quantum optics

atomic batteries

- USE **radioisotope batteries**

atomic beams

- GS beams (radiation)
 - . particle beams
 - . . **atomic beams**
- RT atom optics
- ion beams
- molecular beams
- neutral atoms
- neutral beams
- neutron beams
- particle diffusion
- rarefied gas dynamics

atomic bombs

- USE **fission weapons**

atomic clocks

DEF Timekeeping devices controlled by the frequency of the natural vibrations of certain atoms.

- GS measuring instruments
 - . time measuring instruments
 - . . clocks
 - . . . **atomic clocks**
- RT autonomous spacecraft clocks
- chronometers
- clock paradox
- frequency standards
- gas masers
- masers
- molecular beams

time measurement

atomic clusters

(added January 1994)

- RT adatoms
- agglomeration
- chemisorption
- clumps
- ∞ clusters
- fullerenes
- metal clusters
- molecular clusters
- nucleation

atomic collisions

- GS atomic interactions
 - . **atomic collisions**
 - collisions
 - . **atomic collisions**
- RT ∞ absorption
- atomizing
- autoionization
- ∞ cross sections
- elastic scattering
- electron scattering
- ∞ interactions
- ionic collisions
- ionization
- molecular collisions
- particle collisions
- recoil ions
- recombination reactions
- scattering

atomic energy

- USE **nuclear energy**

atomic energy levels

- UF *triplet excitation*
- triplet state*
- GS level (quantity)
 - . energy levels
 - . . **atomic energy levels**
- RT atomic interactions
- excitation
- ground state
- Landau factor
- laser cooling
- line spectra
- spontaneous emission

atomic excitations

- GS excitation
 - . **atomic excitations**
- RT energy levels
- Heisenberg theory
- ionization
- molecular excitation
- particle collisions
- resonance fluorescence

atomic explosions

- USE **nuclear explosions**

atomic force microscopy

(added February 1994)

DEF A form of microscopy that allows the imaging of general surface morphology and surface atomic structure by the measurement of the atomic forces acting on a sharply pointed probe as it is moved across the surface of a specimen.

- UF *AFM (microscopy)*
- GS microscopy
 - . **atomic force microscopy**
- RT atomic structure
- crystal surfaces
- interatomic forces
- microstructure
- nanofabrication
- nanindentation
- surface properties
- thin films

atomic gases

- USE **monatomic gases**

atomic interactions

- GS **atomic interactions**
 - . atomic collisions

- RT atomic energy levels
 - ∞ interactions
 - ion atom interactions
 - molecular structure
 - quantum mechanics

atomic layer epitaxy

(added June 1997)

- GS growth
 - . crystal growth
 - . . epitaxy
 - . . . **atomic layer epitaxy**
- RT molecular beam epitaxy
- thin films
- vapor deposition
- vapor phase epitaxy

atomic mass

- USE **atomic weights**

atomic mobilities

- GS mobility
 - . **atomic mobilities**
- RT electron mobility
- hole mobility
- ionic mobility
- self diffusion (solid state)

atomic physics

- RT Hartree-Fock-Slater method
- ∞ physics
- resonance fluorescence
- ∞ science

atomic recombination

- GS chemical reactions
 - . **atomic recombination**
 - . . oxygen recombination
 - recombination reactions
 - . **atomic recombination**
 - . . oxygen recombination
- RT deionization
- dissociation
- emission
- emission spectra
- ion recombination
- radiative recombination

atomic spectra

- GS spectra
 - . **atomic spectra**
- RT Balmer series
- Lyman alpha radiation
- Lyman beta radiation
- Lyman spectra
- Paschen series
- Rydberg series

atomic structure

- SN (THIS TERM WAS USED FOR "ELECTRONIC STRUCTURE" PRIOR TO MAY 1999)
- RT atomic force microscopy
- atoms
- constitution
- crystal lattices
- density functional theory
- electronic structure
- elementary particles
- energy levels
- fine structure
- gravitons
- Hartree approximation
- hyperfine structure
- interatomic forces
- isoelectronic sequence
- melts (crystal growth)
- molecular structure
- nuclear chemistry
- nuclear models
- nuclear physics
- octets
- order-disorder transformations
- particle precipitation
- Pauli exclusion principle
- polywater
- ∞ structures
- Thomas-Fermi model

atomic theory

- GS **atomic theory**

. Heisenberg theory
 RT electron transitions
 ground state
 Landau factor
 ∞ nuclear energy
 quantum theory
 ∞ theories

atomic weights

DEF The weight of an atom according to a scale of atomic weight units, awu, valued as one-twelfth the mass of the carbon atom. Used for atomic mass.

UF *atomic mass*
 GS weight (mass)
 . **atomic weights**
 RT ∞ weight

atomization

USE **atomizing**

atomizers

RT atomizing
 evaporators
 grinding mills
 ∞ nozzles
 sprayers

atomizing

UF *atomization*
 GS **atomizing**
 . gas atomization
 . liquid atomization
 RT aerosols
 atomic collisions
 atomizers
 colloidal generators
 colloidizing
 comminution
 disintegration
 flaking
 grinding (comminution)
 grinding mills
 metal powder
 spraying

atoms

GS **atoms**
 . adatoms
 . helium atoms
 . hot atoms
 . hydrogen atoms
 . metastable atoms
 . neutral atoms
 . nitrogen atoms
 . oxygen atoms
 . recoil atoms
 RT atomic structure
 chemical elements
 ∞ elements
 free radicals
 ions
 isomers
 isotope separation
 isotopes
 molecules
 monatomic molecules
 nuclei (nuclear physics)
 polyatomic molecules
 positive ions
 positronium

ATP

USE **adenosine triphosphate**

ATR reactor

USE **advanced test reactors**

ATR-72 aircraft

(added September 1994)
 GS jet aircraft
 . turboprop aircraft
 . . **ATR-72 aircraft**
 passenger aircraft
 . commuter aircraft
 . . **ATR-72 aircraft**
 RT ∞ aircraft

atrophy

RT biological effects

degeneration
 deterioration
 glucocorticoids
 hindlimb suspension
 nutritional requirements
 physical exercise
 tissues (biology)

atropine

GS bases (chemical)
 . alkaloids
 . . **atropine**
 drugs
 . stimulants
 . . **atropine**
 nitrogen compounds
 . alkaloids
 . . **atropine**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **atropine**

ATS

UF *Applications Technology Satellites*
 GS artificial satellites
 . gravity gradient satellites
 . . **ATS**
 . . . ATS 1
 . . . ATS 2
 . . . ATS 3
 . . . ATS 4
 . . . ATS 5
 . . . ATS 6
 . . . ATS 7
 . . . ATS 8
 . scientific satellites
 . . **ATS**
 . . . ATS 1
 . . . ATS 2
 . . . ATS 3
 . . . ATS 4
 . . . ATS 5
 . . . ATS 6
 . . . ATS 7
 . . . ATS 8
 RT communication satellites
 Early Bird satellites
 meteorological satellites
 navigation satellites
 NAVSTAR satellites

ATS 1

GS artificial satellites
 . gravity gradient satellites
 . . **ATS**
 . . . **ATS 1**
 . scientific satellites
 . . **ATS**
 . . . **ATS 1**

ATS 2

GS artificial satellites
 . gravity gradient satellites
 . . **ATS**
 . . . **ATS 2**
 . scientific satellites
 . . **ATS**
 . . . **ATS 2**

ATS 3

GS artificial satellites
 . gravity gradient satellites
 . . **ATS**
 . . . **ATS 3**
 . scientific satellites
 . . **ATS**
 . . . **ATS 3**

ATS 4

GS artificial satellites
 . gravity gradient satellites
 . . **ATS**
 . . . **ATS 4**
 . scientific satellites
 . . **ATS**

. . . **ATS 4**

ATS 5

GS artificial satellites
 . gravity gradient satellites
 . . **ATS**
 . . . **ATS 5**
 . scientific satellites
 . . **ATS**
 . . . **ATS 5**

ATS 6

GS artificial satellites
 . gravity gradient satellites
 . . **ATS**
 . . . **ATS 6**
 . scientific satellites
 . . **ATS**
 . . . **ATS 6**
 RT HET experiment

ATS 7

GS artificial satellites
 . gravity gradient satellites
 . . **ATS**
 . . . **ATS 7**
 . scientific satellites
 . . **ATS**
 . . . **ATS 7**

ATS 8

GS artificial satellites
 . gravity gradient satellites
 . . **ATS**
 . . . **ATS 8**
 . scientific satellites
 . . **ATS**
 . . . **ATS 8**

∞ **attachment**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *reattachment*
 RT assembling
 Coanda effect
 electron attachment
 mounting
 reattached flow

attachments

USE **accessories**

∞ **attack**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT angle of attack
 attacking (assaulting)
 chemical attack

attack aircraft

GS **attack aircraft**
 . A-1 aircraft
 . A-7 aircraft
 . A-9 aircraft
 . A-10 aircraft
 . A-37 aircraft
 . AH-1G helicopter
 . AH-63 helicopter
 . AH-64 helicopter
 . bomber aircraft
 . . A-2 aircraft
 . . A-3 aircraft
 . . A-4 aircraft
 . . A-5 aircraft
 . . A-6 aircraft
 . . B-1 aircraft
 . . B-2 aircraft
 . . B-26 aircraft
 . . B-47 aircraft
 . . B-50 aircraft
 . . B-52 aircraft
 . . B-57 aircraft
 . . B-58 aircraft
 . . B-66 aircraft
 . . B-70 aircraft
 . . F-111 aircraft
 . . Shackleton bomber
 . . Valiant aircraft
 . . Victor MK-1 aircraft

attacking (assaulting)

- . . Vulcan aircraft
- . Breguet 1150 aircraft
- . Buccaneer aircraft
- . CL-41 aircraft
- . COIN aircraft
- . . F-5 aircraft
- . . OV-10 aircraft
- . DH 115 aircraft
- . fighter aircraft
- . . Alpha jet aircraft
- . . DH 112 aircraft
- . . F-2 aircraft
- . . F-4 aircraft
- . . F-5 aircraft
- . . F-8 aircraft
- . . F-9 aircraft
- . . F-14 aircraft
- . . F-15 aircraft
- . . F-16 aircraft
- . . F-17 aircraft
- . . F-18 aircraft
- . . F-20 aircraft
- . . F-22 aircraft
- . . F-84 aircraft
- . . F-86 aircraft
- . . F-89 aircraft
- . . F-94 aircraft
- . . F-100 aircraft
- . . F-101 aircraft
- . . F-102 aircraft
- . . F-104 aircraft
- . . F-105 aircraft
- . . F-106 aircraft
- . . F-117A aircraft
- . . FV-12A aircraft
- . . G-91 aircraft
- . . G-95/4 aircraft
- . . GA-5 aircraft
- . . Harrier aircraft
- . . Jaguar aircraft
- . . JAS-39 aircraft
- . . jet provost aircraft
- . . MiG aircraft
- . . Mirage aircraft
- . . . Mirage 3 aircraft
- . . P-51 aircraft
- . . P-1127 aircraft
- . . P-1154 aircraft
- . . Saab 37 aircraft
- . . Scimitar aircraft
- . . Vampire MK 35 aircraft
- . . YF-12 aircraft
- . AH-1S helicopter
- . AH-1W helicopter
- . P-308 aircraft
- . T-2 aircraft
- . TSR-2 aircraft

RT aeroquatic vehicles

- ∞ aircraft
- antisubmarine warfare aircraft
- jet aircraft
- ∞ military aircraft
- military helicopters
- MRCA aircraft
- supersonic aircraft
- terrain following
- V/STOL aircraft

attacking (assaulting)

UF *assaulting*

GS violence

- . **attacking (assaulting)**

RT ∞ attack

- ∞ military aircraft
- tactics
- warfare

attention

RT alertness

consciousness

attenuation

DEF Reducing in intensity.

GS **attenuation**

- . atmospheric attenuation
- . . auroral absorption
- . microwave attenuation
- . sidelobe reduction
- . wave attenuation
- . . acoustic attenuation

- . . . shock wave attenuation
- . . radar attenuation
- . . radio attenuation

RT ∞ absorption

- attenuators
- ∞ conduction
- damping
- diffraction
- dilution
- dissipation
- electromagnetic absorption
- electromagnetic wave transmission
- elimination
- fading
- impingement
- ∞ inhibition
- internal friction
- light (visible radiation)
- mechanical impedance
- ∞ propagation
- ∞ reduction
- retarding
- shielding
- signal fading
- signal to noise ratios
- sound propagation
- sound transmission
- spatial filtering
- transmission
- transmission loss
- transmitters
- vibration damping
- wave degradation
- wave diffraction
- wave dispersion
- wave propagation

attenuation coefficients

DEF A measure of the space rate of attenuation of any transmitted electromagnetic radiation.

GS coefficients

- . **attenuation coefficients**

RT diffusion coefficient

- flow coefficients
- impedance
- opacity
- reflectance
- scattering coefficients
- transmission efficiency
- transmittance

attenuators

DEF Devices for measuring attenuation. They are usually calibrated in dB (decibels).

GS **attenuators**

- . resistors
- . . potentiometers (resistors)
- . . printed resistors
- . . thermistors

RT ∞ absorbers

- absorbers (materials)
- attenuation
- baffles
- deflectors
- ∞ diffusers
- electromagnetic wave filters
- equalizers (circuits)
- ∞ filters
- insulators
- inverters
- isolators
- mufflers
- power limiters
- radiation shielding
- reflectors
- shielding
- silencers
- suppressors

attitude (inclination)

DEF The position or orientation of an aircraft, spacecraft, etc., either in motion or at rest, as determined by the relationship between its axes and some reference line or plane or some fixed system of reference axes. Used for spatial orientation, tilt, and tilting.

UF *spatial orientation*

tilt

tilting

GS **attitude (inclination)**

- . pitch (inclination)
- . roll
- . satellite orientation
- . yaw

RT horizontal orientation

- instrument orientation
- misalignment
- ∞ motion
- ∞ orientation
- ∞ position
- ∞ space orientation
- stability augmentation
- tiltmeters
- vertical orientation

attitude control

DEF The regulation of the attitude of an aircraft, spacecraft, etc. Also a device or system that automatically regulates and corrects attitude, especially of a pilotless vehicle.

GS **attitude control**

- . directional control
- . . thrust vector control
- . lateral control
- . longitudinal control
- . satellite attitude control

RT air traffic control

- aircraft control
- automatic control
- cold gas
- ∞ control
- control moment gyroscopes
- flight control
- guidance sensors
- helicopter control
- horizon scanners
- magnetic control
- manual control
- Miranda satellite
- missile control
- orbital lifetime
- reaction wheels
- remote control
- rocket engine control
- satellite control
- solar sensors
- spacecraft control
- spacing
- spin stabilization
- star trackers
- thrust control
- trajectory control
- visual control

attitude gyros

DEF Gyro-operated flight instruments that indicate the attitude of an aircraft or spacecraft with respect to a reference coordinate system throughout 360 degrees of rotation about each axis of the craft.

GS gyroscopes

- . **attitude gyros**
- . . gyro horizons

RT control moment gyroscopes

- sea keeping

attitude indicators

UF *helicopter attitude indicators*

yawmeters

GS flight instruments

- . **attitude indicators**
- . . gyro horizons
- measuring instruments
- . indicating instruments
- . . **attitude indicators**
- . . . gyro horizons
- navigation aids
- . navigation instruments
- . . **attitude indicators**
- . . . gyro horizons

RT aircraft instruments

- control moment gyroscopes
- flight control

attitude stability

UF *satellite attitude disturbance*

GS dynamic characteristics

- . dynamic stability

. . motion stability
 . . . **attitude stability**
 directional stability
 gyroscopic stability
 lateral stability
 longitudinal stability
 stability
 . dynamic stability
 . motion stability
 . . **attitude stability**
 directional stability
 gyroscopic stability
 lateral stability
 longitudinal stability
 RT aerodynamic stability
 aircraft stability
 Discos (satellite attitude control)
 hovering stability
 low speed stability
 satellite attitude control
 spacecraft motion
 spacecraft stability
 tumbling motion

attraction
 RT affinity
 field theory (physics)
 ∞ force
 gravitational fields

attractors (mathematics)
(added June 1997)
 GS **attractors (mathematics)**
 . strange attractors
 RT asymptotic properties
 chaos
 dynamical systems
 nonlinear systems
 stochastic processes
 trajectories

attributes
 USE **properties**

attrition (materials)
 USE **comminution**

audio data
 DEF Useful information at audio signal frequency.
 RT audio frequencies
 ∞ data
 data transmission

audio equipment
 GS **audio equipment**
 . earphones
 . loudspeakers
 . microphones
 RT audio visual equipment
 ∞ equipment
 monaural signals

audio frequencies
 SN (APPROXIMATELY 20 TO 20,000 HZ)
 DEF Frequencies corresponding to normally audible sound waves.
 GS frequencies
 . acoustic frequencies
 . . **audio frequencies**
 . . . uefrequencies
 RT acoustic measurement
 audio data
 audio signals
 auditory perception
 cepstral analysis
 extremely low frequencies
 monaural signals
 noise pollution
 radio frequencies
 sound generators
 sound transmission
 sound waves
 very low frequencies
 voice

audio signals
 DEF Signals with a bandwidth of less than 20 kilohertz.
 RT audio frequencies

auditory signals
 signal processing
 signal transmission
 ∞ signals

audio tapes
(added February 1992)
 RT acoustics
 audio visual material
 information
 magnetic tapes
 ∞ tapes
 video tapes

audio visual equipment
(added September 1993)
 RT audio equipment
 display devices
 multimedia
 training devices
 video equipment
 visual aids

audio visual material
(added September 1993)
 RT audio tapes
 multimedia
 visual aids

audiology
 RT audiometry
 auditory fatigue
 auditory perception
 hearing

audiometry
 DEF The testing and measurement of hearing at various levels.
 RT acoustic measurement
 audiology
 auditory defects
 auditory fatigue
 auditory perception
 auditory stimuli
 hearing
 masking
 ∞ measurement
 thresholds (perception)

auditory defects
 UF *deafness*
hearing loss
 GS defects
 . **auditory defects**
 RT audiometry
 bioacoustics
 disabilities
 losses

auditory fatigue
 GS fatigue (biology)
 . **auditory fatigue**
 RT audiology
 audiometry
 hearing
 noise threshold

auditory perception
 UF *sound perception*
 perception
 GS . sensory perception
 . . **auditory perception**
 RT acoustics
 audio frequencies
 audiology
 audiometry
 auditory sensation areas
 binaural hearing
 ear
 earphones
 monaural signals
 noise threshold
 psychoacoustics
 sensitivity
 sound localization
 sound waves
 speech
 thresholds (perception)

Weber test

auditory sensation areas
 DEF In acoustics, the frequency region enclosed by the curves defining the threshold of pain and the threshold of audibility.
 RT auditory perception
 auditory stimuli
 bioacoustics
 thresholds (perception)

auditory signals
 UF *chimes*
 RT audio signals
 bells
 cues
 horns
 monaural signals
 psychoacoustics
 signal mixing
 ∞ signals
 warning
 warning systems

auditory stimuli
 GS stimulation
 . **auditory stimuli**
 RT acoustics
 audiometry
 auditory sensation areas
 noise (sound)
 noise intensity
 sound generators
 sound intensity
 ∞ stimuli
 thresholds (perception)

auditory tasks
 GS tasks
 . **auditory tasks**
 RT acoustics
 hearing
 noise (sound)

aufeis (ice)
 DEF Icing of ground or river water in Arctic areas with continuous permafrost on which the water has continued to flow.
 RT ice
 melting
 permafrost
 rivers

Auger effect
 DEF The nonradiative transition of an atom from an excited electronic energy state to a lower state with the emission of an electron. The term usually refers to the x ray region of energy states. The final state corresponds to one higher degree of ionization than does the initial state. The effect is an alternative process to the transition to a lower state having the same degree of ionization with the emission of an x ray photon, and thus is analogous to the internal conversion of a nuclear transmission.
 RT cosmic ray showers
 ∞ effects
 electron transitions
 Langmuir turbulence

Auger showers
(added August 1997)
 USE **cosmic ray showers**

Auger spectroscopy
 GS spectroscopy
 . **Auger spectroscopy**
 RT chemical analysis
 electron transitions
 spectroscopic analysis
 thermites

augmentation
 UF *enhancement*
 GS **augmentation**
 . stability augmentation
 . thrust augmentation
 RT increasing

Aura spacecraft

spatial filtering

AUOS
USE **Automatic Universal Orbiting Stations**

Aura spacecraft
(added May 2005)
DEF The third of a series of Earth Observing System (EOS) spacecraft developed to advance the understanding of the ways that the Earth's lands, oceans, air, ice, and life function as a total environmental system. Aura studies the Earth's ozone, air quality and climate, and is designed exclusively to conduct research on the composition, chemistry and dynamics of the Earth's upper and lower atmosphere employing multiple instruments on a single satellite. The spacecraft carries four instruments: the High Resolution Dynamics Limb Sounder (HIRDLS), the Microwave Limb Sounder (MLS), Ozone Monitoring Instrument (OMI), and the Tropospheric Emission Spectrometer (TES).

GS artificial satellites
. scientific satellites
. . **Aura spacecraft**
Earth Observing System (EOS)
. **Aura spacecraft**

RT Aqua spacecraft
CALIPSO (Pathfinder satellite)
CloudSat
data products
Earth observations (from space)
remote sensing
Terra spacecraft

Auriga constellation
GS constellations
. **Auriga constellation**

RT Zeta Aurigae star

Aurora 7
GS manned spacecraft
. Mercury spacecraft
. . **Aurora 7**
reentry vehicles
. recoverable spacecraft
. . Mercury spacecraft
. . . **Aurora 7**
soft landing spacecraft
. Mercury spacecraft
. . **Aurora 7**
space capsules
. Mercury spacecraft
. . **Aurora 7**

RT Mercury MA-7 flight

auroral absorption
GS attenuation
. atmospheric attenuation
. . **auroral absorption**
energy absorption
. radiation absorption
. . electromagnetic absorption
. . . **auroral absorption**

RT ∞ absorption
light emission
riometers

auroral activity
USE **auroras**

auroral arcs
GS atmospheric radiation
. auroras
. . **auroral arcs**
. . . red arcs

RT ∞ arcs

auroral echoes
GS echoes
. **auroral echoes**

RT radar echoes
radio echoes

auroral electrojets
GS electric current
. ionospheric currents
. . electrojets
. . . **auroral electrojets**

electricity
. atmospheric electricity
. . ionospheric currents
. . . electrojets
. . . . **auroral electrojets**

RT Birkeland currents
equatorial electrojet
telluric currents

auroral ionization
GS ionization
. gas ionization
. . atmospheric ionization
. . . **auroral ionization**

RT auroras
excitation
light emission
photoionization
red arcs

auroral irradiation
GS irradiation
. **auroral irradiation**

RT auroras
electron irradiation
excitation
ion irradiation
photoionization

auroral spectroscopy
GS spectroscopy
. **auroral spectroscopy**
channel multipliers
Fabry-Perot spectrometers
light emission
optical emission spectroscopy
spectroscopic analysis
visible spectrum

auroral temperature
GS temperature
. atmospheric temperature
. . **auroral temperature**

RT auroras
ion temperature
ionospheric temperature

auroral zones
DEF Roughly circular bands around either geomagnetic pole above which there is a maximum of auroral activity. The zones lie about 10 deg. to 15 deg. of geomagnetic latitude from the geomagnetic poles.

GS regions
. **auroral zones**

RT auroras
Birkeland currents
IMAGE satellite
magnetic poles
Pedersen currents
polar radio blackout
polar regions

auroras
DEF Sporadic radiant emissions from the upper atmosphere over middle and high latitudes. Used for auroral activity and polar auro-ras.

UF *auroral activity*
polar auroras

GS atmospheric radiation
. **auroras**
. . auroral arcs
. . . red arcs
. . radio auroras

RT aeronomy
airglow
auroral ionization
auroral irradiation
auroral temperature
auroral zones
dawn chorus
Earth atmosphere
electron precipitation
ESRO 4 satellite
light emission
magnetic disturbances
night sky
Polar/GGS spacecraft
proton precipitation

sky brightness
solar activity
x rays

ausforming
GS forming techniques
. hot working
. . **ausforming**
metal working
. **ausforming**

RT forging
∞ rolling

austenite
DEF A solid solution of carbon in gamma-iron.

RT allotropy
ferrites
iron alloys
martensite
martensitic transformation
microstructure
steels

austenitic stainless steels
DEF Steels having at room temperature a microstructure consisting, at least predominantly, of austenite. Their austenitic microstructure is attained above all by alloying conditions, e.g., manganese and nickel.

GS alloys
. iron alloys
. . steels
. . . stainless steels
. . . . **austenitic stainless steels**

RT martensitic stainless steels
time temperature parameter

Austin comet
(added May 1991)
GS celestial bodies
. comets
. . **Austin comet**

Australia
GS continents
. **Australia**
nations
. **Australia**

RT Australian space program
Papua New Guinea
Tasmania
Torres Strait

Australian space program
(added February 1989)
GS programs
. space programs
. . **Australian space program**

RT Australia

australites
GS celestial bodies
. meteorites
. . stony meteorites
. . . tektites
. . . . **australites**

RT bediasites

Austria
GS nations
. **Austria**

RT Alps Mountains (Europe)
Austrian space program
Central Europe
Europe

Austrian space program
(added October 1990)
GS programs
. space programs
. . European space programs
. . . **Austrian space program**

RT Austria

autocatalysis
GS catalysis
. **autocatalysis**

RT abiogenesis
catalytic activity

reaction kinetics

autoclaves

- RT autoclaving
- chemical reactors
- ∞ containers
- pressure vessels

autoclaving

- RT autoclaves
- curing
- heating
- leaching
- powder metallurgy

autocoders

- GS languages
 - . programming languages
 - . . Assembly language
 - . . . **autocoders**
- RT compilers
- computer programming
- computer systems programs
- machine oriented languages

autocollimators

USE **collimators**

autocorrelation

DEF In statistics, the simple linear internal correlation of members of a time series (ordered in time or other domains).

- GS correlation
 - . **autocorrelation**
- RT cross correlation
- data correlation
- Fourier analysis
- periodic variations
- time series analysis

autodynes

- GS circuits
 - . **autodynes**
- oscillators
- . **autodynes**
- RT ∞ detectors
- frequency control
- heterodyning
- signal analyzers
- signal detection
- signal detectors
- vacuum tube oscillators

autogyros

- GS V/STOL aircraft
 - . rotary wing aircraft
 - . . **autogyros**
 - . . . Avian 2/180 autogiro

autoignition

(added April 1997)

USE **spontaneous combustion**

autoionization

- GS dissociation
 - . **autoionization**
- ionization
- . **autoionization**
- RT atomic collisions
- many electron effects

autokinesis

- GS perception
 - . sensory perception
 - . . proprioception
 - . . . **autokinesis**
 - . . visual perception
 - . . . space perception
 - **autokinesis**

automata theory

- RT adaptive control
- artificial intelligence
- ∞ automation
- bionics
- cellular automata
- computers
- cybernetics
- depersonalization
- heuristic methods
- information theory

- machine learning
- model reference adaptive control
- robotics
- robots
- self adaptive control systems
- ∞ theories
- Turing machines

automated en route ATC

DEF An air traffic control technology which allows computers to make decisions about conflict resolution, the generation of clearances, and their automatic transmission, with the operator standing by to take over in an emergency.

- GS ground based control
 - . air traffic control
 - . . **automated en route ATC**
 - traffic control
 - . air traffic control
 - . . **automated en route ATC**

- RT aircraft guidance
- approach control
- automated pilot advisory system
- flight control
- ground-air-ground communication
- microwave landing systems

automated guideway transit vehicles

DEF A system of a large number of captive vehicles traveling at relatively close headways on an exclusive guideway controlled by a computer. Used for AGT.

- UF AGT
- GS surface vehicles
 - . automated transit vehicles
 - . . **automated guideway transit vehicles**

- RT automated mixed traffic vehicles
- conveyors
- passengers
- rail transportation
- rapid transit systems
- transportation
- urban transportation
- ∞ vehicles

automated mixed traffic vehicles

DEF Low speed, surface vehicles automatically operated and controlled in a pedestrian environment by following a buried wire in the roadways sensing obstacles and stopping at predetermined spots for passenger exit and entry. Used for AMTV.

- UF AMTV
- GS research vehicles
 - . **automated mixed traffic vehicles**
- surface vehicles
- . motor vehicles
- . . **automated mixed traffic vehicles**

- RT automated guideway transit vehicles
- passengers
- urban transportation
- ∞ vehicles

automated pilot advisory system

DEF An airport advisory system and an air traffic advisory system designed to improve airport and air traffic advisories at high density uncontrolled airports.

- RT air traffic control
- automated en route ATC
- automatic traffic advisory and resolution
- ∞ systems

automated radar terminal system

DEF Radar tracking system for use in a terminal area. Primary and secondary radar targets are detected and data for the two are correlated for transmission to a central computer.

- RT air traffic control
- radar equipment
- radar tracking
- ∞ systems

Automated Transfer Vehicle

(added December 1995)

- RT Ariane 5 launch vehicle
- cargo spacecraft

- Columbus space station
- rendezvous guidance
- space logistics
- ∞ vehicles

automated transit vehicles

- GS surface vehicles
 - . **automated transit vehicles**
 - . . automated guideway transit vehicles

- RT conveyors
- electric motor vehicles
- passengers
- rail transportation
- rapid transit systems
- transportation
- urban transportation
- ∞ vehicles

automatic control

DEF Control of devices and equipment, including aerospace vehicles by automatic means. Used for self regulating.

- UF *self regulating*
- GS **automatic control**
 - . adaptive control
 - . . active control
 - . . model reference adaptive control
 - . . self adaptive control systems
 - . automatic flight control
 - . . automatic landing control
 - . automatic frequency control
 - . automatic gain control
 - . dynamic control
 - . feedback control
 - . . cascade control
 - . feedforward control
 - . numerical control
 - . off-on control
 - . optimal control
 - . . H-2 control
 - . . H-infinity control
 - . linear quadratic Gaussian control
 - . . time optimal control
 - . proportional control
 - . sequential control

- RT aircraft control
- attitude control
- ∞ automation
- autonomous docking
- combustion control
- ∞ control
- control equipment
- control systems design
- controllers
- depersonalization
- directional control
- dynamic characteristics
- electric control
- electronic aircraft
- electronic control
- engine control
- environmental control
- flight control
- ground based control
- guidance (motion)
- helicopter control
- hydraulic control
- ∞ instruments
- jet control
- landing instruments
- lateral control
- longitudinal control
- manual control
- measuring instruments
- missile control
- negative feedback
- optical control
- pneumatic control
- radio control
- real time operation
- recording instruments
- reentry guidance
- regulators
- relief valves
- remote control
- robotics
- rocket engine control
- sampled data systems

automatic control valves

satellite attitude control
satellite control
satellite guidance
self absorption
self alignment
servocontrol
servomechanisms
servomotors
spacecraft control
spacecraft guidance
speed control
stability augmentation
temperature control
Terminal Configured Vehicle Program
thermostats
thrust vector control
tracking problem
transfer functions
turbojet engine control

automatic control valves

GS control equipment
. regulators
. . . **automatic control valves**
. . . pressure regulators
. . . relief valves
valves
. **automatic control valves**
. . pressure regulators
. . relief valves

RT actuators
∞ control
dampers (valves)
dynamic characteristics
fluid amplifiers
fluid switching elements
gas valves
hydraulic equipment
pneumatic control
servomechanisms
solenoid valves
temperature control

automatic data processing

USE **data processing**

automatic flight control

UF *AFCS (control system)*
GS automatic control
. **automatic flight control**
. . automatic landing control
flight control
. **automatic flight control**
. . automatic landing control

RT aircraft control
aircraft instruments
autonomous navigation
∞ control
distance measuring equipment
flight management systems
highly maneuverable aircraft
missile control
navigation
navigation aids
radar navigation
radio navigation
solar compasses
Terminal Configured Vehicle Program
thrust vector control

automatic frequency control

DEF An arrangement whereby the frequency of an oscillator is automatically maintained within specified limits. Used for AFC (control).

UF *AFC (control)*
GS automatic control
. **automatic frequency control**
frequency control
. **automatic frequency control**

RT ∞ control
feedback control
frequency modulation
oscillators
tuning

automatic gain control

DEF A process by which gain is automatically adjusted as a function of input or other specified parameter. Used for AGC (control).

UF *AGC (control)*
GS automatic control
. **automatic gain control**

RT antenna gain
∞ control
feedback control
tuning

automatic indexing

(added April 2000)

USE **indexing (information science)**

automatic landing control

GS automatic control
. automatic flight control
. . **automatic landing control**
flight control
. automatic flight control
. . **automatic landing control**

RT airborne equipment
aircraft equipment
blind landing
distance measuring equipment
flight management systems
instrument landing systems
microwave landing systems
Terminal Configured Vehicle Program

automatic pattern recognition

USE **pattern recognition**

automatic picture transmission

UF *APT (picture transmission)*
GS telecommunication
. communication
. . facsimile communication
. . . **automatic picture transmission**
transmission
. signal transmission
. . data transmission
. . . **automatic picture transmission**

RT television transmission
wave propagation

automatic pilots

DEF Equipment which automatically stabilizes the attitude of a vehicle about its pitch, roll, and yaw axes. Used for autopilots.

UF *autopilots*
GS aircraft instruments
. **automatic pilots**
flight instruments
. **automatic pilots**

RT aircraft equipment
flight control
gyroscopes
highly maneuverable aircraft
homing
landing aids
navigation aids
pilot support systems
∞ pilots
radio altimeters
solar compasses

automatic repeat query

USE **automatic repeat request**

automatic repeat request

(added August 1991)

DEF A request from a receiving device to retransmit the most recent block of data.

UF *ARQ (communication)*
automatic repeat query
automatic request for retransmission

RT data transmission
error correcting codes
error signals
message processing
messages
packet transmission

telecommunication

automatic request for retransmission

USE **automatic repeat request**

automatic rocket impact predictors

USE **computerized simulation**
impact prediction

automatic test equipment

RT ∞ equipment
measuring instruments
self tests
sneak circuit analysis
∞ test equipment

automatic traffic advisory and resolution

SN (AUTOMATIC TRAFFIC ADVISORY AND RESOLUTION SERVICE)
DEF Ground based collision avoidance system using the surveillance and data link capabilities of the discrete address beacon system (DABS). Used for ATARS.

UF *ATARS*
RT automated pilot advisory system
collision avoidance
ground based control
navigation aids
resolution
∞ systems

automatic typewriters

UF *Flexowriters (trademark)*
GS typewriters
. **automatic typewriters**

RT consoles
display devices
printers (data processing)
punched tapes

Automatic Universal Orbiting Stations

(added September 1994)

UF *AUOS*
GS artificial satellites
. space stations
. . **Automatic Universal Orbiting Stations**
stations
. space stations
. . **Automatic Universal Orbiting Stations**

RT ∞ platforms
Russian Federation
spacecraft environments
U.S.S.R. space program

automatic weather stations

DEF Weather stations at which the services of observers are not required. They are usually equipped with telemetric apparatus.

GS stations
. weather stations
. . **automatic weather stations**

RT data acquisition
data collection platforms
instrument packages
meteorological services
ocean data acquisitions systems
remote sensors
weather data recorders

∞ automation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *instrumental analysis*
RT automata theory
automatic control
command and control
computer vision
computers
control systems design
controllers
cybernetics
data processing
depersonalization
fail-safe systems
feedback control
feedforward control
information theory
man machine systems

materials handling
 mechanization
 numerical control
 office automation
 remote control
 robotics
 self erecting devices
 self repairing devices
 servomechanisms
 systems engineering
 tooling

automobile accidents
 GS accidents
 . **automobile accidents**
 RT accident investigation
 accident prevention
 safety devices

automobile engines
 RT external combustion engines
 internal combustion engines
 piston engines
 rotary engines
 Stirling engines
 turbine engines
 Wankel engines

automobile fuels
 GS fuels
 . **automobile fuels**
 RT aircraft fuels
 antiknock additives
 diesel fuels
 gasoline
 hydrocarbon fuels
 internal combustion engines
 liquid fuels
 synthane

automobiles
 UF *jeeps*
 GS surface vehicles
 . motor vehicles
 . . **automobiles**
 . . . electric automobiles
 RT air bag restraint devices
 antiskid devices
 chassis
 electric hybrid vehicles
 electric motor vehicles
 fuel systems
 hydrogen engines
 ignition systems
 lubrication systems
 ∞ military vehicles
 trailers
 trucks
 ∞ vehicles

automorphisms
 GS algebra
 . group theory
 . . homomorphisms
 . . . **automorphisms**

autonomic nervous system
 GS anatomy
 . nervous system
 . . **autonomic nervous system**
 . . . sympathetic nervous system
 RT involuntary actions
 ∞ systems

autonomous docking
 (*added May 2005*)
 DEF Automatic, self-controlled docking enabled through the use of specialized hardware, sensors, and algorithms for navigation, guidance, and positioning.
 GS maneuvers
 . docking
 . . **autonomous docking**
 RT automatic control
 autonomous navigation
 interception
 mooring
 orbital rendezvous
 rendezvous guidance
 space rendezvous

space stations
 spacecraft docking
 spacecraft guidance
 terminal guidance
 unmanned spacecraft

autonomous navigation
 GS navigation
 . **autonomous navigation**
 RT automatic flight control
 autonomous docking
 celestial navigation
 Deep Space 1 Mission
 navigation aids
 navigation instruments
 satellite navigation systems
 space navigation
 spacecraft guidance
 unmanned ground vehicles

autonomous spacecraft clocks
 DEF Standard Time scale instruments aboard spacecraft with provisions for synchronization with existing satellite-based system (global positioning system, for example).
 GS measuring instruments
 . time measuring instruments
 . . clocks
 . . . **autonomous spacecraft clocks**
 RT atomic clocks
 Global Positioning System
 spacecraft instruments
 TDR satellites

autonomy
 RT adaptive control
 command and control
 ∞ commands
 ∞ direction
 equations of motion
 management
 model reference adaptive control
 self adaptive control systems

autopilots
 USE **automatic pilots**

autopsies
 RT dissection
 pathology

autoradiography
 DEF A technique that uses x ray film to visualize radioactively labeled molecules or fragments of molecules used in analyzing the length and number of DNA fragments separated by gel electrophoresis.
 GS imagery
 . photography
 . . **autoradiography**
 . radiography
 . . **autoradiography**
 RT black and white photography

autoregressive moving average
 (*added October 1997*)
 UF *ARMA (mathematics)*
 GS average
 . **autoregressive moving average**
 RT autoregressive processes
 estimating
 IIR filters
 regression analysis
 stochastic processes
 time series analysis

autoregressive processes
 RT autoregressive moving average
 factor analysis
 ∞ processes
 regression analysis
 statistical analysis

autorotation
 DEF A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.
 UF *windmilling*
 GS gyration
 . rotation

. . **autorotation**
 RT rotary wing aircraft
 rotocutes

autotrophs
 DEF Organisms capable of synthesizing organic nutrients directly from simple inorganic substances such as carbon dioxide and inorganic nitrogen.
 GS **autotrophs**
 . hydrogenomonas
 RT heterotrophs

autumn
 DEF The season of the year between summer and winter. Its beginning is marked by the autumnal equinox and its end by the winter solstice.
 GS seasons
 . **autumn**
 RT spring (season)
 summer
 winter

auxiliary equipment (computers)
 USE **peripheral equipment (computers)**

auxiliary power sources
 GS **auxiliary power sources**
 . chemical auxiliary power units
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . . SNAP 1
 . . . SNAP 3
 . . . SNAP 7
 . . . SNAP 9A
 . . . SNAP 11
 . . . SNAP 13
 . . . SNAP 15
 . . . SNAP 17
 . . . SNAP 19
 . . . SNAP 21
 . . . SNAP 23
 . . . SNAP 27
 . . . SNAP 29
 . . . SNAP 50
 . . space power reactors
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . . SNAP 50
 . . . space power unit reactors
 . solar auxiliary power units
 . . ASTEC solar turboelectric generator
 RT aircraft power supplies
 direct power generators
 electric batteries
 electric generators
 ∞ electric power
 electric power supplies
 ∞ energy sources
 ground support equipment
 ∞ power supplies
 spacecraft power supplies
 voltage converters (AC to AC)
 voltage converters (DC to DC)

auxiliary propulsion
 GS propulsion
 . **auxiliary propulsion**
 RT aeronautical engineering
 ∞ astronautics
 engines
 hydrogen oxygen engines
 Marquardt R4D engine
 missiles
 propellants
 propulsion system configurations
 rocket propellants
 space flight
 space shuttles
 space station propulsion

auxins

∞ spacecraft
thrust

auxins

(added August 2004)

DEF Plant hormones which promote tissue growth through cell elongation rather than multiplication.

GS plant growth regulators
. **auxins**
RT gravitropism
plant physiology
plant roots
plants (botany)

AV-8A aircraft

USE **Harrier aircraft**

AV-8B aircraft

USE **Harrier aircraft**

availability

GS **availability**
. bioavailability
RT abundance
energy policy
reserves
resources

avalanche diodes

DEF A solid state device that takes advantage of avalanche multiplication of the photocurrent.

UF *IMPATT diodes*
TRAPATT diodes
Zener diodes
GS electronic equipment
. diodes
. . . semiconductor diodes
. . . **avalanche diodes**
. . . . cryosar
. . . solid state devices
. . . semiconductor devices
. . . **avalanche diodes**
. . . . cryosar
rectifiers
. **avalanche diodes**
. . . cryosar
RT Barriit diodes
ion implantation
negative conductance
TRAPATT devices
voltage regulators

avalanches

GS **avalanches**
. electron avalanche
. Townsend avalanche
RT Earth movements
electric discharges
ion production rates
ionizing radiation

AVCS

USE **Advanced Vidicon Camera System (AVCS)**

average

GS **average**
. autoregressive moving average
. mean
RT distribution moments
median (statistics)
mode (statistics)
normality
norms
quality control
Reynolds averaging

AVHRR

USE **Advanced Very High Resolution Radiometer**

Avian 2/180 autogiro

GS research vehicles
. research aircraft
. . **Avian 2/180 autogiro**
V/STOL aircraft
. rotary wing aircraft
. . autogyros

. . . **Avian 2/180 autogiro**

aviation

USE **aeronautics**

aviation meteorology

DEF Weather conditions and meteorological studies pertaining to aeronautics.

GS meteorology
. **aviation meteorology**
RT aircraft accident investigation
aircraft accidents
aircraft hazards
aircraft icing
atmospheric turbulence
civil aviation
clear air turbulence
downbursts
flight conditions
flight hazards
flight safety
fog
meteorological parameters
meteorological services
microbursts (meteorology)
∞ military aviation
nowcasting
numerical weather forecasting
runway conditions
wind shear

aviation psychology

GS medical science
. aerospace medicine
. . **aviation psychology**
psychology
. **aviation psychology**
RT aircraft pilots
military psychology
pilot training
psychological effects
psychological factors
space psychology

aviators

USE **aircraft pilots**

avionics

DEF The use of electronics in all its forms in airborne or aerospace vehicles.

RT ∞ aeronautics
airborne equipment
aircraft communication
aircraft equipment
aircraft instruments
astrionics
∞ astronautics
∞ control
∞ electronics
flat panel displays
flight management systems
guidance (motion)
head-up displays
modularity
pilot support systems
self tests
single event upsets
systems integration
∞ test equipment
video landmark acquisition and tracking

avoidance

GS **avoidance**
. collision avoidance
. . Beacon Collision Avoidance System
. vortex avoidance
RT accident prevention
hazards
traffic
traffic control
warning systems

AVRO 698 aircraft

USE **Vulcan aircraft**

AVRO 707 aircraft

GS Hawker Siddeley aircraft
. **AVRO 707 aircraft**

jet aircraft
. **AVRO 707 aircraft**
monoplanes
. **AVRO 707 aircraft**
research vehicles
. research aircraft
. . **AVRO 707 aircraft**
tailless aircraft
. **AVRO 707 aircraft**
RT ∞ aircraft
delta wings
Vulcan aircraft

AVRO Whitworth HS-748 aircraft

USE **HS-748 aircraft**

AWACS aircraft

UF *Airborne Warning and Control System*
GS **AWACS aircraft**
. E-2 aircraft
. E-3A aircraft
. E-4A aircraft
RT ∞ aircraft
Boeing aircraft
command and control
early warning systems
Grumman aircraft
∞ military aircraft
military technology

awards

SN (EXCLUDES CONTACTS & GRANTS)
DEF Distinctions that are bestowed upon a person or persons due to their special contributions to a field.
RT astronauts
biography
engineers
scientists

AXAF

USE **X Ray Astrophysics Facility**

axes (coordinates)

USE **coordinates**

axes (reference lines)

GS **axes (reference lines)**
. axes of rotation
. . Earth axis
RT coordinates

axes of rotation

GS axes (reference lines)
. **axes of rotation**
. . Earth axis
RT bodies of revolution
rotating bodies
rotation
shafts (machine elements)
symmetrical bodies

axial compression loads

GS loads (forces)
. axial loads
. . **axial compression loads**
. compression loads
. . **axial compression loads**
RT aerodynamic loads
compressing
dynamic loads
shock loads
static loads
structural design criteria
thrust loads

axial compressors

USE **turbocompressors**

axial flow

GS fluid flow
. **axial flow**
RT annular flow
axisymmetric flow
coaxial flow
coaxial nozzles
counterflow
discharge coefficient
flow geometry
one dimensional flow
radial flow

- three dimensional flow
two dimensional flow
- axial flow compressors*
USE **turbocompressors**
- axial flow pumps**
GS pumps
. **axial flow pumps**
. . turbine pumps
RT centrifugal pumps
fuel pumps
- axial flow turbines**
GS turbomachinery
. turbines
. . **axial flow turbines**
RT gas turbine engines
gas turbines
steam turbines
- axial loads**
GS loads (forces)
. **axial loads**
. . axial compression loads
RT aerodynamic loads
compression loads
dynamic loads
static loads
structural design criteria
thrust loads
- axial modes**
DEF Regimes of vibration along a given axis.
GS modes
. **axial modes**
RT combustion stability
laser modes
propellant combustion
rocket engines
- axial strain**
DEF Linear strain in a plane parallel to the longitudinal axis of the specimen. Used for axisymmetric deformation and uniaxial strain.
UF *axisymmetric deformation*
uniaxial strain
GS deformation
. **axial strain**
RT elastic deformation
Euler-Bernoulli beams
stress-strain diagrams
structural strain
- axial stress**
GS stresses
. **axial stress**
RT tensile stress
- axioms**
UF *postulates*
GS mathematical logic
. **axioms**
RT knowledge
∞ logic
∞ mathematics
- axisymmetric bodies**
GS symmetrical bodies
. **axisymmetric bodies**
. . power law bodies
RT blunt bodies
∞ bodies
bodies of revolution
- conical bodies
ducted bodies
lenticular bodies
missile bodies
slender bodies
slender cones
streamlined bodies
- axisymmetric deformation*
USE **axial strain**
- axisymmetric flow**
GS fluid flow
. **axisymmetric flow**
. . annular flow
. . Karman-Bodewadt flow
RT axial flow
coaxial flow
conical flow
Couette flow
Crocco method
cylindrical waves
flow geometry
helical flow
three dimensional boundary layer
- axisymmetry*
USE **symmetry**
- axles*
USE **shafts (machine elements)**
- axons**
GS cells (biology)
. neurons
. . **axons**
RT myelin sheath
nerve fibers
neurotransmitters
- azeotropes**
RT binary mixtures
mixtures
solutions
- Azerbaijan**
(added August 1993)
GS nations
. **Azerbaijan**
RT Asia
Europe
- azides (inorganic)**
GS nitrogen compounds
. **azides (inorganic)**
. . hydrogen azides
. . sodium azides
- azides (organic)**
GS nitrogen compounds
. **azides (organic)**
. . sodium azides
. . triaminoguanidinium azide
RT explosives
- azimuth**
DEF Horizontal direction or bearing. Used for solar azimuth.
UF *solar azimuth*
RT altitude
angles (geometry)
astronomical coordinates
bearing (direction)
celestial reference systems
∞ direction
elevation angle
- look angles (tracking)
navigation
∞ orientation
position (location)
- azines**
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **azines**
. . . cyanurates
. . . cyanuric acid
. . . meclizine
. . . methylene blue
. . . phenothiazines
pyrazines
. **azines**
. . cyanurates
. . cyanuric acid
. . meclizine
. . methylene blue
. . phenothiazines
RT dyes
- azo compounds**
GS nitrogen compounds
. **azo compounds**
. . HMX
. . RDX
RT ∞ chemical compounds
dyes
- azoles**
DEF Compounds that contain a five-membered heterocyclic ring containing one or more nitrogen atoms.
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **azoles**
. . . . acetazolamide
. . . . oxazole
. . . . pyrroles
. . . . carbazoles
- Azores**
(added July 1991)
GS landforms
. islands
. . **Azores**
nations
. Portugal
. . **Azores**
RT Atlantic Ocean
- Azotobacter**
GS microorganisms
. bacteria
. . **Azotobacter**
- azulene**
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . **azulene**
terpenes
. **azulene**
- Azur satellite**
GS artificial satellites
. scientific satellites
. . **Azur satellite**
RT European space programs
international cooperation
West Germany

B

B stars

- UF *helium stars*
- GS celestial bodies
 - . stars
 - . . early stars
 - . . . hot stars
 - **B stars**
 - shell stars
 - Sigma Orionis
- RT blue stars
 - Herbig-Haro objects
 - limb brightening
 - limb darkening
 - peculiar stars
 - Population I stars
 - stellar composition
 - Wolf-Rayet stars

B-1 aircraft

- GS attack aircraft
 - . bomber aircraft
 - . . **B-1 aircraft**
 - jet aircraft
 - . **B-1 aircraft**
 - North American aircraft
 - . **B-1 aircraft**
- RT ∞ aircraft
 - bombing equipment
 - bombs (ordnance)
 - combat
 - ∞ military aircraft
 - multiengine vehicles
 - warfare
 - ∞ winged vehicles

B-2 aircraft

- (added September 1992)
- UF *stealth bomber*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-2 aircraft**
 - jet aircraft
 - . **B-2 aircraft**
- RT ∞ aircraft
 - ∞ military aircraft
 - stealth technology
 - X-36 aircraft

B-26 aircraft

- UF *Invader aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-26 aircraft**
 - Martin aircraft
 - . **B-26 aircraft**
 - monoplanes
 - . **B-26 aircraft**
- RT ∞ aircraft

B-47 aircraft

- UF *FB-47 aircraft*
- Stratojet aircraft*
- XB-47 aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-47 aircraft**
 - Boeing aircraft
 - . **B-47 aircraft**
 - jet aircraft
 - . **B-47 aircraft**
 - monoplanes
 - . **B-47 aircraft**
- RT ∞ aircraft

B-50 aircraft

- UF *FB-50 aircraft*
- superfortress aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-50 aircraft**
 - Boeing aircraft
 - . **B-50 aircraft**
 - monoplanes
 - . **B-50 aircraft**
- RT ∞ aircraft

B-52 aircraft

- UF *Stratofortress aircraft*
- GS attack aircraft

- . bomber aircraft
- . . **B-52 aircraft**
- Boeing aircraft
- . **B-52 aircraft**
- jet aircraft
- . **B-52 aircraft**
- monoplanes
- . **B-52 aircraft**
- RT ∞ aircraft
- Pegasus air-launched booster
- turbofan engines

B-57 aircraft

- UF *Canberra bomber*
- RB-57 aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-57 aircraft**
 - jet aircraft
 - . **B-57 aircraft**
 - Martin aircraft
 - . **B-57 aircraft**
 - monoplanes
 - . **B-57 aircraft**
- RT ∞ aircraft
- Canberra aircraft

B-58 aircraft

- UF *Hustler aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-58 aircraft**
 - General Dynamics aircraft
 - . **B-58 aircraft**
 - jet aircraft
 - . **B-58 aircraft**
 - monoplanes
 - . **B-58 aircraft**
 - supersonic aircraft
 - . **B-58 aircraft**
 - tailless aircraft
 - . **B-58 aircraft**
- RT ∞ aircraft

B-66 aircraft

- UF *Destroyer aircraft*
- RB-66 aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-66 aircraft**
 - jet aircraft
 - . **B-66 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **B-66 aircraft**
 - monoplanes
 - . **B-66 aircraft**
- RT ∞ aircraft

B-70 aircraft

- UF *Valkyrie aircraft*
- XB-70 aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-70 aircraft**
 - jet aircraft
 - . **B-70 aircraft**
 - monoplanes
 - . **B-70 aircraft**
 - North American aircraft
 - . **B-70 aircraft**
 - research vehicles
 - . research aircraft
 - . . **B-70 aircraft**
 - supersonic aircraft
 - . **B-70 aircraft**
- RT ∞ aircraft

B-103 aircraft

- USE **Buccaneer aircraft**

babbitt metal

- DEF Any of the white alloys composed primarily of tin or lead and of lesser amounts of antimony, copper, and other metals, and used for bearings.
- GS alloys
 - . antimony alloys
 - . . **babbitt metal**

- . copper alloys
- . . **babbitt metal**
- . tin alloys
- . . **babbitt metal**
- RT bearing alloys

baboons

- GS animals
 - . vertebrates
 - . . mammals
 - . . . primates
 - **baboons**

BAC 111 aircraft

- GS BAC aircraft
 - . **BAC 111 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **BAC 111 aircraft**
 - monoplanes
 - . **BAC 111 aircraft**
 - passenger aircraft
 - . **BAC 111 aircraft**
 - transport aircraft
 - . **BAC 111 aircraft**
- RT ∞ aircraft

BAC aircraft

- UF *British Aircraft Corp aircraft*
- GS **BAC aircraft**
 - . BAC 111 aircraft
 - . Canberra aircraft
 - . H-126 aircraft
 - . jet provost aircraft
 - . Scimitar aircraft
 - . TSR-2 aircraft
 - . Valiant aircraft
 - . VC-10 aircraft
 - . Viscount aircraft
- RT ∞ aircraft

BAC TSR 2 aircraft

- USE **TSR-2 aircraft**

Bacillus

- SN (RESTRICTED TO MEMBERS OF THE GENUS BACILLUS; DOES NOT INCLUDE GENERAL MORPHOLOGICAL CLASSIFICATIONS)
- GS microorganisms
 - . bacteria
 - . . **Bacillus**
 - . . . stearothermophilus

back injuries

- GS injuries
 - . **back injuries**
- RT spinal cord injuries
- whiplash injuries

backfire

- RT combustion
 - deflagration
 - explosions
 - fires
 - flame deflectors
 - flame propagation
 - flashback

backfire antennas

- DEF Antennas consisting of radiating feeds, reflector elements, and reflecting surfaces such that the antennas function as open resonators, with radiation from the open end of the resonator.
- GS antennas
 - . **backfire antennas**
- RT antenna radiation patterns
 - dipole antennas
 - endfire arrays
 - microwave antennas
 - radio antennas

background noise

- DEF In recording and reproducing, the total system noise independent of whether or not a signal is present. The signal is not to be included as part of the noise. In receivers, the noise in the absence of signal modulation on the carrier.
- RT channel noise

cosmic noise
 elastic waves
 electromagnetic noise
 ionospheric noise
 ∞ noise
 noise (sound)
 noise measurement
 noise spectra
 noise threshold
 ∞ radiation
 random noise
 ∞ rays
 signal to noise ratios
 squelch circuits

background radiation

GS **background radiation**
 . cosmic microwave background radiation
 RT anticoincidence detectors
 big bang cosmology
 continuous radiation
 corpuscular radiation
 Cosmic Background Explorer satellite
 cosmic noise
 electromagnetic noise
 extraterrestrial radiation
 high altitude tests
 ionospheric noise
 ∞ radiation
 relic radiation
 sky radiation

backings

USE **backups**

backlobes

DEF Radiation lobes whose axes make angles of approximately 180 degrees with respect to the axes of the major lobes of the antennas. By extension radiation lobes in the half-space opposed to the direction of peak activity.

RT antenna design
 antenna radiation patterns
 directional antennas
 ∞ lobes

backpropagation (artificial intelligence)

(added December 2001)

DEF A learning algorithm which minimizes the error function of perceptron neural nets by comparing the actual and desired outputs and adjusting the weights of each neuron layer.

GS mathematical logic
 . algorithms
 . . **backpropagation (artificial intelligence)**
 RT artificial intelligence
 computer techniques
 error analysis
 least squares method
 machine learning
 neural nets
 optimization

backscattering

DEF Scattering of radiation in a direction having a component opposite its original direction of propagation.

GS scattering
 . **backscattering**
 RT differential absorption lidar
 forward scattering
 laser plasma interactions
 microwave signatures
 nuclear scattering
 scatter propagation

backshores

USE **beaches**

backups

DEF Items kept available to replace items which fail to perform satisfactorily. Items under development intended to perform the same general functions another item also under development performs. Used for backings.

UF *backings*
 RT redundant components

reserves
 welding

backward differencing

DEF A method of solving a parabolic problem for approximating a time derivative in terms of a previous time step.

RT differential equations
 numerical stability
 problem solving

backward facing steps

DEF A step structure which faces an oncoming flow. Used for rearward facing steps.

UF *rearward facing steps*
 RT boundary layer flow
 flow geometry
 fluid boundaries
 forward facing steps
 reattached flow
 recirculative fluid flow
 stairsteps
 ∞ steps

backward wave tubes

GS electron tubes
 . vacuum tubes
 . . microwave tubes
 . . . traveling wave tubes
 **backward wave tubes**
 helitrons
 microwave equipment
 . microwave tubes
 . . traveling wave tubes
 . . . **backward wave tubes**
 helitrons
 RT beam currents
 electron transfer
 microwave oscillators

backward waves

DEF In traveling wave tubes, waves whose group velocity is opposite to the direction of electron-stream motion.

RT elastic waves
 electromagnetic radiation
 solitary waves
 transmission lines
 traveling wave tubes
 traveling waves

backwash

SN (EXCLUDES PROCESSES OF BACKWASHING)
 UF *sidewash*
 RT boundary layer stability
 downwash
 slipstreams
 Strouhal number
 turbulence
 wakes

bacteria

GS microorganisms
 . **bacteria**
 . . actinomycetes
 . . archaeobacteria
 . . Azotobacter
 . . Bacillus
 . . . stearothermophilus
 . . Clostridium
 . . . Clostridium botulinum
 . . Escherichia
 . . hydrogenomonas
 . . Klebsiella
 . . nitrobacter
 . . pseudomonas
 . . salmonella
 . . sarcina
 . . serratia
 . . staphylococcus
 . . streptococcus
 . . streptomycetes
 RT aerobes
 anaerobes
 bacteriology
 biofilms
 biological weapons
 blight
 colonies

eukaryotes
 gnotobiotics
 invertebrates
 panspermia
 pathogens
 prokaryotes
 saprophytes
 waste treatment

bacterial diseases

SN (EXCLUDES PLANT DISEASES)
 GS diseases
 . infectious diseases
 . . **bacterial diseases**
 . . . cholera
 . . . diphtheria
 . . . keratitis
 . . . syphilis
 . . . tuberculosis
 . . . typhoid
 . . . typhus
 RT Clostridium
 conjunctivitis
 dermatitis
 encephalitis
 meningitis
 nephritis
 pneumonia

bactericides

DEF Agents that destroy microorganisms. Also known as germicides. Used for germicides.

UF *germicides*
 RT antiinfectives and antibacterials
 antiseptics
 chemical sterilization
 ethylene oxide
 fumigation
 sterilization

bacteriology

GS microbiology
 . **bacteriology**
 RT archaeobacteria
 bacteria
 biochemistry
 ∞ biology
 Clostridium botulinum
 colonies
 endotoxins
 gnotobiotics
 vaccines

bacteriophages

GS microorganisms
 . viruses
 . . **bacteriophages**
 RT interferon

badlands

DEF Intricately stream-dissected topography, characterized by a very fine drainage network with high drainage densities (77 to 747 miles per square mile) and short steep slopes with narrow interflues. Badlands develop on the surface with little or no vegetative cover, overlying unconsolidated or poorly cemented clays or silts, sometimes with soluble minerals such as gypsum or halite. They may also be induced in humid areas by removal of the vegetative cover through overgrazing, or by air pollution from sulfide smelting. The term was first applied to an area in western South Dakota, which was called "mauvaises terres" by the early French fur traders.

GS land
 . **badlands**
 RT barren land
 topography

baffles

DEF Plates that regulate the flow of a fluid, e.g., a heat exchanger, boiler flue, or automotive muffler.

RT attenuators
 ∞ barriers
 blast deflectors
 conical flow
 damping
 deflectors

baggage

- ∞ diffusers
- diverters
- dividers
- ducts
- flame deflectors
- liquid sloshing
- louvers
- mixers
- mufflers
- panels
- reflectors
- shielding
- suppressors

baggage

- GS cargo
 - . **baggage**
- RT air cargo
- bags
- ground handling

bags

- GS **bags**
 - . air bag restraint devices
 - . gas bags
- RT baggage
- ∞ containers
- packages

Bahamas

- GS landforms
 - . islands
 - . . West Indies
 - . . . **Bahamas**
 - nations
 - . **Bahamas**
- RT Caribbean region

Bahrain

- GS landforms
 - . islands
 - . . **Bahrain**
 - nations
 - . **Bahrain**

bailout

- RT air drop operations
- ejection
- ejection injuries
- ejection seats
- ejection training
- escape (abandonment)
- escape systems
- flying ejection seats
- jettison systems
- jettisoning
- parachute descent
- parafoils

bainite

DEF Metastable microstructure or microstructures resulting from the transformation of austenite at temperatures between those which produce pearlite and martensite.

- RT bainitic steel
- iron alloys
- microstructure
- steels

bainitic steel

- GS alloys
 - . iron alloys
 - . . steels
 - . . . **bainitic steel**
- RT bainite

Baja California

USE **Lower California (Mexico)**

bajadas

USE **fans (landforms)**

Bakelite (trademark)

- RT ceramics
- resins

thermosetting resins

bakeout

USE **degassing**

Baker-Nunn camera

- GS optical equipment
 - . cameras
 - . . **Baker-Nunn camera**
 - photographic equipment
 - . cameras
 - . . **Baker-Nunn camera**
- RT astronomical photography
- Schmidt cameras

baking

- SN (EXCLUDES FOOD PROCESSING)
- GS heating
 - . **baking**
- RT casting
- degassing
- drying
- heat treatment
- ovens
- roasting
- sterilization

balance

- GS **balance**
 - . aerodynamic balance
 - . heat balance
 - . material balance
 - . . water balance
- RT compensators
- ∞ equilibrium
- ∞ mass balance
- mass distribution
- weight indicators

balance equations

USE **equations**

balanced amplifiers

USE **push-pull amplifiers**

balancing

- RT eccentricity
- ∞ equilibrium
- flywheels
- man machine systems
- stabilization

Baldwin-Lomax turbulence model

(added May 1997)

- GS models
 - . mathematical models
 - . . turbulence models
 - . . . **Baldwin-Lomax turbulence model**
- RT computational fluid dynamics
- eddy viscosity
- flow equations
- turbulent boundary layer
- turbulent flow

ball bearings

- GS bearings
 - . antifriction bearings
 - . . **ball bearings**
- RT balls
- elastohydrodynamics
- needle bearings
- roller bearings
- thrust bearings

ball lightning

DEF A relatively rare form of lightning, consisting of a reddish, luminous ball, of the order of one foot in diameter, which may move rapidly along solid objects or remain floating in midair. Hissing noises emanate from such balls, and they sometimes explode noisily but may also appear noiselessly.

- GS electric current
 - . electric discharges
 - . . lightning
 - . . . **ball lightning**

RT atmospheric electricity

∞ ballast

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ballast (mass)
- ballasts (impedances)

ballast (mass)

- RT aerodynamic stability
- ∞ ballast
 - buoyancy
 - counterbalances
 - floating
 - floats
 - hydrodynamics
 - loads (forces)
 - mass distribution
 - stability
 - static loads

ballasts (impedances)

DEF Devices that by means of inductance, capacitance, or resistance, singly or in combination, limit the lamp current of fluorescent or mercury lamps to the required value for proper operation, and where necessary provide the required starting voltage and current amd. in ballasts for rapid-start lamps provide low-voltage cathode heating.

- RT ∞ ballast
 - capacitors
 - inductors
 - luminaires
 - resistors
 - transformers

ballistic cameras

DEF Ground-based cameras using multiple exposures on the same plate to record the trajectories of rockets.

- GS optical equipment
 - . cameras
 - . . **ballistic cameras**
 - photographic equipment
 - . cameras
 - . . **ballistic cameras**
- RT ground support equipment
- high speed cameras
- optical tracking
- rangefinding
- stroboscopes
- trajectory measurement

ballistic missile decoys

- GS countermeasures
 - . **ballistic missile decoys**
 - decoys
 - . **ballistic missile decoys**
- RT missile defense
- reentry decoys

Ballistic Missile Early Warning System

- UF **BMEWS**
- GS warning systems
 - . early warning systems
 - . . **Ballistic Missile Early Warning System**
- RT air defense
- military technology
- radar tracking
- ∞ systems

ballistic missile submarines

- GS water vehicles
 - . ships
 - . . submarines
 - . . . **ballistic missile submarines**
 - . underwater vehicles
 - . . submarines
 - . . . **ballistic missile submarines**
- RT fleet ballistic missiles
- missile launchers
- mobile missile launchers
- navy
- Poseidon missiles

- sea launching
- ballistic missiles**
 SN (GUIDED ONLY DURING INITIAL POWERED PHASE)
 DEF Missiles designed to operate primarily in accordance with the laws of ballistics.
 GS missiles
 . **ballistic missiles**
 . . field army ballistic missiles
 . . intercontinental ballistic missiles
 . . . Atlas ICBM
 Atlas D ICBM
 Atlas E ICBM
 Atlas F ICBM
 . . . Minuteman ICBM
 . . . MX missile
 . . . Titan ICBM
 Titan 1 ICBM
 Titan 2 ICBM
 . . intermediate range ballistic missiles
 . . . Blue Streak missile
 . . . Jupiter missile
 . . . polaris missiles
 Polaris A1 missile
 Polaris A2 missile
 Polaris A3 missile
 . . Pershing missile
 . . Poseidon missiles
 . . short range ballistic missiles
 . . Skybolt missile
 . . Subroc missile
 . . V-2 missile
 RT antimissile missiles
 Safeguard system
 surface to surface missiles
- ballistic ranges**
 GS ranges (facilities)
 . test ranges
 . . **ballistic ranges**
 test facilities
 . test ranges
 . . **ballistic ranges**
 RT downrange
 hydroballistics
 missile ranges
- ballistic trajectories**
 DEF Trajectories followed by a body being acted upon only by gravitational forces and the resistance of the medium through which it passes.
 GS trajectories
 . **ballistic trajectories**
 RT ascent trajectories
 ballistics
 coasting flight
 descent trajectories
 downrange
 free fall
 impact prediction
 midcourse trajectories
 missile trajectories
 parabolic flight
- ballistic vehicles**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *nonlifting vehicles*
 RT reentry vehicles
 rocket vehicles
 test vehicles
 ∞ vehicles
 weapons
- ballistics**
 DEF The science that deals with the motion, behavior and effects of projectiles, especially bullets, aerial bombs, rockets or the like; the science or art of designing and hurling projectiles so as to achieve a desired performance.
 GS **ballistics**
 . hydroballistics
 . interior ballistics
 . terminal ballistics
 RT aerodynamic drag
 ballistic trajectories
 gas guns
 howitzers
- hypervelocity guns
 ordnance
 projectiles
 propellants
 trajectories
 trajectory analysis
 trajectory measurement
- ballistocardiography**
 GS bioengineering
 . biometrics
 . . cardiography
 . . . **ballistocardiography**
 RT electrocardiography
 phonocardiography
 seismocardiography
- balloon flight**
 RT ∞ flight
 meteorological flight
 vertical flight
- balloon sounding**
 GS sounding
 . **balloon sounding**
 RT atmospheric sounding
 in situ measurement
 ozonesondes
 radiosondes
 superpressure balloons
- balloon-borne instruments**
 GS measuring instruments
 . **balloon-borne instruments**
 RT airborne equipment
 balloons
 high altitude balloons
 meteorological instruments
 ozonesondes
 radiosondes
 telescopes
- ballooning modes**
 GS modes
 . **ballooning modes**
 RT magnetohydrodynamic stability
 plasma control
 plasma equilibrium
 tearing modes (plasmas)
- balloons**
 GS expandable structures
 . inflatable structures
 . . **balloons**
 . . . high altitude balloons
 jimsphere balloons
 skyhook balloons
 superpressure balloons
 . . . meteorological balloons
 jimsphere balloons
 ROBIN balloons
 . . . microballoons
 . . . tethered balloons
 RT ∞ aircraft
 airships
 ascent
 balloon-borne instruments
 ballutes
 folding structures
 gas bags
 gondolas
 observation aircraft
 pilotless aircraft
 stratoscope telescopes
- balls**
 RT ball bearings
 falling spheres
 joints (junctions)
 spheres
 valves
- ballutes**
 GS brakes (for arresting motion)
 . aerodynamic brakes
 . . **ballutes**
 drag devices
 . aerodynamic brakes
 . . **ballutes**
 expandable structures
- . inflatable structures
 . . **ballutes**
 RT air drop operations
 aircraft brakes
 balloons
 drag chutes
 folding structures
 parachutes
- Balmer series**
 GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 **Balmer series**
 RT absorption spectra
 atomic spectra
 electron transitions
 emission spectra
 H beta line
 H gamma line
 H lines
 hydrogen
- balsa**
 RT trees (plants)
 wood
- Baltic sea**
 GS seas
 . **Baltic sea**
 RT Estonia
 Latvia
- Baltic Shield (Europe)**
 GS rocks
 . bedrock
 . . **Baltic Shield (Europe)**
 RT Earth resources
 Europe
 Precambrian period
- Banach space**
 GS algebra
 . vector spaces
 . . **Banach space**
 . . . Hilbert space
 Sobolev space
 analysis (mathematics)
 . function space
 . . **Banach space**
 . . . Hilbert space
 Sobolev space
 . functional analysis
 . . **Banach space**
 . . . Hilbert space
 Sobolev space
 RT harmonic analysis
 metric space
- band ratioing**
 GS image processing
 . **band ratioing**
 RT image enhancement
 multispectral band scanners
 remote sensing
 spectral bands
- band structure of solids**
 RT Brillouin zones
 conduction bands
 electron transitions
 electronic structure
 energy gaps (solid state)
 forbidden bands
 heterojunction devices
 quantum wells
- bandgap*
 USE **energy gaps (solid state)**
- bandpass filters**
 DEF Wave filters having a single transmission band; neither of the cut-off frequencies being zero or infinity.
 GS electromagnetic wave filters
 . **bandpass filters**
 . . crystal filters
 . . tracking filters
 RT adaptive filters

bands

bandstop filters
bandwidth
electric filters
∞ filters
FIR filters
microwave filters
optical filters
ultraviolet filters
vocoders

∞ **bands**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT absorption spectra
anchors (fasteners)
bandwidth
Bloch band
broadband
clamps
clips
conduction bands
edge dislocations
energy bands
fasteners
forbidden bands
frequencies
Herzberg bands
holders
low frequencies
narrowband
photoluminescent bands
plastic deformation
ring structures
Schumann-Runge bands
sidebands
spectral bands
straps
Swan bands
Vegard-Kaplan bands

bandstop filters

DEF Filters that block signals of a specific frequency or a band of frequencies.

GS electromagnetic wave filters
. electric filters
. . . **bandstop filters**

RT adaptive filters
bandpass filters
bandwidth
crystal filters
∞ filters
high pass filters
low pass filters
microwave filters
optical filters
tracking filters
waveguide filters

bandwidth

GS **bandwidth**
. broadband
. narrowband
. spectral line width
RT bandpass filters
∞ bands
bandstop filters
broadband amplifiers
channel capacity
dynamic characteristics
frequencies
frequency ranges
impedance
laser windows
resonant frequencies
speech baseband compression
tracking filters
transfer functions
width
windows (intervals)

bang-bang control

USE **off-on control**

Bangladesh

UF *East Pakistan*
GS nations
. **Bangladesh**
RT Asia
India

Pakistan

banking flight

USE **turning flight**

Barany chair

DEF A kind of chair in which a person is revolved to test his susceptibility to vertigo. It is named after the Swedish physician Robert Barany who lived from 1876 to 1936.

GS seats
. **Barany chair**
RT rotating environments
tolerances (physiology)
vertigo

Barbados

GS landforms
. islands
. . West Indies
. . . **Barbados**
nations
. **Barbados**
RT Caribbean region

barchans

USE **dunes**

Bardeen approximation

USE **barrier layers**
electrical properties
surface properties

Bardeen-Cooper-Schrieffer theory

USE **BCS theory**

Barents Sea

GS seas
. **Barents Sea**
RT Arctic Ocean
U.S.S.R.

barite

GS minerals
. **barite**
sulfur compounds
. sulfates
. . **barite**

barium

GS chemical elements
. **barium**
. . barium isotopes
metals
. **barium**
. . barium isotopes

barium alloys

GS alloys
. **barium alloys**

barium compounds

GS **barium compounds**
. barium ferrates
. barium fluorides
. barium oxides
. barium sulfides
. barium titanates
. barium zirconates
RT ∞ alkaline earth compounds
∞ chemical compounds
∞ metal compounds

barium ferrates

GS barium compounds
. **barium ferrates**
iron compounds
. ferrates
. . **barium ferrates**

barium fluorides

GS barium compounds
. **barium fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . **barium fluorides**
. halides
. . fluorides
. . . **barium fluorides**
. . metal halides

. . . **barium fluorides**

barium ion clouds

GS clouds (meteorology)
. artificial clouds
. . chemical clouds
. . . **barium ion clouds**
RT Earth magnetosphere
electric fields
geomagnetism
lines of force
metal ions
rocket sounding
thermites

barium isotopes

GS chemical elements
. alkaline earth metals
. . **barium isotopes**
. barium
. . **barium isotopes**
. nuclides
. . isotopes
. . . **barium isotopes**
metals
. alkaline earth metals
. . **barium isotopes**
. barium
. . **barium isotopes**

barium oxides

GS barium compounds
. **barium oxides**
chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . **barium oxides**
RT high temperature superconductors
YBCO superconductors

barium sulfides

GS barium compounds
. **barium sulfides**
chalcogenides
. sulfides
. . inorganic sulfides
. . . **barium sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **barium sulfides**

barium titanates

GS barium compounds
. **barium titanates**
titanium compounds
. titanates
. . **barium titanates**
RT dielectrics
ferroelectric materials

barium zirconates

GS barium compounds
. **barium zirconates**
zirconium compounds
. zirconates
. . **barium zirconates**

Barkhausen effect

RT ∞ effects
electromagnetic measurement
electromagnetism
oscillographs

barley

GS farm crops
. grains (food)
. . **barley**
plants (botany)
. **barley**
RT agriculture
blight
botany
crop growth
crop vigor
∞ crops
∞ food
irrigation

seeds

proprioceptors

Virgo galactic cluster

baroclinic instability

DEF Hydrodynamic instability arising from the existence of a meridional temperature gradient (and hence a thermal wind) in an atmosphere in quasigeostrophic equilibrium and possessing static stability.

GS stability

. **baroclinic instability**

RT atmospheric circulation
atmospheric models
baroclinic waves
baroclinity
flow stability
geostrophic wind
meteorology
zonal flow (meteorology)

baroclinic waves

GS elastic waves

. capillary waves

. . gravity waves

. . . **baroclinic waves**

surface waves

. capillary waves

. . gravity waves

. . . **baroclinic waves**

RT baroclinic instability
baroclinity
barotropic flow
cyclones
density distribution
geostrophic wind
radiation pressure
stratified flow
wave amplification
 ∞ waves
zonal flow (meteorology)

baroclinity

DEF The state of stratification in a fluid in which surfaces of constant pressure (isobaric) intersect surfaces of constant density (isotheric). The number, per unit area, of isobaric-isotheric solenoids intersecting a given surface is a measure of baroclinity.

RT baroclinic instability

baroclinic waves

barotropic flow

barotropism

 ∞ isobars

meteorological solenoids

stratified flow

barometers

DEF Instruments used to measure atmospheric pressure.

GS measuring instruments

. meteorological instruments

. . **barometers**

. pressure gages

. . **barometers**

RT altimeters
hypsometers
manometers
pressure measurement
vacuum gages

*barometric pressure*USE **atmospheric pressure***baroreceptor reflexes*

(added April 2001)

USE **baroreflexes****baroreceptors**

DEF Receptors in the vascular system, particularly the aorta and carotid sinus, which are sensitive to stretch of the vessel walls.

UF *pressoreceptors*

GS anatomy

. sense organs

. . **baroreceptors**

receptors (physiology)

. **baroreceptors**

RT baroreflexes

pressure

baroreflexes

(added March 2001)

DEF A negative feedback system that buffers short-term changes in blood pressure. Increased pressure stretches blood vessels, which activates pressoreceptors (baroreceptors) in the vessel walls. The central nervous system's net response is a reduction of central sympathetic outflow. This reduces blood pressure by decreasing peripheral vascular resistance and by lowering cardiac output. Because the baroreceptors are tonically active, the baroreflex can compensate rapidly for both increases and decreases in blood pressure.

UF *baroreceptor reflexes**pressoreceptor reflexes*

GS reflexes

. **baroreflexes**

. . carotid sinus reflex

RT baroreceptors

blood pressure

cardiovascular system

heart rate

hemodynamic responses

physiological responses

barotrauma

GS injuries

. **barotrauma**

RT decompression sickness

diving (underwater)

barotropic flow

GS fluid flow

. **barotropic flow**

RT air currents

air flow

baroclinic waves

baroclinity

barotropism

flow characteristics

lee waves

planetary waves

Rayleigh waves

Rossby regimes

sea breeze

viscous flow

wind (meteorology)

wind shear

barotropism

DEF The state of a fluid in which surfaces of constant density (or temperature) are coincident with surfaces of constant pressure; it is the state of zero baroclinity.

GS **barotropism**

. planetary waves

RT baroclinity

barotropic flow

 ∞ isobars ∞ **barrages**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT artillery fire

dams

barred galaxies

DEF Spiral galaxies whose nuclei are in the shape of bars at the ends of which the spiral arms begin. About one fifth of all spiral galaxies are barred spirals.

GS celestial bodies

. galaxies

. . spiral galaxies

. . . **barred galaxies**

RT disk galaxies

galactic structure

Hubble diagram

local group (astronomy)

star clusters

star distribution

stars

 ∞ **barrels**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT barrels (containers)

 ∞ drums

gun launchers

barrels (containers)UF *casks*RT ∞ barrels ∞ containers

drums (containers)

barren land

DEF Rugged or unproductive lands devoid of significant vegetation compared to adjacent areas because of environmental factors such as adverse climate, poor soil, or winds. Used for barrens.

UF *barrens*

GS land

. **barren land**

RT arid lands

badlands

desertification

deserts

land use

Sahara Desert (Africa)

sites

soils

topography

*barrens*USE **barren land***barricades*USE **barriers***barrier injection transit time diodes*USE **Barritt diodes****barrier layers**UF *Bardeen approximation*RT ∞ barriers

Barritt diodes

interlayers

JFET

joints (junctions)

junction diodes

junction transistors

 ∞ layers

MBM junctions

nonohmic effect

resonant tunneling

resonant tunneling diodes

seals (stoppers)

semiconductor devices

SIS (semiconductors)

surface layers

tunnel junctions

waterproofing

Zener effect

 ∞ **barriers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Any materials limiting passage through itself of solids, liquids, semisolids, gases, or forms of energy such as ultraviolet light. Used for barricades and obstacles.

UF *barricades**obstacles*

RT abort apparatus

acoustic velocity

arresting gear

baffles

barrier layers

barriers (landforms)

Barritt diodes

blood-brain barrier

bulkheads

chains

closures

constrictions

curtains

dams

dividers

barriers (landforms)

electrode film barriers
enclosures
fences (barriers)
gates (openings)
guards (shields)
MBM junctions
safety devices
Schottky diodes
seals (stoppers)
shielding
thermal barriers (plasma control)
vapor barrier clothing
walls
wind (meteorology)
windows (apertures)

barriers (landforms)

DEF Elongated offshore ridges or masses, usually of sand, rising above the high-tide level, generally extending parallel to, and at some distance from, the shore, and separated from it by some kind of coastal bay. It is built up by the action of waves and currents.

GS landforms
. **barriers (landforms)**
. . Outer Banks (NC)
. . reefs
RT ∞ barriers
bars (landforms)
island arcs

Barritt diodes

DEF Barrier injection transit time diodes that operate similarly to IMPATT diodes. The operating frequencies are determined by the transit times across the drift. Used for barrier injection transit time diodes.

UF *barrier injection transit time diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **Barritt diodes**
. solid state devices
. . semiconductor devices
. . . **Barritt diodes**
RT avalanche diodes
barrier layers
∞ barriers
carrier injection
cryosar
electric potential
injection
junction diodes
microwave oscillators
rectifiers
Schottky diodes
semiconductor junctions
shot noise
transit time

bars

GS **bars**
. elastic bars
. prismatic bars
RT metal plates
rods
structural members

bars (landforms)

DEF A generic term for any of various elongate offshore ridges, banks, or mounds of sand, gravel, or other unconsolidated material, submerged at least at high tides, and built up by the action of waves or currents on the water bottom, especially at the mouth of a river or estuary, or at a slight distance from the beach. Bars commonly form obstructions to water navigation.

UF *tombolos*
GS landforms
. **bars (landforms)**
RT barriers (landforms)
beaches
coastal plains
lagoons
littoral drift

reefs

barycenter

USE **center of gravity**

baryon resonance

DEF An anomaly found in scattering cross sections indicating the existence of an unstable, excited state of baryon.

GS resonance
. **baryon resonance**
RT baryons
hyperons
scattering cross sections

baryons

GS particles
. elementary particles
. fermions
. . . **baryons**
. . . . hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
. hadrons
. . . **baryons**
. . . . hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
RT baryon resonance
cold neutrons
dark matter
eta-mesons
fast neutrons
gravitinos
kaons
meson resonance
mesons
muons
neutrons
nucleons
photoneutrons
pions
protons
recoil protons
solar protons
thermal neutrons

basalt

GS rocks
. igneous rocks
. . **basalt**
RT cones (volcanoes)
lunar maria
Mars volcanoes
regolith
soils
volcanoes
volcanology

base flow

DEF Fluid flow at the base or extreme aft end of a body.

GS fluid flow
. **base flow**
RT head flow
wakes

base heating

GS heating
. **base heating**
RT afterbodies
convection
exhaust nozzles
jet exhaust
jet impingement
∞ radiation
rocket exhaust

base pressure

DEF In aerodynamics, the pressure exerted on the base, or extreme aft end, of a body, as of a cylindrical or boat-tailed body or of a blunt-trailing-edge wing, in a fluid flow.

GS pressure
. **base pressure**

RT aerodynamic drag

basements

RT buildings
floors
foundations

∞ bases

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bases (chemical)
data bases
foundations
inorganic compounds
ion concentration
lunar bases
space bases
stations

bases (chemical)

GS **bases (chemical)**
. adenines
. alkalies
. lithium hydroxides
. potassium hydroxides
. sodium hydroxides
. alkaloids
. atropine
. betaines
. caffeine
. colchicine
. ergotamine
. hyoscine
. lysergine
. morphine
. nicotinamide
. nicotine
. pilocarpine
. reserpine
. strychnine
. . troyl compounds
. guanines
. piperidine
. pyridines
. quinoline
. thymidine
. uracil
RT alkalinity
anhydrides
∞ bases
buffers (chemistry)
pH

bases (foundations)

USE **foundations**

BASIC (programming language)

GS languages
. programming languages
. . **BASIC (programming language)**
RT computer programming

basins

USE **structural basins**

basins (containers)

RT tanks (containers)

baskets

RT ∞ containers
gondolas

bastnasite

GS carbon compounds
. carbonates
. . **bastnasite**
minerals
. **bastnasite**
rare earth compounds
. cerium compounds
. . **bastnasite**

batch processing

GS data processing
. **batch processing**
RT computer programming
computer programs
data processing equipment

- ∞ processing
- bathing**
 GS cleaning
 . washing
 . . **bathing**
 RT cooling
 hygiene
 waste water
- batholiths**
 GS rock intrusions
 . **batholiths**
 rocks
 . bedrock
 . . **batholiths**
 RT granite
 igneous rocks
- baths**
 SN (EXCLUDES BATHING)
 GS **baths**
 . salt baths
 RT dipping
 electroplating
 heat transfer
 quenching (cooling)
 ∞ soaking
 submerging
 water immersion
- bathymeters**
 DEF Instruments that measure the ocean depths and check the topography of the ocean floor. Used for bathymetry.
 UF *bathymetry*
 GS measuring instruments
 . **bathymeters**
 RT depth measurement
 oceanography
 sounding
 underwater research laboratories
- bathymetry*
 USE **bathymeters**
- bathythermographs**
 GS measuring instruments
 . temperature measuring instruments
 . . **bathythermographs**
 recording instruments
 . **bathythermographs**
 RT pressure gradients
 temperature gradients
- bats**
 GS animals
 . vertebrates
 . . mammals
 . . . **bats**
- batteries*
 USE **electric batteries**
- battery chargers**
 RT charge efficiency
 ∞ charging
 electric batteries
 pulse charging
 storage batteries
- battery separators*
 USE **separators**
- Bauschinger effect**
 RT ∞ effects
 fatigue (materials)
 microstructure
- bauxite**
 DEF A ferruginous aluminium hydroxide rock consisting of several minerals. It is the principle source for aluminum.
 RT aluminum oxides
 minerals
- rocks
- B-A-W devices*
 USE **bulk acoustic wave devices**
- bay ice**
 GS ice
 . **bay ice**
 RT freezing
 frost
 ice formation
 ice mapping
 ice reporting
 lake ice
 low temperature
 navigation
 oceanography
 sea ice
 slush
 water
- Bayard-Alpert ionization gages**
 DEF Ionization vacuum gages using a tube with an electrode structure designed to minimize x ray induced electron emission from the ion collector.
 GS measuring instruments
 . pressure gages
 . . vacuum gages
 . . . ionization gages
 **Bayard-Alpert ionization gages**
 vacuum apparatus
 . vacuum gages
 . . ionization gages
 . . . **Bayard-Alpert ionization gages**
 RT hot cathodes
- Bayes theorem**
 UF *Bayesian statistics*
 GS theorems
 . **Bayes theorem**
 RT belief networks
 quality control
 sampling
- Bayesian belief networks*
 USE **belief networks**
- Bayesian statistics*
 USE **Bayes theorem**
- bayous**
 DEF A term variously applied to many local water features in the lower Mississippi River basin and in the Gulf Coast region of the U.S., especially in Louisiana. Its general meaning is a creek of a secondary watercourse that is tributary to another body of water; especially through alluvial lowlands, coastal swamps or river deltas. The origin of the term is from the American French "boyau", "gut"; from the Choctaw "bayuk", "small stream".
 GS landforms
 . inlets (topography)
 . . **bayous**
 RT lakes
 marshlands
 rivers
- ∞ **bays**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT bays (structural units)
 bays (topographic features)
- bays (structural units)**
 RT aircraft compartments
 airframes
 ∞ bays
 compartments
 fuselages
 hulls (structures)
 shells (structural forms)
- bays (topographic features)**
 DEF Wide, curving open indentations, recesses, or arms of seas or lakes into the land or between two capes or headlands; larger than coves, and usually smaller than, but of the same
- general character as gulfs. Used for bights and coves.
 UF *bights*
coves
 GS **bays (topographic features)**
 . Chesapeake Bay (US)
 . Delaware Bay (US)
 . Hudson Bay (Canada)
 . Monterey Bay (CA)
 . Saginaw Bay (MI)
 . San Francisco Bay (CA)
 . San Pablo Bay (CA)
 RT ∞ bays
 estuaries
 gulfs
 inlets (topography)
- BBGKY hierarchy**
 GS classifications
 . hierarchies
 . . **BBGKY hierarchy**
 RT Bogoliubov theory
 Boltzmann transport equation
 equations of state
 Fourier transformation
 kinetic equations
 plasma physics
- BCAS*
 USE **Beacon Collision Avoidance System**
- BCC lattices*
 USE **body centered cubic lattices**
- BCH codes**
 UF *Bose-Chaudhuri-Hocquenghem codes*
 RT binary codes
 ∞ codes
 coding
 computer programming
 decoders
 decoding
 digital techniques
 error correcting devices
 information theory
 parity
 random errors
- BCS theory**
 UF *Bardeen-Cooper-Schrieffer theory*
 RT many body problem
 superconductivity
 ∞ theories
 thermodynamic coupling
- BE A*
 USE **Beacon Explorer A**
- BE B*
 USE **Explorer 22 satellite**
- BE C*
 USE **Explorer 27 satellite**
- BE-3 engine**
 GS engines
 . rocket engines
 . . retrorocket engines
 . . . **BE-3 engine**
 RT Athena rocket vehicle
 Ranger lunar landing vehicles
 solid propellant rocket engines
- beaches**
 DEF Stretches of unconsolidated material that constitute gently sloping zones, typically with concave profiles, extending landward from the low-water line to the place where there is a definite change in material or physiographic form. Used for advancing shorelines, backshores, and inshore zones.
 UF *advancing shorelines*
backshores
inshore zones
 RT bars (landforms)
 coastal currents
 coastal plains
 coasts
 cusps (landforms)

Beacon Collision Avoidance System

- dunes
- lagoons
- lakes
- littoral drift
- marine environments
- shoals
- shorelines
- topography
- waterfowl

Beacon Collision Avoidance System

- UF *BCAS*
- GS avoidance
 - . collision avoidance
 - . . **Beacon Collision Avoidance System**
- RT air traffic control
- aircraft safety
- midair collisions
- radio beacons
- ∞ systems
- transponders

Beacon Explorer A

- UF *BE A*
- S-66 satellite*
- GS artificial satellites
 - . passive satellites
 - . . Beacon satellites
 - . . . **Beacon Explorer A**expandable structures
 - . inflatable structures
 - . . inflatable spacecraft
 - . . . Beacon satellites
 - **Beacon Explorer A**inflatable space structures
 - . inflatable spacecraft
 - . . Beacon satellites
 - . . . **Beacon Explorer A**space erectable structures
 - . inflatable spacecraft
 - . . Beacon satellites
 - . . . **Beacon Explorer A**
- RT Delta launch vehicle

Beacon Explorer B

- USE **Explorer 22 satellite**

Beacon Explorer C

- USE **Explorer 27 satellite**

Beacon satellites

- UF *polar ionosphere beacon*
- GS artificial satellites
 - . passive satellites
 - . . **Beacon satellites**
 - . . . Beacon Explorer A
 - . . . Explorer 22 satelliteexpandable structures
 - . inflatable structures
 - . . inflatable spacecraft
 - . . . **Beacon satellites**
 - Beacon Explorer A
 - Explorer 22 satelliteinflatable space structures
 - . inflatable spacecraft
 - . . **Beacon satellites**
 - . . . Beacon Explorer A
 - . . . Explorer 22 satellitespace erectable structures
 - . inflatable spacecraft
 - . . **Beacon satellites**
 - . . . Beacon Explorer A
 - . . . Explorer 22 satellite
- RT LOCATES system

beacons

- DEF Lights, groups of lights, electronic apparatus, or other devices that guide, orient, or warn aircraft, spacecraft, etc. in flight.
- GS navigation aids
 - . **beacons**
 - . . airport beacons
 - . . . discrete address beacon system
 - . . radar beacons
 - . . . discrete address beacon system
 - . . radio beacons
 - . . . omnidirectional radio ranges
 - self calibrating omnirange
 - . . radio direction finders

- RT aircraft lights
- buoys
- compasses
- homing
- homing devices
- instrument flight rules
- ∞ markers
 - . position indicators
 - . projectors
 - . searchlights
- ∞ signals
 - . solar compasses
 - . visual signals

beads

- RT spot welds
- welded joints
- welding

Beagle aircraft

- RT ∞ aircraft

beam currents

- DEF Currents incident on specimens by primary particle sources.
- GS electric current
 - . **beam currents**
- RT backward wave tubes
- Brillouin flow
- ∞ currents
 - . plasma currents

beam forming

- USE **beamforming**

beam injection

- DEF The introduction of a particle radiation beam into a plasma or ionized gas for the purpose of diagnostics, plasma control, or the study of beam/plasma interactions.
- RT electron beams
- ion beams
- neutral beams
- plasma heating
- plasma-particle interactions
- tokamak devices
- toroidal plasmas

beam interactions

- DEF A general term for interactions between various types of beams with each other or with plasmas or substances.
- RT atom optics
- beams (radiation)
- collision parameters
- high energy interactions
- ∞ interactions
 - . wave-particle interactions

beam leads

- GS conductors
 - . electric conductors
 - . . **beam leads**
 - . flat conductors
 - . . **beam leads**
- RT bonding
- electric connectors
- ∞ joining
 - . microelectronics
 - . micromodules
 - . soldered joints

beam neutralization

- DEF Neutralization that takes place by means of charge exchange with a neutral gas.
- RT beams (radiation)
- electron beams
- ion beams
- neutral beams

beam plasma amplifiers

- GS amplifiers
 - . **beam plasma amplifiers**
- RT electron beams
- millimeter waves
- plasma-particle interactions
- plasmas (physics)

- relativistic electron beams

beam rider guidance

- DEF System for guiding aircraft, spacecraft, or missiles, along a desired path by means of a radar beam, light beam, etc. The center of the beam axis forms a line along which the vehicle senses its location and corrects its course relative to the beam axis.
- GS guidance (motion)
 - . **beam rider guidance**
- RT missile control
- missile systems

beam splitters

- DEF Partially reflecting mirrors which permit some incident light to pass through and reflect the remainder.
- RT beams (radiation)
- particle accelerators
- particle beams
- scatter plates (optics)

beam steering

- (added June 1997)

- GS steering
 - . **beam steering**
- RT antenna radiation patterns
- beam waveguides
- beamforming
- beams (radiation)
- collimation
- laser beams
- steerable antennas

beam switching

- GS switching
 - . **beam switching**
- RT beams (radiation)
- electron optics
- ion engines
- lasers
- magnetic switching
- packet switching

beam waveguides

- GS waveguides
 - . **beam waveguides**
- RT beam steering
- collimators
- ion optics
- photon beams
- plasmaguides
- rectangular waveguides
- wave propagation
- yokes

beamed power

- USE **power beaming**

beamforming

- (added September 1992)

- UF *beam forming*
- beamshaping*
- GS collimation
 - . **beamforming**
- RT antenna arrays
- antenna radiation patterns
- beam steering
- beams (radiation)
- ion optics
- laser beams
- polarization (waves)
- radar beams

∞ beams

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT beams (radiation)
- beams (supports)

beams (radiation)

- GS **beams (radiation)**
 - . gamma ray beams
 - . light beams
 - . . laser beams
 - . microbeams
 - . particle beams
 - . . atomic beams
 - . . electron beams

- . . . relativistic electron beams
- . . ion beams
- . . neutral beams
- . . . molecular beams
- . . . neutron beams
- . . neutrino beams
- . . pion beams
- . . proton beams
- . pencil beams
- . phonon beams
- . photon beams
- . radar beams
- RT beam interactions
- beam neutralization
- beam splitters
- beam steering
- beam switching
- beamforming
- ∞ beams
- coherent electromagnetic radiation
- coherent radiation
- corpuscular radiation
- electromagnetic radiation
- extreme ultraviolet radiation
- infrared radiation
- ionizing radiation
- irradiation
- light (visible radiation)
- longitudinal waves
- monochromatic radiation
- multibeam antennas
- plane waves
- ∞ radiation
- ∞ rays
- submillimeter waves
- ultraviolet radiation
- beams (supports)**
- UF *structural beams*
- GS structural members
- . **beams (supports)**
- . . box beams
- . . cantilever beams
- . . curved beams
- . . Euler-Bernoulli beams
- . . I beams
- . . rectangular beams
- . . Timoshenko beams
- RT ∞ beams
- clamped structures
- columns (supports)
- girders
- ∞ headers
- plastic bodies
- T shape
- trusses
- beamshaping*
- USE **beamforming**
- ∞ **bearing**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bearing (direction)
- bearings
- internal combustion engines
- bearing (direction)**
- RT alignment
- azimuth
- ∞ bearing
- ∞ direction
- direction finding
- exposure
- field of view
- instrument orientation
- ∞ orientation
- position (location)
- sound localization
- ∞ space orientation
- bearing alloys**
- GS alloys
- . **bearing alloys**
- RT aluminum alloys
- babbitt metal
- bearings
- cadmium alloys
- copper alloys
- iron alloys
- lead alloys
- metal powder
- silver alloys
- tin alloys
- zinc alloys
- bearingless rotors**
- GS airfoils
- . wings
- . . rotary wings
- . . . lifting rotors
- **bearingless rotors**
- rotating bodies
- . rotors
- . . rotary wings
- . . . lifting rotors
- **bearingless rotors**
- RT hinges
- rigid rotors
- bearings**
- GS **bearings**
- . antifriction bearings
- . . ball bearings
- . . roller bearings
- . . . needle bearings
- . . foil bearings
- . . gas bearings
- . . journal bearings
- . . liquid bearings
- . . magnetic bearings
- . . thrust bearings
- RT ∞ bearing
- bearing alloys
- boundary lubrication
- bushings
- gimbals
- idlers
- internal combustion engines
- lubrication
- packings (seals)
- pivots
- shafts (machine elements)
- supports
- suspension systems (vehicles)
- swivels
- wheels
- bears**
- GS animals
- . vertebrates
- . . mammals
- . . . **bears**
- beat*
- USE **synchronism**
- beat frequencies**
- DEF The frequencies obtained when two simple harmonic quantities of different frequencies f_1 and f_2 are superimposed. The beat frequency equals $f_1 - f_2$.
- GS frequencies
- . **beat frequencies**
- RT group velocity
- intermediate frequency amplifiers
- Moire effects
- resonant frequencies
- standing waves
- superheterodyne receivers
- Beaufort Sea (North America)**
- GS seas
- . **Beaufort Sea (North America)**
- RT Alaska
- Arctic Ocean
- Canada
- bed rest**
- GS rest
- . **bed rest**
- RT calcium metabolism
- clinical medicine
- head down tilt
- head up tilt
- orthostatic tolerance
- bedding equipment**
- RT ∞ blankets
- ∞ equipment
- bediasites**
- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . tektites
- **bediasites**
- RT australites
- bedrock**
- UF *shields (geology)*
- GS rocks
- . **bedrock**
- . . Baltic Shield (Europe)
- . . batholiths
- RT Earth resources
- geology
- regolith
- ∞ shelves
- soils
- strata
- stratification
- stratigraphy
- tunneling (excavation)
- beds**
- RT beds (process engineering)
- couches
- beds (geology)**
- UF *lake beds*
- GS geology
- . **beds (geology)**
- . . salt beds
- landforms
- . **beds (geology)**
- . . salt beds
- RT ocean bottom
- strata
- stratigraphy
- beds (process engineering)**
- RT beds
- chemical reactors
- extraction
- filtration
- fluidized bed processors
- ion exchanging
- percolation
- Beech 99 aircraft**
- DEF Light, low-wing aircraft manufactured by Beechcraft.
- GS Beechcraft aircraft
- . **Beech 99 aircraft**
- . . Beechcraft 18 aircraft
- . . C-33 aircraft
- . . C-35 aircraft
- light aircraft
- . **Beech 99 aircraft**
- . . Beechcraft 18 aircraft
- . . C-33 aircraft
- . . C-35 aircraft
- RT ∞ aircraft
- ∞ low wing aircraft
- Beech aircraft*
- USE **Beechcraft aircraft**
- Beech C-33 aircraft*
- USE **C-33 aircraft**
- Beech S-35 aircraft*
- USE **C-35 aircraft**
- Beechcraft 18 aircraft**
- GS Beechcraft aircraft
- . Beech 99 aircraft
- . . **Beechcraft 18 aircraft**
- general aviation aircraft
- . **Beechcraft 18 aircraft**
- light aircraft
- . Beech 99 aircraft
- . . **Beechcraft 18 aircraft**
- monoplanes
- . **Beechcraft 18 aircraft**

Beechcraft aircraft

RT ∞ aircraft

Beechcraft aircraft

UF *Beech aircraft*

GS **Beechcraft aircraft**

- . Beech 99 aircraft
- . . Beechcraft 18 aircraft
- . . C-33 aircraft
- . . C-35 aircraft

RT ∞ aircraft

Beer law

RT absorptivity
Bouguer law
electromagnetic absorption
molecular absorption

bees

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **bees**

RT swarming

beetles

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . Coleoptera
. **beetles**
. tribolia

RT infestation

behavior

DEF The way in which an organism, organ, body, or substance acts in an environment or responds to excitation, as the behavior of steel under stress, or the behavior of an animal in a test.

GS **behavior**
. deconditioning
. human behavior

RT conditioning (learning)
diagnosis
education
extroversion
learning
migration
Skinner boxes

Belarus

(added August 1993)

GS nations
. **Belarus**

RT Europe

Belfast aircraft

USE **SC-5 aircraft**

Belgian Congo

USE **Democratic Republic of Congo**

Belgian space program

(added August 1990)

GS programs
. space programs
. . European space programs
. . . **Belgian space program**

RT Belgium

Belgium

GS nations
. **Belgium**

RT Belgian space program
Europe

belief networks

(added December 1994)

DEF Artificial Intelligence technique for computing probabilistic information.

UF *Bayesian belief networks*

GS networks
. **belief networks**

RT artificial intelligence
Bayes theorem
computer techniques
expert systems
knowledge representation
neural nets

probability theory

Belize

UF *British Honduras*

GS nations
. **Belize**

RT Caribbean region
Caribbean Sea
Central America

Bell 214A helicopter

DEF Sixteen-seat utility helicopter manufactured by Bell Helicopter.

GS Bell aircraft
. **Bell 214A helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **Bell 214A helicopter**

RT ∞ aircraft
vertical takeoff aircraft

Bell aircraft

GS **Bell aircraft**
. AH-1S helicopter
. AH-1W helicopter
. AH-63 helicopter
. Bell 214A helicopter
. OH-4 helicopter
. OH-13 helicopter
. UH-1 helicopter
. V-22 aircraft
. X-1 aircraft
. X-2 aircraft
. X-5 aircraft
. X-14 aircraft
. X-22 aircraft
. XV-3 aircraft
. XV-15 aircraft

RT ∞ aircraft

Bellman theory

RT dynamic programming
optimization
∞ theories

bellows

SN (EXPANDABLE JOINTS--FOR DEVICES TO MOVE GASES, USE BLOWERS)

DEF Mechanical structures with walls like those of an accordion.

GS expandable structures
. **bellows**

RT expulsion bladders
joints (junctions)
pumps

bells

RT auditory signals
pressure vessels
psychoacoustics
∞ signals
sound generators
warning
warning systems

Beltrami flow

GS fluid flow
. **Beltrami flow**

RT incompressible flow
steady flow
vorticity

∞ belts

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT asteroid belts
cables (ropes)
fasteners
girdles
proton belts
pulleys
radiation belts
regions
Rouse belts
seat belts
terrestrial dust belt

Benard cells

GS convection

. free convection
. . Rayleigh-Benard convection
. . . **Benard cells**
fluid flow
. convective flow
. . Rayleigh-Benard convection
. . . **Benard cells**

RT convection currents
convection-diffusion equation
Rayleigh number
solar convection (astronomy)
solar granulation
stellar convection

benches

USE **seats**

bend tests

DEF Ductility tests in which specimens are bent through an arc of known radius and angle.

RT bending
crack propagation
destructive tests
flexural strength
fracture mechanics
fracture strength
∞ materials tests
∞ tests

bending

GS **bending**
. elastic bending

RT bend tests
∞ bows
buckling
camber
deflection
deformation
displacement
distortion
elastic deformation
Euler-Bernoulli beams
fatigue tests
fiber strength
flexibility
flexing
flutter
folding
heaving
kinking
modulus of elasticity
plastic deformation
stiffness
structural failure
structural strain
temperature inversions
twisting
warpage

bending diagrams

GS diagrams
. **bending diagrams**

RT deflection

bending fatigue

GS fatigue (materials)
. **bending fatigue**

RT flexural strength
metal fatigue
S-N diagrams

bending moments

GS moments
. **bending moments**

RT loading moments
NASTRAN
static loads
stress analysis
structural design criteria
torque

bending strength

USE **flexural strength**

bending theory

RT stress analysis
stress intensity factors
∞ theories

- Treffitz method
- bending vibration**
 GS vibration
 . structural vibration
 . . **bending vibration**
 RT breathing vibration
 Euler-Bernoulli beams
 flutter
 missile vibration
 panel flutter
 random vibration
 self induced vibration
- bends (physiology)*
 USE **decompression sickness**
- beneficiation**
 RT ∞ absorption
 adsorption
 aeration
 clean fuels
 comminution
 concentrating
 ∞ conditioning
 enrichment
 exploitation
 extraction
 filtration
 flotation
 foaming
 isotopic enrichment
 leaching
 ∞ metallurgy
 minerals
 purification
 refining
 ∞ separation
 settling
 size separation
 sublimation
 upgrading
 washing
 wastes
- Benin**
 UF *Dahomey*
 GS nations
 . **Benin**
 RT Africa
- bentonite**
 DEF A soft, plastic, porous, light colored rock composed essentially of clay minerals of the montmorillonite group plus colloidal silica, and produced by divitrification and chemical alteration of a glassy igneous material, usually a tuff or a volcanic ash.
 RT montmorillonite
 soils
 water treatment
- benzene**
 GS organic compounds
 . cyclic compounds
 . . cyclic hydrocarbons
 . . . **benzene**
 . hydrocarbons
 . . cyclic hydrocarbons
 . . . **benzene**
 RT chlorobenzenes
 cyclohexane
 solvent refined coal
 thiophenes
- benzene poisoning**
 GS diseases
 . toxic diseases
 . . **benzene poisoning**
 toxicity
 . **benzene poisoning**
 RT hydrocarbon poisoning
 industrial safety
 ∞ poisoning
 toxicity and safety hazard
 toxicology
- benzilic acid**
 GS acids
 . carboxylic acids
- . . fatty acids
 . . . **benzilic acid**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . **benzilic acid**
- benzoic acid**
 GS acids
 . carboxylic acids
 . . fatty acids
 . . . **benzoic acid**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . **benzoic acid**
- benzoquinone*
 USE **quinones**
- Berenice rocket vehicle**
 GS rocket vehicles
 . multistage rocket vehicles
 . . **Berenice rocket vehicle**
 RT hypersonic reentry
 solid propellant rocket engines
- Bergman operator**
 GS operators (mathematics)
 . **Bergman operator**
- Bering Sea**
 GS seas
 . **Bering Sea**
 RT Pacific Ocean
- berkelium**
 GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **berkelium**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements
 **berkelium**
 metals
 . actinide series
 . . transuranium elements
 . . . **berkelium**
- Bermuda**
 GS landforms
 . islands
 . . **Bermuda**
 RT Atlantic Ocean
- Bernoulli equation*
 USE **Bernoulli theorem**
- Bernoulli theorem**
 DEF In aeronautics, a law or theorem stating that in a flow of incompressible fluid the sum of the static pressure and the dynamic pressure along a streamline is constant if gravity and frictional effects are disregarded. It is named for Daniel Bernoulli, a Swiss scientist who lived from 1700 to 1782. Used for Bernoulli equation.
 UF *Bernoulli equation*
 GS theorems
 . **Bernoulli theorem**
 RT conservation equations
 ∞ equations
 flow equations
 fluid flow
 isentropic processes
 linearization
 Magnus effect
 panel method (fluid dynamics)
- Bernstein energy principle**
 GS structural analysis
 . energy methods
 . . **Bernstein energy principle**
 RT ∞ energy
 magnetic fields
- beryl**
 UF *emerald*
 GS aluminum compounds
 . **beryl**
- . . alexandrite
 beryllium compounds
 . **beryl**
 . . alexandrite
 minerals
 . **beryl**
 . . alexandrite
 silicon compounds
 . silicates
 . . **beryl**
 . . . alexandrite
 RT beryllium
- beryllium**
 GS chemical elements
 . **beryllium**
 . . beryllium isotopes
 . . . beryllium 7
 . . . beryllium 9
 . . . beryllium 10
 metals
 . **beryllium**
 . . beryllium isotopes
 . . . beryllium 7
 . . . beryllium 9
 . . . beryllium 10
 RT beryl
 moderators
- beryllium 7**
 GS chemical elements
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 7**
 . nuclides
 . . isotopes
 . . . beryllium isotopes
 **beryllium 7**
 radioactive isotopes
 **beryllium 7**
 metals
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 7**
- beryllium 9**
 GS chemical elements
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 9**
 . nuclides
 . . isotopes
 . . . beryllium isotopes
 **beryllium 9**
 radioactive isotopes
 **beryllium 9**
 metals
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 9**
- beryllium 10**
 GS chemical elements
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 10**
 . nuclides
 . . isotopes
 . . . beryllium isotopes
 **beryllium 10**
 radioactive isotopes
 **beryllium 10**
 metals
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 10**
- beryllium alloys**
 GS alloys
 . light alloys
 . . **beryllium alloys**
- beryllium borohydrides**
 GS beryllium compounds
 . **beryllium borohydrides**
 boron compounds
 . borohydrides
 . . **beryllium borohydrides**
 . boron hydrides
 . . **beryllium borohydrides**

beryllium chlorides

- hydrogen compounds
- . hydrides
- . . borohydrides
- . . . **beryllium borohydrides**
- . . boron hydrides
- . . . **beryllium borohydrides**

beryllium chlorides

GS beryllium compounds

- . **beryllium chlorides**

halogen compounds

- . chlorine compounds
- . . chlorides
- . . . **beryllium chlorides**
- . halides
- . . chlorides
- . . . **beryllium chlorides**
- . . metal halides
- . . . **beryllium chlorides**

beryllium compounds

GS **beryllium compounds**

- . beryl
- . . alexandrite
- . beryllium borohydrides
- . beryllium chlorides
- . beryllium fluorides
- . beryllium hydrides
- . beryllium nitrides
- . beryllium oxides
- . . alexandrite

RT ∞ alkaline earth compounds

∞ chemical compounds

∞ metal compounds

- metal fuels
- metal propellants

beryllium fluorides

GS beryllium compounds

- . **beryllium fluorides**

halogen compounds

- . fluorine compounds
- . . fluorides
- . . . metal fluorides
- **beryllium fluorides**
- . halides
- . . fluorides
- . . . metal fluorides
- **beryllium fluorides**
- . . metal halides
- . . . metal fluorides
- **beryllium fluorides**

beryllium hydrides

GS beryllium compounds

- . **beryllium hydrides**

hydrogen compounds

- . hydrides
- . . metal hydrides
- . . . **beryllium hydrides**

beryllium isotopes

GS chemical elements

- . beryllium
- . . **beryllium isotopes**
- . . . beryllium 7
- . . . beryllium 9
- . . . beryllium 10
- . nuclides
- . . isotopes
- . . . **beryllium isotopes**
- beryllium 7
- beryllium 9
- beryllium 10
- metals
- . beryllium
- . . **beryllium isotopes**
- . . . beryllium 7
- . . . beryllium 9
- . . . beryllium 10

beryllium nitrides

GS beryllium compounds

- . **beryllium nitrides**

nitrogen compounds

- . nitrides
- . . metal nitrides

- . . . **beryllium nitrides**

beryllium oxides

GS beryllium compounds

- . **beryllium oxides**
- . . alexandrite
- . chalcogenides
- . . oxides
- . . . metal oxides
- alkaline earth oxides
- **beryllium oxides**
- alexandrite

beryllium poisoning

GS diseases

- . toxic diseases
- . . **beryllium poisoning**
- . toxicity
- . . **beryllium poisoning**

RT industrial safety

∞ poisoning

- respiratory diseases
- toxicity and safety hazard
- toxicology

BESS (satellite)

DEF A proposed NASA primate biomedical experiment scientific satellite that was never developed. Used for biomedical experiment scientific satellite.

UF *Biomedical Experiment Scientific Satellite*

GS artificial satellites

- . **BESS (satellite)**

RT multimission modular spacecraft

- space shuttles

Bessel functions

GS analysis (mathematics)

- . complex variables
- . . **Bessel functions**
- . . . Hankel functions
- . real variables
- . . **Bessel functions**
- . . . Hankel functions

RT boundary value problems

- differential equations
- hypergeometric functions
- orthogonal functions
- power series

Bessel-Bredichin theory

RT comets

- Kohoutek comet
- radiation pressure

∞ theories

beta factor

DEF In plasma physics, the ratio of the plasma kinetic pressure to the magnetic pressure.

RT dense plasmas

- fluid pressure
- fusion reactors
- magnetic fields
- magnetic flux
- magnetohydrodynamic stability
- plasma control
- plasma equilibrium
- plasma heating
- plasma physics
- pressure effects
- reactor physics
- tokamak devices
- toroidal plasmas

beta interactions

USE **weak interactions (field theory)**

beta particles

DEF Particles emitted in the radioactive decay of many radionuclides. A beta particle is identical to an electron. It has a short range in air and a low ability to penetrate other materials.

GS ionizing radiation

- . **beta particles**

nuclear radiation

- . **beta particles**

particles

- . charged particles

- . . energetic particles
- . . . plasmas (physics)
- **beta particles**

corpuscular radiation

- . electron radiation
- . . **beta particles**

energetic particles

- . . plasmas (physics)
- **beta particles**

elementary particles

- . **beta particles**

nuclear particles

- . **beta particles**

RT decay

- electron beams
- electrons
- flux (rate)
- hot atoms
- N electrons
- relativistic electron beams
- weak energy interactions

betaines

GS bases (chemical)

- . alkaloids
- . . **betaines**

nitrogen compounds

- . alkaloids
- . . **betaines**

organic compounds

- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- **betaines**

betatrons

DEF Particle accelerators in which magnetic induction is used to accelerate electrons.

GS particle accelerators

- . cyclic accelerators
- . . **betatrons**
- . electron accelerators
- . . **betatrons**

RT microtrons

- synchrotrons

Bethe-Heitler formula

GS mathematical logic

- . formulas (mathematics)
- . . **Bethe-Heitler formula**

Bethe-Salpeter equation

GS analysis (mathematics)

- . real variables
- . . **Bethe-Salpeter equation**

RT differential equations

∞ equations

- equations of motion
- kinetic equations
- quantum mechanics

bevatron

GS particle accelerators

- . cyclic accelerators
- . . synchrotrons
- . . . **bevatron**

RT synchrocyclotrons

bevel gears

(added May 1999)

GS gears

- . **bevel gears**
- . . spiral bevel gears

RT gear teeth

beverages

GS liquids

- . potable liquids
- . . **beverages**
- . . . wines

RT coffee

- drinking

∞ food

- milk

BGK model

(added September 1993)

UF *Bhatnagar-Grass-Krook model*

GS models

- . mathematical models

- . . **BGK model**
- RT Boltzmann transport equation
computational fluid dynamics
kinetic equations
kinetic theory
Knudsen flow
molecular collisions
molecular flow
particle collisions
rarefied gas dynamics
- Bhatnagar-Grass-Krook model*
USE **BGK model**
- Bhutan**
 - GS nations
 - . **Bhutan**
 - RT Himalayas
India
Sikkim
Tibet
- bias**
 - DEF A constant or systematic error as opposed to a random error. It manifests itself as a persistent positive or negative deviation of the method average from the accepted reference value.
 - GS **bias**
 - . response bias
 - RT compensators
displacement
electric potential errors
instrument errors
open circuit voltage
tube grids
- bibliographies**
 - GS documents
 - . **bibliographies**
 - RT abstracts
biography
documentation
general overviews
handbooks
indexes (documentation)
information dissemination
information retrieval
libraries
literature
 - ∞ reference systems
space glossaries
summaries
- bicarbonates*
USE **carbonates**
- bicrystals**
 - GS crystals
 - . **bicrystals**
 - RT polycrystals
single crystals
- ∞ **bicycle**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT landing gear
surface vehicles
- bidirectional reflectance**
 - GS electromagnetic properties
 - . optical properties
 - . . reflectance
 - . . . **bidirectional reflectance**
 - RT light scattering
reflection
spectral reflectance
surface properties
- bifurcation (biology)**
 - DEF The separation or branching into two parts, areas, aspects or connected segments, of anatomical systems or functions.
 - RT anatomy
arteries
arterioles
 - ∞ biology
blood vessels
branching (physics)
- veins
- bifurcation (mathematics)*
USE **branching (mathematics)**
- big bang cosmology**
 - GS cosmology
 - . **big bang cosmology**
 - RT astronomical models
background radiation
cosmic rays
galactic evolution
gamma ray bursts
grand unified theory
gravitational constant
large-scale structure of the universe
relativity
relic radiation
universe
- Bighorn Mountains (MT-WY)**
 - GS landforms
 - . mountains
 - . . **Bighorn Mountains (MT-WY)**
 - RT Montana
Wyoming
- bights*
USE **bays (topographic features)**
- biharmonic equations**
 - GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . partial differential equations
 - **biharmonic equations**
 - RT elastic properties
 - ∞ equations
- billets**
 - RT casting
castings
forging
ingots
metal plates
metal strips
rods
slabs
wire
- bimetals**
 - RT alloying
alloys
composite materials
functionally gradient materials
metal bonding
metals
- bimetric theories**
 - DEF Theories of gravitation.
 - RT gravitation theory
metric space
Schwarzschild metric
 - ∞ theories
- binary alloys**
 - GS alloys
 - . **binary alloys**
 - binary systems (materials)
 - . **binary alloys**
 - RT alloying
antiphase boundaries
cluster variation method
- binary codes**
 - DEF Codes composed of a combination of entities each of which can assume one of two possible states. Each entity must be identifiable in time or space.
 - RT BCH codes
bit error rate
 - ∞ codes
concatenated codes
digital systems
trellis coding
- binary data**
 - RT analog data
bit error rate
bubble memory devices
 - ∞ data
- data processing
decimal to binary converters
digital data
- binary digits**
 - GS symbols
 - . alphanumeric characters
 - . . digits
 - . . . **binary digits**
 - RT bit error rate
bits
digital electronics
digital systems
- binary fluids**
 - GS binary systems (materials)
 - . binary mixtures
 - . . **binary fluids**
 - mixtures
 - . binary mixtures
 - . . **binary fluids**
 - RT ∞ fluids
gas mixtures
kinetic theory
Lennard-Jones gas
transport properties
- binary integration**
 - GS analysis (mathematics)
 - . real variables
 - . . measure and integration
 - . . . **binary integration**
 - RT adding circuits
digital integrators
- binary mixtures**
 - GS binary systems (materials)
 - . **binary mixtures**
 - . . binary fluids
 - . . . eutectics
 - eutectic alloys
 - mixtures
 - . **binary mixtures**
 - . . binary fluids
 - . . . eutectics
 - eutectic alloys
 - RT azeotropes
gas mixtures
liquid-gas mixtures
- binary phase shift keying**
(added February 1992)
UF *biphase shift keying*
BPSK
GS coding
. signal encoding
. . phase modulation
. . . phase shift keying
. . . . **binary phase shift keying**
keying
. phase shift keying
. . **binary phase shift keying**
modulation
. phase modulation
. . phase shift keying
. . . **binary phase shift keying**
RT quadrature phase shift keying
satellite transmission
- binary stars**
 - DEF Systems of two stars revolving about a barycenter.
 - GS celestial bodies
 - . stars
 - . . double stars
 - . . . **binary stars**
 - cataclysmic variables
 - companion stars
 - Nemesis (star)
 - eclipsing binary stars
 - dwarf novae
 - Lambda Tauri stars
 - Zeta Aurigae star
 - Sigma Orionis
 - symbiotic stars
 - x ray binaries
 - RT accretion disks
gravitational binding energy
limb darkening
star clusters

binary systems (materials)

stellar parallax
stellar systems
superhumps (astronomy)
triple stars
two body problem
variable stars

binary summators

USE **adding circuits**

binary systems (digital)

USE **digital systems**

binary systems (materials)

UF *two phase systems*

GS **binary systems (materials)**

. binary alloys
. binary mixtures
. . binary fluids
. . eutectics
. . . eutectic alloys

RT alloys

∞ materials

phase diagrams
phase separation (materials)
solidus

∞ systems

ternary systems

binary to decimal converters

GS data converters

. **binary to decimal converters**

RT computer components

∞ converters

data processing
decimal to binary converters

binaural hearing

GS hearing

. **binaural hearing**

perception

. **binaural hearing**

RT auditory perception

sound localization

Weber test

binders (adhesives)

USE **adhesives**

binders (materials)

GS **binders (materials)**

. propellant binders
. . solid rocket binders

RT additives

adhesives

cements

∞ materials

molding materials
oxetane polymers
sizing materials
solid lubricants

binding

RT binding energy

bonding

collating

folding

∞ joining

printing

sealing

sewing

binding energy

(added May 1995)

GS **binding energy**

. gravitational binding energy
. nuclear binding energy

RT activation energy

active sites (chemistry)

binding

chemical bonds

electrostatic bonding

∞ energy

lattice energy
quantum wells

vacancies (crystal defects)

binding sites

(added August 2004)

USE **active sites (chemistry)**

binocular vision

GS vision

. **binocular vision**

RT haploscopes

motion perception

space perception

stereoscopic vision

binoculars

GS optical equipment

. **binoculars**

RT eyepieces

microscopes

periscopes

telescopes

binomial coefficients

GS analysis (mathematics)

. combinatorial analysis

. . **binomial coefficients**

coefficients

. **binomial coefficients**

RT factorials

binomial theorem

GS algebra

. **binomial theorem**

theorems

. **binomial theorem**

RT binomials

probability density functions

probability theory

statistical analysis

statistical distributions

binomials

GS algebra

. polynomials

. . **binomials**

RT binomial theorem

bioacoustics

GS acoustics

. **bioacoustics**

RT acoustic attenuation

auditory defects

auditory sensation areas

bioengineering

∞ biology

psychoacoustics

∞ science

sound intensity

bioassay

DEF A standardized procedure for the determination of the effects of an environmental variable or substance on living organisms. Used for biological analysis.

UF *biological analysis*

RT animal models

biochemistry

biological diversity

biological effects

∞ biology

biomarkers

histochemical analysis

in vitro methods and tests

in vivo methods and tests

Bioastronautical Orbital Space System

GS programs

. NASA programs

. . NASA space programs

. . . **Bioastronautical Orbital Space System**

. space programs

. . NASA space programs

. . . **Bioastronautical Orbital Space System**

RT ∞ systems

bioastronautics

DEF The study of biological, behavioral, and medical problems pertaining to astronau-

tics. This includes systems functioning in the environments expected to be found in space, vehicles designed to travel in space, and the conditions on terrestrial bodies other than the Earth.

RT aerospace environments

aerospace medicine

animal models

∞ astronautics

bioengineering

∞ biology

Biosatellite 1

Biosatellite 2

Biosatellite 3

closed ecological systems

Columbus space station

Earth atmosphere

exobiology

head down tilt

head up tilt

hindlimb suspension

lunar environment

planetary environments

∞ science

space adaptation syndrome

space exploration

space flight

space stations

spacecraft environments

tilt-table test

bioavailability

(added August 2001)

DEF The extent to which a drug, nutrient, toxin, or other substance enters the circulatory system or becomes available at a site of physiological activity.

UF *biological availability*

physiologic availability

GS availability

. **bioavailability**

RT adsorption

exposure

intravenous procedures

material absorption

pharmacology

physiochemistry

sorption

toxicity

toxicology

biochemical fuel cells

GS electric generators

. direct power generators

. . fuel cells

. . . **biochemical fuel cells**

electrochemical cells

. fuel cells

. . **biochemical fuel cells**

RT ∞ biology

phosphoric acid fuel cells

regenerative fuel cells

biochemical oxygen demand

DEF The amount of oxygen necessary for the oxidative decomposition of a material by microorganisms. The amount of oxygen consumed in mg/1 of water (or waste water) over a period of 5 days at 20 deg. C under laboratory conditions. Used for BOD.

UF *BOD*

RT algae

∞ biology

ecology

oximetry

oxygen consumption

plants (botany)

pollution control

water pollution

water treatment

biochemistry

DEF Chemistry dealing with the chemical processes and compounds of living organisms.

GS **biochemistry**

. biogeochemistry

. enzymology

. physiochemistry

RT bacteriology

bioassay

- biodegradation
- bioengineering
- ∞ biology
- biomarkers
- biomimetics
- chemical warfare
- ∞ chemistry
- cytology
- enzyme inhibitors
- Gaia hypothesis
- genetic engineering
- histochemical analysis
- immunoassay
- indoleacetic acids
- interferon
- marine chemistry
- metabolites
- molecular biology
- mutagens
- nitrogen metabolism
- nutrition
- optical activity
- organic chemistry
- polymerase chain reaction
- radioimmunoassay
- vegetation growth

bioclimatology
USE **biometeorology**

biocompatibility
DEF Compatibility of substances with living tissues and blood components.
GS compatibility
. **biocompatibility**
RT antibodies
antigens
∞ biology
blood
immunology
leukocytes
monocytes
physiological defenses
vaccines

biocontrol systems
SN (RESTRICTED TO ARTIFICIAL BIOTECHNOLOGICAL SYSTEMS FOR THE CONTROL OF BIOLOGICAL PROCESSES—USE REGULATORY MECHANISMS (BIOLOGY) FOR NATURAL PHYSIOLOGICAL REGULATION)
RT biofeedback
∞ biology
bionics
psychomotor performance
regulatory mechanisms (biology)
∞ systems
tolerances (physiology)

bioconversion
DEF The transformation of algae and/or other biomass materials in successive stages to aliphatic organic acids to aliphatic hydrocarbons to diesel and/or other liquid fuels.
RT algae
∞ biology
biomass energy production
bioprocessing
∞ conversion
enzyme activity
fermentation
fuels
hydrocarbon fuel production
methane
renewable energy
solar heating
vegetation

biodegradability
DEF The characteristic of a substance that can be decomposed by microorganisms.
GS dissociation
. **biodegradability**
RT ∞ biology
decay
decomposition
deterioration
organic materials

- ∞ properties
- biodegradation**
GS degradation
. **biodegradation**
RT activated sludge
biochemistry
biofilms
∞ biology
decay
decomposition
deterioration

biodiversity
USE **biological diversity**

biodynamics
DEF The study of the effects of dynamic processes (motion, acceleration, weightlessness, etc.) on living organisms. Used for biomechanics.
UF *biomechanics*
RT anatomy
bioengineering
biological models (mathematics)
∞ biology
biophysics
∞ dynamics
∞ science
stress (physiology)

bioelectric potential
GS potential energy
. electric potential
. . **bioelectric potential**
RT bioelectricity
∞ biology
ion channels (biology)

bioelectricity
UF *neuron transmission*
RT bioelectric potential
∞ biology
biomagnetism
information processing (biology)
ion channels (biology)
myelin sheath
neuromuscular transmission
spike potentials

bioengineering
GS **bioengineering**
. bioinstrumentation
. . biotelemetry
. . implanted electrodes (biology)
. . biometrics
. . body measurement (biology)
. . . anthropometry
. . . electroplethysmography
. . . cardiography
. . . ballistocardiography
. . . electrocardiography
. . . magnetocardiography
. . . phonocardiography
. . . echocardiography
. . . seismocardiography
. . . vectorcardiography
. . echoencephalography
. . electroencephalography
. . electromyography
. . electronystagmography
. . electroretinography
. . plethysmography
. . . electroplethysmography
. . . radiocardiography
. . tissue engineering
RT bioacoustics
bioastronautics
biochemistry
biodynamics
∞ biology
biomimetics
bionics
biopaks
biophysics
bone mineral content
∞ engineering
genetic engineering
human factors engineering
underwater breathing apparatus

voice control

biofeedback
DEF Originally confined to the presenting of a subject with sensory information about ongoing physiological activities, it now includes the controlling of specific physiological activities through trained mental effort.
GS feedback
. **biofeedback**
. . sensory feedback
RT aerospace medicine
biocontrol systems
blood pressure
conditioning (learning)
∞ control
feedback control
heart rate
human factors engineering
psychology

biofilms
(added July 2001)
DEF Films of bacteria or other microbial organisms, the growth of which is usually defined by the surface of a biological or non-biological substrate.
RT bacteria
biodegradation
biogeochemistry
contaminants
extraterrestrial life
∞ films
fouling
membranes
microorganisms

bioflavonoids
UF *vitamin P*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **bioflavonoids**
vitamins
. **bioflavonoids**
RT drugs

biogenesis
USE **biological evolution**

biogeny
RT ∞ biology
biomarkers
∞ evolution
ontogeny

biogeochemistry
GS biochemistry
. **biogeochemistry**
environmental chemistry
. geochemistry
. . **biogeochemistry**
RT biofilms
∞ biology
biomarkers
botany
∞ chemistry
geobotany
International Geosphere-Biosphere program
minerals
plants (botany)

biography
GS literature
. **biography**
RT awards
bibliographies
case histories
documentation

biohazards
(added August 2003)
USE **biological hazards**

bioinstrumentation
UF *biosensors*
GS bioengineering
. **bioinstrumentation**
. . biotelemetry

biological diversity

- . . . implanted electrodes (biology)
- RT ∞ biology
- biometrics
- bionics
- echoencephalography
- ∞ engineering
- IMBLMS
- ∞ instruments
- magnetocardiography
- measuring instruments
- respirometers
- ∞ sensors
- sphygmography
- wildlife radiolocation

biological activity

USE **activity (biology)**

biological analysis

USE **bioassay**

biological availability

(added August 2001)

USE **bioavailability**

biological cells

USE **cells (biology)**

biological clocks

USE **rhythm (biology)**

biological diversity

(added June 1995)

DEF The diversity of genes, species, and ecosystems that make up the variety and variability of life.

- UF *biodiversity*
- genetic diversity*
- RT bioassay
- biological evolution
- biosynthesis
- cytology
- deforestation
- differentiation (biology)
- gene expression
- genetics
- mutations
- protobiology
- species diffusion

biological effects

- GS **biological effects**
- . desynchronization (biology)
- . fluid shifts (biology)
- . jet lag
- . relative biological effectiveness (RBE)
- RT activity (biology)
- apoptosis
- atrophy
- bioassay
- ∞ biology
- biomedical data
- bone demineralization
- Bragg curve
- chemical effects
- disorientation
- dosage
- ∞ effects
- flight stress (biology)
- human reactions
- Orbiting Frog Otolith
- pathological effects
- physiological effects
- psychological effects
- radiation dosage
- radiation effects
- space adaptation syndrome
- temperature
- thermal pollution

biological evolution

- UF *biogenesis*
- GS evolution (development)
- . **biological evolution**
- . . abiogenesis
- RT archaeobacteria
- biological diversity
- ∞ biology
- chemical evolution

- eukaryotes
- Gaia hypothesis
- gene expression
- genetics
- life sciences
- mutagens
- mutations
- panspermia
- prokaryotes
- protein synthesis
- protobiology

biological hazards

(added August 2003)

DEF Infectious agents or biologically derived infectious materials that cause health risks to human or animals through absorption, inhalation or ingestion.

- UF *biohazards*
- GS hazards
- . **biological hazards**
- RT contamination
- hazardous materials
- hazardous wastes
- toxic hazards

biological markers

(added August 2004)

USE **biomarkers**

biological models

USE **bionics**

biological models (mathematics)

DEF Mathematical models for living systems.

- GS models
- . mathematical models
- . . **biological models (mathematics)**
- RT biodynamics
- ∞ biology
- biomimetics
- bionics
- digital simulation
- dynamic models

biological rhythm

USE **rhythm (biology)**

biological warfare agents

(added January 2002)

USE **biological weapons**

biological weapons

(added December 2001)

DEF Infectious agents engineered for deliberate use as a weapon; includes bacteria, viruses, fungi, and other living microorganisms that can kill or incapacitate.

- UF *biological warfare agents*
- GS weapons
- . **biological weapons**
- RT bacteria
- chemical warfare
- infectious diseases
- spores
- terrorism
- toxins and antitoxins
- virulence
- viruses

∞ biology

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT activation (biology)
- activity (biology)
- activity cycles (biology)
- aerobiology
- aerospace medicine
- aging (biology)
- agriculture
- anatomy
- animals
- bacteriology
- bifurcation (biology)
- bioacoustics
- bioassay
- bioastronautics
- biochemical fuel cells
- biochemical oxygen demand

- biochemistry
- biocompatibility
- biocontrol systems
- bioconversion
- biodegradability
- biodegradation
- biodynamics
- bioelectric potential
- bioelectricity
- bioengineering
- biogeny
- biogeochemistry
- bioinstrumentation
- biological effects
- biological evolution
- biological models (mathematics)
- bioluminescence
- biomagnetism
- biomass
- biomass energy production
- biomedical data
- biometeorology
- biometrics
- biomimetics
- bionics
- biophysics
- bioreactors
- biosatellites
- biosphere
- biosynthesis
- biotechnology
- biotelemetry
- body composition (biology)
- body measurement (biology)
- body size (biology)
- body volume (biology)
- bone demineralization
- bone mineral content
- botany
- carbon cycle
- cells (biology)
- complement (biology)
- cytogenesis
- cytology
- differentiation (biology)
- ecology
- embryology
- evolution (development)
- exobiology
- fatigue (biology)
- flight stress (biology)
- genetic engineering
- genetics
- habitats
- immunology
- implanted electrodes (biology)
- interferon
- life sciences
- marine biology
- medical science
- microbiology
- molecular biology
- morphology
- nitrogen metabolism
- paleobiology
- protobiology
- radiobiology
- relative biological effectiveness (RBE)
- reproduction (biology)
- rhythm (biology)
- ∞ science
- skin temperature (biology)
- tissues (biology)
- veterinary medicine

bioluminescence

- GS emission
- . light emission
- . . luminescence
- . . . **bioluminescence**
- RT ∞ biology
- luminescent proteins
- phosphorescence

biomagnetism

DEF Magnetic fields surrounding parts or the whole of a living biological system; also, the effects of magnetism on parts or the whole of a biological entity.

GS magnetic fields
 . **biomagnetism**
 magnetic properties
 . **biomagnetism**
 RT bioelectricity
 ∞ biology
 biophysics
 electromagnetic fields
 electromagnetic interactions
 radiobiology

biomarkers

(added March 2002)

DEF Any measurable feature from which one can infer a particular environment-induced change in a biological system, detect the presence of a disease, or infer the presence of life in a particular environment.

UF *biological markers*
clinical markers

RT bioassay
 biochemistry
 biogeny
 biogeochemistry
 biometrics
 chemical indicators
 diagnosis
 environmental monitoring
 exobiology
 extraterrestrial life
 life detectors
 ∞ markers
 signatures
 toxicology

biomass

DEF The dry weight of living matter in a given area expressed in terms of mass or weight per unit of volume or area.

GS weight (mass)
 . **biomass**

RT animals
 ∞ biology
 carbon cycle
 ∞ density
 organisms
 plants (botany)
 populations
 silviculture
 ∞ weight

biomass burning

(added December 1999)

DEF Burning of vegetation in forests, grasslands, and agricultural lands usually carried out to clear the land and change its use; a significant contributor to the global budgets of many radiatively and chemically active gases and particulates in the atmosphere.

GS combustion
 . **biomass burning**

RT air pollution
 climate change
 combustion products
 contaminants
 deforestation
 environment pollution
 forest fires
 man environment interactions
 smoke

biomass energy production

GS energy conversion
 . **biomass energy production**

RT bioconversion
 ∞ biology
 bioreactors
 ∞ crops
 ∞ energy sources
 energy technology
 hydrocarbon fuel production
 manures
 methanation
 renewable energy
 vegetation

waste utilization

biomechanics

USE **biodynamics**

biomedical data

RT aerospace medicine
 biological effects
 ∞ biology
 biometrics
 body measurement (biology)
 cardiograms
 ∞ data
 heart rate
 IMLMS

Biomedical Experiment Scientific Satellite

USE **BESS (satellite)**

biometeorology

UF *bioclimatology*
 GS meteorology
 . **biometeorology**
 RT ∞ biology
 coastal ecology
 coastal plains
 ecology
 microclimatology
 nightglow
 phenology

biometrics

GS bioengineering
 . **biometrics**
 . . body measurement (biology)
 . . . anthropometry
 . . . electroplethysmography
 . . . cardiography
 . . . ballistocardiography
 . . . electrocardiography
 . . . magnetocardiography
 . . . phonocardiography
 . . . echocardiography
 . . . seismocardiography
 . . . vectorcardiography
 . . . echoencephalography
 . . . electroencephalography
 . . . electromyography
 . . . electronystagmography
 . . . electroretinography
 . . . plethysmography
 . . . electroplethysmography
 . . . radiocardiography
 RT bioinstrumentation
 ∞ biology
 biomarkers
 biomedical data
 bone mineral content
 ∞ engineering
 Orbiting Frog Otolith
 pupillometry
 statistical analysis
 ∞ statistics

biomimetics

(added October 2000)

DEF The study of biological systems as models for the development of synthetic materials, devices, sensors, and processes.

RT biochemistry
 bioengineering
 biological models (mathematics)
 ∞ biology
 bionics
 cybernetics
 smart materials
 smart structures

bionics

DEF The study of systems, particularly electronic systems, which function after the manner characteristic of, or resembling living systems. Used for biological models and biosimulation.

UF *biological models*
biosimulation
 RT artificial intelligence
 automata theory
 biocontrol systems
 bioengineering
 bioinstrumentation

biological models (mathematics)
 ∞ biology
 biomimetics
 control systems design
 cybernetics
 human factors engineering
 man machine systems
 neuristors
 rheoelectrical simulation
 robots
 simulation
 syncoders
 systems engineering

biopaks

GS support systems
 . life support systems
 . . **biopaks**
 RT bioengineering
 biosatellites
 ∞ containers
 enclosures
 portable life support systems
 preserving

biophysics

GS **biophysics**
 . health physics
 . . public health
 RT biodynamics
 bioengineering
 ∞ biology
 biomagnetism
 ∞ physics
 ∞ science

biopolymer denaturation

UF *denaturation (biopolymers)*
nucleic acid denaturation
protein denaturation
 RT biopolymers
 molecular structure
 nucleic acids
 polymer chemistry
 proteins

biopolymers

GS **biopolymers**
 . nucleic acids
 . . deoxyribonucleic acid
 . . . complementary DNA
 . . . ribonucleic acids
 . . proteins
 . . . albumins
 . . . aspartates
 . . . calmodulin
 . . . elastin
 . . . enzymes
 aldolase
 amidase
 carbonic anhydrase
 catalase
 cholinesterase
 cytochromes
 dehydrogenases
 hexokinase
 lysozyme
 nuclease
 oxidase
 papain
 pepsin
 phosphatases
 protease
 renin
 thrombin
 trypsin
 . . . fibrin
 . . . globulins
 . . . fibrinogen
 . . . gamma globulin
 . . . hemoglobin
 . . . carboxyhemoglobin
 . . . oxyhemoglobin
 . . . keratins
 . . . lipoproteins
 . . . luminescent proteins
 . . . melanin
 . . . myoglobin
 . . . myosins
 . . . osteocalcin

bioprocessing

- . . phytochrome
- . . proteinoids
- . . prothrombin
- . . protoproteins
- . . tumor suppressor proteins
- . lignin
- . polysaccharides
- . . cellulose
- . . . Fortisan (trademark)
- . . chitin
- . . dextrans
- . . glycogens
- . . starches
- . oligonucleotides

RT biopolymer denaturation
nucleotides
∞ polymers
polynucleotides
polypeptides

bioprocessing

RT aerospace environments
bioconversion
biotechnology
electrophoresis
microgravity
∞ microgravity applications
pharmacology
space processing
spaceborne experiments
weightlessness

bioreactors

DEF Biological processors to remove or produce certain chemicals or a particular chemical.

RT ∞ biology
biomass energy production
biotechnology
clinostats
tissue engineering

bioregeneration

USE **regeneration (physiology)**

bioregenerative life support systems

USE **closed ecological systems**

biorhythms

USE **rhythm (biology)**

BIOS project

GS programs
. projects
. . **BIOS project**

Biosatellite 1

GS artificial satellites
. biosatellites
. . **Biosatellite 1**
RT bioastronautics

Biosatellite 2

GS artificial satellites
. biosatellites
. . **Biosatellite 2**
RT bioastronautics

Biosatellite 3

GS artificial satellites
. biosatellites
. . **Biosatellite 3**
RT ∞ astronautics
bioastronautics

biosatellites

SN (EXCLUDES MANNED SPACECRAFT)

DEF Artificial satellites which are specifically designed to contain and support man, animals, or other living material in a reasonably normal manner for an adequate period of time and which, particularly for man and animals, possesses the proper means for safe return to the Earth.

GS artificial satellites
. **biosatellites**
. . Biosatellite 1
. . Biosatellite 2
. . Biosatellite 3
. . Orbiting Frog Otolith
. . Sputnik 2 satellite

RT aerospace environments
∞ biology
biopaks
environmental control
extraterrestrial life
life detectors
life support systems
manned spacecraft
space capsules
∞ spacecraft

biosensors

USE **bioinstrumentation**

biosimulation

USE **bionics**

biosphere

DEF That transition zone between Earth and atmosphere within which most forms of terrestrial life are commonly found; the outer portion of the geosphere and inner or lower portion of the atmosphere.

RT ∞ biology
chemosphere
Earth hydrosphere
free atmosphere
Gaia hypothesis
homosphere
International Geosphere-Biosphere program
lower atmosphere

biosynthesis

RT biological diversity
∞ biology
chemical reactions
genetic engineering
metabolites
prostaglandins
∞ synthesis
synthetic food

Biot method

RT calculus of variations
∞ methodology

Biot number

DEF A standard heat transfer dimensionless number.

GS dimensionless numbers
. **Biot number**
ratios
. **Biot number**
RT heat transfer
∞ numbers

biotechnology

DEF The application of engineering and technological principles to the life sciences.

GS technologies
. **biotechnology**
. . tissue engineering
RT artificial cardiac pacemaker
artificial heart valves
∞ biology
bioprocessing
bioreactors
blood pumps
clone cells
cloning (biology)
cultured cells
heart implantation
in vitro methods and tests
in vivo methods and tests
man machine systems
stem cells

biotelemetry

DEF The remote sensing and evaluation of life functions, as, e.g., in spacecraft and artificial satellites. Used for physiological telemetry.

UF *physiological telemetry*
GS bioengineering
. bioinstrumentation
. . **biotelemetry**
telecommunication
. telemetry
. . **biotelemetry**
transmission

. signal transmission

. . telemetry
. . . **biotelemetry**

RT ∞ biology
communication equipment
∞ engineering
Orbiting Frog Otolith
pneumography
telemedicine
wildlife radiolocation

biotin

UF *vitamin B complex*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **biotin**
vitamins
. **biotin**
RT drugs

biotite

DEF A widely distributed and important rock-forming mineral of the mica group. Used for kimberlite.

UF *kimberlite*
GS minerals
. mica
. . **biotite**

Biot-Savart law

(added August 1998)

DEF Law describing the intensity of a magnetic field produced by a current carrying wire. Also applied in fluid dynamics to describe the flow-velocity field induced by a vortex.

GS laws
. **Biot-Savart law**
RT electromagnetism
flow velocity
magnetic fields
Maxwell equation
vortices

biphase shift keying

USE **binary phase shift keying**

biplanes

GS **biplanes**
. AN-2 aircraft
RT ∞ aircraft
dual wing configurations
light aircraft
monoplanes
tandem wing aircraft
utility aircraft

bipolar transistors

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . **bipolar transistors**
RT bipolarity
carrier injection
epitaxy
majority carriers
minority carriers
n-p-n junctions
semiconductors (materials)

bipolarity

DEF Capability of assuming negative or positive values.

RT bipolar transistors
∞ polarization

bipropellants

USE **liquid rocket propellants**

bird-aircraft collisions

GS accidents
. aircraft accidents
. . **bird-aircraft collisions**
collisions
. midair collisions
. . **bird-aircraft collisions**
RT ∞ aircraft
aircraft hazards
birds

- flight hazards
ingestion (engines)
- birds**
- GS animals
. vertebrates
. . . **birds**
. . . chickens
. . . pigeons
. . . turkeys
. . . waterfowl
- RT aircraft hazards
bird-aircraft collisions
Earth resources
endangered species
flight hazards
homeotherms
plumage
wildlife
- birefringence**
- DEF A double-refraction phenomenon in which an unpolarized beam of light is divided into two beams with different directions and relative velocities of propagation. The amount of energy transmitted along an optical path through a crystal which exhibits birefringence and is a function of crystalline orientation. Used for Pockels effect.
- UF *Pockels effect*
- GS electromagnetic properties
. optical properties
. . . **birefringence**
. . . Kerr electrooptical effect
refraction
. **birefringence**
. . . Kerr electrooptical effect
- RT anisotropic media
anisotropy
birefringent coatings
birefringent filters
calcite
electro-optics
Moire effects
nonlinear optics
photoelasticity
polarization (waves)
reflectance
refractivity
temperature inversions
Voigt effect
- birefringent coatings**
- GS coatings
. optical coatings
. . . **birefringent coatings**
- RT anisotropic media
birefringence
birefringent filters
refractivity
- birefringent filters**
- GS electromagnetic wave filters
. optical filters
. . . **birefringent filters**
- RT birefringence
birefringent coatings
 ∞ filters
optical properties
refractivity
- Birkeland currents**
(added May 1989)
- GS electric current
. field aligned currents
. . . **Birkeland currents**
. . . ionospheric currents
. . . **Birkeland currents**
electricity
. atmospheric electricity
. . . ionospheric currents
. . . **Birkeland currents**
- RT auroral electrojets
auroral zones
electrojets
geomagnetism
ionospheric disturbances
magnetic disturbances
magnetic storms
- Pedersen currents
- birth**
- RT fertilization
fetuses
pregnancy
reproduction (biology)
reproductive systems
- bismaleimide**
- GS nitrogen compounds
. amides
. . . polyimides
. . . **bismaleimide**
. imides
. . . **bismaleimide**
- RT matrix materials
polyimide resins
polymer matrix composites
resin matrix composites
resins
- bismuth**
- GS chemical elements
. **bismuth**
. . . bismuth isotopes
metals
. **bismuth**
. . . bismuth isotopes
- bismuth 205*
USE **bismuth isotopes**
- bismuth alloys**
- GS alloys
. **bismuth alloys**
- RT antimony alloys
eutectic alloys
magnesium alloys
tin alloys
- bismuth compounds**
- GS **bismuth compounds**
. bismuth oxides
. bismuth sulfides
. bismuth tellurides
- RT ∞ chemical compounds
 ∞ Group 5A compounds
 ∞ metal compounds
- bismuth isotopes**
- UF *bismuth 205*
- GS chemical elements
. bismuth
. . . **bismuth isotopes**
. nuclides
. . . isotopes
. . . . **bismuth isotopes**
metals
. bismuth
. . . **bismuth isotopes**
- bismuth oxides**
- GS bismuth compounds
. **bismuth oxides**
chalcogenides
. oxides
. . . metal oxides
. . . . **bismuth oxides**
- RT BSCCO superconductors
- bismuth sulfides**
- GS bismuth compounds
. **bismuth sulfides**
chalcogenides
. sulfides
. . . inorganic sulfides
. . . . **bismuth sulfides**
sulfur compounds
. sulfides
. . . inorganic sulfides
. . . . **bismuth sulfides**
- bismuth tellurides**
- GS bismuth compounds
. **bismuth tellurides**
chalcogenides
. tellurides
. . . **bismuth tellurides**
tellurium compounds
- . tellurides
. . . **bismuth tellurides**
- bisphenols**
- GS hydroxyl compounds
. alcohols
. . . phenols
. . . . **bisphenols**
- Bi-Sr-Ca-Cu-O superconductors*
USE **BSCCO superconductors**
- bistable amplifiers*
USE **flip-flops**
- bistable circuits**
- GS circuits
. **bistable circuits**
. . . flip-flops
- RT digital techniques
multivibrators
trigger circuits
- bistatic radar*
USE **multistatic radar**
- bistatic reflectivity**
- DEF The characteristic of a reflector which reflects energy along a line, or lines, different from, or in addition to, that of the incident ray.
- RT brightness
incident radiation
reflectance
scattering
- bit error rate**
- DEF The number of erroneous bits or characters received from some fixed number of bits transmitted.
- GS rates (per time)
. **bit error rate**
- RT binary codes
binary data
binary digits
bit synchronization
bits
error analysis
error correcting codes
error detection codes
error signals
pulse communication
Reed-Solomon codes
signal to noise ratios
transmission efficiency
transmission rate (communications)
- bit synchronization**
- GS synchronism
. **bit synchronization**
- RT bit error rate
frequency synchronization
- biternary code**
- RT ∞ codes
differential pulse code modulation
digital systems
pulse code modulation
- bits**
- RT binary digits
bit error rate
drill bits
- bitumens**
- DEF Dark-colored (solid, semisolid, or viscous) cementitious substances, natural or manufactured, composed principally of high molecular weight hydrocarbons, of which asphalts, tars, pitches, and asphaltenes are typical.
- RT carbon
coal
coke
 ∞ construction materials
lignite
 ∞ materials
solvent refined coal
- bivariate analysis**
- GS statistical analysis
. variance (statistics)
. . . multivariate statistical analysis

BL Lacertae objects

. . . **bivariate analysis**

RT correlation

BL Lacertae objects

DEF One of a class of astronomical objects exhibiting: (1) rapid variations in intensity at radio, infrared, and optical wavelengths; (2) energy distributions largely at infrared wavelengths; (3) absence of discrete features in low dispersion spectra; and (4) strong and rapidly varying polarization at visual and radio wavelengths.

GS celestial bodies
. blazars

. . . **BL Lacertae objects**

RT extragalactic radio sources
galaxies
irregular galaxies
luminous intensity
polarization (waves)
radiant flux density
radio sources (astronomy)

black and white photography

GS imagery
. photography
. . . **black and white photography**

RT all sky photography
astronomical photography
autoradiography
chronophotography
cinematography
cloud photography
color photography
electron photography
electro-optical photography
frame photography
infrared photography
lunar photography
photomicrography
photoreconnaissance
radar photography
rocket-borne photography
satellite-borne photography
Schlieren photography
shadowgraph photography
spaceborne photography
spectroheliographs
spectrophotography
stereophotography
ultraviolet photometry
urography

Black Arrow launch vehicle

USE **Black Knight rocket vehicle**

black body radiation

DEF The electromagnetic radiation emitted by an ideal black body; it is the theoretical maximum amount of radiant energy of all wavelengths which can be emitted by a body at a given temperature.

GS electromagnetic radiation
. thermal radiation

. . . **black body radiation**

RT brightness distribution
brightness temperature
emissivity
heat radiators
hohlraums
infrared radiation
Kirchhoff law of radiation
light (visible radiation)
nongray atmospheres
nongray gas
Plancks constant
radiance
∞ radiation
sunlight
ultraviolet radiation

Black Brant 1 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . Black Brant sounding rockets
. . . **Black Brant 1 sounding rocket**
. sounding rockets
. . . Black Brant sounding rockets
. . . **Black Brant 1 sounding rocket**

RT solid propellant rocket engines

Black Brant 2 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . Black Brant sounding rockets
. . . **Black Brant 2 sounding rocket**
. sounding rockets
. . . Black Brant sounding rockets
. . . **Black Brant 2 sounding rocket**
RT solid propellant rocket engines

Black Brant 3 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . Black Brant sounding rockets
. . . **Black Brant 3 sounding rocket**
. sounding rockets
. . . Black Brant sounding rockets
. . . **Black Brant 3 sounding rocket**
RT solid propellant rocket engines

Black Brant 4 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . Black Brant sounding rockets
. . . **Black Brant 4 sounding rocket**
. sounding rockets
. . . Black Brant sounding rockets
. . . **Black Brant 4 sounding rocket**
RT solid propellant rocket engines

Black Brant 5 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . Black Brant sounding rockets
. . . **Black Brant 5 sounding rocket**
. sounding rockets
. . . Black Brant sounding rockets
. . . **Black Brant 5 sounding rocket**
RT solid propellant rocket engines

Black Brant sounding rockets

GS rocket vehicles
. single stage rocket vehicles
. . . **Black Brant sounding rockets**
. . . Black Brant 1 sounding rocket
. . . Black Brant 2 sounding rocket
. . . Black Brant 3 sounding rocket
. . . Black Brant 4 sounding rocket
. . . Black Brant 5 sounding rocket
. sounding rockets
. . . **Black Brant sounding rockets**
. . . Black Brant 1 sounding rocket
. . . Black Brant 2 sounding rocket
. . . Black Brant 3 sounding rocket
. . . Black Brant 4 sounding rocket
. . . Black Brant 5 sounding rocket
RT solid propellant rocket engines

Black Hawk assault helicopter

USE **H-60 Helicopter**

Black Hills (SD-WY)

GS landforms
. mountains
. . . **Black Hills (SD-WY)**
RT South Dakota
Wyoming

black holes (astronomy)

GS celestial bodies
. stars
. . . **black holes (astronomy)**
RT accretion disks
degenerate matter
event horizon
gravitational collapse
gravitational lenses
massive stars
naked singularities
Reissner-Nordstrom solution
supernova remnants
white holes (astronomy)
x ray binaries

Black Knight rocket vehicle

UF *Black Arrow launch vehicle*
GS rocket vehicles
. multistage rocket vehicles

. . . **Black Knight rocket vehicle**

. single stage rocket vehicles
. . . **Black Knight rocket vehicle**
RT liquid propellant rocket engines

Black Sea

GS seas
. **Black Sea**
RT Bulgaria
Romania
Turkey
U.S.S.R.

black smokers (oceanography)
(added April 2005)

USE **submarine hydrothermal vents**

Blackbird aircraft

USE **SR-71 aircraft**

Blackburn B-103 aircraft

USE **Buccaneer aircraft**

∞ blackout

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT blackout (physiology)
blackout (propagation)

blackout (physiology)

GS syncope
. **blackout (physiology)**
. . . blackout prevention
unconsciousness
. **blackout (physiology)**
. . . blackout prevention
RT acceleration tolerance
∞ blackout
∞ coma

blackout (propagation)

UF *ionospheric blackout*
GS electromagnetic interference
. radio frequency interference
. . . **blackout (propagation)**
. . . polar radio blackout
RT atmospheric
∞ blackout
electromagnetic fields
electromagnetic noise
ionospheric disturbances
plasma sheaths
plasmas (physics)
radiation effects
radio communication
reentry communication
reentry effects
solar activity effects
x rays

blackout prevention

GS human performance
. astronaut performance
. . . **blackout prevention**
. pilot performance
. . . **blackout prevention**
syncope
. blackout (physiology)
. . . **blackout prevention**
unconsciousness
. blackout (physiology)
. . . **blackout prevention**
RT acceleration tolerance
∞ coma
weightlessness

bladder

GS anatomy
. genitourinary system
. . . **bladder**
RT prostate gland

urology

bladders (mechanics)
USE **diaphragms (mechanics)**

blade slap
USE **blade-vortex interaction**

blade slap noise
DEF Impulsive noise (short high pressure sound waves) of rotating blades, primarily helicopter blades. Used for helicopter impulsive noise.

UF *helicopter impulsive noise*
GS elastic waves
. sound waves
. . noise (sound)
. . . aircraft noise
. . . . **blade slap noise**
. . . flow noise
. . . . aerodynamic noise
. **blade slap noise**

RT blade tips
blade-vortex interaction
Flowcs Williams-Hawkings equation
helicopters
propeller noise

blade tips

GS tips
. **blade tips**
RT airfoil profiles
blade slap noise
blade-vortex interaction
propeller blades
rotary wings
rotor blades (turbomachinery)
wing tips

∞ **blades**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Arms of propeller and rotating wings. Specifically, restrictive, those parts of propellers or of rotating wings from the shank outward, i.e., those parts having efficient airfoil shapes and that cleave the air. Vanes such as rotating vanes or stationary vanes in rotary air compressors, or vanes of turbine wheels.

RT airfoils
blades (cutters)
compressor blades
fins
hydrofoils
propeller blades
rims
rotary wings
rotor blades (turbomachinery)
stator blades
turbine blades
turbomachine blades
vanes

blades (cutters)

GS cutters
. **blades (cutters)**
. . razor blades
RT ∞ blades

blade-vortex interaction

UF *blade slap*
vortex-blade interaction
RT airfoils
blade slap noise
blade tips
helicopters
interactional aerodynamics
∞ interactions
rotary wings
vortices
wing tip vortices

∞ **blankets**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT bedding equipment
blankets (fission reactors)
blankets (fusion reactors)
cloud cover

controlled atmospheres
solar blankets

blankets (fission reactors)

DEF Damper materials for fission reactors.
RT ∞ blankets
∞ dampers
fission
reactor design
reactor materials

blankets (fusion reactors)

DEF Damper materials for fusion reactors.
RT ∞ blankets
fusion reactors
limiters (fusion reactors)
moderators
reactor design
reactor materials

∞ **blanking**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT blanking (cutting)
forming techniques
stamping

blanking (cutting)

GS cutting
. **blanking (cutting)**
forming techniques
. pressing (forming)
. . **blanking (cutting)**
RT ∞ blanking
laser cutting
shearing
stamping

blanks

RT ammunition
briquets
forms (paper)
preforms

Blasius equation

GS analysis (mathematics)
. real variables
. . differential equations
. . . **Blasius equation**
flow equations
. boundary layer equations
. . **Blasius equation**
RT boundary layer flow
∞ equations
Falkner-Skan equation
flat plates
Prandtl-Meyer expansion

Blasius flow

GS fluid flow
. laminar flow
. . **Blasius flow**
. . uniform flow
. . . **Blasius flow**
RT flat plates
head flow
Tollmien-Schlichting waves
turbulent flow
two dimensional flow
wedge flow

blast deflectors

DEF Devices used to divert the exhaust of a rocket fired from a vertical position.

GS deflectors
. **blast deflectors**
RT baffles
diverters
flame deflectors
shielding

blast loads

GS aerodynamic forces
. aerodynamic loads
. . **blast loads**
loads (forces)
. dynamic loads
. . aerodynamic loads
. . . **blast loads**
. . transient loads

. . . shock loads
. . . . **blast loads**
RT aerial explosions
dynamic pressure
explosions
gust loads
impact loads
overpressure
pressure
pressure pulses
Riemann waves
shock waves
wave resistance

blastoff

USE **rocket launching**

∞ **blasts**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT exhaust gases
explosions
jet blast effects
shock waves
sound waves

Blattidae

USE **cockroaches**

blazars

(added December 1988)

DEF Strongly optical polarized active galactic nuclei objects exhibiting BL Lacertae-like and quasar-like characteristics.

GS celestial bodies
. **blazars**
. . BL Lacertae objects
RT accretion disks
active galactic nuclei
active galaxies
disk galaxies
extragalactic radio sources
infrared astronomy
quasars
radio galaxies
radio sources (astronomy)
Seyfert galaxies

bleaching

RT chlorination
cleaning
fading

∞ **bleeding**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT boundary layer control
fluid mechanics
hemorrhages
pressure reduction

bleed-off

USE **pressure reduction**

blended-wing-body configurations

(added April 2001)

DEF Flight vehicle configurations that maximize overall efficiency by integrating the engines, wings, and the body into a single lifting surface. Sometimes referred to as flying-wing configurations.

UF *blended-wing-fuselage*
BWB configurations

flying wing configurations
GS aerodynamic configurations
. body-wing configurations
. . **blended-wing-body configurations**

RT aircraft configurations
aircraft design
SR-71 aircraft

blight

tailless aircraft

blended-wing-fuselage
(added April 2001)

USE **blended-wing-body configurations**

blends

USE **mixtures**

blight

GS plant diseases

. **blight**

RT

alfalfa
bacteria
barley
botany
citrus trees
corn
crop growth
crop vigor
fungi
orchards
parasites
parasitic diseases
plants (botany)
rhizopus
rust fungi
vineyards

blind landing

GS landing

. **blind landing**

RT

aircraft landing
approach indicators
automatic landing control
instrument approach
instrument flight rules
instrument landing systems
landing instruments
night flights (aircraft)

blindness

GS **blindness**

. flash blindness

RT

braille
disabilities
eye diseases
optometry
vision

blinds

RT shielding

∞ shutters

blinking

RT astronomical photometry
display devices
eye movements
visual perception

∞ blisters

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED—CONSULT THE TERMS
LISTED BELOW)

RT

infectious diseases
injuries
mucocoeles
protuberances
rupturing
skin (anatomy)
viruses

Bloch band

GS energy bands

. **Bloch band**

RT ∞

bands
superconductivity

block copolymers

(added January 1990)

GS copolymers

. **block copolymers**

RT

copolymerization
micelles
polybutadiene
∞ polymers
polystyrene

block diagrams

GS diagrams

. **block diagrams**

RT charts

computer programming
computer programs
flow charts
research management
systems analysis

Block Island Sound (RI)

GS sounds (topographic features)

. **Block Island Sound (RI)**

RT

Atlantic Ocean
Rhode Island

blocking

UF *obstructing*

RT ∞

arresters
closing
closures
constraints
constrictions
containment
plugging
plugs
prevention
retarders (devices)
retarding
sealing
seals (stoppers)
stopping

blocks

RT cubes (mathematics)

pulleys
slabs

bleoedite

DEF A mineral consisting of hydrous sodium magnesium sulfate that is colorless. Also known as astrakanite or astrochanite.

GS minerals

. **bleoedite**

RT

magnesium sulfates
sodium compounds
sulfur compounds

blood

GS body fluids

. **blood**

. . fibrin
. . fibrinogen
. . thrombin
. . thromboplastin

RT

anemias
biocompatibility
blood cell count
blood cells
blood circulation
blood coagulation
blood flow
blood groups
blood plasma
blood pressure
blood pumps
blood vessels
blood volume
blood-brain barrier
capillaries (anatomy)
carboxyhemoglobin test
cardiovascular system
coagulation
heart
hematocrit
hematopoiesis
hemoglobin
hemorrhages
hypercapnia
hypocapnia
oximetry
Rhesus factor
transfusion

blood cell count

(added August 2004)

DEF The number of leukocytes and erythrocytes per unit volume in a sample of venous blood. A complete blood count (CBC) also includes measurement of the hemoglobin; hematocrit, and erythrocyte indices.

RT

anemias
blood

blood cells
blood volume
cytology
erythrocytes
hematocrit
hematocrit ratio
hematology
hematopoiesis
hemoglobin
leukocytes
lymphocytes
monocytes
platelets

blood cells

UF *corpuscles (blood)*

GS cells (biology)

. **blood cells**

. . erythrocytes
. . . reticulocytes
. . hemocytes
. . leukocytes
. . . eosinophils
. . . lymphocytes
. . . monocytes
. . . neutrophils

RT

anemias
blood
blood cell count
blood plasma
hematopoiesis
hematopoietic system
hemoglobin

blood circulation

GS circulation

. **blood circulation**

. . brain circulation
. . coronary circulation
. . intracranial circulation
. . ocular circulation
. . peripheral circulation
. . pulmonary circulation

RT

artificial cardiac pacemaker
artificial heart valves
blood
blood-brain barrier
carboxyhemoglobin
circulatory system
cyanosis
diastole
electroplethysmography
heart conduction system
heart function
heart implantation
hematocrit
hemodynamic responses
hemodynamics
hypervolemia
hypovolemia
intravascular system
ischemia
phonoarteriography
physiology
rheoencephalography
rheometers
tourniquets
vasodilator agents

blood coagulation

GS coagulation

. **blood coagulation**

RT

blood
clotting
fibrin
hemostatics
myocardial infarction
platelets
thrombin
thrombocytes
thromboplastin
thrombosis

blood flow

GS fluid flow

. **blood flow**

RT

blood
capillary flow
diastole
hematocrit

- hemoperfusion
- systole
- tourniquets
- blood groups**
 - RT blood
 - platelets
- blood plasma**
 - RT blood
 - blood cells
 - body fluids
 - electrolyte metabolism
 - hematocrit
- blood pressure**
 - GS pressure
 - . **blood pressure**
 - . . diastolic pressure
 - . . hypertension
 - . . hypotension
 - . . lower body negative pressure
 - . . systolic pressure
 - RT baroreflexes
 - biofeedback
 - blood
 - diastole
 - heart function
 - hemodynamic responses
 - hemoperfusion
 - manometers
 - ophthalmodynamometry
 - orthostatic tolerance
 - sphygmography
 - systole
 - ∞ tension
- blood pumps**
 - GS medical equipment
 - . **blood pumps**
 - pumps
 - . **blood pumps**
 - RT artificial heart valves
 - biotechnology
 - blood
 - circulatory system
 - heart
 - pulmonary circulation
- blood serum**
 - (added April 2004)
 - DEF The clear portion of blood that is left after blood coagulation to remove blood cells and clotting proteins.
 - GS serums
 - . **blood serum**
- blood vessels**
 - GS anatomy
 - . circulatory system
 - . . cardiovascular system
 - . . . **blood vessels**
 - arteries
 - aorta
 - arterioles
 - capillaries (anatomy)
 - glomerulus
 - veins
 - RT angiogenesis
 - bifurcation (biology)
 - blood
 - carotid sinus body
 - carotid sinus reflex
 - catheterization
 - embolisms
 - endothelium
 - fat embolisms
 - vasoconstriction
 - vasodilation
 - vasodilator agents
 - ∞ vessels
- blood volume**
 - RT blood
 - blood cell count
 - cardiac output
 - cardiovascular system
 - chronic conditions
 - clinical medicine
 - hematocrit
- hematopoietic system
- hemodynamics
- hypovolemia
- hypovolemia
- stroke volume
- blood-brain barrier**
 - DEF A mechanism which maintains the constancy of the neurons in the central nervous system by preventing certain substances from leaving the bloodstream and entering the neural tissue.
 - RT ∞ barriers
 - blood
 - blood circulation
 - central nervous system
 - neurons
- blowdown wind tunnels**
 - GS test facilities
 - . wind tunnels
 - . . **blowdown wind tunnels**
 - RT hotshot wind tunnels
 - hypersonic wind tunnels
 - hypervelocity wind tunnels
 - low density research
 - low speed wind tunnels
 - subsonic wind tunnels
 - supersonic wind tunnels
 - transonic wind tunnels
- blowers**
 - RT air conditioning
 - air conditioning equipment
 - air ducts
 - blowing
 - centrifugal compressors
 - compressors
 - cooling systems
 - ducted fans
 - exhaust systems
 - ∞ fans
 - impellers
 - injectors
 - materials handling
 - mixers
 - ∞ nozzles
 - refrigerating machinery
 - sealing
 - sprayers
 - superchargers
 - turbomachinery
 - ventilation
 - ventilation fans
 - ventilators
- blowing**
 - GS **blowing**
 - . spanwise blowing
 - . tangential blowing
 - . . under surface blowing
 - . . . upper surface blowing
 - RT aeration
 - agitation
 - blowers
 - boundary layer control
 - circulation
 - circulation control airfoils
 - compressing
 - entrainment
 - exhausting
 - externally blown flaps
 - forced convection
 - injection
 - mixing
 - ∞ pumping
 - spraying
 - upper surface blown flaps
 - wind (meteorology)
- blown flaps*
 - USE **externally blown flaps**
- blowoff (combustion)*
 - USE **flameout**
- blowouts**
 - RT fatigue life
- tires
- Blue Goose missile**
 - GS decoys
 - . **Blue Goose missile**
 - missiles
 - . surface to air missiles
 - . . **Blue Goose missile**
 - RT booster rocket engines
 - countermeasures
 - J-85 engine
 - solid propellant rocket engines
- blue green algae**
 - UF *Cyanophyta*
 - GS plants (botany)
 - . algae
 - . . **blue green algae**
 - . . . anabaena
 - . . . Microcystis
 - . . . Nostoc
 - . thermophilic plants
 - . . **blue green algae**
 - . . . anabaena
 - . . . Microcystis
 - . . . Nostoc
- Blue Scout rocket vehicle**
 - GS launch vehicles
 - . **Blue Scout rocket vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **Blue Scout rocket vehicle**
 - RT Algol engine
 - solid propellant rocket engines
 - X-248 engine
 - X-254 engine
 - XM-33 engine
- blue shift**
 - (added February 2002)
 - DEF The displacement of observed spectral lines toward the shorter wavelengths of the blue end of the spectrum.
 - RT absorption spectra
 - astronomical spectroscopy
 - Doppler effect
 - Doppler-Fizeau effect
 - emission spectra
 - energy gaps (solid state)
 - photoluminescence
 - quantum wells
 - radial velocity
 - red shift
- blue stars**
 - DEF Stars of spectral type O, B, A, or F according to the Draper catalog.
 - GS celestial bodies
 - . stars
 - . . early stars
 - . . . hot stars
 - **blue stars**
 - RT A stars
 - B stars
 - F stars
 - O stars
- Blue Steel missile**
 - GS missiles
 - . **Blue Steel missile**
 - RT liquid propellant rocket engines
- Blue Streak launch vehicle**
 - GS launch vehicles
 - . **Blue Streak launch vehicle**
 - rocket vehicles
 - . **Blue Streak launch vehicle**
 - RT Eldo launch vehicle
 - liquid propellant rocket engines
- Blue Streak missile**
 - GS missiles
 - . ballistic missiles
 - . . intermediate range ballistic missiles
 - . . . **Blue Streak missile**
 - . . surface to surface missiles
 - . . intermediate range ballistic missiles
 - . . . **Blue Streak missile**
 - rocket vehicles

blueprints

. **Blue Streak missile**
RT liquid propellant rocket engines

blueprints

GS documents
. drawings
. . engineering drawings
. . . **blueprints**
RT layouts
reproduction (copying)

bluff bodies

DEF Bodies having a broad, flattened front, as in some reentry vehicles.
RT blunt bodies
∞ bodies
ducted bodies
forebodies
lifting bodies
reentry vehicles
Roshko prediction

bluffs (landforms)

USE **cliffs**

blunt bodies

RT aerodynamic configurations
aerodynamics
axisymmetric bodies
bluff bodies
∞ bodies
ducted bodies
forebodies
missile bodies
nose cones
power law bodies
stagnation point
symmetrical bodies

blunt leading edges

DEF The obtuse cross sections of certain front edges of airfoils or wings.

GS edges
. leading edges
. . **blunt leading edges**
RT airfoils
forebodies
trailing edges

blunt trailing edges

DEF The rounded or obtuse angled trailing edges of wings and/or control surfaces designed to enhance aerodynamic characteristics.

GS edges
. trailing edges
. . **blunt trailing edges**
RT airfoils
control surfaces
wings

blurring

RT aberration
resolution
spatial filtering

BMC

USE **bone mineral content**

BMEWS

USE **Ballistic Missile Early Warning System**

BO-105 helicopter

GS Bolkow aircraft
. **BO-105 helicopter**
passenger aircraft
. **BO-105 helicopter**
utility aircraft
. **BO-105 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **BO-105 helicopter**

boards (paper)

UF *fiberboard*
RT ∞ construction materials
paper (material)

papers

boats

GS surface vehicles
. **boats**
. . lifeboats
water vehicles
. **boats**
. . lifeboats
RT amphibious vehicles
harbors
inflatable structures
keels
∞ military vehicles
research vehicles
ships
underwater vehicles

boattails

DEF The rear portions of elongated bodies, as in rockets, having decreasing cross-sectional area toward the rear.

RT afterbodies
skirts
tail assemblies

BOD

USE **biochemical oxygen demand**

∞ bodies

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT afterbodies
axisymmetric bodies
bluff bodies
blunt bodies
bodies of revolution
celestial bodies
centerbodies
ducted bodies
elastic bodies
finned bodies
flexible bodies
foreign bodies
Herbig-Haro objects
human body
lenticular bodies
lifting bodies
maneuverable reentry bodies
missile bodies
platforms
plastic bodies
pyramidal bodies
reentry vehicles
rotating bodies
slender bodies
solids
streamlined bodies
symmetrical bodies
three dimensional bodies
towed bodies
two dimensional bodies

bodies of revolution

DEF Symmetrical bodies having the form described by rotating a plane curve about an axis in its plane.

GS symmetrical bodies
. **bodies of revolution**
. . conical bodies
. . . slender cones
. . cylindrical bodies
. . . rotating cylinders
. . parabolic bodies
. . power law bodies
. . spheres
. . . celestial sphere
. . . concentric spheres
. . . falling spheres
. . . Poincare spheres
. . . rotating spheres
. . toruses
RT aerodynamic configurations
aerodynamics
axes of rotation
axisymmetric bodies
∞ bodies
cones
disks (shapes)

ellipsoids
finned bodies
geometry
∞ hemispheres
hemispherical shells
ogives
∞ rings
spherical shells
streamlined bodies

body centered cubic lattices

UF *BCC lattices*
GS crystal lattices
. cubic lattices
. . **body centered cubic lattices**
RT close packed lattices
cluster variation method
crystals
face centered cubic lattices

body composition (biology)

GS composition (property)
. **body composition (biology)**
RT ∞ biology
chemical composition
exoskeletons

body fluids

GS **body fluids**
. blood
. . fibrin
. . fibrinogen
. . thrombin
. . thromboplastin
. cerebrospinal fluid
. endolymph
. lymph
. mucus
. saliva
. sweat
. urine
RT blood plasma
diuresis
edema
electrolyte metabolism
fluid shifts (biology)
∞ fluids
isotonicity
lysozyme
mineral metabolism
obesity
perspiration
secretions
water
water balance

body kinematics

GS kinematics
. **body kinematics**
RT acceleration (physics)
acceleration stresses (physiology)
kinetics
particle theory
velocity

body measurement (biology)

SN (LIMITED TO BIOLOGICAL APPLICATIONS--FOR MEASUREMENT OF NON-BIOLOGICAL BODIES USE SIZE DETERMINATION)
GS bioengineering
. biometrics
. . **body measurement (biology)**
. . . anthropometry
. . . electroplethysmography
RT ∞ biology
biomedical data
electrocardiography
electroencephalography
electrophysiology
∞ engineering
human body
human factors engineering
obesity
size determination
∞ sizing

body size (biology)

RT anthropometry
∞ biology

- obesity
- body sway test**
 GS physiological tests
 . **body sway test**
 RT ∞ equilibrium
 head down tilt
 vertical perception
 vestibular tests
- body temperature**
 SN (LIMITED TO TEMPERATURE OF BIOLOGICAL BODIES)
 GS temperature
 . **body temperature**
 RT cold tolerance
 fever
 heat acclimatization
 heat stroke
 heat tolerance
 homeostasis
 homeotherms
 humidity
 hyperthermia
 hypothermia
 perspiration
 poikilothermia
 shivering
 thermoreceptors
 thermoregulation
 vasoconstriction
 vasodilation
- body temperature (non-biological)*
 USE **temperature**
- body temperature regulation*
 USE **thermoregulation**
- body volume (biology)**
 GS volume
 . **body volume (biology)**
 RT ∞ biology
 obesity
- body weight**
 GS weight (mass)
 . **body weight**
 RT obesity
 weightlessness
- body-wing and tail configurations**
 UF *wing-body and tail configurations*
 GS aerodynamic configurations
 . **body-wing and tail configurations**
 RT ∞ configurations
 fuselages
 tail assemblies
 wings
- body-wing configurations**
 UF *wing-body configurations*
 GS aerodynamic configurations
 . **body-wing configurations**
 . . blended-wing-body configurations
 RT airfoils
 drooped airfoils
 GAW-2 airfoil
 wings
- Boeing 707 aircraft**
 GS Boeing aircraft
 . **Boeing 707 aircraft**
 commercial aircraft
 . **Boeing 707 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 707 aircraft**
 monoplanes
 . **Boeing 707 aircraft**
 passenger aircraft
 . **Boeing 707 aircraft**
 transport aircraft
 . **Boeing 707 aircraft**
 RT ∞ aircraft
- Boeing 717 aircraft**
 (added October 1998)
 GS Boeing aircraft
 . **Boeing 717 aircraft**
 commercial aircraft
- . **Boeing 717 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 717 aircraft**
 monoplanes
 . **Boeing 717 aircraft**
 passenger aircraft
 . **Boeing 717 aircraft**
 transport aircraft
 . **Boeing 717 aircraft**
 RT ∞ aircraft
- Boeing 720 aircraft**
 GS Boeing aircraft
 . **Boeing 720 aircraft**
 commercial aircraft
 . **Boeing 720 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 720 aircraft**
 monoplanes
 . **Boeing 720 aircraft**
 passenger aircraft
 . **Boeing 720 aircraft**
 transport aircraft
 . **Boeing 720 aircraft**
 RT ∞ aircraft
- Boeing 727 aircraft**
 GS Boeing aircraft
 . **Boeing 727 aircraft**
 commercial aircraft
 . **Boeing 727 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 727 aircraft**
 passenger aircraft
 . **Boeing 727 aircraft**
 transport aircraft
 . **Boeing 727 aircraft**
 RT ∞ aircraft
 cargo aircraft
- Boeing 733 aircraft**
 GS Boeing aircraft
 . **Boeing 733 aircraft**
 commercial aircraft
 . **Boeing 733 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 733 aircraft**
 monoplanes
 . **Boeing 733 aircraft**
 supersonic aircraft
 . **Boeing 733 aircraft**
 transport aircraft
 . **Boeing 733 aircraft**
 RT ∞ aircraft
 variable sweep wings
- Boeing 737 aircraft**
 GS Boeing aircraft
 . **Boeing 737 aircraft**
 commercial aircraft
 . **Boeing 737 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 737 aircraft**
 monoplanes
 . **Boeing 737 aircraft**
 passenger aircraft
 . **Boeing 737 aircraft**
 transport aircraft
 . **Boeing 737 aircraft**
 RT ∞ aircraft
 cargo aircraft
- Boeing 747 aircraft**
 GS Boeing aircraft
 . **Boeing 747 aircraft**
 commercial aircraft
 . **Boeing 747 aircraft**
 jet aircraft
 . **Boeing 747 aircraft**
 passenger aircraft
 . **Boeing 747 aircraft**
 transport aircraft
 . **Boeing 747 aircraft**
 RT ∞ aircraft
 SOFIA (airborne observatory)
- turbofan engines
 X-34 reusable launch vehicle
- Boeing 747B aircraft*
 USE **E-4A aircraft**
- Boeing 757 aircraft**
 DEF Boeing's twin turbofan short/medium range transport aircraft that made its first flight on February 19, 1982.
 GS Boeing aircraft
 . **Boeing 757 aircraft**
 commercial aircraft
 . **Boeing 757 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 757 aircraft**
 monoplanes
 . **Boeing 757 aircraft**
 passenger aircraft
 . **Boeing 757 aircraft**
 transport aircraft
 . **Boeing 757 aircraft**
 RT ∞ aircraft
- Boeing 767 aircraft**
 DEF Boeing's widebodied medium range commercial transport aircraft that made its first flight on September 26, 1981.
 GS Boeing aircraft
 . **Boeing 767 aircraft**
 commercial aircraft
 . **Boeing 767 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 767 aircraft**
 monoplanes
 . **Boeing 767 aircraft**
 passenger aircraft
 . **Boeing 767 aircraft**
 transport aircraft
 . **Boeing 767 aircraft**
 RT ∞ aircraft
 cargo aircraft
 turbofan engines
- Boeing 777 aircraft**
 (added September 1994)
 GS Boeing aircraft
 . **Boeing 777 aircraft**
 commercial aircraft
 . **Boeing 777 aircraft**
 jet aircraft
 . **Boeing 777 aircraft**
 passenger aircraft
 . **Boeing 777 aircraft**
 transport aircraft
 . **Boeing 777 aircraft**
 RT ∞ aircraft
- Boeing 2707 aircraft**
 GS Boeing aircraft
 . **Boeing 2707 aircraft**
 commercial aircraft
 . supersonic commercial air transport
 . . **Boeing 2707 aircraft**
 jet aircraft
 . **Boeing 2707 aircraft**
 passenger aircraft
 . **Boeing 2707 aircraft**
 supersonic aircraft
 . supersonic transports
 . . supersonic commercial air transport
 . . . **Boeing 2707 aircraft**
 transport aircraft
 . **Boeing 2707 aircraft**
 RT ∞ aircraft
- Boeing aircraft**
 UF *Vertol military helicopters*
 GS Boeing aircraft
 . B-47 aircraft
 . B-50 aircraft
 . B-52 aircraft
 . Boeing 707 aircraft
 . Boeing 717 aircraft
 . Boeing 720 aircraft
 . Boeing 727 aircraft
 . Boeing 733 aircraft

Bogoliubov theory

- . Boeing 737 aircraft
 - . Boeing 747 aircraft
 - . Boeing 757 aircraft
 - . Boeing 767 aircraft
 - . Boeing 777 aircraft
 - . Boeing 787 aircraft
 - . C-135 aircraft
 - . CH-21 helicopter
 - . CH-46 helicopter
 - . CH-47 helicopter
 - . CH-62 helicopter
 - . E-3A aircraft
 - . E-4A aircraft
 - . H-25 helicopter
 - . V-22 aircraft
 - . VZ-2 aircraft
 - . X-20 aircraft
 - . X-32 aircraft
- RT ∞ aircraft
- AWACS aircraft
 - McDonnell Douglas aircraft
 - X-45 aircraft
 - YC-14 aircraft

Bogoliubov theory

- RT BBGKY hierarchy
- ∞ theories

bogs

- USE marshlands

Bohr magneton

- DEF A constant equivalent to the magnetic moment of an electron.
- GS constants
- . **Bohr magneton**
- RT electrons
- magnetic moments

Bohr theory

- GS theoretical physics
- . quantum theory
 - . . **Bohr theory**
- RT electron transitions
- line spectra
- ∞ theories

bohrium

- (added May 1998)
- GS chemical elements
- . **bohrium**
- RT hassium
- seaborgium

boiler plate

- GS structural members
- . plates (structural members)
 - . . metal plates
 - . . . **boiler plate**
- RT thick walls

boilers

- UF *steam generators*
- GS heating equipment
- . **boilers**
- RT external combustion engines
- furnaces
- ∞ generators
- heat balance
- pressure vessels
- steam
- vaporizers
- waste energy utilization

boiling

- UF *ebullition*
- GS phase transformations
- . vaporizing
 - . . **boiling**
 - . . . film boiling
 - . . . nucleate boiling
 - Leidenfrost phenomenon
- RT effervescence
- evaporation
- evolution (liberation)
- heat transfer
- heating

boiling water reactors

- GS nuclear reactors

- . liquid cooled reactors
 - . . water cooled reactors
 - . . . **boiling water reactors**
 - experimental boiling water reactors
 - Halden Boiling Water Reactor
 - Los Alamos Water Boiler Reactor
 - Pathfinder nuclear reactor
 - Spert reactors
- RT nuclear power reactors
- nuclear research and test reactors

bolides

- DEF Brilliant meteors, especially ones which explode; detonating fireballs.
- GS celestial bodies
- . meteoroids
 - . . **bolides**
 - . . . Cyrillid meteoroids
- RT atmospheric entry
- atmospheric heating
- ∞ fireballs
- meteor trails
- meteorites
- meteoroid showers
- Pribram meteorite

Bolivia

- GS nations
- . **Bolivia**
- RT South America

Bolkow aircraft

- GS **Bolkow aircraft**
- . BO-105 helicopter
- RT ∞ aircraft

boll weevils

- GS animals
- . invertebrates
 - . . arthropods
 - . . . insects
 - Coleoptera
 - **boll weevils**
- RT bollworms
- cotton
- infestation

bollworms

- GS animals
- . invertebrates
 - . . arthropods
 - . . . insects
 - **bollworms**
- larvae
- . **bollworms**
- RT boll weevils
- corn
- cotton
- fruits
- infestation
- moths

bolograms

- USE **bolometers**

bolometers

- DEF Instruments which measure the intensity of radiant energy by employing thermally sensitive electrical resistors; a type of actinometer. Used for bolograms.
- UF *bolograms*
- GS measuring instruments
- . radiation measuring instruments
 - . . **bolometers**
- RT Dicke radiometers
- electrical measurement
- heat measurement
- infrared detectors
- photometers
- potentiometers (instruments)
- radiation pyrometers
- radiometers
- resistance thermometers
- temperature measurement
- temperature measuring instruments

- x ray detectors

bolted joints

- DEF Joints fastened with bolts. They are usually designed for heavy loads.
- GS joints (junctions)
- . **bolted joints**
- RT bolts
- lap joints
 - riveted joints
 - scarf joints

bolts

- GS fasteners
- . **bolts**
 - . . rock bolts
 - . . tiebolts
- RT anchors (fasteners)
- bolted joints
- couplings
- holders
- nuts (fasteners)
- screws
- studs (structural members)
- threads

Boltzmann distribution

- GS distribution (property)
- . **Boltzmann distribution**
- RT atmospheric density
- atmospheric diffusion
- kinetic theory
- statistical mechanics
- two fluid models

Boltzmann transport equation

- RT BBGKY hierarchy
- BGK model
- Burnett equations
- Chapman-Enskog theory
- ∞ equations
- Fokker-Planck equation
 - hydrodynamic equations
 - kinetic theory
 - particle diffusion
 - statistical mechanics
 - transport properties
 - transport theory

Boltzmann-Vlasov equation

- RT ∞ equations
- high temperature plasmas
 - Maxwell equation
 - partial differential equations
 - wave equations

Bolza problems

- RT optimization
- ∞ problems

BOMARC A missile

- GS missiles
- . antiaircraft missiles
 - . . BOMARC missiles
 - . . . **BOMARC A missile**
 - . surface to air missiles
 - . . BOMARC missiles
 - . . . **BOMARC A missile**
- RT liquid propellant rocket engines
- solid propellant rocket engines

BOMARC B missile

- GS missiles
- . antiaircraft missiles
 - . . BOMARC missiles
 - . . . **BOMARC B missile**
 - . surface to air missiles
 - . . BOMARC missiles
 - . . . **BOMARC B missile**
- RT liquid propellant rocket engines
- solid propellant rocket engines

BOMARC missiles

- GS missiles
- . antiaircraft missiles
 - . . **BOMARC missiles**
 - . . . BOMARC A missile
 - . . . BOMARC B missile
 - . surface to air missiles
 - . . **BOMARC missiles**

- . . . BOMARC A missile
- . . . BOMARC B missile
- bomb calorimeters**
 - GS measuring instruments
 - . calorimeters
 - . . **bomb calorimeters**
 - RT drop calorimeters
 - flame calorimeters
 - heat measurement
 - high temperature tests
 - temperature measuring instruments
- ∞ **bombardment**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT electron bombardment
 - hypervelocity projectiles
 - irradiation
 - meteoritic damage
 - sputtering
- bomber aircraft**
 - GS attack aircraft
 - . **bomber aircraft**
 - . . A-2 aircraft
 - . . A-3 aircraft
 - . . A-4 aircraft
 - . . A-5 aircraft
 - . . A-6 aircraft
 - . . B-1 aircraft
 - . . B-2 aircraft
 - . . B-26 aircraft
 - . . B-47 aircraft
 - . . B-50 aircraft
 - . . B-52 aircraft
 - . . B-57 aircraft
 - . . B-58 aircraft
 - . . B-66 aircraft
 - . . B-70 aircraft
 - . . F-111 aircraft
 - . . Shackleton bomber
 - . . Valiant aircraft
 - . . Victor MK-1 aircraft
 - . . Vulcan aircraft
 - RT ∞ aircraft
 - antisubmarine warfare aircraft
 - bombing equipment
 - F-117A aircraft
 - jet aircraft
 - ∞ military aircraft
 - ∞ military aviation
 - tanker aircraft
 - training aircraft
 - Vampire MK 35 aircraft
- bombing equipment**
 - GS onboard equipment
 - . aircraft equipment
 - . . **bombing equipment**
 - RT B-1 aircraft
 - bomber aircraft
 - bombs (ordnance)
 - ∞ equipment
 - fire control
- ∞ **bombs**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT bombs (ordnance)
 - precision guided projectiles
 - pressure gages
 - samplers
- bombs (ordnance)**
 - DEF Explosive devices designed to be detonated under specified conditions.
 - GS explosive devices
 - . **bombs (ordnance)**
 - RT ammunition
 - B-1 aircraft
 - bombing equipment
 - ∞ bombs
 - explosives
 - incendiary ammunition
 - missiles
 - nuclear weapons
 - projectiles
 - pyrotechnics
- shaped charges
- torpedoes
- warheads
- bombs (pressure gages)**
 - USE **pressure gages**
- bombs (samplers)**
 - USE **samplers**
- Bonanza aircraft**
 - USE **C-35 aircraft**
- bond graphs**
 - GS charts
 - . graphs (charts)
 - . . **bond graphs**
 - RT control systems design
 - differential equations
 - dynamic models
 - mathematical models
 - ∞ mathematics
 - simulation
 - systems analysis
 - systems engineering
- Bond number**
 - (added December 1999)
 - DEF Dimensionless number representing the ratio between gravitational force and the surface tension of a bubble, drop, or meniscus.
 - GS dimensionless numbers
 - . **Bond number**
 - RT drops (liquids)
 - gravitational effects
 - interfacial tension
 - menisci
- bonded joints**
 - (added March 1993)
 - UF *bondlines*
 - GS joints (junctions)
 - . **bonded joints**
 - RT adhesive bonding
 - bonding
 - rocket engine cases
 - rocket linings
 - scarf joints
 - soldered joints
 - solid propellant rocket engines
 - welded joints
- bonding**
 - DEF Specifically, a system of connections between all metal parts of an aircraft or other structure forming a continuous electrical unit and preventing jumping or arching of static electricity. Glueing or cementing together for structural strength.
 - GS **bonding**
 - . adhesive bonding
 - . agglutination
 - . ceramic bonding
 - . explosive welding
 - . inertia bonding
 - . metal bonding
 - . . metal-metal bonding
 - . reaction bonding
 - . resin bonding
 - RT adhesion
 - adhesion tests
 - beam leads
 - binding
 - bonded joints
 - cementation
 - chemical bonds
 - cohesion
 - cold welding
 - debonding (materials)
 - diffusion welding
 - ∞ joining
 - joints (junctions)
 - laminates
 - laser welding
 - sealing
 - soldering
 - superplastic forming
- welding
- bondlines*
- USE **bonded joints**
- Bondoc meteorite**
 - GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . achondrites
 - **Bondoc meteorite**
- bone demineralization**
 - GS demineralizing
 - . **bone demineralization** diseases
 - . **bone demineralization**
 - RT biological effects
 - ∞ biology
 - bones
 - hindlimb suspension
 - osteoblasts
 - osteocalcin
 - osteogenesis
 - osteoporosis
 - physiological effects
 - physiology
 - weightlessness
- bone density*
- (added August 2004)
- USE **bone mineral content**
- bone formation*
- (added January 2005)
- USE **osteogenesis**
- bone marrow**
 - GS tissues (biology)
 - . connective tissue
 - . . **bone marrow**
 - RT bones
 - cancer
 - erythrocytes
 - hematopoiesis
 - hematopoietic system
 - leukemias
 - leukocytes
 - lymphatic system
 - monocytes
 - osteogenesis
- bone mineral content**
 - UF *BMC*
 - bone density*
 - GS content
 - . **bone mineral content**
 - RT bioengineering
 - ∞ biology
 - biometrics
 - bones
 - calcium carbonates
 - calcium phosphates
 - collagens
 - minerals
 - osteoblasts
 - osteocalcin
 - osteogenesis
 - osteoporosis
- bones**
 - GS anatomy
 - . musculoskeletal system
 - . . **bones**
 - . . . femur
 - . . . pelvis
 - . . . scapula
 - . . . skull
 - cranium
 - intracranial cavity
 - mastoids
 - . . . spine
 - . . . vertebrae
 - . . . sternum
 - . . . tibia
 - . . . ulna
 - RT arthritis
 - bone demineralization
 - bone marrow
 - bone mineral content

Bonne projection

calcification
cartilage
chin
connective tissue
exoskeletons
joints (anatomy)
lamella
osteoblasts
osteocalcin
osteogenesis
osteoporosis
spinal cord
splints

Bonne projection

DEF A type of conical map projection in which meridians are plotted as curves and the parallels are spaced along them at true distances.

RT mapping
maps
∞ projection

Boolean algebra

DEF The study of the manipulation of symbols representing operations according to the rules of logic. Boolean algebra corresponds to an algebra using only the numbers 0 and 1, therefore can be used in programming digital computers which operate on the binary principle.

GS mathematical logic
. lattices (mathematics)
. . **Boolean algebra**
. . . Boolean functions
RT algebra
∞ conjunction
instruction sets (computers)
∞ logic
set theory
switching theory
transistor logic
∞ unions

Boolean functions

GS functions (mathematics)
. **Boolean functions**
mathematical logic
. lattices (mathematics)
. . Boolean algebra
. . . **Boolean functions**

∞ boom

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT booms (equipment)
sonic booms
tail assemblies

booms (equipment)

GS positioning devices (machinery)
. **booms (equipment)**
RT ∞ boom
cranes

boost

USE **acceleration (physics)**

booster recovery

RT expendable stages (spacecraft)
recoverable launch vehicles
∞ recovery
recovery parachutes
spacecraft recovery

booster rocket engines

UF *rocket boosters*
GS engines
. rocket engines
. . **booster rocket engines**
. . . AJ-10 engine
. . . Algol engine
. . . apogee boost motors
. . . H-1 engine
. . . LR-87-AJ-5 engine
. . . M-1 engine
. . . M-55 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine

. . . Nike booster rocket engines
. . . P-1 engine
. . . rocket engine 9KS-11000
. . . Space Shuttle Boosters
. . . . Advanced Solid Rocket Motor (STS)

. . . X-405 engine
RT air breathing boosters
Ares 1 first stage
Ares 5 cargo launch vehicle
Blue Goose missile

∞ boosters
burnout
Delta 4 Heavy launch vehicle
ducted rocket engines
expendable stages (spacecraft)
F-1 rocket engine
hybrid propellant rocket engines
internal combustion engines
launch vehicles
liftoff (launching)
liquid propellant rocket engines
Mace missiles
nuclear engine for rocket vehicles
nuclear rocket engines
oxygen-hydrocarbon rocket engines
recoverable spacecraft
solid propellant rocket engines
spinning solid upper stage
stage separation
sustainer rocket engines
turbo-rocket engines
TX-354 engine

∞ booster rockets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT launch vehicles

∞ boosters

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air breathing boosters
amplifiers
apogee boost motors
booster rocket engines
boosters (explosives)
launch vehicles
Scout project
Space Shuttle Boosters
Titan project

boosters (explosives)

GS explosive devices
. initiators (explosives)
. . **boosters (explosives)**
igniters
. initiators (explosives)
. . **boosters (explosives)**
RT ∞ boosters
exploding wires

boostglide vehicles

DEF Vehicles designed to glide in the atmosphere following a rocket-powered phase. Portions of the flights may be ballistic, out of the atmosphere.

GS gliders
. **boostglide vehicles**
. . X-20 aircraft
reentry vehicles
. **boostglide vehicles**
. . X-20 aircraft
RT aerospace planes
∞ aircraft
Astro vehicle
gliding
hypersonic aircraft
hypersonic gliders
lifting reentry vehicles
manned spacecraft
recoverable spacecraft
rocket planes
∞ vehicles

boots (footwear)

GS clothing
. **boots (footwear)**

RT shoes

Boral

GS composite materials
. **Boral**
composite structures
. laminates
. . **Boral**
RT aluminum
boron carbides
radiation shielding

boranes

GS boron compounds
. boron hydrides
. . **boranes**
. . . carborane
. . . hydrazine borane
. . . pentaboranes
hydrogen compounds
. hydrides
. . boron hydrides
. . . **boranes**
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
RT borohydrides

borates

GS boron compounds
. **borates**
. . lithium borates
RT boric acids
∞ oxygen compounds

Borazon (trademark)

USE **boron nitrides**

borders

RT boundaries
margins
rims

Bordoni peaks

RT elastic deformation
plastic deformation
resonant frequencies
stress relaxation

boredom

RT detachment
human behavior
human reactions
lethargy
monotony
psychological effects
psychology
space flight stress

boreholes

DEF Holes made by drilling into the ground to study stratification, to search for or to obtain natural resources, or to release underground pressures.

RT cavities
clays
drilling
excavation
exploration
geology
gravels
∞ holes
minerals
pits (excavations)
rocks
shales
soils

Borel sets

GS analysis (mathematics)
. real variables
. . measure and integration
. . . **Borel sets**
mathematical logic
. set theory
. . **Borel sets**

- RT probability theory
- bores*
USE **cavities**
- borescopes*
USE **endoscopes**
- boresight error**
DEF Linear displacement between two parallel lines of sight.
GS errors
. position errors
. . **boresight error**
RT air navigation
boresights
directional antennas
displacement
displacement measurement
error analysis
instrument errors
line of sight communication
navigation instruments
optical tracking
range errors
- boresights**
RT boresight error
directional antennas
optical tracking
- boric acids**
GS acids
. **boric acids**
boron compounds
. **boric acids**
RT borates
- borides**
GS boron compounds
. **borides**
. . chromium borides
. . titanium borides
RT intermetallics
- boring machines**
GS tools
. machine tools
. . **boring machines**
RT drills
∞ machinery
- Born approximation**
UF *Born-Mayer equation*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Born approximation**
RT ∞ equations
quantum mechanics
scattering cross sections
- Born-Infeld theory**
RT electrodynamics
electrostatics
Maxwell equation
nonlinear equations
∞ theories
- Born-Mayer equation*
USE **Born approximation**
- Born-Oppenheimer approximation**
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Born-Oppenheimer approximation**
RT Franck-Condon principle
- borohydrides**
GS boron compounds
. **borohydrides**
. . aluminum borohydrides
. . beryllium borohydrides
hydrogen compounds
. hydrides
. . **borohydrides**
. . . aluminum borohydrides
. . . beryllium borohydrides
RT boranes
- boron hydrides
- boron**
GS chemical elements
. metalloids
. . **boron**
. . . boron isotopes
. . . . boron 10
RT boron reinforced materials
Borsic (tradename)
- boron 10**
GS chemical elements
. metalloids
. . boron
. . . boron isotopes
. . . . **boron 10**
. . . . nuclides
. . . . isotopes
. . . . boron isotopes
. . . . **boron 10**
- boron alloys**
GS alloys
. **boron alloys**
RT metalloids
- boron carbides**
GS boron compounds
. **boron carbides**
carbon compounds
. carbides
. . **boron carbides**
RT Boral
ceramic fibers
- boron chlorides**
GS boron compounds
. **boron chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **boron chlorides**
. . . halides
. . . chlorides
. . . **boron chlorides**
- boron compounds**
GS **boron compounds**
. borates
. . lithium borates
. boric acids
. borides
. . chromium borides
. . titanium borides
. borohydrides
. . aluminum borohydrides
. . beryllium borohydrides
. boron carbides
. boron chlorides
. boron fluorides
. boron hydrides
. . aluminum borohydrides
. . beryllium borohydrides
. . boranes
. . . carborane
. . . hydrazine borane
. . . pentaboranes
. boron nitrides
. boron oxides
. boron phosphides
. diborane
. organic boron compounds
. tourmaline
RT ∞ chemical compounds
∞ Group 3A compounds
high energy fuels
metal fuels
metal propellants
- boron fibers**
DEF Fibers produced by vapor deposition methods; used in various composite materials to impart a balance of strength and stiffness.
GS fibers
. reinforcing fibers
. . **boron fibers**
RT aluminum boron composites
Borsic (tradename)
carbon fibers
- composite materials
fiber composites
fiber orientation
fiber strength
∞ filaments
glass fibers
metal matrix composites
polymer matrix composites
reinforced plastics
- boron fluorides**
UF *boron trifluoride*
GS boron compounds
. **boron fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . **boron fluorides**
. . . halides
. . . fluorides
. . . **boron fluorides**
- boron hydrides**
GS boron compounds
. **boron hydrides**
. . aluminum borohydrides
. . beryllium borohydrides
. . boranes
. . . carborane
. . . hydrazine borane
. . . pentaboranes
hydrogen compounds
. hydrides
. . **boron hydrides**
. . . aluminum borohydrides
. . . beryllium borohydrides
. . . boranes
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
RT borohydrides
- boron isotopes**
GS chemical elements
. metalloids
. . boron
. . . **boron isotopes**
. . . . boron 10
. . . . nuclides
. . . . isotopes
. . . . **boron isotopes**
. . . . boron 10
- boron nitrides**
UF *Borazon (trademark)*
GS boron compounds
. **boron nitrides**
nitrogen compounds
. nitrides
. . **boron nitrides**
RT carbon nitrides
- boron oxides**
GS boron compounds
. **boron oxides**
chalcogenides
. oxides
. . **boron oxides**
- boron phosphides**
GS boron compounds
. **boron phosphides**
phosphorus compounds
. phosphides
. . **boron phosphides**
- boron reinforced materials**
GS composite materials
. **boron reinforced materials**
. . aluminum boron composites
. . boron-epoxy composites
RT boron
ceramic matrix composites
epoxy resins
fiber composites
fibers
∞ materials
plastics
reinforced plastics

boron-epoxy composites

reinforcing fibers

boron trifluoride

USE **boron fluorides**

boron-epoxy composites

- GS composite materials
 - . boron reinforced materials
 - . . **boron-epoxy composites**
 - . . polymer matrix composites
 - . . epoxy matrix composites
 - . . . **boron-epoxy composites**
 - . . resin matrix composites
 - . . **boron-epoxy composites**
- RT aircraft structures
 - ∞ chemical compounds
 - composite structures
 - epoxy resins
 - fiber composites
 - laminates
 - plastic aircraft structures
 - spacecraft components
 - superhybrid materials

borosilicate glass

- DEF Low expansion heat resistant glass.
- Used for Pyrex (trademark).
- UF *Pyrex (trademark)*
- GS glass
 - . **borosilicate glass**
- RT glassware
 - honeycomb mirrors
 - silicon dioxide

Borsic (tradename)

- DEF Trademark of United Aircraft Products, Inc. for its boron aluminum composite materials.
- GS composite materials
 - . metal matrix composites
 - . . **Borsic (tradename)**
- RT aluminum
 - boron
 - boron fibers
 - fiber composites
 - ∞ materials
 - metal fibers
 - metals

Bose geometry

- GS geometry
 - . **Bose geometry**
- RT equations of state

Bose-Chaudhuri-Hocquenghem codes

USE **BCH codes**

Bose-Einstein condensates

- (added February 1996)
- GS condensates
 - . **Bose-Einstein condensates**
- RT atom optics
 - bosons
 - condensed matter physics
 - ideal gas
 - relativistic effects
 - superfluidity

Bose-Einstein statistics

USE **quantum statistics**

Bosnia

(added June 1996)

USE **Bosnia and Herzegovina**

Bosnia and Herzegovina

- (added June 1996)
- UF *Bosnia Herzegovina*
- GS nations
 - . **Bosnia and Herzegovina**
- RT Croatia
 - Europe
 - Serbska Republic
 - Yugoslavia

boson fields

- RT field theory (physics)
- ∞ fields

mesons

bosons

- GS particles
 - . elementary particles
 - . . **bosons**
 - . . . alpha particles
 - . . . Higgs bosons
 - . . . mesons
 - eta-mesons
 - hyperons
 - xi hyperons
 - kaons
 - meson resonance
 - X mesons
 - muons
 - omega-mesons
 - pions
 - vector mesons
 - rho-mesons
 - sigma-mesons
 - . . . photons
 - . . . xi hyperons
 - . nuclear particles
 - . . **bosons**
 - . . . alpha particles
 - . . . Higgs bosons
 - . . . mesons
 - eta-mesons
 - hyperons
 - xi hyperons
 - kaons
 - meson resonance
 - X mesons
 - muons
 - omega-mesons
 - pions
 - vector mesons
 - rho-mesons
 - sigma-mesons
 - . . . photons
 - . . . xi hyperons
- RT Bose-Einstein condensates
 - charged particles
 - Fermi-Dirac statistics
 - quantum statistics
 - standard model (particle physics)
 - string theory
 - supersymmetry

botany

- GS **botany**
 - . geobotany
- RT agriculture
 - alfalfa
 - barley
 - biogeochemistry
 - ∞ biology
 - blight
 - brown wave effect
 - brush (botany)
 - chaparral
 - citrus trees
 - corn
 - farm crops
 - fruits
 - genetically modified plants
 - green wave effect
 - habitats
 - hay
 - leguminous plants
 - oats
 - plants (botany)
 - ∞ science
 - silviculture
 - sugar beets
 - sugar cane
 - tomatoes
 - vegetation growth
 - vineyards
 - ∞ zoology

Botswana

- GS nations
 - . **Botswana**
- RT Africa
 - Republic of South Africa

bottles

- RT ∞ containers

flasks
glassware
tanks (containers)

Bouguer law

- DEF A relationship describing the rate of decrease of flux density of a plane-parallel beam of monochromatic radiation as it penetrates a medium which both scatters and absorbs at that wavelength. Used for Lambert law.
- UF *Lambert law*
- RT absorptivity
 - Beer law
 - electromagnetic absorption
 - thermoplasticity

boules

- GS crystals
 - . **boules**
- RT single crystals

boundaries

- UF *peripheries*
- GS **boundaries**
 - . core-mantle boundary
 - . fluid boundaries
 - . . gas-solid interfaces
 - . . jet boundaries
 - . . liquid-liquid interfaces
 - . . liquid-solid interfaces
 - . . liquid-vapor interfaces
 - . antiphase boundaries
 - . free boundaries
 - . grain boundaries
- RT airspace
 - borders
 - boundary conditions
 - circumferences
 - contour sensors
 - delineation
 - fences (barriers)
 - interfaces
 - regions

boundary conditions

- (added July 1990)
- GS conditions
 - . **boundary conditions**
 - . . perfectly matched layers
- RT boundaries
 - boundary element method
 - boundary layers
 - boundary value problems
 - computational aeroacoustics
 - Trefftz method
 - vortex lattice method

boundary detection (imagery)

USE **edge detection**

boundary element method

- DEF Technique for solving two- and three-dimensional boundary value problems in thermodynamics, mechanics, etc.
- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **boundary element method**
 - Trefftz method
- RT boundary conditions
 - computational mechanics
 - stress analysis

boundary integral method

- DEF Technique related to the boundary element method, and used for laminar and turbulent flow problems.
- GS analysis (mathematics)
 - . numerical analysis
 - . . **boundary integral method**
 - . . . procedures
 - . . . **boundary integral method**
- RT boundary value problems
 - ∞ methodology

boundary layer combustion

- GS combustion
 - . **boundary layer combustion**
- RT boundary layers
 - combustible flow

convective heat transfer
diffusion flames
flame propagation
laminar boundary layer
reacting flow

boundary layer control

UF *laminar flow control*
GS **boundary layer control**
. porous boundary layer control
RT aerodynamics
airfoil fences
∞ bleeding
blowing
boundary layers
buffeting
circulation control airfoils
∞ control
control surfaces
drag devices
fluid amplifiers
flutter
jet control
leading edge slats
lift augmentation
lift devices
riblets
spoilers
tangential blowing
turbulence
upper surface blown flaps
vacuum
vortex generators
wing slots
X-21 aircraft

boundary layer equations

GS flow equations
. **boundary layer equations**
. . Blasius equation
RT boundary layers
differential equations
∞ equations
flow theory
Reynolds averaging

boundary layer flow

GS fluid flow
. viscous flow
. . **boundary layer flow**
. . . reattached flow
. . . secondary flow
. . . separated flow
. . . boundary layer separation
RT air currents
atmospheric boundary layer
backward facing steps
Blasius equation
boundary layer thickness
convective heat transfer
flow distribution
forward facing steps
Lighthill gas model
Magnus effect
recirculative fluid flow
Reynolds number
stagnation flow
stagnation point
Tollmien-Schlichting waves
wall flow

boundary layer noise

USE **aerodynamic noise**
boundary layers

boundary layer plasmas

DEF Plasmas resulting from the frictional heat of hypersonic spacecraft entering the Earth's atmosphere.
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . **boundary layer plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . **boundary layer plasmas**
RT aerodynamic heating
aerothermodynamics

boundary layers
hypersonic reentry
plasma physics
plasma sheaths

boundary layer separation

UF *breakaway*
flow separation
laminar boundary layer separation
GS fluid flow
. viscous flow
. . boundary layer flow
. . . separated flow
. . . **boundary layer separation**
RT aerodynamic stalling
airspeed
angle of attack
boundary layers
Crocco-Lee theory
∞ diffusers
Falkner-Skan equation
flow distribution
injection
Kutta-Joukowski condition
lift drag ratio
reattached flow
recirculative fluid flow
reversed flow
rotating stalls
∞ separation
stagnation flow
∞ stalling
sweep angle
vortex generators
zero lift

boundary layer stability

GS dynamic characteristics
. dynamic stability
. . motion stability
. . . flow stability
. . . . **boundary layer stability**
. flow characteristics
. . flow stability
. . . **boundary layer stability**
stability
. dynamic stability
. . motion stability
. . . flow stability
. . . . **boundary layer stability**
RT aerodynamic stability
backwash
boundary layers
Goertler instability
Reynolds number

boundary layer thickness

(added September 1995)
SN (LIMITED TO FLUID DYNAMICS, DO NOT USE FOR PLANETARY OR CORE MANTLE BOUNDARIES)
GS thickness
. **boundary layer thickness**
RT boundary layer flow
flow distribution
pressure gradients
surface layers
transition flow

boundary layer transition

RT air currents
boundary layers
Ekman layer
Goertler instability
Knudsen flow
laminar boundary layer
laminar flow
molecular flow
Reynolds number
three dimensional boundary layer
Tollmien-Schlichting waves
∞ transition
transition flow
∞ transition layers
transition points
turbulence
turbulent boundary layer

turbulent flow

boundary layers

UF *boundary layer noise*
GS **boundary layers**
. atmospheric boundary layer
. compressible boundary layer
. hypersonic boundary layer
. incompressible boundary layer
. laminar boundary layer
. planetary boundary layer
. supersonic boundary layers
. thermal boundary layer
. three dimensional boundary layer
. turbulent boundary layer
. two dimensional boundary layer
RT asthenosphere
boundary conditions
boundary layer combustion
boundary layer control
boundary layer equations
boundary layer plasmas
boundary layer separation
boundary layer stability
boundary layer transition
core-mantle boundary
Crocco method
∞ draft
drag
fluid boundaries
fluid flow
gas-solid interfaces
∞ layers
liquid-liquid interfaces
liquid-solid interfaces
mixing layers (fluids)
panel method (fluid dynamics)
shear layers
surface layers
wall pressure

boundary lubrication

GS lubrication
. **boundary lubrication**
RT bearings
lubricants
squeeze films
vapor phase lubrication
wear resistance

boundary value problems

DEF Physical problems completely specified by a differential equation in an unknown, valid in a certain region of space, and certain information (boundary condition) about the unknown, given on the boundaries of that region. The information required to determine the solution depends completely and uniquely on the particular problem. Used for initial value problems and point matching method (mathematics).

UF *initial value problems*
point matching method (mathematics)
GS **boundary value problems**
. Cauchy problem
. Dirichlet problem
. Neumann problem
RT Bessel functions
boundary conditions
boundary integral method
counter rotation
Crank-Nicholson method
differential equations
finite element method
finite volume method
half planes
half spaces
Hankel functions
ill-posed problems (mathematics)
Lame functions
Mathieu function
minimal surfaces
Monge-Ampere equation
observability (systems)
∞ problems
Sobolev space
three dimensional bodies
Trefftz method

Bourdon tubes

GS transducers

Boussinesq approximation

- . pressure sensors
- . . **Bourdon tubes**
- RT pressure gages
- pressure measurement
- ∞ tubes

Boussinesq approximation

DEF The assumption (frequently used in the theory of convection) that the fluid is incompressible except insofar as the thermal expansion produces a buoyancy.

- RT convection
- heat transfer
- incompressible fluids
- perturbation theory
- thermal expansion

bow shock waves

USE **shock waves**

bow waves

DEF Shock waves in front of a body, such as an airfoil, or apparently attached to the forward tip of the body.

- RT hypersonic wakes
- Mach cones
- magnetosheath
- shock waves
- surface waves

∞ bows

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bending
- camber
- forebodies
- heaving

box beams

- GS structural members
- . beams (supports)
- . . **box beams**
- RT ∞ boxes
- cantilever beams
- girders
- rectangular beams

∞ boxes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT box beams
- boxes (containers)

boxes (containers)

- RT ∞ boxes
- ∞ buckets
- cases (containers)
- ∞ containers
- packages

BPSK

USE **binary phase shift keying**

brackets

- RT anchors (fasteners)
- fasteners
- fixtures
- holders
- mounting

bradycardia

- GS rates (per time)
- . heart rate
- . . **bradycardia**
- signs and symptoms
- . **bradycardia**
- RT heart diseases

Bragg angle

DEF The angle between the incident beam and the lattice planes considered.

- GS geometry
- . Euclidean geometry
- . . angles (geometry)
- . . . **Bragg angle**
- RT Bragg gratings
- Bragg reflectors
- crystallography
- DBR lasers
- diffraction

- diffraction paths
- electron diffraction
- isotropy
- ∞ orientation
- ∞ physical properties
- radiography

Bragg cells

(added September 1988)

- GS modulators
- . **Bragg cells**
- RT acousto-optics
- amplitude modulation
- crystal optics
- light beams
- light modulation
- phase demodulators
- phase modulation
- ultrasonic light modulation

Bragg curve

DEF A curve showing the average specific ionization of an ionizing particle of a particular kind as a function of its kinetic energy, velocity, or residual range.

- RT biological effects
- nuclear reactions
- particle interactions
- radiation effects

Bragg gratings

(added August 1997)

- GS gratings (spectra)
- . **Bragg gratings**
- RT apodization
- Bragg angle
- Bragg reflectors
- interferometers
- optical fibers
- optical filters

Bragg mirrors

(added August 1997)

USE **Bragg reflectors**

Bragg reflectors

(added August 1997)

- UF *Bragg mirrors*
- GS reflectors
- . **Bragg reflectors**
- RT Bragg angle
- Bragg gratings
- DBR lasers
- gallium arsenides
- mirrors
- semiconductor lasers

braided composites

(added November 1992)

- GS composite materials
- . fiber composites
- . . **braided composites**
- RT carbon fiber reinforced plastics
- epoxy matrix composites
- graphite-epoxy composites
- reinforcing fibers
- three dimensional composites
- woven composites

braille

DEF A system of writing that uses characters made up of raised dots. It was named after Louis Braille.

- RT blindness
- embossing

brain

- GS anatomy
- . nervous system
- . . central nervous system
- . . . **brain**
- brain stem
- cerebellum
- cerebral ventricles
- cerebrum
- cerebral cortex
- occipital lobes
- diencephalon
- hypothalamus
- pineal gland

- thalamus
- hippocampus
- RT angiography
- brain circulation
- brain damage
- cerebrospinal fluid
- echoencephalography
- electroencephalography
- encephalitis
- head (anatomy)
- information processing (biology)
- intracranial pressure
- neuroglia
- neurology
- pituitary gland
- psychiatry
- psychology
- rheoencephalography
- spinal cord

brain circulation

- GS circulation
- . blood circulation
- . . **brain circulation**
- RT brain
- rheoencephalography

brain damage

- UF *brain injuries*
- GS injuries
- . **brain damage**
- RT brain

brain injuries

(added August 2004)

USE **brain damage**

brain stem

- GS anatomy
- . nervous system
- . . central nervous system
- . . . brain
- **brain stem**

∞ brakes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT brakes (for arresting motion)
- brakes (forming or bending)

brakes (for arresting motion)

- UF *decelerators*
- dragulators*
- GS **brakes (for arresting motion)**
- . aerodynamic brakes
- . . ballutes
- . . drag chutes
- . . split flaps
- . . wing flaps
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- . aircraft brakes
- . . split flaps
- . . wing flaps
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- . wheel brakes
- RT abort apparatus
- antiskid devices
- ∞ arresters
- arresting gear
- ∞ brakes
- braking
- cylindrical chambers
- drag devices
- flaps (control surfaces)
- landing gear
- nose wheels
- parachutes
- retarders (devices)
- thrust reversal
- towed bodies
- vehicle wheels

- wheels
- brakes (forming or bending)**
RT ∞ brakes
metal working
- braking**
RT brakes (for arresting motion)
deceleration
eddy currents
retarders (devices)
retarding
thrust reversal
- branching (mathematics)**
DEF The appearance of a new solution of a mathematical equation at some critical value of a parameter, as a result of which there may be more than one solution (different branches) of the equation. Used for bifurcation (mathematics)
UF *bifurcation (mathematics)*
GS **branching (mathematics)**
. period doubling
RT chaos
functions (mathematics)
∞ logic
mathematical logic
set theory
switching theory
- branching (physics)**
RT bifurcation (biology)
∞ physics
- brasses**
GS alloys
. copper alloys
. . **brasses**
- Bravais crystals**
GS crystals
. **Bravais crystals**
RT crystal growth
crystal lattices
crystal structure
packing density
single crystals
- Brayton cycle**
DEF A thermodynamic cycle consisting of two constant-pressure processes interspersed with two constant-entropy cycles. Named after George B. Brayton, American engineer.
GS cycles
. thermodynamic cycles
. . **Brayton cycle**
RT gas turbine engines
gas turbines
Rankine cycle
solar dynamic power systems
- Brazil**
GS nations
. **Brazil**
RT Amazon region (South America)
Brazilian space program
South America
- Brazilian space program**
DEF The space program of Brazil which is under the jurisdiction of the Instituto de Pesquisas Espaciais (INPE).
GS programs
. space programs
. . **Brazilian space program**
RT Brazil
- brazing**
GS welding
. fusion welding
. . gas welding
. . . **brazing**
. . . low temperature brazing
RT fluxes
∞ joining
metal bonding
sealing
soldering
- ultrasonic soldering
- Brazzaville*
USE **Congo (Brazzaville)**
- breadboard models**
DEF Assemblies of preliminary circuits or parts used to prove the feasibility of a device, circuit, system, or principle without regard to the final configuration or packaging of the parts.
GS models
. **breadboard models**
RT circuits
printed circuits
product development
prototypes
- breakaway*
USE **boundary layer separation**
- ∞ **breakdown**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT TERMS LISTED BELOW)
RT classifications
electrical faults
failure
gaps
metal working
system failures
- breakers (electric)*
USE **circuit breakers**
- breaking**
RT destruction
fragmentation
∞ separation
- breakup (spacecraft)*
USE **spacecraft breakup**
- breakwaters**
DEF Offshore structures (such as moles, walls, or jetties) that by breaking the force of waves, protect harbors, anchorages, beaches, or shore areas. Used for jetties and sea walls.
UF *jetties*
sea walls
RT concrete structures
harbors
littoral drift
littoral transport
oceanography
structural design
∞ structures
underwater engineering
underwater structures
water waves
∞ waves
- breast**
(added August 2004)
DEF In humans, one of the paired regions in the anterior portion of the thorax.
GS anatomy
. chest
. . **breast**
. . . mammary glands
RT cancer
thorax
- ∞ **breathing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT argon-oxygen atmospheres
breathing apparatus
breathing vibration
emergency breathing techniques
expiration
helium-oxygen atmospheres
high altitude breathing
hypercapnia
hyperpnea
oxygen breathing
respiration
respiratory reflexes
- breathing apparatus**
GS **breathing apparatus**
. oxygen masks
- . underwater breathing apparatus
RT ∞ breathing
∞ equipment
fire fighting
life support systems
oxygen supply equipment
portable life support systems
respirators
- breathing vibration**
GS vibration
. structural vibration
. . **breathing vibration**
RT bending vibration
∞ breathing
exhausting
missile vibration
venting
- breccia**
GS rocks
. **breccia**
RT ataxite
igneous rocks
regolith
sedimentary rocks
soils
- breeder reactors**
GS nuclear reactors
. **breeder reactors**
. . Experimental Breeder Reactor 1
. . Experimental Breeder Reactor 2
. . light water breeder reactors
. . liquid metal fast breeder reactors
RT Enrico Fermi atomic power plant
nuclear power reactors
- breeding (reproduction)**
RT fertility
genetics
heredity
reproduction (biology)
- Breguet 940 aircraft**
GS Breguet aircraft
. **Breguet 940 aircraft**
monoplanes
. **Breguet 940 aircraft**
research vehicles
. research aircraft
. . **Breguet 940 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Breguet 940 aircraft**
RT ∞ aircraft
- Breguet 941 aircraft**
GS Breguet aircraft
. **Breguet 941 aircraft**
jet aircraft
. turboprop aircraft
. . **Breguet 941 aircraft**
monoplanes
. **Breguet 941 aircraft**
passenger aircraft
. **Breguet 941 aircraft**
transport aircraft
. cargo aircraft
. . **Breguet 941 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Breguet 941 aircraft**
RT ∞ aircraft
- Breguet 1150 aircraft**
UF *Atlantic aircraft*
GS antisubmarine warfare aircraft
. **Breguet 1150 aircraft**
attack aircraft
. **Breguet 1150 aircraft**
Breguet aircraft
. **Breguet 1150 aircraft**
jet aircraft
. turboprop aircraft
. . **Breguet 1150 aircraft**
monoplanes
. **Breguet 1150 aircraft**
reconnaissance aircraft
. **Breguet 1150 aircraft**

Breguet aircraft

RT ∞ aircraft

Breguet aircraft

GS **Breguet aircraft**
. Breguet 940 aircraft
. Breguet 941 aircraft
. Breguet 1150 aircraft
RT ∞ aircraft
Jaguar aircraft

bremsstrahlung

DEF Electromagnetic radiation produced by the rapid change in the velocity of an electron or another fast, charged particle as it approaches an atomic nucleus and is deflected by it. In German it means braking radiation.

GS electromagnetic radiation
. **bremsstrahlung**
RT Cerenkov radiation
diffraction radiation
electron photon cascades
electron radiation
far ultraviolet radiation
gamma ray bursts
gamma rays
nuclear radiation
relativistic plasmas
synchrotron radiation
x rays

Brewster angle

GS geometry
. Euclidean geometry
. . . angles (geometry)
. . . **Brewster angle**
RT polarization characteristics
reflection
refractivity

bricks

DEF Solid masonry units of clay or shale, usually formed into a rectangular prism while plastic and burned or fired in a kiln. Bricks are ceramic products.

GS masonry
. **bricks**
RT cements
ceramics
clays
∞ construction materials
mortars (material)

∞ bridges

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bridges (landforms)
bridges (structures)
electric bridges
liquid bridges

bridges (landforms)

GS landforms
. **bridges (landforms)**
RT ∞ bridges
geology
∞ ridges

bridges (structures)

RT ∞ bridges
construction
construction industry
crossings
crossovers
highways
ramps (structures)
∞ structures
towers

Bridgman method

RT crystal growth
∞ methodology
single crystals

brightness

DEF The attribute of visual perception in accordance with which an area appears to emit more or less light.

GS electromagnetic properties
. optical properties
. . . **brightness**

. . . sky brightness
RT bistatic reflectivity
brightness distribution
color
dimming
emissivity
flux (rate)
glare
human factors engineering
illuminance
illuminating
incandescence
∞ intensity
light (visible radiation)
limb brightening
luminance
luminescence
luminosity
luminous intensity
luster
radiance
radiant flux density
reflectance
stellar luminosity
visibility
vision

brightness discrimination

GS discrimination
. sensory discrimination
. . . **brightness discrimination**
RT ∞ illumination
visual perception

brightness distribution

DEF The statistical distribution based on brightness, or the distribution of brightness over the surface of an object.

GS distribution (property)
. **brightness distribution**
electromagnetic properties
. optical properties
. . . **brightness distribution**
statistical distributions
. **brightness distribution**
RT astrophysics
black body radiation
brightness
brightness temperature
∞ distribution
galactic radiation
photography
radiant flux density
radio astronomy
solar granulation
stellar luminosity

brightness temperature

DEF In astrophysics, the temperature of a black body radiating the same amount of energy per unit area at the wavelengths under consideration as the observed body. The temperature of a nonblack body determined by measurement with an optical pyrometer.

GS temperature
. **brightness temperature**
RT astrophysics
black body radiation
brightness distribution
limb brightening
meteorology
photography
radio astronomy
temperature measurement

Brillouin effect

RT ∞ effects
frequency shift
light scattering
monochromatic radiation

Brillouin flow

GS electric current
. **Brillouin flow**
RT beam currents
electron beams
electron optics
∞ flow

traveling wave tubes

Brillouin zones

GS regions
. **Brillouin zones**
RT band structure of solids
conduction bands
crystal lattices
Fermi surfaces
free electrons

Brillouin-Wigner equation

RT ∞ equations

brines

DEF Water saturated or strongly impregnated with common salt.
RT coolants
refrigerants
salinity
salt baths
salt beds
sea water

Brinkman number

(added July 2001)

DEF A dimensionless number expressing the ratio of viscous heating to convective heat transfer rates through the flow boundary.

GS dimensionless numbers
. **Brinkman number**
ratios
. **Brinkman number**
RT channel flow
convective heat transfer
Couette flow
Nusselt number
viscous flow
wall temperature

briquets

RT blanks
pellets
tablets

Bristol-Siddeley BS 53 engine

UF *Pegasus engine*
GS engines
. air breathing engines
. . . gas turbine engines
. . . . jet engines
. . . . turbojet engines
. turbofan engines
. **Bristol-Siddeley BS 53 engine**
. internal combustion engines
. . . gas turbine engines
. . . . jet engines
. turbojet engines
. turbofan engines
. **Bristol-Siddeley BS 53 engine**
. turbine engines
. . . gas turbine engines
. . . . jet engines
. turbojet engines
. turbofan engines
. **Bristol-Siddeley BS 53 engine**
RT P-1127 aircraft

Bristol-Siddeley Olympus 593 engine

GS engines
. air breathing engines
. . . gas turbine engines
. . . . jet engines
. turbojet engines
. **Bristol-Siddeley Olympus 593 engine**
. internal combustion engines
. . . gas turbine engines
. . . . jet engines
. turbojet engines
. **Bristol-Siddeley Olympus 593 engine**
. turbine engines
. . . gas turbine engines
. . . . jet engines
. turbojet engines

- **Bristol-Siddeley Olympus 593 engine**
- Bristol-Siddeley Viper engine**
 GS engines
 . air breathing engines
 . gas turbine engines
 . jet engines
 . . . turbojet engines
 **Bristol-Siddeley Viper engine**
 . internal combustion engines
 . gas turbine engines
 . jet engines
 . . . turbojet engines
 **Bristol-Siddeley Viper engine**
 . turbine engines
 . gas turbine engines
 . jet engines
 . . . turbojet engines
 **Bristol-Siddeley Viper engine**
- British Aircraft Corp aircraft*
 USE **BAC aircraft**
- British Columbia**
 GS nations
 . Canada
 . **British Columbia**
- British Guinea*
 USE **Guyana**
- British Honduras*
 USE **Belize**
- brittle materials**
 RT cleavage
 cracking (fracturing)
 embrittlement
 fracture strength
 granular materials
 hardness
 impact strength
 ∞ materials
 porous materials
- brittle-ductile transition*
 USE **ductile-brittle transition**
- brittleness**
 GS mechanical properties
 . **brittleness**
 RT Charpy impact test
 cleavage
 cold hardening
 crack closure
 crack initiation
 crack propagation
 cracking (fracturing)
 ductile-brittle transition
 ductility
 embrittlement
 fractography
 fracture strength
 fracturing
 hardness
 impact strength
 impact tests
 notch strength
 notch tests
 toughness
 weldability
- broadband**
 UF *wideband*
 GS bandwidth
 . **broadband**
 frequencies
 . **broadband**
 RT asynchronous transfer mode
 ∞ bands
 frequency response
 log periodic antennas
 narrowband
 spiral antennas
- broadband amplifiers**
 GS amplifiers
 . **broadband amplifiers**
 RT bandwidth
- frequencies
 wideband communication
- broadcasting**
 UF *radio broadcasting*
 GS telecommunication
 . **broadcasting**
 RT communication networks
 direct broadcast satellites
 radio communication
 radio equipment
 radio signals
 radio transmission
 Symphonie satellites
 transmission
 Voice of America
- broken symmetry**
 DEF Phenomena where a loss of symmetry is present such as in piezoelectricity. Used for symmetry breaking.
 UF *symmetry breaking*
 GS symmetry
 . **broken symmetry**
 . CP violation
 RT grand unified theory
 Higgs bosons
 mathematical models
 supergravity
 supersymmetry
 theoretical physics
- bromates**
 GS halogen compounds
 . bromine compounds
 . **bromates**
 RT ∞ oxygen compounds
- bromides**
 GS halogen compounds
 . bromine compounds
 . **bromides**
 . . ammonium bromides
 . . cesium bromides
 . . chromium bromides
 . . dibromides
 . . hydrobromic acid
 . . hydrobromides
 . . magnesium bromides
 . . potassium bromides
 . . silver bromides
 . . sodium bromides
 . . strontium bromides
 . halides
 . **bromides**
 . . ammonium bromides
 . . cesium bromides
 . . chromium bromides
 . . dibromides
 . . hydrobromic acid
 . . hydrobromides
 . . magnesium bromides
 . . potassium bromides
 . . silver bromides
 . . sodium bromides
 . . strontium bromides
 RT salt beds
- bromination**
 GS chemical reactions
 . halogenation
 . **bromination**
- bromine**
 GS chemical elements
 . halogens
 . **bromine**
 . . bromine isotopes
- bromine 82*
 USE **bromine isotopes**
- bromine 87*
 USE **bromine isotopes**
- bromine compounds**
 GS halogen compounds
 . **bromine compounds**
 . bromates
 . bromides
- . . ammonium bromides
 . . cesium bromides
 . . chromium bromides
 . . dibromides
 . . hydrobromic acid
 . . hydrobromides
 . . magnesium bromides
 . . potassium bromides
 . . silver bromides
 . . sodium bromides
 . . strontium bromides
 . halon
 RT ∞ chemical compounds
 halocarbons
 polybrominated biphenyls
- bromine isotopes**
 UF *bromine 82*
bromine 87
 GS chemical elements
 . halogens
 . bromine
 . . **bromine isotopes**
 . nuclides
 . isotopes
 . . **bromine isotopes**
- bronchi**
 UF *bronchial tubes*
 GS anatomy
 . respiratory system
 . **bronchi**
 RT lungs
 trachea
 ∞ tubes
- bronchial tubes*
 USE **bronchi**
- bronzes**
 GS alloys
 . copper alloys
 . **bronzes**
- Brorsen-Metcalf comet**
(added May 1991)
 GS celestial bodies
 . comets
 . **Brorsen-Metcalf comet**
 RT solar system
- broths**
 RT ∞ food
 nutrition
- brown dwarf stars**
(added March 1989)
 GS celestial bodies
 . stars
 . **brown dwarf stars**
 RT companion stars
 cool stars
 dwarf stars
 massive compact halo objects
 protostars
 stellar evolution
- brown wave effect**
 RT annual variations
 botany
 chlorophylls
 ∞ effects
 foliage
 leaves
- Brownian movements**
 RT colloids
 dispersions
 Einstein equations
 emulsions
 Fokker-Planck equation
 ∞ motion
 ∞ suspensions
- Bruceton test*
 USE **statistical tests**
- brucite**
 GS chalcogenides
 . oxides
 . **brucite**

Bruderheim meteorite

- magnesium compounds
 - . **brucite**
 - minerals
 - . **brucite**
- Bruderheim meteorite**
 - GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . chondrites
 - **Bruderheim meteorite**
- Brunei**
 - GS nations
 - . **Brunei**
 - RT Asia
- Brunt-Vaisala frequency**
 - DEF The frequency at which an air parcel will oscillate when subjected to an infinitesimal perturbation in a stably stratified atmosphere.
 - GS constraints
 - . meteorological parameters
 - . . **Brunt-Vaisala frequency**
 - frequencies
 - . **Brunt-Vaisala frequency**
 - RT air currents
 - air flow
 - air masses
 - atmospheric circulation
 - atmospheric physics
 - atmospheric stratification
 - oscillations
- brush (botany)**
 - UF *scrubs (botany)*
 - GS plants (botany)
 - . **brush (botany)**
 - . . chaparral
 - RT botany
 - defoliation
 - Earth resources
 - guayule
 - herbicides
- brush seals**
 - (added July 1991)
 - GS seals (stoppers)
 - . **brush seals**
 - RT leakage
- brushes**
 - GS **brushes**
 - . brushes (electrical contacts)
 - RT electric contacts
 - electric generators
 - electric motors
- brushes (electrical contacts)**
 - DEF Conductive metal or carbon blocks used to make sliding electrical contact with a moving part as in an electric motor.
 - GS brushes
 - . **brushes (electrical contacts)**
 - RT electric contacts
 - electric generators
 - electric motors
- Bryophytes**
 - UF *liverworts*
 - mosses*
 - GS plants (botany)
 - . **Bryophytes**
- BSCCO superconductors**
 - (added March 1993)
 - UF *Bi-Sr-Ca-Cu-O superconductors*
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . mixed oxides
 - **BSCCO superconductors**
 - conductors
 - . superconductors (materials)
 - . . high temperature superconductors
 - . . . **BSCCO superconductors**
 - RT bismuth oxides
 - calcium oxides
 - copper oxides
 - cuprates
- strontium oxides
 - superconducting films
- BSX**
 - GS explosives
 - . **BSX**
 - RT nitromethane
- bubble chambers**
 - DEF Devices used for the detection and study of elementary particles and nuclear reactions. Charged particles from an accelerator are introduced into a superheated liquid, each forming a trail of bubbles along its path.
 - GS ionization chambers
 - . **bubble chambers**
 - RT ∞ chambers
 - cloud chambers
 - elementary particles
 - particle trajectories
 - radiation counters
 - spark chambers
- bubble memory devices**
 - GS computer components
 - . computer storage devices
 - . . **bubble memory devices**
 - magnetic storage
 - . **bubble memory devices**
 - RT binary data
 - core storage
 - data processing
 - data recorders
 - data recording
 - data storage
 - magnetic cores
 - magnetic domains
 - magnetic recording
 - magnetic switching
- bubble technique**
 - GS technologies
 - . **bubble technique**
 - RT data recorders
 - electronic equipment
 - flight instruments
 - ∞ instruments
 - magnetic domains
 - onboard equipment
 - recording instruments
 - semiconductor devices
 - solid state devices
 - spacecraft instruments
- bubbles**
 - DEF Internal voids or trapped globules of air or other gas.
 - RT aeration
 - cavitation flow
 - Coanda effect
 - effervescence
 - foams
 - metal foams
 - thermocapillary migration
 - wakes
- Buccaneer aircraft**
 - UF *B-103 aircraft*
 - Blackburn B-103 aircraft*
 - GS attack aircraft
 - . **Buccaneer aircraft**
 - Hawker Siddeley aircraft
 - . **Buccaneer aircraft**
 - jet aircraft
 - . **Buccaneer aircraft**
 - monoplanes
 - . **Buccaneer aircraft**
 - RT ∞ aircraft
 - Harrier aircraft
- bucket brigade devices**
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . charge transfer devices
 - **bucket brigade devices**
 - RT charge coupled devices
- semiconductors (materials)
- ∞ **buckets**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT boxes (containers)
 - ∞ capsules
 - drums (containers)
 - trays
 - turbomachine blades
- buckeye aircraft*
- USE **T-2 aircraft**
- buckling**
 - DEF An unstable state of equilibrium of a thin-walled body stemming from compressive stresses in walls. The lateral deflection of a thin-walled body resulting from such instability.
 - GS **buckling**
 - . creep buckling
 - . elastic buckling
 - . Euler buckling
 - . thermal buckling
 - RT bending
 - collapse
 - compression loads
 - deformation
 - distortion
 - Donnell equations
 - failure
 - failure modes
 - flange wrinkling
 - heaving
 - kink bands
 - kinking
 - ∞ ridges
 - shell stability
 - stresses
 - structural failure
 - structural strain
 - temperature inversions
 - torsion
 - twisting
 - warpage
 - wrinkling
- buckminsterfullerene**
 - (added August 1991)
 - DEF A form of solid carbon consisting of a somewhat disordered hexagonal close packing of soccer-ball-shaped C60 molecules. The molecules are extremely hard pseudospherical molecules bonded by weak Van der Waals forces.
 - GS fullerenes
 - . **buckminsterfullerene**
 - RT carbon
 - graphite
 - molecules
 - polyatomic molecules
 - polyhedrons
- budgeting**
 - RT accounting
 - allocations
 - appropriations
 - ∞ budgets
 - cost analysis
 - cost effectiveness
 - cost estimates
 - economic factors
 - estimating
 - financial management
 - forecasting
 - grants
 - income
 - mission planning
 - planning
 - procurement management
 - project planning
 - revenue
- ∞ **budgets**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT budgeting
 - Earth radiation budget
 - energy budgets
 - engineering management

federal budgets
foreign policy
heat budget
procurement management
research management

Buffalo aircraft

USE **DHC 5 aircraft**

buffer storage

DEF In computer operations, storage used to compensate for a difference in rate of flow or time of occurrence when transferring information from one device to another.

GS computer components
. computer storage devices
. . **buffer storage**

RT ∞ buffers
core storage
data storage
∞ storage

∞ **buffers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT buffer storage
buffers (chemistry)

buffers (chemistry)

RT bases (chemical)
∞ buffers
chemical equilibrium
neutralizers
pH

buffeting

DEF The beating of an aerodynamic structure or surfaces by unsteady flow, gusts, etc.; the irregular shaking or oscillation of a vehicle component owing to turbulent air or separated flow.

RT aerodynamic stability
aircraft stability
boundary layer control
compressibility effects
flight characteristics
flutter
oscillating flow
shaking
spacecraft motion
spacecraft stability
Strouhal number
turbulence effects
vortex avoidance

building materials

USE **construction materials**

building structures

USE **buildings**

buildings

DEF Structures erected and framed of component structural members designed for the housing, shelter or support of persons, animals, or property. Used for building structures.

UF *building structures*
RT architecture
basements
ceilings (architecture)
chimneys
construction
construction industry
floors
greenhouses
hangars
indoor air pollution
inflatable structures
missile silos
museums
roofs
shelters
solar houses
stairways
Starsite program
walls

bulbs

RT luminaires
plant roots

pressure vessels
syringes

Bulgaria

GS nations
. **Bulgaria**
RT Black Sea
Europe

bulging

GS metal working
. **bulging**
RT deep drawing
dimpling
explosive forming
forging
hot working
magnetic forming
metal drawing
stretch forming

bulk acoustic wave devices

DEF Acoustooptic devices utilizing bulk sound waves at megahertz frequencies in thin film transducers. Used for B-A-W devices.

UF *B-A-W devices*
RT ∞ devices
surface acoustic wave devices
transducers

bulk modulus

DEF The reciprocal of the coefficient of compressibility.

GS mechanical properties
. **bulk modulus**
RT compressibility
density (mass/volume)

bulkheads

DEF Steep or vertical structures supporting natural or artificial embankments.

GS walls
. **bulkheads**
RT ∞ barriers
end plates
hulls (structures)
partitions (structures)
reinforcement (structures)
thick walls
thin walls

Bullpup missiles

GS missiles
. air to surface missiles
. . **Bullpup missiles**
RT LR-62-RM-2 engine

Bumblebee project

GS missiles
. **Bumblebee project**
programs
. projects
. . **Bumblebee project**
RT Talos missile
tartar missile
terrier missile
Typhon weapon system

bumpers

RT cushions
meteoroid protection
meteoroids
protectors

bumpy toruses

DEF The shapes (doughnuts) of certain plasmas.

RT fusion reactors
plasma control
plasma heating
tokamak devices
toroidal plasmas

Buna (trademark)

GS elastomers
. rubber
. . synthetic rubbers
. . . **Buna (trademark)**
RT butadiene

styrenes

bunching

GS **bunching**
. electron bunching
RT queueing theory
space charge
velocity modulation

bundle drawing

RT ∞ drawing
metal drawing

bundles

RT ∞ containers
packages
umbilical connectors
wiring

bunkers (fuel)

GS tanks (containers)
. **bunkers (fuel)**
RT fuel systems

buoyancy

RT acoustic levitation
aerostatics
ballast (mass)
buoyancy-driven flow
density (mass/volume)
floating
gas density
levitation
mechanical properties
neutral buoyancy simulation
∞ physical properties
porosity
Rayleigh number
voids

buoyancy-driven flow

(added June 2002)

DEF Convective fluid flow induced by buoyant forces.

GS fluid flow
. convective flow
. . **buoyancy-driven flow**
RT buoyancy
convection
crystal growth
Rayleigh-Benard convection

buoys

RT beacons
compasses
floats
∞ markers
navigation aids
ocean data acquisitions systems

Buran space shuttle

(added August 1989)

GS manned spacecraft
. space shuttles
. . **Buran space shuttle**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . **Buran space shuttle**
soft landing spacecraft
. **Buran space shuttle**
Soviet spacecraft
. **Buran space shuttle**
RT aerospace planes
U.S.S.R. space program

bureaus (organizations)

GS institutions
. **bureaus (organizations)**
organizations
. federations
. . **bureaus (organizations)**
RT programs
projects
teams
university program

burettes

GS measuring instruments

Burger equation

- . **burettes**
- RT glassware
- pipettes
- ∞ tubes
- Burger equation**
- GS analysis (mathematics)
- . real variables
- . . differential equations
- . . . partial differential equations
- **Burger equation**
- RT continuum mechanics
- ∞ equations
- Navier-Stokes equation
- shock wave propagation
- Burkina**
- UF *Upper Volta*
- GS nations
- . **Burkina**
- RT Africa
- Burma**
- GS nations
- . **Burma**
- RT Asia
- burners**
- RT afterburning
- chemical reactors
- combustion chambers
- diffusion welding
- fuel injection
- furnaces
- incinerators
- waste energy utilization
- Burnett equations**
- (added March 1996)
- SN (These equations are frequently associated with models of hypersonic flow and shock waves.)
- GS equations of motion
- . kinetic equations
- . . hydrodynamic equations
- . . . **Burnett equations**
- flow equations
- . **Burnett equations**
- RT Boltzmann transport equation
- Chapman-Enskog theory
- computational fluid dynamics
- hypersonic flow
- shock waves
- burn-in**
- RT failure
- failure analysis
- integrated circuits
- quality control
- burning*
- USE **combustion**
- burning process*
- USE **combustion**
- burning rate**
- DEF The velocity at which a solid propellant in a rocket is consumed. The symbol is r .
- GS rates (per time)
- . **burning rate**
- RT burnout
- combustion
- combustion control
- combustion efficiency
- combustion stability
- explosives
- flame propagation
- flammability
- fuel consumption
- fuel-air ratio
- fuels
- pressure dependence
- propellant consumption
- propellant grains
- propellants
- smoldering
- solid propellant combustion
- solid propellant rocket engines
- solid rocket propellants
- velocity coupling
- burning time**
- UF *firing time*
- GS time
- . **burning time**
- RT combustion
- combustion efficiency
- firing (igniting)
- flight optimization
- flight time
- rocket engines
- rocket firing
- testing time
- thrust
- windows (intervals)
- burnout**
- SN (LIMITED TO TERMINATION OF COMBUSTION IN A ROCKET ENGINE BECAUSE OF EXHAUSTION OF THE PROPELLANT)
- DEF The termination of combustion in a rocket engine because of exhaustion of the propellant.
- RT booster rocket engines
- burning rate
- combustion
- ∞ cut-off
- erosive burning
- extinguishing
- solid propellant rocket engines
- thrust termination
- burns (injuries)**
- GS injuries
- . **burns (injuries)**
- RT crash injuries
- fires
- laser damage
- lesions
- radiation injuries
- burnthrough (failure)**
- GS failure
- . **burnthrough (failure)**
- RT ablation
- damage
- melting
- perforating
- burst tests**
- GS destructive tests
- . **burst tests**
- RT containment
- failure analysis
- fracture mechanics
- fracture strength
- ∞ materials tests
- pressure vessels
- bursts**
- GS **bursts**
- . gamma ray bursts
- . . radio bursts
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- RT ∞ disturbances
- emission
- explosions
- fragmentation
- implosions
- rupturing
- bursts (communication)*
- (added December 1996)
- USE **packets (communication)**
- Burundi**
- UF *Ruanda-Urundi*
- GS nations
- . **Burundi**
- RT Africa
- Rwanda
- bus conductors**
- GS conductors
- . **bus conductors**
- RT electric wire
- flat conductors
- power lines
- ∞ power transmission
- bushings**
- RT bearings
- inserts
- linings
- shafts (machine elements)
- spacers
- business management*
- USE **industrial management**
- butadiene**
- UF *vinyl ethylene*
- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . dienes
- **butadiene**
- RT Buna (trademark)
- hydrocarbon fuels
- polybutadiene
- butanedinitrile*
- (added April 2004)
- USE **succinonitrile**
- butanes**
- UF *isobutane*
- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkanes
- **butanes**
- RT petroleum products
- butenes**
- UF *butylene*
- isobutylene*
- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkenes
- **butenes**
- butt joints**
- GS joints (junctions)
- . **butt joints**
- RT lap joints
- metal joints
- riveted joints
- soldered joints
- welded joints
- butterfly valves**
- GS valves
- . **butterfly valves**
- . . dampers (valves)
- buttes**
- GS landforms
- . terraces (landforms)
- . . plateaus
- . . . mesas
- **buttes**
- ∞ **buttons**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT manual control
- butylene*
- USE **butenes**
- butylene oxides*
- USE **tetrahydrofuran**
- butyric acid**
- GS acids
- . **butyric acid**
- RT fermentation
- BWB configurations*
- (added April 2001)
- USE **blended-wing-body configurations**
- bypass ratio**
- DEF Ratio of the secondary to the primary

inlet airflows for a turbofan engine.

GS ratios
. **bypass ratio**

RT air intakes
engine inlets
flow geometry
hypersonic inlets
inlet airframe configurations
inlet flow

inlet nozzles
intake systems
nose inlets
side inlets
supersonic inlets

bypasses

UF *shunts*
RT diverters

relief valves

by-products

RT materials recovery
products
reaction products
wastes

C

C (programming language)

(added July 1988)

- GS languages
 - . programming languages
 - . . high level languages
 - . . . **C (programming language)**
- RT C++ (programming language)
 - compilers
 - computer programming
 - expert systems

C band

- SN (3.9 TO 6.2 GHZ)
- GS frequencies
 - . radio frequencies
 - . . microwave frequencies
 - . . . **C band**
- RT millimeter waves
 - superhigh frequencies

C stars

- USE **carbon stars**

C-1A aircraft

- UF *Trader aircraft*
- GS Grumman aircraft
 - . **C-1A aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-1A aircraft**
- RT ∞ aircraft
 - ∞ military aircraft

C-2 aircraft

- UF *COD aircraft*
- GS Grumman aircraft
 - . **C-2 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **C-2 aircraft**
 - monoplanes
 - . **C-2 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-2 aircraft**
- RT ∞ aircraft

C-5 aircraft

- UF *Galaxy aircraft*
- GS *Lockheed C-5 aircraft*
 - jet aircraft
 - . **C-5 aircraft**
 - Lockheed aircraft
 - . **C-5 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-5 aircraft**
- RT ∞ aircraft
 - turbofan engines

C-8A augmentor wing aircraft

- DEF NASA's research, short haul, jet aircraft.
- GS jet aircraft
 - . **C-8A augmentor wing aircraft**
 - research vehicles
 - . research aircraft
 - . . **C-8A augmentor wing aircraft**
 - transport aircraft
 - . short haul aircraft
 - . . **C-8A augmentor wing aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **C-8A augmentor wing aircraft**
- RT ∞ aircraft

C-9 aircraft

- GS jet aircraft
 - . **C-9 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-9 aircraft**
 - McDonnell aircraft
 - . . **C-9 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-9 aircraft**
- RT ∞ aircraft

evacuating (transportation)

C-15 aircraft

- UF *YC-15 aircraft*
- GS transport aircraft
 - . cargo aircraft
 - . . **C-15 aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **C-15 aircraft**
- RT ∞ aircraft

C-17 aircraft

- (added August 1995)
- GS McDonnell Douglas aircraft
 - . **C-17 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-17 aircraft**
- RT ∞ aircraft
 - turbofan engines

C-33 aircraft

- UF *Beech C-33 aircraft*
- GS *Debonair aircraft*
 - Beechcraft aircraft
 - . Beech 99 aircraft
 - . . **C-33 aircraft**
 - general aviation aircraft
 - . **C-33 aircraft**
 - light aircraft
 - . Beech 99 aircraft
 - . . **C-33 aircraft**
 - monoplanes
 - . **C-33 aircraft**
 - passenger aircraft
 - . **C-33 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-33 aircraft**
- RT ∞ aircraft

C-35 aircraft

- UF *Beech S-35 aircraft*
- GS *Bonanza aircraft*
 - Beechcraft aircraft
 - . Beech 99 aircraft
 - . . **C-35 aircraft**
 - general aviation aircraft
 - . **C-35 aircraft**
 - light aircraft
 - . Beech 99 aircraft
 - . . **C-35 aircraft**
 - monoplanes
 - . **C-35 aircraft**
 - passenger aircraft
 - . **C-35 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-35 aircraft**
- RT ∞ aircraft

C-46 aircraft

- UF *Commando aircraft*
- GS *Curtiss C-46 aircraft*
 - Curtiss-Wright aircraft
 - . **C-46 aircraft**
 - monoplanes
 - . **C-46 aircraft**
 - passenger aircraft
 - . **C-46 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-46 aircraft**
- RT ∞ aircraft

C-47 aircraft

- UF *Dakota aircraft*
- GS McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-47 aircraft**
 - monoplanes
 - . **C-47 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-47 aircraft**

RT ∞ aircraft

C-54 aircraft

- UF *R5D aircraft*
- GS *Skymaster aircraft*
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-54 aircraft**
 - monoplanes
 - . **C-54 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-54 aircraft**
- RT ∞ aircraft

C-118 aircraft

- GS McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-118 aircraft**
 - monoplanes
 - . **C-118 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-118 aircraft**
- RT ∞ aircraft

C-119 aircraft

- GS Fairchild-Hiller aircraft
 - . **C-119 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-119 aircraft**
- RT ∞ aircraft

C-121 aircraft

- UF *EC-121 aircraft*
- GS *Lockheed Constellation aircraft*
 - R7V aircraft*
 - Warning Star aircraft*
 - Lockheed aircraft
 - . **C-121 aircraft**
 - monoplanes
 - . **C-121 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-121 aircraft**
- RT ∞ aircraft
 - passenger aircraft

C-123 aircraft

- UF *Provider aircraft*
- GS *YC-123 aircraft*
 - Fairchild-Hiller aircraft
 - . **C-123 aircraft**
 - monoplanes
 - . **C-123 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-123 aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **C-123 aircraft**
- RT ∞ aircraft

C-124 aircraft

- GS McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-124 aircraft**
 - monoplanes
 - . **C-124 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-124 aircraft**
- RT ∞ aircraft

C-130 aircraft

- UF *GC-130 aircraft*
- GS *Hercules aircraft*
 - JC-130 aircraft*
 - KC-130 aircraft*
 - NC-130 aircraft*
 - jet aircraft
 - . turboprop aircraft
 - . . **C-130 aircraft**
 - Lockheed aircraft
 - . **C-130 aircraft**
 - monoplanes
 - . **C-130 aircraft**
 - transport aircraft

. cargo aircraft
 . . **C-130 aircraft**
 RT ∞ aircraft
 T-56 engine

C-131 aircraft
 UF *Samaritan aircraft*
 GS General Dynamics aircraft
 . **C-131 aircraft**
 monoplanes
 . **C-131 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-131 aircraft**
 RT ∞ aircraft

C-133 aircraft
 UF *Cargomaster aircraft*
 GS jet aircraft
 . turboprop aircraft
 . . **C-133 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **C-133 aircraft**
 monoplanes
 . **C-133 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-133 aircraft**
 RT ∞ aircraft
 T-34 engine

C-135 aircraft
 UF *EC-135 aircraft*
KC-135 aircraft
Stratotanker aircraft
 GS Boeing aircraft
 . **C-135 aircraft**
 jet aircraft
 . **C-135 aircraft**
 monoplanes
 . **C-135 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-135 aircraft**
 RT Advanced Range Instrumentation
 Aircraft
 ∞ aircraft
 turbofan aircraft

C-140 aircraft
 UF *Jet Star aircraft*
 GS jet aircraft
 . **C-140 aircraft**
 Lockheed aircraft
 . **C-140 aircraft**
 monoplanes
 . **C-140 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-140 aircraft**
 RT ∞ aircraft

C-141 aircraft
 UF *Starlifter aircraft*
 GS jet aircraft
 . turbofan aircraft
 . . **C-141 aircraft**
 Lockheed aircraft
 . **C-141 aircraft**
 monoplanes
 . **C-141 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-141 aircraft**
 RT ∞ aircraft
 Kupper Airborne Observatory
 turbofan engines

C-142 aircraft
 USE **XC-142 aircraft**

C-160 aircraft
 UF *Transall C-160 aircraft*
 GS Hamburger aircraft
 . **C-160 aircraft**
 jet aircraft
 . turboprop aircraft
 . . **C-160 aircraft**
 monoplanes

. **C-160 aircraft**
 Nord aircraft
 . **C-160 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-160 aircraft**
 RT ∞ aircraft
 turboprop engines

C++ (programming language)
(added October 1991)
 GS languages
 . programming languages
 . . high level languages
 . . . **C++ (programming language)**
 RT C (programming language)
 Java (programming language)
 object-oriented programming

cabin atmospheres
 GS controlled atmospheres
 . **cabin atmospheres**
 . . spacecraft cabin atmospheres
 RT aircraft compartments
 ∞ atmospheres
 cockpits
 environmental control
 oxygen supply equipment
 pressurized cabins
 space capsules

∞ **cabins**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT aircraft compartments
 cockpits
 pressurized cabins
 spacecraft cabins

cable force recorders
 GS recording instruments
 . **cable force recorders**
 RT ∞ recorders
 strain gages
 tensiometers

cable television
(added December 1990)
 UF *CATV*
 GS television systems
 . **cable television**
 RT closed circuit television
 communication cables
 television transmission

∞ **cables**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT cables (ropes)
 coaxial cables
 communication cables
 power lines
 submarine cables
 tetherlines
 transmission lines

cables (ropes)
 RT ∞ belts
 ∞ cables
 chains
 cordage
 fasteners
 reels
 strands
 towing
 wire

CAD (design)
 USE **computer aided design**

cadastral mapping
 DEF Large-scale mapping for showing the
 boundaries of subdivisions of land, usually with
 the directions and lengths thereof and the areas
 of individual tracts, compiled for the purpose of
 describing and recording ownership. The map
 may also show culture, drainage, and other
 features related to the use of the land.
 GS mapping
 . **cadastral mapping**

RT geography
 maps
 thematic mapping

cadmium
 GS chemical elements
 . **cadmium**
 . . cadmium isotopes
 metals
 . transition metals
 . . **cadmium**
 . . . cadmium isotopes
 heavy metals
 RT

cadmium 114
 USE **cadmium isotopes**

cadmium alloys
 GS alloys
 . **cadmium alloys**
 RT bearing alloys

cadmium antimonides
 GS antimony compounds
 . antimonides
 . . **cadmium antimonides**
 cadmium compounds
 . **cadmium antimonides**

cadmium chlorides
 GS cadmium compounds
 . **cadmium chlorides**
 halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **cadmium chlorides**
 . halides
 . . chlorides
 . . . **cadmium chlorides**
 . . metal halides
 . . . **cadmium chlorides**

cadmium compounds
 GS **cadmium compounds**
 . cadmium antimonides
 . cadmium chlorides
 . cadmium fluorides
 . cadmium selenides
 . cadmium sulfides
 . cadmium tellurides
 RT ∞ chemical compounds
 ∞ Group 2B compounds
 ∞ metal compounds

cadmium fluorides
 GS cadmium compounds
 . **cadmium fluorides**
 halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **cadmium fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **cadmium fluorides**
 . metal halides
 . . metal fluorides
 **cadmium fluorides**

cadmium isotopes
 UF *cadmium 114*
 GS chemical elements
 . cadmium
 . . **cadmium isotopes**
 . nuclides
 . . isotopes
 . . . **cadmium isotopes**
 metals
 . transition metals
 . . cadmium
 . . . **cadmium isotopes**

cadmium mercury tellurides
 USE **mercury cadmium tellurides**

cadmium nickel batteries
 USE **nickel cadmium batteries**

cadmium selenides
 GS cadmium compounds

cadmium sulfides

- . . **cadmium selenides**
- chalcogenides
- . selenides
- . . **cadmium selenides**
- selenium compounds
- . selenides
- . . **cadmium selenides**

cadmium silver batteries
USE **silver cadmium batteries**

cadmium sulfides

GS cadmium compounds

- . **cadmium sulfides**
- chalcogenides
- . sulfides
- . . inorganic sulfides
- . . . **cadmium sulfides**
- sulfur compounds
- . sulfides
- . . inorganic sulfides
- . . . **cadmium sulfides**

cadmium tellurides

GS cadmium compounds

- . **cadmium tellurides**
- chalcogenides
- . tellurides
- . . **cadmium tellurides**
- tellurium compounds
- . tellurides
- . . **cadmium tellurides**

caffeine

GS bases (chemical)

- . alkaloids
- . . **caffeine**
- drugs
- . stimulants
- . . **caffeine**
- fungicides
- . xanthines
- . . **caffeine**
- nitrogen compounds
- . alkaloids
- . . **caffeine**
- . xanthines
- . . **caffeine**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- **caffeine**
- . . . purines
- xanthines
- **caffeine**

CAI
USE **computer assisted instruction**

caissons

RT construction

foundations

Cajun rocket vehicle

GS rocket vehicles

- . sounding rockets
- . . **Cajun rocket vehicle**

RT Nike-Cajun rocket vehicle

solid propellant rocket engines

sondes

calciferol

UF *vitamin D*

GS organic compounds

- . lipids
- . . **calciferol**
- vitamins
- . **calciferol**

calcification

RT arthritis

bones

osteocalcin

calcination
USE **roasting**

calcite

GS cadmium compounds

- . calcium carbonates

- . . **calcite**
- carbon compounds
- . carbonates
- . . calcium carbonates
- . . . **calcite**
- minerals
- . **calcite**

RT aragonite

birefringence

calcium

GS chemical elements

- . **calcium**
- . . calcium isotopes
- metals
- . **calcium**
- . . calcium isotopes

RT calmodulin

gypsum

osteocalcin

calcium 45
USE **calcium isotopes**

calcium carbonates

GS calcium compounds

- . **calcium carbonates**
- . . akermanite
- . . aragonite
- . . calcite
- . . chalk
- carbon compounds
- . carbonates
- . . **calcium carbonates**
- . . . akermanite
- . . . aragonite
- . . . calcite
- . . . chalk

RT bone mineral content

limestone

calcium chlorides

GS calcium compounds

- . **calcium chlorides**
- halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **calcium chlorides**
- . halides
- . . chlorides
- . . . **calcium chlorides**
- . . metal halides
- . . . **calcium chlorides**

calcium compounds

GS **calcium compounds**

- . calcium carbonates
- . . akermanite
- . . aragonite
- . . calcite
- . . chalk
- . calcium chlorides
- . calcium fluorides
- . . fluorspar
- . calcium oxides
- . . akermanite
- . calcium phosphates
- . calcium silicates
- . . gehlenite
- . calcium sulfides
- . calcium tungstates
- . calcium vanadates
- . fluorite
- . merwinite
- . monticellite
- . perovskites
- . scheelite

RT ∞ alkaline earth compounds

∞ chemical compounds

∞ metal compounds

calcium fluorides

GS calcium compounds

- . **calcium fluorides**
- . . fluorspar
- halogen compounds
- . fluorine compounds
- . . fluorides
- . . . difluorides
- **calcium fluorides**

- fluorspar
- . . . metal fluorides
- **calcium fluorides**
- fluorspar
- . halides
- . . fluorides
- . . difluorides
- **calcium fluorides**
- fluorspar
- . . . metal fluorides
- **calcium fluorides**
- fluorspar
- . . . metal halides
- . . . metal fluorides
- **calcium fluorides**
- fluorspar

calcium isotopes

UF *calcium 45*

GS chemical elements

- . calcium
- . . **calcium isotopes**
- . nuclides
- . . isotopes
- . . . **calcium isotopes**
- metals
- . calcium
- . . **calcium isotopes**

calcium metabolism

GS metabolism

- . **calcium metabolism**

RT bed rest

calmodulin

osteoporosis

parathyroid gland

thyroid gland

calcium oxides

UF *lime*

GS calcium compounds

- . **calcium oxides**
- . . akermanite
- chalcogenides
- . oxides
- . . metal oxides
- . . . alkaline earth oxides
- **calcium oxides**
- akermanite

RT BSCCO superconductors

calcium phosphates

UF *apatites*

GS calcium compounds

- . **calcium phosphates**
- phosphorus compounds
- . phosphates
- . . **calcium phosphates**

RT bone mineral content

kidney stones

calcium silicates

GS calcium compounds

- . **calcium silicates**
- . . gehlenite
- silicon compounds
- . silicates
- . . **calcium silicates**
- . . . gehlenite

RT amphiboles

minerals

plagioclase

calcium sulfides

GS calcium compounds

- . **calcium sulfides**
- chalcogenides
- . sulfides
- . . inorganic sulfides
- . . . **calcium sulfides**
- sulfur compounds
- . sulfides
- . . inorganic sulfides
- . . . **calcium sulfides**

calcium tungstates

GS calcium compounds

- . **calcium tungstates**
- tungsten compounds
- . tungstates

- . . calcium tungstates
 - calcium vanadates**
 - GS calcium compounds
 - . calcium vanadates
 - vanadium compounds
 - . vanadates
 - . . calcium vanadates
 - calculation*
 - USE **computation**
 - calculators**
 - RT arithmetic
 - computation
 - computers
 - calculi**
 - UF *renal calculi*
 - GS deposits
 - . **calculi**
 - . . dental calculi
 - RT lithiasis
 - uroolithiasis
 - calculus**
 - SN (LIMITED TO MATHEMATICS)
 - GS analysis (mathematics)
 - . **calculus**
 - . . continuity (mathematics)
 - . . differential calculus
 - . . Fourier-Bessel transformations
 - . . Graeff calculus
 - . . integral calculus
 - . . limits (mathematics)
 - . . series (mathematics)
 - . . . asymptotic series
 - . . . Campbell-Hausdorff series
 - . . . cosine series
 - . . . Fourier series
 - . . . Pade approximation
 - . . . power series
 - Taylor series
 - MacLaurin series
 - . . . progressions
 - . . . Prony series
 - . . . sine series
 - . . vector analysis
 - . . . collinearity
 - . . . coplanarity
 - . . . curl (vectors)
 - vorticity
 - RT analytic geometry
 - asymptotes
 - differential equations
 - functions (mathematics)
 - ∞ mathematics
 - monotone functions
 - operational calculus
 - real variables
 - calculus of variations**
 - UF *variation method*
 - GS analysis (mathematics)
 - . real variables
 - . . **calculus of variations**
 - RT Biot method
 - Castigliano variational theorem
 - differential equations
 - Euler-Lagrange equation
 - integral equations
 - invariant imbeddings
 - Jacobi matrix method
 - maxima
 - operational calculus
 - pontryagin principle
 - steepest descent method
 - variational principles
 - calderas**
 - DEF Large, basin-shaped volcanic depressions, more or less circular in form, the diameter of which is many times greater than that of the included vent or vents.
 - GS landforms
 - . **calderas**
 - RT cones (volcanoes)
 - craters
 - lava
 - Mars volcanoes
 - volcanic eruptions
 - volcanoes
 - volcanology
 - calendars**
 - DEF Orderly arrangements of days, weeks, months, etc. to suit a particular need such as civil life.
 - GS **calendars**
 - . crop calendars
 - RT month
 - scheduling
 - time
 - calibrating**
 - UF *graduation*
 - GS **calibrating**
 - . intercalibration
 - . wind tunnel calibration
 - RT accuracy
 - instrument compensation
 - instrument errors
 - measuring instruments
 - ∞ scaling
 - Solar Cell Calibration Facility
 - standardization
 - standards
 - temperature scales
 - California**
 - GS nations
 - . United States
 - . . **California**
 - RT Cascade Range (CA-OR-WA)
 - Coachella Valley (CA)
 - coastal ranges (CA)
 - Death Valley (CA)
 - Feather River Basin (CA)
 - Great Basin (US)
 - Imperial Valley (CA)
 - Lake Tahoe (CA-NV)
 - Mojave Desert (CA)
 - Monterey Bay (CA)
 - Palo Verde Valley (CA)
 - Peninsular Ranges (CA)
 - Sacramento Valley (CA)
 - Salton Sea (CA)
 - San Andreas Fault
 - San Francisco (CA)
 - San Francisco Bay (CA)
 - San Joaquin Valley (CA)
 - San Pablo Bay (CA)
 - Sierra Nevada Mountains (CA)
 - Southern California
 - californium**
 - GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . **californium**
 - californium isotopes
 - . . . nuclides
 - . . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - **californium**
 - californium isotopes
 - metals
 - actinide series
 - transuranium elements
 - **californium**
 - californium isotopes
 - RT californium compounds
 - californium 252*
 - USE **californium isotopes**
 - californium compounds**
 - GS actinide series compounds
 - . **californium compounds**
 - RT californium
 - californium isotopes**
 - UF *californium 252*
 - GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . californium
 - **californium isotopes**
 - nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - californium
 - **californium isotopes**
 - metals
 - . actinide series
 - . . transuranium elements
 - . . . californium
 - californium isotopes
 - **californium isotopes**
- CALIPSO (Pathfinder satellite)**
 - (added October 2005)
 - DEF CALIPSO (Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation) is an Earth observing satellite that combines an active lidar instrument with passive infrared and visible imagers to probe the vertical structure and properties of thin clouds and aerosols over the globe.
 - GS artificial satellites
 - . scientific satellites
 - . . **CALIPSO (Pathfinder satellite)**
 - Earth Observing System (EOS)
 - . **CALIPSO (Pathfinder satellite)**
 - RT aerosols
 - Aqua spacecraft
 - Aura spacecraft
 - clouds (meteorology)
 - CloudSat
 - Earth observations (from space)
 - infrared radar
 - meteorological satellites
 - meteorology
 - precipitation (meteorology)
 - remote sensing
- Callisto**
 - DEF A satellite of Jupiter orbiting at a mean distance of 1,884,000 kilometers. Also called Jupiter IV.
 - GS celestial bodies
 - . natural satellites
 - . . icy satellites
 - . . . **Callisto**
 - . . . Jupiter satellites
 - Galilean satellites
 - **Callisto**
 - RT Charon
 - extraterrestrial oceans
 - Ganymede
 - Io
 - Jupiter (planet)
- calmodulin**
 - GS biopolymers
 - . proteins
 - . . **calmodulin**
 - organic compounds
 - . proteins
 - . . **calmodulin**
 - RT calcium
 - calcium metabolism
 - cytoplasm
 - gravitropism
 - regulatory mechanisms (biology)
- caloric requirements**
 - GS nutritional requirements
 - . **caloric requirements**
 - RT diets
 - ∞ food
 - metabolism
 - mineral metabolism
 - ∞ nutrients
 - nutrition
- caloric stimuli**
 - RT ∞ stimuli
- calorimeters**
 - DEF Instruments designed to measure heat evolved or absorbed. Used for microcalorimeters.
 - UF *microcalorimeters*
 - GS measuring instruments
 - . **calorimeters**
 - . . bomb calorimeters
 - . . drop calorimeters
 - . . flame calorimeters
 - RT heat measurement

calves

high temperature tests
scintillating fibers
temperature measuring instruments

calorimetry

USE **heat measurement**

calutrons

USE **cyclotrons**

calves

GS animals
. vertebrates
. . . mammals
. . . . cattle
. . . . **calves**
RT livestock

Calypso

(added January 1996)

DEF A natural satellite of Saturn orbiting at a mean distance of 294,660 kilometers.

GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Calypso**
RT Saturn (planet)

CAM (manufacturing)

USE **computer aided manufacturing**

camber

GS **camber**
. conical camber
. wing camber
RT airfoils
bending
∞ bows
cambered wings
curvature
curved beams
deflection
deformation
distortion
flexing
fuselages
lift
warpage

cambered wings

GS airfoils
. wings
. . **cambered wings**
RT camber
fixed wings
twisted wings
uncambered wings
wing camber

Cambodia

UF *Kampuchea*
GS nations
. **Cambodia**
RT Asia

Cambrian Period

(added June 1989)

GS Paleozoic Era
. **Cambrian Period**
RT geochronology
paleontology
Precambrian period

Camel aircraft

USE **TU-104 aircraft**

camera shutters

RT cameras
irises (mechanical apertures)
Kerr cells
panoramic cameras
∞ shutters
streak cameras

camera tubes

GS electron tubes
. **camera tubes**
. . image dissector tubes
. . orthicons
. . . image orthicons
. . vidicons

. . . return beam vidicons
. . . . thermicons
RT cameras
dynodes
image converters
image transducers
monoscopes
planotrons
television cameras
video equipment

cameras

GS optical equipment
. **cameras**
. . Baker-Nunn camera
. . ballistic cameras
. . CCD cameras
. . Delft camera
. . diffraction limited cameras
. . faint object camera
. . high speed cameras
. . . framing cameras
. . digital cameras
. . I2S cameras
. . Lallemand cameras
. . multispectral band cameras
. . panoramic cameras
. . pinhole cameras
. . Schmidt cameras
. . streak cameras
. . television cameras
photographic equipment
. **cameras**
. . Baker-Nunn camera
. . ballistic cameras
. . CCD cameras
. . Delft camera
. . diffraction limited cameras
. . faint object camera
. . high speed cameras
. . . framing cameras
. . digital cameras
. . I2S cameras
. . Lallemand cameras
. . multispectral band cameras
. . panoramic cameras
. . pinhole cameras
. . Schmidt cameras
. . streak cameras
. . television cameras
RT camera shutters
camera tubes
cinematography
focusing
lenses
photography
SIM
streak photography
ultraviolet photography
underwater photography
wide angle lenses

Cameroon

GS nations
. **Cameroon**
RT Africa

camouflage

RT air defense
coverings
netting (materials/structures)
stealth technology

Campbell-Hausdorff series

GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **Campbell-Hausdorff series**
. . real variables
. . series (mathematics)
. . . **Campbell-Hausdorff series**

camphor

GS ketones
. **camphor**
terpenes
. **camphor**

cams

GS positioning devices (machinery)

. **cams**
RT actuators
eccentrics
internal combustion engines
linkages
mechanical devices

Canada

GS nations
. **Canada**
. . Alberta
. . British Columbia
. . Manitoba
. . New Brunswick
. . Newfoundland
. . Northwest Territories
. . Nova Scotia
. . Ontario
. . Prince Edward Island
. . Quebec
. . Saskatchewan
. . Yukon Territory
RT Anik 1
Anik 2
Anik 3
Beaufort Sea (North America)
Canadian space program
Canadian spacecraft
Communications Technology Satellite
Great Lakes (North America)
Great Plains Corridor (North America)
Hudson Bay (Canada)
International Field Year for Great Lakes
International Hydrological Decade
Labrador
Lake Champlain Basin (NY-VT)
North America
Pacific Northwest (US)
Rocky Mountains (North America)
St Lawrence Valley (North America)
Williston Basin (North America)

Canadair aircraft

UF *Canadair CF-104 aircraft*
CF-104 aircraft
GS **Canadair aircraft**
. CL-41 aircraft
. CL-44 aircraft
. CL-84 aircraft
. CL-600 challenger aircraft
RT ∞ aircraft
General Dynamics aircraft

Canadair CF-104 aircraft

USE **Canadair aircraft**
F-104 aircraft

Canadair CL-41 aircraft

USE **CL-41 aircraft**

Canadair CL-44 aircraft

USE **CL-44 aircraft**

Canadair CL-84 aircraft

USE **CL-84 aircraft**

Canadarm (ISS)

(added September 2001)

USE **Space Station Mobile Servicing System**

Canadian Shield

RT geology
meteorite craters
Precambrian period

Canadian space program

DEF Space research, programs, and activities undertaken by Canada.

GS programs
. space programs
. . **Canadian space program**
. . . Alouette project
RT aerospace technology transfer
Anik 1
Anik 2
Anik 3
Anik satellites
Canada

Canadian spacecraft
 Communications Technology Satellite
 NASA programs
 Radarsat
 scientific satellites
 Space Station Mobile Servicing
 System
 synchronous satellites
 technology assessment
 technology utilization

Canadian spacecraft

DEF Spacecraft of the Canadian Government. The following satellites have been developed: Alouette satellites, ISIS satellites, Anik satellites, and Hermes satellite. RADARSAT and MSAT are in the process of being developed.

GS **Canadian spacecraft**

. Alouette satellites
 . . Alouette 1 satellite
 . . Alouette 2 satellite
 . . Alouette B satellite
 . Anik satellites
 . . Anik 1
 . . Anik 2
 . . Anik 3
 . Radarsat

RT Canada
 Canadian space program
 ∞ spacecraft

canals

GS landforms
 . **canals**
 waterways
 . **canals**
 RT ditches
 flood control
 fluid flow
 gates (openings)
 Great Lakes (North America)
 irrigation
 Mars surface
 materials handling
 Panama
 seepage
 straits
 troughs
 water flow

canard configurations

DEF Pertaining to an aerodynamic vehicle in which horizontal surfaces used for trim and control are forward of the main lifting surface; the horizontal trim and control surfaces in such an arrangement.

GS aerodynamic configurations
 . **canard configurations**

RT aircraft structures
 ∞ configurations
 control surfaces
 JAS-39 aircraft
 Saab 37 aircraft
 tandem wing aircraft
 X-31 aircraft

Canary Islands

GS landforms
 . islands
 . . **Canary Islands**
 nations
 . Spain
 . . **Canary Islands**

Canberra aircraft

GS BAC aircraft
 . **Canberra aircraft**
 jet aircraft
 . **Canberra aircraft**
 monoplanes
 . **Canberra aircraft**
 RT ∞ aircraft
 B-57 aircraft

Canberra bomber

USE **B-57 aircraft**

cancellation

RT contracts
 elimination

removal
 stopping

cancellation circuits

GS circuits
 . **cancellation circuits**
 RT display devices
 moving target indicators
 pulse Doppler radar
 radar

cancer

UF *carcinoma*
sarcoma
 GS diseases
 . tumors
 . . neoplasms
 . . . **cancer**
 leukemias
 RT bone marrow
 breast
 carcinogens
 cells (biology)
 metastasis
 oncogenes
 radiation therapy
 tissues (biology)
 tumor suppressor genes
 tumor suppressor proteins
 ulcers

cancer genes

(added July 2002)
 USE **oncogenes**

canisters

USE **cans**

canning

GS food processing
 . **canning**
 RT encapsulating
 ∞ food

Cannonball 2 satellite

GS artificial satellites
 . scientific satellites
 . . **Cannonball 2 satellite**

cannons

USE **guns (ordnance)**

cannulae

RT ∞ tubes

canonical forms

GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **canonical forms**
 RT fibers (mathematics)

canopies

RT aircraft structures
 airframes
 cockpits
 fairings
 windshields

canopies (vegetation)

DEF The topmost layers of leaves and branches of forest trees or other plants.

GS vegetation
 . **canopies (vegetation)**
 RT foliage
 forests
 grasses
 leaf area index
 leaves
 plants (botany)
 rain forests
 sod
 trees (plants)
 vegetative index

cans

UF *canisters*
 RT ∞ containers

drums (containers)

cant

USE **slopes**

cantilever beams

GS cantilever members
 . **cantilever beams**
 structural members
 . beams (supports)
 . . **cantilever beams**
 RT box beams
 I beams

cantilever members

GS **cantilever members**
 . cantilever beams
 . cantilever plates
 RT levers

cantilever plates

GS cantilever members
 . **cantilever plates**
 structural members
 . plates (structural members)
 . . **cantilever plates**
 RT anisotropic plates

cantilever wings

USE **wings**

canyons

UF *coulees*
gorges
 GS landforms
 . **canyons**
 . . Grand Canyon (AZ)
 RT arroyos
 cliffs
 fans (landforms)
 ravines
 rivers
 valleys
 water erosion

cap clouds

UF *orographic clouds*
 GS clouds (meteorology)
 . **cap clouds**
 RT atmospheric moisture
 climatology
 cloud cover
 meteorology
 nephelanalysis
 precipitation (meteorology)
 weather

capacitance

DEF That property of a system of conductors and dielectrics which permits the storage of electrically separated charges when potential differences exist between the conductors. It is the ratio of a quantity, Q, of electricity to a potential difference, V. A capacitance value is always positive. The units are farads when the charge is expressed in coulombs and the potential in volts: C = Q/V. Capacitance is symbolized as C.

GS electrical properties
 . **capacitance**
 RT capacitance-voltage characteristics
 capacitors
 ∞ capacity
 dielectric properties
 electric charge
 electrical impedance
 electrostatic charge
 inductance
 open circuit voltage
 RC circuits
 reactance
 RLC circuits

capacitance switches

GS switches
 . **capacitance switches**
 RT capacitors
 dielectrics
 RLC circuits

capacitance-voltage characteristics

switching circuits

capacitance-voltage characteristics

DEF The characteristics of a metal semiconductor contact or a semiconductor junction that manifests a measured capacitance as a function of a dc bias voltage with small, superimposed ac voltage applied to that junction or contact.

GS electrical properties
. **capacitance-voltage characteristics**

RT capacitance
∞ characteristics
electric potential
metal oxide semiconductors
volt-ampere characteristics

capacitive fuel gages

GS measuring instruments
. fuel gages
. . . **capacitive fuel gages**

RT dielectrics

capacitors

GS **capacitors**
. electrochemical capacitors

RT amplifiers
ballasts (impedances)
capacitance
capacitance switches
circuit protection circuits
∞ condensers
dielectrics
electrets
electric bridges
electric energy storage
electric filters
electric reactors
energy storage
Gerdien condensers
parallel plates
solid state devices

∞ capacity

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT capacitance
channel capacity
output
production engineering
risk
volume

Cape Hatteras (NC)

GS landforms
. capes (landforms)
. . . **Cape Hatteras (NC)**

RT Atlantic Ocean
North Carolina

Cape Kennedy launch complex

GS launching bases
. **Cape Kennedy launch complex**

RT ground support equipment

Cape Verde

GS nations
. **Cape Verde**

RT Africa
Atlantic Ocean
islands

capes (landforms)

GS landforms
. **capes (landforms)**
. . . Cape Hatteras (NC)

RT land

∞ capillaries

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT capillaries (anatomy)
capillary tubes

capillaries (anatomy)

GS anatomy
. circulatory system
. . . cardiovascular system

. . . blood vessels
. . . . **capillaries (anatomy)**
. glomerulus

RT arterioles
blood
∞ capillaries

capillary circulation

USE **capillary flow**

capillary flow

UF *capillary circulation*

GS fluid flow
. **capillary flow**

RT blood flow
laminar flow
liquid bridges
surface tension driven convection
thermocapillary migration

capillary pumped loops

(added September 2003)

DEF Passive, two-phase heat transport systems that utilize the capillary pressure developed in a fine pore evaporator wick to circulate the working fluid. Often used for cooling electronic components in spacecraft, telecommunications, and other systems.

UF *CPL (heat transfer)*

RT capillary tubes
cooling systems
cryogenic cooling
evaporative cooling
heat transfer
liquid cooling
temperature control

capillary tubes

RT ∞ capillaries
capillary pumped loops
∞ tubes

capillary waves

GS elastic waves
. **capillary waves**
. . . gravity waves
. . . baroclinic waves
. . . ripples
surface waves
. **capillary waves**
. . . gravity waves
. . . baroclinic waves
. . . ripples

RT interfacial tension
two dimensional flow
water waves

∞ caps

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT caps (explosives)
coverings
nose cones
polar caps
seals (stoppers)
spherical caps

caps (explosives)

GS explosive devices
. initiators (explosives)
. . . **caps (explosives)**
igniters
. initiators (explosives)
. . . **caps (explosives)**

RT ∞ caps
detonators
exploding wires
fuses (ordnance)
primers (explosives)

∞ capsules

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ buckets
∞ containers
fuel capsules
shells (structural forms)
space capsules
tablets

test chambers

∞ test equipment
test vehicles
∞ vessels

capsules (spacecraft)

USE **space capsules**

captive tests

DEF Holddown tests of a propulsive subsystem, rocket engine or motor as distinguished from a flight test.

GS **captive tests**

. static tests
. . . static firing

RT engine tests
ground tests
missile tests
prefiring tests
prelaunch tests
∞ tests

capture cross sections

USE **absorption cross sections**

capture effect

DEF An effect in frequency-modulation (FM) reception where the stronger signal of two stations on the same frequency completely suppresses the weaker signal.

RT absorbance

∞ absorption

∞ effects

electron capture
frequency modulation
frequency synchronization
nuclear capture
recombination reactions
trajectory analysis

captured air bubble vehicles

GS surface vehicles
. **captured air bubble vehicles**
water vehicles
. **captured air bubble vehicles**

RT hydrofoil craft
surface effect ships
SWATH (ship)
∞ vehicles

Caravelle aircraft

USE **SE-210 aircraft**

Carbamates (tradename)

GS esters
. **Carbamates (tradename)**
. . . urethanes
poisons
. pesticides
. . . insecticides
. . . **Carbamates (tradename)**
. urethanes

carbamides

GS nitrogen compounds
. amides
. . **carbamides**

carbazoles

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. pyrroles
. **carbazoles**

carbenes

DEF An organic radical containing divalent carbon.

RT free radicals

carbides

DEF Compounds of carbon with one or more metallic elements.

GS carbon compounds
. **carbides**
. . aluminum carbides
. . boron carbides
. . cementite
. . chromium carbides
. . hafnium carbides

- .. molybdenum carbides
 - .. niobium carbides
 - .. silicon carbides
 - .. tantalum carbides
 - .. titanium carbides
 - .. tungsten carbides
 - .. uranium carbides
 - .. vanadium carbides
 - .. zirconium carbides
- RT ceramic nuclear fuels
- refractory materials
- carbohydrate metabolism**
 - GS metabolism
 - . **carbohydrate metabolism**
 - .. hyperglycemia
 - .. hypoglycemia
 - RT cortisone
 - diabetes mellitus
 - glucocorticoids
 - hydrogen metabolism
- carbohydrates**
 - UF *saccharides*
 - GS organic compounds
 - . **carbohydrates**
 - .. citric acid
 - .. glucosides
 - ... nucleosides
 - ... adenines
 - ... guanosines
 - .. polysaccharides
 - .. cellulose
 - ... Fortisan (trademark)
 - .. chitin
 - .. dextrans
 - .. glycogens
 - .. starches
 - .. sugars
 - ... dextrans
 - ... inositols
 - ... lactose
 - ... mannitol
 - ... monosaccharides
 - ... sucrose
 - ... hexoses
 - ... galactose
 - ... glucose
 - ... pentose
 - ... ribose
 - ... xylose
 - RT alcohols
 - ethyl alcohol
 - ∞ food
 - glycerols
 - ∞ nutrients
 - optical activity
 - ∞ oxygen compounds
 - photosynthesis
 - stereochemistry
 - synthetic food
- carbon**
 - GS chemical elements
 - . **carbon**
 - .. carbon isotopes
 - ... carbon 12
 - ... carbon 13
 - ... carbon 14
 - RT activated carbon
 - bitumens
 - buckminsterfullerene
 - carbon nanotubes
 - charcoal
 - coke
 - decarburization
 - diamonds
 - fullerenes
 - glassy carbon
 - graphite
 - soot
- carbon 12**
 - GS chemical elements
 - . carbon
 - .. carbon isotopes
 - ... **carbon 12**
 - .. nuclides
 - .. isotopes
 - ... carbon isotopes
- ... **carbon 12**
- carbon 13**
 - GS chemical elements
 - . carbon
 - .. carbon isotopes
 - ... **carbon 13**
 - .. nuclides
 - .. isotopes
 - ... carbon isotopes
 - ... **carbon 13**
- carbon 14**
 - GS chemical elements
 - . carbon
 - .. carbon isotopes
 - ... **carbon 14**
 - .. nuclides
 - .. isotopes
 - ... carbon isotopes
 - ... **carbon 14**
 - ... radioactive isotopes
 - ... **carbon 14**
- carbon arcs**
 - GS electric current
 - . electric discharges
 - .. electric arcs
 - ... **carbon arcs**
 - RT arc lamps
 - image furnaces
- carbon compounds**
 - SN (RESTRICTED TO INORGANIC COMPOUNDS)
 - GS **carbon compounds**
 - . carbides
 - .. aluminum carbides
 - .. boron carbides
 - .. cementite
 - .. chromium carbides
 - .. hafnium carbides
 - .. molybdenum carbides
 - .. niobium carbides
 - .. silicon carbides
 - .. tantalum carbides
 - .. titanium carbides
 - .. tungsten carbides
 - .. uranium carbides
 - .. vanadium carbides
 - .. zirconium carbides
 - . carbon dioxide
 - . carbon disulfide
 - . carbon monoxide
 - . carbon suboxides
 - . carbon tetrachloride
 - . carbon tetrafluoride
 - . carbonates
 - .. bastnasite
 - .. calcium carbonates
 - ... akermanite
 - ... aragonite
 - ... calcite
 - ... chalk
 - .. dolomite (mineral)
 - .. polycarbonates
 - ... Lexan (trademark)
 - .. siderites
 - .. sodium carbonates
 - .. tetraethyl orthocarbonates
 - . halocarbons
 - .. chlorocarbons
 - .. chlorofluorocarbons
 - .. fluorocarbons
 - .. halon
 - . carbon nitrides
 - .. fullerides
 - RT carbonaceous materials
 - ∞ chemical compounds
 - ∞ Group 4A compounds
 - hydrocarbons
 - methylidyne
 - Swan bands
- carbon cycle**
 - DEF The path of carbon in living beings in which carbon dioxide is fixed by photosynthesis to form organic nutrients and ultimately restored to the inorganic state by respiration and protoplasmic decay.
- GS cycles
 - . **carbon cycle**
- RT animals
 - ∞ biology
 - biomass
 - ecology
 - organisms
 - plants (botany)
 - viability
- carbon dioxide**
 - GS carbon compounds
 - . **carbon dioxide**
 - chalcogenides
 - .. oxides
 - .. dioxides
 - ... **carbon dioxide**
 - gases
 - . **carbon dioxide**
 - RT Chlorella
 - metabolic wastes
 - synthane
- carbon dioxide concentration**
 - GS composition (property)
 - . chemical composition
 - .. **carbon dioxide concentration**
 - .. concentration (composition)
 - .. **carbon dioxide concentration**
 - . gas composition
 - .. **carbon dioxide concentration**
 - RT air purification
 - atmospheric composition
 - climate change
 - decontamination
 - rebreathing
 - spacecraft cabin atmospheres
- carbon dioxide lasers**
 - GS stimulated emission devices
 - . lasers
 - .. gas lasers
 - ... **carbon dioxide lasers**
 - RT chemical lasers
 - continuous wave lasers
 - gas masers
 - infrared lasers
 - Mach-Zehnder interferometers
 - molecular oscillations
 - organic lasers
 - polar gases
 - pulsed lasers
 - Q switched lasers
 - stimulated emission
 - TEA lasers
 - waveguide lasers
- carbon dioxide removal**
 - GS removal
 - . **carbon dioxide removal**
 - RT air purification
 - decontamination
 - rebreathing
 - smoke abatement
- carbon dioxide tension**
 - GS **carbon dioxide tension**
 - . hypercapnia
 - . hypocapnia
- carbon disulfide**
 - GS carbon compounds
 - . **carbon disulfide**
 - chalcogenides
 - .. sulfides
 - .. disulfides
 - ... **carbon disulfide**
 - sulfur compounds
 - . sulfides
 - .. disulfides
 - ... **carbon disulfide**
- carbon fiber reinforced plastics**
 - UF *CFRP*
 - GS composite materials
 - . fiber composites
 - .. **carbon fiber reinforced plastics**
 - ... carbon-phenolic composites
 - . polymer matrix composites
 - .. reinforced plastics

carbon fibers

- . . . carbon fiber reinforced plastics
- . . . carbon-phenolic composites plastics
- . reinforced plastics
- . . . carbon fiber reinforced plastics
- . . . carbon-phenolic composites
- RT braided composites
- fibers
- graphite-epoxy composites
- lay-up
- PEEK
- reinforcing fibers
- superhybrid materials
- woven composites

carbon fibers

- GS fibers
- . reinforcing fibers
- . . . carbon fibers
- RT boron fibers
- carbon-phenolic composites
- carbon-silicon carbide composites
- chemical vapor infiltration
- composite materials
- fiber composites
- fiber pullout
- ∞ filaments
- polyacrylonitrile

carbon isotopes

- GS chemical elements
- . carbon
- . . . carbon isotopes
- . . . carbon 12
- . . . carbon 13
- . . . carbon 14
- . nuclides
- . isotopes
- . . . carbon isotopes
- . . . carbon 12
- . . . carbon 13
- . . . carbon 14

carbon lasers

- GS stimulated emission devices
- . lasers
- . . . carbon lasers
- RT chemical lasers
- gas lasers
- infrared lasers
- liquid lasers
- organic lasers
- stimulated emission

carbon monoxide

- GS carbon compounds
- . carbon monoxide
- chalcogenides
- . oxides
- . . . carbon monoxide
- gases
- . carbon monoxide
- RT Hopcalite (trademark)
- smog
- synthane

carbon monoxide lasers

- GS stimulated emission devices
- . lasers
- . . gas lasers
- . . . carbon monoxide lasers
- RT chemical lasers
- continuous wave lasers
- infrared lasers
- molecular oscillations
- stimulated emission
- TEA lasers

carbon monoxide poisoning

- GS diseases
- . toxic diseases
- . . carbon monoxide poisoning
- toxicity
- . carbon monoxide poisoning
- RT carboxyhemoglobin
- lethality
- occupational diseases
- pathological effects

∞ poisoning

carbon nanotubes

(added September 2001)

DEF Single- or multilayer nanotubes composed of cylindrical graphene sheets of bonded carbon atoms, and closed at either end with caps containing pentagonal rings. These nanotubes are single molecules typically measuring a few nanometers in diameter and several microns in length.

- UF CNT (nanotechnology)
- tubular fullerenes
- GS nanostructures (devices)
- . nanotubes
- . . carbon nanotubes
- RT carbon
- fullerenes
- graphite
- nanostructure (characteristics)
- single electron transistors

carbon nitrides

(added October 2001)

- GS carbon compounds
- . carbon nitrides
- nitrogen compounds
- . nitrides
- . . carbon nitrides
- RT amorphous materials
- boron nitrides
- ceramic coatings
- protective coatings
- semiconductors (materials)
- thin films

carbon stars

- UF C stars
- GS celestial bodies
- . stars
- . . giant stars
- . . . red giant stars
- carbon stars
- . . late stars
- . . . cool stars
- carbon stars
- RT asymptotic giant branch stars
- irregular variable stars
- Mira variables
- R Coronae Borealis stars
- stellar composition
- subgiant stars
- Wolf-Rayet stars

carbon steels

- GS alloys
- . iron alloys
- . . steels
- . . . carbon steels
- low carbon steels
- RT high strength steels

carbon suboxides

DEF Colorless lacrimatory gases having unpleasant odors and boiling points of approximately -7 degrees C.

- GS carbon compounds
- . carbon suboxides
- chalcogenides
- . oxides
- . . carbon suboxides
- gases
- . carbon suboxides
- RT ∞ oxygen compounds

carbon tetrachloride

- UF tetrachloromethane
- GS carbon compounds
- . carbon tetrachloride
- halogen compounds
- . chlorine compounds
- . . chlorides
- . . . carbon tetrachloride
- . . halides
- . . chlorides
- . . . carbon tetrachloride

carbon tetrachloride poisoning

- GS diseases
- . toxic diseases

. . carbon tetrachloride poisoning

toxicity

- . carbon tetrachloride poisoning
- RT industrial safety
- ∞ poisoning
- toxicity and safety hazard
- toxicology

carbon tetrafluoride

- GS carbon compounds
- . carbon tetrafluoride
- halogen compounds
- . fluorine compounds
- . . fluoro compounds
- . . . fluorine organic compounds
- fluorohydrocarbons
- carbon tetrafluoride
- organic compounds
- . fluorine organic compounds
- . . fluorohydrocarbons
- . . . carbon tetrafluoride
- . hydrocarbons
- . . fluorohydrocarbons
- . . . carbon tetrafluoride

carbonaceous chondrites

DEF A group name for friable, dull-black, chondritic stony meteorites, characterized by the presence of hydrated clay type silicate minerals, by considerable amounts and a great variety of organic compounds believed to be of extraterrestrial origin; by a near or total lack of free nickel-iron; and by an abnormally high content of inert gases.

- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- . . . chondrites
- carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite

carbonaceous materials

DEF Substance composed of or containing carbon or carbon compounds.

- GS carbonaceous materials
- . graphite
- . . pyrolytic graphite
- . peat
- . soot
- RT carbon compounds
- coal
- crude oil
- fossil fuels
- lignite
- ∞ materials
- organic materials
- solvent refined coal

carbonaceous meteorites

- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- ureilites

- RT exobiology
meteoritic composition
- carbonaceous rocks**
GS rocks
. sedimentary rocks
. . . **carbonaceous rocks**
. . . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
- RT carbonates
regolith
shatter cones
soils
- carbonates**
UF *bicarbonates*
GS carbon compounds
. **carbonates**
. . bastnasite
. . calcium carbonates
. . . akermanite
. . . aragonite
. . . calcite
. . . chalk
. . dolomite (mineral)
. . polycarbonates
. . . Lexan (trademark)
. . siderites
. . sodium carbonates
. . tetraethyl orthocarbonates
- RT alkalis
carbonaceous rocks
carbonic acid
molten carbonate fuel cells
∞ oxygen compounds
- carbon-carbon composites**
GS composite materials
. **carbon-carbon composites**
- RT carbon-silicon carbide composites
fiber composites
fracture strength
reinforcing fibers
thermal protection
thermal resistance
- carbonic acid**
GS acids
. **carbonic acid**
- RT carbonates
- carbonic anhydrase**
GS biopolymers
. proteins
. . enzymes
. . . **carbonic anhydrase**
organic compounds
. proteins
. . enzymes
. . . **carbonic anhydrase**
- RT acetazolamide
- carbonization**
GS chemical reactions
. **carbonization**
- RT charring
decarbonation
- carbon-phenolic composites**
(added January 1993)
GS composite materials
. fiber composites
. . carbon fiber reinforced plastics
. . . **carbon-phenolic composites**
. . polymer matrix composites
. . reinforced plastics
. . . carbon fiber reinforced plastics
. . . . **carbon-phenolic composites**
. . resin matrix composites
. . **carbon-phenolic composites**
plastics
. reinforced plastics
. . carbon fiber reinforced plastics
. . . **carbon-phenolic composites**
- RT ablative materials
carbon fibers
phenolic resins
- rocket nozzles
- carbon-silicon carbide composites**
(added March 2005)
DEF Composite materials formed from carbon embedded in a matrix of silicon carbide.
Also known as C/SiC composites.
- GS composite materials
. ceramic matrix composites
. . **carbon-silicon carbide composites**
- RT carbon fibers
carbon-carbon composites
fiber composites
silicon carbides
- carbonyl compounds**
RT ∞ chemical compounds
oxetane polymers
- carborane**
GS boron compounds
. boron hydrides
. . boranes
. . . **carborane**
hydrogen compounds
. hydrides
. . boron hydrides
. . . boranes
. . . . **carborane**
- Carborundum (trademark)**
RT abrasives
refractory materials
silicon carbides
- carboxyhemoglobin**
GS biopolymers
. proteins
. . hemoglobin
. . . **carboxyhemoglobin**
organic compounds
. proteins
. . hemoglobin
. . . **carboxyhemoglobin**
organometallic compounds
. hemoglobin
. . **carboxyhemoglobin**
- RT blood circulation
carbon monoxide poisoning
erythrocytes
- carboxyhemoglobin test**
GS physiological tests
. **carboxyhemoglobin test**
- RT blood
hematology
- carboxyl group**
RT carboxylic acids
- carboxylates**
GS esters
. **carboxylates**
- RT carboxylic acids
- carboxylation**
GS chemical reactions
. **carboxylation**
- RT decarboxylation
- carboxylic acids**
GS acids
. **carboxylic acids**
. . acrylic acid
. . alanine
. . . phenylalanine
. . aspartic acid
. . citric acid
. . dicarboxylic acids
. . fatty acids
. . . acetic acid
. . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
. . . acetylsalicylic acid
. . benzilic acid
. . benzoic acid
. . lipoic acid
. . oleic acid
. . . palmitic acid
- . . . propionic acid
. . . sebacic acid
. . . valeric acid
. . . abscisic acid
. . folic acid
. . formhydroxamic acid
. . formic acid
. . Hexogenes (trademark)
. . lactic acid
. . lysine
. . nicotinic acid
. . oxalic acid
. . oxamic acids
. . tryptophan
organic compounds
. **carboxylic acids**
. . acrylic acid
. . alanine
. . . phenylalanine
. . aspartic acid
. . citric acid
. . dicarboxylic acids
. . fatty acids
. . . acetic acid
. . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
. . . acetylsalicylic acid
. . benzilic acid
. . benzoic acid
. . lipoic acid
. . oleic acid
. . . palmitic acid
. . propionic acid
. . sebacic acid
. . valeric acid
. . . abscisic acid
. . folic acid
. . formhydroxamic acid
. . formic acid
. . Hexogenes (trademark)
. . lactic acid
. . lysine
. . nicotinic acid
. . oxalic acid
. . oxamic acids
. . tryptophan
- RT carboxyl group
carboxylates
terephthalate
- carburetors**
UF *injection carburetors*
RT chokes (fuel systems)
contactors
engine parts
engines
fuel injection
fuel systems
injectors
internal combustion engines
∞ jet nozzles
mixers
premixed flames
throats
- carburiing**
DEF Introducing carbon into a solid ferrous alloy by holding above Ac1 in contact with a suitable carbonaceous material. The carburiized alloy is usually quench hardened.
GS hardening (materials)
. **carburiing**
- RT decarburization
- carcinogens**
DEF Agents producing or inciting cancerous growth.
RT cancer
hazardous materials
neoplasms
- carcinoma*
USE **cancer**
- carcinotrons**
GS amplifiers
. **carcinotrons**
electron tubes
vacuum tubes
. . microwave tubes

cardiac auricles

- . . . traveling wave tubes
- **carcinotrons**
- microwave equipment
- . microwave tubes
- . . traveling wave tubes
- **carcinotrons**

RT helitrons

cardiac auricles

GS anatomy

- . circulatory system
- . . cardiovascular system
- . . . heart
- **cardiac auricles**

RT His bundle

cardiac output

(added March 1991)

GS output

- . **cardiac output**
- . . heart minute volume
- . . stroke volume

RT blood volume

- cardiovascular system
- heart function
- heart rate
- physiological tests

cardiac ventricles

GS anatomy

- . circulatory system
- . . cardiovascular system
- . . . heart
- **cardiac ventricles**

RT diastolic pressure

- echocardiography
- His bundle
- systole

cardiograms

RT biomedical data

- cardiography
- heart

cardiography

GS bioengineering

- . biometrics
- . . **cardiography**
- . . . ballistocardiography
- . . . electrocardiography
- . . . magnetocardiography
- . . . phonocardiography
- echocardiography
- . . . seismocardiography
- . . . vectorcardiography

RT cardiograms

- cardiovascular system
- heart
- heart diseases
- heart function
- medical equipment
- physiological tests

cardiology

GS medical science

- . **cardiology**

RT angiography

- artificial cardiac pacemaker
- heart
- heart diseases
- heart rate
- radiocardiography

cardiotachometers

GS medical equipment

- . **cardiotachometers**

RT heart

cardiovascular system

DEF The system of an animal pertaining to the heart and blood vessels. Used for vascular system.

UF *vascular system*

GS anatomy

- . circulatory system
- . . **cardiovascular system**
- . . . blood vessels
- arteries
- aorta
- arterioles

- capillaries (anatomy)
- glomerulus
- veins
- . . . heart
- cardiac auricles
- cardiac ventricles
- epicardium
- heart conduction system
- myocardium

RT angiogenesis

- angiography
- baroreflexes
- blood
- blood volume
- cardiac output
- cardiography
- carotid sinus body
- carotid sinus reflex
- cerebral vascular accidents
- diastole
- fat embolisms
- head up tilt
- heart diseases
- hematopoiesis
- hematopoietic system
- hemodynamics
- hemorrhages
- lower body negative pressure
- stroke volume

∞ systems

- systole
- tilt-table test

cards

GS **cards**

- . punched cards

RT computer storage devices

- data storage

caret wings

GS airfoils

- . wings
- . . **caret wings**
- planforms

RT **caret wings**

- arrow wings
- delta wings
- waveriders

CARETS (test site)

USE **Central Atlantic Regional Ecol Test Site**

cargo

UF *freight*

GS **cargo**

- . air cargo
- . . air mail
- . baggage

RT air drop operations

- airdrops
- delivery
- freight costs
- harbors
- hauling
- materials handling
- Multi-Purpose Logistics Modules
- railroad humping tests
- rapid transit systems
- transportation
- transportation energy
- trucks

cargo aircraft

GS transport aircraft

- . **cargo aircraft**
- . . Breguet 941 aircraft
- . . C-1A aircraft
- . . C-2 aircraft
- . . C-5 aircraft
- . . C-9 aircraft
- . . C-15 aircraft
- . . C-17 aircraft
- . . C-33 aircraft
- . . C-35 aircraft
- . . C-46 aircraft
- . . C-47 aircraft
- . . C-54 aircraft
- . . C-118 aircraft
- . . C-119 aircraft

- . . C-121 aircraft
- . . C-123 aircraft
- . . C-124 aircraft
- . . C-130 aircraft
- . . C-131 aircraft
- . . C-133 aircraft
- . . C-135 aircraft
- . . C-140 aircraft
- . . C-141 aircraft
- . . C-160 aircraft
- . . CH-21 helicopter
- . . CL-44 aircraft
- . . DC 3 aircraft
- . . DC 7 aircraft
- . . P-160 aircraft
- . . P-166 aircraft
- . . spanloader aircraft
- . . YC-14 aircraft

RT air cargo

∞ aircraft

- Boeing 727 aircraft
- Boeing 737 aircraft
- Boeing 767 aircraft
- commercial aircraft
- heavy lift helicopters
- jet aircraft
- materials handling
- Mercure aircraft
- MH-262 aircraft

∞ military aircraft

- monoplanes
- passenger aircraft
- SC-7 aircraft
- supersonic transports
- T-39 aircraft
- TU-154 aircraft
- utility aircraft
- VC-10 aircraft
- very large transport aircraft

cargo ships

UF *LOTS cargo ships*

GS surface vehicles

- . **cargo ships**
- . . Savannah nuclear ship
- . . tanker ships
- water vehicles
- . ships
- . . **cargo ships**
- . . . Savannah nuclear ship
- . . . tanker ships

RT artificial harbors

- deepwater terminals
- nuclear powered ships
- offshore docking
- offshore platforms
- shipyards
- tanker terminals
- wharves

cargo spacecraft

RT Automated Transfer Vehicle

- ferry spacecraft

∞ spacecraft

Cargomaster aircraft

USE **C-133 aircraft**

Caribbean region

DEF The region that consists of all or parts of the islands of the Caribbean Sea, the Bahamas, the British dependent territories, the Virgin Islands, and the mainland areas of the three Guianas and Belize.

RT Antigua and Barbuda

- Bahamas
- Barbados
- Belize
- Cuba
- developing nations
- Dominican Republic
- French Guiana
- Grenada
- Guyana
- Haiti
- Jamaica
- Martinique
- Surinam
- Trinidad and Tobago
- Virgin Islands

- West Indies
- Caribbean Sea**
 GS seas
 . **Caribbean Sea**
 RT Belize
 Cuba
 Dominican Republic
 Gulf of Mexico
 Gulf Stream
 Haiti
 Panama Canal Zone
 Virgin Islands
- Caribou aircraft*
 USE **DHC 4 aircraft**
- caribous**
 GS animals
 . vertebrates
 . . mammals
 . . . deer
 **caribous**
- Carme**
(added January 1996)
 DEF A natural satellite of Jupiter orbiting at a mean distance of 22,600,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . Jupiter satellites
 . . . **Carme**
 RT Jupiter (planet)
- carnitine**
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **carnitine**
 vitamins
 . **carnitine**
- Carnot cycle**
 DEF An idealized reversible thermodynamic cycle. The Carnot cycle consists of four stages: (a) an isothermal expansion of the gas at temperature T1; (b) an adiabatic expansion to temperature T2; (c) an isothermal compression at temperature T2; (d) an adiabatic compression to the original state of the gas to complete the cycle.
 GS cycles
 . thermodynamic cycles
 . . **Carnot cycle**
 RT adiabatic conditions
 Rankine cycle
 Stirling cycle
- carotene**
 GS organic compounds
 . hydrocarbons
 . . **carotene**
 pigments
 . **carotene**
 RT retinene
 skin (anatomy)
- carotenoids**
(added August 2004)
 DEF The general name for a group of fat-soluble pigments found in green, yellow, and leafy vegetables, and yellow fruits. They are aliphatic hydrocarbons consisting of a polyisoprene backbone
 GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . **carotenoids**
 pigments
 . **carotenoids**
 RT terpenes
- carotid sinus body**
 RT arteries
 blood vessels
 cardiovascular system
 carotid sinus reflex
 chemoreceptors
 circulatory system
 nerves
- sinuses
- carotid sinus reflex**
 GS reflexes
 . baroreflexes
 . . **carotid sinus reflex**
 RT arteries
 blood vessels
 cardiovascular system
 carotid sinus body
 circulatory system
 heart function
 nerves
 sinuses
- Carpathian Mountains (Europe)**
 GS landforms
 . mountains
 . . **Carpathian Mountains (Europe)**
 RT Europe
- carriages**
 RT carts
 chassis
 dollies
 frames
 landing gear
 supports
 undercarriages
- carrier density (solid state)**
 DEF The charge carrier concentrations of holes and/or electrons in a semiconductor which determines its electronic characteristics and function.
 GS density (number/volume)
 . particle density (concentration)
 . . electron density (concentration)
 . . . **carrier density (solid state)**
 RT acceptor materials
 carrier lifetime
 carrier transport (solid state)
 ∞ carriers
 donor materials
 electron-hole drops
 semiconductors (materials)
 Zener effect
- carrier frequencies**
 GS frequencies
 . **carrier frequencies**
 RT carrier to noise ratios
 frequency division multiplexing
 harmonic generations
 modulation
 multiplexing
 radio frequencies
 single channel per carrier
 transmission
 sweep frequency
 unified S band
- carrier injection**
 GS injection
 . **carrier injection**
 RT additives
 Barritt diodes
 bipolar transistors
 carrier lifetime
 charge carriers
 charge transfer
 injection locking
 ion injection
 majority carriers
 minority carriers
 radiative recombination
 semiconductors (materials)
 Suhl effect
 traveling solvent method
- carrier lifetime**
 GS life (durability)
 . **carrier lifetime**
 RT carrier density (solid state)
 carrier injection
 carrier mobility
 carrier transport (solid state)
 charge carriers
 minority carriers
- solar cells
- carrier mobility**
 GS electrical properties
 . **carrier mobility**
 . . electron mobility
 . . hole mobility
 mobility
 . **carrier mobility**
 . . electron mobility
 . . hole mobility
 transport properties
 . **carrier mobility**
 . . electron mobility
 . . hole mobility
 RT carrier lifetime
 electrical resistivity
 electromagnetic properties
 excitons
 Hall effect
 ion implantation
 superconductors (materials)
- carrier modulation*
 USE **modulation**
- carrier rockets*
 USE **launch vehicles**
- carrier sense multiple access**
(added April 2000)
 DEF A data transmission protocol for multi-access networks where each node in the network senses traffic and waits for it to clear before transmitting; if two or more nodes transmit simultaneously, they wait a random interval before attempting to re-transmit.
 GS protocol (computers)
 . **carrier sense multiple access**
 telecommunication
 . multiple access
 . . **carrier sense multiple access**
 transmission
 . signal transmission
 . . data transmission
 . . . multiple access
 **carrier sense multiple access**
 RT communication networks
 computer networks
 Ethernet
 local area networks
 packet transmission
- carrier systems*
 USE **wireless communication**
- carrier to noise ratios**
 DEF RF signal power input to the receiver divided by the noise power input.
 RT carrier frequencies
 communication satellites
 data transmission
 downlinking
 Earth terminals
 frequency modulation
 signal to noise ratios
 transmission efficiency
 uplinking
- carrier transport (solid state)**
 DEF The mobility of conduction electrons or holes in semiconductors.
 RT carrier density (solid state)
 carrier lifetime
 diffusion length
 energy conversion efficiency
 solar cells
- carrier waves**
 DEF Waves generated at a point in the transmitting system and modulated by the signal. Used for subcarrier waves.
 UF *subcarrier waves*
 RT modulation
 radio spectra
- ∞ **carriers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT aircraft carriers

Cartan space

carrier density (solid state)
charge carriers
Zener effect

Carrington rotation
USE **solar rotation**

Cartan space
RT compressible flow
fluid flow
potential flow
∞ space

Cartesian coordinates
DEF A coordinate system in which the locations of points in space are expressed by reference to three planes, called coordinate planes, no two of which are parallel. Used for rectangular coordinates.
UF *rectangular coordinates*
GS *coordinates*
. **Cartesian coordinates**
geometry
. Euclidean geometry
. . . **Cartesian coordinates**
RT cylindrical coordinates
oblique coordinates

cartilage
GS anatomy
. musculoskeletal system
. . . **cartilage**
tissues (biology)
. connective tissue
. . . **cartilage**
RT bones
larynx

cartography
USE **mapping**

cartridge actuated devices
USE **actuators**
explosive devices

cartridges
RT cases (containers)
∞ containers
packages
projectiles
propellants

carts
GS **carts**
. Crew Equipment Translation Aid (ISS)
RT carriages
materials handling
undercarriages

cascade control
UF *multiloop systems*
GS automatic control
. feedback control
. . . **cascade control**
RT ∞ cascades
∞ control
electronic control
optical control
remote control

cascade flow
GS fluid flow
. **cascade flow**
RT ∞ cascades
outlet flow
turbomachine blades

Cascade Range (CA-OR-WA)
GS land
. **Cascade Range (CA-OR-WA)**
landforms
. mountains
. . . **Cascade Range (CA-OR-WA)**
RT California
Oregon
United States
Washington

cascade wind tunnels
GS test facilities

. wind tunnels
. . hypersonic wind tunnels
. . . **cascade wind tunnels**
. . hypervelocity wind tunnels
. . . **cascade wind tunnels**
RT hypersonic flow
shock tunnels

∞ **cascades**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cascade control
cascade flow
circuits
cosmic ray showers
electron photon cascades

cascades (fluid dynamics)
USE **fluid dynamics**

cascode devices
(added August 1998)
DEF Amplifier devices consisting of a common grounded-emitter (cathode) or source stage that drives a grounded-base output stage, resulting in high-impedance, high-gain, and low-noise,
GS amplifiers
. **cascode devices**
electronic equipment
. solid state devices
. . semiconductor devices
. . . **cascode devices**
RT CMOS
field effect transistors
high electron mobility transistors
switching circuits
transistor amplifiers
transistor circuits
transistors

cascode MOSFET
USE **field effect transistors**

case bonded propellants
GS propellants
. solid propellants
. . . **case bonded propellants**
RT ammunition
composite propellants
explosives
hybrid propellants
inhibitors
plasticizers
solid rocket propellants

case histories
GS histories
. **case histories**
RT anthropology
biography
clinical medicine
documentation
etiology
phenomenology
records
sociology

cases (containers)
GS **cases (containers)**
. rocket engine cases
RT boxes (containers)
cartridges
∞ containers
missile bodies
packages
∞ shelves

∞ **casing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT coverings
enclosure
jackets
linings
pipes (tubes)

sheaths

casks
USE **barrels (containers)**

Caspian Sea
GS seas
. **Caspian Sea**
RT coasts

Cassegrain antennas
GS antennas
. **Cassegrain antennas**
RT antenna design
Gregorian antennas
parabolic antennas
reflector antennas
subreflectors
two reflector antennas

Cassegrain optics
RT fiber optics
geometrical optics
mirrors
∞ optics
reflecting telescopes
telescopes

Cassini mission
(added August 1988)
GS space missions
. **Cassini mission**
RT European Space Agency
European space programs
Huygens probe
international cooperation
Mariner Mark 2 Spacecraft
∞ missions
NASA space programs
Saturn (planet)
space exploration
space probes
Titan
Titan 4B launch vehicle
Titan atmosphere

Cassiopeia A
GS celestial bodies
. nebulae
. . . **Cassiopeia A**
. radio sources (astronomy)
. . . **Cassiopeia A**
RT Orion nebula

Cassiopeia constellation
GS constellations
. **Cassiopeia constellation**
RT celestial bodies
celestial sphere
stars

cast alloys
GS alloys
. **cast alloys**
RT castings
mechanical properties
microstructure
rheocasting
squeeze casting

Castigliano variational theorem
GS theorems
. **Castigliano variational theorem**
RT calculus of variations
energy methods
Euler-Lagrange equation
stress analysis
structural analysis

casting
GS forming techniques
. **casting**
. . centrifugal casting
. . investment casting
. . propellant casting
. . rheocasting
. . sand casting
. . slip casting
. . squeeze casting
RT baking

- billets
 - dies
 - extruding
 - forging
 - inclusions
 - ingots
 - liquid metals
 - melting
 - metal working
 - ∞ metallurgy
 - ∞ microstructure
 - molding materials
 - molds
 - mushy zones
 - pinholes
 - polymeric films
 - pouring
 - pultrusion
 - resin transfer molding
 - shrinkage
 - solidification
- casting solvents*
USE **plasticizers**
- castings**
GS **castings**
. ingots
. propellant casting
RT billets
cast alloys
defects
degassing
flat patterns
inclusions
microstructure
molds
pinholes
pouring
risers
solidification
- Castor 2 engine*
USE **TX-354 engine**
- castor oil**
GS oils
. **castor oil**
organic compounds
. lipids
. . . **castor oil**
RT fatty acids
- casts**
RT damage assessment
gauze
plasters
splints
- casualties**
RT death
disasters
evacuating (transportation)
- CAT scanner*
USE **computer aided tomography**
- catabolism**
GS metabolism
. **catabolism**
RT physiology
- cataclysmic variables**
GS celestial bodies
. stars
. . . double stars
. . . binary stars
. . . . **cataclysmic variables**
. . . variable stars
. . . . **cataclysmic variables**
RT dwarf stars
eclipsing binary stars
flare stars
hot stars
novae
periodic variations
solar oscillations
stellar flares
stellar mass ejection
stellar oscillations
- superhumps (astronomy)
white dwarf stars
- catalase**
GS biopolymers
. proteins
. . enzymes
. . . **catalase**
organic compounds
. proteins
. . enzymes
. . . **catalase**
RT cells (biology)
- ∞ **catalogs**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT astronomical catalogs
catalogs (publications)
hardware utilization lists
indexes (documentation)
lists
- catalogs (publications)**
GS documents
. **catalogs (publications)**
. . astronomical catalogs
RT ∞ catalogs
categories
documentation
information dissemination
libraries
- catalysis**
GS **catalysis**
. autocatalysis
RT ∞ acceleration
activation
catalytic activity
cracking (chemical engineering)
Fischer-Tropsch process
reaction kinetics
- catalysts**
GS **catalysts**
. electrocatalysts
. Hopcalite (trademark)
. Ziegler catalyst
RT accelerating agents
additives
admixtures
coal derived gases
coal derived liquids
enzymes
Grignard reactions
high energy fuels
inhibitors
∞ initiators
platinum black
propellant additives
reagents
retardants
synthesis gas
- catalytic activity**
RT active sites (chemistry)
activity (biology)
autocatalysis
catalysis
cracking (chemical engineering)
enzyme inhibitors
Fischer-Tropsch process
phosphatases
- catalytic sites*
(added August 2004)
USE **active sites (chemistry)**
- catapults**
DEF A power-actuated machine or device for hurling forth something, as an airplane or missile, at a high initial speed; also a device usually explosive, for ejecting a person from an aircraft.
GS launchers
. **catapults**
. . rocket catapults
RT aircraft launching devices
missile launchers
- sea launching
- cataracts**
GS diseases
. eye diseases
. . **cataracts**
RT lenses
occupational diseases
- catastrope theory**
RT discontinuity
divergence
predictions
∞ theories
topology
- catchers**
RT electron bunching
klystrons
output
- catchment areas*
USE **watersheds**
- catecholamine**
GS organic compounds
. amines
. . **catecholamine**
. . . epinephrine
. . . norepinephrine
RT dopamine
hormones
neurotransmitters
- categories**
RT catalogs (publications)
classes
∞ groups
∞ sections
- catenaries**
GS geometry
. curves (geometry)
. . **catenaries**
. Euclidean geometry
. . analytic geometry
. . . **catenaries**
- catheterization**
RT blood vessels
intravenous procedures
- cathetometers**
GS measuring instruments
. optical measuring instruments
. . **cathetometers**
optical equipment
. optical measuring instruments
. . **cathetometers**
- cathode glow**
GS emission
. light emission
. . luminescence
. . . **cathode glow**
RT cathodoluminescence
glow discharges
rarefied plasmas
- cathode ray tubes**
DEF Vacuum tubes consisting essentially of an electron gun producing a concentrated electron beam (or cathode ray) which impinges on a phosphorescent coating on the back of a viewing face (or screen). The excitation of the phosphor produces light, the intensity of which is controlled by the flow of electrons. Deflection of the beam is achieved either electromagnetically by currents in coils around the tube, or electrostatically by voltages on internal deflection plates.
GS electron tubes
. vacuum tubes
. . **cathode ray tubes**
. . . monoscopes
. . . picture tubes
RT display devices
electron guns
electron optics
image tubes
magnetic lenses

cathodes

- oscilloscopes
- printers
- raster scanning
- television equipment
- video equipment

cathodes

DEF In electron tubes, electrodes through which a primary stream of electrons enters the interelectrode space.

GS electrodes

- . **cathodes**
- . . cell cathodes
- . . hollow cathodes
- . . tube cathodes
- . . . cold cathodes
- . . . hot cathodes
- . . . photocathodes
- . . . thermionic cathodes
- . . . tunnel cathodes

RT anodes

- cold cathode tubes
- electrode materials
- electron emission

∞ filaments

- frequency modulation photomultipliers
- photomultiplier tubes
- phototubes
- thermionics
- tube anodes

cathodic coatings

DEF Material forming a continuous film on a base metal by mechanical coating or by electroplating.

GS coatings

- . **cathodic coatings**

RT anodic coatings

- cladding
- electrode materials
- electrodeposition
- electroplating
- metal oxides
- mischmetal
- oxide films
- oxides
- plating

cathodoluminescence

DEF Luminescence produced when high velocity electrons bombard a metal in a vacuum, thus vaporizing small amounts of the metal which, in an excited state, emit radiation characteristic of the metal.

GS emission

- . light emission
- . . luminescence
- . . . **cathodoluminescence**

RT cathode glow

- light sources
- porous silicon
- visible spectrum

catholytes

GS conductors

- . electrolytes
- . . **catholytes**

RT anolytes

- cell cathodes
- diaphragms (mechanics)

cations

DEF Positively-charged ions.

GS ions

- . positive ions
- . . **cations**
- . . . formyl ions
- . . . vanadyl radical

RT anions

- cell cathodes
- ionic mobility
- metal ions

cats

GS animals

- . vertebrates
- . . mammals

. . . **cats**

CATT devices

DEF Controlled avalanche transit time triodes which use avalanche multiplication in the collector depletion region of a silicon, bipolar, transistor-like structure to increase the gain and thereby achieve a higher frequency operation of silicon bipolar transistors. Used for controlled avalanche transit time devices.

UF *controlled avalanche transit time devices*

RT electron avalanche

- power gain
- transit time
- triodes

cattle

GS animals

- . vertebrates
- . . mammals
- . . . **cattle**
- calves

RT grazing

- livestock
- rangelands

CATV

USE **cable television**

Caucasus Mountains (U.S.S.R.)

GS landforms

- . mountains
- . . **Caucasus Mountains (U.S.S.R.)**

RT U.S.S.R.

Cauchy integral formula

GS analysis (mathematics)

- . complex variables
- . . **Cauchy integral formula**

Cauchy problem

UF *Riemann problem*

GS boundary value problems

- . **Cauchy problem**

RT differential equations

- Godunov method

∞ problems

Cauchy-Riemann equations

GS analysis (mathematics)

- . real variables
- . . differential equations
- . . . partial differential equations
- **Cauchy-Riemann equations**

RT analytic functions

- ∞ equations
- Godunov method

caulking

DEF Material ranging in physical characteristics from plastic to solid to preformed. Used to seal and waterproof joints and overlaps in structures, other assemblies or portions thereof where movement may occur.

RT moisture resistance

- plugging
- sealing
- waterproofing

causes

RT ∞ effects

- etiology

∞ origins

∞ sources

caustic lines

DEF The locations of wave front interactions induced by the maneuvers of supersonic aircraft in changing direction and/or attitude.

RT flight paths

- shock waves
- sonic booms
- supersonic flight
- wave fronts

caustics

USE **alkalies**

caustics (optics)

DEF The envelope of rays diffracted by sur-

face defects in materials.

RT diffraction

- fracture mechanics

∞ optics

- polarized radiation

∞ rays

- surface defects

caves

RT cavities

- karst
- kettles (geology)
- underground structures

cavitation

USE **cavitation flow**

cavitation corrosion

GS corrosion

- . **cavitation corrosion**

RT cavitation flow

- corrosion prevention
- corrosion resistance
- corrosion tests
- erosion

cavitation flow

DEF The formation of bubbles in a liquid, occurring whenever the static pressure at any point in the fluid flow becomes less than the fluid vapor pressure. Used for cavitation and gaseous cavitation.

UF *cavitation*

- gaseous cavitation*

GS fluid flow

- . turbulent flow
- . . **cavitation flow**
- . . . supercavitating flow

RT bubbles

- cavitation corrosion
- erosion
- flow distribution
- impingement
- separated flow
- ultrasonic cleaning
- vortices
- wakes
- water

cavities

UF *bores*

GS **cavities**

- . laser cavities

RT apertures

- boreholes
- caves
- cavity flow

∞ cells

- crack geometry
- cracks
- defects
- ducts
- gas pockets
- hole distribution (mechanics)

∞ holes

- holes (mechanics)

∞ hollow

- interstices
- karst
- kettles (geology)
- leakage
- openings
- orifices
- outlets
- passageways
- perforated plates
- perforated shells

∞ perforation

- ports (openings)
- recesses
- tooth diseases
- vents
- voids

cavitons

DEF Density cavities created by localized oscillating electric fields.

RT electric fields

- plasma density
- plasma physics

- plasma resonance
 - ... digital computers
 - ... **CDC 1604 computer**
- cavity flow**
 - (added November 1991)
 - GS fluid flow
 - . internal flow
 - .. **cavity flow**
 - RT cavities
 - channel flow
 - corner flow
 - ducted flow
 - engine inlets
 - ∞ flow
 - fluid boundaries
 - open channel flow
 - pipe flow
- cavity resonators**
 - UF *resonant cavities*
 - GS resonators
 - . **cavity resonators**
 - .. superconducting cavity resonators
 - RT circulators (phase shift circuits)
 - cyclotron resonance devices
 - electron tubes
 - field mode theory
 - Helmholtz resonators
 - klystrons
 - magnetrons
 - microwave resonance
 - multimode resonators
 - oscillators
 - resonant frequencies
 - traveling wave masers
 - velocity modulation
- cavity vapor generators**
 - RT ∞ generators
 - vaporizers
 - vapors
- cays*
 - USE **keys (islands)**
- CC-106 aircraft*
 - USE **CL-44 aircraft**
- CCD*
 - USE **charge coupled devices**
- CCD cameras**
 - (added September 1995)
 - GS optical equipment
 - . cameras
 - .. **CCD cameras**
 - photographic equipment
 - . cameras
 - .. **CCD cameras**
 - RT CCD star tracker
 - charge coupled devices
 - Clementine spacecraft
 - digital cameras
 - photography
- CCD star tracker**
 - DEF Navigation instrument designed for the NASA space transportation system. Used for stellar (star tracker).
 - UF *Stellar (star tracker)*
 - GS tracking (position)
 - . star trackers
 - .. **CCD star tracker**
 - RT CCD cameras
 - celestial navigation
 - charge coupled devices
 - spacecraft guidance
- CDC 160-A computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC 160-A computer**
 - .. digital computers
 - ... **CDC 160-A computer**
- CDC 1604 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC 1604 computer**
- CDC 3100 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC 3100 computer**
 - .. digital computers
 - ... **CDC 3100 computer**
- CDC 3200 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC 3200 computer**
 - .. digital computers
 - ... **CDC 3200 computer**
- CDC 3600 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC 3600 computer**
 - .. digital computers
 - ... **CDC 3600 computer**
- CDC 3800 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC 3800 computer**
 - .. digital computers
 - ... **CDC 3800 computer**
- CDC 6000 series computers**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC 6000 series computers**
 - ... CDC 6400 computer
 - ... CDC 6600 computer
 - ... CDC 6700 computer
 - .. digital computers
 - ... **CDC 6000 series computers**
 - ... CDC 6400 computer
 - ... CDC 6600 computer
 - ... CDC 6700 computer
- CDC 6400 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... CDC 6000 series computers
 - ... **CDC 6400 computer**
 - .. digital computers
 - ... CDC 6000 series computers
 - ... **CDC 6400 computer**
- CDC 6600 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... CDC 6000 series computers
 - ... **CDC 6600 computer**
 - .. digital computers
 - ... CDC 6000 series computers
 - ... **CDC 6600 computer**
- CDC 6700 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... CDC 6000 series computers
 - ... **CDC 6700 computer**
 - .. digital computers
 - ... CDC 6000 series computers
 - ... **CDC 6700 computer**
- CDC 7000 series computers**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC 7000 series computers**
 - ... CDC 7600 computer
 - .. digital computers
 - ... **CDC 7000 series computers**
- CDC 7600 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... CDC 7000 series computers
 - ... **CDC 7600 computer**
 - .. digital computers
 - ... CDC 7000 series computers
 - ... **CDC 7600 computer**
- CDC 8090 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC 8090 computer**
 - .. digital computers
 - ... **CDC 8090 computer**
- CDC computers**
 - GS data processing equipment
 - . computers
 - .. **CDC computers**
 - ... CDC 160-A computer
 - ... CDC 1604 computer
 - ... CDC 3100 computer
 - ... CDC 3200 computer
 - ... CDC 3600 computer
 - ... CDC 3800 computer
 - ... CDC 6000 series computers
 - ... CDC 6400 computer
 - ... CDC 6600 computer
 - ... CDC 6700 computer
 - ... CDC 7000 series computers
 - ... CDC 7600 computer
 - ... CDC 8090 computer
 - ... CDC Cyber 170 series computers
 - ... CDC Cyber 175 computer
 - ... CDC Cyber 74 computer
 - ... CDC Cyber 174 computer
 - ... CDC Cyber 203 computer
 - ... CDC Cyber 205 computer
 - ... CDC Star 100 computer
 - RT digital computers
- CDC Cyber 74 computer**
 - UF *Cyber 74 computer*
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC Cyber 74 computer**
 - .. digital computers
 - ... **CDC Cyber 74 computer**
- CDC Cyber 170 series computers**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC Cyber 170 series computers**
 - ... CDC Cyber 175 computer
 - .. digital computers
 - ... **CDC Cyber 170 series computers**
 - ... CDC Cyber 175 computer
- CDC Cyber 174 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC Cyber 174 computer**
 - .. digital computers
 - ... **CDC Cyber 174 computer**
- CDC Cyber 175 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... CDC Cyber 170 series computers
 - ... **CDC Cyber 175 computer**
 - .. digital computers
 - ... CDC Cyber 170 series computers
 - ... **CDC Cyber 175 computer**
- CDC Cyber 203 computer**
 - GS data processing equipment
 - . computers
 - .. CDC computers
 - ... **CDC Cyber 203 computer**

CDC Cyber 205 computer

- . . . digital computers
- . . . **CDC Cyber 203 computer**

CDC Cyber 205 computer

- GS data processing equipment
- . computers
- . . . CDC computers
- . . . **CDC Cyber 205 computer**
- . . . digital computers
- . . . **CDC Cyber 205 computer**

CDC Star 100 computer

- GS data processing equipment
- . computers
- . . . CDC computers
- . . . **CDC Star 100 computer**
- . . . digital computers
- . . . **CDC Star 100 computer**

CDMA

- USE **code division multiple access**

CD-ROM

- (added September 1992)
- GS computer components
- . computer storage devices
- . . . read-only memory devices
- . . . **CD-ROM**
- RT data bases
- information retrieval
- information systems
- optical disks
- optical memory (data storage)

CE/SE method

- (added June 2002)
- USE **space-time CE/SE method**

Cedar Rapids (IA)

- GS cities
- . **Cedar Rapids (IA)**
- RT Iowa

CEFOAM checkout equipment

- RT checkout
- ∞ test equipment

ceiling (aircraft capability)

- RT ∞ aircraft
- aircraft specifications
- ∞ ceilings
- flight altitude
- flight characteristics

∞ ceilings

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ceiling (aircraft capability)
- ceilings (architecture)
- ceilings (meteorology)

ceilings (architecture)

- RT buildings
- ∞ ceilings
- ∞ diffusers
- floors
- insulation
- panels
- reflectors

ceilings (meteorology)

DEF The height above the Earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken", "overcast" or "obscuration" and not classified as "thin" or "partial".

- RT aircraft landing
- ∞ ceilings
- cloud height indicators
- meteorological parameters
- meteorology
- visibility

ceilometers

- USE **cloud height indicators**

telescopes

- GS electron tubes
- . vacuum tubes
- . . . microwave tubes

- . . . **telescopes**
- microwave equipment
- . microwave tubes
- . . . **telescopes**
- mirrors
- . **telescopes**
- optical equipment
- . image converters
- . . . **telescopes**
- telescopes
- . **telescopes**
- RT solar instruments

celestial bodies

DEF Any aggregations of matter in space constituting a unit for astronomical study, as the sun, moon, a planet, comet, star, or nebula. Also called heavenly bodies.

GS **celestial bodies**

- . asteroid belts
- . . . Toro asteroid
- . . . asteroids
- . . . Amor asteroid
- . . . Amphitrite asteroid
- . . . Apollo asteroids
- . . . Ceres asteroid
- . . . Chiron
- . . . EROS asteroid
- . . . Gaspra asteroid
- . . . Icarus asteroid
- . . . Ida asteroid
- . . . Quaoar
- . . . Toro asteroid
- . . . Toutatis asteroid
- . . . Trojan asteroids
- . . . Vesta asteroid
- . . . blazars
- . . . BL Lacertae objects
- . . . comet heads
- . . . comet nuclei
- . . . comet tails
- . . . comets
- . . . Arend-Roland comet
- . . . Austin comet
- . . . Brorsen-Metcalf comet
- . . . Encke comet
- . . . Giacobini-Zinner comet
- . . . Grigg-Skjellerup comet
- . . . Hale-Bopp comet
- . . . Halley's comet
- . . . Humason comet
- . . . IRAS-Araki-Alcock comet
- . . . Kohoutek comet
- . . . Morehouse comet
- . . . Mrkos comet
- . . . Okazaki-Levy-Rudenko comet
- . . . Schwassmann-Wachmann comet
- . . . Shoemaker-Levy 9 comet
- . . . Tempel 1 comet
- . . . Tempel 2 comet
- . . . West comet
- . . . Wild 2 comet
- . . . faint objects
- . . . galactic clusters
- . . . local group (astronomy)
- . . . Virgo galactic cluster
- . . . galaxies
- . . . active galaxies
- . . . Markarian galaxies
- . . . radio galaxies
- . . . Seyfert galaxies
- . . . compact galaxies
- . . . disk galaxies
- . . . dwarf galaxies
- . . . elliptical galaxies
- . . . interacting galaxies
- . . . irregular galaxies
- . . . Maffei galaxies
- . . . Magellanic clouds
- . . . peculiar galaxies
- . . . ring galaxies
- . . . shell galaxies
- . . . spiral galaxies
- . . . Andromeda Galaxy
- . . . barred galaxies
- . . . Milky Way Galaxy
- . . . protogalaxies
- . . . starburst galaxies
- . . . Virgo galactic cluster

- . . . infrared sources (astronomy)
- . . . infrared stars
- . . . meteorites
- . . . iron meteorites
- . . . Aroos meteorite
- . . . Lazarev meteorite
- . . . Odessa meteorite
- . . . Sikhote-Alin meteorite
- . . . micrometeorites
- . . . stony meteorites
- . . . achondrites
- . . . Bondoc meteorite
- . . . chassignites
- . . . Kapoeta achondrite
- . . . nakhlites
- . . . Norton County achondrite
- . . . shergottites
- . . . SNC meteorites
- . . . ureilites
- . . . carbonaceous meteorites
- . . . carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- ureilites
- chondrites
- Bruderheim meteorite
- carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- Harleton meteorite
- Hvittis chondrite
- Okhansk meteorite
- Pantar chondrites
- Pribram meteorite
- tektites
- australites
- bediasites
- Tungusk meteorite
- stony-iron meteorites
- meteoroid showers
- Aquarid meteoroids
- Arietid meteoroids
- Cyrrillid meteoroids
- Draconid meteoroids
- Geminid meteoroids
- Leonid meteoroids
- Orionid meteoroids
- Perseid meteoroids
- Quadrantid meteoroids
- Taurid meteoroids
- meteoroids
- Aquarid meteoroids
- Arietid meteoroids
- bolides
- Cyrrillid meteoroids
- Draconid meteoroids
- Geminid meteoroids
- Leonid meteoroids
- micrometeoroids
- meteoroid dust clouds
- zodiacal dust
- Orionid meteoroids
- Perseid meteoroids
- Quadrantid meteoroids
- radio meteors
- sporadic meteoroids
- Taurid meteoroids
- moonlets
- natural satellites
- icy satellites
- Ariel
- Callisto
- Dione
- Enceladus
- Europa
- Ganymede
- Hyperion

- . . . Iapetus
- . . . Mimas
- . . . Rhea (astronomy)
- . . . Tethys
- . . . Titania
- . . . Jupiter satellites
- . . .Adrastea
- . . . Amalthea
- . . . Carme
- . . . Elara
- . . . Galilean satellites
- Callisto
- Europa
- Ganymede
- Io
- . . . Himalia
- . . . Leda
- . . . Lysithea
- . . . Metis
- . . . Pasiphae
- . . . Sinope
- . . . Thebe
- . . . Mars satellites
- . . . Deimos
- . . . Phobos
- . . . moon
- . . . Neptune satellites
- . . . Galatea
- . . . Larissa
- . . . Naiad
- . . . Nereid
- . . . Proteus
- . . . Triton
- . . . Pluto satellites
- . . . Charon
- . . . Hydra
- . . . Nix
- . . . Saturn satellites
- . . . Calypso
- . . . Dione
- . . . Enceladus
- . . . Epimetheus
- . . . Helene
- . . . Hyperion
- . . . Iapetus
- . . . Janus
- . . . Mimas
- . . . Pandora
- . . . Phoebe
- . . . Prometheus
- . . . Rhea (astronomy)
- . . . Telesto
- . . . Tethys
- . . . Titan
- . . . Uranus satellites
- . . . Ariel
- . . . Cordelia
- . . . Miranda
- . . . Oberon
- . . . Puck
- . . . Titania
- . . . Umbriel
- . . . nebulae
- . . . Cassiopeia A
- . . . Crab nebula
- . . . Gum nebula
- . . . H I regions
- . . . H II regions
- . . . Herbig-Haro objects
- . . . Orion nebula
- . . . planetary nebulae
- . . . reflection nebulae
- . . . solar nebula
- . . . planetary rings
- . . . Jupiter rings
- . . . Saturn rings
- . . . Uranus rings
- . . . planets
- . . . extrasolar planets
- . . . gas giant planets
- Jupiter (planet)
- Neptune (planet)
- Saturn (planet)
- Uranus (planet)
- . . . terrestrial planets
- Earth (planet)
- Mars (planet)
- Mercury (planet)
- Venus (planet)
- . . . hypothetical planets
- . . . protoplanets
- . . . radio sources (astronomy)
- . . . Cassiopeia A
- . . . extragalactic radio sources
- radio galaxies
- radio jets (astronomy)
- . . . quasars
- . . . radio stars
- . . . pulsars
- . . . solar system
- . . . star clusters
- . . . globular clusters
- . . . open clusters
- . . . Pleiades cluster
- . . . Praesepe star clusters
- . . . stars
- . . . black holes (astronomy)
- . . . brown dwarf stars
- . . . double stars
- . . . binary stars
- cataclysmic variables
- companion stars
- Nemesis (star)
- eclipsing binary stars
- dwarf novae
- Lambda Tauri stars
- Zeta Aurigae star
- Sigma Orionis
- symbiotic stars
- x ray binaries
- . . . early stars
- . . . hot stars
- A stars
- B stars
- shell stars
- Sigma Orionis
- . . . blue stars
- O stars
- white dwarf stars
- Wolf-Rayet stars
- . . . F stars
- . . . G stars
- . . . sun
- . . . giant stars
- . . . asymptotic giant branch stars
- . . . Omicron Ceti star
- . . . red giant stars
- carbon stars
- . . . horizontal branch stars
- . . . infrared stars
- . . . late stars
- . . . cool stars
- carbon stars
- flare stars
- K stars
- M stars
- Van Biesbroeck star
- Mira variables
- Omicron Ceti star
- S stars
- . . . magnetic stars
- . . . magnetars
- . . . main sequence stars
- . . . dwarf stars
- dwarf novae
- flare stars
- red dwarf stars
- . . . sun
- . . . massive stars
- . . . metallic stars
- . . . neutron stars
- . . . magnetars
- . . . pulsars
- . . . soft gamma repeaters
- . . . peculiar stars
- . . . shell stars
- . . . Sigma Orionis
- . . . symbiotic stars
- . . . Praesepe star clusters
- . . . protostars
- . . . pre-main sequence stars
- T Tauri stars
- . . . radio stars
- . . . pulsars
- . . . reference stars
- . . . subdwarf stars
- . . . subgiant stars
- . . . supergiant stars
- . . . R Coronae Borealis stars
- . . . supermassive stars
- . . . triple stars
- . . . variable stars
- cataclysmic variables
- cepheid variables
- flare stars
- irregular variable stars
- R Coronae Borealis stars
- Lambda Tauri stars
- Mira variables
- Omicron Ceti star
- novae
- dwarf novae
- Hercules nova
- semiregular variable stars
- supernovae
- supernova 1987A
- symbiotic stars
- T Tauri stars
- white holes (astronomy)
- . . . x ray stars
- . . . soft gamma repeaters
- . . . x ray binaries
- . . . Population I stars
- . . . Population II stars
- . . . Population III stars
- . . . massive compact halo objects
- . . . meteorite parent bodies
- . . . near Earth objects
- . . . stellar systems
- . . . trans-Neptunian objects
- . . . Charon
- . . . Pluto (planet)
- . . . Quaoar
- . . . dwarf planets
- . . . Ceres asteroid
- . . . Pluto (planet)
- RT Aries constellation
- asteroid capture
- astrodynamics
- astrolabes
- astronomical observatories
- astronomy
- astrophysics
- ∞ bodies
- Cassiopeia constellation
- Centaurus constellation
- Corona Borealis constellation
- Cygnus constellation
- gravitational waves
- impact melts
- interstellar matter
- Lyra constellation
- orbits
- solar neighborhood
- space flight
- universe
- RT Aries constellation
- DEF The determination of the form of the Earth, of the Earth's gravitational field, and of relative positions of satellite trajectories.
- GS geodesy
- . . . **celestial geodesy**
- RT Explorer 29 satellite
- Explorer 36 satellite
- geodetic satellites
- GEOS 1 satellite
- GEOS 2 satellite
- GEOS 3 satellite
- International Satellite Geodesy
- . . . Experiment
- satellite laser ranging
- time
- celestial mechanics**
- DEF The study of the theory of motions of celestial bodies under the influence of gravitational fields.
- GS mechanics (physics)
- . . . classical mechanics
- . . . space mechanics
- . . . **celestial mechanics**
- RT astrodynamics
- astronomy
- astrophysics
- ephemerides
- equations of motion

celestial navigation

- four body problem
- gravitational waves
- hyperbolic trajectories
- Lagrangian equilibrium points
- long term effects
- many body problem
- orbital mechanics
- orbital resonances (celestial mechanics)
- orbits
- perturbation theory
- planets
- Roche limit
- Schach effect
- solar system
- stars
- stellar orbits
- sun
- terrestrial planets
- three body problem
- trajectory analysis
- Trojan orbits
- two body problem
- Wolf-Rayet stars

celestial navigation

DEF The process of directing a craft from one point to another by reference to celestial bodies of known constants.

- GS navigation
 - . **celestial navigation**
 - .. Astroguide Navigation System
 - .. astronavigation
- RT air navigation
 - autonomous navigation
 - CCD star tracker
 - inertial navigation
 - injection guidance
 - interplanetary navigation
 - polar navigation
 - radar navigation
 - radio navigation
 - reference stars
 - solar position
 - space navigation
 - spacecraft guidance
 - star trackers
 - surface navigation

celestial observation

USE **astronomy**

celestial reference systems

- RT air navigation
 - astronomical coordinates
 - astronomical maps
 - azimuth
 - coordinates
 - geocentric coordinates
 - inertial reference systems
 - interplanetary navigation
 - interstellar travel
 - laser guide stars
 - planetocentric coordinates
 - proper motion
- ∞ reference systems
 - solar longitude
 - spherical coordinates
- ∞ systems

celestial sphere

DEF An imaginary sphere of infinite radius concentric with the Earth, on which all celestial bodies except the Earth are assumed to be projected.

- GS symmetrical bodies
 - . bodies of revolution
 - .. spheres
 - ... **celestial sphere**
- RT Aries constellation
 - astronomical maps
 - Cassiopeia constellation
 - Centaurus constellation
 - constellations
 - Corona Borealis constellation
 - Cygnus constellation
 - horizon
 - Lyra constellation
 - orbital position estimation
 - planispheres

- proper motion
- zenith

cell anodes

- GS electrodes
 - . anodes
 - .. **cell anodes**
- RT anions
 - anolytes
 - cell cathodes
 - electrode materials

cell cathodes

- GS electrodes
 - . cathodes
 - .. **cell cathodes**
- RT catholytes
 - cations
 - cell anodes
 - electrode materials
 - electrodeposition

cell culturing

(added August 2004)

DEF A technique for maintenance or growth of animal cells in vitro. It refers to the culturing of cells derived from dispersed cells taken from the original tissue, from a primary culture, or from a cell line or cell strain by enzymatic, mechanical, or chemical disaggregation.

- GS culture techniques
 - . **cell culturing**
- RT cells (biology)
 - clone cells
 - culture media
 - cultured cells
 - microbiology
 - organ culturing
 - tissue culturing
 - tissue engineering

cell division

- GS cytogenesis
 - . **cell division**
- RT ∞ division
 - mitosis
 - reproduction (biology)
 - stem cells

cell lines

(added December 2004)

USE **cultured cells**

cell membranes (biology)

- GS membranes
 - . **cell membranes (biology)**
- RT cells (biology)
 - cytology
 - ion channels (biology)
 - osmosis

cell physiology

(added August 2004)

USE **cytology**

cellophane

- RT cellulose
 - ∞ polymers

∞ **cells**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT activation (biology)
 - cavities
 - cells (biology)
 - compartments
 - cores
 - electrochemical cells
 - electrolytic cells
 - fillers
 - fuel cells
 - geophysical fluid flow cells
 - hexagonal cells
 - honeycomb structures
 - Kerr cells
 - lithium sulfur batteries
 - particle in cell technique
 - photoconductive cells
 - photoelectric cells
 - photovoltaic cells

- porous materials
- resolution cell
- solar cells
- tissues (biology)
- topology

cells (biology)

- UF *biological cells*
- GS **cells (biology)**
 - . blood cells
 - .. erythrocytes
 - ... reticulocytes
 - .. hemocytes
 - .. leukocytes
 - ... eosinophils
 - ... lymphocytes
 - ... monocytes
 - ... neutrophils
 - . eukaryotes
 - . fibroblasts
 - . gametocytes
 - .. eggs
 - ... zygotes
 - .. spermatozoa
 - . macrophages
 - . neurons
 - .. axons
 - .. dendrites
 - . neuroblasts
 - . cultured cells
 - . osteoblasts
 - . prokaryotes
 - . protoplasts
 - . stem cells
 - .. clone cells
 - .. muscle cells
 - .. muscle fibers
- RT anatomy
 - apoptosis
- ∞ biology
 - cancer
 - catalase
 - cell culturing
 - cell membranes (biology)
- ∞ cells
 - chlorophylls
 - chloroplasts
 - chromosomes
 - cloning (biology)
 - culture media
 - cytogenesis
 - cytology
 - cytometry
 - cytoplasm
 - endoplasmic reticulum
 - endothelium
 - ganglia
 - hematopoiesis
 - hemoglobin
 - histochemical analysis
 - interleukins
 - Krebs cycle
 - lysosomes
 - mitochondria
 - mitosis
 - mutagens
 - mutations
 - necrosis
 - neuroglia
 - neurotransmitters
 - nuclei (cytology)
 - organelles
 - organs
 - plasmolysis
 - plastids
 - ribosomes
 - sarcoplasmic reticulum
 - tissue engineering
 - tissues (biology)

cellular automata

(added May 2003)

DEF A discrete, dynamical system consisting of a regular array of cells, each of which can have one of a finite number of states. With each time step, the cell is updated according to a set of local rules based on the state of neighboring cells.

- RT automata theory

Turing machines
cellular manufacturing
 (added April 2000)
 USE **group technology (manufacturing)**
cellular materials (non biological)
 USE **foams**

cellulose
 DEF The carbohydrate that is the principal constituent of wood and forms of structural framework of the wood cells.
 GS biopolymers
 . polysaccharides
 . . **cellulose**
 . . . Fortisan (trademark)
 organic compounds
 . carbohydrates
 . . polysaccharides
 . . . **cellulose**
 Fortisan (trademark)
 RT cellophane
 lignin
 Masonite (trademark)
 synthetic food
 tenite
 wood

cellulose nitrate
 UF *nitrocellulose*
pyroxylin
 GS esters
 . organic nitrates
 . . **cellulose nitrate**
 explosives
 . **cellulose nitrate**
 nitrogen compounds
 . nitrates
 . . organic nitrates
 . . . **cellulose nitrate**
 RT double base propellants
 double base rocket propellants

cementation
 RT adhesive bonding
 agglomeration
 agglutination
 bonding
 heating
 precipitation (chemistry)

cementite
 DEF An intermetallic compound containing iron and carbon.
 GS carbon compounds
 . carbides
 . . **cementite**
 RT iron alloys
 microstructure
 pearlite
 steels

cements
 RT adhesives
 binders (materials)
 bricks
 concretes
 ∞ construction materials
 grout
 masonry
 mortars (material)
 sealing

CEMS system
 USE **Central Electronic Management System**

Cenozoic Era
 (added June 1989)
 DEF An era of geologic time, from the beginning of the Tertiary Period to the present. (Some authors do not include the Quaternary, considering it a separate era.) It is characterized by the evolution and abundance of mammals, advanced mollusks, and birds and paleobotanically, by angiosperms. The Cenozoic Era is considered to have begun about 65 million years ago.
 GS **Cenozoic Era**

. Quaternary period
 . Tertiary Period
 . . Holocene epoch
 . . Pleistocene epoch
 RT Cretaceous-Tertiary boundary
 extinction
 geochronology
 paleontology

censored data (mathematics)
 GS data processing
 . **censored data (mathematics)**
 RT approximation
 ∞ data
 error analysis
 probability density functions
 reliability
 sampling
 statistical analysis
 statistical distributions

census
 RT animals
 demography
 human beings
 ∞ statistics
 urban planning

Centaur launch vehicle
 UF *Centaur vehicle*
 GS launch vehicles
 . **Centaur launch vehicle**
 . . Atlas Centaur launch vehicle
 rocket vehicles
 . **Centaur launch vehicle**
 . . Atlas Centaur launch vehicle
 RT Atlas D ICBM
 liquid propellant rocket engines
 Saturn project
 Titan Centaur launch vehicle

Centaur project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Centaur project**
 . projects
 . . **Centaur project**
 . space programs
 . . NASA space programs
 . . . **Centaur project**
 RT Atlas Centaur launch vehicle
 launch vehicles
 Mariner program
 RL-10 engines
 Surveyor project

Centaur vehicle
 USE **Centaur launch vehicle**

Centaurus constellation
 GS constellations
 . **Centaurus constellation**
 RT celestial bodies
 celestial sphere
 stars

center of gravity
 DEF The center of mass of a system of masses, as the barycenter of the Earth-moon system. Used for barycenter.
 UF *barycenter*
 RT center of mass
 ∞ centers
 centroids
 gravitational fields
 lunar rotation
 mass
 moments of inertia

center of mass
 DEF A point of a material body or system of bodies which moves as though the system's total mass existed at that point and all external forces were applied at the point.
 GS mass
 . **center of mass**
 RT center of gravity
 mascons

weight (mass)
center of pressure
 RT ∞ centers
 hydrostatic pressure
 moments of inertia
 pressure
 pressure distribution
 pressure heads

centerbodies
 RT afterbodies
 aircraft structures
 ∞ bodies
 cylindrical bodies
 forebodies
 fuselages

∞ **centers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT center of gravity
 center of pressure
 color centers
 concentricity
 foci
 loci
 world data centers

centimeter waves
 DEF Electromagnetic radiation in the 3,000 to 30,000 MHz range.
 GS electromagnetic radiation
 . radio waves
 . . short wave radiation
 . . . microwaves
 **centimeter waves**
 RT cosmic noise
 extraterrestrial radio waves
 microwave frequencies
 superhigh frequencies

Central African Republic
 GS nations
 . **Central African Republic**
 RT Africa

Central America
 GS regions
 . **Central America**
 RT Belize
 Costa Rica
 El Salvador
 Guatemala
 Honduras
 Nicaragua
 North America
 Panama
 Panama Canal Zone
 South America

Central Atlantic Region (US)
 GS regions
 . **Central Atlantic Region (US)**
 RT United States

Central Atlantic Regional Ecol Test Site
 SN (CENTRAL ATLANTIC REGIONAL ECOLOGICAL TEST SITE)
 UF *CARETS (test site)*
 GS sites
 . **Central Atlantic Regional Ecol Test Site**
 test facilities
 . **Central Atlantic Regional Ecol Test Site**
 RT ecology
 environment protection

central bulge (galaxies)
 USE **galactic bulge**

Central Electronic Management System
 UF *CEMS system*
 GS data processing
 . **Central Electronic Management System**
 RT management

Central Europe

∞ systems

Central Europe

- GS continents
 - . Europe
 - . . **Central Europe**
- regions
- . **Central Europe**
- RT Austria
- continents
- Czechoslovakia
- East Germany
- Germany
- Hungary
- Poland
- Romania
- West Germany

central nervous system

- GS anatomy
 - . nervous system
 - . . **central nervous system**
 - . . . brain
 - brain stem
 - cerebellum
 - cerebral ventricles
 - cerebrum
 - cerebral cortex
 - occipital lobes
 - diencephalon
 - hypothalamus
 - pineal gland
 - thalamus
 - hippocampus
 - spinal cord
- RT blood-brain barrier
- psychopharmacology
- psychotropic drugs
- ∞ systems

central nervous system depressants

- GS depressants
 - . **central nervous system depressants**
 - drugs
 - . **central nervous system depressants**
- RT amobarbital
- psychopharmacology
- ∞ systems
- tranquillizers

central nervous system stimulants

- GS drugs
 - . stimulants
 - . . **central nervous system stimulants**
- RT amphetamines
- psychopharmacology
- ∞ systems

Central Piedmont (US)

- GS landforms
 - . terraces (landforms)
 - . . plateaus
 - . . . piedmonts
 - **Central Piedmont (US)**
- RT mountains

central processing units

DEF The units of computing systems that include the circuits controlling the interpretation of instructions and their execution. Used for processors (computers).

- UF *processors (computers)*
- GS computer components
 - . **central processing units**
 - . . arithmetic and logic units
 - . . RISC processors
- RT chips (electronics)
- computer storage devices
- computers
- control units (computers)
- logic circuits
- microprocessors
- registers (computers)

centrifugal casting

- GS forming techniques
 - . casting

- . . **centrifugal casting**
- RT investment casting

centrifugal compressors

- GS compressors
 - . **centrifugal compressors**
 - turbomachinery
 - . **centrifugal compressors**
- RT blowers
- compressor blades
- compressor rotors
- impellers
- pump impellers
- pumps
- radial flow
- rotors
- superchargers
- turbocompressors

centrifugal force

DEF The apparent force in a rotating system, deflecting masses radially from the axis or rotation.

- RT angular acceleration
- centrifuges
- centripetal force
- ∞ force
- Goertler instability

centrifugal pumps

- GS pumps
 - . **centrifugal pumps**
 - turbomachinery
 - . **centrifugal pumps**
- RT axial flow pumps
- fuel pumps
- impellers
- pump impellers
- turbine pumps
- turbocompressors

centrifuges

DEF Specifically in aerospace, large motor driven apparatus with long arms at the end of which human and animal subjects or equipment can be revolved and rotated at various speeds to simulate (very closely) the (prolonged) accelerations in high performance aircraft, rockets, and spacecraft. Sometimes called astronautic centrifuges. Used for cyclones (equipment).

- UF *cyclones (equipment)*
- GS **centrifuges**
 - . human centrifuges
- RT centrifugal force
- centrifuging
- centripetal force
- classifiers
- clinostats
- concentrators
- extraction
- flight simulators
- fluid filters
- high gravity environments
- separators
- space simulators
- ∞ test equipment
- training simulators

centrifuging

- RT centrifuges
- clinorotation
- concentrating
- extraction
- materials recovery
- ∞ separation
- swirling

centrifuging stress

- GS stress (biology)
 - . acceleration stresses (physiology)
 - . . **centrifuging stress**
 - stress (physiology)
 - . acceleration stresses (physiology)
 - . . **centrifuging stress**
- RT acceleration tolerance
- gravitational physiology
- gravity perception

centripetal force

- RT angular acceleration

- centrifugal force
- centrifuges
- ∞ force
- revolving

centroids

- RT center of gravity
- moments of inertia

Centurion aircraft

USE **Cessna 210 aircraft**

cephalagia

USE **headache**

cephalopods

- GS animals
 - . invertebrates
 - . . mollusks
 - . . . **cephalopods**
 - octopuses

cepheid variables

- GS celestial bodies
 - . stars
 - . . variable stars
 - . . . **cepheid variables**
- RT Cepheus constellation

Cepheus constellation

- GS constellations
 - . **Cepheus constellation**
- RT cepheid variables

cepstra

DEF The Fourier transformation of the logarithm of the power spectrum.

- GS spectra
 - . power spectra
 - . . **cepstra**
- RT quefrecncies

cepstral analysis

DEF The application of cepstral methods to wave or signal phenomena in seismology, speech analysis, echos, underwater acoustics, etc.

- GS data processing
 - . signal analysis
 - . . **cepstral analysis**
 - . . voice data processing
 - . . **cepstral analysis**
 - spectrum analysis
 - . **cepstral analysis**
- RT acoustic measurement
- audio frequencies
- echoes
- multipath transmission
- power spectra
- signal reflection
- signature analysis
- spectral signatures
- speech recognition
- time lag
- vibration measurement

ceramal protective coatings

USE **cermets**
protective coatings

ceramals

USE **cermets**

ceramic bonding

- GS bonding
 - . **ceramic bonding**
- RT ceramic matrix composites
- ceramics

ceramic coatings

- SN (COATINGS CONSISTING OF CERAMIC MATERIALS)
- GS coatings
 - . inorganic coatings
 - . . **ceramic coatings**
 - . . protective coatings
 - . . **ceramic coatings**
- RT carbon nitrides
- finishes
- metal coatings
- porcelain

- sprayed coatings
vacuum deposition
- ceramic fibers**
DEF Fibers composed of ceramic materials. They are usually used for reinforcement.
GS fibers
 . synthetic fibers
 . . **ceramic fibers**
RT boron carbides
ceramic matrix composites
ceramics
chemical vapor infiltration
composite wrapping
cordage
fiber composites
fiber orientation
fiber strength
filament winding
∞ filaments
polycarbosilanes
reinforcing fibers
silicon carbides
strands
titanium carbides
- ceramic honeycombs**
RT ceramic matrix composites
honeycomb cores
honeycomb structures
- ceramic matrix composites**
DEF Composite materials consisting of a reinforced ceramic matrix.
GS composite materials
 . **ceramic matrix composites**
 . . carbon-silicon carbide composites
RT aircraft construction materials
boron reinforced materials
ceramic bonding
ceramic fibers
ceramic honeycombs
ceramics
cermets
chemical vapor infiltration
composite structures
crack bridging
fiber pullout
fiber pushout
functionally gradient materials
matrix materials
nanocomposites
reinforcing fibers
silicon nitrides
titanium carbides
titanium nitrides
- ceramic nuclear fuels**
GS ceramics
 . **ceramic nuclear fuels**
 fuels
 . nuclear fuels
 . . **ceramic nuclear fuels**
RT carbides
cermets
nitrides
plutonium compounds
plutonium oxides
sol-gel processes
thorium compounds
uranium carbides
uranium compounds
uranium oxides
- ceramic-metal composites*
USE **cermets**
- ceramics**
DEF Inorganic compounds or mixtures requiring heat treatment to fuse them into homogeneous masses usually possessing high temperature strength but low ductility. Types and uses range from china for dishes to refractory liners for nozzles.
GS **ceramics**
 . ceramic nuclear fuels
 . lead zirconate titanates
 . piezoelectric ceramics
 . porcelain
 . Pyroceram (trademark)
- RT abrasives
Bakelite (trademark)
bricks
ceramic bonding
ceramic fibers
ceramic matrix composites
cermets
clays
dielectrics
ferroelastic materials
ferroelectric materials
frit
glass
glazes
heat engines
high temperature superconductors
injection molding
masonry
∞ materials science
mortars (material)
photoacoustic microscopy
pyrolytic materials
reaction bonding
refractories
refractory coatings
refractory materials
sialon
silicon dioxide
tiles
vitrification
YBCO superconductors
yttria-stabilized zirconia
- cerebellum**
GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 **cerebellum**
- cerebral cortex**
GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 cerebrum
 **cerebral cortex**
RT ∞ cortexes
- cerebral vascular accidents**
RT cardiovascular system
∞ strokes
- cerebral ventricles**
GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 **cerebral ventricles**
RT cerebrospinal fluid
cerebrum
- cerebrospinal fluid**
GS body fluids
 . **cerebrospinal fluid**
RT brain
cerebral ventricles
∞ fluids
- cerebrum**
GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 **cerebrum**
 cerebral cortex
 occipital lobes
RT cerebral ventricles
- Cerenkov counters**
GS measuring instruments
 . counters
 . . radiation counters
 . . . **Cerenkov counters**
 . . radiation measuring instruments
 . . radiation counters
 . . . **Cerenkov counters**
RT Alpha Magnetic Spectrometer
- scintillation counters
- Cerenkov effect*
USE **Cerenkov radiation**
- Cerenkov radiation**
DEF The radiation from a charged particle whose velocity is greater than the phase velocity that an electromagnetic wave would have if it were propagating in the medium. The particle will continue to lose energy by radiation until its velocity is less than this phase velocity. Used for Cerenkov effect.
UF *Cerenkov effect*
GS electromagnetic radiation
 . **Cerenkov radiation**
RT bremsstrahlung
corpuscular radiation
cosmic rays
∞ effects
 gamma ray bursts
 gamma rays
 light (visible radiation)
 nuclear radiation
∞ radiation
 ultraviolet radiation
- CERES (experiment)**
(added May 2007)
DEF As a key component of the Earth Observing System (EOS) program, the Clouds and the Earth's Radiant Energy System (CERES) experiment aims to record cloud properties and radiative fluxes within the Earth's atmosphere. Aboard the TRMM, Terra, and Aqua spacecraft, the CERES instruments provide radiometric measurements of both solar-reflected and Earth-emitted radiation from the top of the atmosphere to the Earth's surface from three broad-band channels. CERES data products provide scientists with a better understanding of the roles of clouds and the energy cycle in global climate change.
UF *Clouds and the Earth's Radiant Energy System*
GS programs
 . projects
 . . **CERES (experiment)**
RT Aqua spacecraft
climate change
cloud physics
clouds (meteorology)
data products
Earth atmosphere
Earth observations (from space)
Earth Observing System (EOS)
Earth radiation budget
Earth radiation budget experiment
radiant flux density
remote sensing
Terra spacecraft
terrestrial radiation
TRMM satellite
- Ceres asteroid**
GS celestial bodies
 . asteroids
 . . **Ceres asteroid**
 . dwarf planets
 . . **Ceres asteroid**
RT asteroid belts
- ceresin**
GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkanes
 paraffins
 **ceresin**
 waxes
 . **ceresin**
RT phase change materials
- cerium**
GS chemical elements
 . rare earth elements
 . . **cerium**
 . . . cerium isotopes
 cerium 137
 cerium 144

cerium 137

metals
. rare earth elements
. . . **cerium**
. . . . cerium isotopes
. cerium 137
. cerium 144

RT mischmetal

cerium 137
GS chemical elements
. nuclides
. . isotopes
. . . cerium isotopes
. . . . **cerium 137**
. radioactive isotopes
. **cerium 137**
. rare earth elements
. cerium
. cerium isotopes
. **cerium 137**
metals
. rare earth elements
. . cerium
. . . cerium isotopes
. . . . **cerium 137**

cerium 144
GS chemical elements
. nuclides
. . isotopes
. . . cerium isotopes
. . . . **cerium 144**
. radioactive isotopes
. **cerium 144**
. rare earth elements
. cerium
. cerium isotopes
. **cerium 144**
metals
. rare earth elements
. . cerium
. . . cerium isotopes
. . . . **cerium 144**

cerium compounds
GS rare earth compounds
. **cerium compounds**
. . bastnasite
. . . cerium oxides
RT ∞ chemical compounds
∞ metal compounds

cerium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **cerium isotopes**
. . . . cerium 137
. cerium 144
. rare earth elements
. cerium
. **cerium isotopes**
. cerium 137
. cerium 144
metals
. rare earth elements
. . cerium
. . . **cerium isotopes**
. . . . cerium 137
. cerium 144

cerium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **cerium oxides**
rare earth compounds
. cerium compounds
. . **cerium oxides**

cermets
DEF Bodies consisting of ceramic particles bonded with a metal; used in aircraft, rockets, and spacecraft for high strength, high temperature applications. The name is derived from a combination of CERamic and METal. Used for ceramal protective coatings and ceramals.
UF *ceramal protective coatings*
ceramals
ceramic-metal composites

GS composite materials
. **cermets**

RT ceramic matrix composites
ceramic nuclear fuels
ceramics
combustion synthesis
heat resistant alloys
metals
powder metallurgy
refractories
refractory materials
YBCO superconductors

certification

DEF Personnel - The act of verifying and documenting that personnel have completed required training and have demonstrated specific proficiency. Process & Software - An act, whereby a responsible official provides a written guarantee that a product, process, or service satisfies all performance and design requirements.

RT aircraft reliability
checkout
evaluation
flight tests
performance tests
physiological tests
psychological tests
qualifications
quality control
selection
site selection
training evaluation

cesium

GS chemical elements
. alkali metals
. . **cesium**
. . . cesium isotopes
. . . . cesium 133
. cesium 134
. cesium 137
. cesium 144
metals
. alkali metals
. . **cesium**
. . . cesium isotopes
. . . . cesium 133
. cesium 134
. cesium 137
. cesium 144

RT cesium alloys
cesium antimonides
cesium bromides
cesium diodes
cesium engines
cesium fluorides
cesium halides
cesium hydrides
cesium iodides
cesium ions
cesium plasma
cesium vapor

cesium 133

GS chemical elements
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 133**
. nuclides
. isotopes
. cesium isotopes
. **cesium 133**
metals
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 133**

cesium 134

GS chemical elements
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 134**
. nuclides
. isotopes
. cesium isotopes

. . . . **cesium 134**
. radioactive isotopes
. **cesium 134**
metals
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 134**

cesium 137

GS chemical elements
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 137**
. nuclides
. isotopes
. cesium isotopes
. **cesium 137**
. radioactive isotopes
. **cesium 137**
metals
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 137**

cesium 144

GS chemical elements
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 144**
. nuclides
. isotopes
. cesium isotopes
. **cesium 144**
. radioactive isotopes
. **cesium 144**
metals
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 144**

cesium alloys

GS alloys
. **cesium alloys**

RT alkali metals
cesium

cesium antimonides

GS antimony compounds
. antimonides
. . **cesium antimonides**
cesium compounds
. **cesium antimonides**

RT cesium

cesium bromides

GS cesium compounds
. cesium halides
. . **cesium bromides**
halogen compounds
. bromine compounds
. . bromides
. . . **cesium bromides**
. . . . halides
. bromides
. **cesium bromides**
. metal halides
. alkali halides
. cesium halides
. **cesium bromides**

RT cesium

cesium compounds

GS **cesium compounds**
. cesium antimonides
. cesium halides
. . cesium bromides
. . . cesium fluorides
. . . . cesium iodides
. cesium hydrides
. cesium oxides

RT ∞ alkali metal compounds
∞ chemical compounds
∞ metal compounds

- metal fuels
- cesium diodes**
 - GS electron tubes
 - . thermionic diodes
 - . . . **cesium diodes**
 - . . . vacuum tubes
 - . . . **cesium diodes**
 - electronic equipment
 - . diodes
 - . . . thermionic diodes
 - . . . **cesium diodes**
 - RT cesium
 - plasma diodes
 - thermionic converters
- cesium engines**
 - GS engines
 - . rocket engines
 - . . . electric rocket engines
 - . . . electrostatic engines
 - . . . ion engines
 - **cesium engines**
 - RT cesium
- cesium fluorides**
 - GS cesium compounds
 - . cesium halides
 - . . . **cesium fluorides**
 - halogen compounds
 - . fluorine compounds
 - . . . fluorides
 - metal fluorides
 - **cesium fluorides**
 - . halides
 - . . . fluorides
 - metal fluorides
 - **cesium fluorides**
 - . . . metal halides
 - alkali halides
 - cesium halides
 - **cesium fluorides**
 - . . . metal fluorides
 - **cesium fluorides**
 - RT cesium
- cesium halides**
 - GS cesium compounds
 - . **cesium halides**
 - . . . cesium bromides
 - . . . cesium fluorides
 - . . . cesium iodides
 - halogen compounds
 - . halides
 - . . . metal halides
 - alkali halides
 - **cesium halides**
 - cesium bromides
 - cesium fluorides
 - cesium iodides
 - RT cesium
- cesium hydrides**
 - GS cesium compounds
 - . **cesium hydrides**
 - hydrogen compounds
 - . hydrides
 - . . . metal hydrides
 - **cesium hydrides**
 - RT cesium
- cesium iodides**
 - GS cesium compounds
 - . cesium halides
 - . . . **cesium iodides**
 - halogen compounds
 - . halides
 - . . . metal halides
 - alkali halides
 - cesium halides
 - **cesium iodides**
 - . iodine compounds
 - . . . iodides
 - **cesium iodides**
 - RT cesium
- cesium ions**
 - GS ions
 - . **cesium ions**
- RT cesium
- cesium isotopes**
 - GS chemical elements
 - . alkali metals
 - . . . cesium
 - **cesium isotopes**
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - . nuclides
 - . . . isotopes
 - **cesium isotopes**
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - metals
 - . alkali metals
 - . . . cesium
 - **cesium isotopes**
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
- cesium oxides**
 - GS cesium compounds
 - . **cesium oxides**
 - chalcogenides
 - . oxides
 - . . . metal oxides
 - **cesium oxides**
- cesium plasma**
 - GS particles
 - . charged particles
 - . . . energetic particles
 - . . . plasmas (physics)
 - metallic plasmas
 - **cesium plasma**
 - . corpuscular radiation
 - . . . energetic particles
 - . . . plasmas (physics)
 - metallic plasmas
 - **cesium plasma**
 - RT cesium
 - thermionic converters
- cesium vapor**
 - GS chemical elements
 - . alkali metals
 - . . . **cesium vapor**
 - . . . nuclides
 - isotopes
 - **cesium vapor**
 - metals
 - . alkali metals
 - . . . **cesium vapor**
 - vapors
 - . **cesium vapor**
 - RT cesium
 - mercury vapor
- Cessna 172 aircraft**
 - GS Cessna aircraft
 - . **Cessna 172 aircraft**
 - general aviation aircraft
 - . **Cessna 172 aircraft**
 - light aircraft
 - . **Cessna 172 aircraft**
 - monoplanes
 - . **Cessna 172 aircraft**
 - passenger aircraft
 - . **Cessna 172 aircraft**
 - single engine aircraft
 - . **Cessna 172 aircraft**
 - RT ∞ aircraft
- Cessna 205 aircraft**
 - GS Cessna aircraft
 - . **Cessna 205 aircraft**
 - general aviation aircraft
 - . **Cessna 205 aircraft**
 - light aircraft
 - . **Cessna 205 aircraft**
 - monoplanes
 - . **Cessna 205 aircraft**
 - passenger aircraft
- . **Cessna 205 aircraft**
- single engine aircraft
- RT ∞ aircraft
- Cessna 210 aircraft**
 - UF *Centurion aircraft*
 - GS Cessna aircraft
 - . **Cessna 210 aircraft**
 - general aviation aircraft
 - . **Cessna 210 aircraft**
 - light aircraft
 - . **Cessna 210 aircraft**
 - monoplanes
 - . **Cessna 210 aircraft**
 - passenger aircraft
 - . **Cessna 210 aircraft**
 - single engine aircraft
 - . **Cessna 210 aircraft**
- Cessna 402B aircraft**
 - DEF A lighter, twin-engine, short-haul cargo/passenger aircraft manufactured by the Cessna Aircraft Company.
 - GS Cessna aircraft
 - . **Cessna 402B aircraft**
 - general aviation aircraft
 - . **Cessna 402B aircraft**
 - light aircraft
 - . **Cessna 402B aircraft**
 - monoplanes
 - . **Cessna 402B aircraft**
 - passenger aircraft
 - . **Cessna 402B aircraft**
 - transport aircraft
 - . short haul aircraft
 - . . . **Cessna 402B aircraft**
 - RT ∞ aircraft
- Cessna aircraft**
 - GS **Cessna aircraft**
 - . A-37 aircraft
 - . Cessna 172 aircraft
 - . Cessna 205 aircraft
 - . Cessna 210 aircraft
 - . Cessna 402B aircraft
 - . Cessna L-19 aircraft
 - . T-37 aircraft
 - RT ∞ aircraft
- Cessna L-19 aircraft**
 - GS Cessna aircraft
 - . **Cessna L-19 aircraft**
 - light aircraft
 - . **Cessna L-19 aircraft**
 - monoplanes
 - . **Cessna L-19 aircraft**
 - observation aircraft
 - . **Cessna L-19 aircraft**
 - reconnaissance aircraft
 - . **Cessna L-19 aircraft**
 - RT ∞ aircraft
- CETA cart (ISS)**
 - (added December 2002)
 - USE **Crew Equipment Translation Aid (ISS)**
- cetane**
 - GS organic compounds
 - . hydrocarbons
 - . . . aliphatic hydrocarbons
 - alkanes
 - **cetane**
- cetyl compounds**
 - GS alkyl compounds
 - . **cetyl compounds**
 - RT ∞ chemical compounds
- Ceylon**
 - USE **Sri Lanka**
- CF-104 aircraft**
 - USE **Canadair aircraft F-104 aircraft**
- CF-700 engine**
 - GS engines
 - . air breathing engines

CH-3 helicopter

- . . . gas turbine engines
- jet engines
- turbojet engines
- turbofan engines
- **CF-700 engine**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turbofan engines
- **CF-700 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turbofan engines
- **CF-700 engine**

RT vertical takeoff aircraft

CFCs

USE **chlorofluorocarbons**

CFD

USE **charge flow devices**

CFRP

USE **carbon fiber reinforced plastics**

CH (methylidyne)

USE **methylidyne**

CH-3 helicopter

GS passenger aircraft
. **CH-3 helicopter**
Sikorsky aircraft
. **CH-3 helicopter**
transport aircraft
. **CH-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. helicopters
. . military helicopters
. . . **CH-3 helicopter**
. . . rigid rotor helicopters
. . . . **CH-3 helicopter**

RT S-61 helicopter

CH-21 helicopter

UF *H-21 helicopter*
Shawnee helicopter
Workhorse helicopter

GS Boeing aircraft
. **CH-21 helicopter**
transport aircraft
. cargo aircraft
. . **CH-21 helicopter**
V/STOL aircraft
. rotary wing aircraft
. helicopters
. . military helicopters
. . . **CH-21 helicopter**

CH-34 helicopter

UF *Choctaw helicopter*
H-34 helicopter

GS Sikorsky aircraft
. **CH-34 helicopter**
transport aircraft
. **CH-34 helicopter**
V/STOL aircraft
. rotary wing aircraft
. helicopters
. . military helicopters
. . . **CH-34 helicopter**

RT S-58 helicopter

CH-46 helicopter

UF *CH-113 helicopter*
HRB-1 helicopter
Sea Knight helicopter
Voyageur helicopter

GS Boeing aircraft
. **CH-46 helicopter**
passenger aircraft
. **CH-46 helicopter**
transport aircraft
. **CH-46 helicopter**
V/STOL aircraft
. rotary wing aircraft
. helicopters

- . . . military helicopters
- **CH-46 helicopter**
- tandem rotor helicopters
- **CH-46 helicopter**

CH-47 helicopter

UF *Chinook helicopter*
HC-1 helicopter

GS Boeing aircraft
. **CH-47 helicopter**
passenger aircraft
. **CH-47 helicopter**
transport aircraft
. **CH-47 helicopter**
V/STOL aircraft
. rotary wing aircraft
. helicopters
. . military helicopters
. . . **CH-47 helicopter**
. . . tandem rotor helicopters
. . . . **CH-47 helicopter**

CH-53 helicopter

USE **H-53 helicopter**

CH-54 helicopter

UF *S-64 helicopter*
Sikorsky S-64 helicopter
Skycrane helicopter

GS passenger aircraft
. **CH-54 helicopter**
Sikorsky aircraft
. **CH-54 helicopter**
transport aircraft
. **CH-54 helicopter**
V/STOL aircraft
. rotary wing aircraft
. helicopters
. . military helicopters
. . . **CH-54 helicopter**

CH-62 helicopter

GS Boeing aircraft
. **CH-62 helicopter**
V/STOL aircraft
. rotary wing aircraft
. helicopters
. . heavy lift helicopters
. . . **CH-62 helicopter**
. . . military helicopters
. . . . **CH-62 helicopter**

RT ∞ military aircraft

CH-113 helicopter

USE **CH-46 helicopter**

Chad

GS nations
. **Chad**

RT Africa

chaff

GS countermeasures
. electronic countermeasures
. . **chaff**

RT deception
electronic warfare
radar echoes

chain reactions (chemistry)

(added May 1999)

GS chemical reactions
. **chain reactions (chemistry)**

RT chemical lasers
combustion chemistry

chain reactions (nuclear physics)

(added May 1999)

GS nuclear reactions
. nuclear fission
. . **chain reactions (nuclear physics)**

RT fission products
neutrons

chains

SN (EXCLUDES CHEMICAL BONDS AND NUCLEAR REACTIONS)

RT ∞ barriers
cables (ropes)
fasteners

∞ links
molecular chains

chairs

USE **seats**

chalcogenides

GS **chalcogenides**
. oxides
. . alkoxides
. . anhydrides
. . . peroxides
. . . . inorganic peroxides
. hydrogen peroxide
. . . . organic peroxides
. potassium peroxides
. sodium peroxides
. boron oxides
. . brucite
. carbon monoxide
. carbon suboxides
. chlorine oxides
. dioxides
. . carbon dioxide
. . . flint
. . . hydrogen peroxide
. . . silicon dioxide
. . . . quartz
. coesite
. stishovite
. . . sulfur dioxides
. germanium oxides
. heavy water
. indium oxides
. metal oxides
. . alkaline earth oxides
. . . barium oxides
. . . . beryllium oxides
. alexandrite
. calcium oxides
. akermanite
. . . . magnesium oxides
. akermanite
. periclase
. aluminum oxides
. . . alexandrite
. . . . sapphire
. . bismuth oxides
. . cerium oxides
. . cesium oxides
. chromium oxides
. . cobalt oxides
. . copper oxides
. . gallium oxides
. . hafnium oxides
. . iron oxides
. . . hematite
. . . ilmenite
. . . magnetite
. lanthanum oxides
. . lead oxides
. . lithium oxides
. . manganese oxides
. . . Hopcalite (trademark)
. . . mercury oxides
. . mixed oxides
. . . BSCCO superconductors
. . . YBCO superconductors
. molybdenum oxides
. . nickel oxides
. . niobium oxides
. . platinum oxides
. . plutonium oxides
. . potassium oxides
. . scandium oxides
. . silver oxides
. . sodium peroxides
. . strontium oxides
. . tantalum oxides
. . thorium oxides
. . tin oxides
. . titanium oxides
. . . anatase
. . . . ilmenite
. . . . rutile
. . . tungsten oxides
. . . . scheelite
. . . uranium oxides
. . . vanadium oxides

. . . yttrium oxides
 . . . zinc oxides
 . . . zirconium oxides
 . . . yttria-stabilized zirconia
 . . . nitrogen oxides
 . . . nitric oxide
 . . . nitrogen dioxide
 . . . nitrogen tetroxide
 . . . nitrous oxides
 . . . phosphorus oxides
 . . . pyroxenes
 . . . enstatite
 . . . selenium oxides
 . . . silicon oxides
 . . . muscovite
 . . . nephelite
 . . . silicon dioxide
 quartz
 coesite
 stishovite
 . . . spodumene
 . . . sulfur oxides
 . . . sulfur dioxides
 . . . selenides
 . . . cadmium selenides
 . . . copper selenides
 . . . copper indium selenides
 . . . gallium selenides
 . . . indium selenides
 . . . copper indium selenides
 . . . lead selenides
 . . . zinc selenides
 . . . sulfides
 . . . disulfides
 . . . carbon disulfide
 . . . inorganic sulfides
 . . . barium sulfides
 . . . bismuth sulfides
 . . . cadmium sulfides
 . . . calcium sulfides
 . . . copper sulfides
 . . . hydrogen sulfide
 . . . indium sulfides
 . . . lead sulfides
 . . . molybdenum sulfides
 molybdenum disulfides
 . . . polysulfides
 . . . strontium sulfides
 . . . zinc sulfides
 wurtzite
 zinblend
 . . . pyrites
 . . . pyrrhotite
 . . . troilite
 . . . tellurides
 . . . bismuth tellurides
 . . . cadmium tellurides
 . . . indium tellurides
 . . . lanthanum tellurides
 . . . lead tellurides
 . . . mercury tellurides
 . . . mercury cadmium tellurides
 . . . tin tellurides
 . . . zinc tellurides
 RT ∞ Group 6A compounds

chalk

GS calcium compounds
 . calcium carbonates
 . . **chalk**
 carbon compounds
 . carbonates
 . . calcium carbonates
 . . . **chalk**
 RT gypsum

Challenger (Orbiter)

UF *Space Shuttle Orbiter 099*
 GS manned spacecraft
 . space shuttles
 . . Space Shuttle orbiters
 . . . **Challenger (Orbiter)**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . space shuttles
 Space Shuttle orbiters
 **Challenger (Orbiter)**
 RT Endeavour (orbiter)

Space Shuttle mission 31-B
 Space Shuttle mission 31-C
 Space Shuttle mission 31-D
 Space Shuttle mission 41-B
 Space Shuttle mission 41-C
 Space Shuttle mission 41-G
 Space Shuttle mission 51-B
 Space Shuttle mission 51-E
 Space Shuttle mission 51-F
 Space Shuttle mission 51-L
 Space Shuttle mission 61-A
 ∞ spacecraft

∞ **chambers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT anechoic chambers
 arc chambers
 bubble chambers
 cloud chambers
 combustion chambers
 cylindrical chambers
 flexing
 flow chambers
 hyperbaric chambers
 ionization chambers
 plenum chambers
 pressure chambers
 reverberation chambers
 spark chambers
 test chambers
 thrust chambers
 vacuum chambers

Chance-Vought aircraft

RT ∞ aircraft

Chandler motion

USE **polar wandering (geology)**

Chandler wobble

(added September 1992)
 SN (EXCLUDES CHANDLER MOTION)
 DEF A movement in the Earth's axis of rotation whose period of motion is about 14 months. Used for Eulerian nutation.
 UF *Eulerian nutation*
 GS nutation
 . **Chandler wobble**
 RT Earth axis
 ∞ Earth motion
 Earth orientation
 Earth rotation
 geodynamics
 geophysics
 polar wandering (geology)

Chandra X Ray Astrophysics Facility

(added March 1999)
 USE **X Ray Astrophysics Facility**

Chandrasekhar equation

GS analysis (mathematics)
 . real variables
 . . differential equations
 . . . **Chandrasekhar equation**
 RT electromagnetic absorption
 ∞ equations

change detection

DEF A process of examining imagery to detect changes on a planetary surface or astronomical body.
 GS detection
 . **change detection**
 RT aerial photography
 aerial reconnaissance
 Earth Resources Program
 image classification
 image processing
 imagery
 land use
 multispectral band scanners
 multispectral photography
 pattern recognition
 photointerpretation
 radar imagery
 remote sensing
 scene analysis
 side-looking radar

terrain analysis

channel capacity

RT Aloha system
 bandwidth
 ∞ capacity
 cochannel interference
 demand assignment multiple access
 frequencies
 packet transmission
 transmission rate (communications)

channel flow

GS fluid flow
 . internal flow
 . . **channel flow**
 . . . open channel flow
 RT annular flow
 Brinkman number
 cavity flow
 choked flow
 corner flow
 dredged materials
 ducted flow
 flow geometry
 fluid injection
 incompressible fluids
 outlet flow
 pipe flow
 wall flow

channel multipliers

UF *channeltrons*
 GS multipliers
 . **channel multipliers**
 RT auroral spectroscopy
 electron avalanche
 microchannel plates
 photomultiplier tubes
 radiation counters

channel noise

DEF In communications bursts of interruptive pulses caused mainly by contact closures in electromagnetic equipment or by transient voltages in electric cables during transmission of signals or data. Impulsive noise is the frequent cause of transmission errors.
 RT Aloha system
 background noise
 cochannel interference
 electromagnetic noise
 noise spectra
 random noise
 signal to noise ratios
 thermal noise
 time division multiple access
 trellis coding

channel wings

GS airfoils
 . wings
 . . **channel wings**
 planforms
 . wing planforms
 . . **channel wings**
 RT aerodynamic configurations
 aircraft design
 aircraft parts
 aircraft structures

∞ **channels**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT channels (data transmission)
 computer storage devices
 dredged materials
 ducts
 frequencies
 media
 parallel plates
 structural members
 telecommunication
 throats

channels (data transmission)

UF *data busses*
 RT asynchronous transfer mode
 ∞ channels
 ∞ data

chaos

data links
data processing
data transmission
protocol (computers)
Rayleigh fading
single channel per carrier
transmission

channeltrons

USE **channel multipliers**

chaos

(added June 1989)

RT attractors (mathematics)
branching (mathematics)
mathematical models
nonlinear systems
period doubling
stochastic processes
strange attractors

chaotic cloud patterns

USE **clouds (meteorology)**

chaparral

GS plants (botany)
. brush (botany)
. . . **chaparral**
RT botany
Earth resources
trees (plants)

Chaparral missile

GS missiles
. surface to air missiles
. . . **Chaparral missile**
RT space weapons

Chaplygin equation

GS flow equations
. **Chaplygin equation**
RT ∞ equations
hodographs
vector spaces

Chapman shear layer

USE **shear layers**

Chapman-Enskog theory

UF *Enskog-Chapman theory*
GS kinetic theory
. transport theory
. . . **Chapman-Enskog theory**
RT Boltzmann transport equation
Burnett equations
distribution functions
flow distribution
monatomic gases
rarefied gas dynamics
temperature gradients
 ∞ theories
thermal diffusion

Chapman-Ferraro problem

RT atmospheric models
Earth magnetosphere
interplanetary magnetic fields
magnetopause
 ∞ problems
solar wind

Chapman-Jouget flame

USE **chemical equilibrium
detonation
flame propagation**

character recognition

GS recognition
. pattern recognition
. . . **character recognition**
RT artificial intelligence
contrast
 ∞ detectors
graphology
handwriting
legibility
optical data processing
optical scanners
perception
readers
reading

resolution
scene analysis
 ∞ sensors
symbols
visibility

characteristic equations

USE **eigenvalues
eigenvectors**

characteristic functions

USE **eigenvalues
eigenvectors**

characteristic method

USE **method of characteristics**

∞ characteristics

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
DEF Specifically, distinguishing qualities,
properties, features or capabilities of an entity.
RT aerodynamic characteristics
capacitance-voltage characteristics
dynamic characteristics
flight characteristics
flow characteristics
method of characteristics
nanostructure (characteristics)
polarization characteristics
Segre characteristic
spray characteristics
static aerodynamic characteristics
volt-ampere characteristics

characterization

RT descriptions
examination
representations

characters

USE **symbols**

charcoal

GS **charcoal**
. activated carbon
RT adsorbents
carbon
coke
fuels

charge carriers

GS **charge carriers**
. free electrons
. holes (electron deficiencies)
. majority carriers
. minority carriers
RT carrier injection
carrier lifetime
 ∞ carriers
electron mobility
hole mobility

charge coupled devices

DEF Semiconductor devices arrayed so
that the electric charge at the output of one
provides the input stimulus to the next. Use for
CCD.

UF *CCD*
GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . charge transfer devices
. . . . **charge coupled devices**
RT bucket brigade devices
CCD cameras
CCD star tracker
charge injection devices
focal plane devices
ITO (semiconductors)

charge distribution

GS distribution (property)
. **charge distribution**
electrical properties
. **charge distribution**
RT current distribution
electron distribution
electrostatic charge
force distribution

hole distribution (electronics)
ion distribution
mass distribution
neutral atoms
polarization (charge separation)

charge efficiency

DEF The efficiency of electric cell recharg-
ing.
GS efficiency
. **charge efficiency**
RT battery chargers
 ∞ charging
electric batteries
primary batteries
recharging
storage batteries

charge exchange

SN (LIMITED TO COLLISIONAL TRANSFER
OF AN ELECTRON FROM A NEUTRAL
ATOM OR MOLECULE TO AN
ION--EXCLUDES SEMICONDUCTOR AND
PHOTOCHEMICAL CHARGE TRANSFER)
DEF The collisional transfer of an electron
from a neutral atom or molecule to an ion.
GS exchanging
. **charge exchange**
. . . resonance charge exchange
RT electron transfer
ion atom interactions
ion charge
ion production rates
plasma-particle interactions
recoil ions

charge flow devices

DEF Metal oxide semiconductor (MOS) de-
vices used for fire detectors and humidity sen-
sors. Used for CFD.
UF *CFD*
GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . . transistors
. . . . field effect transistors
. . . . **charge flow devices**
RT integrated circuits
 ∞ sensors

charge injection devices

UF *CID*
GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . . charge transfer devices
. . . . **charge injection devices**
RT charge coupled devices
electro-optics
imaging techniques
semiconductors (materials)
star trackers

charge separation

USE **polarization (charge separation)**

charge transfer

SN (EXCLUDES COLLISIONAL CHARGE
EXCHANGE)
RT carrier injection
charged particles
electron transfer
ion exchanging
ionic reactions
mass transfer
photochemical reactions
polarization (charge separation)
transferring

charge transfer devices

UF *CTD*
GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . . **charge transfer devices**
. . . . bucket brigade devices
. . . . charge coupled devices
. . . . charge injection devices
RT ITO (semiconductors)
organic charge transfer salts

tunable filters

charged particles

- SN (FOR IONIC PARTICLES SEE IONS)
- GS particles
 - . **charged particles**
 - .. antiprotons
 - .. energetic particles
 - ... electrons
 - conduction electrons
 - free electrons
 - high energy electrons
 - relativistic electron beams
 - hot electrons
 - N electrons
 - negatrons
 - photoelectrons
 - pi-electrons
 - polarons
 - solar electrons
 - .. nuclei (nuclear physics)
 - ... alpha particles
 - ... deuterons
 - even-even nuclei
 - heavy nuclei
 - hypernuclei
 - odd-even nuclei
 - odd-odd nuclei
 - tritons
 - .. plasmas (physics)
 - ... argon plasma
 - ... beta particles
 - ... boundary layer plasmas
 - ... cold plasmas
 - ... collisional plasmas
 - strongly coupled plasmas
 - ... collisionless plasmas
 - ... cosmic plasma
 - ... cylindrical plasmas
 - ... dense plasmas
 - ... plasma focus
 - strongly coupled plasmas
 - ... electron plasma
 - ... electron-positron plasmas
 - ... elliptical plasmas
 - ... helium plasma
 - ... high temperature plasmas
 - ... hydrogen plasma
 - deuterium plasma
 - ... laser plasmas
 - ... metallic plasmas
 - cesium plasma
 - uranium plasmas
 - ... microplasmas
 - ... nitrogen plasma
 - ... nonequilibrium plasmas
 - ... nonuniform plasmas
 - ... oxygen plasma
 - ... rarefied plasmas
 - ... relativistic plasmas
 - ... rotating plasmas
 - ... semiconductor plasmas
 - ... space plasmas
 - solar wind
 - stellar winds
 - ... dusty plasmas
 - ... spherical plasmas
 - ... thermal plasmas
 - ... toroidal plasmas
 - .. ionized gases
 - .. Lorentz gas
 - .. magnetically trapped particles
 - .. radiation belts
 - ... artificial radiation belts
 - ... inner radiation belt
 - ... outer radiation belt
 - ... proton belts
 - .. partons
 - .. plasma clouds
 - .. magnetic clouds
 - .. plasma jets
 - ... radio jets (astronomy)
 - .. plasma layers
 - .. plasma sheaths
 - .. plasma slabs
 - .. positrons
 - .. protons
 - ... recoil protons
 - ... solar protons

- RT antineutrinos
- antiparticles
- bosons
- charge transfer
- corpuscular radiation
- Coulomb collisions
- Coulomb potential
- cyclotron frequency
- cyclotron radiation
- cyclotron resonance
- deuteron irradiation
- electron-positron pairs
- elementary particles
- eta-mesons
- gyrofrequency
- Helios Project
- hyperons
- ion charge
- kaons
- leptons
- Lorentz force
- meson-nucleon interactions
- mesons
- muon spin rotation
- muons
- neutral sheets
- neutrons
- nonadiabatic theory
- ∞ nuclei
- nucleon-nucleon interactions
- nucleons
- omega-mesons
- particle charging
- particle precipitation
- particle trajectories
- pions
- Reissner-Nordstrom solution
- rho-mesons
- sigma-mesons
- single event upsets
- trapped particles

∞ **charging**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT battery chargers
- charge efficiency
- electric charge
- electrostatic charge
- explosive devices
- explosives
- filling
- injection
- magnetic charge density
- SCATHA satellite

charm (particle physics)

DEF A quantum number which has been proposed to account for an apparent lack of symmetry in the behavior of hadrons relative to that of leptons, to explain why certain reactions of elementary particles do not occur, and to account for the longevity of the J particle.

- RT hadrons
- leptons
- particle interactions
- particle theory
- ∞ physics
- quantum theory
- theoretical physics

Charon

DEF Natural satellite of the planet Pluto, discovered and named by Dr. James W. Christy.

- GS celestial bodies
- .. natural satellites
- .. Pluto satellites
- ... **Charon**
- .. trans-Neptunian objects
- .. **Charon**
- RT Callisto
- Deimos
- Earth-Moon system
- Europa
- Galilean satellites
- Ganymede
- Iapetus
- Io
- New Horizons mission

- planetary orbits
- Pluto (planet)
- solar system
- Titan

Charpy impact test

- GS impact tests
- .. **Charpy impact test**
- notch tests
- .. **Charpy impact test**
- RT brittleness
- drop tests
- hardness
- ∞ materials tests
- notch sensitivity

charring

- RT ablation
- carbonization
- combustion
- decomposition
- fire damage
- oxidation
- thermal absorption

charts

- GS **charts**
- .. flow charts
- .. graphs (charts)
- .. bond graphs
- .. Gompertz curves
- .. Mollier diagram
- .. Patterson map
- .. meteorological charts
- .. nautical charts
- RT block diagrams
- diagrams
- display devices
- drawings
- graphic arts
- maps
- navigation aids
- nomographs
- ∞ plots
- statistical analysis
- statistical tests
- visual aids

chassignites

- (added August 1991)
- DEF Achondritic stony meteorites composed almost entirely (958) of olivine, with accessory amounts of chromite, and lacking nickel-iron. It resembles terrestrial dunite.
- GS celestial bodies
- .. meteorites
- .. stony meteorites
- ... achondrites
- ... **chassignites**
- RT nakhlites
- shergottites
- SNC meteorites

chassis

- GS frames
- .. **chassis**
- RT automobiles
- carriages
- ∞ headers
- struts
- supports
- undercarriages

Chebyshev approximation

- GS analysis (mathematics)
- .. numerical analysis
- .. approximation
- ... **Chebyshev approximation**
- RT series (mathematics)
- statistical analysis

checkout

- SN (SEQUENCE OF TESTS TO DETERMINE FUNCTIONAL READINESS OF EQUIPMENT)
- DEF A sequence of actions taken to test or examine a thing as to its readiness for incorporation into a new phase of use, or for the performance of its intended function. The sequence of steps taken to familiarize a person with the operation of an airplane or other piece

chelates

of equipment. Used for debugging.

UF *debugging*

RT aircraft maintenance

CEFOAM checkout equipment

certification

cold flow tests

countdown

file maintenance (computers)

inspection

maintenance

performance tests

prefiring tests

program verification (computers)

self tests

space vehicle checkout program

spacecraft maintenance

∞ test equipment

∞ tests

checkout equipment

USE **test equipment**

chelate compounds

USE **chelates**

chelates

UF *chelate compounds*

RT chelation

∞ chemical compounds

organometallic compounds

chelation

RT chelates

chemical reactions

chemical analysis

GS chemical tests

. **chemical analysis**

. . chromatography

. . . gas chromatography

. . . gel chromatography

. . . liquid chromatography

. . . paper chromatography

. . . thin layer chromatography

. . electrophotometry

. . gas analysis

. . . ozonometry

. . . Van Slyke method

. . iodimetry

. . Karl Fischer reagent

. . microanalysis

. . neutron activation analysis

. . potentiometric analysis

. . qualitative analysis

. . quantitative analysis

. . . Kjeldahl method

. . . Van Slyke method

. . spectroscopic analysis

. . urinalysis

. . volumetric analysis

RT alkalinity

analytical chemistry

∞ analyzing

assaying

Auger spectroscopy

chemical detection

∞ chemistry

colorimetry

coulometers

density measurement

diffractometers

electron probes

fuel tests

gas spectroscopy

gel chromatography

hydrometers

hygrometers

identifying

inductively coupled plasma mass

spectrometry

infrared spectrophotometers

infrared spectroscopy

ion selective electrodes

isotopic labeling

laser spectroscopy

magnetic resonance spectroscopy

Mars surface samples

mass spectrometers

mass spectrometry

∞ materials tests

∞ measurement

metallicity

methylene blue

moisture meters

mutagens

nephanalysis

optical measurement

particle tracks

particulate sampling

photometry

physical chemistry

polarimeters

polarography

psychrometers

radiochemistry

reagents

sampling

spectral signatures

spectrometers

spectrophotometers

spectroscopy

∞ tests

thermogravimetry

titrimeters

x ray analysis

chemical attack

GS **chemical attack**

. intergranular corrosion

. transgranular corrosion

RT ∞ attack

corrosion

corrosion prevention

corrosion resistance

corrosion tests

degradation

dissolving

impregnating

oxidation

passivity

pitting

rusting

scale (corrosion)

chemical auxiliary power units

GS auxiliary power sources

. **chemical auxiliary power units**

RT electric batteries

fuel cells

lead acid batteries

magnesium cells

chemical bonds

UF *molecular bonds*

GS **chemical bonds**

. covalent bonds

. hydrogen bonds

RT active sites (chemistry)

agglutination

binding energy

bonding

coupled modes

covalence

crystal lattices

ionic crystals

ligands

molecules

monatomic molecules

octets

polyatomic molecules

polywater

saturation (chemistry)

Swan bands

unsaturation (chemistry)

valence

chemical cleaning

GS cleaning

. **chemical cleaning**

. . pickling (metallurgy)

RT descaling

dissolving

chemical clouds

DEF Artificial clouds of chemical compounds released in the ionosphere for observation of dispersion and other characteristics.

GS clouds (meteorology)

. artificial clouds

. . **chemical clouds**

. . . barium ion clouds

RT chemical release modules

CRRES (satellite)

particles

plasma clouds

chemical compatibility

(added September 1995)

GS compatibility

. **chemical compatibility**

RT affinity

liquid rocket propellants

metal matrix composites

propellant tests

stability

chemical composition

GS composition (property)

. **chemical composition**

. . carbon dioxide concentration

. . stellar composition

RT alkalinity

atmospheric composition

atom concentration

body composition (biology)

distribution (property)

gas composition

ionospheric composition

ligands

metallic stars

metallicity

planetary structure

spectral signatures

∞ **chemical compounds**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Distinct substances formed by a union of two or more ingredients in definite proportions by weight.

RT acetyl compounds

actinide series compounds

adducts

∞ alkali metal compounds

∞ alkaline earth compounds

alkyl compounds

allyl compounds

aluminum compounds

amines

ammonium compounds

antimony compounds

∞ aromatic compounds

arsenic compounds

azo compounds

barium compounds

beryllium compounds

bismuth compounds

boron compounds

boron-epoxy composites

bromine compounds

cadmium compounds

calcium compounds

carbon compounds

carbonyl compounds

cerium compounds

cesium compounds

cetyl compounds

chelates

∞ chemicals

chlorine compounds

chromium compounds

clathrates

cobalt compounds

complex compounds

compound A

∞ compounds

congeners

copper compounds

curium compounds

cyano compounds

cyclic compounds

deuterium compounds

diallyl compounds

dibasic compounds

dibutyl compounds

difluoro compounds

diphenyl compounds

dopa

dysprosium compounds

- epoxy compounds
- erbium compounds
- ethyl compounds
- ethylene compounds
- europium compounds
- fluorine compounds
- fluorine organic compounds
- fluoro compounds
- fullerides
- furans
- gallium compounds
- germanium compounds
- ∞ Group 1B compounds
- ∞ Group 2B compounds
- ∞ Group 3A compounds
- ∞ Group 3B compounds
- ∞ Group 4A compounds
- ∞ Group 4B compounds
- ∞ Group 5A compounds
- ∞ Group 5B compounds
- ∞ Group 6A compounds
- ∞ Group 6B compounds
- ∞ Group 7B compounds
- ∞ Group 8 compounds
- hafnium compounds
- halocarbons
- halogen compounds
- heterocyclic compounds
- hexyl compounds
- hydrazinium compounds
- hydrazonium compounds
- hydrogen compounds
- hydroxyl compounds
- indium aluminum arsenides
- indium compounds
- indium oxides
- inorganic compounds
- intercalation
- iodine compounds
- iridium compounds
- iron compounds
- isopropyl compounds
- lanthanum compounds
- lead compounds
- lead organic compounds
- lithium compounds
- lutetium compounds
- magnesium compounds
- manganese compounds
- mercury compounds
- ∞ metal compounds
- methoxy systems
- methyl compounds
- molecules
- molybdenum compounds
- monatomic molecules
- neodymium compounds
- neptunium compounds
- nickel compounds
- niobium compounds
- nitro compounds
- nitrogen compounds
- nitronium compounds
- nitroso compounds
- organic aluminum compounds
- organic boron compounds
- organic compounds
- organic germanium compounds
- organic lithium compounds
- organic phosphorus compounds
- organic semiconductors
- organic silicon compounds
- organic sulfur compounds
- organic tin compounds
- organometallic compounds
- osmium compounds
- ∞ oxygen compounds
- oxynitrides
- palladium compounds
- phosgene
- phosphonium compounds
- phosphorus compounds
- platinum compounds
- plutonium compounds
- polonium compounds
- polyatomic molecules
- polynuclear organic compounds
- polyquinoxalines
- potassium compounds
- praseodymium compounds
- propyl compounds
- protactinium compounds
- rare earth compounds
- ∞ rare gas compounds
- refractory materials
- rhodium compounds
- rhodium compounds
- rubidium compounds
- ruthenium compounds
- samarium compounds
- scandium compounds
- selenium compounds
- silicon compounds
- silver compounds
- sodium compounds
- strontium compounds
- strontium oxides
- stypnates
- sulfur compounds
- sulfur hexafluoride
- tantalum compounds
- technetium compounds
- tellurium compounds
- tetrahydrofuran
- thiols
- thorium compounds
- thulium compounds
- tin compounds
- titanium compounds
- triethyl compounds
- trimethyl compounds
- trinitro compounds
- tropyl compounds
- tungsten compounds
- uranium compounds
- vanadium compounds
- vanadyl compounds
- Wiswesser notations
- xenon compounds
- ytterbium compounds
- yttrium compounds
- zinc compounds
- zirconium compounds
- zwitterions
- ... americium
- ... americium isotopes
- ... americium 241
- ... berkelium
- ... californium
- ... californium isotopes
- ... curium
- ... curium isotopes
- ... curium 242
- ... curium 244
- ... einsteinium
- ... fermium
- ... lawrencium
- ... mendelevium
- ... neptunium
- ... neptunium isotopes
- ... nobelium
- ... plutonium
- ... plutonium isotopes
- ... plutonium 238
- ... plutonium 239
- ... plutonium 240
- ... plutonium 241
- ... plutonium 244
- ... sergenium
- ... uranium
- ... uranium isotopes
- ... uranium 232
- ... uranium 233
- ... uranium 234
- ... uranium 235
- ... uranium 238
- . alkali metals
- . cesium
- . cesium isotopes
- . cesium 133
- . cesium 134
- . cesium 137
- . cesium 144
- . cesium vapor
- . francium
- . lithium
- . liquid lithium
- . lithium isotopes
- . potassium
- . liquid potassium
- . potassium isotopes
- . potassium 38
- . potassium 39
- . potassium 40
- . rubidium
- . rubidium isotopes
- . rubidium 86
- . sodium
- . liquid sodium
- . sodium isotopes
- . sodium 22
- . sodium 24
- . sodium vapor
- . alkaline earth metals
- . barium isotopes
- . aluminum
- . aluminum isotopes
- . aluminum 26
- . aluminum 27
- . barium
- . barium isotopes
- . beryllium
- . beryllium isotopes
- . beryllium 7
- . beryllium 9
- . beryllium 10
- . bismuth
- . bismuth isotopes
- . cadmium
- . cadmium isotopes
- . calcium
- . calcium isotopes
- . carbon
- . carbon isotopes
- . carbon 12
- . carbon 13
- . carbon 14
- . chromium
- . chromium isotopes
- . cobalt
- . cobalt isotopes
- . cobalt 58
- . cobalt 60

chemical defense

DEF All actions and counteractions designed for the protection of personnel and material against offensive chemical agents.

- RT chemical detection
- civil defense
- clothing
- drugs
- first aid
- injuries
- masks
- neurology
- physiological factors
- protective clothing
- safety devices
- warfare

chemical detection

(added April 2004)

DEF Sensing and identification of chemical compounds within a particular environment.

- GS detection
- . chemical detection
- . explosives detection
- RT chemical analysis
- chemical defense
- chemical tests

chemical effects

- RT biological effects
- ∞ effects
- sterilization effects
- temperature effects

chemical elements

- GS chemical elements
- . actinide series
- . actinium
- . radium
- . . radium isotopes
- . . . radium 226
- . thorium
- . . thorium isotopes
- . transuranium elements

chemical elements

- . copper
- .. copper isotopes
- . gallium
- .. gallium isotopes
- . gold
- .. gold isotopes
- ... gold 198
- . hafnium
- .. hafnium isotopes
- . hahnium
- . halogens
- .. astatine
- .. bromine
- ... bromine isotopes
- .. chlorine
- .. fluorine
- ... fluorine isotopes
- .. liquid fluorine
- .. iodine
- ... iodine isotopes
- iodine 125
- iodine 131
- iodine 132
- . heavy elements
- . hydrogen
- .. hydrogen isotopes
- ... deuterium
- ... hydrogen 4
- ... metallic hydrogen
- ... tritium
- .. liquid hydrogen
- . indium
- . iridium
- .. iridium isotopes
- . iron
- .. iron isotopes
- ... iron 57
- ... iron 58
- ... iron 59
- . lead (metal)
- .. lead isotopes
- . light elements
- . magnesium
- .. magnesium isotopes
- . manganese
- .. manganese isotopes
- . mercury (metal)
- .. mercury isotopes
- .. mercury vapor
- .. metalloids
- .. antimony
- .. antimony isotopes
- .. arsenic
- ... arsenic isotopes
- . boron
- ... boron isotopes
- boron 10
- .. germanium
- ... germanium isotopes
- .. polonium
- ... polonium isotopes
- polonium 208
- polonium 209
- polonium 210
- .. silicon
- ... amorphous silicon
- ... porous silicon
- ... silicon isotopes
- .. tellurium
- ... tellurium isotopes
- .. molybdenum
- . nickel
- .. nickel isotopes
- . niobium
- .. niobium isotopes
- ... niobium 95
- . nitrogen
- .. liquid nitrogen
- .. nitrogen isotopes
- ... nitrogen 15
- ... nitrogen 16
- .. solid nitrogen
- . nuclides
- .. isotopes
- ... aluminum isotopes
- aluminum 26
- aluminum 27
- ... antimony isotopes
- ... argon isotopes
- ... arsenic isotopes
- ... barium isotopes
- ... beryllium isotopes
- beryllium 7
- beryllium 9
- beryllium 10
- ... bismuth isotopes
- ... boron isotopes
- boron 10
- ... bromine isotopes
- ... cadmium isotopes
- ... calcium isotopes
- ... carbon isotopes
- carbon 12
- carbon 13
- carbon 14
- ... cerium isotopes
- ... cerium 137
- ... cerium 144
- ... cesium isotopes
- ... cesium 133
- ... cesium 134
- ... cesium 137
- ... cesium 144
- ... cesium vapor
- ... chromium isotopes
- ... cobalt isotopes
- ... cobalt 58
- ... cobalt 60
- ... dysprosium isotopes
- ... erbium isotopes
- ... europium isotopes
- ... fluorine isotopes
- ... gadolinium isotopes
- ... gallium isotopes
- ... germanium isotopes
- ... gold isotopes
- ... gold 198
- ... hafnium isotopes
- ... helium isotopes
- ... holmium isotopes
- ... hydrogen isotopes
- ... deuterium
- ... hydrogen 4
- ... metallic hydrogen
- ... tritium
- ... iodine isotopes
- ... iodine 125
- ... iodine 131
- ... iodine 132
- ... iridium isotopes
- ... iron isotopes
- ... iron 57
- ... iron 58
- ... iron 59
- ... krypton isotopes
- ... krypton 85
- ... lanthanum isotopes
- ... lead isotopes
- ... lithium isotopes
- ... lutetium
- ... lutetium isotopes
- ... magnesium isotopes
- ... manganese isotopes
- ... mercury isotopes
- ... molybdenum isotopes
- ... neodymium isotopes
- ... neon isotopes
- ... nickel isotopes
- ... niobium isotopes
- ... niobium 95
- ... nitrogen isotopes
- ... nitrogen 15
- ... nitrogen 16
- ... nobelium isotopes
- ... osmium isotopes
- ... oxygen isotopes
- ... oxygen 17
- ... oxygen 18
- ... palladium isotopes
- ... phosphorus isotopes
- ... phosphorus 32
- ... platinum isotopes
- ... polonium isotopes
- ... polonium 208
- ... polonium 209
- ... polonium 210
- ... potassium isotopes
- ... potassium 38
- ... potassium 39
- ... potassium 40
- ... praseodymium isotopes
- ... promethium isotopes
- ... protactinium isotopes
- ... radioactive isotopes
- astatine isotopes
- beryllium 7
- beryllium 9
- beryllium 10
- ... carbon 14
- ... cerium 137
- ... cerium 144
- ... cesium 134
- ... cesium 137
- ... cesium 144
- ... cobalt 58
- ... cobalt 60
- ... copper isotopes
- ... gold 198
- ... indium isotopes
- ... iodine 125
- ... iodine 131
- ... iodine 132
- ... iron 59
- ... krypton 85
- ... niobium 95
- ... nitrogen 16
- ... phosphorus 32
- ... polonium 208
- ... polonium 209
- ... polonium 210
- ... potassium 38
- ... potassium 40
- ... rubidium 86
- ... sodium 22
- ... sodium 24
- ... strontium 85
- ... strontium 88
- ... strontium 89
- ... strontium 90
- ... transuranium elements
- americium
- americium isotopes
- americium 241
- berkelium
- californium
- californium isotopes
- curium
- curium isotopes
- curium 242
- curium 244
- einsteinium
- fermium
- lawrencium
- mendelevium
- neptunium
- neptunium isotopes
- nobelium
- plutonium
- plutonium isotopes
- plutonium 238
- plutonium 239
- plutonium 240
- plutonium 241
- plutonium 244
- sergenium
- tritium
- ... uranium 232
- ... uranium 233
- ... uranium 238
- ... xenon 133
- ... xenon 135
- ... zirconium 95
- .. radium isotopes
- ... radium 226
- .. radon isotopes
- .. rhenium isotopes
- .. rhodium isotopes
- .. rubidium isotopes
- ... rubidium 86
- .. ruthenium isotopes
- .. samarium isotopes
- .. scandium isotopes
- .. selenium isotopes
- .. silicon isotopes
- .. silver isotopes
- .. sodium isotopes
- ... sodium 22

- sodium 24
- . . . strontium isotopes
- strontium 85
- strontium 87
- strontium 89
- strontium 90
- . . . sulfur isotopes
- . . . tantalum isotopes
- . . . technetium isotopes
- . . . tellurium
- tellurium isotopes
- . . . terbium isotopes
- . . . thallium isotopes
- . . . thorium isotopes
- . . . thulium isotopes
- . . . tin isotopes
- . . . titanium isotopes
- . . . tungsten isotopes
- . . . uranium isotopes
- uranium 232
- uranium 233
- uranium 234
- uranium 235
- uranium 238
- . . . vanadium isotopes
- . . . xenon isotopes
- xenon 129
- xenon 133
- xenon 135
- . . . ytterbium isotopes
- . . . yttrium isotopes
- . . . zinc isotopes
- . . . zirconium isotopes
- zirconium 95
- . osmium
- . . osmium isotopes
- . oxygen
- . . liquid oxygen
- . . oxygen isotopes
- . . . oxygen 17
- . . . oxygen 18
- . palladium
- . phosphorus
- . . phosphorus isotopes
- . . . phosphorus 32
- . platinum
- . . platinum isotopes
- . protactinium
- . . protactinium isotopes
- . rare earth elements
- . . cerium
- . . . cerium isotopes
- cerium 137
- cerium 144
- . . dysprosium
- . . . dysprosium isotopes
- . . erbium
- . . . erbium isotopes
- . . europium
- . . . europium isotopes
- . . gadolinium
- . . . gadolinium isotopes
- . . holmium
- . . . holmium isotopes
- . . lanthanum
- . . . lanthanum isotopes
- . . lutetium
- . . . lutetium isotopes
- . . neodymium
- . . . neodymium isotopes
- . . praseodymium
- . . . praseodymium isotopes
- . . promethium
- . . . promethium isotopes
- . . samarium
- . . . samarium isotopes
- . . scandium
- . . . scandium isotopes
- . . terbium
- . . . terbium isotopes
- . . thulium
- . . . thulium isotopes
- . . ytterbium
- . . . ytterbium isotopes
- . . yttrium
- . . . yttrium isotopes
- . rare gases
- . . argon
- . . . argon isotopes

- . . helium
- . . . helium isotopes
- . . . liquid helium
- liquid helium 2
- . . krypton
- . . . krypton isotopes
- krypton 85
- . . neon
- . . . liquid neon
- . . . neon isotopes
- . . radon
- . . . radon isotopes
- . . xenon
- . . . xenon isotopes
- xenon 129
- xenon 133
- xenon 135
- . rhenium
- . . rhenium isotopes
- . rhodium
- . . rhodium isotopes
- . ruthenium
- . . ruthenium isotopes
- . rutherfordium
- . selenium
- . silver
- . . silver isotopes
- . strontium
- . . strontium isotopes
- . . . strontium 85
- . . . strontium 87
- . . . strontium 89
- . . . strontium 90
- . sulfur
- . . sulfur isotopes
- . tantalum
- . . tantalum isotopes
- . technetium
- . thallium
- . . thallium isotopes
- . tin
- . . tin isotopes
- . titanium
- . . titanium isotopes
- . tungsten
- . vanadium
- . . vanadium isotopes
- . zinc
- . . zinc isotopes
- . zirconium
- . . zirconium isotopes
- . . . zirconium 95
- . bohrium
- . dubnium
- . hassium
- . meitnerium
- . seaborgium
- . siderophile elements

RT atoms

- ∞ chemicals
- ∞ elements
- ferrous metals
- ions
- isotopic enrichment
- light ions
- metals
- nonferrous metals
- nuclear isobars
- plasmas (physics)
- trace contaminants

chemical energy

DEF Energy produced or absorbed in the process of a chemical reaction. In any such a reaction, energy losses or gains usually involve only the outermost electrons of the atoms or ions of the system undergoing change; here a chemical bond of some type is established or broken without disrupting the original atomic or ionic identities of the constituents.

GS **chemical energy**

- . energy of formation

RT ∞ energy

- free energy
- internal energy
- kinetic energy

∞ level

- molecular energy levels
- ∞ nuclear energy

potential energy

chemical engineering

RT aerothermochemistry

∞ chemistry

- combustion chemistry
- cracking (chemical engineering)
- diffusion

∞ engineering

- fluid flow
- furnaces
- heat transfer
- materials handling

∞ operations

- thermochemistry

chemical equilibrium

UF *Chapman-Jouget flame*

chemical shift

GS **chemical equilibrium**

- . acid base equilibrium

RT association reactions

- buffers (chemistry)
- dissociation

∞ equilibrium

- heat of dissociation
- phase rule
- reaction kinetics
- thermodynamic equilibrium

chemical evolution

DEF The theory of the creation or production of living matter from nonliving matter.

GS evolution (development)

- . **chemical evolution**

RT abiogenesis

- biological evolution

∞ evolution

- exobiology
- life sciences
- organic compounds
- protein synthesis
- protobiology
- self assembly

chemical explosions

GS explosions

- . **chemical explosions**
- . . gas explosions
- . . propellant explosions

RT aerial explosions

- combustion
- detonable gas mixtures
- detonation
- explosives
- flammable gases
- turbulent combustion
- underground explosions
- underwater explosions

chemical extinguishers

USE **fire extinguishers**

chemical fractionation

GS fractionation

- . **chemical fractionation**

RT distillation

- refining

∞ separation

chemical fuels

DEF Fuels that depend upon an oxidizer for combustion or for development of thrust, such as liquid or solid rocket fuel or internal combustion engine fuel; distinguished from nuclear fuel.

GS fuels

- . **chemical fuels**
- . . endothermic fuels
- . . high energy fuels
- . . hydrocarbon fuels
- . . . diesel fuels
- . . . fossil fuels
- coal
- anthracite
- lignite
- solvent refined coal
- . . . crude oil
- . . . natural gas
- liquefied natural gas
- . . . peat

chemical indicators

- . . . shale oil
- . . . gasoline
- . . . jet engine fuels
- JP-4 jet fuel
- JP-5 jet fuel
- JP-6 jet fuel
- JP-7 jet fuel
- JP-8 jet fuel
- . . . synthane
- . . . liquid fuels
- . . . antimisting fuels
- . . . diesel fuels
- . . . gasoline
- . . . hydrogen fuels
- . . . jet engine fuels
- JP-4 jet fuel
- JP-5 jet fuel
- JP-6 jet fuel
- JP-7 jet fuel
- JP-8 jet fuel
- . . . fuel oils
- . . . kerosene
- . . . metal fuels
- . . . synthetic fuels
- . . . gasohol (fuel)
- . . . synthane

RT clean fuels
explosives
fuel production
gelled propellants
gelled rocket propellants
hybrid propellants
monopropellants
plastic propellants
propellants
pyrotechnics
solid propellants

chemical indicators

RT biomarkers
∞ indicators
methylene blue
phloroglucinol

chemical kinetics

USE **reaction kinetics**

chemical lasers

GS stimulated emission devices
. lasers
. . **chemical lasers**
. . . HCL lasers
. . . HCL argon lasers
. . . chemical oxygen-iodine lasers

RT argon lasers
carbon dioxide lasers
carbon lasers
carbon monoxide lasers
chain reactions (chemistry)
gas lasers
HCN lasers
HF lasers
infrared lasers
liquid lasers
organic lasers
Q switched lasers
TEA lasers
tube lasers

chemical machining

UF *chemical milling*
GS machining
. **chemical machining**
. . electrochemical machining

RT milling (machining)

chemical milling

USE **chemical machining**

chemical oxygen-iodine lasers

(added August 1997)
UF *COIL (lasers)*
GS stimulated emission devices
. lasers
. . chemical lasers
. . . **chemical oxygen-iodine lasers**
. . . iodine lasers
. . . **chemical oxygen-iodine lasers**

RT continuous wave lasers

chemical properties

GS **chemical properties**
. acidity
. salinity
. thermochemical properties
. . heat of combustion
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization

RT adsorptivity
∞ high resistance
hydrophobicity
hygroscopicity
∞ low resistance
moisture content
passivity
∞ physical properties
propellant properties
∞ properties
∞ resistance
thermodynamic properties
toxicity
toxicity and safety hazard

chemical propulsion

UF *chemonuclear propulsion*
GS propulsion
. **chemical propulsion**
. . hybrid propulsion

RT jet propulsion
marine propulsion
spacecraft propulsion
underwater propulsion

chemical reaction control

RT agitation
∞ control
∞ reaction control
temperature control

chemical reactions

UF *flame interaction*
GS **chemical reactions**
. acylation
. . acetylation
. . alkylation
. . ammonolysis
. . association reactions
. . atomic recombination
. . oxygen recombination
. . carbonization
. . carboxylation
. . copolymerization
. . cracking (chemical engineering)
. . hydrocracking
. . pyrolysis
. . decarbonation
. . decarboxylation
. . defluorination
. . dehydrogenation
. . deionization
. . denitrogenation
. . depolymerization
. . desulfurizing
. . endothermic reactions
. . epoxidation
. . exothermic reactions
. . fermentation
. . Friedel-Craft reaction
. . glycolysis
. . Grignard reactions
. . halogenation
. . bromination
. . chlorination
. . fluorination
. . hydroboration
. . hydrogenolysis
. . hydrocracking
. . hydrolysis
. . ion recombination
. . metal-water reactions
. . metathesis
. . methanation
. . methylation
. . Michael reaction

. nitration
. nitriding
. nitrogenation
. nitrolysis
. oxidation
. . electrochemical oxidation
. . photooxidation
. . rusting
. . oxidation-reduction reactions
. . oxygenation
. . phosphorylation
. . photochemical reactions
. . photochromism
. . photodecomposition
. . photolysis
. . photooxidation
. . photosynthesis
. . radiolysis
. . pyrohydrolysis
. . reduction (chemistry)
. . deoxidizing
. . hydrogenation
. . Sabatier reaction
. . sulfation
. . sulfidation
. . thermal decomposition
. . pyrolysis
. . cycloaddition
. . thermal dissociation
. . titration
. . Diels-Alder reactions
. . chain reactions (chemistry)

RT biosynthesis
chelation
combustion chemistry
corrosion
gas-metal interactions
hydration
interstellar chemistry
∞ operations
particle interactions
plasma jet synthesis
polymerization
radiochemical separation
reacting flow
∞ reaction
reaction bonding
reaction intermediates
reaction kinetics
reactivity
reagents
sodalite
solvation
stoichiometry
surface reactions
∞ synthesis
synthesis (chemistry)
synthetic fuels
thermochemistry

chemical reactors

RT autoclaves
beds (process engineering)
burners
columns (process engineering)
contactors
fluidized bed processors
furnaces
gas generators
∞ gas reactors
reactor design
reactor materials
reactor safety
∞ reactors
synthesizers
tanks (containers)
water cooled reactors

chemical relaxation

USE **molecular relaxation**

chemical release modules

DEF Shuttle launched, free-flying spacecraft containing canisters for injecting chemicals into the upper atmosphere and the measurement of the reactions.
GS modules
. **chemical release modules**
RT chemical clouds
CRRES (satellite)

dispersing

*chemical shift*USE **chemical equilibrium****chemical sterilization**

GS cleaning
 . sterilization
 . . **chemical sterilization**

RT antiseptics
 bactericides
 ethylene oxide
 purification
 sewage treatment
 spacecraft sterilization

chemical tests

GS **chemical tests**
 . chemical analysis
 . . chromatography
 . . . gas chromatography
 . . . gel chromatography
 . . . liquid chromatography
 . . . paper chromatography
 . . . thin layer chromatography
 . . electrophotometry
 . . gas analysis
 . . . ozonometry
 . . . Van Slyke method
 . . iodimetry
 . . Karl Fischer reagent
 . . microanalysis
 . . neutron activation analysis
 . . potentiometric analysis
 . . qualitative analysis
 . . quantitative analysis
 . . . Kjeldahl method
 . . . Van Slyke method
 . . spectroscopic analysis
 . . urinalysis
 . . volumetric analysis
 . salt spray tests

RT chemical detection
 corrosion resistance
 gas spectroscopy
 high temperature tests
 inspection
 low temperature tests
 nondestructive tests
 quality control
 sampling
 staining
 ∞ tests

*chemical vapor deposition*USE **vapor deposition****chemical vapor infiltration**

(added December 1992)
 UF *CVI (fabrication)*
 GS infiltration
 . **chemical vapor infiltration**

RT carbon fibers
 ceramic fibers
 ceramic matrix composites
 composite materials
 densification
 fiber composites

chemical warfare

GS warfare
 . **chemical warfare**

RT biochemistry
 biological weapons
 physiological factors

*chemically reacting flow*USE **reacting flow**∞ **chemicals**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ chemical compounds
 chemical elements

chemiluminescence

DEF Any luminescence produced by chemical action.

GS emission
 . light emission

. . luminescence
 . . . **chemiluminescence**

RT airglow
 phosphorescence

chemisorption

DEF The binding of a liquid or gas on the surface or in the interior of a solid by chemical bonds or forces.

GS sorption
 . adsorption
 . . **chemisorption**

RT adatoms
 adsorptivity
 atomic clusters
 gas-metal interactions
 hydrogen embrittlement
 masking
 metal clusters
 molecular clusters

∞ **chemistry**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The science that studies the composition, structure, properties, interactions, and transformations of elemental matter and compounds.

RT aerothermochemistry
 aerothermodynamics
 analytical chemistry
 atmospheric chemistry
 biochemistry
 biogeochemistry
 chemical analysis
 chemical engineering
 chemotherapy
 combustion chemistry
 computational chemistry
 cosmochemistry
 cryochemistry
 electrochemistry
 environmental chemistry
 geochemistry
 hydroxyl radicals
 inorganic chemistry
 interstellar chemistry
 marine chemistry
 nuclear chemistry
 organic chemistry
 photoelectrochemistry
 physical chemistry
 ∞ physical sciences
 ∞ Physics and Chemistry Experiment in Space
 physiochemistry
 plasma chemistry
 polymer chemistry
 precipitation (chemistry)
 propellant chemistry
 quantum chemistry
 radiation chemistry
 radiochemistry
 reduction (chemistry)
 saturation (chemistry)
 stereochemistry
 stoichiometry
 synthesis (chemistry)
 thermochemistry
 unsaturation (chemistry)
 Wiswesser notations

*chemonuclear propulsion*USE **chemical propulsion**
nuclear propulsion**chemoreceptors**

GS anatomy
 . sense organs
 . . **chemoreceptors**
 receptors (physiology)
 . **chemoreceptors**

RT carotid sinus body
 olfactory perception
 taste

chemosphere

DEF The vaguely defined region of the upper atmosphere in which photochemical reac-

tions take place. It is generally considered to include the stratosphere (or the top thereof) and the mesosphere, and sometimes the lower part of the thermosphere.

GS Earth atmosphere

. **chemosphere**
 biosphere
 Earth ionosphere
 heterosphere
 homosphere
 lower atmosphere
 mesosphere
 middle atmosphere
 ozonosphere
 plasmasphere
 stratosphere
 thermosphere
 troposphere
 upper atmosphere

chemotherapeutic agents

(added April 2004)

USE **drugs****chemotherapy**

UF *drug therapy*
 GS therapy
 . **chemotherapy**

RT antiseptics
 ∞ chemistry
 drugs

Chena River Basin (AK)

GS landforms
 . structural basins
 . . river basins
 . . . **Chena River Basin (AK)**

RT Alaska

Chesapeake Bay (US)

GS bays (topographic features)
 . **Chesapeake Bay (US)**

RT estuaries
 Maryland
 river basins
 sounds (topographic features)
 Virginia

chest

GS anatomy
 . **chest**
 . . breast
 . . . mammary glands

RT thorax
 torso

*chewing*USE **mastication****chiasms**

GS crossings
 . **chiasms**

chickens

GS animals
 . vertebrates
 . . birds
 . . . **chickens**

child device

RT learning
 learning theory
 training devices

Child-Langmuir law

GS laws
 . **Child-Langmuir law**

RT perveance
 space charge
 thermionic diodes

children

RT adults
 females
 human beings
 males
 parents
 progeny

Chile

GS nations

chimneys

. Chile
RT European Southern Observatory
South America

chilling
USE **cooling**

chimes
USE **auditory signals**

chimneys
RT buildings
exhaust systems
flues
furnaces
plumes
stacks
vents
waste energy utilization

chimpanzees
GS animals
. vertebrates
. . mammals
. . . primates
. . . . apes
. **chimpanzees**

RT human beings

chin
GS anatomy
. face (anatomy)
. . **chin**

RT bones
head (anatomy)

China
UF *China (communist) mainland*
Chinese Peoples Republic

GS nations
. **China**

RT Asia
Chinese aircraft
Chinese space program
Chinese spacecraft
Hong Kong
Taiwan

China (communist) mainland
USE **China**

Chinese aircraft
RT ∞ aircraft
China

Chinese Peoples Republic
USE **China**

Chinese space program
GS programs
. space programs
. . **Chinese space program**

RT China
Long March launch vehicles
∞ research projects
Shenzhou 5 spacecraft
space missions
Taiwan

Chinese spacecraft
DEF Spacecraft built and launched by the Chinese Peoples Republic.

GS **Chinese spacecraft**
. Shenzhou 5 spacecraft

RT China
Long March launch vehicles
∞ spacecraft
Taiwan

chinone
USE **quinones**

Chinook helicopter
USE **CH-47 helicopter**

chipping
RT abrasion
comminution
cutting
flaking
fracturing

fragmentation
pitting
∞ separation
spalling
splitting
wear

chips
RT chips (electronics)
fragments
scrap

chips (electronics)
DEF Integrated microcircuits mounted on substrates and performing significant numbers of functions.

GS **chips (electronics)**
. chips (memory devices)
. systems-on-a-chip

RT application specific integrated circuits
central processing units
chips
computer design
integrated circuits
large scale integration
microelectronics
microprocessors
reconfigurable hardware
RISC processors
systolic arrays
very large scale integration
VHSIC (circuits)

chips (memory devices)
DEF Integrated microcircuit devices used collectively to perform the functions of data storage: accepting, retaining, and emitting bits of data.

GS chips (electronics)
. **chips (memory devices)**
computer components
. **chips (memory devices)**

RT ∞ devices
integrated circuits
memory (computers)
metal-nitride-oxide-semiconductors
semiconductor devices

chiral dynamics
RT chirality
∞ dynamics
group theory
Lagrange multipliers
matrices (mathematics)

chirality
(added August 1994)
GS symmetry
. **chirality**

RT antisymmetry
chiral dynamics
enantiomers
group theory
handedness

Chiron
DEF Minor planet 2060, a solar system asteroid discovered by Charles T. Kowal of Hale Observatories. Used for Minor Planet 2060.

UF *Minor Planet 2060*

GS celestial bodies
. asteroids
. . **Chiron**

RT Apollo asteroids
asteroid belts
meteoroids
planets
solar system
space debris

chironomus flies
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **chironomus flies**

RT Drosophila

infestation

chirp
DEF An all encompassing term for the various techniques of pulse expansion-pulse compression applied to pulse radar; a technique to expand narrow pulses to wide pulses for transmission, and compress wide received pulses to the original narrow pulse width and wave shape, to gain improvement in signal-to-noise ratio without degradation to range resolution and range discrimination.

GS electromagnetic interference
. radio frequency interference
. . **chirp**
. . . chirp signals

chirp signals
GS electromagnetic interference
. radio frequency interference
. . chirp
. . . **chirp signals**

RT electromagnetic noise
∞ signals

chitin
SN (A POLYSACCHARIDE WHICH IS THE PRINCIPAL CONSTITUENT OF THE SHELLS OF CRABS AND LOBSTERS, THE SHARDS OF BEETLES, AND IS ALSO FOUND IN CERTAIN FUNGI)

DEF A polysaccharide which is the principal constituent of the shells of crabs and lobsters and of the shards of beetles. It is also found in certain fungi.

GS biopolymers
. polysaccharides
. . **chitin**
organic compounds
. carbohydrates
. . polysaccharides
. . . **chitin**

RT gums (substances)
starches

chloral
GS aldehydes
. **chloral**

chlorates
GS halogen compounds
. chlorine compounds
. . **chlorates**

RT ∞ oxygen compounds
perchlorates

Chlorella
DEF A genus of unicellular green algae to be adapted to converting carbon dioxide into oxygen in a closed ecological system.

GS plants (botany)
. algae
. . **Chlorella**

RT aerospace medicine
carbon dioxide
culture techniques
life support systems
oxygen
photosynthesis

chlorides
UF *pentachlorides*
trichlorides

GS halogen compounds
. chlorine compounds
. . **chlorides**
. . . aluminum chlorides
. . . ammonium chlorides
. . . beryllium chlorides
. . . boron chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . carbon tetrachloride
. . . copper chlorides
. . . dichlorides
. . . germanium chlorides
. . . hydrochlorides
. . . hydrogen chlorides
. . . hydrochloric acid
. . . iron chlorides
. . . lanthanum chlorides

- ... lead chlorides
 - ... lithium chlorides
 - ... magnesium chlorides
 - ... nitrosyl chlorides
 - ... nitroxychlorides
 - ... nitril chlorides
 - ... phosgene
 - ... potassium chlorides
 - ... silicon tetrachloride
 - ... silver chlorides
 - ... sodium chlorides
 - ... sulfur chlorides
 - ... tetrachlorides
 - ... titanium chlorides
 - ... tungsten chlorides
 - ... zinc chlorides
 - halides
 - chlorides**
 - ... aluminum chlorides
 - ... ammonium chlorides
 - ... beryllium chlorides
 - ... boron chlorides
 - ... cadmium chlorides
 - ... calcium chlorides
 - ... carbon tetrachloride
 - ... copper chlorides
 - ... dichlorides
 - ... germanium chlorides
 - ... hydrochlorides
 - ... hydrogen chlorides
 - ... hydrochloric acid
 - ... iron chlorides
 - ... lanthanum chlorides
 - ... lead chlorides
 - ... lithium chlorides
 - ... magnesium chlorides
 - ... nitrosyl chlorides
 - ... nitroxychlorides
 - ... nitril chlorides
 - ... phosgene
 - ... potassium chlorides
 - ... silicon tetrachloride
 - ... silver chlorides
 - ... sodium chlorides
 - ... sulfur chlorides
 - ... tetrachlorides
 - ... titanium chlorides
 - ... tungsten chlorides
 - ... zinc chlorides
 - RT methyl chloride
 - polyvinyl chloride
 - salt beds
- chlorination**
- GS chemical reactions
 - halogenation
 - chlorination**
 - RT bleaching
 - hydrometallurgy
 - pyrometallurgy
 - water treatment
- chlorine**
- GS chemical elements
 - halogens
 - chlorine**
- chlorine compounds**
- GS halogen compounds
 - chlorine compounds**
 - chlorates
 - chlorides
 - ... aluminum chlorides
 - ... ammonium chlorides
 - ... beryllium chlorides
 - ... boron chlorides
 - ... cadmium chlorides
 - ... calcium chlorides
 - ... carbon tetrachloride
 - ... copper chlorides
 - ... dichlorides
 - ... germanium chlorides
 - ... hydrochlorides
 - ... hydrogen chlorides
 - ... hydrochloric acid
 - ... iron chlorides
 - ... lanthanum chlorides
 - ... lead chlorides
 - ... lithium chlorides
 - ... magnesium chlorides
 - ... nitrosyl chlorides
 - ... nitroxychlorides
 - ... nitril chlorides
 - ... phosgene
 - ... potassium chlorides
 - ... silicon tetrachloride
 - ... silver chlorides
 - ... sodium chlorides
 - ... sulfur chlorides
 - ... tetrachlorides
 - ... titanium chlorides
 - ... tungsten chlorides
 - ... zinc chlorides
 - chlorine fluorides
 - chlorine oxides
 - chlorocarbons
 - chlorosilanes
 - DDT
 - meclizine
 - perchlorates
 - ... aluminum perchlorates
 - ... ammonium perchlorates
 - ... hydrazine perchlorates
 - ... hydrogen perchlorate
 - ... hydroxylammonium perchlorates
 - ... lithium perchlorates
 - ... magnesium perchlorates
 - ... nitronium perchlorate
 - ... potassium perchlorates
 - trichloroethylene
- RT ∞ chemical compounds
- halocarbons
- chlorine fluorides**
- GS halogen compounds
 - chlorine compounds
 - chlorine fluorides**
 - fluorine compounds
 - fluorides
 - ... **chlorine fluorides**
 - halides
 - fluorides
 - ... **chlorine fluorides**
 - RT liquid rocket propellants
- chlorine oxides**
- GS chalcogenides
 - oxides
 - chlorine oxides**
 - halogen compounds
 - chlorine compounds
 - chlorine oxides**
- chloroaromatics**
- GS **chloroaromatics**
 - chlorobenzenes
 - RT ∞ aromatic compounds
- chlorobenzenes**
- GS chloroaromatics
 - chlorobenzenes**
 - organic compounds
 - cyclic compounds
 - cyclic hydrocarbons
 - ... **chlorobenzenes**
 - hydrocarbons
 - cyclic hydrocarbons
 - ... **chlorobenzenes**
 - RT benzene
- chlorocarbons**
- DEF All compounds containing chlorine and carbon with or without other elements.
 - GS carbon compounds
 - halocarbons
 - chlorocarbons**
 - halogen compounds
 - chlorine compounds
 - chlorocarbons**
 - halocarbons
 - chlorocarbons**
 - RT chlorofluorocarbons
- chloroethylene**
- GS organic compounds
 - ethylene compounds
 - chloroethylene**
- ... trichloroethylene
- chlorofluorocarbons**
(added December 1991)
- DEF A family of compounds of chlorine, fluorine, and carbon, entirely of industrial origin. CFCs include refrigerants, propellants for spray cans and for blowing plastic-foam insulation, styrofoam packaging, and solvents for cleaning electronic circuit boards.
 - UF CFCs
 - GS carbon compounds
 - halocarbons
 - chlorofluorocarbons**
 - halogen compounds
 - halocarbons
 - chlorofluorocarbons**
 - RT air pollution
 - chlorocarbons
 - chlorofluoromethane
 - contaminants
 - fluorocarbons
 - greenhouse effect
 - ozone depletion
 - ozonosphere
- chlorofluoromethane**
- GS halogen compounds
 - fluorine compounds
 - fluoro compounds
 - ... fluorine organic compounds
 - ... fluorohydrocarbons
 - ... **chlorofluoromethane**
 - organic compounds
 - fluorine organic compounds
 - fluorohydrocarbons
 - ... **chlorofluoromethane**
 - hydrocarbons
 - fluorohydrocarbons
 - ... **chlorofluoromethane**
 - RT air pollution
 - chlorofluorocarbons
 - contaminants
 - methane
 - ozone depletion
- chloroform**
- GS drugs
 - anesthetics
 - chloroform**
 - RT anesthesiology
- chloroformate**
- GS esters
 - chloroformate**
 - formates
 - chloroformate**
- chlorophylls**
- GS magnesium compounds
 - chlorophylls**
 - organometallic compounds
 - chlorophylls**
 - pigments
 - chlorophylls**
 - porphyrins
 - chlorophylls**
 - RT algae
 - brown wave effect
 - cells (biology)
 - chloroplasts
 - Coastal Zone Color Scanner
 - dissolved organic matter
 - green wave effect
 - ocean color scanner
 - photosynthesis
 - plants (botany)
 - porphines
 - Sea-viewing Wide Field-of-view Sensor
 - skin (anatomy)
- chloroplasts**
- GS organelles
 - chloroplasts**
 - RT cells (biology)
 - chlorophylls
 - cytoplasm

chloroprene resins

photosynthesis

chloroprene resins

- UF *neoprenes*
- GS elastomers
 - . rubber
 - . . . synthetic rubbers
 - . . . **chloroprene resins**

chlorosilanes

- GS halogen compounds
 - . chlorine compounds
 - . . **chlorosilanes**
- hydrogen compounds
 - . hydrides
 - . . silanes
 - . . . **chlorosilanes**
- silicon compounds
 - . silanes
 - . . **chlorosilanes**

chlorpromazine

- GS hydrazines
 - . **chlorpromazine**

Chocotaw helicopter

- USE **CH-34 helicopter**

choice

- USE **selection**

choked flow

- (added July 1992)
- GS fluid flow
 - . **choked flow**
- RT channel flow
 - . ducted flow
 - . flow velocity
 - . inlet flow
 - . nozzle flow
 - . orifice flow
 - . pipe flow

chokes

- SN (EXCLUDES FUEL SYSTEM AND ELECTRONIC DEVICES)
- RT chokes (restrictions)
 - ∞ diffusers
 - . electric coils
 - . mixing
 - . nozzle inserts
 - ∞ nozzles

chokes (fuel systems)

- RT carburetors
 - . chokes (restrictions)
 - . fuel systems
 - . orifices
 - ∞ systems

chokes (restrictions)

- RT chokes
 - . chokes (fuel systems)
 - . closures
 - . constrictions
 - . impedance
 - ∞ nozzles
 - . orifices
 - . throats
 - . valves

cholera

- GS diseases
 - . infectious diseases
 - . . bacterial diseases
 - . . . **cholera**
- RT human pathology
 - . kidney diseases
 - . pathogenesis
 - . pathological effects
 - . physiological effects

Cholesky factorization

- DEF A numerical algorithm used to solve linear systems of equations.
- GS factorization
 - . **Cholesky factorization**
- RT conjugates
 - . finite element method
 - . iterative solution

real variables

cholesterol

- GS organic compounds
 - . lipids
 - . . steroids
 - . . . **cholesterol**
- RT arteriosclerosis
 - . liquid crystals

choline

- GS organic compounds
 - . **choline**
- RT vitamins

cholinergic blocking agents

- USE **anticholinergics**

cholinergics

- GS drugs
 - . **cholinergics**
 - . . anticholinergics
- RT cyclic AMP

cholinesterase

- GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **cholinesterase**
- organic compounds
 - . proteins
 - . . enzymes
 - . . . **cholinesterase**
- RT neuromuscular transmission

chondrites

DEF Meteoritic stones characterized by small rounded grains or spherules.

- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . **chondrites**
 - Bruderheim meteorite
 - carbonaceous chondrites
 - Alais meteorite
 - Allende meteorite
 - Cold Bokkeveld meteorite
 - Ivuna meteorite
 - Murchison meteorite
 - Murray meteorite
 - Orgueil meteorite
 - Tonk meteorite
 - Harleton meteorite
 - Hvittis chondrite
 - Okhansk meteorite
 - Pantar chondrites
 - Pribram meteorite
- RT achondrites
 - . chondrule
 - . siderophile elements
 - . tektites

chondrule

- RT chondrites
 - . enstatite
 - . meteorites
 - . meteoritic microstructures
 - . mineralogy

choppers (electric)

- USE **electric choppers**

chords (geometry)

DEF Straight lines intersecting circles or other curves, or straight lines connecting the ends of arcs. In aeronautics, straight lines intersecting or touching airfoil profiles at two points; specifically, those parts of lines between two points of intersections. Used for aerodynamic chords.

- UF *aerodynamic chords*
- GS geometry
 - . Euclidean geometry
 - . . lines (geometry)
 - . . . **chords (geometry)**
- RT curves (geometry)
 - . geodesic lines
 - . tangential blowing

tangents

choroid membranes

- GS anatomy
 - . sense organs
 - . . eye (anatomy)
 - . . . **choroid membranes**
- membranes
 - . **choroid membranes**
- RT vision

chorus (dawn phenomenon)

- USE **dawn chorus**

chorus phenomenon

- USE **dawn chorus**

chromates

- UF *dichromates*
- GS chromium compounds
 - . **chromates**
 - . . potassium chromates
- RT ∞ oxygen compounds

chromatin

(added August 2004)

DEF The material of chromosomes. It is a complex of DNA, histones, and nonhistone proteins (chromosomal proteins, non-histone) found within the nucleus of a cell.

- RT chromosomes
 - . cytology
 - . deoxyribonucleic acid
 - . neutrophils

chromatography

DEF The separation of chemical substances by making use of differences in the rates at which the substances travel through or along a stationary medium.

- GS chemical tests
 - . chemical analysis
 - . . **chromatography**
 - . . . gas chromatography
 - . . . gel chromatography
 - . . . liquid chromatography
 - . . . paper chromatography
 - . . . thin layer chromatography
- RT adsorption
 - . colorimetry
 - . quantitative analysis
 - . sorption

chrome

- USE **chromium**

chromic acid

- GS acids
 - . **chromic acid**
- chromium compounds
 - . **chromic acid**

chromites

- GS minerals
 - . **chromites**
- RT chromium
 - . chromium oxides
 - . peridotite
 - . serpentine

chromium

- UF *chrome*
- GS chemical elements
 - . **chromium**
 - . . chromium isotopes
 - . metals
 - . refractory metals
 - . . **chromium**
 - . . . chromium isotopes
 - . transition metals
 - . . **chromium**
 - . . . chromium isotopes
 - . refractory materials
 - . refractory metals
 - . . **chromium**
 - . . . chromium isotopes
- RT chromites
 - . heavy metals

- strategic materials
- chromium alloys**
GS alloys
 . **chromium alloys**
 . . Astroloy (trademark)
 . . chromium steels
 . . Rene 41
 . . Rene 63
 . . Rene 77
 . . Rene 95
RT heat resistant alloys
Inconel (trademark)
stainless steels
Stellite (trademark)
Waspaloy
- chromium borides**
GS boron compounds
 . borides
 . . **chromium borides**
chromium compounds
 . **chromium borides**
- chromium bromides**
GS chromium compounds
 . **chromium bromides**
halogen compounds
 . bromine compounds
 . . bromides
 . . . **chromium bromides**
 . halides
 . . bromides
 . . . **chromium bromides**
 . . metal halides
 . . . **chromium bromides**
- chromium carbides**
GS carbon compounds
 . carbides
 . . **chromium carbides**
chromium compounds
 . **chromium carbides**
- chromium compounds**
GS **chromium compounds**
 . chromates
 . . potassium chromates
 . chromic acid
 . chromium borides
 . chromium bromides
 . chromium carbides
 . chromium fluorides
 . chromium oxides
 . sodium chromites
RT ∞ chemical compounds
∞ Group 6B compounds
∞ metal compounds
- chromium fluorides**
GS chromium compounds
 . **chromium fluorides**
halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **chromium fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **chromium fluorides**
 . . metal halides
 . . . metal fluorides
 **chromium fluorides**
- chromium isotopes**
GS chemical elements
 . chromium
 . . **chromium isotopes**
 . nuclides
 . . isotopes
 . . . **chromium isotopes**
metals
 . refractory metals
 . . chromium
 . . . **chromium isotopes**
 . transition metals
 . . chromium
 . . . **chromium isotopes**
refractory materials
- . refractory metals
 . . chromium
 . . . **chromium isotopes**
- chromium oxides**
GS chalcogenides
 . oxides
 . . metal oxides
 . . . **chromium oxides**
chromium compounds
 . **chromium oxides**
RT chromites
- chromium steels**
DEF Steels containing chromium as the main alloying element.
GS alloys
 . chromium alloys
 . . **chromium steels**
 . iron alloys
 . . steels
 . . . **chromium steels**
RT ferritic stainless steels
- chromophores**
(added July 1994)
RT color
dyes
electrochromism
nonlinear optics
optical activity
optical materials
∞ optics
pigments
- chromosome aberrations**
(added August 2004)
DEF Abnormal number or structure of chromosomes.
RT chromosomes
congenital anomalies
genes
mitosis
mutations
telomeres
- chromosomes**
DEF The self replicating genetic structure of cells containing the cellular DNA that bears in it's nucleotidesequene the linear array of genes.
RT cells (biology)
chromatin
chromosome aberrations
congenital anomalies
cytology
gene expression
gene therapy
genes
genetic code
genetics
mitosis
mutations
∞ nuclei
reproductive systems
telomeres
tetrad theory
- chromosphere**
DEF A thin layer of relatively transparent gases above the photosphere of the sun.
GS environments
 . extraterrestrial environments
 . . stellar atmospheres
 . . . **chromosphere**
RT coronal loops
faculae
photosphere
solar atmosphere
solar corona
solar prominences
solar transition region
spicules
stellar structure
stellar winds
Transition Region and Coronal Explorer
- chronaxy**
GS time
- . reaction time
 . . **chronaxy**
RT responses
sensory stimulation
thresholds (perception)
- chronic conditions**
GS conditions
 . **chronic conditions**
RT blood volume
diseases
disorders
health
- chronobiology*
USE **rhythm (biology)**
- chronographs*
USE **chronometers**
- chronology**
UF *age determination*
dating
GS **chronology**
 . geochronology
RT time
- chronometers**
UF *chronographs*
GS measuring instruments
 . time measuring instruments
 . . clocks
 . . . **chronometers**
RT atomic clocks
clock paradox
time measurement
timing devices
- chronophotography**
UF *time lapse photography*
GS imagery
 . photography
 . . **chronophotography**
RT black and white photography
motion pictures
- chronotrons*
USE **pulse rate**
time lag
- chugging*
USE **combustion stability**
- Chukchi Sea**
DEF Part of the Arctic Ocean north of the Bering Strait between Asia and North America.
GS seas
 . **Chukchi Sea**
RT Arctic regions
- chutes**
UF *slides*
RT conveyors
materials handling
- CID*
USE **charge injection devices**
- cinder cones*
USE **cones (volcanoes)**
- cinelfluorography*
USE **motion pictures**
radiography
- cinematography**
GS imagery
 . photography
 . . **cinematography**
RT animation
black and white photography
cameras
color photography
infrared photography
motion pictures
stereophotography
streak cameras

cinespectrographs

video tapes

cineradiography

USE **motion pictures radiography**

cinespectrographs

RT optical measuring instruments spectroscopy

cinetheodolites

GS measuring instruments
. optical measuring instruments
. . . transits
. . . . theodolites
. **cinetheodolites**
optical equipment
. optical measuring instruments
. . . transits
. . . . theodolites
. **cinetheodolites**
RT photographic tracking satellite tracking

circadian rhythms

DEF Regular changes in physiological function occurring in approximately 24 hour cycles. Used for diurnal rhythms.
UF *diurnal rhythms*
GS rhythm (biology)
. **circadian rhythms**
RT activity cycles (biology) photoperiod zeitgebers

circles (geometry)

GS geometry
. Euclidean geometry
. . **circles (geometry)**
. . . great circles
RT circumferences curves (geometry) ellipses radii
∞ rings
∞ sectors segments spheres

circuit boards

RT electronic packaging printed circuits

circuit breakers

UF *breakers (electric)*
RT disconnect devices dropouts electric relays
∞ fuses switches switching circuits

circuit diagrams

UF *schematics*
GS diagrams
. **circuit diagrams**
RT engineering drawings layouts photomasks

circuit protection

GS protection
. **circuit protection**
RT capacitors circuits current regulators electric fuses electric power transmission electric reactors electrical faults electrical grounding electrical insulation expulsion
∞ fuses overvoltage phase control phase error sneak circuit analysis suppressors surges

transformers transmission circuits transmission lines voltage regulators

circuit reliability

GS reliability
. **circuit reliability**
RT aircraft reliability component reliability drift (instrumentation) quality control sneak circuit analysis spacecraft reliability

circuits

DEF Networks providing one or more closed paths. Used for electric circuits, exploding conductor circuits, shunts, and subcircuits.

UF *electric circuits*
exploding conductor circuits
shunts
subcircuits

GS circuits

. adding circuits
. analog circuits
. autodynes
. bistable circuits
. . flip-flops
. cancellation circuits
. clamping circuits
. coincidence circuits
. comparator circuits
. conjugated circuits
. counting circuits
. . scalars
. coupling circuits
. delay circuits
. . phantastrons
. digital integrators
. duplexers
. discriminators
. . Fraunhofer line discriminators
. . frequency discriminators
. echo suppressors
. electric bridges
. . wire bridge circuits
. . . Wheatstone bridges
. equivalent circuits
. feedback circuits
. fire control circuits
. fluidic circuits
. gates (circuits)
. . field-programmable gate arrays
. . threshold gates
. hybrid circuits
. integrated circuits
. . application specific integrated circuits
. . DTL integrated circuits
. . encapsulated microcircuits
. . field-programmable gate arrays
. . large scale integration
. . linear integrated circuits
. . medium scale integration
. . TTL integrated circuits
. . very large scale integration
. . VHSIC (circuits)
. iterative networks
. LC circuits
. limiter circuits
. . clipper circuits
. linear circuits
. magnetic circuits
. matrices (circuits)
. microwave circuits
. mixing circuits
. multivibrators
. . flip-flops
. . monostable multivibrators
. negative resistance circuits
. Ohms law
. phase detectors
. . synchrosopes
. phase shift circuits
. . circulators (phase shift circuits)
. pneumatic circuits
. power supply circuits
. printed circuits

. RC circuits
. RL circuits
. . RLC circuits
. squelch circuits
. sweep circuits
. switching circuits
. . fluid switching elements
. logic circuits
. transistor circuits
. transmission circuits
. trigger circuits
. varactor diode circuits
. . threshold gates

RT

amplifiers breadboard models capacitors
∞ cascades circuit protection differentiators digital electronics duality principle duplexers electric connectors electric current
∞ electric equipment electric filters electric motors electric power transmission electric wire electrical grounding electromechanics electron tubes flat conductors inductors integrators Kirchhoff law of networks loops microelectronics microminiaturization microstrip devices miniature electronic equipment miniaturization modules network analysis oscillators selectors short circuits signal generators solid state devices solions
∞ strip transmission lines trees (mathematics) underground transmission lines voltage controlled oscillators wiring

circular cones

GS cones
. **circular cones**
RT half cones nose cones

circular cylinders

RT ∞ cylinders cylindrical bodies cylindrical shells elliptical cylinders

circular orbits

GS orbits
. **circular orbits**
. . stationary orbits
RT Earth orbits eccentric orbits elliptical orbits equatorial orbits geosynchronous orbits lunar orbits orbital mechanics planetary orbits polar orbits quadratures satellite orbits solar orbits spacecraft orbits twenty-four hour orbits

circular plates

GS structural members

- . plates (structural members)
- . . **circular plates**
- RT annular plates
- disks (shapes)
- end plates
- flat plates

circular polarization

- GS polarization (waves)
- . **circular polarization**
- RT elliptical polarization
- optical polarization

circular shells

- GS shells (structural forms)
- . **circular shells**
- RT cylindrical shells
- hemispherical shells
- metal shells
- spherical shells

circular tubes

- RT cylindrical shells
- duct geometry
- pipes (tubes)
- ∞ tubes

circular waveguides

- DEF Small hollow tubes that are designed to transmit a specific wavelength along the length of the tube.
- GS waveguides
- . **circular waveguides**
- RT microwave transmission
- propagation modes

circulation

- DEF The flow or motion of a fluid in or through a given area or volume. A precise measure of the average flow of a fluid along a given closed curve. Used for recirculation.
- UF *recirculation*
- GS **circulation**
- . atmospheric circulation
- . . zonal flow (meteorology)
- . blood circulation
- . . brain circulation
- . . coronary circulation
- . . intercranial circulation
- . . ocular circulation
- . . peripheral circulation
- . . pulmonary circulation
- . water circulation
- . . water currents
- . . . ocean currents
- coastal currents
- el Nino
- Gulf Stream
- Lomonosov current
- . . thermohaline circulation
- RT blowing
- circulation distribution
- congestion
- ∞ currents
- delivery
- diffusion
- dispersing
- ∞ flow
- fluid flow
- purging
- rotation

circulation control airfoils

- DEF Airfoils in which a high lift capability is produced by supercirculation where control of the stagnation points by the jet sheet produces high lift coefficients.
- GS airfoils
- . **circulation control airfoils**
- . . circulation control rotors
- RT blowing
- boundary layer control
- Coanda effect
- ∞ control
- lift augmentation
- short takeoff aircraft
- tangential blowing
- under surface blowing

- upper surface blowing

circulation control rotors

- DEF Rotors that provide STOL capability on high performance aircraft by means of tangential blowing over a rounded trailing edge and mass flow characteristic of turbine engine bleed.
- GS airfoils
- . circulation control airfoils
- . . **circulation control rotors**
- . . wings
- . . . rotary wings
- **circulation control rotors**
- rotating bodies
- . rotors
- . . rotary wings
- . . . **circulation control rotors**
- RT ∞ control
- vertical takeoff aircraft
- x wing rotors

circulation distribution

- DEF The line integral of the velocity component around a curve along the closed contour.
- RT atmospheric circulation
- circulation
- ∞ distribution
- velocity distribution

circulators (phase shift circuits)

- GS circuits
- . phase shift circuits
- . . **circulators (phase shift circuits)**
- RT cavity resonators
- delay circuits
- duplexers
- Faraday effect
- Hall generators
- limiter circuits

circulatory system

- GS anatomy
- . **circulatory system**
- . . cardiovascular system
- . . . blood vessels
- arteries
- aorta
- arterioles
- capillaries (anatomy)
- glomerulus
- veins
- . . . heart
- cardiac auricles
- cardiac ventricles
- epicardium
- heart conduction system
- myocardium
- RT arteriosclerosis
- artificial cardiac pacemaker
- blood circulation
- blood pumps
- carotid sinus body
- carotid sinus reflex
- exercise physiology
- hypervolemia
- organs

circumferences

- GS geometry
- . Euclidean geometry
- . . analytic geometry
- . . . **circumferences**
- RT boundaries
- circles (geometry)
- diameters
- radii

circumlunar communication

- GS telecommunication
- . space communication
- . . lunar communication
- . . . **circumlunar communication**
- RT interplanetary communication
- radar
- radio communication
- satellite communication
- spacecraft communication

- unified S band

circumlunar trajectories

- GS trajectories
- . round trip trajectories
- . . **circumlunar trajectories**
- . . spacecraft trajectories
- . . . lunar trajectories
- **circumlunar trajectories**
- RT Earth orbits
- Earth-Moon trajectories
- lunar flight
- lunar orbits
- moon-Earth trajectories
- reentry trajectories
- rendezvous trajectories
- transfer orbits

circumpolar westerlies

- GS wind (meteorology)
- . **circumpolar westerlies**
- RT atmospheric circulation
- jet streams (meteorology)
- winds aloft
- zonal flow (meteorology)

circumsolar radiation

- DEF Radiation from small angle scattering of direct sunlight from atmospheric aerosols with dimensions on the order of or greater than the wavelength of light.
- GS extraterrestrial radiation
- . solar radiation
- . . **circumsolar radiation**
- RT atmospheric scattering
- light scattering
- ∞ radiation
- scattering
- sunlight

circumsolar telescopes

- DEF Optical instruments for measuring the circumsolar radiation for application to solar energy systems. Mirrors and lenses are utilized for incident sunlight concentration.
- GS telescopes
- . **circumsolar telescopes**
- RT lenses
- measuring instruments
- mirrors
- optical equipment
- radiation pyrometers
- solar radiation

circumstellar matter

- USE **stellar envelopes**

cirques (landforms)

- GS landforms
- . structural basins
- . . **cirques (landforms)**
- RT glaciers
- ice
- mountains
- snow

cirrocumulus clouds

- DEF Cerriform clouds appearing as a thin sheet of small white puffs resembling flakes or patches of cotton without shadows.
- GS clouds (meteorology)
- . **cirrocumulus clouds**
- RT atmospheric moisture
- cirrostratus clouds
- climatology
- cloud cover
- fog
- meteorology
- nephelanalysis
- precipitation (meteorology)
- thunderstorms
- weather

cirrostratus clouds

- DEF Cirriform clouds appearing as a whitish veil. Usually fibrous, sometimes smooth, they often produce halo phenomena. This form may totally cover the sky.
- GS clouds (meteorology)
- . **cirrostratus clouds**

cirrus clouds

RT atmospheric moisture
cirrocumulus clouds
climatology
cloud cover
fog
meteorology
nephelanalysis
precipitation (meteorology)
thunderstorms
weather

cirrus clouds

DEF Cirriform clouds in the form of thin, white featherlike shapes in patches or narrow bands. They have a fibrous and/or silky sheen. Large ice crystals often trail downward a considerable vertical distance in fibrous, slanted, or irregularly curved wisps called mares' tails.

GS clouds (meteorology)
. **cirrus clouds**

cirrus shields

GS clouds (meteorology)
. **cirrus shields**
RT climatology
meteorology
weather forecasting

CIS

USE **Commonwealth of Independent States**

cislunar space

DEF Of or pertaining to phenomena, projects, or activity in the space between the Earth and the moon, or between the Earth and the moon's orbit.

GS environments
. aerospace environments
. . **cislunar space**
. extraterrestrial environments
. . **cislunar space**
RT deep space
Earth-Moon trajectories
interplanetary space
lunar flight
lunar orbits
∞ space

cities

UF *metropolitan areas*
urban areas
GS **cities**
. Atlanta (GA)
. Cedar Rapids (IA)
. Houston (TX)
. Manitou (CO)
. Moscow
. New Haven (CT)
. New York City (NY)
. Phoenix (AZ)
. Pontiac (MI)
. San Francisco (CA)
. Vatican City
RT anthropology
communities
heat islands
industrial areas
inhabitants
megalopolises
nations
residential areas
sociology
suburban areas
urban development
urban planning
urban research

citrates

RT citric acid
esters

citric acid

GS acids
. carboxylic acids
. . **citric acid**
organic compounds
. carbohydrates
. . **citric acid**
. carboxylic acids

. . **citric acid**
RT citrates

citrus trees

GS plants (botany)
. trees (plants)
. . **citrus trees**
RT agriculture
blight
botany
crop growth
crop vigor
∞ crops
∞ curing
∞ food
irrigation
orchards
seeds

civil aviation

UF *commercial aviation*
RT A-380 aircraft
∞ aeronautics
air law
airline operations
aviation meteorology
commercial aircraft
general aviation aircraft
passenger aircraft

civil defense

RT air defense
antimissile defense
chemical defense
∞ defense
defense program
evacuating (transportation)
nuclear explosions
nuclear warfare
protection
Sentinel system
shelters
survival
warning
warning systems

CL-41 aircraft

UF *Canadair CL-41 aircraft*
CT-114 aircraft
Tutor aircraft
GS attack aircraft
. **CL-41 aircraft**
Canadair aircraft
. **CL-41 aircraft**
General Dynamics aircraft
. **CL-41 aircraft**
jet aircraft
. **CL-41 aircraft**
monoplanes
. **CL-41 aircraft**
RT ∞ aircraft

CL-44 aircraft

UF *Canadair CL-44 aircraft*
CC-106 aircraft
Yukon aircraft
GS Canadair aircraft
. **CL-44 aircraft**
General Dynamics aircraft
. **CL-44 aircraft**
jet aircraft
. turboprop aircraft
. . **CL-44 aircraft**
monoplanes
. **CL-44 aircraft**
transport aircraft
. cargo aircraft
. . **CL-44 aircraft**
RT ∞ aircraft

CL-84 aircraft

UF *Canadair CL-84 aircraft*
GS antisubmarine warfare aircraft
. **CL-84 aircraft**
Canadair aircraft
. **CL-84 aircraft**
General Dynamics aircraft
. **CL-84 aircraft**
jet aircraft
. turboprop aircraft

. . **CL-84 aircraft**
tilt wing aircraft
. **CL-84 aircraft**
transport aircraft
. **CL-84 aircraft**
V/STOL aircraft
. **CL-84 aircraft**
RT ∞ aircraft

CL-595 helicopter

USE **XH-51 helicopter**

CL-600 challenger aircraft

DEF Canadair turboprop aircraft with supercritical wings.
GS Canadair aircraft
. **CL-600 challenger aircraft**
general aviation aircraft
. **CL-600 challenger aircraft**
jet aircraft
. turboprop aircraft
. . **CL-600 challenger aircraft**
RT ∞ aircraft
∞ military aircraft
supercritical wings

CL-823 aircraft

UF *Lockheed CL-823 aircraft*
GS jet aircraft
. **CL-823 aircraft**
Lockheed aircraft
. **CL-823 aircraft**
supersonic aircraft
. supersonic transports
. . **CL-823 aircraft**
transport aircraft
. **CL-823 aircraft**
RT ∞ aircraft

cladding

DEF A coating placed on the surface of a material and usually bonded to the material.

GS metal working
. **cladding**
RT anodic stripping
cathodic coatings
cold working
composite materials
explosive welding
extruding
laminates
metal coatings
metallizing
plating
protective coatings

claiming

RT ∞ law
patents
preempting

clamped structures

(added February 1998)
RT beams (supports)
clamps
composite structures
joints (junctions)
laminates
plates (structural members)
shells (structural forms)
structural members
structural vibration
∞ structures

clamping circuits

DEF Circuits which maintain either extremity of a waveform at a prescribed potential. Networks for adjusting the absolute voltage level of waveforms.

GS circuits
. **clamping circuits**
RT limiter circuits
power limiters

clamps

RT ∞ bands
clamped structures
clips
fasteners
holders

- jigs
 - mechanical devices
 - sealing
 - straps
 - clarity**
 - RT atmospheric optics
 - electromagnetic properties
 - haze
 - opacity
 - optical properties
 - purity
 - ∞ sharpness
 - solubility
 - transparence
 - turbidity
 - Clark Y airfoil*
 - USE **airfoil profiles**
 - classes**
 - RT categories
 - ∞ groups
 - ∞ sections
 - Classic aircraft*
 - USE **IL-62 aircraft**
 - classical mechanics**
 - GS mechanics (physics)
 - . **classical mechanics**
 - . . space mechanics
 - . . . astrodynamics
 - . . . celestial mechanics
 - . . . orbital mechanics
 - Kepler laws
 - minimum variance orbit determination
 - RT angular momentum
 - continuum mechanics
 - equations of motion
 - Euler-Lagrange equation
 - Hamiltonian functions
 - Lagrange coordinates
 - Maxwell bodies
 - momentum
 - phase-space integral
 - Poisson equation
 - quaternions
 - statistical mechanics
 - classifications**
 - GS **classifications**
 - . hierarchies
 - . . BBGKY hierarchy
 - . . dichotomies
 - . indexes (documentation)
 - . . KWIC indexes
 - . . Wiswesser notations
 - . subjects
 - RT astronomical catalogs
 - ∞ breakdown
 - ∞ classifying
 - cluster analysis
 - congeners
 - image classification
 - taxonomy
 - classifiers**
 - GS separators
 - . **classifiers**
 - . . sizing screens
 - . . thickeners (equipment)
 - RT centrifuges
 - concentrating
 - concentrators
 - flotation
 - ∞ separation
 - shakers
 - size determination
 - size separation
 - spirals (concentrators)
 - ∞ **classifying**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *sorting*
 - RT classifications
 - concentrators
 - discriminant analysis (statistics)
 - evaluation
 - image classification
 - security
 - selection
 - size separation
 - sorting algorithms
 - taxonomy
 - clathrates**
 - RT ∞ chemical compounds
 - crystal structure
 - crystals
 - inclusions
 - clays**
 - GS **clays**
 - . illite
 - . kaolinite
 - . montmorillonite
 - . vermiculite
 - RT alluvium
 - boreholes
 - bricks
 - ceramics
 - colloids
 - fans (landforms)
 - grout
 - masonry
 - mining
 - molding materials
 - mud
 - refractory materials
 - rocks
 - sedimentary rocks
 - sediments
 - shales
 - sizing materials
 - soils
 - strip mining
- clean energy**
 - RT air pollution
 - environment pollution
 - environmental engineering
 - geothermal energy conversion
 - renewable energy
 - tidepower
 - water pollution
 - waterwave energy
 - windpower utilization
- clean fuels**
 - DEF Energy sources from which pollutants and other impurities have been removed by refining, purification, and other means, to produce fuels less conducive to pollution.
 - GS fuels
 - . **clean fuels**
 - RT beneficiation
 - chemical fuels
 - hydrocarbon fuels
 - pollution
 - refining
 - synthetic fuels
- clean rooms**
 - DEF Areas in which the temperature, humidity, and the airborne particulate contamination are controlled as required.
 - GS rooms
 - . **clean rooms**
 - RT assembling
 - cleanliness
 - controlled atmospheres
 - environmental control
- cleaners**
 - GS **cleaners**
 - . air filters
 - RT ∞ absorbers
 - absorbers (equipment)
 - absorbers (materials)
 - cleaning
 - cleanliness
 - separators
 - ultrasonic cleaning
 - washers (cleaners)
- cleaning**
 - GS **cleaning**
 - . chemical cleaning
 - . . pickling (metallurgy)
 - . housekeeping (spacecraft)
 - . sterilization
 - . . chemical sterilization
 - . . spacecraft sterilization
 - . ultrasonic cleaning
 - . washing
 - . . bathing
 - . environmental cleanup
 - RT abrasion
 - antifouling
 - antiseptics
 - bleaching
 - cleaners
 - cleanliness
 - clearing
 - corrosion prevention
 - decontamination
 - descaling
 - dissolving
 - dust
 - flushing
 - metal finishing
 - metal polishing
 - paint removal
 - polishing
 - purification
 - ∞ reduction
 - refining
 - scarfing
 - scavenging
 - scrubbers
 - ∞ separation
 - surface finishing
 - trichloroethylene
 - waste water
- cleanliness**
 - GS **cleanliness**
 - . housekeeping (spacecraft)
 - RT clean rooms
 - cleaners
 - cleaning
 - hygiene
 - oral hygiene
- clear air turbulence**
 - GS turbulence
 - . atmospheric turbulence
 - . . **clear air turbulence**
 - RT aviation meteorology
 - gusts
 - jet streams (meteorology)
 - thermal instability
 - turbulent diffusion
 - wind shear
- clearances**
 - RT adjusting
 - alignment
 - allowances
 - datum (elevation)
 - spacing
 - tightness
 - tolerances (mechanics)
- clearing**
 - RT cleaning
 - purging
 - removal
- clearings (openings)**
 - UF *slashes*
 - GS **clearings (openings)**
 - . firebreaks
 - . polynyas
 - RT deforestation
 - forests
 - trees (plants)
- cleavage**
 - UF *scission*
 - RT brittle materials
 - brittleness
- Clebsch-Gordan coefficients**
 - GS coefficients
 - . **Clebsch-Gordan coefficients**
 - RT angular momentum

Clementine spacecraft

coupling

Clementine spacecraft

(added May 1997)

DEF A spacecraft launched in January 1994 as part of a joint NASA/DoD-BMDO (Ballistic Missile Defense Organization) mission to space-qualify several lightweight electronic instruments and systems (including an ultraviolet/visible CCD camera, a near infrared and long-wavelength infrared camera, and a combined high-resolution CCD camera and laser ranging system). The Clementine mission also provided the first complete systematic surface mapping of the moon from the ultraviolet to near infrared spectral regions. A software malfunction in May of 1994 precluded a planned flyby of the asteroid Geographos.

RT asteroid missions
CCD cameras
flyby missions
lunar exploration
lunar maps
lunar spacecraft
lunar surface
∞ spacecraft

client server systems

(added May 1996)

GS networks
. computer networks
. . **client server systems**
RT architecture (computers)
computer systems design
distributed processing
internets
Java (programming language)
on-line systems

cliffs

UF *bluffs (landforms)*
RT canyons
escarpments
fiords
landslides
ledges
∞ shelves
slopes
topography

climate

UF *macroclimate*
RT climate change
climatology
long term effects
meteorology
paleoclimatology
Southern Oscillation
weather

climate change

RT air pollution
atmospheric composition
atmospheric temperature
biomass burning
carbon dioxide concentration
CERES (experiment)
climate
climate models
climatology
global warming
Glory Mission satellite
GRACE mission
greenhouse effect
man environment interactions
Mission to Planet Earth
paleoclimatology
stratospheric warming

climate models

(added March 1995)

GS models
. **climate models**
RT atmospheric models
climate change
environment models
hydrology models

ocean models

climatology

DEF Branch of meteorology that studies the average weather conditions and statistical variations for a specified region over an extended period of time.

UF *Milankovitch theory*

GS **climatology**
. agroclimatology
. hydroclimatology
. microclimatology
. paleoclimatology
RT Antarctic regions
anvil clouds
Arctic regions
atmospheric circulation
Atmospheric General Circulation
Models
cap clouds
cirrocumulus clouds
cirrostratus clouds
cirrus shields
climate
climate change
cloud cover
cloud dispersal
clouds (meteorology)
dendrochronology
desertline
deserts
environmental chemistry
environmental engineering
FIRE (climatology)
fog dispersal
geography
Glory Mission satellite
hailstorms
heat islands
humidity
hurricanes
hydrology
intraseasonal variations
ISCCP Project
lightning suppression
Madden-Julian Oscillation
meteorology
middle atmosphere
periodic variations
phenology
polar meteorology
polar regions
precipitation (meteorology)
primitive equations
quasi-biennial oscillation
rainmaking
sea breeze
seasons
snowstorms
solar radiation
storm enhancement
storm suppression
storms
storms (meteorology)
sunlight
teleconnections (meteorology)
temperate regions
temperature
tropical regions
weather
wind (meteorology)
zonal flow (meteorology)

climbing flight

GS ascent
. **climbing flight**
RT ascent trajectories
coasting flight
∞ flight
flight paths
horizontal flight
parabolic flight
rocket flight
soaring
takeoff
turning flight

vertical flight

clinical markers

(added August 2004)

USE **biomarkers**

clinical medicine

GS medical science
. **clinical medicine**
RT anesthesiology
bed rest
blood volume
case histories
diagnosis
examination
healing
health
human beings
∞ medicine
∞ operations
sports medicine
surgery
transplantation
∞ treatment

clinorotation

(added July 2000)

DEF Rotational motion of a test subject about one or more axes that are inclined with respect to the gravitational vector; often applied to simulate a microgravity environment.

UF *clinostat rotation*

clinostating

GS gyration
. rotation
. . **clinorotation**

RT centrifuging
clinostats
gravitational effects
gravitational physiology
microgravity
rotating environments
space environment simulation
weightlessness
weightlessness simulation

clinostat rotation

(added July 2000)

USE **clinorotation**

clinostating

(added August 2000)

USE **clinorotation**

clinostats

(added July 2000)

DEF Devices for producing vector-averaged gravitational environments which mimic microgravity.

UF *random positioning machines*

GS simulators
. environment simulators
. . space simulators
. . . **clinostats**

RT bioreactors
centrifuges
clinorotation
gravitational effects
gravitational physiology
microgravity
rotating environments
space environment simulation
tissue engineering
weightlessness simulation

clipper circuits

GS circuits
. limiter circuits
. . **clipper circuits**
RT comparator circuits
power limiters

clips

RT anchors (fasteners)
∞ bands
clamps
couplings
fasteners
holders

mechanical devices

clock paradox

- GS time measurement
 - . **clock paradox**
- RT atomic clocks
 - chronometers
 - time signals
 - timing devices

clocks

- UF *watches*
- GS measuring instruments
 - . time measuring instruments
 - . . . **clocks**
 - atomic clocks
 - autonomous spacecraft clocks
 - chronometers
- RT time measurement
 - time synchronization
 - timing devices

*clogging*USE **plugging****clone cells***(added August 2004)*

DEF A group of genetically identical cells all descended from a single common ancestral cell by mitosis in eukaryotes or by binary fission in prokaryotes. Clone cells also include populations of recombinant DNA molecules all carrying the same inserted sequence.

- GS cells (biology)
 - . cultured cells
 - . . **clone cells**
- RT biotechnology
 - cell culturing
 - cloning (biology)
 - culture media
 - culture techniques
 - cytology
 - genetic engineering
 - organ culturing
 - tissue culturing

cloning (biology)*(added August 1997)*

- RT biotechnology
 - cells (biology)
 - clone cells
 - culture media
 - culture techniques
 - cultured cells
 - deoxyribonucleic acid
 - gene expression
 - genes
 - genetic code
 - genetic engineering
 - genetics
 - phenotype
 - plasmids
 - reproduction (biology)

close packed lattices

- GS crystal lattices
 - . **close packed lattices**
- RT body centered cubic lattices
 - face centered cubic lattices

*closed basins*USE **structural basins****closed circuit television**

- GS communication equipment
 - . **closed circuit television**
 - telecommunication
 - . **closed circuit television**
 - television systems
 - . **closed circuit television**
- RT cable television
 - color television
 - educational television
 - stereotelevision
 - television cameras
 - television receivers
 - television transmission

wireless communication

closed cycles

- SN (EXCLUDES CLOSED LOOP CONTROL SYSTEMS)
- RT control theory
 - cooling systems
 - electric generators
 - gas turbines
 - loops
 - nuclear reactors
 - plasma generators
 - thermal cycling tests
 - thermodynamic cycles

closed ecological systems

DEF Systems that provide for the maintenance of life in an isolated living chamber through complete reutilization of the material available, in particular, by means of a cycle wherein exhaled carbon dioxide, urine, and other waste matter are converted chemically or by photosynthesis into oxygen, water, and food. Used for bioregenerative life support systems.

- UF *bioregenerative life support systems*
- GS support systems
 - . life support systems
 - . . **closed ecological systems**
- RT aerospace medicine
 - bioastronautics
 - ecology
 - ecosystems
 - food production (in space)
 - gnatobiotics
 - long term effects
 - oxygen production
 - space habitats
 - spacecraft cabin atmospheres
 - spacecraft environments
 - survival
 - ∞ systems

*closed faults*USE **geological faults***closed loop systems*USE **feedback control****closing**

- RT blocking
 - plugging
 - sealing
 - stopping

Clostridium

- GS microorganisms
 - . bacteria
 - . . **Clostridium**
 - . . . Clostridium botulinum
- RT bacterial diseases

Clostridium botulinum

- GS microorganisms
 - . bacteria
 - . . Clostridium
 - . . . **Clostridium botulinum**
- RT bacteriology
 - pathogens
 - toxic diseases

closure law

- GS laws
 - . **closure law**
- RT field theory (physics)
 - k-epsilon turbulence model
 - statistical mechanics
 - turbulent flow

closures

- RT ∞ barriers
 - blocking
 - chokes (restrictions)
 - constrictions
 - couplings
 - coverings
 - enclosures
 - end plates
 - fasteners
 - fittings
 - ∞ gates
 - ∞ joints (junctions)

- plugging
- plugs
- seals (stoppers)
- tightness
- valves

*cloth*USE **fabrics****clothing**

- GS **clothing**
 - . boots (footwear)
 - . cotton fibers
 - . coveralls
 - . flight clothing
 - . garments
 - . gloves
 - . goggles
 - . protective clothing
 - . . helmets
 - . . pressure suits
 - . . . space suits
 - extravehicular mobility units
 - vapor barrier clothing
 - . shoes
 - . socks
 - . suits
 - . . pressure suits
 - . . . space suits
 - extravehicular mobility units
- RT chemical defense
 - consumables (spacecrew supplies)
 - cotton
 - cuffs
 - fabrics
 - leather
 - textiles
 - vests

clotting

- RT blood coagulation
 - embolisms
 - thrombocytes
 - thromboplastin

cloud chambers

DEF Devices for observing the paths of ionizing particles, based on the principle that supersaturated vapor condenses more readily on ions than on neutral molecules.

- GS ionization chambers
 - . **cloud chambers**
- RT bubble chambers
 - ∞ chambers
 - radiation counters
 - spark chambers

cloud cover

- UF *overcast*
- RT anvil clouds
 - ∞ blankets
 - cap clouds
 - cirrocumulus clouds
 - cirrostratus clouds
 - climatology
 - clouds (meteorology)
 - FIRE (climatology)
 - flight conditions
 - ISCCP Project
 - meteorological parameters
 - meteorology
 - METEOSAT satellite
 - nephanalysis
 - shadows
 - sky
 - sky brightness
 - solar radiation
 - sunlight
 - Venus clouds
 - Venus surface
 - weather forecasting

cloud dispersal

- GS weather modification
 - . **cloud dispersal**
- RT climatology
 - clouds (meteorology)

cloud glaciation

dispersing

cloud glaciation

- GS ice formation
 - . **cloud glaciation**
- RT freezing
 - graupel
 - hail
 - ice clouds
 - ice nuclei
 - snow
 - snow cover

cloud height indicators

- UF *cellometers*
- GS measuring instruments
 - . indicating instruments
 - . . **cloud height indicators**
 - . meteorological instruments
 - . . **cloud height indicators**
- RT ceilings (meteorology)

cloud photographs

- GS photographs
 - . **cloud photographs**
- RT aerial photography
 - all sky photography
 - photography
 - spaceborne photography
 - TIROS project

cloud photography

- GS imagery
 - . photography
 - . . **cloud photography**
- RT aerial photography
 - all sky photography
 - black and white photography
 - ESSA satellites
 - meteorological satellites
 - METEOSAT satellite
 - Nimbus 1 satellite
 - Nimbus 2 satellite
 - Nimbus project
 - Nimbus satellites
 - spaceborne photography
 - TIROS operational satellite system
 - TIROS project
 - TIROS satellites

cloud physics

DEF A subdivision of physical meteorology concerned with physical properties of clouds in the atmosphere and the processes occurring therein.

- GS atmospheric physics
 - . **cloud physics**
- RT Aitken nuclei
 - Atmospheric Cloud Physics Lab (Spacelab)
 - atmospheric electricity
 - CERES (experiment)
 - condensation nuclei
 - condensing
 - convection clouds
 - drop size
 - fog dispersal
 - graupel
 - nephanalysis
 - Ophiuchi clouds
- ∞ physics
 - precipitation (meteorology)
- ∞ science
 - Venus clouds
 - weather modification

cloud seeding

DEF Any technique carried out with the intent of adding to a natural cloud in a planetary atmosphere certain substances that will alter the natural development of that cloud.

- GS nucleation
 - . **cloud seeding**
 - weather modification
 - . **cloud seeding**
- RT clouds (meteorology)
 - precipitation (meteorology)
 - rain
 - rainmaking

stimulation

∞ clouds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT clouds (meteorology)
 - dust
 - electron clouds
 - exhaust clouds
 - H I regions
 - H II regions
 - hydrogen clouds
 - ice clouds
 - infrared cirrus (astronomy)
 - Magellanic clouds
 - magnetic clouds
 - meteoroid dust clouds
 - molecular clouds
 - Oort cloud
 - Ophiuchi clouds
 - particles
 - plasma clouds
 - Venus clouds

clouds (meteorology)

DEF A visible mass of water vapor suspended in the atmosphere above the Earth's surface.

- UF *chaotic cloud patterns*
- GS **clouds (meteorology)**
 - . artificial clouds
 - . . chemical clouds
 - . . . barium ion clouds
 - . . cap clouds
 - . . cirrocumulus clouds
 - . . cirrostratus clouds
 - . . cirrus clouds
 - . . cirrus shields
 - . . convection clouds
 - . . . arc clouds
 - . . cumulonimbus clouds
 - . . . anvil clouds
 - . . cumulus clouds
 - . . . anvil clouds
 - . . ice clouds
 - . . nimbostratus clouds
 - . . noctilucent clouds
 - . . stratocumulus clouds
 - . . stratus clouds
- RT acid rain
 - Alpine meteorology
 - atmospheric correction
 - atmospheric moisture
 - CALIPSO (Pathfinder satellite)
 - CERES (experiment)
 - climatology
 - cloud cover
 - cloud dispersal
 - cloud seeding
- ∞ clouds
 - CloudSat
 - condensation nuclei
 - drop size
 - FIRE (climatology)
 - fog
 - fog dispersal
 - ISCCP Project
 - meteorology
 - MISR (radiometry)
 - nephanalysis
 - precipitation (meteorology)
 - shadows
 - sky
 - thunderstorms
 - weather

Clouds and the Earth's Radiant Energy System

(added May 2007)

USE **CERES (experiment)**

CloudSat

(added October 2005)

DEF An Earth observing satellite designed to measure those properties of clouds that are critical for understanding their effects on both weather and climate. Its millimeter-wavelength Cloud Profiling Radar (CPR) measures profiles of cloud vertical structure, liquid and ice water

content, and cloud optical properties.

- GS artificial satellites
 - . scientific satellites
 - . . **CloudSat**
 - Earth Observing System (EOS)
 - . **CloudSat**
- RT aerosols
 - Aqua spacecraft
 - Aura spacecraft
 - CALIPSO (Pathfinder satellite)
 - clouds (meteorology)
 - Earth observations (from space)
 - meteorological satellites
 - meteorology
 - precipitation (meteorology)
 - remote sensing

cloud-to-cloud discharges

(added August 1999)

- GS electric current
 - . electric discharges
 - . . lightning
 - . . . **cloud-to-cloud discharges**

cloud-to-ground discharges

(added August 1999)

- GS electric current
 - . electric discharges
 - . . lightning
 - . . . **cloud-to-ground discharges**
- RT elves
 - sprites (atmospheric physics)

clumps

- RT agglomeration
 - atomic clusters
- ∞ clusters
 - metal clusters
 - molecular clusters
 - pattern recognition
 - regression analysis

cluster analysis

DEF The analysis of data with the object of finding natural groupings within the data either by hand or with the aid of a computer.

- RT classifications
 - data mining
 - image analysis
 - image processing
 - pattern recognition
 - remote sensing
 - statistical analysis

Cluster Mission

(added September 1989)

- GS space missions
 - . **Cluster Mission**
- RT Earth magnetosphere
 - European space programs
 - international cooperation
- ∞ missions
 - NASA space programs
 - scientific satellites
 - SOHO Mission
 - solar terrestrial interactions
 - solar wind
 - space plasmas

cluster variation method

(added July 1997)

DEF An exact, statistical-mechanical technique for approximating the configurational entropy of a crystalline material, such as an alloy. The method is based on the cluster-cumulant expansion of entropy, that involves the expansion of the thermodynamic quantities of an infinite system in terms of the density matrices of finite groups of lattice sites called clusters. The method, first proposed by Kikuchi, was developed as a theoretical tool for dealing with atomic ordering.

- UF *CVM (solid state)*
- RT binary alloys
 - body centered cubic lattices
 - face centered cubic lattices
 - Hamiltonian functions
 - intermetallics
 - Ising model
- ∞ methodology

order-disorder transformations
 phase diagrams
 phase transformations
 solid solutions
 statistical mechanics
 ternary alloys

∞ clusters

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT atomic clusters
 clumps
 galactic clusters
 globular clusters
 metal clusters
 micelles
 molecular clusters
 Pleiades cluster
 Praesepe star clusters
 star clusters
 Virgo galactic cluster

clutches

RT engine parts
 mechanical devices
 mechanical drives

clutter

DEF Atmospheric noise, extraneous signals, etc. which tend to obscure the reception of a desired signal in a radio receiver, radarscope, etc.

GS echoes
 . radar echoes
 . . **clutter**
 RT airborne radar
 jamming
 radio frequency interference
 space-time adaptive processing

C-M diagram

USE **color-magnitude diagram**

CMBR (astronomy)

(added July 2000)

USE **cosmic microwave background radiation**

CMOS

DEF The combination of a PMOS (p-type channel metal oxide semiconductor) with an NMOS (n-type channel metal oxide semiconductor). Used for complementary metal oxide semiconductors.

UF *complementary metal oxide semiconductors*
 GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . metal oxide semiconductors
 **CMOS**
 semiconductors (materials)
 . metal oxide semiconductors
 . . **CMOS**
 RT cascode devices
 ITO (semiconductors)
 latch-up

CN emission

DEF Radio waves emitted from incandescent gaseous cyanide (CN) in space under low pressures at wavelengths characteristic of the elements comprising the gas. Used for cyanide emission.

UF *cyanide emission*
 GS electromagnetic radiation
 . radio waves
 . . radio emission
 . . . **CN emission**
 emission
 . radio emission
 . . **CN emission**
 RT hydrocyanic acid
 millimeter waves
 radio sources (astronomy)

cnoidal waves

DEF Finite amplitude progressive waves in shallow water having a wave profile represented by the Jacobian elliptic function "CN."

RT elastic waves
 gravity waves
 shallow water
 solitary waves
 surface waves
 water depth
 water waves
 ∞ waves

CNSR

USE **Rosetta mission**

CNT (nanotechnology)

(added September 2001)

USE **carbon nanotubes**

Coachella Valley (CA)

GS valleys
 . **Coachella Valley (CA)**
 RT California
 deserts

coagulation

GS **coagulation**
 . blood coagulation
 RT accumulations
 agglomeration
 Aitken nuclei
 blood
 coalescing
 concentrating
 deposition
 embolisms
 fibrin
 flocculating
 flotation
 gelation
 hardening (materials)
 hemorrhages
 lumping
 precipitation (chemistry)
 ∞ separation
 ∞ setting
 settling
 solidification
 thrombopenia
 water treatment

coal

DEF A brown to black combustible sedimentary rock (in the geological sense) composed principally of consolidated and chemically altered plant remains.

GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . fossil fuels
 **coal**
 anthracite
 lignite
 solvent refined coal
 resources
 . Earth resources
 . . fossil fuels
 . . . **coal**
 anthracite
 lignite
 solvent refined coal
 rocks
 . sedimentary rocks
 . . carbonaceous rocks
 . . . **coal**
 anthracite
 lignite
 solvent refined coal

RT

ashes
 asphaltenes
 bitumens
 carbonaceous materials
 coal derived gases
 coal derived liquids
 coal gasification
 coal liquefaction
 coal utilization
 coke
 energy policy
 fly ash
 hydrolysis
 peat
 regolith

soils
 strip mining
 synthane

coal derived gases

DEF The gases which are derived from various coal gasification processes.
 RT catalysts
 coal
 coal derived liquids
 coal gasification
 coal utilization
 methane
 synthesis gas

coal derived liquids

DEF Fluid hydrocarbons derived from the liquefaction of coal.
 RT asphaltenes
 catalysts
 coal
 coal derived gases
 coal gasification
 coal liquefaction
 coal utilization

coal gasification

GS gasification
 . **coal gasification**
 . . hydrolysis
 RT coal
 coal derived gases
 coal derived liquids
 coal liquefaction
 cracking (chemical engineering)
 energy policy
 fuel cell power plants
 gases
 hydrocarbon fuels
 hydrocracking
 lignite
 methanation
 synthane
 synthesis gas
 volatility

coal liquefaction

GS phase transformations
 . liquefaction
 . . **coal liquefaction**
 RT asphaltenes
 coal
 coal derived liquids
 coal gasification
 energy policy
 hydrocarbon fuels
 hydrocracking
 hydrolysis
 lignite
 melting
 solvent refined coal

coal utilization

GS utilization
 . **coal utilization**
 RT coal
 coal derived gases
 coal derived liquids
 energy consumption
 energy policy
 energy technology
 hydrocarbon fuels
 lignite
 solvent refined coal

coalescence

USE **coalescing**

coalescing

DEF Growing of grains at the expense of the remainder by adsorption or the growth of a phase or particle at the expense of the remainder by absorption or by reprecipitation. Used for coalescence.

UF *coalescence*
 RT agglomeration
 agitation
 coagulation
 concentrating
 flocculating

Coanda effect

- magnetic islands
- mixers
- ∞ separation
- settling
- thickeners (equipment)

Coanda effect

- RT ∞ attachment
- bubbles
- circulation control airfoils
- ∞ effects
- entrainment
- fluid amplifiers
- jet amplifiers
- jet streams (meteorology)
- reattached flow
- ∞ separation
- thrust augmentation

coarseness

- RT fineness
- Ostwald ripening
- reflectance
- roughness
- surface properties
- surface roughness
- surface stability
- surface temperature

coastal currents

DEF Ocean currents caused by the approach of waves to coasts at an angle. They flow parallel to and near the shore. Used for littoral currents and longshore currents.

- UF *littoral currents*
- longshore currents*
- GS circulation
- . water circulation
- . . water currents
- . . . ocean currents
- **coastal currents**
- RT beaches
- coasts
- ∞ currents
- gyres
- oceanography
- oceans
- sea truth
- seas
- tides
- wetlands

coastal dunes

USE **dunes**

coastal ecology

- GS ecology
- . **coastal ecology**
- RT biometeorology
- coasts
- Earth resources
- environment effects
- environments
- marine environments
- marine resources
- oil pollution
- phenology
- thermal pollution
- waterfowl
- wetlands

coastal marshlands

USE **marshlands**

coastal plains

- GS land
- . plains
- . . **coastal plains**
- landforms
- . plains
- . . **coastal plains**
- RT bars (landforms)
- beaches
- biometeorology
- coasts
- Earth resources
- ecology
- environments
- piedmonts

wetlands

coastal ranges (CA)

- GS landforms
- . mountains
- . . **coastal ranges (CA)**
- RT California
- Pacific Ocean

coastal water

- GS water
- . nearshore water
- . . **coastal water**
- RT Coastal Zone Color Scanner
- environment effects
- ocean color scanner
- oceans
- sea water
- shellfish
- shorelines
- vadose water
- water depth
- wetlands

Coastal Zone Color Scanner

DEF A spaceborne instrument devoted to the measurement of ocean color. Every parameter is optimized for use over water to the exclusion of other types of sensing.

- GS scanners
- . ocean color scanner
- . . **Coastal Zone Color Scanner**
- RT chlorophylls
- coastal water
- colorimetry
- multispectral band scanners
- ocean data acquisitions systems
- oceanographic parameters
- oceanography
- photomapping
- remote sensing
- remote sensors
- satellite imagery
- Sea-viewing Wide Field-of-view Sensor
- water color

coasting flight

DEF The flight of a rocket between burnout of thrust cutoff of one stage and ignition of another, or between burnout and summit altitude or maximum horizontal range.

- RT ascent trajectories
- ballistic trajectories
- climbing flight
- cruising flight
- descent trajectories
- ∞ flight
- midcourse trajectories
- parabolic flight
- rocket flight
- soaring

coasts

DEF The strips of land of indefinite width (may be many kilometers) that extend from the low tide line inland to the first major change in landforms.

- RT beaches
- Caspian Sea
- coastal currents
- coastal ecology
- coastal plains
- coral reefs
- cusps (landforms)
- dunes
- estuaries
- lagoons
- lakes
- littoral drift
- marine environments
- oceans
- seas
- shorelines
- storm surges
- tidal flats
- upwelling water

coating

- GS **coating**

- . anodizing
- . electroplating
- . encapsulating
- . metallizing
- RT anodic stripping
- coatings
- corrosion prevention
- deposition
- flame plating
- flame spraying
- HVOF thermal spraying
- lining processes
- metal finishing
- metal spraying
- ∞ metallurgy
- metalorganic chemical vapor deposition
- optical coatings
- plasma spraying
- ∞ priming
- sealing
- siliconizing
- spraying
- surface finishing
- surface properties
- surface treatment
- vapor deposition

coatings

DEF Liquid, liquefiable or mastic compositions which are converted to a solid protective, decorative, or functional adherent film after application as a thin layer.

- GS **coatings**
- . antiradar coatings
- . antireflection coatings
- . cathodic coatings
- . electroplating
- . enamels
- . encapsulating
- . glass coatings
- . glazes
- . inorganic coatings
- . . anodic coatings
- . . ceramic coatings
- . lacquers
- . magnetic films
- . metal coatings
- . . aluminum coatings
- . . gold coatings
- . . nickel coatings
- . . zinc coatings
- . metallizing
- . paints
- . . pressure sensitive paints
- . . temperature sensitive paints
- . plastic coatings
- . protective coatings
- . . anodic coatings
- . . ceramic coatings
- . . primers (coatings)
- . . refractory coatings
- . optical coatings
- . rubber coatings
- . sprayed coatings
- . thermal control coatings
- . thermochromic coatings
- . . birefringent coatings

- RT additives
- coating
- composite materials
- corrosion
- corrosion prevention
- coverings
- cryodeposits
- deposition
- deposits
- diamond films
- dipping
- electroless deposition
- energy absorption films
- epoxy resins
- fabrics
- ∞ films
- finishes
- flame spraying
- furan resins
- hot corrosion
- impregnating

inhibitors
 laminates
 Langmuir-Blodgett films
 ∞ layers
 lining processes
 linings
 metal films
 metal finishing
 metal spraying
 ∞ metallurgy
 moisture resistance
 passivity
 pavements
 plasma spraying
 plasticizers
 ∞ priming
 protection
 rusting
 sealers
 sealing
 ∞ sheets
 siliconizing
 solvents
 spraying
 substrates
 surface finishing
 surface properties
 thin films
 vapor deposition
 veneers
 waterproofing
 waxes
 weatherproofing
 wings

coaxial cables
 DEF Waveguides consisting of two concentric conductors insulated from each other. Used for coaxial transmission.
 UF *coaxial transmission*
 GS transmission lines
 . communication cables
 . . **coaxial cables**
 RT ∞ cables
 power lines
 submarine cables
 waveguides

coaxial flow
 GS fluid flow
 . **coaxial flow**
 RT annular flow
 annular nozzles
 axial flow
 axisymmetric flow
 flow geometry
 Hilsch tubes
 shear flow
 stratified flow
 two dimensional flow

coaxial nozzles
 DEF Class of nozzle configurations in jet aircraft for reducing noise.
 RT aircraft noise
 axial flow
 fluid flow
 noise reduction
 nozzle geometry
 ∞ nozzles
 supersonic nozzles
 variable cycle engines

coaxial plasma accelerators
 GS plasma accelerators
 . **coaxial plasma accelerators**
 RT ∞ accelerators
 magnetic nozzles
 plasma engines
 plasma guns

coaxial transmission
 USE **coaxial cables transmission**

cobalt
 GS chemical elements
 . **cobalt**
 . . cobalt isotopes
 . . . cobalt 58

. . . cobalt 60
 metals
 . transition metals
 . . **cobalt**
 . . . cobalt isotopes
 cobalt 58
 cobalt 60
 RT strategic materials

cobalt 58
 GS chemical elements
 . cobalt
 . . cobalt isotopes
 . . . **cobalt 58**
 . . nuclides
 . . isotopes
 . . . cobalt isotopes
 **cobalt 58**
 radioactive isotopes
 **cobalt 58**
 metals
 . transition metals
 . . cobalt
 . . . cobalt isotopes
 **cobalt 58**

cobalt 60
 GS chemical elements
 . cobalt
 . . cobalt isotopes
 . . . **cobalt 60**
 . . nuclides
 . . isotopes
 . . . cobalt isotopes
 **cobalt 60**
 radioactive isotopes
 **cobalt 60**
 metals
 . transition metals
 . . cobalt
 . . . cobalt isotopes
 **cobalt 60**

cobalt acetates
 GS acetates
 . **cobalt acetates**
 cobalt compounds
 . **cobalt acetates**
 esters
 . **cobalt acetates**

cobalt alloys
 GS alloys
 . **cobalt alloys**
 . . Astroloy (trademark)
 . . Rene 41
 . . Rene 63
 . . Rene 77
 . . Rene 95
 RT heat resistant alloys
 Kovar (trademark)
 Stellite (trademark)
 Waspaloy

cobalt compounds
 GS **cobalt compounds**
 . cobalt acetates
 . cobalt fluorides
 . cobalt oxalates
 . cobalt oxides
 . cohenite
 RT ∞ chemical compounds
 ∞ Group 8 compounds
 ∞ metal compounds

cobalt fluorides
 GS cobalt compounds
 . **cobalt fluorides**
 halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **cobalt fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **cobalt fluorides**
 . . metal halides
 . . . metal fluorides

. . . . **cobalt fluorides**

cobalt isotopes
 GS chemical elements
 . cobalt
 . . **cobalt isotopes**
 . . . cobalt 58
 . . . cobalt 60
 . nuclides
 . . isotopes
 . . . **cobalt isotopes**
 cobalt 58
 cobalt 60
 metals
 . transition metals
 . . cobalt
 . . . **cobalt isotopes**
 cobalt 58
 cobalt 60

cobalt oxalates
 GS cobalt compounds
 . **cobalt oxalates**
 oxalates
 . **cobalt oxalates**

cobalt oxides
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **cobalt oxides**
 cobalt compounds
 . **cobalt oxides**

COBE
 USE **Cosmic Background Explorer satellite**

Cobol
 UF *Common Business Oriented Language*
 GS languages
 . programming languages
 . . **Cobol**
 RT FORTRAN
 PL/1

Cobra Dane (radar)
 DEF Radar installation for monitoring Soviet missiles.
 GS radar
 . surveillance radar
 . . **Cobra Dane (radar)**
 . tracking radar
 . . **Cobra Dane (radar)**
 RT antenna arrays
 early warning systems
 missile trajectories
 radar signatures

Coccomyces
 GS plants (botany)
 . fungi
 . . **Coccomyces**

cochannel interference
 (*added April 2000*)
 DEF Interference caused by multiple, simultaneous transmissions occurring in the same communication channel.
 GS electromagnetic interference
 . radio frequency interference
 . . **cochannel interference**
 RT channel capacity
 channel noise
 intersymbolic interference
 phase shift keying

cochlea
 GS anatomy
 . sense organs
 . . ear
 . . . labyrinth
 **cochlea**

cockpit simulators

. . . . Corti organ

Cock aircraft
USE **AN-22 aircraft**

cockpit assistant systems
(added October 1997)
USE **pilot support systems**

cockpit simulators
GS simulators
. training simulators
. flight simulators
. . . **cockpit simulators**
training devices
. training simulators
. flight simulators
. . . **cockpit simulators**
RT spacecraft cabin simulators
training devices
virtual reality

cockpit weather information systems
(added August 1996)
DEF A cockpit display system that provides flight crews with a graphical display of interactive weather information, including surface observations, terminal forecasts, radar summaries, and lightning strike data. The system also provides weather trend information and has zooming capabilities that enable the user to see information for the entire nation or to focus on specific areas.
GS information systems
. **cockpit weather information systems**
RT airborne equipment
cockpits
display devices
flight conditions
flight instruments
meteorological parameters
weather forecasting

cockpits
RT aircraft compartments
cabin atmospheres
∞ cabins
canopies
cockpit weather information systems
ejection seats
flying ejection seats
fuselages
pilot support systems
pressurized cabins
space capsules
spacecraft cabin atmospheres
spacecraft cabins
windshields

cockroaches
UF *Blattidae*
GS animals
. invertebrates
. . arthropods
. . . insects
. . . **cockroaches**

cocks
UF *stopcocks*
GS valves
. **cocks**
RT gas valves
hydraulic equipment

COD (cracks)
USE **crack opening displacement**

COD aircraft
USE **C-2 aircraft**

code division multiple access
DEF Multiple access system in which users are segregated by means of pseudorandom signal coding and bandwidth spreading so that the complete time and frequency axes are occupied and only the power is shared. Used for CDMA.
UF *CDMA*
GS telecommunication

. multiple access
. . **code division multiple access**
. radio communication
. . radio relay systems
. . . **code division multiple access**
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . **code division multiple access**
RT Aloha system
frequency division multiple access
multichannel communication
multiplexing
satellite networks
switching
wideband communication

code division multiplexing
DEF The separation of two or more simultaneous radio transmissions over a common path by signal coding and bandwidth spreading.
GS transmission
. multiplexing
. . **code division multiplexing**
RT data transmission
demultiplexing
frequency division multiple access
radio communication
radio transmission
satellite transmission
signal transmission
telecommunication
wavelength division multiplexing

coders
UF *encoders*
RT analog to digital converters
coding
decoders
programmers

∞ **codes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT BCH codes
binary codes
biternary code
coding
color coding
concatenated codes
cryptography
digits
error correcting codes
error detection codes
Morse code
Reed-Solomon codes
standards
symbols
trellis coding

coding
UF *encoding notation*
GS **coding**
. decoding
. redundancy encoding
. signal encoding
. . amplitude modulation
. . . quadrature amplitude modulation
. . . frequency modulation
. . . feedback frequency modulation
. . . FM/PM (modulation)
. . . frequency shift keying
. . . pulse frequency modulation
. . . phase modulation
. . . FM/PM (modulation)
. . . phase shift keying
. . . . binary phase shift keying
. . . . quadrature phase shift keying
. . . pulse modulation
. . . pulse amplitude modulation
. . . pulse code modulation
. . . . delta modulation
. . . . differential pulse code modulation
. . . . pulse frequency modulation
. . . . pulse time modulation
. . . . pulse duration modulation

. . . . pulse position modulation
. . . trellis coding
. Wiswesser notations
abbreviations
RT addressing
alphabets
analog to digital converters
BCH codes
coders
∞ codes
color coding
computer programming
computer programs
concatenated codes
cryptography
data transmission
dictionaries
digital techniques
error detection codes
identifying
information theory
languages
parity
pulse compression
Reed-Solomon codes
symbolic programming
symbols
vector quantization
Viterbi decoders

coefficient of friction
UF *friction coefficient*
GS **coefficients**
. **coefficient of friction**
surface properties
. **coefficient of friction**
RT friction
friction factor
friction reduction
kinetic friction
sliding friction
static friction
wear resistance

coefficients
GS **coefficients**
. accommodation coefficient
. aerodynamic coefficients
. attenuation coefficients
. binomial coefficients
. Clebsch-Gordan coefficients
. coefficient of friction
. coherence coefficient
. correlation coefficients
. coupling coefficients
. diffusion coefficient
. . Soret coefficient
. flow coefficients
. . discharge coefficient
. heat transfer coefficients
. hydrodynamic coefficients
. influence coefficient
. . structural influence coefficients
. ionization coefficients
. nozzle thrust coefficients
. Onsager phenomenological coefficient
. recombination coefficient
. regression coefficients
. scattering coefficients
. virial coefficients
. Wigner coefficient
RT ∞ constant
constants
mechanical properties
optical properties
polynomials
Racah coefficient
statistical analysis
∞ weight

coenzymes
GS organic compounds
. **coenzymes**
. . adenosine diphosphate
. . adenosine triphosphate
. . cyclic AMP
. . glutathione
. . thiamine

- RT enzymes
- coercivity**
RT magnetic properties
magnetization
- coesite**
DEF A polymorph of silicon dioxide.
GS chalcogenides
. oxides
. . . dioxides
. . . silicon dioxide
. . . . quartz
. **coesite**
. . . silicon oxides
. . . silicon dioxide
. . . . quartz
. **coesite**
minerals
. quartz
. . **coesite**
silicon compounds
. silicon oxides
. . silicon dioxide
. . . quartz
. . . . **coesite**
RT Earth crust
Earth mantle
meteorites
rutile
stishovite
stony meteorites
tektites
- coffee**
GS farm crops
. **coffee**
RT beverages
- Coffin-Manson law**
DEF A relationship which enables one to estimate the fatigue life from the cyclic plastic strain range. The specific life for a given metal or alloy is determined by its tensile ductility.
GS laws
. **Coffin-Manson law**
RT crack propagation
fatigue life
fatigue tests
metal fatigue
- cogeneration**
DEF The generation of electricity or shaft power by an energy conversion system and the concurrent use of the rejected thermal energy from the conversion system as an auxiliary energy source.
RT electric generators
electric power plants
energy conversion
∞ generation
heat generation
∞ power plants
solar energy conversion
thermal energy
waste energy utilization
- cognition**
RT artificial intelligence
cognitive psychology
decision making
identifying
IFF systems (identification)
information processing (biology)
knowledge representation
perception
- cognitive psychology**
GS psychology
. **cognitive psychology**
RT cognition
information processing (biology)
intelligence
mental performance
- COGO (programming language)**
UF *coordinate geometry language*
GS languages
. programming languages
- . . **COGO (programming language)**
- cohenite**
GS cobalt compounds
. **cohenite**
iron compounds
. **cohenite**
minerals
. **cohenite**
nickel compounds
. **cohenite**
- ∞ **coherence**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT coherent radiation
coherent scattering
cohesion
congruences
elastic scattering
intelligibility
laser outputs
lasers
maser outputs
phase coherence
wave dispersion
wave propagation
- coherence coefficient**
GS coefficients
. **coherence coefficient**
RT coherent radar
coherent radiation
∞ interference
noise propagation
phase coherence
stochastic processes
- coherent acoustic radiation**
GS coherent radiation
. **coherent acoustic radiation**
elastic waves
. **coherent acoustic radiation**
RT ∞ radiation
ultrasonic radiation
underwater acoustics
- coherent anti-Stokes Raman spectroscopy*
USE **Raman spectroscopy**
- coherent electromagnetic radiation**
GS coherent radiation
. **coherent electromagnetic radiation**
radiation
. . coherent light
. . laser beams
electromagnetic radiation
. **coherent electromagnetic radiation**
radiation
. . coherent light
. . laser beams
RT beams (radiation)
holography
infrared radiation
interstellar masers
ionizing radiation
krypton fluoride lasers
lasers
light (visible radiation)
masers
modulated continuous radiation
monochromatic radiation
quantum electronics
∞ radiation
radio waves
squeezed states (quantum theory)
stimulated emission
stimulated emission devices
traveling wave masers
ultraviolet radiation
- coherent light**
DEF Light in which the phase relationship between points in a beam remains constant throughout the beam.
GS coherent radiation
. coherent electromagnetic radiation
. . **coherent light**
electromagnetic radiation
. coherent electromagnetic radiation
- . . **coherent light**
. light (visible radiation)
. . **coherent light**
RT four-wave mixing
gamma ray lasers
HCN lasers
holographic interferometry
holography
laser outputs
lasers
monochromatic radiation
neodymium lasers
optical computers
optical memory (data storage)
phase coherence
plasmadynamic lasers
rare gas-halide lasers
scatter plates (optics)
Shiva laser system
speckle holography
squeezed states (quantum theory)
stimulated emission
two-wavelength lasers
ultraviolet lasers
- coherent radar**
DEF A type of radar that employs circuitry which permits comparison of the phase of successive received target signals.
GS radar
. **coherent radar**
RT coherence coefficient
continuous wave radar
Doppler radar
moving target indicators
pulse Doppler radar
pulse radar
radar detection
search radar
surveillance radar
tracking radar
- coherent radiation**
UF *coherent sources*
coherent transmission
GS **coherent radiation**
. coherent acoustic radiation
. coherent electromagnetic radiation
. . coherent light
. . laser beams
RT beams (radiation)
∞ coherence
coherence coefficient
continuous radiation
corpuscular radiation
elastic waves
electromagnetic radiation
light (visible radiation)
optical properties
∞ radiation
∞ rays
wave propagation
- coherent scattering**
DEF Scattering of photons or particles in which there are define phase relationships between the incoming and scattered waves. Ordinary scattering is coherent. With coherent scattering, interference occurs between the waves scattered by two or more scattering centers. The total intensity is the vector sum of the amplitudes of the various waves.
GS scattering
. **coherent scattering**
RT ∞ coherence
Compton effect
elastic scattering
incoherent scattering
inelastic scattering
nuclear scattering
- coherent sources*
USE **coherent radiation radiation sources**
- coherent transmission*
USE **coherent radiation**

cohesion

cohesion

DEF The mutual attraction by which elements of a substance are held together.

- RT agglutination
- bonding
- ∞ coherence
- internal friction
- internal pressure
- plastic properties
- spreading

cohomology

USE **homology**

COIL (lasers)

(added August 1997)

USE **chemical oxygen-iodine lasers**

∞ coils

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT electric coils
- inductors
- magnet coils
- magnetic coils
- springs (elastic)
- toroids
- wire

COIN aircraft

- UF *counterinsurgency aircraft*
- LARA aircraft*
- light armed reconnaissance aircraft*
- GS attack aircraft
- . **COIN aircraft**
- . . F-5 aircraft
- . . OV-10 aircraft
- RT ∞ aircraft
- light intratheater transport

coincidence circuits

DEF Circuits that produce a usable output only when each of two or more input circuits receive pulses simultaneously or within an assignable time interval.

- GS circuits
- . **coincidence circuits**
- RT anticoincidence detectors
- gates (circuits)
- radiation counters
- synchronism

coining

- GS forming techniques
- . pressing (forming)
- . . **coining**
- metal working
- . **coining**
- RT cold pressing
- cold working
- dies
- forging
- hot isostatic pressing
- hot pressing
- sizing (shaping)
- stamping

coke

- GS fuels
- . **coke**
- RT bitumens
- carbon
- charcoal
- coal
- lignite

Coke aircraft

USE **AN-24 aircraft**

colchicine

- GS bases (chemical)
- . alkaloids
- . . **colchicine**
- nitrogen compounds
- . alkaloids
- . . **colchicine**
- organic compounds
- . cyclic compounds
- . . cyclic hydrocarbons
- . . . **colchicine**

- . . heterocyclic compounds
- . . . alkaloids
- **colchicine**
- . hydrocarbons
- . . cyclic hydrocarbons
- . . . **colchicine**

cold acclimatization

- GS adaptation
- . acclimatization
- . . **cold acclimatization**
- RT heat acclimatization
- subzero temperature

cold blooded animals

USE **poikilothermia**

Cold Bokkeveld meteorite

- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- **Cold Bokkeveld meteorite**
- . . . chondrites
- carbonaceous chondrites
- **Cold Bokkeveld meteorite**

cold cathode tubes

- DEF Electron tubes containing cold cathodes.
- GS electron tubes
- . **cold cathode tubes**
- . . phototubes
- . . . photomultiplier tubes
- frequency modulation photomultipliers
- RT cathodes
- electrodes
- gas discharges
- ∞ gas tubes
- tube cathodes
- tunnel cathodes

cold cathodes

- DEF Cathodes that function without the application of heat.
- GS electrodes
- . cathodes
- . . tube cathodes
- . . . **cold cathodes**
- RT gas discharges
- tunnel cathodes

cold drawing

DEF Reducing the cross section (of wire) by pulling through a die or dies, at a temperature lower than the recrystallization temperature.

- RT deep drawing
- ∞ drawing
- metal drawing

cold flow tests

- SN (EXCLUDES MECHANICAL CREEP, TESTS)
- DEF Tests of liquid rockets without firing them to check or verify the efficiency of a propulsion subsystem, providing for the conditioning and flow of propellants (including tank pressurization, propellant loading, and propellant feeding).
- GS engine tests
- . **cold flow tests**
- ground tests
- . **cold flow tests**
- RT checkout
- feed systems
- plastic properties
- prelaunch tests
- propellant tests
- propulsion system performance
- rocket engine design
- static tests
- ∞ tests

- GS engine tests
- . **cold flow tests**
- ground tests
- . **cold flow tests**
- RT checkout
- feed systems
- plastic properties
- prelaunch tests
- propellant tests
- propulsion system performance
- rocket engine design
- static tests
- ∞ tests

cold forming

USE **cold working**

cold fronts

- GS fronts (meteorology)
- . **cold fronts**

- RT air masses
- ∞ fronts
- meteorological parameters
- meteorology
- storms
- synoptic meteorology
- thunderstorms
- tornadoes
- warm fronts
- weather forecasting

cold gas

- GS gases
- . **cold gas**
- RT attitude control
- gas jets
- jet thrust

cold hardening

- SN (LIMITED TO HARDENING OF MATERIALS BY COOLING TO VERY LOW TEMPERATURES-- EXCLUDES PRECIPITATION HARDENING AT OR NEAR ROOM TEMPERATURE AND HARDENING VIA COLD WORKING)
- GS hardening (materials)
- . **cold hardening**
- RT brittleness
- hardness
- phase transformations
- precipitation hardening
- work hardening

cold neutrons

- DEF Neutrons of less velocity than thermal neutrons; at 152 deg. C their energy is below 0.01 eV.
- GS particles
- . elementary particles
- . . fermions
- . . . neutrons
- **cold neutrons**
- . neutral particles
- . . neutrons
- . . . **cold neutrons**
- RT baryons

cold plasmas

- UF *low temperature plasmas*
- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **cold plasmas**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **cold plasmas**
- RT collisionless plasmas
- rarefied plasmas

cold pressing

- RT coining
- compacting
- hot isostatic pressing
- hot pressing
- metal working
- ∞ pressing
- pressing (forming)
- upsetting

cold rolling

- GS forming techniques
- . cold working
- . . **cold rolling**
- RT metal working

cold strength

- GS mechanical properties
- . **cold strength**
- RT high temperature tests
- low temperature environments
- low temperature tests
- ∞ strength

cold surfaces

- UF *cold walls*
- RT cryogenic fluid storage
- ∞ surfaces

cold tolerance

- GS tolerances (physiology)

. **cold tolerance**
 RT body temperature
 exposure
 frostbite
 heat tolerance
 homeostasis
 subzero temperature
 thermoregulation
 vasoconstriction

cold traps
 GS traps
 . **cold traps**
 RT condensers (liquefiers)
 cryogenic temperature
 cryogenics
 cryotrapping
 freezing
 refrigerating
 vacuum apparatus
 vapor traps

cold walls
 USE **cold surfaces**
walls

cold water
 GS water
 . **cold water**
 RT potable water

cold weather
 GS weather
 . **cold weather**
 RT frost damage
 low temperature environments
 pressure ice
 snow cover
 subzero temperature
 weatherproofing
 winter

cold weather tests
 GS environmental tests
 . **cold weather tests**
 RT high temperature tests
 low temperature tests
 ∞ tests

cold welding
 GS welding
 . pressure welding
 . . **cold welding**
 RT adhesion
 bonding
 high vacuum
 vacuum effects

cold working
 DEF Deforming metal plasticity at a temperature lower than the recrystallization temperature. Used for cold forming.
 UF *cold forming*
 GS forming techniques
 . **cold working**
 . . cold rolling
 . . electrohydraulic forming
 . . explosive forming
 RT cladding
 coining
 deep drawing
 extruding
 forging
 ∞ joining
 magnetic forming
 metal drawing
 metal spinning
 metal working
 peening
 roll forming
 shearing
 shot peening
 stamping
 stretch forming
 stretching
 swaging
 temper (metallurgy)
 upsetting

winding

Coleoptera
 GS animals
 . invertebrates
 . . arthropods
 . . . insects
 **Coleoptera**
 beetles
 tribolia
 boll weevils

colic
 GS diseases
 . **colic**
 RT gastrointestinal system
 intestines

collagens
 RT bone mineral content
 connective tissue
 gelatins
 leather
 proteins
 skin (anatomy)

collapse
 GS **collapse**
 . gravitational collapse
 RT buckling
 deformation
 failure
 structural failure

collating
 RT binding
 compilers
 correlation
 insertion
 position (location)
 positioning

collection
 RT accumulations
 acquisition
 assembling
 input
 lumping
 museums
 ∞ receiving
 sampling
 selection
 stockpiling

collectors
 USE **accumulators**

colleges
 USE **universities**

collimation
 GS **collimation**
 . beamforming
 RT adjusting
 alignment
 beam steering
 directivity
 four-wave mixing
 microbeams
 ∞ orientation
 polarization (waves)

collimators
 DEF Optical devices which render rays of light parallel. Used for autocollimators.
 UF *autocollimators*
 GS optical equipment
 . **collimators**
 RT beam waveguides
 mirrors
 optical measurement

collinearity
 GS analysis (mathematics)
 . calculus
 . . vector analysis
 . . . **collinearity**
 . . . real variables
 . . . vector analysis
 . . . **collinearity**
 geometry

. vector analysis
 . . **collinearity**
 linearity
 . **collinearity**

collision avoidance
 UF *collision warning devices*
 GS avoidance
 . **collision avoidance**
 . . Beacon Collision Avoidance System
 RT air navigation
 air traffic
 air traffic control
 aircraft approach spacing
 aircraft guidance
 aircraft safety
 airspace
 approach control
 automatic traffic advisory and resolution
 collisions
 flight paths
 flight rules
 flight safety
 midair collisions
 National Airspace Utilization System
 radar
 radar navigation
 radio navigation
 runway incursions
 threat evaluation
 traffic control
 visual flight
 warning
 warning systems

collision parameters
 DEF In orbit computation, the distances between centers of attraction of central force fields and the extension of velocity vectors of moving objects at great distances from the centers. In gas dynamics and atomic physics, any of several parameters such as cross section, collision rate, mean free path, etc., which provide a measure of the probability of collision.
 GS **collision parameters**
 . collision rates
 RT ∞ absorption
 beam interactions
 ∞ cross sections
 mean free path
 nuclear interactions
 particle interactions
 particle theory
 scattering

collision rates
 DEF Ratios defined by the average number of collisions per second suffered by a molecule or other particle moving through a gas.
 GS collision parameters
 . **collision rates**
 rates (per time)
 . **collision rates**

collision warning devices
 USE **collision avoidance**
warning systems

collisional plasmas
 GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **collisional plasmas**
 strongly coupled plasmas
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **collisional plasmas**
 strongly coupled plasmas
 RT electron runaway (plasma physics)
 high temperature plasmas
 nuclear fusion
 plasma conductivity
 plasma density

collisionless plasmas

plasma waves

collisionless plasmas

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **collisionless plasmas**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **collisionless plasmas**
- RT cold plasmas
- ionic waves
- Kelvin-Helmholtz instability
- low density research
- magnetic islands
- rarefied plasmas

collisions

- GS **collisions**
 - . atomic collisions
 - . cometary collisions
 - . Coulomb collisions
 - . inelastic collisions
 - . ionic collisions
 - . meteorite collisions
 - . midair collisions
 - . . bird-aircraft collisions
 - . asteroid collisions
 - . molecular collisions
 - . particle collisions
- RT air bag restraint devices
- air traffic control
- aircraft accidents
- aircraft hazards
- aircraft safety
- collision avoidance
- crashes
- flight hazards
- flight paths
- gas atomization
- impact velocity
- pilot error
- recoillings
- runway incursions
- scattering

collocation

- RT assemblies
- ∞ assembly
- congruences
- position (location)
- positioning

colloidal generators

- RT atomizing
- dispersions
- ∞ generators
- plasma diffusion
- plasma generators
- sprayers
- vaporizers

colloidal propellants

- UF *cordite*
- GS mixtures
 - . dispersions
 - . . colloids
 - . . . **colloidal propellants**
- propellants
- . **colloidal propellants**
- RT gelled propellants
- slurry propellants
- solid propellants
- solid suspensions

colloidal suspensions
(added May 2001)

USE **colloids**

colloiding

- UF *lyophilization*
- GS mixing
 - . **colloiding**
- RT agitation
- atomizing
- colloids
- comminution
- compounding

dispersing
flocculating
gelation
homogenizing
precipitation (chemistry)
suspending (mixing)

colloids

- UF *colloidal suspensions*
- lyophils*
- GS mixtures
 - . dispersions
 - . . **colloids**
 - . . . aerosols
 - fog
 - . . . colloidal propellants
- RT Brownian movements
- clays
- colloiding
- electrodialysis
- electrophoresis
- emulsions
- foams
- gels
- homeostasis
- micelles
- nonNewtonian fluids
- particles
- plastisols
- ∞ separation

Colombia

- GS nations
 - . **Colombia**
- RT Llanos Orientales (Colombia)
- Magdalena-Cauca Valley (Colombia)
- South America

colonies

- RT bacteria
- bacteriology

color

- UF *coloration*
- GS electromagnetic properties
 - . optical properties
 - . . **color**
 - . . . iridescence
 - . . . stellar color
 - . . . water color
- RT brightness
- chromophores
- colorimetry
- contrast
- darkness
- dichroism
- discoloration
- electrochromism
- fading
- human factors engineering
- incandescence
- isochromatics
- light (visible radiation)
- perception
- phototropism
- ∞ physical properties
- prewhitening
- spectra
- surface properties
- symbols
- thermochromatic materials
- vegetative index
- visibility
- vision
- wave dispersion

color (particle physics)

USE **quantum chromodynamics**

color centers

- UF *F centers*
- RT ∞ centers
- Franck-Condon principle

color coding

- DEF Any system of colors used for purposes of identification. Used for color enhancement.
- UF *color enhancement*
- RT ∞ codes

coding

color enhancement

USE **color coding**

color infrared photography

- DEF A representation of temperature differences using false colors.
- GS imagery
 - . photography
 - . . multispectral photography
 - . . . infrared photography
 - **color infrared photography**
- RT color photography
- infrared imagery

color perception

USE **color vision**

color photography

- GS imagery
 - . photography
 - . . **color photography**
- RT aerial photography
- black and white photography
- cinematography
- color infrared photography
- orthophotography
- photochromism
- photomapping
- shadowgraph photography
- stereophotography
- ultraviolet photography
- underwater photography

color television

- GS telecommunication
 - . **color television**
 - television systems
 - . **color television**
- RT closed circuit television
- communicating
- communication equipment
- educational television
- satellite television
- spacecraft television
- stereotelevision
- television reception
- television transmission

color vision

- UF *color perception*
- GS vision
 - . **color vision**
- RT eye (anatomy)
- Young-Helmholtz theory

Colorado

- GS nations
 - . United States
 - . . **Colorado**
- RT Colorado Plateau (US)
- Colorado River (North America)
- Manitou (CO)
- Pike's Peak (CO)
- San Juan Mountains (CO)

Colorado Plateau (US)

- GS land
 - . **Colorado Plateau (US)**
 - landforms
 - . terraces (landforms)
 - . . plateaus
 - . . . **Colorado Plateau (US)**
- RT Arizona
- Colorado
- highlands
- New Mexico
- Utah

Colorado River (North America)

- GS rivers
 - . **Colorado River (North America)**
- RT Arizona
- Colorado
- Mexico

- Utah
- coloration*
USE **color**
- color-color diagram**
DEF A two-axis coordinate graph showing the distribution of stars or other objects with reference to different color indices.
GS diagrams
. **color-color diagram**
RT color-magnitude diagram
Hertzsprung-Russell diagram
stellar color
stellar spectra
stellar spectrophotometry
UBV spectra
- colorimetry**
GS optical measurement
. **colorimetry**
RT chemical analysis
chromatography
Coastal Zone Color Scanner
color
electrophotometry
liquid chromatography
ocean color scanner
optical measuring instruments
photometry
spectrophotometry
spectroscopy
thermochromatic materials
- color-magnitude diagram**
DEF The plot of the absolute or apparent magnitude against the color index for a group of stars. Also known as C-M diagram. Used for C-M diagram.
UF *C-M diagram*
GS diagrams
. **color-magnitude diagram**
RT asymptotic giant branch stars
color-color diagram
globular clusters
Hertzsprung-Russell diagram
horizontal branch stars
main sequence stars
star clusters
stellar color
stellar evolution
stellar magnitude
- cols*
USE **gaps (geology)**
- Columbia (Orbiter)**
UF *Space Shuttle Orbiter 102*
GS manned spacecraft
. space shuttles
. . . Space Shuttle orbiters
. . . **Columbia (Orbiter)**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. . . . **Columbia (Orbiter)**
RT manned space flight
Space Shuttle mission 31-A
Space Shuttle mission 41-A
Space Shuttle mission 61-A
Space Shuttle mission 61-C
Space Shuttle mission 61-E
∞ spacecraft
- Columbia River Basin (ID-OR-WA)**
GS landforms
. structural basins
. . river basins
. . . **Columbia River Basin (ID-OR-WA)**
RT Idaho
Oregon
rivers
- Washington
- columbium*
USE **niobium**
- Columbus module**
(added December 2007)
DEF Permanent laboratory module of the International Space Station developed by the European Space Agency. The module accommodates both internal and external experiment racks for conducting multidisciplinary research into material science, fluid physics, and the life sciences.
GS laboratories
. space laboratories
. . manned orbital laboratories
. . . **Columbus module**
manned spacecraft
. manned orbital laboratories
. . **Columbus module**
modules
. space station modules
. . **Columbus module**
RT Columbus space station
European Space Agency
International Space Station
spaceborne experiments
- Columbus space station**
SN (LIMITED TO THE AUTONOMOUS ESA SPACE STATION. FOR REFERENCES TO THE INTERNATIONAL SPACE STATION MODULE USE COLUMBUS MODULE.)
DEF A manned orbital platform originally planned by the European Space Agency to be a fully autonomous space station. This planned station was later superseded by the 'Columbus module' that became the Agency's largest contribution to the International Space Station.
GS artificial satellites
. space stations
. . **Columbus space station**
ESA spacecraft
. **Columbus space station**
manned spacecraft
. **Columbus space station**
space platforms
. **Columbus space station**
stations
. space stations
. . **Columbus space station**
RT AEPS
Automated Transfer Vehicle
bioastronautics
Columbus module
ferry spacecraft
International Space Station
intraorbit transfer vehicles
large space structures
man tended free flyers
manned orbital laboratories
military spacecraft
orbital servicing
rendezvous spacecraft
shape control
space shuttles
Space Station Freedom
space station polar platforms
- ∞ **columns**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT columns (process engineering)
columns (supports)
- columns (process engineering)**
RT absorbers (equipment)
chemical reactors
∞ columns
concentrators
condensers (liquefiers)
contactors
contractors
dehydration
dehydrogenation
distillation equipment
drying apparatus
extraction
scrubbers
- separators
vaporizers
- columns (supports)**
GS structural members
. **columns (supports)**
. . tapered columns
RT beams (supports)
∞ columns
pylon mounting
pylons
struts
studs (structural members)
Timoshenko beams
towers
- ∞ **coma**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aberration
blackout (physiology)
blackout prevention
comet heads
comet nuclei
comet tails
cometary atmospheres
comets
Grigg-Skjellerup comet
Kohoutek comet
screen effect
Tempel 2 comet
unconsciousness
- combat**
GS military operations
. **combat**
warfare
. **combat**
RT aircraft survivability
B-1 aircraft
electronic warfare
- ∞ **combination**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT admixtures
consolidation
mixtures
permutations
- combinations (mathematics)**
GS analysis (mathematics)
. combinatorial analysis
. . **combinations (mathematics)**
RT partitions (mathematics)
permutations
- combinatorial analysis**
GS analysis (mathematics)
. **combinatorial analysis**
. . binomial coefficients
. . combinations (mathematics)
. . factorials
. . partitions (mathematics)
. . permutations
RT ∞ analyzing
∞ applications of mathematics
graph theory
information theory
number theory
probability theory
set theory
- combined cycle power generation**
DEF Power generation which combines an open-cycle gas turbine and a closed-cycle steam turbine.
RT electric generators
electric power plants
energy technology
gas turbines
steam turbines
- Combined Release and Radiation Effects Sat*
USE **CRRES (satellite)**
- combined stress**
GS stresses
. **combined stress**
RT fatigue life

combustible flow

stress analysis
stress concentration
stress intensity factors

combustibility

USE **flammability**

combustible flow

GS fluid flow
. reacting flow
. . **combustible flow**

RT boundary layer combustion
combustion physics
combustion products
detonation waves
dump combustors
flame propagation
fuel flow
turbulent combustion
turbulent flames
turbulent flow

combustion

DEF A chemical process of oxidation that occurs at a rate fast enough to produce heat and usually light either as a glow or flames. Some oxidation such as that of hydrogen emits radiation outside the visible spectrum. Used for burning and burning process.

UF *burning*

burning process

GS **combustion**
. afterburning
. boundary layer combustion
. deflagration
. erosive burning
. fuel combustion
. . nuclear fuel burnup
. hydrocarbon combustion
. hypersonic combustion
. metal combustion
. propellant combustion
. . solid propellant combustion
. . . solid propellant ignition
. biomass burning
. smoldering
. spontaneous combustion
. supersonic combustion
. turbulent combustion

RT backfire
burning rate
burning time
burnout
charring
chemical explosions
combustion chambers
combustion chemistry
combustion control
combustion efficiency
combustion physics
combustion products
combustion stability
combustion synthesis
combustion temperature
combustion vibration
detonation
diffusion flames
exothermic reactions
explosions
extinguishing
fire damage
firebreaks
fires
flame propagation
flameout
flames
flammability
flashback
forest fires
heat balance
heat generation
ignition
ignition limits
incendiary ammunition
internal combustion engines
oxidation

∞ physics
quenching (cooling)
spark ignition

supersonic combustion ramjet
engines

combustion chambers

DEF Containers in which the actual burning of fuel takes place. Used for combustors.

UF *combustors*

GS **combustion chambers**

. dump combustors

RT burners

∞ chambers
combustion
engine parts
engines
flame holders
flameout
furnaces
internal combustion engines
jet engines
pistons
refractories
spark plugs
thrust chambers

combustion chemistry

DEF The study of the exothermic oxidation reactions occurring immediately before and during combustion.

GS thermochemistry

. **combustion chemistry**

RT chain reactions (chemistry)
chemical engineering
chemical reactions

∞ chemistry
combustion
combustion physics
combustion products
combustion stability
combustion synthesis
exothermic reactions
flame temperature
oxidation
reacting flow
reaction kinetics

combustion control

DEF Control of factors (temperature, preheating, draft, excess or deficient air, etc.) which affects combustion efficiency.

RT automatic control
burning rate
combustion

∞ control
engine control
fuel control
temperature control

combustion efficiency

DEF The efficiency with which fuel is burned, expressed as the ratio of the actual energy released by the combustion to the potential chemical energy of the fuel.

GS efficiency

. **combustion efficiency**

RT ACEE program
burning rate
burning time
combustion
dump combustors
exhaust gases
fuel combustion
fuel consumption
fuel-air ratio
power efficiency
propellant combustion
propellant consumption
propulsion system performance
propulsive efficiency
thermodynamic efficiency

combustion heat

USE **heat of combustion**

combustion instability

USE **combustion stability**

combustion physics

GS thermodynamics
. **combustion physics**

RT aerothermodynamics

combustible flow
combustion
combustion chemistry
Damkohler number
flame propagation
heat of combustion
ignition

∞ physics
plasmas (physics)
reaction-diffusion equations

∞ science
thermochemistry
turbulent combustion

combustion products

GS products
. reaction products
. . **combustion products**
. . . soot

RT air pollution
ashes
biomass burning
combustible flow
combustion
combustion chemistry
dilutents
dust
exhaust gases
flue gases
fly ash
high temperature gases
odors
particulates
pollution transport
polycyclic aromatic hydrocarbons
rocket exhaust
smog
smoke
vapors
wastes

combustion stability

UF *acoustic combustion*
chugging
combustion instability

GS dynamic characteristics
. dynamic stability
. . **combustion stability**
. . . flame stability
stability
. dynamic stability
. . **combustion stability**
. . . flame stability

RT axial modes
burning rate
combustion
combustion chemistry
fuel combustion
motion stability
pressure oscillations
propellant combustion
smoldering
solid propellant combustion
thermal instability
thermoacoustic effects
turbulent combustion
velocity coupling

combustion synthesis

(added April 1993)

RT annealing
cermets
combustion
combustion chemistry
exothermic reactions
functionally gradient materials
powder metallurgy
sintering

combustion temperature

GS temperature
. **combustion temperature**

RT combustion
erosive burning
flame temperature
flash point
ignition temperature
operating temperature

spontaneous combustion

combustion vibration
 GS vibration
 . **combustion vibration**
 RT combustion
 elastic waves
 structural stability

combustion waves
 USE **flame propagation**

combustion wind tunnels
 GS test facilities
 . wind tunnels
 . . **combustion wind tunnels**
 RT hypersonic wind tunnels
 hypervelocity wind tunnels

combustors
 USE **combustion chambers**

Comet 4 aircraft
 UF *de Havilland DH 106 aircraft*
DH 106 aircraft
 GS commercial aircraft
 . **Comet 4 aircraft**
de Havilland aircraft
 . **Comet 4 aircraft**
Hawker Siddeley aircraft
 . **Comet 4 aircraft**
 jet aircraft
 . **Comet 4 aircraft**
 monoplanes
 . **Comet 4 aircraft**
 passenger aircraft
 . **Comet 4 aircraft**
 RT ∞ aircraft

comet heads
 GS celestial bodies
 . **comet heads**
 RT ∞ coma
 cometary atmospheres
 solar system

comet nuclei
 GS celestial bodies
 . **comet nuclei**
 RT ∞ coma
 Comet Nucleus Tour
 cometary atmospheres
 Oort cloud
 Rosetta mission
 solar system
 Stardust Mission

Comet Nucleus Tour
(added February 1999)
 DEF A NASA Discovery-class mission to acquire imagery and comparative spectral maps of comet nuclei and analyze comet dust flows. The mission spacecraft will fly to within 100 kilometers of at least three near-Earth comets including Comet Encke, Comet Schwassmann-Wachmann, and Comet d'Arrest.
 UF *CONTOUR (mission)*
 GS space missions
 . flyby missions
 . . **Comet Nucleus Tour**
 RT comet nuclei
 Encke comet
 Schwassmann-Wachmann comet
 swingby technique

Comet Rendezvous Asteroid Flyby Mission
(added November 1988)
 UF *CRAF mission*
 GS space missions
 . asteroid missions
 . . **Comet Rendezvous Asteroid Flyby Mission**
 . flyby missions
 . . **Comet Rendezvous Asteroid Flyby Mission**
 RT Mariner Mark 2 Spacecraft
 ∞ missions
 NASA space programs
 Near Earth Asteroid Rendezvous Mission

Rosetta mission

comet tails
 GS celestial bodies
 . **comet tails**
 RT ∞ coma
 cometary atmospheres
 Grigg-Skjellerup comet
 radiation pressure
 solar system
 solar wind

cometary atmospheres
 DEF The region of the coma of a comet as well as the gaseous part surrounding the coma that often is a hydrogen atmosphere that contains particulate matter.
 RT astronomical photometry
 ∞ atmospheres
 ∞ coma
 comet heads
 comet nuclei
 comet tails
 cometary magnetospheres
 comets
 ionopause

cometary collisions
(added June 1994)
 GS collisions
 . **cometary collisions**
 RT asteroid collisions
 craters
 Cretaceous-Tertiary boundary
 Deep Impact Mission
 hypervelocity impact
 meteorite collisions
 near Earth objects
 shatter cones
 Shoemaker-Levy 9 comet

cometary magnetospheres
(added September 1988)
 RT cometary atmospheres
 comets
 ∞ magnetospheres

comets
 DEF Luminous members of the solar system composed of a head, or coma, and often with a spectacular gaseous tail extending a great distance from the head.
 GS celestial bodies
 . **comets**
 . . Arend-Roland comet
 . . Austin comet
 . . Brorsen-Metcalf comet
 . . Encke comet
 . . Giacobini-Zinner comet
 . . Grigg-Skjellerup comet
 . . Hale-Bopp comet
 . . Halley's comet
 . . Humason comet
 . . IRAS-Araki-Alcock comet
 . . Kohoutek comet
 . . Morehouse comet
 . . Mrkos comet
 . . Okazaki-Levy-Rudenko comet
 . . Schwassmann-Wachmann comet
 . . Shoemaker-Levy 9 comet
 . . Tempel 1 comet
 . . Tempel 2 comet
 . . West comet
 . . Wild 2 comet
 RT Bessel-Bredichin theory
 ∞ coma
 cometary atmospheres
 cometary magnetospheres
 Deep Impact Mission
 hypothetical planets
 Kuiper belt
 meteorite parent bodies
 meteoroid showers
 meteoroids
 near Earth objects
 Oort cloud
 solar system

comfort
 RT acoustics

air conditioning
 efficiency
 environmental engineering
 glare
 human factors engineering
 humidity
 illuminating
 ∞ performance
 physiological effects
 psychological effects
 reward (psychology)
 riding quality
 seats
 temperature
 ventilation

command and control
 UF *command-control*
 RT ∞ automation
 autonomy
 AWACS aircraft
 ∞ commands
 ∞ control
 decision making
 E-2 aircraft
 E-3A aircraft
 E-4A aircraft
 ground support equipment
 logistics
 management
 surveillance
 targets

command guidance
 DEF The guidance of a spacecraft or rocket by means of electronic signals sent to receiving devices in the vehicle. Used for command systems.
 UF *command systems*
 GS guidance (motion)
 . **command guidance**
 RT ∞ commands
 ground support equipment
 injection guidance
 midcourse guidance
 rendezvous guidance
 rendezvous spacecraft
 spacecraft guidance
 terminal guidance

command languages
 DEF Vocabularies to interactively execute activities such as computer retrieval or input.
 GS languages
 . **command languages**
 . . query languages
 RT human-computer interface
 information retrieval

command modules
 GS compartments
 . **command modules**
 modules
 . spacecraft modules
 . . **command modules**
 spacecraft components
 . spacecraft modules
 . . **command modules**
 RT Apollo spacecraft
 ∞ commands
 Marquardt R4D engine
 service modules
 spacecraft docking modules
 spacerec transfer

command service modules
 UF *CSM*
 GS modules
 . spacecraft modules
 . . **command service modules**
 spacecraft components
 . spacecraft modules
 . . **command service modules**
 RT Apollo project
 lunar orbits
 manned spacecraft
 Skylab 1
 Skylab 2
 Skylab 3
 Skylab 4

commands

spacecraft docking modules

command systems

USE **command guidance**

command-control

USE **command and control**

Commando aircraft

USE **C-46 aircraft**

∞ commands

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT autonomy
command and control
command guidance
command modules
decisions

commerce

GS **commerce**

. electronic commerce
RT commercial spacecraft
consumption
costs
economic development
finance
gross national product
industrial areas
industries
∞ investment
liabilities
losses
manufacturing
market research
marketing
PERT
product development
project management
risk
supplying

commerce lab

RT government/industry relations
∞ microgravity applications
mission planning
space commercialization
Space Shuttle payloads
user requirements

commercial aircraft

UF *commercial aviation*

GS **commercial aircraft**

. Boeing 707 aircraft
. Boeing 720 aircraft
. Boeing 727 aircraft
. Boeing 733 aircraft
. Boeing 737 aircraft
. Boeing 747 aircraft
. Boeing 757 aircraft
. Boeing 767 aircraft
. Boeing 777 aircraft
. Comet 4 aircraft
. CV-340 aircraft
. CV-440 aircraft
. CV-880 aircraft
. CV-990 aircraft
. DC 3 aircraft
. DC 7 aircraft
. DC 8 aircraft
. DC 9 aircraft
. DC 10 aircraft
. DH 121 aircraft
. DO-328 aircraft
. Electra aircraft
. European Airbus
. . A-300 aircraft
. . A-310 aircraft
. . A-320 aircraft
. . A-330 aircraft
. . A-340 aircraft
. . A-380 aircraft
. F-28 transport aircraft
. IL-62 aircraft
. Jetstream aircraft
. L-1011 aircraft
. Lear jet aircraft
. light transport aircraft
. MD 11 aircraft

. MD 80 aircraft
. P-160 aircraft
. SE-210 aircraft
. supersonic commercial air transport
. . Boeing 2707 aircraft
. . TU-144 aircraft
. Boeing 717 aircraft
. TU-104 aircraft
. TU-124 aircraft
. TU-134 aircraft
. TU-154 aircraft
. TU-204 aircraft
. VC-10 aircraft
RT air transportation
∞ aircraft
airline operations
cargo aircraft
civil aviation
commuter aircraft
EH-101 helicopter
general aviation aircraft
ground effect machines
jet aircraft
passenger aircraft
rotary wing aircraft
supersonic transports
transport aircraft
utility aircraft
V/STOL aircraft
water takeoff and landing aircraft

commercial aviation

USE **civil aviation**
commercial aircraft

commercial energy

RT allocations
distributing
domestic energy
economic factors
∞ energy
energy consumption
energy conversion
industrial energy
transportation energy

commercial off-the-shelf products

(added March 2001)

DEF Readily-available, commercially-developed products; often referring to commercial products that can be used as an alternative to in-house or customized product development.

UF *COTS products*

GS products

. **commercial off-the-shelf products**

RT commercialization
cost effectiveness
government procurement
procurement management
product development

commercial spacecraft

DEF Commercial satellites and other spacecraft operated by the private sector.

GS **commercial spacecraft**

. RCA Satcom satellites

RT aerospace industry
aerospace vehicles
commerce
communication satellites
industries
space commercialization
space industrialization
space manufacturing
space processing
VentureStar launch vehicle

commercialization

(added March 1997)

GS **commercialization**

. space commercialization
RT commercial off-the-shelf products
government/industry relations
marketing
product development
technology transfer

comminution

UF *attrition (materials)*

GS **comminution**

. crushing
. grinding (comminution)
. shredding

RT atomizing
beneficiation
chipping
colloiding
crushers
cutting
disintegration
flaking
fragmentation
gas atomization
grinding mills
metal powder
∞ milling
particle production
powder metallurgy
∞ reduction

Committee on Space Research

UF *COSPAR (committee)*

RT ∞ aerospace sciences
conferences
European space programs
international cooperation
NASA programs
programs

commodities

RT government procurement
manufacturing
market research
procurement management
products

Common Business Oriented Language

USE **Cobol**

commonality

DEF The factors which are common in equipment or systems.

GS standardization

. **commonality**

RT aircraft equipment
cost reduction
efficiency
equipment specifications
ground support systems
interoperability
spacecraft components
specifications

Commonwealth of Independent States

(added September 1993)

UF *CIS*

RT Asia
Europe
nations
Russian Space Program

communicating

GS **communicating**

. aircraft communication
. electrocutaneous communication
. ground-air-ground communication
. information dissemination
. . messages
. . selective dissemination of information
. interstellar communication
. lip reading
. point to point communication
. . NASCOM network
. underground communication
. verbal communication
. . conversation

RT color television
computer conferencing
crosstalk
education
frequency assignment
information
information flow
information management
message processing
Morse code
stereotelevision
systems engineering
TDR satellites

technology transfer
telecommunication

communication

GS telecommunication
 . **communication**
 . . facsimile communication
 . . . automatic picture transmission
 . . line of sight communication
 . . optical communication
 . . . free-space optical communication
 . . ship to shore communication
 . . underwater communication
 . . voice communication
 . . . telephony
 . . quantum communication
RT computer conferencing
information
information flow
information management
Marisat satellites
message processing
spread spectrum transmission
technology transfer

communication cables

GS transmission lines
 . **communication cables**
 . . coaxial cables
RT cable television
∞ cables
electric wire
optical fibers
submarine cables
waveguides

communication equipment

GS **communication equipment**
 . Advanced Vidicon Camera System (AVCS)
 . closed circuit television
 . duplexers
 . interphones
 . PLAT system
 . radio receivers
 . . superheterodyne receivers
 . . transmitter receivers
 . . whistler recorders
 . spacecraft television
 . . digital spacecraft television
 . . Ranger block 3 television system
 . . satellite television
 . stereotelevision
RT antenna components
biotelemetry
color television
Earth terminals
educational television
∞ equipment
furlable antennas
high definition television
inertialess steerable antennas
information adaptive system
logarithmic receivers
matched filters
orbiting dipoles
P.A.C.M. telemetry
pulse frequency modulation
pulse frequency modulation telemetry
radio communication
radio equipment
radio relay systems
radio telegraphy
radio telemetry
spherical antennas
telemetry
telephony
television systems
unified S band

communication networks

DEF Organization of facilities for the rapid reception of, transmission of, and/or relaying of electrical impulses for reproduction as printed messages, pictures, or other data.

GS networks
 . **communication networks**
 . . Aloha system
 . . Deep Space Network
 . . internets

. . . ARPA computer network
. . . World Wide Web
. . . Iridium network
. . . local area networks
. . . NASCOM network
. . . VSAT (network)
. . . wide area networks
RT access control
asynchronous transfer mode
broadcasting
carrier sense multiple access
data links
defense communications system (DCS)
demand assignment multiple access
electronic bulletin boards
electronic mail
frequency division multiplexing
network control
packet switching
packets (communication)
protocol (computers)
pulse communication
radio communication
satellite constellations
satellite networks
telecommunication
video conferencing

communication satellites

DEF Satellites designed to reflect or relay electromagnetic signals used for communication.

UF *Iridium satellites*
GS artificial satellites
 . **communication satellites**
 . . ACTS
 . . aeronautical satellites
 . . . Aerosat satellites
 . . Arcomsat
 . . Communications Technology Satellite
 . . . ComStar C
 . . . NATO 3B satellite
 . . ComStar satellites
 . . direct broadcast satellites
 . . European Communications Satellite
 . . Intelsat satellites
 . . low frequency transionospheric satellites
 . . L-Sat
 . . Marecs maritime satellites
 . . Marots (ESA)
 . . Molniya satellites
 . . MSAT
 . . Palapa satellites
 . . . Palapa 2 satellite
 . . . Raduga satellite
 . . RCA Satcom satellites
 . . Relay satellites
 . . . Relay 1 satellite
 . . . Relay 2 satellite
 . . Symphonie satellites
 . . SYNCOM satellites
 . . . Early Bird satellites
 . . . SYNCOM 1 satellite
 . . . SYNCOM 2 satellite
 . . . SYNCOM 3 satellite
 . . . SYNCOM 4 satellite
 . . TDR satellites
 . . Westar satellites

RT Advent Project
ATS
carrier to noise ratios
commercial spacecraft
Comsat program
Defense Communications Satellite System
demand assignment multiple access
domestic satellite communications systems
downlinking
Earth terminal measurement system
Echo project
electronic mail
Fleet Satellite Communication System
geophysical satellites
ground-air-ground communication

HET experiment
Indian space program
INMARSAT satellites
Iridium network
land mobile satellite service
mobile communication systems
network control
orbit spectrum utilization
passive satellites
radio relay systems
satellite communication
satellite constellations
satellite networks
Skynet satellites
space commercialization
space communication
Synchronous Communications Satellite Proj
Synchronous Meteorological Satellite
synchronous platforms
synchronous satellites
telecommunication
teleconferencing
Telstar project
unmanned spacecraft
uplinking
wireless communication

communication systems

USE **telecommunication**

communication theory

UF *statistical communication theory*
RT cross coupling
cybernetics
data transmission
high level languages
information theory
intelligibility
languages
lattices (mathematics)
messages
network synthesis
quantum communication
random noise
random processes
redundancy
semantics
sentences
signal to noise ratios
switching theory
∞ theories

Communications Technology Satellite

UF *Hermes satellite*
GS artificial satellites
 . communication satellites
 . . **Communications Technology Satellite**
 . . . ComStar C
 . . . NATO 3B satellite
RT Canada
Canadian space program
international cooperation
NASA programs
synchronous satellites
technology assessment
technology utilization

communities

GS **communities**
 . inhabitants
 . . mountain inhabitants
 . . space colonies
RT cities
demography
ethnic factors
integrated energy systems
megalopolises
minorities
Modular Integrated Utility System
nations
police
politics
regimes
sociology
Starsite program
United Nations
urban development
urban planning

commutation

urban research

commutation

DEF Sequential sampling, on a repetitive timesharing basis, of multiple data sources for transmitting or recording, or both, on a single channel.

RT commutators
interpolation
switching theory

commutators

DEF Devices used to accomplish time division multiplexing by repetitive sequential switching.

GS **commutators**
. decommutators
RT armatures
commutation
distributors
electric contacts
electric motors
∞ rotating electrical machines
rotating generators

commuter aircraft

(added October 1988)

GS passenger aircraft
. **commuter aircraft**
. . . ATR-72 aircraft
RT air transportation
∞ aircraft
commercial aircraft
general aviation aircraft

compact disk read-only memory devices

USE **optical disks**

compact galaxies

(added November 1988)

GS celestial bodies
. galaxies
. . . **compact galaxies**
RT galactic structure

compacting

RT agglomeration
cold pressing
densification
hot isostatic pressing
hot pressing
powder metallurgy
presses
∞ pressing
pressing (forming)
vibration

compactness

USE **void ratio**

companding

DEF A process in which compression is followed by expansion, as in noise reduction systems.

RT frequency modulation
modulation
radio transmission
signal processing
signal to noise ratios

companion stars

GS celestial bodies
. stars
. . . double stars
. . . . binary stars
. . . . **companion stars**
. Nemesis (star)
RT brown dwarf stars
parallax
stellar motions
triple stars
variable stars
x ray binaries

comparator circuits

GS circuits
. **comparator circuits**
RT clipper circuits
delay circuits
discrimination

time discrimination

comparators

DEF In computer operations, devices or circuits for comparing information from two sources.

GS measuring instruments
. **comparators**
RT anticoincidence detectors
discriminators
error signals
harmonic generators
monochromators
reflectometers

comparison

RT analogies
cost analysis
Earth analogs
economic analysis
estimates
evaluation
examination
intercalibration
matching
pattern registration
ranking

compartmentation

USE **compartments**

compartments

UF *compartmentation*
GS **compartments**
. air locks
. . . airlock modules
. aircraft compartments
. command modules
. pressurized cabins
. spacecraft cabins
. test chambers
. . . anechoic chambers
. . . pressure chambers
. . . . hyperbaric chambers
. . . . vacuum chambers
. . . reverberation chambers
RT bays (structural units)
∞ cells
crew experiment stations
crew observation stations
crew workstations
enclosures
modules
rooms
space station modules
spacecraft modules

COMPASS (programming language)

GS languages
. programming languages
. . . Assembly language
. . . . **COMPASS (programming language)**
RT compilers
computer programming

compasses

DEF Instruments for indicating a horizontal reference direction, specifically, magnetic compasses.

GS measuring instruments
. indicating instruments
. . **compasses**
. . . gyrocompasses
. . . magnetic compasses
. . . solar compasses
navigation aids
. navigation instruments
. . **compasses**
. . . gyrocompasses
. . . magnetic compasses
. . . solar compasses
RT aircraft instruments
beacons
buoys
flight instruments
radar beacons
radio direction finders

transits

compatibility

DEF A characteristic ascribed to a major subsystem that indicates it functions well in the overall system. Also applied to the overall system with reference to how well its various subsystems work together, as in 'the vehicle has good compatibility.' Also applied to materials which can be used in conjunction with other materials and not react with each other under normal operating conditions.

GS **compatibility**
. biocompatibility
. chemical compatibility
. electromagnetic compatibility
. systems compatibility
RT acceptability
affinity
conventions
permissivity
stability
suitability
versatility

∞ compensation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT allowances
errors
image motion compensation
instrument compensation
temperature compensation
transient response

compensators

RT balance
bias
compulsators
error signals
feedback
loop transfer recovery
video equipment

compensatory tracking

GS tracking (position)
. **compensatory tracking**
RT infrared tracking
optical tracking
radar tracking

competition

RT athletes
human performance
human reactions
physical fitness

compilation (computers)

USE **compilers**

compiler programs

USE **compilers**

compilers

SN (PROGRAM-MAKING ROUTINES FOR DIGITAL COMPUTERS)
UF *compilation (computers)*
compiler programs
GS computer programs
. **compilers**
RT assembler routines
autocoders
C (programming language)
collating
COMPASS (programming language)
computer program integrity
computer systems programs
data conversion routines
disk operating system (DOS)
FORTRAN
operating systems (computers)
parsing algorithms
Pascal (programming language)
PL/1
programmed instruction
subroutines

∞ complement

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF An angle equal to 90 deg. minus a given angle. The true complement of any quantity in positional notation, i.e. the quantity which, when added to the first quantity, gives the least quantity containing one more place. The base-minus-one complement of any quantity in positional notation; i.e., the quantity which when added to the first quantity containing the same number of places.

RT ∞ biology
complements (mathematics)
personnel

complement (biology)

RT ∞ biology
∞ complement
hemolysis

complementary DNA

(added August 2004)

GS acids
. nucleic acids
. . deoxyribonucleic acid
. . . **complementary DNA**
biopolymers
. nucleic acids
. . deoxyribonucleic acid
. . . **complementary DNA**
organic compounds
. nucleic acids
. . deoxyribonucleic acid
. . . **complementary DNA**

complementary metal oxide semiconductors

USE **CMOS**

complements (mathematics)

RT angles (geometry)
∞ complement
∞ logic

completeness

RT achievement
computer program integrity
integrity

complex compounds

DEF Chemical compounds in which part of the molecular bonding is of the coordinate type.

RT ∞ chemical compounds
molecular structure
transition metals

complex numbers

RT geometry
integers
∞ numbers
real numbers

complex systems

RT parameter identification
reliability engineering
system identification
∞ systems
systems analysis

complex variables

GS analysis (mathematics)
. **complex variables**
. . Airy function
. . analytic functions
. . . entire functions
. . Bessel functions
. . . Hankel functions
. . Cauchy integral formula
. . conformal mapping
. . conjugates
. . . conjugate points
. . exponential functions
. . . logarithms
. . gamma function
. . harmonic functions
. . hyperbolic functions
. . hypergeometric functions
. . Laguerre functions
. . Legendre functions
. . Liouville theorem
. . Mathieu function
. . meromorphic functions
. . . elliptic functions

. . . rational functions
. . nonholonomic equations
. . orthogonal functions
. . . Walsh function
. . Schwarz-Christoffel transformation
. . singularity (mathematics)
. . . naked singularities
. . spherical harmonics

RT aperiodic functions
complexity
dependent variables
Euler-Cauchy equations
functional analysis
Joukowski transformation
maximum principle
real variables
Schauder fixpoint theorem
stability derivatives
Theodorsen transformation
uniqueness theorem
∞ variable

complexity

UF *complication*
GS **complexity**
. task complexity
RT complex variables
feedback
∞ performance
statistical distributions

compliance (elasticity)

USE **modulus of elasticity**

complication

USE **complexity**

component reliability

GS reliability
. **component reliability**
RT aircraft reliability
circuit reliability
cumulative damage
process control (industry)
quality control
retirement for cause
spacecraft reliability
structural reliability
systems health monitoring

∞ **components**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF An article which is a self-contained element of a complete operating unit and performs a function necessary to the operation of that unit. Used for parts.

UF *parts*
RT accessories
antenna components
assemblies
computer components
content
engine parts
fractions
ingredients
missile components
modules
redundant components
segments
spacecraft components
spare parts
structural members
subassemblies

composite functions

GS analysis (mathematics)
. real variables
. . **composite functions**
functions (mathematics)
. **composite functions**

composite materials

DEF Structural materials of metals, ceramics, or plastics with built-in strengthening agents which may be in the form of filaments, foils, powders, or flakes of a different compatible material. Used for composites and pyrographalloy.

UF *composites*

pyrographalloy

GS **composite materials**

. Boral
. boron reinforced materials
. . aluminum boron composites
. . boron-epoxy composites
. carbon-carbon composites
. ceramic matrix composites
. . carbon-silicon carbide composites
. cermets
. composite propellants
. fiber composites
. . aramid fiber composites
. . braided composites
. . carbon fiber reinforced plastics
. . . carbon-phenolic composites
. . glass fiber reinforced plastics
. . woven composites
. functionally gradient materials
. glassy carbon
. hybrid composites
. metal matrix composites
. . aluminum boron composites
. . aluminum graphite composites
. . Borsic (tradename)
. . eutectic composites
. particulate reinforced composites
. plywood
. polymer matrix composites
. . epoxy matrix composites
. . . boron-epoxy composites
. . . graphite-epoxy composites
. . graphite-polyimide composites
. reinforced plastics
. . carbon fiber reinforced plastics
. . . carbon-phenolic composites
. . . glass fiber reinforced plastics
. . . micarta
. resin matrix composites
. . boron-epoxy composites
. . carbon-phenolic composites
. . graphite-epoxy composites
. superhybrid materials
. . graphite-epoxy composites
. nanocomposites
. three dimensional composites
. whisker composites
RT aircraft construction materials
airframe materials
aramid fibers
bimetals
boron fibers
carbon fibers
chemical vapor infiltration
cladding
coatings
∞ construction materials
E glass
fiber orientation
fiber pullout
fiber pushout
fiber volume fraction
fiber-matrix interfaces
fibers
insulation
interlaminar stress
laminates
lay-up
low density research
∞ materials
∞ matrices
matrix materials
metals
micromechanics
mixtures
modular ratios
monotectic alloys
multilayer insulation
ply orientation
powder metallurgy
preforms
prepregs
reinforcement (structures)
reinforcing fibers
reinforcing materials
resin film infusion
resin transfer molding
rigid structures
∞ rovings

composite propellants

- S glass
- sandwich structures
- sheet molding compounds
- smart materials
- solid suspensions
- spiral wrapping
- stacking sequence (composite materials)
- thermosetting resins

composite propellants

DEF Solid rocket propellants consisting of a fuel and an oxidizer neither of which would burn without the presence of the other.

GS composite materials

- . **composite propellants**
- propellants
- . solid propellants
- . . **composite propellants**

RT case bonded propellants
double base propellants
double base rocket propellants
explosives
fuel production
plastic propellants
plastisols
polysulfides
polyurethane resins
propellant additives
propellant binders
solid rocket propellants

composite structures

GS **composite structures**

- . laminates
- . . Boral
- . . plywood

RT boron-epoxy composites
ceramic matrix composites
clamped structures
functionally gradient materials
glass fiber reinforced plastics
honeycomb cores
honeycomb structures
hybrid structures
lay-up
pultrusion
resin film infusion
sheet molding compounds
smart structures
steel structures

∞ structures

composite wrapping

RT ceramic fibers
fiber composites
filament winding
isotenoid structures
spiral wrapping

∞ wrap

composites

USE **composite materials**

∞ composition

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT composition (property)

- content
- formulations
- ingredients
- stoichiometry

composition (property)

GS **composition (property)**

- . atmospheric composition
- . . atmospheric moisture
- . . ionospheric composition
- . body composition (biology)
- . chemical composition
- . . carbon dioxide concentration
- . . stellar composition
- . concentration (composition)
- . . atom concentration
- . . carbon dioxide concentration
- . . fiber volume fraction
- . . low concentrations
- . . mascons
- . . meteoroid concentration
- . . moisture content

- . . . atmospheric moisture
- . gas composition
- . . carbon dioxide concentration
- . isotope ratios
- . lunar composition
- . meteoritic composition
- . planetary composition
- . plasma composition

RT ∞ composition

- gradients
- Henry law
- lumping
- mixtures
- Raoult law
- solutions
- stoichiometry

composting

GS disposal

- . waste disposal
- . . **composting**
- management
- . waste management
- . . waste disposal
- . . . **composting**

RT garbage
metabolic wastes
shredding
solid wastes
waste treatment
waste utilization

compound A

GS halogen compounds

- . fluorine compounds
- . . fluorides
- . . . **compound A**
- . halides
- . . fluorides
- . . . **compound A**

RT ∞ chemical compounds

compound helicopters

GS V/STOL aircraft

- . rotary wing aircraft
- . . helicopters
- . . . **compound helicopters**
- S-67 helicopter

RT aeronautical engineering
air transportation

∞ aircraft

- aircraft configurations
- aircraft design
- helicopter design
- short takeoff aircraft
- vertical takeoff aircraft

compounding

UF *milling (mixing)*

GS mixing

- . **compounding**

RT colloidizing
dissolving
grinding (comminution)
homogenizing

∞ milling

∞ compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ chemical compounds

- potting compounds

compressed air

GS gases

- . gas mixtures
- . . air
- . . . **compressed air**
- mixtures
- . solutions
- . . gas mixtures
- . . . air
- **compressed air**

RT compressors
drills
energy storage
man operated propulsion systems
oxygen supply equipment
pneumatic equipment

∞ pumping

compressed gas

DEF Any gaseous materials or mixtures having a container pressure exceeding 40 psi at 70 degrees F, or 104 psi at 130 degrees F. Compressed gases are further defined as flammable or nonflammable.

GS gases

- . **compressed gas**
- . . high pressure oxygen

RT compressors
gas pressure
pneumatic control

compressed video

USE **video compression**

compressibility

DEF The property of a substance, as air, by virtue of which its density increases with increase in pressure.

GS mechanical properties

- . **compressibility**

RT bulk modulus
compressible flow
compressive strength
density (mass/volume)
equations of state
Gruneisen constant
hydroelasticity
incompressibility
metal powder
porosity
powder (particles)

compressibility effects

RT buffeting
compressible flow

∞ effects

- flutter
- heat transfer
- oscillating flow
- pressure effects
- relaxation (physiology)
- secondary flow
- supersonic flow
- transonic flow

compressible boundary layer

GS boundary layers

- . **compressible boundary layer**

RT laminar boundary layer
three dimensional boundary layer
turbulent boundary layer

compressible flow

DEF In aerodynamics, flow at speeds sufficiently high that density changes in the fluid cannot be neglected.

GS fluid flow

- . **compressible flow**
- . . Ringleb flow
- . . transonic flow

RT aerodynamics

- air flow
- Cartan space
- compressibility
- compressibility effects
- Crocco method
- gas flow
- Hugoniot equation of state
- hypersonic flow
- incompressible flow
- magneto hydrodynamic flow
- Newton pressure law
- stagnation flow
- stagnation pressure
- stagnation temperature
- subsonic flow
- supersonic flow

compressible fluids

RT aerodynamic heating
Crocco method
fluid power

∞ fluids

- hydroelasticity
- ideal fluids
- incompressible fluids

Maxwell fluids
method of characteristics
P waves
superfluidity

compressing

UF *recompression*
squeezing
GS **compressing**
. plasma compression
. speech baseband compression
RT adiabatic conditions
anvils
axial compression loads
blowing
compressors
concentrating
densification
internal compression inlets
magnetic compression
mechanical properties
metal powder
piston theory
∞ pressing
pressure
pressure reduction
pulse compression
∞ pumping
rarefaction
squeeze casting
superchargers

compression loads

GS loads (forces)
. **compression loads**
. . axial compression loads
. . impact loads
RT aerodynamic loads
axial loads
buckling
compressive strength
contact loads
dynamic loads
edge loading
kink bands
kinking
mechanical properties
shock loads
static loads
structural design criteria
thrust loads

compression ratio

DEF In internal combustion engines, the ratio between the volume displaced by the piston plus the clearance space, to the volume of the clearance space.

GS ratios
. **compression ratio**
RT efficiency
fuel-air ratio

compression testers

USE **compression tests**

compression tests

UF *compression testers*
meteorite compression tests
RT creep tests
destructive tests
hardness tests
impact tests
load tests
∞ materials tests
static tests
∞ tests

compression waves

DEF In acoustics, waves in an elastic medium which cause an element of the medium to change its volume without undergoing rotation. Mathematically, a compression wave is one whose velocity wave has zero curl.

GS elastic waves
. **compression waves**
RT P waves
wave rotors

compressive strength

DEF The maximum load sustained by a

standard specimen of a material when subjected to a crushing force.

GS mechanical properties
. **compressive strength**
RT compressibility
compression loads
ductility
elastic properties
fiber strength
high strength
load carrying capacity
Poisson ratio
resilience
shear strength
∞ strength
toughness

compressor blades

DEF Blades which are either rotor blades or stator blades in axial-flow compressors; sometimes used restrictively (and ambiguously) for compressor rotor blades.

GS turbomachine blades
. **compressor blades**
RT ∞ blades
centrifugal compressors
fan blades
rotating stalls
rotor blades (turbomachinery)
stator blades
turbine blades
turbocompressors
vanes

compressor efficiency

GS efficiency
. **compressor efficiency**
RT power efficiency
thermodynamic efficiency

compressor rotors

GS rotating bodies
. rotors
. . **compressor rotors**
RT centrifugal compressors
compressors
∞ fans
impellers
rotor blades (turbomachinery)
turbine wheels
turbocompressors

compressors

SN (EXCLUDES DATA COMPRESSORS)
DEF Machines for compressing air or other fluids.

GS **compressors**
. centrifugal compressors
. superchargers
. supersonic compressors
. transonic compressors
. turbocompressors
RT air conditioning equipment
blowers
compressed air
compressed gas
compressing
compressor rotors
condensers (liquefiers)
coolers
∞ fans
refrigerating machinery
stators
turbomachinery
vacuum pumps
vaneless diffusers

Compton effect

DEF The decrease in frequency and increase in wavelength of x rays or gamma rays when scattered by free electrons.

GS scattering
. **Compton effect**
RT coherent scattering
∞ effects
inelastic scattering
nuclear reactions
photoelectricity

Sunyaev-Zeldovich effect

Compton Gamma Ray Observatory
USE **Gamma Ray Observatory**

compulsators

DEF Compensated pulsed alternators, i.e., single phased alternators designed for pulsed power duty with air gap armature windings and air gap compensating windings.

RT AC generators
compensators
electric power supplies
pulse generators

computation

UF *calculation*
GS **computation**
. computational geometry
. orbit calculation
. . minimum variance orbit
determination
. . orbital position estimation
. quantum computation
RT addition
∞ applications of mathematics
arithmetic
calculators
computational astrophysics
computational electromagnetics
computational fluid dynamics
computers
data processing
data reduction
dividing (mathematics)
flux vector splitting
∞ formulas
ill-conditioned problems
(mathematics)
interpolation
linear prediction
multiplication
subtraction
sums
systolic arrays

computational aeroacoustics

(added November 2008)

DEF Computational methods used for the numerical simulation of acoustic fields generated by and interacting with fluid flows.

GS acoustics
. aeroacoustics
. . **computational aeroacoustics**
analysis (mathematics)
. numerical analysis
. . **computational aeroacoustics**
RT aerodynamic noise
boundary conditions
computational fluid dynamics
Ffowcs Williams-Hawkings equation
finite difference theory
noise prediction (aircraft)
sound waves
wave propagation

computational aerodynamics

(added April 1997)

USE **computational fluid dynamics**

computational astrophysics

GS analysis (mathematics)
. numerical analysis
. . **computational astrophysics**
astrophysics
. **computational astrophysics**
RT computation
computerized simulation
laboratory astrophysics
mathematical models
∞ science

computational chemistry

DEF A complementary method for determining properties of gases, solids, and their interactions from first principle calculations. It extends testing capabilities to realms that are too dangerous or too costly to obtain experimentally.

GS analysis (mathematics)

- . numerical analysis
- . . **computational chemistry**
- RT ∞ chemistry
- computer techniques
- computerized simulation
- configuration interaction
- physical chemistry
- self consistent fields
- ∞ tests

computational electromagnetics

(added March 1995)

- GS analysis (mathematics)
- . numerical analysis
- . . **computational electromagnetics**
- RT computation
- computational fluid dynamics
- electromagnetism
- finite difference time domain method
- meshfree methods
- parallel processing (computers)
- perfectly matched layers
- radar cross sections

computational fluid dynamics

DEF The field of study concerned with the application of high-speed digital computers to solve the complete nonlinear partial differential equations governing viscous fluid flows.

- UF *computational aerodynamics*
- GS analysis (mathematics)
- . numerical analysis
- . . **computational fluid dynamics**
- mechanics (physics)
- . fluid mechanics
- . . fluid dynamics
- . . . **computational fluid dynamics**

- RT Baldwin-Lomax turbulence model
- BGK model
- Burnett equations
- computation
- computational aeroacoustics
- computational electromagnetics
- computational mechanics
- convection-diffusion equation
- direct numerical simulation
- ∞ dynamics
- equations of motion
- finite element method
- flow deflection
- flow equations
- flux difference splitting
- flux vector splitting
- Godunov method
- grid generation (mathematics)
- hydrodynamic coefficients
- interactional aerodynamics
- k-epsilon turbulence model
- k-omega turbulence model
- large eddy simulation
- meshfree methods
- multiblock grids
- multigrid methods
- Navier-Stokes equation
- numerical flow visualization
- panel method (fluid dynamics)
- relaxation method (mathematics)
- Reynolds averaging
- space-time CE/SE method
- spectral methods
- structured grids (mathematics)
- turbulence models
- TVD schemes
- unstructured grids (mathematics)
- upwind schemes (mathematics)
- vortex in cell technique
- vortex lattice method

computational geometry

(added August 1988)

- GS computation
- . **computational geometry**
- geometry
- . **computational geometry**
- RT computer aided design
- Voronoi diagrams

computational grids

- UF *grids (mathematics)*
- mesh (mathematics)*

- GS coordinates
- . **computational grids**
- . . structured grids (mathematics)
- . . . multiblock grids
- . . unstructured grids (mathematics)
- RT grid generation (mathematics)
- grid refinement (mathematics)
- ∞ grids
- mathematical models
- multigrid methods
- numerical analysis
- perfectly matched layers
- problem solving
- three dimensional models

computational grids (computer networks)

(added December 2003)

- USE **grid computing (computer networks)**

computational mechanics

(added June 2008)

DEF The discipline concerned with the development and application of numerical and scientific computing methods to study phenomena governed by the principles of mechanics.

- GS analysis (mathematics)
- . numerical analysis
- . . approximation
- . . . **computational mechanics**
- mechanics (physics)
- . **computational mechanics**
- RT boundary element method
- computational fluid dynamics
- computerized simulation
- continuum mechanics
- finite element method
- fracture mechanics
- mathematical models
- meshfree methods
- solid mechanics
- structural analysis

computer aided design

DEF The use of the computer in design work. Used for CAD (design), computer aided engineering, and computerized design.

- UF *CAD (design)*
- computer aided engineering*
- computerized design*
- GS computer techniques
- . **computer aided design**
- . . IPAD
- RT aircraft design
- amplifier design
- computational geometry
- computer graphics
- computerized simulation
- ∞ design
- design optimization
- drafting machines
- engine design
- helicopter design
- human-computer interface
- lens design
- lofting
- logic design
- missile design
- multidisciplinary design optimization
- rapid prototyping
- reactor design
- robotics
- satellite design
- spacecraft design
- structural design
- structured programming
- three dimensional models

computer aided engineering

- USE **computer aided design**

computer aided manufacturing

DEF Interactive computing in support of manufacturing. Used for CAM (manufacturing).

- UF *CAM (manufacturing)*
- GS computer techniques
- . **computer aided manufacturing**
- manufacturing
- . **computer aided manufacturing**
- RT computer graphics

- computerized simulation
- group technology (manufacturing)
- rapid prototyping
- robotics

computer aided mapping

DEF Creating data bases of topographic and man-made features for the production of traditional maps and digital maps. Resultant digital maps have great flexibility and can be easily updated. The user can select the appropriate scale, view selected features, and view any desired area.

- GS computer techniques
- . **computer aided mapping**
- mapping
- . **computer aided mapping**
- RT computer graphics
- computerized simulation
- maps
- robotics

computer aided tomography

- UF *CAT scanner*
- GS computer techniques
- . **computer aided tomography**
- imagery
- . radiography
- . . tomography
- . . . **computer aided tomography**
- RT computer graphics
- image processing

computer animation

- GS arts
- . graphic arts
- . . animation
- . . . **computer animation**
- computer graphics
- . **computer animation**
- computer techniques
- . **computer animation**
- RT computerized simulation
- motion pictures

computer architecture

- USE **architecture (computers)**

computer assisted instruction

DEF The use of a computer to present instructional material and to accept and evaluate student responses.

- UF *CAI*
- GS computer techniques
- . **computer assisted instruction**
- education
- . programmed instruction
- . . **computer assisted instruction**
- RT language programming
- symbolic programming

computer bulletin boards

- USE **electronic bulletin boards**

computer codes

- USE **computer programs**

computer compatible tapes

- DEF Machine readable tapes.
- GS computer components
- . computer storage devices
- . . **computer compatible tapes**
- magnetic tapes
- . **computer compatible tapes**
- RT computers
- data processing equipment
- digital computers
- ∞ tapes

computer components

- GS **computer components**
- . adding circuits
- . central processing units
- . . arithmetic and logic units
- . . RISC processors
- . chips (memory devices)
- . computer storage devices
- . . bubble memory devices
- . . buffer storage
- . . computer compatible tapes

- . . cryogenic computer storage
 - . . delay lines (computer storage)
 - . . magnetic disks
 - . . magnetic drums
 - . . optical disks
 - . . random access memory
 - . . . core storage
 - . . read-only memory devices
 - . . . CD-ROM
 - . . registers (computers)
 - . . . accumulators (computers)
 - . microprocessors
 - . . Intel 8080 microprocessor
 - . peripheral equipment (computers)
 - . . printers (data processing)
 - . . remote consoles
 - . shift registers
 - RT architecture (computers)
 - binary to decimal converters
 - ∞ components
 - computers
 - consoles
 - control units (computers)
 - counters
 - decimal to binary converters
 - digital electronics
 - firmware
 - logical elements
 - remote consoles
- computer conferencing**
(added September 1993)
- DEF A form of teleconferencing that allows one or more users to exchange messages on a computer network.
- GS telecommunication
 - . teleconferencing
 - . . **computer conferencing**
 - RT communicating
 - communication
 - electronic bulletin boards
 - electronic mail
 - electronic publishing
 - World Wide Web
- computer design**
- SN (DESIGN OF COMPUTERS--EXCLUDES COMPUTERIZED DESIGN AND SYSTEMS ENGINEERING)
 - RT architecture (computers)
 - chips (electronics)
 - computers
 - ∞ design
 - fluid logic
 - hardware description languages
 - logic design
 - memory (computers)
 - microprocessors
 - MIMD (computers)
 - optical computers
 - product development
 - read-only memory devices
 - SIMD (computers)
- computer graphics**
- DEF The technique of combining computer calculations with various display devices, printers, plotters, etc. to render information in graphical or pictorial format. Used for interactive graphics.
- UF *interactive graphics*
 - GS **computer graphics**
 - . computer animation
 - RT computer aided design
 - computer aided manufacturing
 - computer aided mapping
 - computer aided tomography
 - computers
 - data processing terminals
 - display devices
 - graphical user interface
 - IBM personal computers
 - Macintosh personal computers
 - multimedia
 - plotters
 - raster scanning
 - remote consoles
 - scene generation
 - scientific visualization
 - tomography
- windows (computer programs)
- computer information security**
- DEF Protective measures to prevent destruction, larceny, and/or unauthorized use of information in computerized files. Used for computer security.
- GS security
 - . computer security
 - . . **computer information security**
 - RT access control
 - computer viruses
 - cryptography
 - data processing
 - disk operating system (DOS)
 - electronic commerce
 - firewalls (computers)
 - information resources management
 - operating systems (computers)
 - privacy
 - quantum cryptography
 - selective dissemination of information
 - steganography
 - terrorism
- computer methods*
- USE **computer programs**
- computer networks**
- DEF The interconnection of two or more computers for the mutual or individual processing of data to and from a multitude of terminals or stations by utilizing appropriate switching techniques, transmission systems, or miniprocessors.
- GS networks
 - . **computer networks**
 - . . internets
 - . . . ARPA computer network
 - . . . World Wide Web
 - . . client server systems
 - . . local area networks
 - . . wide area networks
 - RT Aloha system
 - carrier sense multiple access
 - computer security
 - distributed interactive simulation
 - distributed processing
 - electronic mail
 - Ethernet
 - firewalls (computers)
 - grid computing (computer networks)
 - interprocessor communication
 - intrusion detection (computers)
 - network control
 - protocol (computers)
 - service oriented architecture
 - VSAT (network)
- computer program integrity**
- DEF The completeness of a program to execute its intended function.
- GS integrity
 - . **computer program integrity**
 - reliability
 - . software reliability
 - . . **computer program integrity**
 - RT compilers
 - completeness
 - computer viruses
 - computers
 - digital computers
 - errors
 - programs
 - redundancy
 - security
- computer program reliability*
- USE **software reliability**
- computer programming**
- DEF The preparation of a formalized sequence of instructions that can be recognized and implemented by a computer.
- UF *Legendre code*
 - GS **computer programming**
 - . assembler routines
 - . language programming
 - . logic programming
 - . microprogramming
- . multiprogramming
 - . object-oriented programming
 - . on-line programming
 - . parallel programming
 - . structured programming
 - . symbolic programming
 - RT Ada (programming language)
 - addressing
 - ALGOL
 - algorithms
 - APL (programming language)
 - Assembly language
 - autocoders
 - BASIC (programming language)
 - batch processing
 - BCH codes
 - block diagrams
 - C (programming language)
 - coding
 - COMPASS (programming language)
 - computer viruses
 - context free languages
 - data structures
 - digital techniques
 - expert systems
 - file maintenance (computers)
 - firmware
 - flow charts
 - formalism
 - format
 - Forth (programming language)
 - FORTRAN
 - HAL/S (language)
 - heuristic methods
 - kinoforn
 - linear programming
 - LISP (programming language)
 - logic design
 - machine-independent programs
 - MAP (programming language)
 - MIMD (computers)
 - natural language (computers)
 - numerical analysis
 - open source licensing (computers)
 - Pascal (programming language)
 - PL/1
 - program verification (computers)
 - programmed instruction
 - programmers
 - ∞ programming
 - programming environments
 - programming languages
 - Prolog (programming language)
 - real time operation
 - response time (computers)
 - reverse engineering
 - RISC processors
 - run time (computers)
 - sequential control
 - SIMD (computers)
 - software engineering
 - software reliability
 - software reuse
 - systems analysis
 - theorem proving
 - time sharing
 - UNIX (operating system)
- computer programs**
- UF *computer codes*
 - computer methods*
 - software (computers)*
 - GS **computer programs**
 - . applications programs (computers)
 - . . NASTRAN
 - . . spreadsheets
 - . . web services
 - . compilers
 - . computer systems programs
 - . . assembler routines
 - . . input/output routines
 - . . operating systems (computers)
 - . . . disk operating system (DOS)
 - . . . UNIX (operating system)
 - . . subroutine libraries (computers)
 - . editing routines (computers)
 - . machine-independent programs
 - . merging routines
 - . multiple output programs

computer security

- . object programs
- . software development tools
- . source programs
- . subroutines
- RT algorithms
- Assembly language
- batch processing
- block diagrams
- coding
- computer viruses
- computers
- data conversion routines
- data flow analysis
- data processing
- data transfer (computers)
- digital computers
- error detection codes
- fixed point arithmetic
- floating point arithmetic
- Goddard Trajectory Determination System
- IBM personal computers
- instruction sets (computers)
- intellectual property
- laser guidance
- machine translation
- Macintosh personal computers
- modularity
- NASA Interactive Planning System
- numerical control
- on-line systems
- programmed instruction
- programming environments
- programs
- report generators
- ∞ routines
- software engineering
- software reliability
- software reuse
- structured programming
- ∞ translators
- user manuals (computer programs)

computer security

(added February 2003)

DEF Measures and controls taken to prevent unauthorized access, misuse, or destruction of computer systems and networks, software, or the information stored in computer files.

GS security

. computer security

- . . computer information security
- . . firewalls (computers)
- . . intrusion detection (computers)

RT

- access control
- computer networks
- computer systems design
- computer viruses
- internets
- protocol (computers)

computer simulation

USE **computerized simulation**

computer storage devices

UF *machine storage*

GS

- computer components
- . **computer storage devices**
- . . bubble memory devices
- . . buffer storage
- . . computer compatible tapes
- . . cryogenic computer storage
- . . delay lines (computer storage)
- . . magnetic disks
- . . magnetic drums
- . . optical disks
- . . random access memory
- . . . core storage
- . . read-only memory devices
- . . . CD-ROM
- . . registers (computers)
- . . . accumulators (computers)

RT

- acoustic delay lines
- associative memory
- cards
- central processing units
- ∞ channels
- cryosar
- ∞ equipment
- flip-flops

- hole burning
- magnetic storage
- memory (computers)
- microprocessors
- optical memory (data storage)
- parametrons
- peripheral equipment (computers)
- punched cards
- punched tapes
- random access
- shift registers
- ∞ storage
- thin films

computer systems design

GS systems engineering

. computer systems design

RT

- client server systems
- computer security
- concurrent processing
- ∞ design
- disk operating system (DOS)
- distributed processing
- firewalls (computers)
- interprocessor communication
- man machine systems
- operating systems (computers)
- peripheral equipment (computers)
- programmable logic devices
- read-only memory devices
- relational data bases
- service oriented architecture
- software development tools
- software engineering
- ∞ systems
- virtual memory systems

computer systems performance

DEF The efficiency and reliability that characterize the real operation of the system.

RT

- consistency
- data sampling
- efficiency
- evaluation
- operator performance
- output
- ∞ performance
- performance tests
- quality
- reliability
- response time (computers)
- RISC processors
- software reliability
- ∞ systems

computer systems programs

GS computer programs

. computer systems programs

- . . assembler routines
- . . input/output routines
- . . operating systems (computers)
- . . . disk operating system (DOS)
- . . . UNIX (operating system)
- . . subroutine libraries (computers)

RT

- algorithms
- application programming interface
- Assembly language
- autocoders
- compilers
- computer viruses
- computers
- data flow analysis
- data processing
- digital computers
- editing routines (computers)
- error detection codes
- report generators
- ∞ routines
- software engineering
- ∞ systems
- systems analysis

computer systems simulation

DEF Forecasting of computer requirements by the use of predictive modeling and estimating computer workloads.

GS

- simulation
- . systems simulation
- . . **computer systems simulation**
- RT analog simulation

- data processing equipment
- digital simulation
- hardware description languages
- mathematical models
- operations research
- simulators
- ∞ systems
- systems analysis

computer techniques

GS **computer techniques**

- . computer aided design
- . . IPAD
- . computer aided manufacturing
- . computer aided mapping
- . computer aided tomography
- . computer animation
- RT . computer assisted instruction
- adaptive optics
- ARPA computer network
- backpropagation (artificial intelligence)
- belief networks
- computational chemistry
- computers
- decision support systems
- flight management systems
- knowledge based systems
- management information systems
- management methods
- management systems
- microprocessors
- NASTRAN
- numerical differentiation
- on-line systems
- parsing algorithms
- personal computers
- sorting algorithms
- spreadsheets
- word processing

computer viruses

(added March 1989)

RT

- computer information security
- computer program integrity
- computer programming
- computer programs
- computer security
- computer systems programs
- intrusion detection (computers)
- software engineering

computer vision

DEF Capability of computers to analyze and act on visual input.

UF

machine vision

RT

- artificial intelligence
- ∞ automation
- edge detection
- Gabor filters
- optical flow (image analysis)
- pattern recognition
- position sensing
- robot sensors
- robotics
- robots

computerized control

USE **numerical control**

computerized design

USE **computer aided design**

computerized simulation

DEF Computer-calculated representation of a process, device, or concept in mathematical form. Used for ARIP (impact prediction), automatic rocket impact predictors, computer simulation, and IP (impact prediction).

UF

- ARIP (impact prediction)*
- automatic rocket impact predictors*
- computer simulation*
- IP (impact prediction)*

GS

- simulation
- . **computerized simulation**
- . . analog simulation
- . . digital simulation
- . . distributed interactive simulation
- RT algorithms
- altitude simulation
- computational astrophysics

- computational chemistry
- computational mechanics
- computer aided design
- computer aided manufacturing
- computer aided mapping
- computer animation
- computers
- control simulation
- differential analyzers
- flight simulation
- hardware-in-the-loop simulation
- highly maneuverable aircraft
- hydraulic analogies
- landing simulation
- Lennard-Jones potential
- mathematical models
- ∞ missile simulators
- molecular dynamics
- motion simulators
- multiscale models
- numerical flow visualization
- numerical weather forecasting
- operations research
- scientific visualization
- simulated annealing
- systems simulation
- target simulators
- three dimensional models
- two dimensional models
- virtual reality

computers

- GS data processing equipment
 - computers**
 - .. analog computers
 - ... EAI 680 computer
 - ... Honeywell 600/6000 computer
 - ... SIGMA 5 computer
 - ... Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - .. CDC computers
 - ... CDC 160-A computer
 - ... CDC 1604 computer
 - ... CDC 3100 computer
 - ... CDC 3200 computer
 - ... CDC 3600 computer
 - ... CDC 3800 computer
 - ... CDC 6000 series computers
 - ... CDC 6400 computer
 - ... CDC 6600 computer
 - ... CDC 6700 computer
 - ... CDC 7000 series computers
 - ... CDC 7600 computer
 - ... CDC 8090 computer
 - ... CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - ... CDC Cyber 74 computer
 - ... CDC Cyber 174 computer
 - ... CDC Cyber 203 computer
 - ... CDC Cyber 205 computer
 - ... CDC Star 100 computer
 - .. counting rate computers
 - .. DDP computers
 - ... DDP 516 computer
 - .. digital computers
 - ... CDC 160-A computer
 - ... CDC 1604 computer
 - ... CDC 3100 computer
 - ... CDC 3200 computer
 - ... CDC 3600 computer
 - ... CDC 3800 computer
 - ... CDC 6000 series computers
 - ... CDC 6400 computer
 - ... CDC 6600 computer
 - ... CDC 6700 computer
 - ... CDC 7000 series computers
 - ... CDC 7600 computer
 - ... CDC 8090 computer
 - ... CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - ... CDC Cyber 74 computer
 - ... CDC Cyber 174 computer
 - ... CDC Cyber 203 computer
 - ... CDC Cyber 205 computer
 - ... CDC Star 100 computer

- ... EAI 680 computer
- ... EAI 8400 computer
- ... EAI 8900 computer
- ... EMR 6050 computer
- ... Ferranti Mercury computer
- ... GE computers
 - GE 625 computer
 - GE 635 computer
- ... Hewlett-Packard computers
- ... Honeywell computers
 - DDP 516 computer
 - Honeywell 600/6000 computer
 - Honeywell ADEPT computer
 - Honeywell DDP 116 computer
- ... IBM 360 computer
- ... IBM 370 computer
- ... IBM 650 computer
- ... IBM 704 computer
- ... IBM 709 computer
- ... IBM 1130 computer
- ... IBM 1401 computer
- ... IBM 1410 computer
- ... IBM 1620 computer
- ... IBM 2250 computer
- ... IBM 7030 computer
- ... IBM 7040 computer
- ... IBM 7044 computer
- ... IBM 7070 computer
- ... IBM 7074 computer
- ... IBM 7090 computer
- ... IBM 7094 computer
- ... ICL computers
- ... Iliac computers
 - ... Iliac 3 computer
 - ... Iliac 4 computer
- ... microcomputers
 - ... personal computers
 - IBM personal computers
 - Macintosh personal computers
 - ... minicomputers
 - ... Nova computers
 - ... Modcomp II computer
 - ... Modcomp IV computer
 - ... parallel computers
 - ... massively parallel processors
 - Connection Machine
 - ... MIMD (computers)
 - ... SIMD (computers)
 - ... PDP 15 computer
 - ... PDP computers
 - ... PDP 7 computer
 - ... PDP 8 computer
 - ... PDP 9 computer
 - ... PDP 10 computer
 - ... PDP 11 computer
 - ... PDP 11/20 computer
 - ... PDP 11/40 computer
 - ... PDP 11/45 computer
 - ... PDP 11/50 computer
 - ... PDP 11/70 computer
 - ... PDP 12 computer
 - ... Philco 2000 computer
 - ... Raytheon computers
 - ... RCA spectra 70 computer
 - ... SDS 900 series computers
 - SDS 930 computer
 - ... SDS 9300 computer
 - ... SEL computers
 - ... sequential computers
 - ... SIGMA 5 computer
 - ... SIGMA computers
 - SIGMA 9 computer
 - ... Solomon computers
 - ... Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - ... Univac 80 computer
 - ... Univac 418 computer
 - ... Univac 490 computer
 - ... Univac 494 computer
 - ... Univac 1230 computer
 - ... Univac Larc computer
 - ... VAX computers
 - VAX-11 series computers
 - VAX-11/780 computer
 - .. embedded computer systems

- ... airborne/spaceborne computers
- .. hybrid computers
- .. hypercube multiprocessors
- .. IBM computers
 - ... IBM 360 computer
 - ... IBM 370 computer
 - ... IBM 650 computer
 - ... IBM 704 computer
 - ... IBM 709 computer
 - ... IBM 1130 computer
 - ... IBM 1401 computer
 - ... IBM 1410 computer
 - ... IBM 1620 computer
 - ... IBM 2250 computer
 - ... IBM 7030 computer
 - ... IBM 7040 computer
 - ... IBM 7044 computer
 - ... IBM 7070 computer
 - ... IBM 7074 computer
 - ... IBM 7090 computer
 - ... IBM 7094 computer
 - ... IBM personal computers
 - .. MINOS computer
 - .. optical computers
 - .. Pegasus computer
 - .. RCA computers
 - ... RCA spectra 70 computer
 - ... RCA-110 computers
 - .. Siemens 2002 computer
 - .. site data processors
 - .. supercomputers
 - .. Connection Machine
 - .. Cray computers
 - .. transputers
 - .. Univac computers
 - ... Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - ... Univac 80 computer
 - ... Univac 418 computer
 - ... Univac 490 computer
 - ... Univac 494 computer
 - ... Univac 1230 computer
 - ... Univac Larc computer
 - .. quantum computers
- RT applications programs (computers)
- arithmetic and logic units
- artificial intelligence
- automata theory
- ∞ automation
- ∞ calculators
- central processing units
- computation
- computer compatible tapes
- computer components
- computer design
- computer graphics
- computer program integrity
- computer programs
- computer systems programs
- computer techniques
- computerized simulation
- control data (computers)
- control units (computers)
- cybernetics
- data converters
- data processing
- digital to voice translators
- file maintenance (computers)
- fixed point arithmetic
- floating point arithmetic
- HAL/S (language)
- ∞ hardware
- information retrieval
- information theory
- Intel 8080 microprocessor
- logic circuits
- machine-independent programs
- ∞ machinery
- memory (computers)
- multiprocessing (computers)
- printers (data processing)
- read-only memory devices
- real time operation
- run time (computers)
- telecommunication

Comsat program

vocoders

Comsat program

GS programs

. **Comsat program**

RT communication satellites
Early Bird satellites
Telstar project
Telstar satellites

ComStar C

DEF The third in a series of Comsat domestic communications satellites launched in a transfer orbit by NASA for COMSAT.

GS artificial satellites

. communication satellites
. . Communications Technology Satellite
. . . **ComStar C**

ComStar satellites

DEF Series of domestic Comsat communication satellites.

GS artificial satellites

. communication satellites

. . **ComStar satellites**

RT satellite networks

concatenated codes

DEF Two or more codes which are encoded and decoded in series.

RT binary codes

∞ codes

coding
data transmission
decoding
error correcting codes
redundancy encoding
Reed-Solomon codes
signal encoding
trellis coding

concavity

RT contour sensors

contours
convexity
flatness
shapes
∞ surface geometry

concentrating

RT accumulations
adsorption
agglomeration
beneficiation
centrifuging
classifiers
coagulation
coalescing
compressing
∞ concentration
concentrators
condensing
crystallization
distillation
drying
enrichment
evaporation
extraction
filtration
flocculating
flotation
percolation
precipitation (chemistry)
∞ separation
separators
settling
sorption
stress concentration
upgrading
vaporizing

∞ concentration

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The quantity of a substance contained in a unit quantity of sample.

RT concentrating
concentration (composition)
crowding

filtration

isotopic enrichment

concentration (composition)

UF *volume fraction*

GS composition (property)

. **concentration (composition)**

. . atom concentration
. . carbon dioxide concentration
. . fiber volume fraction
. . low concentrations
. . mascons
. . meteoroid concentration
. . moisture content
. . . atmospheric moisture

RT ∞ concentration
dilution
particulate sampling
purity
quality
sampling
∞ saturation
solubility

concentrators

GS **concentrators**

. spirals (concentrators)

RT accumulators
centrifuges
classifiers
∞ classifying
columns (process engineering)
concentrating
evaporators
filtration
fluid filters
precipitators
radiative heat transfer
separators
size separation
sizing screens
solar collectors
stills
thermal radiation
traps
washers (cleaners)

concentric cylinders

RT ∞ cylinders
cylindrical shells

concentric spheres

DEF Structures in which the space between the spheres is utilized for experiments involving fluid flow, etc.

GS symmetrical bodies
. bodies of revolution
. . spheres
. . . **concentric spheres**

RT concentricity

concentricity

RT ∞ centers
concentric spheres
eccentricity

Concorde aircraft

GS jet aircraft
. turbofan aircraft
. . **Concorde aircraft**
Sud Aviation aircraft
. **Concorde aircraft**
supersonic aircraft
. supersonic transports
. . **Concorde aircraft**
transport aircraft
. **Concorde aircraft**
RT ∞ aircraft

concrete structures

DEF Buildings, dams, stadiums, etc., constructed entirely of a mixture of aggregates, water, and Portland cement.

RT aggregates
breakwaters
construction
earthquake resistant structures
foundations
∞ materials
rigid structures

∞ structures

towers

concretes

DEF Homogeneous mixtures of portland cement, aggregates, and water and which may contain admixtures.

RT admixtures
aggregates
cements
∞ construction materials
grout
insulation
masonry
mortars (material)
pavements
structural members

concurrent engineering

(added September 1994)

DEF Use of multi-disciplinary teams to perform simultaneous design of products and production processes from conception through disposal.

RT design to cost
∞ engineering
industrial management
life cycle costs
multidisciplinary research
product development
reliability engineering
systems engineering
total quality management
value engineering

concurrent processing

GS data processing
. **concurrent processing**
RT architecture (computers)
computer systems design
MIMD (computers)
multiprocessing (computers)
parallel processing (computers)
SIMD (computers)

condensates

GS **condensates**
. Bose-Einstein condensates
. hydrometeors
RT Aitken nuclei
∞ condensation
condensers (liquefiers)
condensing
contrails
drop size
liquefied gases
plumes
vapors

∞ condensation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The physical process by which a vapor becomes a liquid or solid; the opposite of evaporation. Specifically, in meteorology, the transformation from vapor to liquid.

RT condensates
condensation nuclei
condensing
gas-metal interactions
liquefaction
Mayer problem
rectification

condensation nuclei

DEF Liquid or solid particles upon which condensation of water begins in the atmosphere.

GS **condensation nuclei**
. Aitken nuclei
aerosols
RT cloud physics
clouds (meteorology)
∞ condensation
condensing
drops (liquids)
ice nuclei
meteorology
microparticles
nucleation

- ∞ nuclei
- rain
- condensation pumps**
 - GS pumps
 - . vacuum pumps
 - . . **condensation pumps**
 - vacuum apparatus
 - . vacuum pumps
 - . . **condensation pumps**
- condensation trails*
- USE **contrails**
- condensed matter physics**
 - RT Bose-Einstein condensates
 - matter (physics)
 - negative matter
 - ∞ physics
 - ∞ solid state physics
- condenser radiators*
- USE **condensers (liquefiers)**
- heat radiators**
- ∞ **condensers**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT capacitors
 - condensers (liquefiers)
 - jet condensers
 - photographic rectifiers
- condensers (liquefiers)**
 - UF *condenser radiators*
 - GS **condensers (liquefiers)**
 - . jet condensers
 - RT absorbers (equipment)
 - air conditioning
 - air conditioning equipment
 - cold traps
 - columns (process engineering)
 - compressors
 - condensates
 - ∞ condensers
 - condensing
 - cooling fins
 - cooling systems
 - distillation equipment
 - drying apparatus
 - evaporators
 - exhaust systems
 - film condensation
 - heat exchangers
 - heat pumps
 - liquefied gases
 - refrigerating machinery
 - separators
 - spacecraft radiators
 - vaporizers
- condensing**
 - UF *gas liquefaction*
 - GS **condensing**
 - . film condensation
 - RT association reactions
 - cloud physics
 - concentrating
 - condensates
 - ∞ condensation
 - condensation nuclei
 - condensers (liquefiers)
 - cooling
 - dehumidification
 - dew point
 - distillation
 - drop size
 - drops (liquids)
 - evaporation
 - gas-liquid interactions
 - gas-metal interactions
 - nucleation
 - phase change materials
 - phase transformations
 - refrigerating
 - ∞ saturation
 - ∞ separation
 - sublimation
 - supercooling
- supersaturation
- conditioned reflexes**
 - GS reflexes
 - . **conditioned reflexes**
 - RT conditioning (learning)
 - reaction time
- conditioned responses*
- USE **conditioning (learning)**
- ∞ **conditioning**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT beneficitation
 - conditioning (learning)
 - power conditioning
 - preconditioning
- conditioning (learning)**
 - UF *conditioned responses*
 - GS learning
 - . **conditioning (learning)**
 - RT behavior
 - biofeedback
 - conditioned reflexes
 - ∞ conditioning
 - habituation (learning)
 - inhibition (psychology)
- conditioning (treating)*
- USE **treatment**
- conditions**
 - GS **conditions**
 - . adiabatic conditions
 - . boundary conditions
 - . . perfectly matched layers
 - . chronic conditions
 - . flight conditions
 - . Kutta-Joukowski condition
 - . Lipschitz condition
 - . nonadiabatic conditions
 - . nonequilibrium conditions
 - . runway conditions
 - RT in vitro methods and tests
 - in vivo methods and tests
- Condor missile**
 - GS missiles
 - . air to surface missiles
 - . . **Condor missile**
- conductance*
- USE **resistance**
- conducting*
- USE **conduction**
- conducting fluids**
 - SN (EXCLUDES PLASMAS)
 - RT conductors
 - electrolytes
 - ∞ fluids
 - magneto hydrodynamics
- conducting media*
- USE **conductors**
- conducting polymers**
(added January 1990)
- GS conductors
- . electric conductors
- . . **conducting polymers**
- RT dendrimers
- electroactive polymers
- organic semiconductors
- polyacetylene
- polymeric films
- ∞ polymers
- polypyrroles
- semiconductors (materials)
- ∞ **conduction**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF The transfer of energy within and through a conductor by means of internal particle of molecular activity and without any net external motion. Used for conducting.
- UF *conducting*
- RT attenuation
- conductive heat transfer
- convection
- electric conductors
- electric power transmission
- heat transfer
- heating
- refraction
- sound propagation
- sound transmission
- thermal conductors
- thermal diffusion
- transmission
- wave propagation
- conduction bands**
 - DEF A range of states in the energy spectrum of a solid in which electrons can move freely.
 - GS energy bands
 - . **conduction bands**
 - RT band structure of solids
 - ∞ bands
 - Brillouin zones
 - electron transitions
 - Franck-Condon principle
 - NDM semiconductor devices
 - polarons
 - porous silicon
 - quantum wells
 - semiconductors (materials)
 - trapping
- conduction electrons**
 - GS particles
 - . charged particles
 - . . energetic particles
 - . . . electrons
 - **conduction electrons**
 - . corpuscular radiation
 - . . energetic particles
 - . . . electrons
 - **conduction electrons**
 - . elementary particles
 - . . fermions
 - . . . leptons
 - electrons
 - **conduction electrons**
 - RT free electrons
 - quantum wells
 - valence
- conductive heat transfer**
 - UF *heat conduction*
 - GS transmission
 - . heat transmission
 - . . heat transfer
 - . . . **conductive heat transfer**
 - RT ∞ conduction
 - convective heat transfer
 - laminar heat transfer
 - thermal conductivity
 - thermal conductors
- ∞ **conductivity**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF The ability to transmit, as electricity, heat, sound, etc. A unit measure of electrical conduction; the facility with which a substance conducts electricity, as represented by the current density per unit electrical-potential gradient in the direction of flow.
 - RT atmospheric conductivity
 - electrical properties
 - electrical resistivity
 - fluid flow
 - impedance
 - ionospheric conductivity
 - magnetoresistivity
 - mobility
 - Ohms law
 - photoconductivity
 - plasma conductivity
 - superconducting power transmission
 - superconductivity
 - thermal conductivity
 - transconductance

conductivity meters

transport properties
void ratio

conductivity meters

GS measuring instruments
. **conductivity meters**
. . electrical conductivity meters

conductors

DEF Substances or entities which transmit electricity, heat, or sound. Used for conducting media.

UF *conducting media*

GS **conductors**

. bus conductors
. electric conductors
. . beam leads
. . conducting polymers
. . electric wire
. electrolytes
. . anolytes
. . catholytes
. . ion exchange membrane
 electrolytes
. . jumpers
. . molten salt electrolytes
. . nonaqueous electrolytes
. . solid electrolytes
. flat conductors
. . beam leads
. photoconductors
. superconductors (materials)
. . high temperature superconductors
. . . BSCCO superconductors
. . . YBCO superconductors
. . heavy fermion superconductors
. . organic superconductors
. thermal conductors

RT

antennas
conducting fluids
exploding wires
metals
nonferrous metals
organic semiconductors
semiconductors (materials)
subreflectors

cones

SN (LIMITED TO MATERIAL OBJECTS)

DEF Geometric configurations having a circular bottom and sides tapering off to an apex (as in nose cones). Used for conical flare and fusiform shapes.

UF *conical flare*
fusiform shapes

GS **cones**

. circular cones
. conical bodies
. . slender cones
. half cones
. Mach cones
. nose cones
. . ablative nose cones
. . rocket nose cones
. shatter cones

RT

aerodynamic configurations
bodies of revolution
conical shells
conics
frustums
symmetrical bodies

cones (volcanoes)

UF *cinder cones*

GS geology

. **cones (volcanoes)**
landforms

. **cones (volcanoes)**

RT

basalt
calderas
craters
effusives
geomorphology
lava
Mars volcanoes
mountains
orography
paleomagnetism
petrology
Rouse belts

volcanoes
volcanology

conferences

UF *congresses*
meetings
proceedings
symposia

RT Committee on Space Research

consulting
conventions
 ∞ discussion
documentation
documents
papers
reports
Starsite program
teleconferencing
video conferencing

confidence

RT correlation
errors
probability theory
psychological effects
quality control
reliability
risk
statistical analysis

confidence limits

DEF In statistics, the upper and lower extremes of the confidence interval.

RT contingency
estimates
forecasting
maximum likelihood estimates
 ∞ measurement
null hypothesis
precision
predictions
quality control
range (extremes)
reliability
risk
sampling
significance
standard deviation
statistical analysis
statistical tests
 ∞ tests
variance (statistics)

configuration interaction

DEF In physical chemistry, the interaction between two different possible arrangements of the electrons in an atom or molecule.

RT computational chemistry
electron orbitals

∞ interactions
intermolecular forces
molecular interactions
molecular structure
 ∞ structures

configuration management

DEF A discipline applying technical and administrative direction and surveillance to: identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, record and report change processing and implementation status, and verify conformance with specified requirements.

GS management
. **configuration management**

RT ∞ configurations

∞ configurations

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT aerodynamic configurations
aircraft configurations
body-wing and tail configurations
canard configurations
configuration management
launch vehicle configurations
missile configurations
propulsion system configurations
spacecraft configurations

staggering
torpedoes

confinement

RT astronaut performance
containment
isolation
magnetic compression
nuclear reactor control
plasma control
plasma equilibrium
sensory deprivation

confining

RT astronaut performance
deprivation
isolation
sensory deprivation

confirmation

USE **proving**

confluence

USE **convergence**

conformal mapping

UF *conformal transformations*

GS analysis (mathematics)

. complex variables

. . **conformal mapping**

functions (mathematics)

. **conformal mapping**

RT coordinate transformations

Euler-Cauchy equations

graphs (charts)

invariant imbeddings

isoparametric finite elements

Jacobi integral

Lighthill method

minimal surfaces

Schwarz-Christoffel transformation

Theodorsen transformation

conformal transformations

USE **conformal mapping**

confusion

RT entrapment
tangling

congeners

RT ∞ chemical compounds
classifications
isomers
muscles
tautomers

congenital anomalies

UF *congenital conditions*

RT chromosome aberrations
chromosomes
genetics
heredity
Rhesus factor

congenital conditions

USE **congenital anomalies**

congestion

RT circulation
ischemia
pneumonia
respiratory diseases
vasodilation

Congo (Brazzaville)

UF *Brazzaville*

French Equatorial Congo

GS nations

. **Congo (Brazzaville)**

RT Africa

Congo (Kinshasa)

USE **Democratic Republic of Congo**

congresses

USE **conferences**

congressional reports

UF *proceedings*

GS documents

- . **congressional reports**
- reports
- . **congressional reports**
- RT Presidential reports
- congruences**
- GS number theory
- . **congruences**
- RT ∞ coherence
- collocation
- dividing (mathematics)
- geometry
- identities
- integers
- symmetry
- conical bodies**
- UF *conoïds*
- GS cones
- . **conical bodies**
- . . . slender cones
- symmetrical bodies
- . bodies of revolution
- . . **conical bodies**
- . . . slender cones
- RT afterbodies
- axisymmetric bodies
- conical camber**
- GS camber
- . **conical camber**
- RT wing camber
- conical flare*
- USE **cones**
- conical flow**
- GS fluid flow
- . **conical flow**
- RT axisymmetric flow
- baffles
- ∞ diffusers
- multiphase flow
- separated flow
- three dimensional flow
- wall flow
- wedge flow
- conical inlets**
- GS intake systems
- . **conical inlets**
- RT air intakes
- conical nozzles
- funnels
- conical nozzles**
- RT annular nozzles
- conical inlets
- convergent nozzles
- convergent-divergent nozzles
- divergent nozzles
- exhaust diffusers
- exhaust nozzles
- hypersonic nozzles
- inlet nozzles
- ∞ jet nozzles
- nozzle geometry
- nozzle inserts
- nozzle walls
- ∞ nozzles
- plug nozzles
- rocket nozzles
- skirts
- sonic nozzles
- spike nozzles
- spray nozzles
- supersonic nozzles
- transonic nozzles
- turbine exhaust nozzles
- wind tunnel nozzles
- conical scanning**
- DEF Scanning in which the direction of maximum radiation generates a cone whose vertex angle is of the order of the beam width. Such scanning may be either rotating or nutating, according as the direction of polarization rotates or remains unchanged.
- GS scanning
- . **conical scanning**
- RT examination
- field of view
- monitors
- panoramic scanning
- radar scanning
- readers
- reading
- scanners
- searching
- surveillance
- conical shells**
- GS shells (structural forms)
- . **conical shells**
- RT cones
- conics**
- GS geometry
- . Euclidean geometry
- . . analytic geometry
- . . . **conics**
- ellipses
- hyperbolas
- parabolas
- RT cones
- half cones
- loci
- conifers**
- GS plants (botany)
- . trees (plants)
- . . **conifers**
- RT deciduous trees
- forests
- timber identification
- ∞ trees
- coning motion**
- (added June 1997)
- RT dynamic stability
- gyration
- ∞ motion
- motion stability
- nutaton
- precession
- rotation
- spin stabilization
- tumbling motion
- yaw
- conjugate gradient method**
- DEF An interactive method for solving a system of linear equations of dimension N which terminates in at most N steps if no rounding errors are encountered. Each iterate will bring one closer to the solution.
- GS analysis (mathematics)
- . numerical analysis
- . . iteration
- . . . **conjugate gradient method**
- RT algorithms
- conjugates
- gradients
- iterative solution
- conjugate points**
- GS analysis (mathematics)
- . complex variables
- . . conjugates
- . . . **conjugate points**
- RT lines of force
- magnetic fields
- conjugated circuits**
- DEF Branches of an electrical network configured so that a change in the electromotive force in either branch does not result in a current change in the other.
- GS circuits
- . **conjugated circuits**
- conjugates**
- GS analysis (mathematics)
- . complex variables
- . . **conjugates**
- . . . conjugate points
- RT Cholesky factorization
- conjugate gradient method
- conjugation
- finite element method
- conjugation**
- GS **conjugation**
- . phase conjugation
- . . four-wave mixing
- RT conjugates
- ∞ **conjunction**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Boolean algebra
- occultation
- orbits
- probability theory
- set theory
- conjunctiva**
- GS anatomy
- . sense organs
- . . eye (anatomy)
- . . . **conjunctiva**
- membranes
- . **conjunctiva**
- RT conjunctivitis
- keratitis
- vision
- conjunctivitis**
- GS diseases
- . eye diseases
- . . **conjunctivitis**
- . . infectious diseases
- . . **conjunctivitis**
- RT bacterial diseases
- conjunctiva
- Connecticut**
- GS nations
- . United States
- . . **Connecticut**
- RT New Haven (CT)
- Connection Machine**
- (added September 1992)
- GS data processing equipment
- . computers
- . . digital computers
- . . . parallel computers
- massively parallel processors
- **Connection Machine**
- . . . supercomputers
- . . **Connection Machine**
- RT architecture (computers)
- interprocessor communication
- multiprocessing (computers)
- parallel processing (computers)
- connections*
- USE **joints (junctions)**
- connective tissue**
- GS tissues (biology)
- . **connective tissue**
- . . adipose tissues
- . . bone marrow
- . . cartilage
- RT bones
- collagens
- exoskeletons
- joints (anatomy)
- ligaments
- musculoskeletal system
- tendons
- connectors**
- GS **connectors**
- . electric connectors
- . umbilical connectors
- . unions (connectors)
- RT adapters
- cordage
- couplings
- disconnect devices
- fasteners
- fittings
- flanges
- flat conductors
- joints (junctions)
- jumpers

consciousness

- ∞ junctions
- linkages
- optical interconnects
- sleeves
- ∞ terminals
- yokes

connectors (electric)

USE **electric connectors**

conoids

USE **conical bodies**

consciousness

- GS perception
 - . sensory perception
 - . . **consciousness**
- RT attention
 - mental performance
 - recognition
 - sleep deprivation

consecutive events

- GS events
 - . **consecutive events**
- RT intervals
 - Petri nets
 - probability theory
 - scheduling
 - sequencing
 - sequential control
 - time measurement

conservation

- GS **conservation**
 - . energy conservation
- RT agriculture
 - deforestation
 - drought
 - energy policy
 - environment management
 - firebreaks
 - forest management
 - forests
 - habitats
 - land use
 - Newton second law
 - nonconservative forces
 - parity
 - potable water
 - regional planning
 - rural land use
 - soil science
 - soils
 - water management
 - water reclamation

conservation element and solution element
(added June 2002)

USE **space-time CE/SE method**

conservation equations

- RT Bernoulli theorem
- continuity equation
- ∞ equations
 - nonconservative forces
 - space-time CE/SE method
 - vorticity transport hypothesis

conservation laws

- GS laws
 - . **conservation laws**
- RT CP violation
 - momentum theory
 - Newton Theory
 - nonconservative forces
 - space-time CE/SE method

consistency

- DEF A property of a material determined by the complete flow force relation.
- RT accuracy
 - computer systems performance
 - effort
 - errors
 - leveling
 - linearity
- ∞ measurement
- ∞ performance
- precision

- quality
- ratings
- reliability
- tolerances (mechanics)
- validity
- variability

consoles

DEF Arrays of controls and indicators for the monitoring and control of a particular sequence of actions, as in the checkout of a rocket, a countdown action, or a launch procedure.

- GS **consoles**
 - . remote consoles
- RT automatic typewriters
 - computer components
 - control boards
 - data processing terminals
 - display devices
 - ∞ equipment
 - flat panel displays
 - head-up displays
 - man machine systems
 - manual control

consolidation

- RT ∞ combination
 - densification
 - liquid phase sintering
 - overconsolidation
 - stabilization

consonants (speech)

- RT speech
 - vowels
 - words (language)

∞ constant

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT coefficients
 - constants
 - invariance
 - time constant

constant speed propellers

USE **variable pitch propellers**

constant volume balloons

USE **superpressure balloons**

constantan

- GS alloys
 - . **constantan**
- RT copper
 - nickel
 - thermocouples

constants

- GS **constants**
 - . Bohr magneton
 - . gravitational constant
 - . Gruneisen constant
 - . Hubble constant
 - . Plancks constant
 - . solar constant
 - . time constant
 - . . perceptual time constant
- RT coefficients
- ∞ constant

Constellation program

(added July 2007)
DEF A NASA space program to create spacecraft for human spaceflight, consisting primarily of the Ares I and Ares V launch vehicles, the Orion crew capsule, the Earth Departure Stage and the Lunar Surface Access Module. These spacecraft will be capable of performing a variety of missions, from Space Station resupply to lunar landings.

- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Constellation program**
 - . space programs
 - . . NASA space programs
 - . . . **Constellation program**
- RT Altair Lunar Lander

- Ares 1 launch vehicle
- Ares 5 cargo launch vehicle
- Crew Exploration Vehicle
- manned space flight
- space exploration

constellations

DEF Originally conspicuous configurations of stars; now regions of the celestial sphere marked by arbitrary boundary lines.

- GS **constellations**
 - . Andromeda Constellation
 - . Aries constellation
 - . Auriga constellation
 - . Cassiopeia constellation
 - . Centaurus constellation
 - . Cepheus constellation
 - . Corona Borealis constellation
 - . Cygnus constellation
 - . Lyra constellation
 - . Orion constellation
 - . Sagittarius constellation
 - . Scorpius constellation
 - . Scutum constellation
 - . Taurus constellation
- RT celestial sphere
 - planispheres
 - stars
 - zodiac

Constellation-X

(added February 2006)

DEF Astronomical observatory comprised of several x-ray satellites orbiting in close proximity to each other and working in unison to generate the observing power of one giant telescope.

- UF *Con-X observatory*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Constellation-X**
- networks
 - . satellite networks
 - . . satellite constellations
 - . . . **Constellation-X**
- observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Constellation-X**
- telescopes
 - . spaceborne telescopes
 - . . **Constellation-X**
 - . . x ray telescopes
 - . . . **Constellation-X**
- RT spaceborne astronomy
 - x ray astronomy

constitution

- RT atomic structure
 - governments
 - law (jurisprudence)

constitutional diagrams

USE **phase diagrams**

constitutive equations

- RT electric fields
- ∞ equations
 - magnetic charge density
 - magnetic fields
 - magnetic flux

constraints

- UF *hindrance*
 - limitations
 - restraints
- GS **constraints**
 - . meteorological parameters
 - . . Brunt-Vaisala frequency
- RT blocking
 - constrictions
 - dynamic programming
 - ∞ holding
 - linear programming
 - nonlinear programming
 - operations research
 - optimization
 - penalty function
 - range (extremes)

- retaining
- constrictions**
 UF *restrictions*
 RT ∞ barriers
 blocking
 chokes (restrictions)
 closures
 constraints
 contracts
 impedance
 plugging
 ∞ resistance
 retarders (devices)
 seals (stoppers)
 stopping
- constrictors**
 GS anatomy
 . musculoskeletal system
 . . muscles
 . . . **constrictors**
- construction**
 SN (EXCLUDES TYPES OF STRUCTURES)
 UF *erection*
 RT architecture
 assembling
 bridges (structures)
 buildings
 caissons
 concrete structures
 ∞ construction materials
 contractors
 contracts
 ∞ design
 excavation
 fabrication
 highways
 inspection
 installing
 layouts
 maintenance
 masonry
 quality control
 reconstruction
 rigging
 shipyards
 space manufacturing
 Starsite program
 steel structures
 stress analysis
 structural analysis
 structural design
 structural engineering
 structural members
 surveys
 tunneling (excavation)
 welding
- construction in space*
 USE **orbital assembly**
- construction industry**
 GS industries
 . **construction industry**
 RT bridges (structures)
 buildings
 contractors
 industrial areas
 industrial plants
 towers
 trusses
- ∞ **construction materials**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *building materials*
structural materials
 RT aggregates
 aircraft construction materials
 aircraft survivability
 airframe materials
 architecture
 bitumens
 boards (paper)
 bricks
 cements
 composite materials
 concretes
- construction
 graphite-epoxy composites
 grout
 insulation
 lathes
 Masonite (trademark)
 masonry
 ∞ materials
 materials selection
 panels
 plastics
 polymer matrix composites
 protective coatings
 reactor materials
 skin (structural member)
 spacecraft construction materials
 structural members
- consulting**
 RT conferences
 management planning
 personnel
 resources
- consumables (spacecraft)**
 DEF All supplies for spacecraft and spacecrews that will be consumed during a mission.
 GS **consumables (spacecraft)**
 . storable propellants
 RT consumables (spacecrew supplies)
 in situ resource utilization
 propellant storage
 space logistics
 working fluids
- consumables (spacecrew supplies)**
 GS **consumables (spacecrew supplies)**
 . space rations
 RT clothing
 consumables (spacecraft)
 dehydrated food
 ∞ food
 food production (in space)
 hygiene
 potable water
 provisioning
 sanitation
 space flight feeding
 space logistics
 survival equipment
- consumers**
 RT consumption
 market research
 marketing
 product development
- consumption**
 GS **consumption**
 . energy consumption
 . fuel consumption
 . oxygen consumption
 . propellant consumption
 . water consumption
 RT commerce
 consumers
 demand (economics)
 depletion
 exhausting
 exhaustion
 supplying
 utilization
- contact dermatitis**
 GS diseases
 . infectious diseases
 . . dermatitis
 . . . **contact dermatitis**
 RT allergic diseases
 dermatology
 epidermis
 itching
 skin (anatomy)
- contact lenses**
 GS lenses
 . **contact lenses**
 RT eyepieces
- reticles
- contact loads**
 DEF Dynamic loading by contact between two bodies.
 GS loads (forces)
 . **contact loads**
 . . impact loads
 . . rolling contact loads
 RT compression loads
 dynamic pressure
 random loads
 shock loads
 ∞ sliding contact
 transient loads
- contact potentials**
 DEF The potential differences at the junctions of two dissimilar substances.
 GS potential energy
 . electric potential
 . . **contact potentials**
 RT electric contacts
 surface properties
- contact resistance**
 DEF The resistance to current flow between two touching bodies, consisting of constriction resistance and film resistance.
 GS electrical properties
 . electrical impedance
 . . electrical resistance
 . . . **contact resistance**
 impedance
 . electrical impedance
 . . electrical resistance
 . . . **contact resistance**
 RT electric contacts
 nonohmic effect
 ∞ resistance
 surface properties
- contactors**
 SN (EXCLUDES ELECTRIC SWITCHES)
 RT carburetors
 chemical reactors
 columns (process engineering)
 electric switches
 mixers
 sprayers
- contacts (electric)*
 USE **electric contacts**
- contacts (geology)**
 GS geology
 . **contacts (geology)**
 RT formations
 metamorphism (geology)
 mineral deposits
 rock intrusions
 rocks
- containerless melts**
 GS melts (crystal growth)
 . **containerless melts**
 RT crystal growth
 crystallization
 crystals
 directional solidification (crystals)
 liquid bridges
 low gravity manufacturing
 manufacturing
 melting
 orbital workshops
 space processing
 weightlessness
- ∞ **containers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF A non-specific term for receptacles capable of closure. Used for receptacles (containers).
 UF *receptacles (containers)*
 RT ampoules
 autoclaves
 bags
 barrels (containers)
 baskets

containment

biopaks
bottles
boxes (containers)
bundles
cans
∞ capsules
cartridges
cases (containers)
crucibles
disposal
drums (containers)
enclosures
fuel tanks
glassware
hoppers
 housings
materials handling
micromodules
packages
packaging
preserving
pressure vessels
protectors
reels
spools
sprayers
tanks (containers)
transporter
trays
wing tanks

containment

RT asteroid capture
blocking
burst tests
confinement
retaining
sealing
stopping

contaminants

UF *noxious materials*
pollutants
GS **contaminants**
. radioactive contaminants
. trace contaminants
RT biofilms
biomass burning
chlorofluorocarbons
chlorofluoromethane
contamination
decontamination
diluents
dirt
dust
effluents
environment effects
environmental quality
fuel contamination
hazardous materials
hazardous wastes
heavy metals
impurities
∞ materials
nonpoint sources
particulates
pollution
purity
quality
soil pollution
volatile organic compounds
wastes
water treatment

contamination

GS **contamination**
. fuel contamination
. spacecraft contamination
RT air pollution
antifouling
antiinfectives and antibacterials
biological hazards
contaminants
decontamination
environment effects
fouling
intrusion
molecular shields
nonpoint sources
planetary protection

pollution
purity
radioactive wastes
water pollution

content

GS **content**
. bone mineral content
RT ∞ components
∞ composition
ingredients

content-addressable memory
(added December 1999)

USE **associative memory**

context

DEF The composition, structure, or manner in which something is put together. Also refers to the situation or environment of an event.
RT natural language (computers)
pattern recognition

context free languages

GS languages
. programming languages
. . **context free languages**
RT computer programming
symbolic programming

continental drift

RT continents
Earth crust
Earth planetary structure
geomagnetism
geophysics
paleomagnetism

continental margins

USE **continental shelves**

continental shelves

DEF The ocean floor that is between the shoreline and the abyssal ocean floor, including various provinces; the continental shelf; continental borderland; continental slope; and the continental rise. Used for continental margins.
UF *continental margins*
RT geology
ocean bottom
seamounts
∞ shelves

continents

GS **continents**
. Africa
. Asia
. Australia
. Europe
. . Central Europe
. North America
. South America
RT Antarctic regions
Central Europe
continental drift
cratons
geography
mountains
transcontinental systems

contingency

RT confidence limits
correlation
estimates
expectation
materials handling
predictions
reserves
risk

continuity

RT continuity (mathematics)
coordination
scheduling
topology
variability

continuity (mathematics)

GS analysis (mathematics)
. calculus
. . **continuity (mathematics)**

RT continuity
functions (mathematics)
isoperimetric problem
normal density functions
Poisson density functions
probability density functions
regularity
statistical analysis
symmetry
topology

continuity equation

RT conservation equations
continuum mechanics
Crocco-Lee theory
∞ equations
equations of motion
equations of state
fluid dynamics
nonconservative forces
steady flow

continuous flow electrophoresis

USE **electrophoresis**

continuous noise

RT ∞ noise
noise propagation
sound generators

continuous radiation

UF *continuous waves*
GS **continuous radiation**
. modulated continuous radiation
RT absorption spectra
background radiation
coherent radiation
corpuscular radiation
elastic waves
electromagnetic radiation
emission spectra
pulsed radiation
∞ radiation
∞ rays

continuous spectra

DEF Spectra in which wavelengths, wave numbers, and frequencies are represented by the continuum of real numbers or a portion thereof, rather than by a discrete sequence of numbers. For electromagnetic radiation, spectra that exhibit no detailed structure and represent a gradual variation of intensity with wavelength from one end to the other, as the spectra of incandescent solids. For particles, spectra that exhibit a continuous variation of the momentum or energy.
GS spectra
. **continuous spectra**
RT astronomical spectroscopy
solar spectra
spectral emission
stellar spectra

continuous wave lasers

GS stimulated emission devices
. lasers
. . **continuous wave lasers**
RT argon lasers
carbon dioxide lasers
carbon monoxide lasers
chemical oxygen-iodine lasers
laser stability
solid state lasers

continuous wave radar

UF *CW radar*
GS radar
. **continuous wave radar**
RT coherent radar
Doppler radar
pulse radar
radar detection
radar range
search radar
surveillance radar

tracking radar

*continuous waves*USE **continuous radiation****continuum flow**

GS fluid flow
 . gas flow
 . . **continuum flow**
 RT free molecular flow
 molecular flow
 rarefied gas dynamics
 slip flow

continuum mechanics

GS mechanics (physics)
 . **continuum mechanics**
 RT Burger equation
 classical mechanics
 computational mechanics
 continuity equation
 continuum modeling
 ∞ dynamics
 flow theory
 fluid mechanics
 Maxwell bodies
 multipolar fields
 solid mechanics
 statistical mechanics
 stress tensors

continuum modeling

RT continuum mechanics
 continuums
 large space structures
 mathematical models
 structural analysis

continuums

DEF Things that are continuous, which have no discrete parts as the continuum of real numbers as opposed to the sequence of discrete integers, as the background continuum of a spectrogram due to thermal radiation.

RT continuum modeling
 probability theory
 real variables
 relativity
 topology

CONTOUR (mission)*(added February 1999)*USE **Comet Nucleus Tour****contour sensors**

DEF The sensing of image coincidences by means of optical processing techniques.

RT boundaries
 concavity
 contours
 convexity
 imagery
 images
 ∞ sensors
 shapes
 topography

contours

UF *curved surfaces*
 RT concavity
 contour sensors
 convexity
 curved panels
 datum (elevation)
 elevation
 flatness
 geomorphology
 hypsography
 mapping
 roughness
 shapes
 topography

contract incentives

GS incentives
 . **contract incentives**
 motivation

. **contract incentives****contract management**

GS management
 . **contract management**
 RT contracts
 decision making
 decisions
 PERT
 project management
 schedules
 subcontracts
 systems engineering

contract negotiation

RT contractors
 contracts
 decision making
 government/industry relations
 industries
 management
 manufacturing
 subcontracts

contraction

RT cooling
 ∞ reduction
 shrinkage
 spasms

contractors

RT columns (process engineering)
 construction
 construction industry
 contract negotiation
 contracts
 government/industry relations
 industries
 qualifications
 subcontracts
 transportation

contracts

GS **contracts**
 . insurance (contracts)
 . subcontracts
 RT agreements
 cancellation
 constrictions
 construction
 contract management
 contract negotiation
 contractors
 estimates
 estimating
 extensions
 federal budgets
 government procurement
 government/industry relations
 grants
 leasing
 legal liability
 options
 procurement
 projects
 proposals
 revisions
 supplements

contrails

DEF Condensation trails. Artificial clouds made by the exhaust of jet aircraft.

UF *condensation trails*
vapor trails
 RT condensates
 wakes

contralateral functions

RT ∞ functions

contrarotating propellers

DEF Two propellers mounted on concentric shafts having a common drive and rotating in opposite directions.

GS propellers
 . **contrarotating propellers**
 RT propeller drive
 propeller efficiency

turboprop engines

contrast

DEF In general, the degree of differentiation between different tones in an image.

GS **contrast**
 . image contrast
 . phase contrast
 RT character recognition
 color
 legibility
 perception
 printing
 resolution
 ∞ sharpness
 visibility
 vision

∞ **control**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *control systems*
controlled stability
regulation
 RT access control
 active control
 adaptive control
 air navigation
 air traffic control
 aircraft control
 altitude control
 approach control
 astronautics
 attitude control
 automatic control
 automatic control valves
 automatic flight control
 automatic frequency control
 automatic gain control
 avionics
 biofeedback
 boundary layer control
 cascade control
 chemical reaction control
 circulation control airfoils
 circulation control rotors
 combustion control
 command and control
 control boards
 control configured vehicles
 control data (computers)
 control equipment
 control moment gyroscopes
 control rockets
 control rods
 control simulation
 control stability
 control sticks
 control surfaces
 control systems design
 control theory
 control units (computers)
 control valves
 controllability
 controlled atmospheres
 controlled fusion
 controllers
 critical path method
 cybernetics
 direct lift controls
 directional control
 dynamic characteristics
 dynamic control
 electric control
 electronic control
 elevators (control surfaces)
 engine control
 environmental control
 feedback control
 feedforward control
 fire control
 fire control circuits
 flaps (control surfaces)
 flight control
 flood control
 fluidics
 fly by tube control
 fly by wire control
 frequency control

control boards

fuel control
ground based control
harmonic control
helicopter control
hydraulic control
integrated mission control center
interactive control
inventory controls
jet control
lateral control
linear parameter-varying control
linear quadratic Gaussian control
linear quadratic regulator
longitudinal control
magnetic control
manual control
MIMO (control systems)
missile control
model reference adaptive control
multivariable control
network control
nuclear reactor control
numerical control
off-on control
optical control
optimal control
payload control
phase control
plasma control
pneumatic control
pointing control systems
pollution control
porous boundary layer control
process control (industry)
proportional control
quality control
radar approach control
radio control
∞ reaction control
regulations
regulators
regulatory mechanisms (biology)
remote control
robot control
rocket engine control
satellite attitude control
satellite control
scheduling
self adaptive control systems
sequential control
servocontrol
servomechanisms
shape control
shock wave control
SISO (control systems)
spacecraft control
spectral shift control
spectral shift control reactor
speed control
stabilization
steering
Submarine Integrated Control project
systems engineering
tabs (control surfaces)
temperature control
thermal control coatings
thrust control
thrust vector control
time optimal control
traffic control
trajectory control
Transit Attitude Control satellite
transponder control group
turbojet engine control
variable stream control engines
visual control
voice control
wave incidence control
weather modification

control boards

UF *control panels*
RT consoles
∞ control
display devices
manual control
remote control

control configured vehicles

RT aircraft configurations

aircraft design
∞ control
flight control
technology utilization
∞ vehicles

control data (computers)

RT computers
∞ control
∞ data
data systems

control devices

USE **control equipment**

control equipment

UF *control devices*
GS **control equipment**
. control sticks
. pressure switches
. regulators
. . . automatic control valves
. . . pressure regulators
. . . relief valves
. . cryostats
. . current regulators
. . flow regulators
. . . fuel flow regulators
. . oxygen regulators
. . speed regulators
. . thermostats
. . voltage regulators
. servoamplifiers
. teleoperators
RT aircraft control
automatic control
∞ control
∞ effectors
electric control
electronic control
feedback control
manipulators
manual control
nonlinear systems
off-on control
optical control
pneumatic control
proportional control
recording instruments
speed control
transducers

control moment gyroscopes

GS gyroscopes
. **control moment gyroscopes**
RT attitude control
attitude gyros
attitude indicators
∞ control
equations of motion
gimbals
gyrodampers
indicating instruments
measuring instruments
nutating dampers
servocontrol
servomechanisms

control panels

USE **control boards**

control rockets

DEF Vernier engines, retrorockets, or other such rockets, used to change the attitude of, guide, or make small changes in the speed of a rocket, spacecraft, or the like. Used for steering rockets.

UF *steering rockets*
GS engines
. rocket engines
. . Vernier engines
. . . **control rockets**
. . torpedo engines
. . Vernier engines
. . . **control rockets**
RT ∞ control
retrorocket engines
steering
thrust control

variable thrust

control rods

GS rods
. **control rods**
RT ∞ control
neutron absorbers
nuclear reactor control
nuclear reactors
poisoning (reaction inhibition)
reactor cores
reactor safety

control simulation

GS simulation
. **control simulation**
RT aircraft control
computerized simulation
∞ control
control theory
flight simulation
flight simulators
hardware-in-the-loop simulation
motion simulators
spacecraft control
spacecraft maneuvers
training simulators

control stability

GS dynamic characteristics
. dynamic stability
. . **control stability**
stability
. dynamic stability
. . **control stability**
RT aircraft control
aircraft spin
aircraft stability
∞ control
controllability
flight control
loop transfer recovery
MIMO (control systems)
motion stability
Nyquist diagram
pilot induced oscillation
robustness (mathematics)
sampled data systems
SISO (control systems)
spacecraft motion
spacecraft stability
stability augmentation
systems stability

control sticks

GS control equipment
. **control sticks**
RT aircraft control
∞ control
flight control
manual control

control surfaces

GS **control surfaces**
. ailerons
. . flaperons
. . spoiler slot ailerons
. elevators (control surfaces)
. elevons
. flaps (control surfaces)
. . externally blown flaps
. . . upper surface blown flaps
. . flaperons
. . jet flaps
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
. guide vanes
. jet vanes
. horizontal tail surfaces
. rudders
. . aerial rudders
. . marine rudders
. spoilers
. tabs (control surfaces)
RT aerodynamic brakes
aerodynamic configurations

aerodynamic interference
aerodynamics
aircraft parts
aircraft structures
airfoils
airframes
blunt trailing edges
boundary layer control
canard configurations
∞ control
drag devices
fins
fires
flight control
free wing aircraft
guidance (motion)
nose fins
stabilizers (fluid dynamics)
∞ surfaces
sweptback tail surfaces
T tail surfaces
tail assemblies
tail surfaces
trapezoidal tail surfaces
vanes
wings

control systems
USE **control**

control systems design
GS systems engineering
. **control systems design**
RT aerospace systems
automatic control
∞ automation
bionics
bond graphs
∞ control
control theory
controllers
cybernetics
∞ design
design analysis
electric control
electronic control
feedback control
frequency domain analysis
genetic algorithms
H-2 control
H-infinity control
linear parameter-varying control
linear quadratic Gaussian control
linear quadratic regulator
loop transfer functions
loop transfer recovery
mathematical models
membership functions
MIMO (control systems)
numerical control
operations research
optimal control
parameter identification
robot control
SISO (control systems)
system identification
systems analysis
systems integration
time domain analysis
uncertain systems

control theory
RT adaptive control
closed cycles
∞ control
control simulation
control systems design
controllability
distributed parameter systems
dynamic control
dynamical systems
feedback
feedback control
feedforward control
games
H-2 control
H-infinity control
interactive control
linear quadratic Gaussian control
linear quadratic regulator

loop transfer recovery
MIMO (control systems)
model reference adaptive control
multivariable control
observability (systems)
off-on control
optimal control
robot control
robustness (mathematics)
sampled data systems
servocontrol
shape control
SISO (control systems)
∞ theories
tracking problem
uncertain systems

control units (computers)
DEF Those parts of computers that cause the arithmetic unit, storage, and transfer of a computer to operate in proper sequence.
RT central processing units
computer components
computers
∞ control
data processing equipment

control valves
GS valves
. **control valves**
RT actuators
∞ control
pneumatic control

controllability
DEF The capability of an aircraft, rocket, or other vehicle to respond to control, especially in direction or attitude. Used for handling qualities.
UF *handling qualities*
RT aircraft control
aircraft performance
aircraft specifications
aircraft spin
aircraft stability
∞ control
control stability
control theory
directional stability
flight characteristics
helicopter control
helicopter performance
liquid sloshing
low speed stability
maneuverability
pilot ratings
quality
spacecraft reliability
stability
steering
wheel brakes

controlled atmospheres
GS **controlled atmospheres**
. argon-oxygen atmospheres
. cabin atmospheres
. . spacecraft cabin atmospheres
. helium-oxygen atmospheres
. inert atmosphere
RT air conditioning
∞ atmospheres
∞ blankets
clean rooms
∞ control
environments
furnaces
gas mixtures
gnatobiotics
oxygen supply equipment
spacecraft environments

controlled avalanche transit time devices
USE **CATT devices**

controlled fusion
SN (CONTROLLED NUCLEAR FUSION)
GS nuclear reactions
. thermonuclear reactions
. . nuclear fusion
. . . **controlled fusion**
RT ∞ control

Joint European Torus
limiters (fusion reactors)
plasma compression
plasma cooling
plasma currents
plasma physics
relativistic electron beams
strongly coupled plasmas
thermonuclear power generation
zeta pinch

controlled stability
USE **control**

controllers
SN (LIMITED TO DEVICES AND CONTROL THEORY)
GS **controllers**
. power factor controllers
. servomechanisms
. . servoamplifiers
. . servomotors
RT actuators
analyzers
automatic control
∞ automation
∞ control
control systems design
cryostats
current regulators
cybernetics
electronic control
H-2 control
H-infinity control
instrument receivers
instrument transmitters
∞ instruments
linear quadratic regulator
measuring instruments
optical control
pneumatic control
pressure regulators
programmable logic devices
propellant actuated instruments
regulators
remote control
rocket-borne instruments
speed control
speed regulators
temperature control
thermostats
voltage regulators

Convair 340 aircraft
USE **CV-340 aircraft**

Convair 440 aircraft
USE **CV-440 aircraft**

Convair 880 aircraft
USE **CV-880 aircraft**

Convair 990 aircraft
USE **CV-990 aircraft**

convection
DEF In general, mass motion within a fluid resulting in transport and mixing of the properties of that fluid. Specifically, in meteorology, atmospheric motions that are predominately vertical.

GS **convection**
. forced convection
. free convection
. . Rayleigh-Benard convection
. . . Benard cells
. stellar convection
. . solar convection (astronomy)
. surface tension driven convection
. . Marangoni convection
RT advection
base heating
Boussinesq approximation
buoyancy-driven flow
∞ conduction
convection cells
convection-diffusion equation
fluid dynamics
Grashof number
heat transmission

convection cells

heating
meteorology
mixing height
mixing layers (fluids)
stellar interiors

convection cells

(added June 1990)
RT atmospheric circulation
convection
convection currents
convective flow
convective heat transfer

convection clouds

GS clouds (meteorology)
. **convection clouds**
. . . arc clouds
. . . cumulonimbus clouds
. . . anvil clouds
. . . cumulus clouds
. . . anvil clouds
RT air currents
cloud physics
meteorology
nephanalysis
supercooling
vertical air currents

convection currents

RT air currents
Benard cells
convection cells
convection-diffusion equation
electron bunching
fluid flow
free convection
mixing height
Rayleigh-Benard convection
solar convection (astronomy)
solar granulation
stellar convection
vertical air currents

convection-diffusion equation

(added August 1991)
DEF An equation for convection and diffusion, in which the rate of change with respect to time of the density (concentration) of the convecting/diffusing substance at a fixed point in space plus the product of the divergence of the velocity field and the density of the convecting/diffusing substance equals the product of the diffusion coefficient and the differential of the density of the convecting/diffusing substance.
UF *diffusion-convection equation*
RT Benard cells
computational fluid dynamics
convection
convection currents
convective flow
diffusion
diffusion coefficient
 ∞ equations
flow equations
flow theory
Rayleigh-Benard convection
reaction-diffusion equations

convective flow

UF *thermal currents*
GS fluid flow
. **convective flow**
. . . Rayleigh-Benard convection
. . . Benard cells
. . . buoyancy-driven flow
RT convection cells
convection-diffusion equation
free convection
gas density
geophysical fluid flow cells
heat transmission
Marangoni convection
mass flow rate
mass transfer
porous boundary layer control
solar convection (astronomy)
stellar convection
surface tension driven convection
temperature

thermal diffusion

convective heat transfer

GS transmission
. heat transmission
. . heat transfer
. . . **convective heat transfer**
RT aerodynamic heating
boundary layer combustion
boundary layer flow
Brinkman number
conductive heat transfer
convection cells
cooling fins
forced convection
free convection
laminar heat transfer
mass transfer
Nusselt number
radiative heat transfer
Rayleigh-Benard convection
surface cooling
temperature gradients
thermohydraulics
thermosiphons
turbulent heat transfer

conventions

RT agreements
air law
compatibility
conferences
 ∞ cooperation
international cooperation
international law
outer space treaty
standards

convergence

DEF Approach to a limit, e.g., by an infinite sequence. Used for confluence.
UF *confluence*
RT divergence
patch tests
regularity
tapering
variability

convergent nozzles

RT conical nozzles
fluid amplifiers
nozzle geometry
nozzle walls
 ∞ nozzles
turbine engines
turbojet engines

convergent-divergent nozzles

UF *de Laval nozzles*
GS exhaust nozzles
. **convergent-divergent nozzles**
RT conical nozzles
nozzle geometry
nozzle inserts
 ∞ nozzles
rocket nozzles
supersonic nozzles
transonic nozzles
turbine exhaust nozzles
wind tunnel nozzles

conversation

GS communicating
. verbal communication
. . **conversation**
speech
. **conversation**
RT voice communication
words (language)

∞ conversion

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bioconversion
conversion tables
data conversion routines
electric generators
energy conversion
energy conversion efficiency
exchanging

frequency converters
geothermal energy conversion
internal conversion
isomerization
liquefaction
metrication
ocean thermal energy conversion
organic wastes (fuel conversion)
ortho para conversion
photothermal conversion
photovoltaic conversion
refining
satellite solar energy conversion
solar energy conversion
solar total energy systems
thermionic power generation
thermoelectric power generation
turbogenerators
waterwave energy conversion

conversion tables

GS tables (data)
. **conversion tables**
RT ∞ conversion
data converters
International System of Units
units of measurement

convertiplanes

USE **V/STOL aircraft**

∞ converters

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Rotary devices for changing alternating current to direct current. Transducers whose output is a different frequency from its input.
RT analog to digital converters
binary to decimal converters
current converters (AC to DC)
data converters
digital to analog converters
direct power generators
down-converters
electric generators
frequency converters
image converters
instrument transformers
inverted converters (DC to AC)
parametric frequency converters
power converters
pulse width amplitude converters
pyrometallurgy
solar blankets
thermionic converters
torque converters
transducers
transformers
up-converters
voltage converters (AC to AC)
voltage converters (DC to DC)

convertible fan-shaft engines

GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **convertible fan-shaft engines**
. aircraft engines
. . **convertible fan-shaft engines**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **convertible fan-shaft engines**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **convertible fan-shaft engines**
RT helicopter engines
jet thrust

- propulsion system configurations
 - rotary wings
 - TF-34 engine
 - turboshafts
 - V/STOL aircraft
 - variable cycle engines
 - vertical takeoff aircraft
- convexity**
- GS shapes
 - . **convexity**
 - RT concavity
 - contour sensors
 - contours
 - flatness
 - lenticular bodies
 - ∞ surface geometry
- conveyors**
- RT automated guideway transit vehicles
 - automated transit vehicles
 - chutes
 - cranes
 - elevators (lifts)
 - feeders
 - forks
 - ∞ lifts
 - materials handling
 - ribbons
 - rollers
 - scoops
 - ∞ tracks
 - transportation
- convolution integrals**
- UF *convolutions (mathematics)*
 - GS analysis (mathematics)
 - . functional analysis
 - . . **convolution integrals**
 - integrals
 - . **convolution integrals**
 - RT integral transformations
 - trellis coding
- convolutions (mathematics)*
- USE **convolution integrals**
- convulsions**
- RT human pathology
 - muscles
 - psychotherapy
 - seizures
 - ∞ shock
- Con-X observatory*
(added February 2006)
- USE **Constellation-X**
- Cook Inlet (AK)**
- GS landforms
 - . inlets (topography)
 - . . **Cook Inlet (AK)**
 - RT Alaska
- Cookpot aircraft*
- USE **TU-124 aircraft**
- cool stars**
- GS celestial bodies
 - . stars
 - . . late stars
 - . . . **cool stars**
 - carbon stars
 - flare stars
 - K stars
 - M stars
 - Van Biesbroeck star
 - Mira variables
 - Omicron Ceti star
 - S stars
 - RT brown dwarf stars
 - giant stars
 - R Coronae Borealis stars
 - stellar atmospheres
 - stellar envelopes
 - stellar spectra
- stellar temperature
- coolant loss*
- USE **loss of coolant**
- coolants**
- DEF Liquids of gases used to cool something, as a rocket combustion chamber.
 - GS **coolants**
 - . engine coolants
 - . organic coolants
 - RT air conditioning
 - air cooling
 - brines
 - coolers
 - cooling
 - cooling systems
 - freon
 - gas cooling
 - heat exchangers
 - liquid cooling
 - loss of coolant
 - nuclear reactors
 - reactor materials
 - refrigerants
 - sodium cooling
- coolers**
- RT air conditioning
 - air conditioning equipment
 - air cooling
 - compressors
 - coolants
 - cooling
 - cooling systems
 - cryogenic cooling
 - refrigerating
 - refrigerating machinery
 - refrigerators
- cooling**
- UF *chilling*
 - heat dissipation*
 - heat dissipation chilling*
 - GS **cooling**
 - . absorption cooling
 - . air cooling
 - . evaporative cooling
 - . . film cooling
 - . . sweat cooling
 - . gas cooling
 - . laser cooling
 - . liquid cooling
 - . . film cooling
 - . magnetic cooling
 - . plasma cooling
 - . precooling
 - . quenching (cooling)
 - . . rapid quenching (metallurgy)
 - . cryogenic cooling
 - . radiant cooling
 - . regenerative cooling
 - . sodium cooling
 - . solar cooling
 - . solid cryogen cooling
 - . space cooling (buildings)
 - . supercooling
 - . surface cooling
 - . thermoelectric cooling
 - . thermomagnetic cooling
 - RT ablation
 - ablative materials
 - air conditioning
 - bathing
 - condensing
 - contraction
 - coolants
 - coolers
 - cooling flows (astrophysics)
 - cryogenics
 - engine coolants
 - film condensation
 - freezing
 - freon
 - geothermal energy utilization
 - heat exchangers
 - heat radiators
 - heat shielding
 - heat transfer
 - heating
- Hilsch tubes
- jackets
- low temperature
- melting
- mushy zones
- refrigerating
- reusable heat shielding
- spacecraft radiators
- temperature control
- temperature distribution
- thermal cycling tests
- thermal shock
- thermal stresses
- transpiration
- ventilation
- ventilation fans
- venting
- wetting
- cooling fins**
- GS fins
 - . **cooling fins**
 - RT condensers (liquefiers)
 - convective heat transfer
 - finned bodies
 - heat exchangers
 - heat radiators
 - radiative heat transfer
- cooling flows (astrophysics)**
- GS fluid flow
 - . gas flow
 - . . **cooling flows (astrophysics)**
 - RT accretion disks
 - cooling
 - cosmic gases
 - dark matter
 - galactic clusters
 - galactic evolution
 - intergalactic media
 - interstellar gas
 - star formation
 - x ray sources
- cooling systems**
- RT absorbers (equipment)
 - air conditioning
 - air conditioning equipment
 - air cooling
 - air filters
 - blowers
 - capillary pumped loops
 - closed cycles
 - condensers (liquefiers)
 - coolants
 - coolers
 - dehumidification
 - engine coolants
 - Ettingshausen effect
 - evaporative cooling
 - evaporators
 - exhaust systems
 - freon
 - heat exchangers
 - heat pumps
 - heat radiators
 - heat sinks
 - infrared suppression
 - intake systems
 - liquid cooling
 - lubrication systems
 - refrigerants
 - refrigerating
 - refrigerating machinery
 - registers (air circulation)
 - solar cooling
 - solid cryogens
 - space cooling (buildings)
 - spacecraft radiators
 - ∞ systems
 - temperature control
 - temperature distribution
 - thermoacoustic refrigerators
 - transpiration
 - ventilation
 - ventilation fans

cooperation

vents

∞ cooperation

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT conventions
 - employee relations
 - international cooperation
 - public relations
 - sea law

Cooper-Harper ratings

(added August 1999)

- GS flight characteristics
 - . pilot ratings
 - . . **Cooper-Harper ratings**
- ratings
 - . pilot ratings
 - . . **Cooper-Harper ratings**
- RT aircraft performance
 - helicopter performance

coordinate geometry language

USE **COGO (programming language)**

coordinate systems

USE **coordinates**

coordinate transformations

- GS functions (mathematics)
 - . **coordinate transformations**
 - transformations (mathematics)
 - . **coordinate transformations**
- RT conformal mapping
 - invariant imbeddings
 - isoparametric finite elements
 - isotropic turbulence
 - Joukowski transformation
 - Schwarzschild metric
 - Theodorsen transformation

coordinates

DEF Sets of measures defining points in space. Used for axes (coordinates) and coordinate systems.

- UF *axes (coordinates)*
 - coordinate systems*
- GS **coordinates**
 - . astronomical coordinates
 - . Cartesian coordinates
 - . computational grids
 - . . structured grids (mathematics)
 - . . . multiblock grids
 - . . unstructured grids (mathematics)
 - . cylindrical coordinates
 - . geodetic coordinates
 - . Hylleraas coordinates
 - . hyperbolic coordinates
 - . inertial coordinates
 - . Lagrange coordinates
 - . oblique coordinates
 - . planetocentric coordinates
 - . . geocentric coordinates
 - . polar coordinates
 - . spherical coordinates
- RT algebra
 - analytic geometry
 - axes (reference lines)
 - celestial reference systems
 - Earth axis
 - equators
 - Euclidean geometry
 - fractals
 - Fujita method
 - geomagnetic latitude
 - geometry
 - grid generation (mathematics)
- ∞ grids
 - half planes
 - half spaces
 - latitude
 - line of sight
 - longitude
 - manifolds (mathematics)
 - maps
- ∞ nets
- ∞ origins
- ∞ positions (location)

∞ reference systems

coordination

- RT continuity
- correlation
- interfaces
- sequencing
- time sharing

coordination number

(added June 2002)

DEF In any system with a lattice structure, the number of neighboring units for any given unit.

- RT crystal lattices
 - crystal structure
 - ligands
 - molecular structure
- ∞ numbers
- x ray spectroscopy

coordination polymers

RT ∞ polymers

Copernicus spacecraft

USE **OA0 3**

copilots

USE **aircraft pilots**

coplanarity

- GS analysis (mathematics)
 - . calculus
 - . . vector analysis
 - . . . **coplanarity**
 - . real variables
 - . . vector analysis
 - . . . **coplanarity**
 - geometry
 - . vector analysis
 - . . **coplanarity**

copolymerization

- GS chemical reactions
 - . **copolymerization**
 - synthesis (chemistry)
 - . polymerization
 - . . **copolymerization**
- RT block copolymers
 - dimerization
- ∞ polymers
 - vinyl copolymers

copolymers

DEF Polymers formed from two or more types of monomers.

- GS **copolymers**
 - . block copolymers
 - . vinyl copolymers
 - . Viton rubber (trademark)
- RT KEL-F
 - polymer blends
- ∞ polymers

copper

- GS chemical elements
 - . **copper**
 - . . copper isotopes
 - metals
 - . transition metals
 - . . **copper**
 - . . . copper isotopes
- RT amines
 - constantan
 - heavy metals
 - selenium alloys

copper alloys

- GS alloys
 - . **copper alloys**
 - . . babbitt metal
 - . . brasses
 - . . bronzes
 - . . Manganin (trademark)
- RT aluminum-lithium alloys
 - bearing alloys
 - gold alloys
 - lamella (metallurgy)

lithium alloys

copper chlorides

- GS copper compounds
 - . **copper chlorides**
 - halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **copper chlorides**
 - . halides
 - . . chlorides
 - . . . **copper chlorides**
 - . metal halides
 - . . . **copper chlorides**

copper compounds

- GS **copper compounds**
 - . copper chlorides
 - . copper fluorides
 - . copper oxides
 - . copper selenides
 - . . copper indium selenides
 - . copper sulfides
 - . cuprates
- RT ∞ chemical compounds
- ∞ Group 1B compounds
- ∞ metal compounds

copper fluorides

- GS copper compounds
 - . **copper fluorides**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **copper fluorides**
 - . halides
 - . . fluorides
 - . . . metal fluorides
 - **copper fluorides**
 - . metal halides
 - . . metal fluorides
 - . . . **copper fluorides**

copper indium selenides

(added June 1995)

- GS chalcogenides
 - . selenides
 - . . copper selenides
 - . . . **copper indium selenides**
 - . . indium selenides
 - . . . **copper indium selenides**
 - copper compounds
 - . copper selenides
 - . . **copper indium selenides**
 - . indium compounds
 - . . indium selenides
 - . . **copper indium selenides**
 - . selenium compounds
 - . selenides
 - . . copper selenides
 - . . . **copper indium selenides**
 - . . indium selenides
 - . . . **copper indium selenides**
- RT semiconductors (materials)
 - solar cells
 - thin films

copper isotopes

- GS chemical elements
 - . copper
 - . . **copper isotopes**
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - **copper isotopes**
 - metals
 - . transition metals
 - . . copper
 - . . . **copper isotopes**

copper oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **copper oxides**
 - copper compounds
 - . **copper oxides**
- RT BSCCO superconductors
 - cuprates

- thermites
YBCO superconductors
- copper selenides**
GS chalcogenides
. selenides
. . **copper selenides**
. . . copper indium selenides
copper compounds
. **copper selenides**
. . copper indium selenides
selenium compounds
. selenides
. . **copper selenides**
. . . copper indium selenides
- copper sulfides**
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . **copper sulfides**
copper compounds
. **copper sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **copper sulfides**
- copyrights**
GS intellectual property
. **copyrights**
RT documents
licensing
patent applications
policies
regulations
- coral heads*
USE **coral reefs**
- coral reefs**
UF *atoll reefs*
coral heads
RT atolls
coasts
islands
keys (islands)
reefs
- cordage**
RT cables (ropes)
ceramic fibers
connectors
cotton
fibers
∞ filaments
strands
strings
wire
yarns
- Cordelia**
(added January 1996)
DEF A natural satellite of Uranus orbiting at a mean distance of 49,750 kilometers.
GS celestial bodies
. natural satellites
. . Uranus satellites
. . . **Cordelia**
RT Uranus (planet)
- cordierite**
GS aluminum compounds
. **cordierite**
iron compounds
. **cordierite**
magnesium compounds
. **cordierite**
minerals
. **cordierite**
silicon compounds
. silicates
. . **cordierite**
- cordite*
USE **colloidal propellants**
double base propellants
- core flow**
GS fluid flow
- . **core flow**
RT flow geometry
magnetohydrodynamic flow
one dimensional flow
plasmas (physics)
shear flow
- core sampling**
GS sampling
. **core sampling**
RT cores
depth measurement
drilling
Earth crust
hydrogeology
mines (excavations)
ocean bottom
ocean currents
oceanography
particle tracks
salinity
samplers
- core storage**
UF *machine storage*
GS computer components
. computer storage devices
. . random access memory
. . . **core storage**
magnetic storage
. **core storage**
memory (computers)
. random access memory
. . **core storage**
RT bubble memory devices
buffer storage
data storage
magnetic disks
magnetic drums
∞ storage
- core-mantle boundary**
(added August 1994)
GS boundaries
. **core-mantle boundary**
RT boundary layers
Earth core
Earth mantle
lunar mantle
planetary boundary layer
planetary cores
planetary mantles
regolith
tectonics
- cores**
GS **cores**
. honeycomb cores
. lunar core
. magnetic cores
. planetary cores
. . Earth core
. . reactor cores
. stellar cores
RT ∞ cells
core sampling
mandrels
molding materials
- Coriolis effect**
DEF The physiological effect felt by a person moving radially in a rotating system, as a rotating space station resulting in nausea vertigo, dizziness, etc. Named after Gaspard G. Coriolis (d 1843), French civil engineer.
RT disorientation
∞ effects
gyres
Kelvin waves
meteorology
planetary waves
rotating environments
rotation
vestibular tests
- cork (materials)**
GS wood
. **cork (materials)**
RT ∞ materials
organic materials
- thermal insulation
- corn**
UF *zea mays*
GS farm crops
. grains (food)
. . **corn**
plants (botany)
. **corn**
RT agriculture
blight
bollworms
botany
crop growth
∞ crops
curing
Earth resources
∞ food
irrigation
seeds
- cornea**
GS anatomy
. sense organs
. . eye (anatomy)
. . . **cornea**
RT keratitis
vision
- corner flow**
GS fluid flow
. **corner flow**
RT cavity flow
channel flow
ducted flow
∞ flow
nozzle flow
secondary flow
- corners**
RT angles (geometry)
antennas
joints (junctions)
shapes
- Corona Borealis constellation**
GS constellations
. **Corona Borealis constellation**
RT celestial bodies
celestial sphere
stars
- corona discharges*
USE **electric corona**
- coronagraphs**
RT astronomical photography
solar observatories
spectroheliographs
Starsat telescope
telescopes
- coronal holes**
DEF Solar areas where extreme UV and x ray coronal emission is abnormally low or absent. These are coronal regions apparently associated with diverging magnetic fields.
GS coronas
. stellar coronas
. . solar corona
. . . **coronal holes**
RT decametric waves
∞ holes
radio astronomy
solar radio emission
solar wind
solar x-rays
stellar structure
ultraviolet radiation
- coronal loops**
DEF Loop like structures revealed in soft x ray images of the solar limb and believed to evolve from the introduction of energy and density perturbations at the top of an arched, cylindrical magnetic flux tube initially in equilibrium in the coronal plasma.
GS coronas
. stellar coronas
. . solar corona

coronal mass ejection

. . . **coronal loops**
 RT chromosphere
 coronal mass ejection
 solar flares
 solar limb

coronal mass ejection
(added June 1997)
 GS ejection
 . stellar mass ejection
 . . **coronal mass ejection**
 RT coronal loops
 interplanetary shock waves
 solar corona
 solar flares
 solar wind
 stellar coronas
 STEREO (observatory)

coronary artery disease
 GS diseases
 . heart diseases
 . . **coronary artery disease**
 RT angina pectoris
 arteriosclerosis
 myocardial infarction

coronary circulation
 GS circulation
 . blood circulation
 . . **coronary circulation**
 RT heart
 heart valves

coronas
 GS **coronas**
 . electric corona
 . stellar coronas
 . . solar corona
 . . . coronal holes
 . . . coronal loops
 RT electric arcs
 electric discharges
 halos
 ionization
 solar spectra

corotation
 GS gyration
 . rotation
 . . **corotation**
 RT astronomical models
 Earth magnetosphere
 galactic rotation
 galactic structure
 spiral galaxies
 stellar motions
 stellar rotation

Corporal missile
 GS missiles
 . surface to surface missiles
 . . **Corporal missile**
 RT liquid propellant rocket engines

corpuscles (blood)
 USE **blood cells**

corpuscular radiation
 SN (LIMITED TO NONELECTROMAGNETIC RADIATION CONSISTING OF ENERGETIC CHARGED OR NEUTRAL PARTICLES)
 DEF Nonelectromagnetic radiation consisting of energetic charged or neutral particles. Used for penetrating particles.
 UF *penetrating particles*
 GS particles
 . **corpuscular radiation**
 . . electron precipitation
 . . electron radiation
 . . . beta particles
 . . . electron beams
 relativistic electron beams
 . . energetic particles
 . . electrons
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons

. . . . negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 . . . nuclei (nuclear physics)
 alpha particles
 deuterons
 even-even nuclei
 heavy nuclei
 hypernuclei
 odd-even nuclei
 odd-odd nuclei
 tritons
 . . plasmas (physics)
 argon plasma
 beta particles
 boundary layer plasmas
 cold plasmas
 collisional plasmas
 strongly coupled plasmas
 collisionless plasmas
 cosmic plasma
 cylindrical plasmas
 dense plasmas
 plasma focus
 strongly coupled plasmas
 electron plasma
 electron-positron plasmas
 elliptical plasmas
 helium plasma
 high temperature plasmas
 hydrogen plasma
 deuterium plasma
 laser plasmas
 metallic plasmas
 cesium plasma
 uranium plasmas
 microplasmas
 nitrogen plasma
 nonequilibrium plasmas
 nonuniform plasmas
 oxygen plasma
 rarefied plasmas
 relativistic plasmas
 rotating plasmas
 semiconductor plasmas
 space plasmas
 solar wind
 stellar winds
 dusty plasmas
 spherical plasmas
 thermal plasmas
 toroidal plasmas
 . . primary cosmic rays
 . . . solar cosmic rays
 . . radiation belts
 . . . artificial radiation belts
 . . . inner radiation belt
 . . . outer radiation belt
 . . . proton belts
 . . . solar corpuscular radiation
 . . . solar electrons
 . . . solar neutrinos
 . . . solar neutrons
 . . . solar protons
 RT alpha particles
 atmospheric radiation
 background radiation
 beams (radiation)
 Cerenkov radiation
 charged particles
 coherent radiation
 continuous radiation
 cosmic rays
 electromagnetic radiation
 extraterrestrial radiation
 flux (rate)
 galactic radiation
 incident radiation
 interstellar radiation
 ionizing radiation
 ions
 mesons
 neutrons
 nuclear particles
 nuclear radiation
 nuclei (nuclear physics)
 particle production

phonon beams
 pulsed radiation
 ∞ radiation
 radiation distribution
 radiation pressure
 radiation sources
 ∞ rays
 reflected waves
 refracted waves
 solar radiation
 solar terrestrial interactions
 stratosphere radiation

correction

DEF A quantity, equal in absolute magnitude to the error, added to a calculated or observed value to obtain a true value.

GS **correction**
 . atmospheric correction
 . optical correction procedure
 RT accommodation
 accuracy
 adaptation
 adjusting
 alignment
 error correcting devices
 errors
 improvement
 information theory
 intercalibration
 parity
 redundancy
 revisions
 vegetative index

correlation

DEF In statistics, a relationship between two occurrences which is expressed as a number between minus one (-1) and plus one (+1). Used for correlation functions.

UF *correlation functions*
 GS **correlation**
 . angular correlation
 . autocorrelation
 . correlation coefficients
 . correlation detection
 . cross correlation
 . data correlation
 . spectral correlation
 . statistical correlation
 RT bivariate analysis
 collating
 confidence
 contingency
 coordination
 covariance
 ∞ estimators
 evaluation
 factor analysis
 forecasting
 information theory
 least squares method
 multivariate statistical analysis
 optimization
 probability theory
 quality control
 regression analysis
 regression coefficients
 significance
 statistical analysis
 teleconnections (meteorology)
 time series analysis
 validity
 variability
 variance (statistics)

correlation coefficients

GS coefficients
 . **correlation coefficients**
 . correlation
 . **correlation coefficients**
 . statistical analysis
 . **correlation coefficients**
 RT quality control
 statistical correlation

correlation detection

DEF A method of detection in which a signal is compared, point-to-point, with an internally generated reference.

- GS correlation
 . **correlation detection**
 detection
 . signal detection
 . . **correlation detection**
- RT ∞ detectors
 electromagnetic wave filters
 phase lock demodulators
 signal to noise ratios
- correlation functions*
 USE **correlation**
- correlators**
 SN (LIMITED TO DEVICES THAT DETECT WEAK SIGNALS IN NOISE BY PERFORMING AN ELECTRONIC OPERATION)
 DEF Devices that detect weak signals in noise by performing an electronic operation. Used for synchronous detectors.
 UF *synchronous detectors*
 GS **correlators**
 . image correlators
 . optical correlators
 RT synchrosopes
- corridors**
 GS **corridors**
 . Great Plains Corridor (North America)
 . St Louis-Kansas City Corridor (MO)
 RT passageways
- corrosion**
 DEF The deterioration of a metal by chemical or electrochemical reaction with its environment. Used for metal corrosion.
 UF *metal corrosion*
 GS **corrosion**
 . cavitation corrosion
 . electrochemical corrosion
 . fretting corrosion
 . fuel corrosion
 . hot corrosion
 . intergranular corrosion
 . rusting
 . scale (corrosion)
 . stress corrosion
 . . stress corrosion cracking
 . transgranular corrosion
 RT chemical attack
 chemical reactions
 coatings
 damage
 degradation
 deposits
 deterioration
 dissolving
 durability
 electrochemistry
 electrolysis
 erosion
 etchants
 etching
 failure
 finishes
 fouling
 gas-metal interactions
 humidity
 impingement
 incompatibility
 metal coatings
 ∞ metallurgy
 metal-water reactions
 oxidation
 passivity
 pitting
 protective coatings
 salt spray tests
 sterilization effects
 surface properties
 tribology
 wear
 weathering
- corrosion prevention**
 GS prevention
 . **corrosion prevention**
 protection
 . **corrosion prevention**
- RT aeration
 antifouling
 antioxidants
 cavitation corrosion
 chemical attack
 cleaning
 coating
 coatings
 desensitizing
 ∞ films
 fuel tanks
 ∞ inhibition
 inhibitors
 metal coatings
 nickel coatings
 packaging
 passivity
 preserving
 propellant additives
 sensitizing
 silicizing
 surface finishing
 surface treatment
 water treatment
 weatherproofing
- corrosion resistance**
 GS **corrosion resistance**
 . oxidation resistance
 RT antioxidants
 cavitation corrosion
 chemical attack
 chemical tests
 passivity
 pitting
 ∞ resistance
 rusting
 salt spray tests
 silicizing
 sulfidation
 surface finishing
- corrosion test loops**
 GS environmental tests
 . corrosion tests
 . . **corrosion test loops**
 loops
 . **corrosion test loops**
 RT ∞ tests
- corrosion tests**
 GS environmental tests
 . **corrosion tests**
 . . corrosion test loops
 . . salt spray tests
 RT cavitation corrosion
 chemical attack
 destructive tests
 fuel tests
 ∞ materials tests
 pitting
 propellant tests
 stability tests
 stress corrosion cracking
 ∞ tests
 transgranular corrosion
 underwater tests
 weathering
- corrugated plates**
 GS structural members
 . plates (structural members)
 . . **corrugated plates**
 RT corrugating
 reinforced plates
- corrugated shells**
 GS shells (structural forms)
 . **corrugated shells**
 RT anisotropic shells
 corrugating
 reinforced shells
- corrugated waveguides**
(added February 1998)
 GS waveguides
 . **corrugated waveguides**
 RT gratings (spectra)
 optical waveguides
- waveguide antennas
- corrugating**
 RT corrugated plates
 corrugated shells
 deformation
 grooves
 ∞ plates
 ∞ ridges
 ∞ waves
- Corsair aircraft*
 USE **A-7 aircraft**
- ∞ **cortexes**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT cerebral cortex
 cortexes (botany)
- cortexes (botany)**
 RT ∞ cortexes
 plants (botany)
- Corti organ**
 GS anatomy
 . sense organs
 . . ear
 . . . labyrinth
 cochlea
 **Corti organ**
- corticosteroids**
 GS organic compounds
 . lipids
 . . steroids
 . . . **corticosteroids**
 aldosterone
 hydroxycorticosteroid
 cortisone
 glucocorticoids
 secretions
 . endocrine secretions
 . . hormones
 . . . **corticosteroids**
 aldosterone
 hydroxycorticosteroid
 cortisone
 glucocorticoids
 RT adrenal metabolism
- cortisone**
 GS drugs
 . **cortisone**
 organic compounds
 . lipids
 . . steroids
 . . . corticosteroids
 hydroxycorticosteroid
 **cortisone**
 secretions
 . endocrine secretions
 . . hormones
 . . . corticosteroids
 hydroxycorticosteroid
 **cortisone**
 RT adrenal metabolism
 carbohydrate metabolism
- corundum*
 USE **aluminum oxides**
- Corvus missile**
 GS missiles
 . **Corvus missile**
 RT liquid propellant rocket engines
- COS-B satellite**
 GS artificial satellites
 . ESA satellites
 . . **COS-B satellite**
 ESA spacecraft
 . ESA satellites
 . . **COS-B satellite**
 RT Europa 2 launch vehicle
 European space programs
 gamma ray sources (astronomy)
- cosine series**
 GS analysis (mathematics)

- . calculus
 - .. series (mathematics)
 - ... **cosine series**
 - . real variables
 - .. differential equations
 - ... **cosine series**
 - .. periodic functions
 - ... trigonometric functions
 - ... **cosine series**
 - .. series (mathematics)
 - ... **cosine series**
 - functions (mathematics)
 - . transcendental functions
 - .. periodic functions
 - ... trigonometric functions
 - ... **cosine series**
 - RT wavelet analysis
- Cosmic Background Explorer satellite**
- DEF A NASA satellite launched on November 18, 1989 on a Delta I expendable launch vehicle. It is designed to measure background radiation in order to confirm or deny the big bang theory. Used for COBE.
- UF *COBE*
- GS artificial satellites
- . scientific satellites
 - .. Explorer satellites
 - ... **Cosmic Background Explorer satellite**
- RT background radiation
- radiation spectra
 - spaceborne astronomy
- cosmic dust**
- DEF Finely divided solid matter with particle sizes smaller than a micrometeorite, thus with diameters much smaller than a millimeter, moving in interplanetary space.
- GS extraterrestrial matter
- . interstellar matter
 - .. **cosmic dust**
 - ... interplanetary dust
 - ... meteoroid dust clouds
 - ... zodiacal dust particles
 - . dust
 - .. **cosmic dust**
 - ... interplanetary dust
 - ... meteoroid dust clouds
 - ... zodiacal dust
- RT infrared cirrus (astronomy)
- intergalactic media
 - meteoroids
 - micrometeorites
 - micrometeoroids
 - molecular clouds
 - organic solids
 - polycyclic aromatic hydrocarbons
 - reflection nebulae
 - space debris
 - terrestrial dust belt
 - Venus fly trap rocket vehicle
- cosmic gamma ray bursts*
- USE **gamma ray bursts**
- cosmic gases**
- GS extraterrestrial matter
- . **cosmic gases**
 - .. interplanetary gas
 - .. interstellar gas
 - gases
 - . rarefied gases
 - .. **cosmic gases**
 - ... interplanetary gas
 - ... interstellar gas
- RT cooling flows (astrophysics)
- degenerate matter
 - electron gas
 - intergalactic media
 - ionized gases
 - neutral gases
 - Sunyaev-Zeldovich effect
- cosmic microwave background radiation**
(added July 2000)
- UF *CMBR (astronomy)*
- GS background radiation
- . **cosmic microwave background radiation**
 - electromagnetic radiation
 - . radio waves
 - .. extraterrestrial radio waves
 - ... **cosmic microwave background radiation**
 - .. short wave radiation
 - ... microwaves
 - ... **cosmic microwave background radiation**
 - extraterrestrial radiation
 - . extraterrestrial radio waves
 - .. **cosmic microwave background radiation**
- RT cosmology
- Microwave Anisotropy Probe
 - radio astronomy
 - relic radiation
 - Sunyaev-Zeldovich effect
- cosmic noise**
- DEF Interference caused by cosmic radio waves.
- GS electromagnetic interference
- . radio frequency interference
 - .. electromagnetic noise
 - ... **cosmic noise**
- RT Alouette project
- background noise
 - background radiation
 - centimeter waves
 - electromagnetic noise measurement
 - galactic radiation
 - galactic radio waves
 - interstellar radiation
 - microwave emission
 - microwaves
 - noise storms
 - solar radiation
 - solar radio emission
- cosmic plasma**
- GS extraterrestrial matter
- . **cosmic plasma**
 - particles
 - . charged particles
 - .. energetic particles
 - ... plasmas (physics)
 - ... **cosmic plasma**
 - . corpuscular radiation
 - .. energetic particles
 - ... plasmas (physics)
 - ... **cosmic plasma**
- RT intergalactic media
- interplanetary gas
 - plasma clouds
 - plasmopause
 - relativistic plasmas
 - solar wind
 - stellar winds
 - strongly coupled plasmas
- cosmic radiation*
- USE **cosmic rays**
- cosmic radio waves*
- USE **extraterrestrial radio waves**
- cosmic ray albedo**
- GS albedo
- . **cosmic ray albedo**
- RT absorptance
- ∞ absorption
 - atmospheric attenuation
 - Earth albedo
 - lunar albedo
 - primary cosmic rays
 - reflectance
 - secondary cosmic rays
- cosmic ray showers**
- UF *air showers*
- Auger showers*
 - Moliere formula*
- GS ionizing radiation
- . cosmic rays
 - .. **cosmic ray showers**
- RT Auger effect
- ∞ cascades
- electron photon cascades
 - secondary cosmic rays
 - ∞ showers
- cosmic rays**
- DEF The aggregate of extremely high energy subatomic particles which travel the solar system and bombard the earth from all directions. Cosmic ray primaries seem to be mostly protons, hydrogen nuclei, but also contain heavier nuclei. On colliding with atmospheric particles they produce many different kinds of lower energy secondary cosmic radiation. Used for cosmic radiation.
- UF *cosmic radiation*
- GS ionizing radiation
- . **cosmic rays**
 - .. cosmic ray showers
 - .. galactic cosmic rays
 - .. gamma ray bursts
 - .. primary cosmic rays
 - .. solar cosmic rays
 - .. secondary cosmic rays
- RT aerospace environments
- albedo
 - Alpha Magnetic Spectrometer
 - alpha particles
 - big bang cosmology
 - Cerenkov radiation
 - corpuscular radiation
 - deuterons
 - electromagnetic radiation
 - electron acceleration
 - electrons
 - extraterrestrial radiation
 - Fermi Gamma-ray Space Telescope
 - Forbush decreases
 - galactic radiation
 - gamma ray telescopes
 - gamma rays
 - heliosphere
 - interstellar radiation
 - ion density (concentration)
 - mesons
 - neutrons
 - nuclear particles
 - nuclei (nuclear physics)
 - particle tracks
 - photons
 - protons
 - ∞ radiation
 - radiation belts
 - radiative transfer
 - scintillating fibers
 - single event upsets
 - solar radiation
 - stellar radiation
 - VLF emission recorders
 - x rays
- cosmic x rays**
- GS electromagnetic radiation
- . x rays
 - .. **cosmic x rays**
 - ionizing radiation
 - . x rays
 - .. **cosmic x rays**
- RT extraterrestrial radiation
- galactic radiation
 - gamma ray astronomy
 - gamma ray bursts
 - gamma rays
 - x ray astronomy
 - x ray binaries
 - x ray sources
- cosmions*
(added November 1999)
- USE **weakly interacting massive particles**
- cosmochemistry**
- DEF The branch of chemistry that deals with the chemical composition and changes in the universe.
- RT ∞ chemistry
- cosmology
 - extraterrestrial matter
 - geochemistry
 - interstellar chemistry

- isotope ratios
- laboratory astrophysics
- meteoritic composition
- cosmogony*
- USE **cosmology**
- cosmology**
 - UF *cosmogony*
 - GS **cosmology**
 - . big bang cosmology
 - . Hubble diagram
 - . missing mass (astrophysics)
 - RT astronomical models
 - astrophysics
 - cosmic microwave background radiation
 - cosmochemistry
 - dark energy
 - dark matter
 - event horizon
 - existence
 - galactic evolution
 - grand unified theory
 - gravitinos
 - Hubble constant
 - large-scale structure of the universe
 - local group (astronomy)
 - mass distribution
 - naked singularities
 - nuclear astrophysics
 - planetary evolution
 - Population III stars
 - protoplanets
 - red shift
 - star distribution
 - star formation
 - stellar evolution
 - stellar mass accretion
 - string theory
 - supergravity
 - supersymmetry
 - Tully-Fisher relation
 - universe
 - white holes (astronomy)
- cosmonauts**
 - GS personnel
 - . flying personnel
 - . . . **cosmonauts**
 - RT ∞ astronautics
 - astronauts
 - crew experiment stations
 - crew observation stations
 - crew workstations
 - crews
 - pilots (personnel)
 - Russian Space Program
 - spacecrews
- ∞ **cosmos**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT Cosmos satellites
 - universe
- Cosmos 2 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 2 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 2 satellite**
- Cosmos 3 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 3 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 3 satellite**
- Cosmos 5 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 5 satellite**
 - . Soviet satellites
- . . Cosmos satellites
- . . . **Cosmos 5 satellite**
- Cosmos 6 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 6 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 6 satellite**
- Cosmos 14 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 14 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 14 satellite**
- Cosmos 44 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 44 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 44 satellite**
- Cosmos 54 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 54 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 54 satellite**
- Cosmos 71 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 71 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 71 satellite**
- Cosmos 110 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 110 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 110 satellite**
- Cosmos 137 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 137 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 137 satellite**
- Cosmos 144 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 144 satellite**
 - . meteorological satellites
 - . . **Cosmos 144 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 144 satellite**
- Cosmos 149 satellite**
 - UF *Space Arrow satellite*
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 149 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 149 satellite**
- Cosmos 166 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 166 satellite**
- . . Cosmos satellites
- . . . **Cosmos 166 satellite**
- . Soviet satellites
- . . Cosmos satellites
- . . . **Cosmos 166 satellite**
- Cosmos 186 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 186 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 186 satellite**
- Cosmos 188 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 188 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 188 satellite**
- Cosmos 206 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 206 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 206 satellite**
- Cosmos 213 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 213 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 213 satellite**
- Cosmos 224 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 224 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 224 satellite**
- Cosmos 225 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 225 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 225 satellite**
- Cosmos 381 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 381 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 381 satellite**
- Cosmos 782 satellite**
 - DEF One in a series of satellites launched by the USSR reportedly for geophysical observations.
 - GS artificial satellites
 - . Soviet satellites
 - . . **Cosmos 782 satellite**
 - RT international cooperation
- Cosmos 936 satellite**
 - DEF One in a series of satellites launched by the USSR reportedly for geophysical observations.
 - GS artificial satellites
 - . Soviet satellites
 - . . **Cosmos 936 satellite**
 - RT international cooperation
- Cosmos 954 satellite**
 - DEF A Russian ocean surveillance satellite

Cosmos 1129 satellite

which reentered over Canada spreading radioactive debris.

- GS artificial satellites
 - . geophysical satellites
 - . . . Cosmos satellites
 - . . . **Cosmos 954 satellite**
 - . Soviet satellites
 - . . . Cosmos satellites
 - . . . **Cosmos 954 satellite**
- RT uncontrolled reentry (spacecraft)

Cosmos 1129 satellite

DEF Soviet VOSTOK biological spacecraft launched on September 25, 1979 carrying experiments from several nations. NASA contributed 13 experiments.

- GS artificial satellites
 - . geophysical satellites
 - . . . Cosmos satellites
 - . . . **Cosmos 1129 satellite**
 - . Soviet satellites
 - . . . Cosmos satellites
 - . . . **Cosmos 1129 satellite**
- RT international cooperation

Cosmos satellites

- GS artificial satellites
 - . geophysical satellites
 - . . . **Cosmos satellites**
 - . . . Cosmos 2 satellite
 - . . . Cosmos 3 satellite
 - . . . Cosmos 5 satellite
 - . . . Cosmos 6 satellite
 - . . . Cosmos 14 satellite
 - . . . Cosmos 44 satellite
 - . . . Cosmos 54 satellite
 - . . . Cosmos 71 satellite
 - . . . Cosmos 110 satellite
 - . . . Cosmos 137 satellite
 - . . . Cosmos 144 satellite
 - . . . Cosmos 149 satellite
 - . . . Cosmos 166 satellite
 - . . . Cosmos 186 satellite
 - . . . Cosmos 188 satellite
 - . . . Cosmos 206 satellite
 - . . . Cosmos 213 satellite
 - . . . Cosmos 224 satellite
 - . . . Cosmos 225 satellite
 - . . . Cosmos 381 satellite
 - . . . Cosmos 954 satellite
 - . . . Cosmos 1129 satellite
 - . . . Intercosmos satellites
 - . Soviet satellites
 - . . . **Cosmos satellites**
 - . . . Cosmos 2 satellite
 - . . . Cosmos 3 satellite
 - . . . Cosmos 5 satellite
 - . . . Cosmos 6 satellite
 - . . . Cosmos 14 satellite
 - . . . Cosmos 44 satellite
 - . . . Cosmos 54 satellite
 - . . . Cosmos 71 satellite
 - . . . Cosmos 110 satellite
 - . . . Cosmos 137 satellite
 - . . . Cosmos 144 satellite
 - . . . Cosmos 149 satellite
 - . . . Cosmos 166 satellite
 - . . . Cosmos 186 satellite
 - . . . Cosmos 188 satellite
 - . . . Cosmos 206 satellite
 - . . . Cosmos 213 satellite
 - . . . Cosmos 224 satellite
 - . . . Cosmos 225 satellite
 - . . . Cosmos 381 satellite
 - . . . Cosmos 954 satellite
 - . . . Cosmos 1129 satellite
 - . . . Intercosmos satellites
- RT ∞ cosmos

COSPAR (committee)

USE **Committee on Space Research**

COSPAS

DEF The USSR satellite of the COSPAS-SarSat project which is a satellite-aided project for the search and rescue of distressed vehicles, administered by USSR, US, French, and Canadian agencies.

- GS artificial satellites
 - . **COSPAS**

- RT reconnaissance
- rescue operations
- SarSat
- searching

Cosserat surfaces

- RT flat surfaces
- ∞ surface geometry
- surface properties
- ∞ surfaces

cost analysis

- UF *cost benefit analysis*
- RT ∞ analyzing
 - budgeting
 - comparison
 - costs
 - design to cost
 - economic analysis
 - feasibility
 - feasibility analysis
 - financial management
 - life cycle costs
 - management
 - management analysis
 - management planning
 - optical transfer function
 - production costs
 - proposals
 - value engineering
 - wage surveys

cost benefit analysis
(added April 2000)

- USE **cost analysis**
- cost effectiveness**

cost effectiveness

- UF *cost benefit analysis*
- GS effectiveness
 - . **cost effectiveness**
- RT allocations
 - budgeting
 - commercial off-the-shelf products
 - life cycle costs

cost estimates

- GS estimates
 - . **cost estimates**
- RT aircraft production costs
 - appropriations
 - budgeting
 - costs
 - economic analysis
 - economy
 - ∞ estimators
 - federal budgets
 - financial management
 - management
 - production costs
 - value engineering
 - wage surveys

cost incentives

- RT efficiency
 - incentive techniques
 - management
 - value engineering

cost reduction

- RT commonality
 - efficiency
 - incentive techniques
 - launch costs
 - management
 - management methods
 - management planning
 - rapid prototyping
 - small satellite technology
 - value engineering
 - wage surveys

Costa Rica

- GS nations
 - . **Costa Rica**
- RT Central America

costs

- GS **costs**
 - . freight costs

- . launch costs
 - . life cycle costs
 - . low cost
 - . operating costs
 - . production costs
 - . . . aircraft production costs
- RT accounting
 - aircraft production
 - commerce
 - cost analysis
 - cost estimates
 - damage assessment
 - design to cost
 - economic analysis
 - economic factors
 - economic impact
 - economics
 - efficiency
 - estimating
 - evaluation
 - feasibility
 - financial management
 - gross national product
 - revenue
 - task complexity
 - tasks
 - value

Cote d'Ivoire

(added September 1993)

- UF *Ivory Coast*
- GS nations
 - . **Cote d'Ivoire**
- RT Africa

COTS products

(added March 2001)

- USE **commercial off-the-shelf products**

cotton

- GS farm crops
 - . **cotton**
 - plants (botany)
 - . **cotton**
- RT boll weevils
- bollworms
- clothing
- cordage
- cotton fibers
- Earth resources
- fabrics
- fibers
- textiles
- yarns

cotton fibers

- GS clothing
 - . **cotton fibers**
 - fibers
 - . **cotton fibers**
 - textiles
 - . **cotton fibers**
- RT cotton
- crepe
- organic materials

couches

- RT beds
- cushions
- harnesses
- seats

Couette flow

- GS fluid flow
 - . steady flow
 - . . . **Couette flow**
 - . two dimensional flow
 - . . . **Couette flow**
 - . viscous flow
 - . . . **Couette flow**
- RT annular flow
- axisymmetric flow
- Brinkman number
- Hartmann flow
- internal flow

- rotating cylinders
- Cougar aircraft*
USE **F-9 aircraft**
- cough**
GS reflexes
. respiratory reflexes
. . . **cough**
signs and symptoms
. **cough**
RT expellants
- coulees*
USE **canyons**
- Coulomb collisions**
DEF The collisions of sets of two particles both of which are charged.
GS collisions
. **Coulomb collisions**
RT charged particles
- Coulomb potential**
GS potential energy
. electric potential
. . . **Coulomb potential**
RT charged particles
coulometry
electric field strength
electric fields
∞ potential
- coulometers**
DEF Electrolytic cells or electronic devices arranged to measure the quantity of electricity by the chemical action produced in accordance with Faraday's law.
GS measuring instruments
. **coulometers**
RT ammeters
chemical analysis
coulometry
electrical measurement
electrochemistry
electrodeposition
electrolysis
titration
voltmeters
- coulometry**
GS electrical measurement
. **coulometry**
electrochemistry
. electrolysis
. . . **coulometry**
RT Coulomb potential
coulometers
- countdown**
DEF A step-by-step process that culminates in a climactic event, each step being performed in accordance with a schedule marked by a count in inverse numerical order; specifically, this process is used in leading up to the launch of a large of complicated rocket vehicle, or in leading up to a captive test, a readiness firing, a mock firing or other firing test.
GS preflight operations
. **countdown**
schedules
. **countdown**
RT checkout
crew procedures (preflight)
launching
liftoff (launching)
prelaunch problems
prelaunch tests
space vehicle checkout program
spacecraft launching
windows (intervals)
- counter rotation**
DEF Movement of sets of bodies or fluids around a common axis where movement in own rotational direction is opposed by movement in the opposite direction.
GS gyration
. rotation
. . . **counter rotation**
- RT boundary value problems
counterflow
counter-rotating wheels
rotating disks
rotating fluids
- counterbalances**
RT aircraft stability
ballast (mass)
dynamic stability
mass distribution
spacecraft stability
static stability
- counterflow**
GS fluid flow
. **counterflow**
RT axial flow
counter rotation
heat exchangers
heat transfer
trapped vortices
turbulent diffusion
turbulent flow
vortices
- counterinsurgency aircraft*
USE **COIN aircraft**
- countermeasures**
GS **countermeasures**
. ballistic missile decoys
. electronic countermeasures
. . . antiradar coatings
. . . chaff
. jamming
. optical countermeasures
. reentry decoys
. stealth technology
RT antiradiation missiles
Blue Goose missile
decoys
protection
quail missile
radar absorbers
target masking
torpedoes
- counter-rotating wheels**
UF *inertia wheels*
GS wheels
. **counter-rotating wheels**
RT counter rotation
flywheels
gears
mechanical drives
reaction wheels
- counters**
UF *dekatrons*
gas discharge counters
pulse recorders
quantizer
GS measuring instruments
. **counters**
. . . radiation counters
. . . Cerenkov counters
. . . electron counters
. . . Geiger counters
. . . neutron counters
. . . neutron spectrometers
. . . particle telescopes
. . . proportional counters
. . . quantum counters
. . . scintillation counters
. . . spark chambers
RT accumulators (computers)
computer components
counting
counting circuits
data recorders
ionization chambers
monitors
recording instruments
- countersinking**
RT grinding (material removal)
- metal cutting
- counting**
RT counters
data acquisition
enumeration
estimating
∞ measurement
∞ numbers
observation
repetition
sampling
- counting circuits**
GS circuits
. **counting circuits**
. . . scalars
RT anticoincidence detectors
counters
logic circuits
- counting rate computers**
GS data processing equipment
. computers
. . . **counting rate computers**
- coupled modes**
DEF Modes of vibration that are not independent, but which influence one mode to the other. Used for mode coupling.
UF *mode coupling*
GS modes
. **coupled modes**
RT chemical bonds
couples
couplings
crosslinking
laser arrays
magnetosphere-ionosphere coupling
polymerization
strongly coupled plasmas
uncoupled modes
- couplers**
SN (EXCLUDES MECHANICAL DEVICE)
GS **couplers**
. antenna couplers
. . . diplexers
. . . directional couplers
. coupling circuits
RT antenna components
coupling
couplings
impedance matching
yokes
- couples**
RT antenna couplers
coupled modes
coupling circuits
cross coupling
diplexers
optical coupling
spin-spin coupling
uncoupled modes
yokes
- coupling**
SN (FOR MECHANICAL DEVICES, USE COUPLINGS)
GS **coupling**
. acoustic coupling
. cross coupling
. electromagnetic coupling
. . . microwave coupling
. . . optical coupling
. gyroscopic coupling
. magnetosphere-ionosphere coupling
. spin-spin coupling
. thermodynamic coupling
RT antenna couplers
Clebsch-Gordan coefficients
couplers
couplings
decoupling
directional couplers
linkages
mechanical drives
Racah coefficient
velocity coupling

coupling circuits

wave interaction

coupling circuits

- GS circuits
 - . **coupling circuits**
- couplers
 - . **coupling circuits**
- RT antenna couplers
- couplers
- cross coupling
- energy transfer
- impedance matching
- microwave coupling
- RC circuits
- RL circuits
- transformers

coupling coefficients

- GS coefficients
 - . **coupling coefficients**
- RT form factors
- magnetic induction
- transfer functions

couplings

DEF Devices or contrivances for joining adjacent ends or parts of anything. Devices permitting transfer of energy from one electrical circuit to another, or from one mechanical device to another.

- RT anchors (fasteners)
- bolts
- clips
- closures
- connectors
- coupled modes
- couplers
- coupling
- directional couplers
- fasteners
- fittings
- ∞ joining
- joints (junctions)
- linkages
- mechanical drives
- pins
- rivets
- screws
- sleeves
- splines
- trailers
- unions (connectors)

Courier aircraft

USE **U-10 aircraft**

Courier satellite

- GS artificial satellites
 - . **Courier satellite**
- RT Advent Project

courses

USE **paths**

covalence

- RT chemical bonds
- covalent bonds

covalent bonds

- GS chemical bonds
 - . **covalent bonds**
- RT covalence

covariance

- GS statistical analysis
 - . variance (statistics)
 - . . . multivariate statistical analysis
 - . . . **covariance**
- RT correlation
- experiment design
- factor analysis
- orthogonality
- quality control
- regression analysis
- significance
- variability

coveralls

- GS clothing
 - . **coveralls**

- RT flight clothing
- protective clothing

coverings

- RT camouflage
- ∞ caps
- ∞ casing
- closures
- coatings
- electrostatic bonding
- enclosures
- ∞ envelopes
- guards (shields)
- housings
- jackets
- masking
- netting (materials/structures)
- preserving
- sealing
- shells (structural forms)
- shrouds
- spherical caps

coves

USE **bays (topographic features)**

Cowell method

USE **numerical integration**

cowlings

- GS housings
 - . **cowlings**
- RT air intakes
- fairings
- nacelles
- pods (external stores)
- protuberances
- shells (structural forms)

CP violation

(added April 2002)

DEF Violation of the combined conservation laws associated with charge conjugation (C) and space inversion (P, parity) by the weak nuclear force. A symmetry violation thought to be responsible for the excess of matter over antimatter in the Universe.

- GS symmetry
 - . broken symmetry
 - . . **CP violation**
- RT conservation laws
- parity
- particle decay
- standard model (particle physics)
- weak interactions (field theory)

CPL (heat transfer)

(added September 2003)

USE **capillary pumped loops**

Crab nebula

- GS celestial bodies
 - . nebulae
 - . . **Crab nebula**
- RT Orion nebula
- supernovae
- Taurus constellation

crabs

- GS animals
 - . invertebrates
 - . . arthropods
 - . . . **crabs**

crack arrest

- RT crack initiation
- crack propagation
- crack tips
- cracking (fracturing)

crack bridging

(added March 1995)

DEF The occurrence of unbroken material grains or reinforcing elements extending across the surfaces of a crack. A common occurrence in fiber composites and some ceramic materials, it contributes to improved crack growth resistance.

- UF *fiber bridging*
- grain bridging*

- RT ceramic matrix composites
- crack opening displacement
- crack propagation
- fiber composites
- fracture mechanics
- metal matrix composites

crack closure

DEF Phenomenon which occurs when the cyclic plasticity of a material gives rise to the development of residual plastic deformations in the vicinity of a crack tip, causing the fatigue crack to close at positive load.

- RT brittleness
- cracking (fracturing)
- cracks
- Elber equation
- fatigue (materials)
- fractography
- fracture mechanics
- fracture strength
- fracturing
- Griffith crack
- metal fatigue
- microcracks
- stress corrosion cracking
- surface cracks

crack formation

USE **crack initiation**

crack geometry

DEF The shape and size of partial fractures or flaws in materials.

- GS geometry
 - . **crack geometry**
- RT cavities
- crack tips
- cracks
- fatigue (materials)
- fractography
- microcracks
- short cracks
- surface cracks
- voids

crack initiation

- UF *crack formation*
- RT brittleness
- crack arrest
- crack tips
- cracks
- critical loading
- fracture mechanics
- fracture strength
- J integral
- metal fatigue
- metal surfaces
- microcracks
- short cracks
- stress concentration
- stress corrosion cracking
- stress intensity factors
- surface cracks
- surface defects
- toughness

crack opening displacement

(added September 1988)

DEF The displacement at the mouth of a crack in a material. Used for COD (cracks).

- UF *COD (cracks)*
- GS displacement
 - . **crack opening displacement**
- RT crack bridging
- crack propagation
- cracking (fracturing)
- cracks
- fracture mechanics
- fracture strength
- fractures (materials)
- fracturing
- gaps
- notch tests
- notches
- voids

crack propagation

- GS propagation (extension)
 - . **crack propagation**

- RT acoustic emission
bend tests
brittleness
Coffin-Manson law
crack arrest
crack bridging
crack opening displacement
crack tips
cracking (fracturing)
cracks
fatigue (materials)
fractography
fracture mechanics
fracture strength
fracturing
Griffith crack
J integral
metal fatigue
micromechanics
plane strain
∞ propagation
residual strength
∞ resistance
Segre characteristic
short cracks
strain distribution
stress corrosion cracking
stress distribution
stress intensity factors
surface cracks
- crack tips**
DEF The boundaries between cracked and uncracked material.
GS fractures (materials)
. cracks
. . **crack tips**
tips
. **crack tips**
RT crack arrest
crack geometry
crack initiation
crack propagation
- cracking (chemical engineering)**
DEF A process used to reduce the molecular weight of hydrocarbons by breaking molecular bonds by thermal, catalytic, or hydrocracking methods.
GS chemical reactions
. **cracking (chemical engineering)**
. . hydrocracking
. . pyrolysis
decomposition
. **cracking (chemical engineering)**
. . hydrocracking
. . pyrolysis
RT ammonolysis
catalysis
catalytic activity
chemical engineering
coal gasification
electrolysis
hydrocarbons
hydrogenolysis
hydrolysis
nitrolysis
organic chemistry
photolysis
thermal dissociation
- cracking (fracturing)**
GS fracturing
. **cracking (fracturing)**
. . stress corrosion cracking
RT brittle materials
brittleness
crack arrest
crack closure
crack opening displacement
crack propagation
cracks
destruction
edge cracks
failure
fatigue (materials)
J integral
kinking
rupturing
stress concentration
- stress corrosion
stress intensity factors
structural failure
structural strain
temperature inversions
- cracks**
UF *crevices*
GS fractures (materials)
. **cracks**
. . crack tips
. . edge cracks
. . microcracks
. . short cracks
. . surface cracks
RT cavities
crack closure
crack geometry
crack initiation
crack opening displacement
crack propagation
cracking (fracturing)
defects
Elber equation
failure modes
fatigue (materials)
interstices
leakage
openings
stresses
temperature inversions
ultrasonic spectroscopy
- CRAF mission*
USE **Comet Rendezvous Asteroid Flyby Mission**
- craft*
USE **vehicles**
- Cramer-Rao bounds**
(added June 1997)
GS analysis (mathematics)
. real variables
. . extremum values
. . . minima
. . . **Cramer-Rao bounds**
RT Fisher information
maximum likelihood estimates
variance (statistics)
- cramps**
RT epilepsy
muscular function
seizures
- cranes**
SN (EXCLUDES BIRDS)
GS handling equipment
. **cranes**
. . gantry cranes
RT booms (equipment)
conveyors
∞ lifts
logistics
materials handling
towers
winches
- cranium**
GS anatomy
. head (anatomy)
. . skull
. . . **cranium**
. . . . intracranial cavity
. . . . musculoskeletal system
. . bones
. . . skull
. . . . **cranium**
. intracranial cavity
RT intercranial circulation
mastoids
- cranked wings*
USE **swept wings**
- Crank-Nicholson method**
DEF A method for solving parabolic partial differential equations, whose main feature is an implicit method which avoids the need for using very small time steps.
RT boundary value problems
differential equations
finite difference theory
finite element method
numerical analysis
problem solving
- cranks*
USE **eccentrics**
- crash injuries**
GS injuries
. **crash injuries**
RT accidents
burns (injuries)
hazards
whiplash injuries
- crash landing**
GS crashes
. **crash landing**
. . ditching (landing)
RT aircraft accidents
aircraft hazards
aircraft safety
aircraft spin
arresting gear
crashworthiness
emergency landing
flight hazards
glide landings
hard landing
horizontal spacecraft landing
lunar landing
pilot error
planetary landing
skid landings
soft landing
spacecraft landing
water landing
- crashes**
GS **crashes**
. crash landing
. . ditching (landing)
RT accidents
air bag restraint devices
aircraft accidents
aircraft hazards
aircraft safety
collisions
crashworthiness
encounters
flight hazards
flight safety
highways
midair collisions
pilot error
runway incursions
safety
wreckage
- crashworthiness**
DEF The ability of a vehicle to withstand a crash.
RT aircraft accidents
aircraft landing
aircraft safety
crash landing
crashes
flight safety
impact resistance
- cratering**
GS **cratering**
. projectile cratering
RT craters
ejecta
impact damage
Mars craters
meteorite craters
meteoritic damage
nuclear explosions
- craters**
UF *maars*
GS **craters**
. lunar craters

cratons

. . Ptolemaeus Crater
. . Tycho crater
. meteorite craters
. planetary craters
. . Mars craters
RT asteroid collisions
calderas
cometary collisions
cones (volcanoes)
cratering
ejecta
impact damage
satellite surfaces

cratons

RT continents
Earth crust
Earth surface
ocean bottom

crawler tractors

GS surface vehicles
. motor vehicles
. . tractors
. . . **crawler tractors**
RT electric motor vehicles
ground support equipment
handling equipment
lunar surface vehicles
manned lunar surface vehicles
tracked vehicles
∞ transport vehicles
∞ vehicles

Cray computers

DEF Supercomputers built by Cray Research Inc. that require the supporting services of another front-end general purpose computer for operation. They incorporate very fast scalar and vector hardware, are used primarily for the simulation of physical phenomena, and are programmed in FORTRAN.

GS data processing equipment
. computers
. . supercomputers
. . . **Cray computers**

crayons

RT ∞ markers
temperature measurement

crazing

USE **surface cracks**

creatine

GS crystals
. **creatine**
RT juices

creatinine

RT diseases
urine

creation

USE **creativity**

creativity

UF *creation*
RT arts
education
morale

creep analysis

RT ∞ analyzing
stress analysis
stress relaxation
structural analysis

creep buckling

GS buckling
. **creep buckling**

creep diagrams

GS diagrams
. **creep diagrams**
RT stress relaxation
stress-strain-time relations

creep properties

GS mechanical properties
. **creep properties**

. . creep rupture strength
. . shear creep
. . steady state creep
. . tensile creep

RT

anelasticity
deformation
dimensional stability
ductility
fatigue (materials)
∞ flow
plastic deformation
plastic flow
∞ properties
residual stress
shear flow
shear properties
static deformation
stress relaxation
stresses
structural failure
superplasticity
temperature inversions

creep resistance

USE **creep strength**

creep rupture strength

UF *stress rupture strength*
GS mechanical properties
. creep properties
. . **creep rupture strength**
RT fracture strength
J integral
∞ strength

creep strength

DEF The constant nominal stress that will cause a specified quantity of creep in a given time at constant temperature. Used for creep resistance.

UF *creep resistance*
GS mechanical properties
. **creep strength**
RT load carrying capacity
∞ resistance
∞ strength

creep tests

RT compression tests
fatigue tests
load tests
plastic deformation
static tests
∞ tests

crepe

GS fabrics
. **crepe**
RT cotton fibers
silk

creols

GS hydroxyl compounds
. alcohols
. . phenols
. . . **creols**

crestatrons

USE **traveling wave tubes**

crests

USE **waves**

Cretaceous Period

(*added June 1989*)
GS Mesozoic Era
. **Cretaceous Period**
RT Cretaceous-Tertiary boundary
geochronology
paleontology
Tertiary Period

Cretaceous-Tertiary boundary

(*added June 1989*)
UF *K-T boundary*
RT Cenozoic Era
cometary collisions
Cretaceous Period
extinction
geochronology

Mesozoic Era
paleobiology
paleontology
Tertiary Period

crevasses

GS **crevasses**
. glaciers
RT Earth movements
geological faults
recesses
seamounts

crevices

USE **cracks**

Crew Equipment Translation Aid (ISS)

(*added December 2002*)

DEF A human powered cart used by astronauts to conduct extravehicular-activity (EVA) maintenance on the International Space Station (ISS).

UF *CETA cart (ISS)*
GS carts

. **Crew Equipment Translation Aid (ISS)**

RT astronaut maneuvering equipment
extravehicular activity
extravehicular mobility units
International Space Station
orbital assembly

crew experiment stations

GS stations
. workstations
. . crew workstations
. . . **crew experiment stations**
RT astronauts
compartments
cosmonauts
crews
personnel
spacecraft cabins
spacecrews

Crew Exploration Vehicle

(*added July 2005*)

UF *Orion crew vehicle*
GS lunar spacecraft

. **Crew Exploration Vehicle**

manned spacecraft

. **Crew Exploration Vehicle**

RT Ares 1 launch vehicle
Ares 1 upper stage
Constellation program
long duration space flight
lunar exploration
manned Mars missions
manned space flight
Mars exploration

crew observation stations

GS stations
. workstations
. . crew workstations
. . . **crew observation stations**
RT astronauts
compartments
cosmonauts
crews
personnel
spacecraft cabins
spacecrews

crew procedures (inflight)

DEF Operations performed by crews aboard aircraft or spacecraft during flight. Includes flight operations as well as spaceborne experiment procedures.

GS flight operations
. **crew procedures (inflight)**
procedures
. **crew procedures (inflight)**

RT display devices
flight crews
in-flight monitoring
spacecrews
tasks

∞ tests

crew procedures (preflight)

DEF Operations performed by crews aboard aircraft or spacecraft and by ground support crews before flight or launching.

GS procedures

. **crew procedures (preflight)**

RT countdown
display devices
flight crews
flight operations
ground handling
ground tests
in-flight monitoring
onboard equipment
preflight operations
prelaunch tests
spacecraft control
spacecrews
tasks

∞ tests

crew size

DEF The number of people in a crew.

RT flight crews

*crew stations*USE **crew workstations****crew workstations**UF *crew stations*

GS stations

. workstations

. . . **crew workstations**

. . . crew experiment stations

. . . crew observation stations

RT astronauts
compartments
cosmonauts
crews
helmet mounted displays
personnel
spacecraft cabins
spacecrews

crews

GS personnel

. **crews**

. . . flight crews

. . . spacecrews

RT astronauts
cosmonauts
crew experiment stations
crew observation stations
crew workstations
flight nurses
pilots (personnel)

crickets

GS animals

. invertebrates

. . . arthropods

. . . insects

. . . . **crickets****crime**GS **crime**

. air piracy

. terrorism

RT law (jurisprudence)
police
regulations
security
social factors
surveillance
violence

*crimping*USE **folding****criteria**

DEF The minimum standards or limits on which judgments may be based.

GS **criteria**

. structural design criteria

RT evaluation

figure of merit

∞ measures

standards

critical current

(added December 1999)

DEF A current value in a superconductive material, at a particular constant temperature and in the absence of a magnetic field, below which the material is superconducting and above which the material behaves normally.

GS electric current

. **critical current**

RT critical temperature
current density
superconductivity
superconductors (materials)

critical experiments

RT experimentation

nuclear fission

nuclear reactions

critical flicker fusionUF *flicker fusion frequency*

GS perception

. sensory perception

. . visual perception

. . . **critical flicker fusion**

RT afterimages

flicker

critical flow

GS fluid flow

. **critical flow**

RT flow characteristics
gas flow
laminar flow
liquid flow
multiphase flow
orifice flow
pipe flow
pressure gradients
Ringleb flow
single-phase flow
steady flow
steam flow
subcritical flow
supercritical flow
turbulent flow
unsteady flow

critical frequencies

DEF The limiting frequencies below which magnetoionic wave components are reflected and above which they penetrate through, an ionized medium (plasma) at vertical incidence.

GS frequencies

. **critical frequencies**

RT light (visible radiation)

resonant frequencies

critical loading

SN (LIMITED TO FORCE LOADS)

UF *critical stress*

GS loads (forces)

. **critical loading**

stresses

. **critical loading**

RT aerodynamic loads
crack initiation
dynamic loads
load carrying capacity
proportional limit
shallow shells
static loads

*critical Mach number*USE **critical velocity****Mach number****critical mass**

DEF The amount of concentrated fissionable material that can just support a self-sustaining fission reaction.

GS mass

. **critical mass**

RT nuclear fission
nuclear fuel burnup
nuclear reactions
plasma core reactors

subcritical mass

critical path method

GS network analysis

. **critical path method**

RT ∞ control
dynamic programming
estimating
GERT
management methods
∞ methodology
mission planning
operations research
∞ paths
PERT
planning
program trend line analysis
programming (scheduling)
project management
research
sequencing
sneak circuit analysis
systems engineering

critical point

DEF The thermodynamic state in which liquid and gas phases of a substance coexist in equilibrium at the highest possible temperature. At higher temperature than the critical no liquid phase can exist.

GS thermodynamic properties
. thermophysical properties

. . . **critical point**

RT Mayer problem

critical pressure

DEF In rocketry, the pressure in the nozzle throat for which the isentropic weight flow rate is maximum. The pressure of a gas at the critical point, which is the highest pressure under which a liquid can exist in equilibrium with its vapor.

GS pressure

. **critical pressure**

thermodynamic properties

. thermophysical properties

. . . **critical pressure**

RT degenerate matter
high pressure
liquid phases
supercritical pressures
vapor phases

*critical Reynolds number*USE **Reynolds number***critical speed*USE **critical velocity***critical stress*USE **critical loading****critical temperature**

DEF The temperature above which a substance cannot exist in the liquid state regardless of the pressure. As applied to reactor overheat or afterheat, the temperature at which the least resistant component of the reactor core begins to melt down. As applied to materials, the temperature at which a change in phase takes place causing an appreciable change in the properties of the material.

GS temperature

. **critical temperature**

thermodynamic properties

. thermophysical properties

. . . **critical temperature**

RT critical current
cryogenic temperature
heat treatment
high temperature superconductors
metallic hydrogen
noncondensable gases
phase diagrams
phase transformations

critical velocity

DEF In rocketry, the speed of sound at the conditions prevailing at the nozzle throat. Used for critical Mach number, critical Reynolds number, and critical speed.

Croatia

- UF *critical Mach number*
critical speed
- GS rates (per time)
 - . **critical velocity**velocity
 - . **critical velocity**
- RT exhaust velocity
resonant frequencies
Reynolds number
tip speed

Croatia

(added October 1994)

- GS nations
 - . **Croatia**
- RT Bosnia and Herzegovina
Europe
Yugoslavia

Crocco method

- RT axisymmetric flow
boundary layers
compressible flow
compressible fluids
entropy
inviscid flow
- ∞ methodology
shock wave propagation
steady flow
vorticity

Crocco-Lee theory

- RT boundary layer separation
continuity equation
gas flow
inviscid flow
mass flow
multiphase flow
reattached flow
separated flow
- ∞ theories

Croloy

- GS alloys
 - . iron alloys
 - . . . steels
 - . . . **Croloy**

crop calendars

- DEF Schedules for the maturation and harvesting of seasonal crops.
- GS calendars
 - . **crop calendars**
- RT ∞ crops
farm crops
growth
scheduling
seasons

crop dusting

- DEF The application of fungicides or insecticides in powder form to a crop, usually from a low flying aircraft.
- GS spraying
 - . **crop dusting**
- RT aerosols
agricultural aircraft
agriculture
dispersions
farm crops
pesticides
powder (particles)

crop growth

- GS growth
 - . vegetation growth
 - . . **crop growth**
- RT agriculture
alfalfa
barley
blight
citrus trees
corn
- ∞ crops
Earth resources
farm crops
farmlands
germination
grasslands

- Large Area Crop Inventory
Experiment
- oats
- orchards
- photosynthesis
- photosynthetically active radiation
- plant diseases
- plant stress
- plants (botany)
- sugar beets
- sugar cane
- thermal resources
- vineyards
- wheat

crop identification

- GS identifying
 - . **crop identification**
- RT agriculture
- ∞ crops
Earth resources
evaluation
farmlands
ground truth
imaging techniques
leaf area index
multispectral photography
plant diseases
recognition
remote sensors
- ∞ sensors
sorghum
spectral signatures
SPOT (French satellite)
sunflowers
timber identification
vegetative index

crop inventories

DEF Numerical estimates of vegetable, fruit, and other commercial farm products based on the analysis of photography or imagery from aircraft or satellites made during periodic passes during the growth cycle.

- GS inventories
 - . **crop inventories**
- RT agriculture
AgRISTARS project
farm crops
farmlands
Large Area Crop Inventory
Experiment
leaf area index
remote sensors
vegetative index

Crop Inventories by Remote Sensing

USE **AgRISTARS project**

crop vigor

- RT agriculture
alfalfa
barley
blight
citrus trees
farm crops
farmlands
genetically modified plants
irrigation
normalized difference vegetation
index
- oats
- orchards
- phototropism
- plant diseases
- plant stress
- plants (botany)
- sugar beets
- sugar cane
- thermal resources
- vegetation growth
viability
vineyards
wheat

croplands

USE **farmlands**

∞ crops

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT agriculture
alfalfa
barley
biomass energy production
citrus trees
corn
crop calendars
crop growth
crop identification
farm crops
farmlands
frost damage
Large Area Crop Inventory
Experiment
- orchards
planting
sorghum
sunflowers
tomatoes
vineyards
wheat

cross correlation

- GS correlation
 - . **cross correlation**
- RT autocorrelation
data correlation

cross coupling

- GS coupling
 - . **cross coupling**
- RT communication theory
couples
coupling circuits
microwave coupling
optical coupling
radio frequency interference

cross faults

USE **geological faults**

cross flow

- DEF A flow going across another flow, as a spanwise flow over a wing.
- GS fluid flow
 - . **cross flow**
- RT aerodynamic characteristics
- ∞ flow
flow characteristics
flow geometry
spanwise blowing
water tunnel tests

cross polarization

- DEF The component of the electric field vector normal to the desired polarization component.
- GS polarization (waves)
 - . **cross polarization**
- RT optical coupling
optical properties
polarized electromagnetic radiation
polarons
rotation

cross relaxation

- RT masers
- ∞ relaxation
rutile
spin-spin coupling

∞ cross sections

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Measures of the effectiveness of particular processes expressed either as areas (geometric cross sections) which would produce the observed results, or as ratios.
- RT absorption cross sections
airfoil profiles
area
atomic collisions
collision parameters
distribution (property)
drawings
geometry
gradients
ionization cross sections
mean free path
neutron cross sections

planforms
 radar cross sections
 scattering cross sections
 shapes
 stopping power
 surveys
 two dimensional bodies

crossbedding (geology)
 GS geology
 . **crossbedding (geology)**
 RT landforms
 rocks
 strata
 stratification
 stratigraphy

crossed field amplifiers
 GS amplifiers
 . microwave amplifiers
 . . **crossed field amplifiers**
 microwave equipment
 . microwave amplifiers
 . . **crossed field amplifiers**
 RT electron tubes
 magnetrons
 traveling wave tubes

crossed field guns
 RT electron guns
 ∞ guns
 plasma control
 plasma guns
 plasma jets

crossed fields
 RT electric fields
 field theory (physics)
 magnetic fields
 magnetrons
 plasma control
 waveguides

crossings
 GS **crossings**
 . chiasms
 RT bridges (structures)
 crossovers
 intersections
 pipelines
 ramps (structures)

crosslinking
 GS **crosslinking**
 . vulcanizing
 RT addition resins
 coupled modes
 curing
 ∞ joining
 netting (materials/structures)
 phenolic epoxy resins

crossovers
 RT bridges (structures)
 crossings
 intersections

crosstalk
 DEF Electrical disturbances in a communication channel as a result of coupling with other communication channels.
 GS electromagnetic interference
 . **crosstalk**
 . . ionospheric cross modulation
 RT communicating
 electromagnetic compatibility
 ∞ interference
 telephony
 wave diffraction

crowding
 RT ∞ concentration
 ∞ saturation

CRRES (satellite)
 (added April 1993)
 UF *Combined Release and Radiation Effects Sat*
 GS artificial satellites
 . scientific satellites

. . **CRRES (satellite)**
 RT chemical clouds
 chemical release modules
 Earth ionosphere
 Earth magnetosphere
 extraterrestrial radiation
 orbital space tests
 radiation effects
 space plasmas
 spaceborne experiments

crucibles
 RT ∞ containers
 heating equipment

cruciform wings
 GS airfoils
 . wings
 . . **cruciform wings**
 RT fixed wings
 low aspect ratio wings

crude oil
 UF *petroleum*
 GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . fossil fuels
 **crude oil**
 geophysical fluids
 . **crude oil**
 oils
 . **crude oil**
 resources
 . Earth resources
 . . fossil fuels
 . . . **crude oil**
 RT carbonaceous materials
 deposits
 energy policy
 fuel production
 offshore energy sources
 oil exploration
 oil fields
 petroleum products
 reserves
 underwater resources
 waxes

cruise missiles
 DEF Guided missiles, the major portion of whose flight path to its target is conducted at an approximately constant velocity - depends on the dynamic reaction of air for lift, and upon propulsive forces to balance drag.
 GS missiles
 . surface to surface missiles
 . . **cruise missiles**
 . . . Navaho missile
 . . . Tomahawk missiles
 RT antiship missiles
 terrain following

cruising flight
 RT coasting flight
 ∞ flight
 horizontal flight

Crusader aircraft
 USE **F-8 aircraft**

crushers
 RT comminution
 crushing
 disintegration
 grinding mills
 impactors

crushing
 GS comminution
 . **crushing**
 RT crushers
 disintegration

grinding (comminution)

crustal dynamics
 USE **Earth crust geodynamics**

crustal fractures
 GS fracturing
 . **crustal fractures**
 RT Earth crust
 Earth movements
 Earth surface
 earthquake resistance
 earthquakes
 geodynamics
 geological faults
 microseisms
 P waves
 S waves
 San Andreas Fault
 seismic waves
 seismology
 shatter cones
 shock loads
 shock waves
 soil mechanics
 surface waves

crusts
 GS **crusts**
 . lunar crust
 . planetary crusts
 . . Earth crust
 RT lunar mantle
 planetary mantles

cryochemistry
 DEF The study of chemical phenomena in very low temperature environment.
 GS physical chemistry
 . **cryochemistry**
 RT ∞ chemistry
 cryogenic equipment
 cryogenics
 low temperature physics

cryocycle principle
 RT cryopumping
 spacecraft power supplies

cryodeposits
 GS deposits
 . **cryodeposits**
 RT coatings
 ∞ cryogenic storage
 cryogenics

cryogenic computer storage
 GS computer components
 . computer storage devices
 . . **cryogenic computer storage**
 RT ∞ cryogenic storage
 cryotrons
 ∞ equipment
 superconductors (materials)

cryogenic cooling
 DEF Use of cryogenic fluids to reach temperatures near absolute zero.
 GS cooling
 . **cryogenic cooling**
 RT capillary pumped loops
 coolers
 cryogenics
 freezing
 heat transfer
 refrigerating

cryogenic equipment
 UF *Dewar systems*
 RT cryochemistry
 cryogenics
 ∞ equipment
 gravitational wave antennas
 refrigerating
 refrigerating machinery
 solid cryogens

cryogenic fluid storage
 RT cold surfaces

cryogenic fluids

- ∞ cryogenic storage
- cryogenic tanks
- evaporative cooling
- fluid management
- fuel tanks
- multilayer insulation
- space storage
- ∞ storage
- storage tanks
- thermal insulation

cryogenic fluids

- GS liquids
 - . **cryogenic fluids**
 - . . Fermi liquids
 - . . FLOX
 - . . liquid helium
 - . . . liquid helium 2
 - . . liquid hydrogen
 - . . liquid nitrogen
 - . . liquid oxygen
- RT cryogenic tanks
- cryogenic temperature
- cryogenics
- cryopumping
- fluid management
- ∞ fluids
- rocket oxidizers
- solid cryogen cooling
- solidified gases

cryogenic gyroscopes

- GS gyroscopes
 - . **cryogenic gyroscopes**
- RT high temperature superconductors

cryogenic magnets

- GS magnets
 - . **cryogenic magnets**
- RT high temperature superconductors
- superconducting magnets

cryogenic rocket propellants

- DEF Rocket fuels, oxidizers, or propulsion fluids which are liquid only at very low temperatures.
- GS propellants
 - . rocket propellants
 - . . liquid rocket propellants
 - . . . **cryogenic rocket propellants**
- RT cryogenics
- endothermic fuels
- fluid management
- gaseous rocket propellants
- gelled rocket propellants
- high energy fuels
- high energy propellants
- hybrid propellants
- hydrogen fuels
- hypergolic rocket propellants
- liquefied gases
- liquid hydrogen
- liquid oxygen
- RL-10 engines
- slush
- space storage
- storable propellants

∞ cryogenic storage

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cryodeposits
- cryogenic computer storage
- cryogenic fluid storage

cryogenic tanks

- (added August 2003)
- DEF Containers or other structures designed to hold cryogenic materials.
- UF *cryotanks*
- GS tanks (containers)
 - . **cryogenic tanks**
- RT cryogenic fluid storage
- cryogenic fluids
- space storage
- storage tanks

cryogenic temperature

- UF *ultralow temperature*
- GS temperature

- . low temperature
- . . **cryogenic temperature**
- RT absolute zero
- cold traps
- critical temperature
- cryogenic fluids
- cryogenics
- Curie temperature
- solidified gases
- space temperature

cryogenic wind tunnels

- DEF Wind tunnels employing a cryogenic environment and utilizing independent control over Mach number, Reynolds number, aeroelastic effects, and model-tunnel interactions.
- GS test facilities
 - . wind tunnels
 - . . **cryogenic wind tunnels**
- RT flight simulators
- test chambers

cryogenics

- DEF The study of the methods of producing very low temperatures. The study of the behavior of materials and processes at cryogenic temperatures.
- RT absolute zero
- cold traps
- cooling
- cryochemistry
- cryodeposits
- cryogenic cooling
- cryogenic equipment
- cryogenic fluids
- cryogenic rocket propellants
- cryogenic temperature
- cryopumping
- cryosar
- cryostats
- cryotrons
- Fermi liquids
- high temperature superconductors
- Joule-Thomson effect
- liquefied gases
- low temperature
- low temperature physics
- refrigerating
- solid cryogen cooling
- solid cryogens
- solid nitrogen
- solidified gases
- superconducting power transmission
- superconductivity
- thermoelectric cooling
- thermomagnetic cooling

cryolite

- GS aluminum compounds
 - . **cryolite**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **cryolite**
 - . . fluoro compounds
 - . . . **cryolite**
 - . halides
 - . . fluorides
 - . . . **cryolite**
 - minerals
 - . **cryolite**
 - sodium compounds
 - . **cryolite**
- RT aluminum

cryopumping

- DEF The process of removing gas from a system by condensing it on a surface maintained at very low temperatures.
- RT cryocycle principle
- cryogenic fluids
- cryogenics
- ∞ pumping
- vacuum pumps

cryosar

- GS electronic equipment
- . diodes
- . . semiconductor diodes
- . . . avalanche diodes

- **cryosar**
- . solid state devices
- . . semiconductor devices
- . . . avalanche diodes
- **cryosar**
- rectifiers
- . avalanche diodes
- . . **cryosar**
- RT Barritt diodes
- computer storage devices
- cryogenics

cryosorption

USE **sorption**

∞ cryospheres

- (added June 1996)
- SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED - - CONSULT THE TERMS LISTED BELOW))
- RT Earth cryosphere
- planetary cryospheres
- planetary environments

cryostats

- GS control equipment
- . regulators
- . . **cryostats**
- RT controllers
- cryogenics
- electric switches
- high temperature tests
- liquid helium
- liquid helium 2
- low temperature tests
- temperature control
- thermostats

cryotanks

(added August 2003)

USE **cryogenic tanks**

cryotrapping

- GS trapping
- . **cryotrapping**
- RT cold traps

cryotrons

- DEF Devices based upon the principle that superconductivity established at temperatures near absolute zero is destroyed by the application of a magnetic field.
- GS electronic equipment
- . solid state devices
- . . **cryotrons**
- switches
- . electric switches
- . . **cryotrons**
- RT cryogenic computer storage
- cryogenics
- superconductivity
- superconductors (materials)

cryptography

- DEF The science of preparing messages in a form which cannot be read by those not privy to the secrets of the form.
- GS **cryptography**
- . quantum cryptography
- RT ∞ codes
- coding
- computer information security
- decoding
- information theory
- message processing
- steganography

crystal defects

- DEF Departure from the regular arrangement of atoms in the ideal crystal lattice.
- UF *lattice imperfections*
- stacking faults*
- GS defects
- . **crystal defects**
- . . crystal dislocations
- . . . edge dislocations
- . . . screw dislocations
- . . point defects
- . . . vacancies (crystal defects)
- . . . Frenkel defects
- . . . antisite defects

RT crystallography
 embedded atom method
 holes (electron deficiencies)
 impurities
 interstitials
 lattice vibrations
 mechanical twinning
 order-disorder transformations
 pinning
 polygonization
 stacking fault energy
 stacks
 surface defects
 trapping
 twinning

crystal dislocations

DEF Types of lattice imperfections whose existence in metals is postulated in order to account for the phenomenon of crystal growth and of slip, particularly for the low value of shear stress required to initiate slip.

GS defects
 . crystal defects
 . . **crystal dislocations**
 . . . edge dislocations
 . . . screw dislocations
 dislocations (materials)
 . **crystal dislocations**
 . . edge dislocations
 . . screw dislocations

RT antiphase boundaries
 fatigue (materials)
 grain boundaries
 pinning
 point defects
 Portevin-le Chatelier effect
 superlattices
 superplasticity
 surface defects

crystal field splitting

USE **crystal field theory**

crystal field theory

(added January 1993)

UF *crystal field splitting*

crystal fields

GS field theory (physics)
 . **crystal field theory**

RT crystal lattices
 electric fields
 metal ions

crystal fields

USE **crystal field theory**

crystal filters

GS electromagnetic wave filters
 . bandpass filters
 . . **crystal filters**
 . electric filters
 . . **crystal filters**

RT bandstop filters

∞ filters
 intermediate frequency amplifiers
 radio equipment
 radio filters
 tunable filters

crystal growth

GS growth
 . **crystal growth**
 . . Czochralski method
 . . directional solidification (crystals)
 . . epitaxy
 . . . atomic layer epitaxy
 . . . electroepitaxy
 . . . liquid phase epitaxy
 . . . molecular beam epitaxy
 . . . vapor phase epitaxy
 . . hydrothermal crystal growth
 . . protein crystal growth
 . . traveling solvent method
 . . Verneuil process

RT Aitken nuclei
 Bravais crystals
 Bridgman method
 buoyancy-driven flow
 containerless melts

crystal morphology
 crystallization
 crystallography
 crystals
 doped crystals
 float zones
 inoculation
 laser deposition
 mechanical twinning
 melts (crystal growth)
 metalorganic chemical vapor
 deposition
 ∞ microgravity applications
 nanostructure growth
 netting (materials/structures)
 nucleation
 polygonization
 pulsed laser deposition
 rapid quenching (metallurgy)
 space processing
 twinning
 vapor deposition

crystal lattices

DEF Three-dimensional, recurring patterns in which the atoms of crystals are arranged.

GS **crystal lattices**
 . close packed lattices
 . cubic lattices
 . . body centered cubic lattices
 . . face centered cubic lattices
 . superlattices

RT antiphase boundaries

atomic structure
 Bravais crystals
 Brillouin zones
 chemical bonds
 coordination number
 crystal field theory
 crystal morphology
 crystallography
 crystals
 doping (materials)
 epitaxy
 geometry
 graphoepitaxy
 hexagonal cells
 ionic crystals
 Ising model
 isomorphism
 Kossel pattern
 lattice energy
 lattice parameters
 lattice vibrations
 ∞ lattices
 Laue method
 Laves phases
 metal crystals
 metallography
 molecular chains
 molecular structure
 Mossbauer effect
 order-disorder transformations
 particle in cell technique
 Patterson map
 polymorphism
 rapid quenching (metallurgy)
 single crystals
 synthetic metals
 ultrapure metals

crystal morphology

(added October 2002)

DEF Characterization of a crystal by the shape and relative angular position of its faces.

GS morphology
 . **crystal morphology**
 RT crystal growth
 crystal lattices
 crystal structure
 crystal surfaces
 crystallography
 crystals
 shapes

crystal optics

RT aberration
 acousto-optics
 Bragg cells
 diffraction

doped crystals
 fiber optics
 geometrical optics
 ∞ optics
 phase matching
 photorefractivity
 physical optics

crystal oscillators

GS crystals
 . **crystal oscillators**
 . . piezoelectric crystals
 oscillators
 . **crystal oscillators**
 . . piezoelectric crystals
 RT electrical properties
 frequency control
 frequency stability
 oscillations
 piezoelectricity

crystal rectifiers

UF *silicon rectifiers*
 GS electronic equipment
 . diodes
 . . **crystal rectifiers**
 . solid state devices
 . . **crystal rectifiers**
 rectifiers
 . **crystal rectifiers**
 RT current converters (AC to DC)
 semiconductor devices

crystal structure

SN (AGGLOMERATIONS OF CRYSTALS--
 EXCLUDES CRYSTAL LATTICES)
 GS **crystal structure**
 . Widmanstätten structure
 RT Abrikosov theory
 allotropy
 anisotropy
 antiphase boundaries
 Bravais crystals
 clathrates
 coordination number
 crystal morphology
 crystallinity
 crystallites
 crystals
 doped crystals
 enantiomers
 epitaxy
 ferroelasticity
 graphoepitaxy
 interstitials
 isomorphism
 isotropy
 Laves phases
 liquid phase epitaxy
 mechanical twinning
 metal crystals
 microstructure
 molecular dynamics
 nanocrystals
 nanostructure (characteristics)
 order-disorder transformations
 packing density
 Patterson map
 phonons
 polycrystals
 polymorphism
 rapid quenching (metallurgy)
 spherulites
 ∞ structures
 superlattices
 twinning
 vapor phase epitaxy

crystal surfaces

GS solid surfaces
 . **crystal surfaces**
 RT atomic force microscopy
 crystal morphology
 metal surfaces
 surface layers
 ∞ surfaces

crystallinity

RT amorphous materials

crystallites

crystal structure

crystallites

GS crystals

- . **crystallites**
- . . spherulites

RT crystal structure
microcrystals
minerals
rosette shapes

crystallization

UF *devitrification*

GS **crystallization**

- . directional solidification (crystals)
- . melt spinning
- . recrystallization

RT agglomeration
concentrating
containerless melts
crystal growth
demineralizing
freezing
inoculation
liquidus
materials recovery
melts (crystal growth)
modulation
nucleation
Ostwald ripening
phase stability (materials)
phase transformations
precipitation (chemistry)
purification
refining

∞ separation
settling
solid state
solidification
sublimation
submarine hydrothermal vents
supercooling
supersaturation
zone melting

crystallography

RT Bragg angle
crystal defects
crystal growth
crystal lattices
crystal morphology
crystals
Debye-Scherrer method
directivity
isotropy
lamella (metallurgy)
lattice parameters
Laue method
metallography

∞ metallurgy
microbeams
microstructure
mineralogy
neutron diffraction
order-disorder transformations

∞ orientation
radiography

∞ solid state physics
x ray analysis
x ray diffraction

crystals

GS **crystals**

- . bicrystals
- . boules
- . Bravais crystals
- . creatine
- . crystal oscillators
- . . piezoelectric crystals
- . crystallites
- . . spherulites
- . dendritic crystals
- . doped crystals
- . ionic crystals
- . liquid crystals
- . metal crystals
- . microcrystals
- . mixed crystals
- . nanocrystals
- . polycrystals

- . quartz crystals
- . single crystals
- . whiskers (crystals)

RT anisotropy
body centered cubic lattices
clathrates
containerless melts
crystal growth
crystal lattices
crystal morphology
crystal structure
crystallography
electroepitaxy
face centered cubic lattices

∞ grains
isotropy
packing density
phase matching
ruby
spherules

CSM
USE **command service modules**

CT-114 *aircraft*
USE **CL-41 aircraft**

CTD
USE **charge transfer devices**

Cuba

GS landforms

- . islands
- . . West Indies
- . . . **Cuba**
- . nations
- . **Cuba**

RT Caribbean region
Caribbean Sea

cubane

GS organic compounds

- . hydrocarbons
- . **cubane**

cubes (mathematics)

GS geometry

- . Euclidean geometry
- . . polyhedrons
- . . . **cubes (mathematics)**

RT blocks

cubic equations

GS algebra

- . nonlinear equations
- . . **cubic equations**
- . analysis (mathematics)
- . real variables
- . . nonlinear equations
- . . . **cubic equations**
- . field theory (algebra)
- . **cubic equations**

RT ∞ equations
polynomials

cubic lattices

GS crystal lattices

- . **cubic lattices**
- . . body centered cubic lattices
- . . face centered cubic lattices

RT Laves phases

cues

GS **cues**

- . zeitgebers

RT auditory signals
visual signals

cuestas
USE **ridges**

cuffs

RT clothing
seals (stoppers)

cultivation

GS **cultivation**

- . plowing

RT ammonia
ammonium nitrates
ashes

culture media
culture techniques
fertilizers
planting
silviculture
soils
tissues (biology)

cultural resources

DEF Archaeological and historical sites.

RT archaeology
human beings

culture (social sciences)

RT American Indians
anthropology
artifacts
Eskimos
ethnic factors
governments
minorities
politics
race factors
races (anthropology)
regimes
social factors
sociology

culture media
(added August 2004)

DEF Any liquid or solid preparation made specifically for the growth, storage, or transport of microorganisms or other types of cells. The variety of media that exists allow for the culturing of specific microorganisms and cell types, such as differential media, selective media, test media, and defined media.

GS culture techniques

- . **culture media**

RT cell culturing
cells (biology)
clone cells
cloning (biology)
cultivation
cultured cells
microbiology
organ culturing
tissue culturing
tissue engineering

culture techniques

GS **culture techniques**

- . cell culturing
- . culture media
- . organ culturing
- . tissue culturing

RT Chlorella
clone cells
cloning (biology)
cultivation
cultured cells
in vitro methods and tests
in vivo methods and tests
microbiology
stem cells
tissue engineering

cultured cells
(added August 2004)

DEF Cells propagated in vitro in special media conducive to their growth. Cultured cells are used to study developmental, morphologic, metabolic, physiologic, and genetic processes, among others.

UF *cell lines*

GS cells (biology)

- . **cultured cells**
- . . clone cells

RT biotechnology
cell culturing
cloning (biology)
culture media
culture techniques
in vitro methods and tests
microbiology
organ culturing
tissue culturing

cumulative damage

GS damage

current density

silicon controlled rectifiers
thyratrons

current density

GS rates (per time)
. flux density
. . **current density**
RT critical current
electric current
electrolysis
electroplating
pinning

current distribution

GS distribution (property)
. **current distribution**
RT charge distribution
electron distribution
∞ hole distribution
hole distribution (electronics)
ion distribution
magnetic annular arc
neutral currents

current regulators

UF *current stabilizers*
GS control equipment
. regulators
. . **current regulators**
RT circuit protection
controllers
electric current
∞ electric equipment
electric switches
electronic control
limiter circuits
power factor controllers
power supply circuits
switching circuits
transmission loss
voltage regulators

current sheets

RT antennas
electric current
magnetic flux
magnetic islands
∞ sheets

current stabilizers

USE **current regulators**

∞ currents

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air currents
air flow
beam currents
circulation
coastal currents
electric current
external surface currents
fluid flow
ocean currents
water currents

currents (oceanography)

USE **water currents**

curtains

RT ∞ barriers
dividers
doors
entrances
openings
∞ partitions
partitions (structures)
∞ screens
separators
walls
windows (apertures)

Curtiss C-46 aircraft

USE **C-46 aircraft**

Curtiss-Wright aircraft

GS **Curtiss-Wright aircraft**
. C-46 aircraft
. X-19 aircraft

RT ∞ aircraft

curvature

GS geometry
. **curvature**
RT camber
∞ curves
curves (geometry)
differential geometry
flexing
∞ profiles
shapes
zero force curves

curve fitting

RT data compression
data smoothing
forecasting
least squares method
minimax technique
saddle points
statistical distributions
statistical tests
time series analysis

curved beams

GS structural members
. beams (supports)
. . **curved beams**
RT camber
I beams

curved panels

GS panels
. **curved panels**
RT contours
shapes
wing panels

curved surfaces

USE **contours**
shapes
surfaces

∞ curves

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT curvature
graphs (charts)
learning curves
light curve
toroids
trajectories
zero force curves

curves (geometry)

GS geometry
. **curves (geometry)**
. . catenaries
. . cycloids
. . epicycloids
. . S curves
. . . Gompertz curves
RT analytic geometry
∞ arcs
chords (geometry)
circles (geometry)
curvature
cusps (mathematics)
differential geometry
Euclidean geometry
geodesic lines
∞ helices
homotopy theory
inflection points
line shape
manifolds (mathematics)
menisci
segments
∞ spirals

curvilinear coordinates

USE **spherical coordinates**

Cushioncraft ground effect machine

GS ground effect machines
. **Cushioncraft ground effect machine**
RT hovering

vertical takeoff aircraft

cushions

RT air cushion landing systems
bumpers
couches
ground effect (aerodynamics)
hydraulic equipment
∞ pad
pneumatic equipment
seats
shock absorbers
vibration isolators

∞ cusps

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cusps (landforms)
cusps (mathematics)
double cusps
polar cusps

cusps (landforms)

GS landforms
. **cusps (landforms)**
RT beaches
coasts
∞ cusps
topography

cusps (mathematics)

GS geometry
. **cusps (mathematics)**
. . double cusps
RT curves (geometry)
∞ cusps
epicycloids
maxima
minima

custom integrated circuits

USE **application specific integrated circuits**

cutaneous perception

USE **touch**

∞ cut-off

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF An act or instance of shutting something off; specifically, in rocketry, an act or instance of shutting off the propellant flow in a rocket, or stopping the combustion of the propellant.
RT burnout
engine failure
machining

cut-outs

USE **openings**

cutters

SN (EXCLUDES SHIPS)
GS **cutters**
. blades (cutters)
. . razor blades
. drill bits
. drills
. saws
. shears
RT cutting
dies
laser cutting
machine tools
scrapers
taps
tools

cutting

GS **cutting**
. blanking (cutting)
. laser cutting
. metal cutting
. milling (machining)
. planing
. scarfing
. shearing
. slicing
. spark machining

- RT abrasion
chipping
comminution
cutters
drilling
flaking
forming techniques
fracturing
grinding (material removal)
grooving
machining
micromachining
peeling
perforating
piercing
∞ separation
shredding
splitting
torches
- CV-2 aircraft*
USE **DHC 4 aircraft**
- CV-7 aircraft*
USE **DHC 5 aircraft**
- CV-340 aircraft**
UF *Convair 340 aircraft*
GS commercial aircraft
. **CV-340 aircraft**
General Dynamics aircraft
. **CV-340 aircraft**
monoplanes
. **CV-340 aircraft**
passenger aircraft
. **CV-340 aircraft**
RT ∞ aircraft
- CV-440 aircraft**
UF *Convair 440 aircraft*
Metropolitan aircraft
GS commercial aircraft
. **CV-440 aircraft**
General Dynamics aircraft
. **CV-440 aircraft**
monoplanes
. **CV-440 aircraft**
passenger aircraft
. **CV-440 aircraft**
RT ∞ aircraft
- CV-880 aircraft**
UF *Convair 880 aircraft*
GS commercial aircraft
. **CV-880 aircraft**
General Dynamics aircraft
. **CV-880 aircraft**
jet aircraft
. **CV-880 aircraft**
monoplanes
. **CV-880 aircraft**
passenger aircraft
. **CV-880 aircraft**
transport aircraft
. **CV-880 aircraft**
RT ∞ aircraft
- CV-990 aircraft**
UF *Convair 990 aircraft*
GS commercial aircraft
. **CV-990 aircraft**
General Dynamics aircraft
. **CV-990 aircraft**
jet aircraft
. turbofan aircraft
. **CV-990 aircraft**
monoplanes
. **CV-990 aircraft**
passenger aircraft
. **CV-990 aircraft**
- RT ∞ aircraft
- CVD (deposition)*
USE **vapor deposition**
- CVI (fabrication)*
USE **chemical vapor infiltration**
- CVM (solid state)*
(added July 1997)
USE **cluster variation method**
- CW radar*
USE **continuous wave radar**
- cyanamides**
GS nitrogen compounds
. amides
. **cyanamides**
. cyano compounds
. **cyanamides**
- cyanates**
RT esters
urethanes
- cyanide emission*
USE **CN emission**
- cyanides**
GS **cyanides**
. acetonitrile
. cyanogen
. iron cyanides
. malononitrile
. succinonitrile
RT cyano compounds
cyanoacetylene
nitrogen compounds
- cyano compounds**
GS nitrogen compounds
. **cyano compounds**
. cyanamides
. cyanoacetylene
. isocyanates
. diisocyanates
. fulminates
RT ∞ chemical compounds
cyanides
nitriles
- cyanoacetylene**
GS nitrogen compounds
. cyano compounds
. **cyanoacetylene**
organic compounds
. hydrocarbons
. **cyanoacetylene**
RT acetylene
cyanides
- cyanocobalamin**
UF *vitamin B 12*
GS organic compounds
. cyclic compounds
. heterocyclic compounds
. **cyanocobalamin**
vitamins
. **cyanocobalamin**
- cyanogen**
GS cyanides
. **cyanogen**
- Cyanophyta*
USE **blue green algae**
- cyanosis**
GS diseases
. **cyanosis**
RT blood circulation
heart function
- cyanurates**
GS esters
. **cyanurates**
organic compounds
. cyclic compounds
. heterocyclic compounds
. azines
- . . . **cyanurates**
pyrazines
. azines
. **cyanurates**
- cyanuric acid**
GS acids
. **cyanuric acid**
hydroxyl compounds
. alcohols
. triols
. **cyanuric acid**
organic compounds
. cyclic compounds
. heterocyclic compounds
. azines
. **cyanuric acid**
pyrazines
. azines
. **cyanuric acid**
- Cyber 74 computer*
USE **CDC Cyber 74 computer**
- cybernetics**
DEF The study of methods of control and communication which are common to living organisms and machines.
RT adaptive control
automata theory
∞ automation
biomimetics
bionics
communication theory
computers
∞ control
control systems design
controllers
depersonalization
feedback
human factors engineering
information theory
machine learning
man machine systems
management
model reference adaptive control
neural nets
psychology
∞ systems
systems engineering
- cycles**
DEF The complete sequences of values of a periodic quantity that occur during a period. Used for cycling and periodic processes.
UF *cycling*
periodic processes
GS **cycles**
. activity cycles (biology)
. carbon cycle
. hydrological cycle
. solar cycles
. sunspot cycle
. stress cycles
. thermodynamic cycles
. Brayton cycle
. Carnot cycle
. Otto cycle
. Rankine cycle
. Stirling cycle
. photoperiod
. work-rest cycle
RT alternations
amplitudes
annual variations
cyclic loads
diurnal variations
fatigue (materials)
frequency distribution
harmonics
intermittency
long term effects
periodic variations
∞ phases
reciprocation
rhythm (biology)
starting

cyclic accelerators

superharmonics

cyclic accelerators

- GS particle accelerators
 - . **cyclic accelerators**
 - . . betatrons
 - . . synchrocyclotrons
 - . . synchrotrons
 - . . . bevatron
 - . . . storage rings (particle accelerators)
- RT ∞ accelerators

cyclic adenosine monophosphate

USE **cyclic AMP**

cyclic AMP

DEF A nucleotide which is implicated as an intracellular messenger in a wide variety of cellular processes. Prototypically it acts as a molecular transducer of nonsteroid signals from outside the cell to relevant cellular enzymes by a series of reactions. Used for cyclic adenosine monophosphate.

- UF *cyclic adenosine monophosphate*
- GS organic compounds
 - . coenzymes
 - . . **cyclic AMP**
 - . . cyclic compounds
 - . . heterocyclic compounds
 - . . . adenosines
 - **cyclic AMP**
 - . . nucleotides
 - . . adenosines
 - . . . **cyclic AMP**
 - . . phosphorus compounds
 - . . phosphates
 - . . **cyclic AMP**
- RT adenosine monophosphate
 - adrenergics
 - alkynes
 - amino acids
 - cholinergics
 - guanines
 - pharmacology

cyclic compounds

DEF In organic chemistry, compounds containing a ring of atoms.

- GS organic compounds
 - . **cyclic compounds**
 - . . cyclic hydrocarbons
 - . . . anthracene
 - . . . benzene
 - . . . chlorobenzenes
 - . . . colchicine
 - . . . cyclobutane
 - . . . cyclohexane
 - . . . cyclopropane
 - . . . durenene
 - . . . indene
 - . . . menthol
 - . . . naphthalene
 - . . . naphthenes
 - . . . polycyclic aromatic hydrocarbons
 - . . heterocyclic compounds
 - . . . acriflavine
 - . . . adenosines
 - adenosine diphosphate
 - adenosine monophosphate
 - adenosine triphosphate
 - cyclic AMP
 - . . . alkaloids
 - atropine
 - betaines
 - caffeine
 - colchicine
 - ergotamine
 - hyoscine
 - lysergine
 - morphine
 - nicotinamide
 - nicotine
 - pilocarpine
 - reserpine
 - strychnine
 - tropyl compounds
 - . . . anisole
 - . . . ascorbic acid
 - . . . azines

- cyanurates
- cyanuric acid
- meclizine
- methylene blue
- phenothiazines
- azoles
- acetazolamide
- oxazole
- pyrroles
- carbazoles
- azulene
- bioflavonoids
- biotin
- carnitine
- cyanocobalamin
- cytidylic acid
- dimenhydrinate
- endrin
- ethylene oxide
- folic acid
- furans
- tetrahydrofuran
- guanethidine
- HMX
- nicotinic acid
- phthalocyanin
- phyloquinone
- piperidine
- promethazine
- purines
- adenines
- xanthenes
- caffeine
- guanines
- uric acid
- pyridines
- pyridoxine
- pyrimidines
- alloxan
- thymidine
- thymine
- uracil
- indoles
- RDX
- retinene
- riboflavin
- tetracyclines
- tetrazoles
- thiamine
- thiazine (trademark)
- thiophenes
- tocopherol
- trimethadione
- tryptamines
- tryptophan
- melatonin
- serotonin
- imidazoles
- rhodamine

RT ∞ chemical compounds
cycloaddition
organic chemistry

cyclic hydrocarbons

- GS organic compounds
 - . cyclic compounds
 - . . **cyclic hydrocarbons**
 - . . . anthracene
 - . . . benzene
 - . . . chlorobenzenes
 - . . . colchicine
 - . . . cyclobutane
 - . . . cyclohexane
 - . . . cyclopropane
 - . . . durenene
 - . . . indene
 - . . . menthol
 - . . . naphthalene
 - . . . naphthenes
 - . . . polycyclic aromatic hydrocarbons
 - . hydrocarbons
 - . . **cyclic hydrocarbons**
 - . . . anthracene
 - . . . benzene
 - . . . chlorobenzenes
 - . . . colchicine
 - . . . cyclobutane
 - . . . cyclohexane
 - . . . cyclopropane

- . . . durenene
 - . . . indene
 - . . . menthol
 - . . . naphthalene
 - . . . naphthenes
 - . . . polycyclic aromatic hydrocarbons
- RT alkynes

cyclic loads

- SN (LIMITED TO FORCE LOADS)
- GS loads (forces)
 - . dynamic loads
 - . . **cyclic loads**
- RT cycles
 - Elber equation
 - inelastic stress
 - S-N diagrams
 - stress cycles
 - structural design criteria
 - transient loads
 - variable amplitude loading
 - vibration
 - vibratory loads

cycling

USE **cycles**

cycloaddition

(added June 1998)

DEF Pericyclic chemical reaction in which unsaturated molecules combine to form a cyclic compound under the influence of heat or light.

- GS chemical reactions
 - . **cycloaddition**
 - . . Diels-Alder reactions
- RT cyclic compounds
 - photochemical reactions
 - polymerization
 - synthesis (chemistry)

cyclobutane

- GS organic compounds
 - . cyclic compounds
 - . . cyclic hydrocarbons
 - . . . **cyclobutane**
 - . . hydrocarbons
 - . . . cyclic hydrocarbons
 - . . . **cyclobutane**

cyclogenesis

- RT arc clouds
 - atmospheric circulation
 - atmospheric pressure
 - cyclones
 - hurricanes
 - low pressure
 - storms (meteorology)

cyclohexane

- GS organic compounds
 - . cyclic compounds
 - . . cyclic hydrocarbons
 - . . . **cyclohexane**
 - . . hydrocarbons
 - . . . cyclic hydrocarbons
 - . . . **cyclohexane**
- RT benzene
 - hexenes
 - hydrogenation

cycloids

- GS geometry
 - . curves (geometry)
 - . . **cycloids**
 - . . Euclidean geometry
 - . . . analytic geometry
 - . . . **cycloids**

cyclones

- SN (METEOROLOGICAL--EXCLUDES EQUIPMENT)
- DEF Areas of low pressure with a closed circulation that rotate counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
- GS storms
 - . storms (meteorology)
 - . . **cyclones**
 - . . . hurricanes
 - Anna hurricane
 - . . . typhoons

- RT anticyclones
atmospheric pressure
baroclinic waves
cyclogenesis
ground wind
low pressure
meteorology
precipitation (meteorology)
storm damage
synoptic meteorology
tornadoes
tropical storms
wind (meteorology)
- cyclones (equipment)*
USE **centrifuges**
- cyclopropane**
GS drugs
. anesthetics
. . . **cyclopropane**
organic compounds
. cyclic compounds
. . . cyclic hydrocarbons
. . . . **cyclopropane**
. hydrocarbons
. . . cyclic hydrocarbons
. . . . **cyclopropane**
- RT propane
- Cyclops plasma accelerator**
GS plasma accelerators
. **Cyclops plasma accelerator**
- RT ∞ accelerators
plasmas (physics)
- cyclotetramethylene tetranitramine*
USE **HMX**
- cyclotrimethylene trinitramine*
USE **RDX**
- cyclotron frequency**
DEF Frequency at which a charged particle orbits in a uniform magnetic field. It depends on the charge to mass ratio of the particle times the magnetic field. While the frequency is independent of the particle energy, Lamor orbit increases with energy.
GS frequencies
. **cyclotron frequency**
- RT charged particles
Larmor precession
- cyclotron radiation**
DEF The electromagnetic radiation emitted by charged particles as they orbit in a magnetic field. The radiation arises from the centripetal acceleration of the particle as it moves in a circular orbit.
GS electromagnetic radiation
. nonthermal radiation
. . . **cyclotron radiation**
. . . ion cyclotron radiation
- RT charged particles
Larmor precession
Larmor radius
∞ radiation
- cyclotron resonance**
DEF Energy transfer to charged particles in a magnetic field from an alternating-current electric field whose frequency is equal to the cyclotron frequency.
GS resonance
. **cyclotron resonance**
. . . electron cyclotron resonance
- RT charged particles
diamagnetism
energy transfer
Fermi surfaces
ion cyclotron radiation
plasma resonance
- cyclotron resonance devices**
DEF Microwave amplifiers based on the interaction between electromagnetic waves and transverse electron streams moving along helical trajectories. Used for gyrotrons.
UF *gyrotrons*
- GS amplifiers
. microwave amplifiers
. . . **cyclotron resonance devices**
electron tubes
. vacuum tubes
. . . microwave tubes
. . . . **cyclotron resonance devices**
microwave equipment
. microwave amplifiers
. . . **cyclotron resonance devices**
. microwave tubes
. . . **cyclotron resonance devices**
- RT cavity resonators
∞ devices
diffraction radiation
electron cyclotron resonance
klystrons
millimeter waves
power amplifiers
traveling wave tubes
- cyclotrons**
UF *calutrons*
GS particle accelerators
. **cyclotrons**
. . . geocyclotrons
. . . microtrons
. . . Oak Ridge isochronous cyclotron
. . . omegatrons
. . . synchrocyclotrons
- RT synchrotrons
- Cygnus constellation**
GS constellations
. **Cygnus constellation**
- RT celestial bodies
celestial sphere
stars
- ∞ **cylinders**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT analytic geometry
circular cylinders
concentric cylinders
cylindrical bodies
cylindrical chambers
cylindrical shells
∞ drums
drums (containers)
elastic cylinders
elliptical cylinders
hemisphere cylinder bodies
monocoque structures
orthotropic cylinders
oscillating cylinders
plasma cylinders
rotating cylinders
viscoelastic cylinders
- cylindrical afterbodies*
USE **afterbodies**
cylindrical bodies
- cylindrical antennas**
GS antennas
. **cylindrical antennas**
- RT antenna radiation patterns
radio equipment
- cylindrical bodies**
UF *cylindrical afterbodies*
cylindroids
- GS symmetrical bodies
. bodies of revolution
. . . **cylindrical bodies**
. . . rotating cylinders
- RT afterbodies
Airy function
centerbodies
circular cylinders
∞ cylinders
cylindrical coordinates
elastic cylinders
elliptical cylinders
forebodies
fuselages
hemisphere cylinder bodies
orthotropic cylinders
oscillating cylinders
- plasma cylinders
plastic bodies
rollers
viscoelastic cylinders
- cylindrical chambers**
RT brakes (for arresting motion)
∞ chambers
∞ cylinders
- cylindrical coordinates**
GS coordinates
. **cylindrical coordinates**
- RT astronomical coordinates
Cartesian coordinates
cylindrical bodies
- cylindrical plasmas**
DEF Magnetic self-attraction of parallel electric currents causing constriction of a conducting plasma through which a large current is flowing.
GS particles
. charged particles
. . . energetic particles
. . . plasmas (physics)
. . . . **cylindrical plasmas**
. corpuscular radiation
. . . energetic particles
. . . plasmas (physics)
. . . . **cylindrical plasmas**
plasma cylinders
. **cylindrical plasmas**
- RT pinch effect
- cylindrical shells**
GS shells (structural forms)
. **cylindrical shells**
- RT circular cylinders
circular shells
circular tubes
concentric cylinders
∞ cylinders
elastic cylinders
elliptical cylinders
metal shells
orthotropic cylinders
orthotropic shells
oscillating cylinders
plasma cylinders
plastic shells
reinforced shells
rotating cylinders
thin walled shells
viscoelastic cylinders
- cylindrical tanks**
GS tanks (containers)
. **cylindrical tanks**
- RT fuel tanks
propellant tanks
storage tanks
- cylindrical waves**
DEF Waves in which the wave fronts are coaxial cylinders.
RT axisymmetric flow
elastic waves
electromagnetic radiation
plane waves
spherical waves
∞ waves
- cylindroids*
USE **cylindrical bodies**
- Cyprus**
GS landforms
. islands
. . . **Cyprus**
nations
. **Cyprus**
- RT Greece
Mediterranean Sea
- Cyrillid meteoroids**
GS celestial bodies
. meteoroid showers
. . . **Cyrillid meteoroids**
. meteoroids

cysteamine

. . bolides
. . . **Cyrrillid meteoroids**
RT natural satellites
tektites

cysteamine

GS drugs
. antiradiation drugs
. . **cysteamine**
organic compounds
. amines
. . **cysteamine**
RT amino acids
proteins
radiation protection

cysteine

GS acids
. amino acids
. . **cysteine**
drugs
. **cysteine**
organic compounds
. amino acids
. . **cysteine**
sulfur compounds
. thiols
. . **cysteine**
RT proteins

cystic fibrosis

GS diseases
. fibrosis
. . **cystic fibrosis**
RT tissues (biology)

cysts

GS **cysts**
. mucocoeles
RT neoplasms
tissues (biology)
tumors

cytidylic acid

GS acids
. **cytidylic acid**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **cytidylic acid**

cytochromes

GS biopolymers
. proteins
. . enzymes
. . . **cytochromes**
organic compounds
. proteins
. . enzymes
. . . **cytochromes**

pigments
. **cytochromes**
RT cytogenesis
skin (anatomy)

cytogenesis

GS **cytogenesis**
. cell division
. differentiation (biology)
. hematopoiesis
. mitosis
. osteogenesis
RT ∞ biology
cells (biology)
cytochromes
cytology
cytoplasm
∞ differentiation
genetics
heredity
osteoblasts
physiology

cytology

UF *cell physiology*
RT animal models
apoptosis
biochemistry
biological diversity
∞ biology
blood cell count
cell membranes (biology)
cells (biology)
chromatin
chromosomes
clone cells
cytogenesis
cytometry
eukaryotes
in vitro methods and tests
in vivo methods and tests
lysosomes
mitochondria
mitosis
monocytes
necrosis
nuclei (cytology)
organelles
plasmolysis
plastids
prokaryotes
sarcolemmal reticulum
stem cells
tissue engineering

cytometry

(added February 1990)
UF *cytophotometry*
RT cells (biology)
cytology

microscopy

cytophotometry
USE **cytometry**

cytoplasm

RT calmodulin
cells (biology)
chloroplasts
cytogenesis
endoplasmic reticulum
eosinophils
fibroblasts
mitosis
neutrophils
nuclei (cytology)
organelles
plastids
ribosomes
sarcolemmal reticulum

Czech Republic

(added December 1995)
GS nations
. **Czech Republic**
RT Czechoslovakia
Europe
Slovakia

Czechoslovakia

GS nations
. **Czechoslovakia**
RT Central Europe
Czech Republic
Czechoslovakian space program
Czechoslovakian spacecraft
Europe
Slovakia

Czechoslovakian space program

(added March 1989)
GS programs
. space programs
. . European space programs
. . . **Czechoslovakian space program**
RT Czechoslovakia

Czechoslovakian spacecraft

DEF Spacecraft of Czechoslovakia.
RT Czechoslovakia
∞ spacecraft

Czochralski method

GS growth
. crystal growth
. . **Czochralski method**
RT ∞ methodology
Verneuil process

D

D layer
 USE **D region**

D lines
 GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 **D lines**
 RT absorption spectra
 emission spectra
 H lines
 solar spectra

D region
 SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 50 AND 90 KM)
 UF *D layer*
 GS Earth atmosphere
 . upper atmosphere
 . . Earth ionosphere
 . . . lower ionosphere
 **D region**
 regions
 . **D region**
 RT Earth-ionosphere waveguide

D-1 satellite
 GS artificial satellites
 . French satellites
 . . **D-1 satellite**

D-2 satellites
 UF *D-2B satellite*
Polaire satellite
Tournesole satellite
 GS artificial satellites
 . French satellites
 . . **D-2 satellites**
 . meteorological satellites
 . . **D-2 satellites**

D-2B satellite
 USE **D-2 satellites**

D-558 aircraft
 UF *Douglas D-558 aircraft*
Skyrocket aircraft
Skystreak aircraft
 GS jet aircraft
 . **D-558 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **D-558 aircraft**
 monoplanes
 . **D-558 aircraft**
 research vehicles
 . research aircraft
 . . **D-558 aircraft**
 supersonic aircraft
 . **D-558 aircraft**
 RT ∞ aircraft

Dacron (trademark)
 GS fabrics
 . **Dacron (trademark)**
 fibers
 . synthetic fibers
 . . **Dacron (trademark)**
 RT polyester resins
 reinforcing fibers

Dactyl
 USE **natural satellites**

DAD Explorer
 USE **Dual Air Density Explorer**

DAEMO (data analysis)
 USE **data processing**
data reduction
data transmission

Dahomey
 USE **Benin**

Dakota aircraft
 USE **C-47 aircraft**

Dalton law
 DEF The empirical generalization that for

many so-called perfect gases, a mixture of these gases will have a pressure equal to the sum of the partial pressures that each of the gases would have as a sole component with the same volume and temperature, provided there is no chemical interaction.
 RT gas composition
 gas dynamics
 gas-gas interactions
 ideal gas
 partial pressure
 vapor pressure

DAMA
 USE **demand assignment multiple access**

damage
 GS **damage**
 . cumulative damage
 . earthquake damage
 . fire damage
 . flood damage
 . frost damage
 . impact damage
 . . meteoritic damage
 . . rain impact damage
 . proton damage
 . radiation damage
 . . laser damage
 . storm damage
 RT burnthrough (failure)
 corrosion
 damage assessment
 decay
 decomposition
 defects
 deformation
 degradation
 destruction
 deterioration
 discoloration
 disintegration
 durability
 fatigue (biology)
 fatigue (materials)
 fractures (materials)
 hot corrosion
 immobilization
 impairment
 injuries
 lethality
 losses
 radiation effects
 sabotage
 space weathering
 warpage
 wear
 weathering

damage assessment
 DEF Estimate of injury or loss to components, subsystems, or entire systems, as well as the cost of repairs or replacement to restore serviceability.
 GS assessments
 . **damage assessment**
 RT casts
 costs
 damage
 estimates
 maintenance
 recoverability
 replacing
 spare parts
 value

damage threshold
 USE **yield point**

Damkohler number
 RT activation energy
 combustion physics
 diffusion flames
 flame propagation
 ∞ numbers

reaction kinetics

DAMP program
 USE **Downrange Antimissile Measurement Program**

∞ **dampers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT blankets (fission reactors)
 dampers (valves)
 nutation dampers
 oscillation dampers
 vibration isolators

dampers (valves)
 GS valves
 . butterfly valves
 . . **dampers (valves)**
 RT automatic control valves
 ∞ dampers
 gas valves
 vibration isolators

damping
 DEF The suppression of oscillations or disturbances; the dissipation of energy with time. Used for damping factor, damping in pitch, damping in roll, damping in yaw, elastic stability, and jet damping.
 UF *damping factor*
damping in pitch
damping in roll
damping in yaw
elastic stability
jet damping
 GS **damping**
 . elastic damping
 . . viscoelastic damping
 . Landau damping
 . vibration damping
 . viscous damping
 . . viscoelastic damping
 . magnetic damping
 RT ∞ absorption
 attenuation
 baffles
 deceleration
 dissipation
 dynamic characteristics
 dynamic response
 dynamic stability
 energy absorption
 gyroscope fluids
 gyroscopic pendulums
 gyroscopic stability
 hysteresis
 impedance
 insulation
 internal friction
 mechanical impedance
 mufflers
 negative feedback
 oscillations
 ∞ reduction
 ∞ resistance
 resonant frequencies
 resonant vibration
 retarding
 roll
 sea keeping
 shock absorbers
 silencers
 stability derivatives
 stopping
 subharmonic generators
 suppressors
 time constant
 transfer functions
 transient oscillations
 transient response
 vibration isolators

damping tests

wave interaction

damping factor

USE **damping**

damping in pitch

USE **damping pitch (inclination)**

damping in roll

USE **damping**

damping in yaw

USE **damping yaw**

damping tests

- GS vibration tests
 - . **damping tests**
 - . . stroking tests
- RT resonance testing
- stability tests
- ∞ tests
- vibration measurement

dampness

USE **moisture content**

dams

- RT ∞ barrages
- ∞ barriers
- flood control
- hydroelectricity
- reservoirs
- wharves

danger

USE **hazards**

Danish space program

- (added August 1990)
- GS programs
 - . space programs
 - . . European space programs
 - . . . **Danish space program**
- RT Denmark

dark adaptation

DEF The process by which the iris and retina of the eye adjust to allow maximum vision in dim illumination, following exposure of the eye to a relatively brighter illumination.

- GS adaptation
 - . retinal adaptation
 - . . **dark adaptation**
- RT darkness
- night vision
- pupillometry
- vision
- visual pigments

dark current

- (added October 1997)
- UF *electrode dark current*
- GS electric current
 - . **dark current**
- RT low currents
- photocathodes
- photodiodes
- photoelectric cells
- phototubes
- signal to noise ratios

dark energy

- (added February 2004)
- DEF A hypothetical form of energy that permeates all of space and is believed to be responsible for accelerating the expansion of the Universe.

- RT astrophysics
- cosmology
- dark matter
- ∞ energy
- gravitation theory
- universe

dark matter

- GS extraterrestrial matter
 - . interstellar matter
 - . . **dark matter**
 - matter (physics)

. dark matter

- RT Alpha Magnetic Spectrometer
- baryons
- cooling flows (astrophysics)
- cosmology
- dark energy
- galactic evolution
- galactic halos
- intergalactic media
- large-scale structure of the universe
- massive compact halo objects
- missing mass (astrophysics)
- neutrinos
- Population III stars
- universe
- weakly interacting massive particles

darkening

- GS **darkening**
 - . limb darkening
- RT darkness
- ∞ illumination
- night
- visibility

darkness

- RT color
- dark adaptation
- darkening
- diurnal variations
- illuminating
- ∞ illumination
- light (visible radiation)
- night
- night flights (aircraft)
- optical properties
- shadows
- zeitgebers

darkrooms

- GS rooms
 - . **darkrooms**
- RT photographic processing
- photographic processing equipment
- photography

Darkstar unmanned aerial vehicle

- (added August 1998)
- USE **pilotless aircraft reconnaissance aircraft**

Dart turboprop engines

- USE **turboprop engines**

Dash helicopter

- USE **QH-50 helicopter**

Dassault aircraft

- GS **Dassault aircraft**
 - . Mirage aircraft
 - . . Mirage 3 aircraft
 - . Mystere 20 aircraft
 - . Mystere 50 aircraft
- RT ∞ aircraft

Dassault Mirage 3 aircraft

- USE **Mirage 3 aircraft**

Dassault Mystere 20 aircraft

- USE **Mystere 20 aircraft**

Dassault Mystere 50 aircraft

- USE **Mystere 50 aircraft**

DAST program

- SN (DRONES FOR AERODYNAMIC AND STRUCTURAL TESTING)
- DEF A NASA program which uses the Firebee 2 target drone aircraft as a test bed for getting flight data on research wings. The drone is launched from the wing of a B52 and recovered by parachute. The program's purpose is the study of flight loads and load control. Used for drones for aerodynamic and struct test.
- UF *Drones for Aerodynamic and Structural Test*
- GS programs
 - . NASA programs
 - . . **DAST program**
- RT aeroelasticity
- aircraft control

aircraft design
drone aircraft
flight tests
flutter
remotely piloted vehicles
vibration damping

∞ data

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT analog data
- audio data
- binary data
- biomedical data
- censored data (mathematics)
- channels (data transmission)
- control data (computers)
- data acquisition
- data base management systems
- data bases
- data collection platforms
- data compression
- data conversion routines
- data converters
- data correlation
- data links
- data management
- data processing
- data processing equipment
- data processing terminals
- data recorders
- data recording
- data reduction
- data retrieval
- data sampling
- data smoothing
- data storage
- data systems
- data transmission
- datum (elevation)
- digital data
- end-to-end data systems
- information
- interservice data exchange program
- ∞ measurement
- metadata
- ocean data acquisitions systems
- onboard data processing
- optical data processing
- optical data storage materials
- optical memory (data storage)
- printers (data processing)
- radar data
- records
- site data processors
- Space Flight Tracking and Data Network
- statistical analysis
- statistical tests
- ∞ statistics
- tables (data)
- video data
- voice data processing
- weather data recorders
- world data centers

data acquisition

- GS acquisition
 - . **data acquisition**
- RT Advanced Range Instrumentation Aircraft
- Alouette project
- analog to digital converters
- automatic weather stations
- counting
- ∞ data
- Deep Space Instrumentation Facility
- detection
- Earth observations (from space)
- end-to-end data systems
- forms (paper)
- Global Tracking Network
- ground stations
- infrared radiometers
- meteorological research aircraft
- needs (data system)
- news media
- observation
- ocean data acquisitions systems

optical data processing
 optical scanners
 remote sensors
 ∞ sensors
 Space Flight Tracking and Data Network
 STDN (network)
 surveys
 tables (data)
 tracking networks

data adaptive evaluator/monitor

USE **data processing**
data reduction
data transmission

data analysis

USE **data processing**
data reduction

data base management systems

DEF Software products that control data structures containing interrelated data stored so as to optimize accessibility and control, minimize redundancy, and offer multiple views of the data to various applications programs.

RT ∞ data
 data bases
 data management
 information management
 management information systems
 relational data bases
 ∞ systems

data bases

GS **data bases**
 . knowledge bases (artificial intelligence)
 . numerical data bases
 . relational data bases

RT ∞ bases
 CD-ROM
 ∞ data
 data base management systems
 data structures
 metadata
 software engineering

data busses

USE **channels (data transmission)**

data collection platforms

RT Argos system
 automatic weather stations
 ∞ data
 ground stations
 instrument packages
 integrated global ocean station systems
 ∞ platforms
 remote sensors

data compaction

USE **data compression**

data compression

DEF Any technique used to reduce the amount of storage required to store data.

UF *data compaction*
 GS **data compression**
 . video compression

RT curve fitting
 ∞ data
 decoding
 discrete cosine transform
 Fourier analysis
 telecommunication
 telemetry
 vector quantization

data conversion routines

GS **data conversion routines**
 . subroutines

RT algorithms
 compilers
 computer programs
 ∞ conversion
 ∞ data

∞ routines

data converters

GS **data converters**
 . analog to digital converters
 . binary to decimal converters
 . decimal to binary converters
 . digital to analog converters

RT analog circuits
 analog data
 computers
 conversion tables
 ∞ converters
 ∞ data
 decoders
 digital data
 transducers
 video data

data correlation

GS correlation
 . **data correlation**
 data processing
 . **data correlation**
 RT angular correlation
 autocorrelation
 cross correlation
 ∞ data
 statistical analysis
 statistical correlation
 teleconnections (meteorology)
 temperature ratio

data flow analysis

RT computer programs
 computer systems programs
 data simulation
 data transfer (computers)
 flow charts
 network analysis
 sequential control

data fusion

USE **multisensor fusion**

data handling systems

USE **data systems**

data integration

DEF Taking data from multiple sources and merging the data into a single data file.

RT data management
 data simulation
 multisensor fusion

data links

DEF Communications channels or circuits used to transmit data from a sensor to a computer; a readout device or a storage device.

GS telecommunication
 . **data links**
 RT channels (data transmission)
 communication networks

∞ data
 decommutators
 discrete address beacon system
 frequency reuse

∞ links
 networks
 protocol (computers)
 radio receivers
 radio relay systems
 remote consoles
 site data processors
 telemetry
 VSAT (network)
 wireless communication

data management

GS management
 . **data management**

RT ∞ data
 data base management systems
 data integration
 data simulation
 data simulation
 frames (data processing)
 information resources management
 metadata
 on-line systems
 records management

relational data bases
 surveys
 tables (data)
 virtual memory systems

data mining

(added April 2000)

DEF The extraction of patterns from large data sets in order to discover previously unknown and potentially useful information.

UF *knowledge discovery*
knowledge extraction

GS data processing
 . **data mining**
 information analysis

RT . **data mining**
 cluster analysis
 data retrieval
 machine learning
 trend analysis

data processing

SN (LIMITED TO MECHANICAL OR ELECTRONIC MANIPULATION OF DATA)

DEF Application of procedures, mechanical, electrical, computational, or other whereby data are changed from one form to another. Used for automatic data processing, DAEMO (data analysis), data adaptive evaluator/monitor, and data analysis.

UF *automatic data processing*
DAEMO (data analysis)
data adaptive evaluator/monitor
data analysis

GS **data processing**

. associative processing (computers)
 . batch processing
 . censored data (mathematics)
 . Central Electronic Management System
 . concurrent processing
 . data correlation
 . data reduction
 . . data smoothing
 . data retrieval
 . data storage
 . data transfer (computers)
 . distributed processing
 . . grid computing (computer networks)

. Karhunen-Loeve expansion
 . multiprocessing (computers)
 . onboard data processing
 . optical data processing
 . parallel processing (computers)
 . pipelining (computers)
 . scene analysis
 . signal analysis
 . . cepstral analysis
 . signal processing
 . . space-time adaptive processing
 . vector processing (computers)
 . voice data processing
 . . cepstral analysis
 . data mining

RT access time
 adjoints
 airborne/spaceborne computers
 analog data
 Atmospheric & Oceanographic Inform Sys

∞ automation
 binary data
 binary to decimal converters
 bubble memory devices
 channels (data transmission)
 computation
 computer information security
 computer programs
 computer systems programs
 computers

∞ data
 data products
 data structures
 decimal to binary converters
 digital computers
 digital data
 editing
 editing routines (computers)
 end-to-end data systems

data processing equipment

- fixed point arithmetic
- floating point arithmetic
- frames (data processing)
- image processing
- information resources management
- information retrieval
- information theory
- interrogation
- language programming
- mechanization
- microprocessors
- natural language (computers)
- needs (data system)
- on-line systems
- peripheral equipment (computers)
- preprocessing
- ∞ processing
- protocol (computers)
- RCA computers
- records
- response time (computers)
- site data processors
- symbols
- systems engineering
- tables (data)
- tabulation processes
- telecommunication
- word processing

data processing equipment

DEF Machines for handling information in a sequence of reasonable operations. Used for data processors.

UF *data processors*

GS data processing equipment

- . computers
 - . . . analog computers
 - . . . EAI 680 computer
 - . . . Honeywell 600/6000 computer
 - . . . SIGMA 5 computer
 - . . . Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - . . . CDC computers
 - CDC 160-A computer
 - CDC 1604 computer
 - CDC 3100 computer
 - CDC 3200 computer
 - CDC 3600 computer
 - CDC 3800 computer
 - CDC 6000 series computers
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
 - CDC 7000 series computers
 - CDC 7600 computer
 - CDC 8090 computer
 - CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - CDC Cyber 74 computer
 - CDC Cyber 174 computer
 - CDC Cyber 203 computer
 - CDC Cyber 205 computer
 - CDC Star 100 computer
 - counting rate computers
 - DDP computers
 - DDP 516 computer
 - digital computers
 - CDC 160-A computer
 - CDC 1604 computer
 - CDC 3100 computer
 - CDC 3200 computer
 - CDC 3600 computer
 - CDC 3800 computer
 - CDC 6000 series computers
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
 - CDC 7000 series computers
 - CDC 7600 computer
 - CDC 8090 computer
 - CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - CDC Cyber 74 computer
 - CDC Cyber 174 computer
 - CDC Cyber 203 computer

- CDC Cyber 205 computer
- CDC Star 100 computer
- EAI 680 computer
- EAI 8400 computer
- EAI 8900 computer
- EMR 6050 computer
- Ferranti Mercury computer
- GE computers
 - GE 625 computer
 - GE 635 computer
- Hewlett-Packard computers
- Honeywell computers
 - DDP 516 computer
 - Honeywell 600/6000 computer
 - Honeywell ADEPT computer
 - Honeywell DDP 116 computer
- IBM 360 computer
- IBM 370 computer
- IBM 650 computer
- IBM 704 computer
- IBM 709 computer
- IBM 1130 computer
- IBM 1401 computer
- IBM 1410 computer
- IBM 1620 computer
- IBM 2250 computer
- IBM 7030 computer
- IBM 7040 computer
- IBM 7044 computer
- IBM 7070 computer
- IBM 7074 computer
- IBM 7090 computer
- IBM 7094 computer
- ICL computers
- Illiac computers
 - Illiac 3 computer
 - Illiac 4 computer
- microcomputers
 - personal computers
 - IBM personal computers
 - Macintosh personal computers
 - minicomputers
 - Nova computers
 - Modcomp II computer
 - Modcomp IV computer
 - parallel computers
 - massively parallel processors
 - Connection Machine
 - MIMD (computers)
 - SIMD (computers)
 - PDP 15 computer
 - PDP computers
 - PDP 7 computer
 - PDP 8 computer
 - PDP 9 computer
 - PDP 10 computer
 - PDP 11 computer
 - PDP 11/20 computer
 - PDP 11/40 computer
 - PDP 11/45 computer
 - PDP 11/50 computer
 - PDP 11/70 computer
 - PDP 12 computer
 - Philco 2000 computer
 - Raytheon computers
 - RCA spectra 70 computer
 - SDS 900 series computers
 - SDS 930 computer
 - SDS 9300 computer
 - SEL computers
 - sequential computers
- SIGMA 5 computer
- SIGMA computers
 - SIGMA 9 computer
- Solomon computers
 - Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - Univac 80 computer
 - Univac 418 computer
 - Univac 490 computer
 - Univac 494 computer
 - Univac 1230 computer
 - Univac Larc computer
- VAX computers
- VAX-11 series computers

- VAX-11/780 computer
- embedded computer systems
- airborne/spaceborne computers
- hybrid computers
- hypercube multiprocessors
- IBM computers
 - IBM 360 computer
 - IBM 370 computer
 - IBM 650 computer
 - IBM 704 computer
 - IBM 709 computer
 - IBM 1130 computer
 - IBM 1401 computer
 - IBM 1410 computer
 - IBM 1620 computer
 - IBM 2250 computer
 - IBM 7030 computer
 - IBM 7040 computer
 - IBM 7044 computer
 - IBM 7070 computer
 - IBM 7074 computer
 - IBM 7090 computer
 - IBM 7094 computer
- IBM personal computers
- MINOS computer
- optical computers
- Pegasus computer
- RCA computers
 - RCA spectra 70 computer
 - RCA-110 computers
- Siemens 2002 computer
- site data processors
- supercomputers
- Connection Machine
- Cray computers
- transputers
- Univac computers
 - Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - Univac 80 computer
 - Univac 418 computer
 - Univac 490 computer
 - Univac 494 computer
 - Univac 1230 computer
 - Univac Larc computer
- quantum computers
- data processing terminals
 - VSAT (network)
- microprocessors
 - Intel 8080 microprocessor
- peripheral equipment (computers)
- printers (data processing)
- remote consoles

RT

- batch processing
- computer compatible tapes
- computer systems simulation
- control units (computers)

∞ data

- digital radar systems
- ∞ equipment
- interfaces
- multiprocessing (computers)
- optical data processing
- pipelining (computers)
- printers
- simulation

data processing terminals

- GS data processing equipment
 - . **data processing terminals**
 - . . VSAT (network)
- RT computer graphics
 - consoles
- ∞ data
 - human-computer interface
 - man machine systems
 - remote consoles
- ∞ terminals

data processors

USE **data processing equipment**

data products

(added June 2005)

DEF Processed data from the same source,

normally compiled into a set according to shared characteristics.

- GS products
 - . **data products**
- RT Aqua spacecraft
 - Aura spacecraft
 - CERES (experiment)
 - data processing
 - Earth Observing System (EOS)
 - image processing
 - Landsat satellites
 - MISR (radiometry)
 - MODIS (radiometry)
 - remote sensing
 - remote sensors
 - satellite imagery
 - satellite-borne instruments
 - space commercialization
 - Surface Meteorology and Solar Energy project
 - Surface Radiation Budget project
 - technology utilization
 - Terra spacecraft
 - thematic mapping

data readout systems

- USE **data systems**
- display devices**

data recorders

- GS **data recorders**
 - . flight recorders
 - . . flight load recorders
 - . weather data recorders
- RT bubble memory devices
 - bubble technique
 - counters
- ∞ data
 - display devices
 - monitors
 - punched cards
- ∞ recorders
 - recording instruments
 - tape recorders
 - video disks

data recording

- GS recording
 - . **data recording**
- RT bubble memory devices
 - ∞ data
 - magnetic recording
 - magnetic storage
 - optical data storage materials
 - photographic recording
 - punched cards
 - punched tapes
 - recording heads
 - records
 - tables (data)
 - tabulation processes
 - video disks

data reduction

DEF Transformation of observed values into useful, ordered, or simplified information. Used for DAEMO (data analysis), data adaptive evaluator/monitor, data analysis, and TARE (data reduction).

- UF *DAEMO (data analysis)*
 - data adaptive evaluator/monitor*
 - data analysis*
 - TARE (data reduction)*
- GS data processing
 - . **data reduction**
 - . . data smoothing
- RT computation
 - ∞ data
 - editing
 - preprocessing
 - ∞ reduction
 - tables (data)

data retrieval

- GS data processing
 - . **data retrieval**
 - retrieval
 - . **data retrieval**
- RT ∞ data
 - data mining

- data transfer (computers)
- documentation
- information management
- information retrieval
- interservice data exchange program
- libraries
- management information systems
- microfilms
- relational data bases
- search profiles
- tables (data)
- telemetry
- world data centers

data sampling

- GS sampling
 - . **data sampling**
- RT computer systems performance
 - ∞ data
 - quality control
 - sampled data systems
 - telecommunication
 - time series analysis

data simulation

DEF The use of statistical or physical models to produce synthetic data for testing purposes.

- GS simulation
 - . **data simulation**
- RT data flow analysis
 - data integration
 - data management

data smoothing

DEF The mathematical process of fitting a smooth curve to dispersed data points.

- GS data processing
 - . data reduction
 - . . **data smoothing**
 - recording
 - . **data smoothing**
 - smoothing
 - . **data smoothing**
- RT curve fitting
 - ∞ data

data storage

- GS data processing
 - . **data storage**
- RT bubble memory devices
 - buffer storage
 - cards
 - core storage
 - ∞ data
 - data transfer (computers)
 - document storage
 - flip-flops
 - holography
 - information management
 - interservice data exchange program
 - magnetic storage
 - management information systems
 - microfilms
 - microphotographs
 - optical data storage materials
 - optical disks
 - punched cards
 - selective dissemination of information
 - ∞ storage
 - video disks
 - virtual memory systems
 - white light holography
 - world data centers

data structures

DEF The organization of computer memory used to represent information in a computer program or database.

- RT computer programming
 - data bases
 - data processing
 - knowledge based systems
 - structured programming

data systems

- UF *data handling systems*
 - data readout systems*
- GS **data systems**
 - . air data systems

- . needs (data system)
- RT Atmospheric & Oceanographic Inform Sys
 - control data (computers)
- ∞ data
 - data transfer (computers)
 - digital systems
 - Earth Resources Information System
 - end-to-end data systems
 - geographic information systems
 - management information systems
 - ∞ systems

data transfer (computers)

DEF The technique used by the hardware manufacturer to transmit data from computer to storage device or from storage device to computer, usually under specialized program control.

- GS data processing
 - . **data transfer (computers)**
- RT asynchronous transfer mode
 - computer programs
 - data flow analysis
 - data retrieval
 - data storage
 - data systems
 - data transmission
 - input/output routines
 - interoperability

data transmission

- UF *DAEMO (data analysis)*
 - data adaptive evaluator/monitor*
 - information transmission*
- GS transmission
 - . signal transmission
 - . . **data transmission**
 - . . . automatic picture transmission
 - . . . multiple access
 - Aloha system
 - carrier sense multiple access
 - code division multiple access
 - demand assignment multiple access
 - frequency division multiple access
 - time division multiple access
 - . . . packet transmission
 - Aloha system
 - . . . single channel per carrier transmission
- RT access control
 - Argos system
 - asynchronous transfer mode
 - audio data
 - automatic repeat request
 - carrier to noise ratios
 - channels (data transmission)
 - code division multiplexing
 - coding
 - communication theory
 - concatenated codes
 - ∞ data
 - data transfer (computers)
 - Deep Space Instrumentation Facility
 - electronic mail
 - FM/PM (modulation)
 - frequency division multiplexing
 - information theory
 - intersymbolic interference
 - laser applications
 - local area networks
 - modems
 - multiplexing
 - packet switching
 - packets (communication)
 - protocol (computers)
 - pulse communication
 - radio telemetry
 - radio transmission
 - reading
 - redundancy encoding
 - satellite transmission
 - ship to shore communication
 - TDR satellites
 - telecommunication
 - telemetry
 - transmission efficiency

datum (elevation)

transmission rate (communications)
video data
VSAT (network)
wireless communication

data visualization

USE **scientific visualization**

dating

USE **chronology**
time measurement

datum (elevation)

RT clearances
contours
∞ data
elevation angle
hypsography
leveling
maps
surveys

dawn chorus

UF *chorus (dawn phenomenon)*
chorus phenomenon
GS atmospheric radiation
. **dawn chorus**
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospheric
. . . . ionospheric
. **dawn chorus**
RT auroras
magnetic storms
whistlers

dawsonite

DEF A mineral consisting of aluminum sodium carbonate.
GS minerals
. **dawsonite**
RT aluminum
sodium
sodium carbonates

dayglow

GS atmospheric radiation
. sky radiation
. . **dayglow**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . **dayglow**
RT glare
light sources
sky
solar radiation
twilight glow
ultraviolet radiation

daytime

RT diurnal variations
evening
morning
night
noon
sky brightness

DBR lasers

(added November 1991)
UF *distributed Bragg reflector lasers*
GS electronic equipment
. solid state devices
. . solid state lasers
. . . **DBR lasers**
stimulated emission devices
. lasers
. . solid state lasers
. . . **DBR lasers**
RT Bragg angle
Bragg reflectors
distributed feedback lasers
semiconductor lasers

tunable lasers

DBS (satellites)

USE **direct broadcast satellites**

DC 3 aircraft

UF *Douglas DC-3 aircraft*
GS commercial aircraft
. **DC 3 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 3 aircraft**
monoplanes
. **DC 3 aircraft**
transport aircraft
. cargo aircraft
. . **DC 3 aircraft**
RT ∞ aircraft

DC 7 aircraft

UF *Douglas DC-7 aircraft*
GS commercial aircraft
. **DC 7 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 7 aircraft**
monoplanes
. **DC 7 aircraft**
transport aircraft
. cargo aircraft
. . **DC 7 aircraft**
RT ∞ aircraft
passenger aircraft

DC 8 aircraft

UF *Douglas DC-8 aircraft*
GS commercial aircraft
. **DC 8 aircraft**
jet aircraft
. turbofan aircraft
. . **DC 8 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 8 aircraft**
monoplanes
. **DC 8 aircraft**
passenger aircraft
. **DC 8 aircraft**
transport aircraft
. **DC 8 aircraft**
RT ∞ aircraft

DC 9 aircraft

UF *Douglas DC-9 aircraft*
GS commercial aircraft
. **DC 9 aircraft**
jet aircraft
. **DC 9 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 9 aircraft**
transport aircraft
. **DC 9 aircraft**
RT ∞ aircraft
MD 80 aircraft

DC 10 aircraft

GS commercial aircraft
. **DC 10 aircraft**
jet aircraft
. **DC 10 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 10 aircraft**
McDonnell aircraft
. . **DC 10 aircraft**
passenger aircraft
. **DC 10 aircraft**
transport aircraft
. **DC 10 aircraft**
RT ∞ aircraft
turbofan engines

DC 11 aircraft

USE **MD 11 aircraft**

DC (current)

USE **direct current**

DC generators

(added July 1991)

UF *direct current generators*
GS electric generators
. direct power generators
. . **DC generators**
. . . homopolar generators
RT ∞ generators
rotating generators

DCT (mathematics)

USE **discrete cosine transform**

DDP 516 computer

GS data processing equipment
. computers
. . DDP computers
. . . **DDP 516 computer**
. . digital computers
. . . Honeywell computers
. . . . **DDP 516 computer**

DDP computers

GS data processing equipment
. computers
. . **DDP computers**
. . . DDP 516 computer
RT digital computers

DDT

UF *dichlorodiphenyltrichloroethane*
GS halogen compounds
. chlorine compounds
. . **DDT**
poisons
. pesticides
. . insecticides
. . . **DDT**

de Broglie wavelengths

GS wavelengths
. **de Broglie wavelengths**
RT elementary particles
mass
momentum
Plancks constant
quantum theory
velocity
Wentzel-Kramer-Brillouin method

de Havilland aircraft

GS **de Havilland aircraft**
. Comet 4 aircraft
. DH 112 aircraft
. DH 115 aircraft
. DH 121 aircraft
. DH 125 aircraft
. DHC 2 aircraft
. DHC 4 aircraft
. DHC 5 aircraft
RT ∞ aircraft

de Havilland DH 106 aircraft

USE **Comet 4 aircraft**

de Havilland DH 112 aircraft

USE **DH 112 aircraft**

de Havilland DH 115 aircraft

USE **DH 115 aircraft**

de Havilland DH 121 aircraft

USE **DH 121 aircraft**

de Havilland DH 125 aircraft

USE **DH 125 aircraft**

de Havilland DHC 4 aircraft

USE **DHC 4 aircraft**

de Havilland DHC 5 aircraft

USE **DHC 5 aircraft**

de Havilland Venom aircraft

USE **DH 112 aircraft**

de Laval nozzles

USE **convergent-divergent nozzles**

deacclimatization

USE **acclimatization**

deactivation

UF *inactivation*

RT activation
passivity
polarization (charge separation)
polarization (spin alignment)
sabotage
shutdowns

dead reckoning
DEF In navigation, determination of position by advancing a previous known position for courses and distances.
GS navigation
. **dead reckoning**
RT air navigation
digital navigation
Doppler navigation
inertial navigation
polar navigation
radar navigation
radio navigation
surface navigation

deadweight
USE **static loads**

deafness
USE **auditory defects**

death
RT apoptosis
casualties
expiration
injuries
life span
mortality
necrosis

Death Valley (CA)
GS landforms
. **Death Valley (CA)**
valleys
. **Death Valley (CA)**
RT arid lands
California
desertification
deserts
river basins

Debonair aircraft
USE **C-33 aircraft**

debonding (materials)
(added July 1992)
SN (LIMITED TO THE SEPARATION OF BONDED MATERIALS; NOT TO BE USED FOR THE BREAKUP OF ATOMIC/MOLECULAR BONDS)
RT anodic stripping
bonding
delaminating
fiber composites
fiber pushout
laminates
matrix materials
peeling
reinforcing fibers
∞ separation

debris
GS **debris**
. space debris
RT ejecta
environment effects
fragments
glacial drift
pollution
∞ radioactive debris
scrap
wastes

debugging
USE **checkout**

Debye length
DEF A theoretical length which describes the maximum separation at which a given electron will be influenced by the electric field of a given positive ion.
GS distance
. **Debye length**

RT plasmas (physics)

Debye temperature
USE **specific heat**

Debye-Huckel theory
RT dissociation
electrolytes
plasma potentials
∞ theories

Debye-Scherrer method
RT crystallography
diffraction
∞ methodology

decametric waves
GS electromagnetic radiation
. radio waves
. . **decametric waves**
RT coronal holes
high frequencies
very high frequencies

decarbonation
GS chemical reactions
. **decarbonation**
RT carbonization

decarboxylation
GS chemical reactions
. **decarboxylation**
RT carboxylation

decarburation
RT carbon
carburiizing
heating
metal working

decay
DEF Decrease of a radioactive substance because of nuclear emission of alpha or beta particles, positrons, or gamma rays.
GS **decay**
. particle decay
. . neutron decay
. plasma decay
. radioactive decay
. . alpha decay
. . neutron emission
. spacecraft glow
. weak energy interactions
. . weak interactions (field theory)
RT beta particles
biodegradability
biodegradation
damage
degradation
deterioration
disintegration
emission
gamma rays
half life
hot atoms
nuclear fission
radiative lifetime

decay rates
GS rates (per time)
. **decay rates**
. . electron decay rate

Decca navigation
DEF A long range, ambiguous, two dimensional navigation system using continuous wave transmission to provide hyperbolic lines of position through the radio frequency phase comparison techniques from four transmitters.
GS navigation
. radio navigation
. . hyperbolic navigation
. . . **Decca navigation**
RT distance measuring equipment
loran
loran C
loran D
navigation aids
Shoran
solar compasses

surface navigation

deceleration
DEF The act or process of moving, or cause to move, with decreasing speed.
GS rates (per time)
. acceleration (physics)
. . **deceleration**
. . . spin reduction
RT angular acceleration
braking
damping
impact
impact acceleration
landing loads
physiological acceleration
∞ reduction
retarding
retrofiring
retrothrust
stopping
tapering
thrust reversal

decelerators
USE **brakes (for arresting motion)**

deception
RT air defense
chaff
electronic countermeasures
electronic warfare
optical countermeasures
simulation

deciduous trees
GS plants (botany)
. trees (plants)
. . **deciduous trees**
RT conifers
Earth resources
foliage
forests
leaves
timber identification

decimal to binary converters
GS data converters
. **decimal to binary converters**
RT binary data
binary to decimal converters
computer components
data processing

decimals
RT digits
number theory
∞ numbers

decimeter waves
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . microwaves
. . . . **decimeter waves**
RT millimeter waves
planetary radiation
solar radio emission
ultrahigh frequencies

decision aids
(added October 1997)
USE **decision support systems**

decision elements
USE **logical elements**

decision making
RT cognition
command and control
contract management
contract negotiation
decision support systems
decisions
economy
judgments
management
management methods
management planning
problem solving

decision support systems

risk assessment
risk management
Starsite program
systems engineering
tradeoffs

decision support systems

(added October 1997)

UF *decision aids*

GS information systems
. **decision support systems**
support systems
. **decision support systems**

RT artificial intelligence
computer techniques
decision making
expert systems
knowledge based systems
pilot support systems
problem solving
situational awareness

decision theory

GS **decision theory**
. statistical decision theory

RT dynamic programming
expectation
game theory
information theory
martingales
mathematical models
operations research
probability theory
recommendations
risk
scheduling
statistical analysis
stochastic processes
strategy
∞ synthesis
systems engineering
∞ theories

decisions

RT ∞ commands
contract management
decision making
judgments
logic circuits
management
procurement policy
project planning
selection

decks (floors)

USE **floors**

declination

DEF Angular distance north or south of the celestial equator; the arc of an hour circle between the celestial equator and a point on the celestial sphere, measured northward or southward from the celestial equator through 90 degrees, and labeled N or S to indicate the direction of measurement.

RT mapping
navigation

decoders

DEF Devices for translating electrical signals into predetermined functions. In computer operations, networks or devices in which one of two or more possible outputs results from a prescribed combination of inputs.

GS **decoders**
. Viterbi decoders
RT BCH codes
coders
data converters
decoding
demodulators
Reed-Solomon codes
∞ translators

decoding

GS coding
. **decoding**
RT BCH codes
concatenated codes
cryptography

data compression
decoders
demodulation
dictionaries
∞ interpretation
translating
Viterbi decoders

decommissioning

DEF Disposal or deactivation of equipment or sites whose usefulness has diminished to a point where it is no longer required for its original purpose.

RT radioactive wastes
underground storage

decommutators

DEF Equipment for separation, demodulation, or demultiplexing commutated signals.

GS commutators
. **decommutators**
RT data links
demodulators
differential pulse code modulation
electric motors
∞ generators
pulse code modulation
telemetry

decomposition

GS **decomposition**
. ammonolysis
. cracking (chemical engineering)
. . hydrocracking
. . pyrolysis
. glycolysis
. hydrogenolysis
. . hydrocracking
. nitrolysis
. photodecomposition
. photodissociation
. photolysis
. propellant decomposition
. radiolysis
. thermal decomposition
. . pyrolysis
RT ablation
biodegradability
biodegradation
charring
damage
degradation
deterioration
disintegration
dissociation
electrolysis
laterites
overvoltage
storage stability
thermal dissociation

decompression

USE **pressure reduction**

decompression sickness

DEF A disorder experienced by deep sea divers and aviators caused by reduced atmospheric pressure and evolved gas bubbles in the body, marked by pain in the extremities, pain in the chest (chokes), occasionally leading to severe central nervous system symptoms and neurocirculatory collapse. Used for bends (physiology).

UF *bends (physiology)*
GS sicknesses
. **decompression sickness**
RT aeroembolism
altitude sickness
barotrauma
diving (underwater)

deconditioning

GS behavior
. **deconditioning**
RT learning
reflexes

decongestants

GS drugs
. **decongestants**

RT antihistaminics

decontamination

GS **decontamination**
. spacecraft sterilization
RT air purification
antiseptics
carbon dioxide concentration
carbon dioxide removal
cleaning
contaminants
contamination
dewaxing
disposal
dissipation
elimination
environmental cleanup
ethylene oxide
exhausting
extensions
∞ food
planetary protection
pollution
purging
purification
purity
∞ reduction
∞ separation
spacecraft contamination
sterilization
sterilization effects
washing

decoupling

GS **decoupling**
. spin decoupling
RT coupling
disconnect devices
gravitinos
releasing

decoys

GS **decoys**
. ballistic missile decoys
. Blue Goose missile
. quail missile
. reentry decoys
RT countermeasures
dummies

decrementing

USE **reduction**

deduction

RT derivation
inference

deep drawing

RT bulging
cold drawing
cold working
explosive forming
magnetic forming
metal working
stretching

Deep Impact Mission

(added July 2005)

DEF Flyby mission designed to observe the collision of a solid impactor with comet Tempel 1. The mission consists of a flyby spacecraft, which releases a guided impactor. The flyby spacecraft is equipped with two telescopes, the High Resolution Instrument, and the Medium Resolution Instrument, for imaging and spectroscopy of the collision and its effects.

GS space missions
. flyby missions
. . **Deep Impact Mission**
RT cometary collisions
comets
hypervelocity impact
hypervelocity projectiles
projectile cratering
space probes
Tempel 1 comet

deep scattering layers

RT acoustic scattering
echo sounding

- ∞ layers
 - oceanography
 - organisms
 - scattering
 - sound waves
 - underwater acoustics
- deep space**
 - GS environments
 - . aerospace environments
 - . . **deep space**
 - . . . interplanetary space
 - . . . interstellar space
 - . extraterrestrial environments
 - . . **deep space**
 - . . . interplanetary space
 - . . . interstellar space
 - RT cislunar space
 - frictionless environments
 - long duration space flight
 - ∞ space
- Deep Space 1 Mission**
(added October 1998)
 - DEF First of several technology demonstration missions supporting the NASA New Millennium Program. Advanced technologies include an ion propulsion system, solar concentrator arrays, autonomous navigation and control systems, an integrated camera and imaging spectrometer, and several telecommunications and microelectronics devices. The mission plan includes a flyby of Asteroid 1992 KD.
 - UF *DS1 (space mission)*
 - GS space missions
 - . **Deep Space 1 Mission**
 - RT asteroid missions
 - autonomous navigation
 - flyby missions
 - interplanetary spacecraft
 - ion propulsion
 - NASA space programs
 - solar electric propulsion
- Deep Space Instrumentation Facility**
 - UF *DSIF (instrumentation facility)*
 - GS stations
 - . ground stations
 - . . **Deep Space Instrumentation Facility**
 - . tracking stations
 - . . **Deep Space Instrumentation Facility**
 - RT data acquisition
 - data transmission
 - radio control
- Deep Space Network**
 - DEF A communications network managed by the Jet Propulsion Laboratory for command and control of all planetary flights.
 - UF *DSN (space network)*
 - GS networks
 - . communication networks
 - . . **Deep Space Network**
 - . tracking networks
 - . . **Deep Space Network**
 - RT spacecraft tracking
- deep water**
 - GS water
 - . **deep water**
 - RT ocean bottom
 - oceanography
 - oceans
 - seas
 - submarine hydrothermal vents
- deep well injection (wastes)**
 - DEF Storage of liquid wastes, particularly chlorohydrocarbons, by injection into subsurface geologic strata for long term isolation from the environment.
 - GS injection
 - . fluid injection
 - . . liquid injection
 - . . . **deep well injection (wastes)**
- RT waste disposal
- deep-sea hydrothermal vents*
(added April 2005)
 - USE **submarine hydrothermal vents**
- deepwater terminals**
 - RT artificial harbors
 - cargo ships
 - marine technology
 - marine transportation
 - oceanography
 - offshore docking
 - offshore energy sources
 - offshore platforms
 - ∞ ports
 - ship terminals
 - tanker ships
 - tanker terminals
 - ∞ tankers
 - terminal facilities
 - transportation
- deer**
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . **deer**
 - caribous
 - RT grazing
 - livestock
- defects**
 - UF *flaws*
 - imperfections*
 - GS **defects**
 - . auditory defects
 - . crystal defects
 - . . crystal dislocations
 - . . . edge dislocations
 - . . . screw dislocations
 - . . point defects
 - . . . vacancies (crystal defects)
 - Frenkel defects
 - antisite defects
 - . hyperopia
 - . inclusions
 - . speech defects
 - . surface defects
 - RT castings
 - cavities
 - cracks
 - cumulative damage
 - damage
 - inhomogeneity
 - irregularities
 - leakage
 - pinholes
 - porosity
 - scoring
 - vignetting
 - voids
 - x ray analysis
- Defender project**
 - GS programs
 - . projects
 - . . **Defender project**
- ∞ **defense**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT air defense
 - antimissile defense
 - civil defense
 - Defense Communications Satellite System
 - defense communications system (DCS)
 - defense industry
 - defense program
 - DMSP satellites
 - missile defense
 - physiological defenses
- Defense Communications Satellite System**
 - GS telecommunication
 - . **Defense Communications Satellite System**
- . . Fleet Satellite Communication System
 - RT communication satellites
 - ∞ defense
 - radio relay systems
 - space communication
 - ∞ systems
- defense communications system (DCS)**
 - GS networks
 - . **defense communications system (DCS)**
 - telecommunication
 - . **defense communications system (DCS)**
 - RT communication networks
 - ∞ defense
 - military technology
 - ∞ systems
- defense industry**
 - GS industries
 - . **defense industry**
 - . . weapons industry
 - RT antimissile defense
 - ∞ defense
 - military technology
 - missile defense
- Defense Meteorological Satellite Program*
 - USE **DMSP satellites**
- defense program**
 - GS programs
 - . **defense program**
 - RT air defense
 - antimissile defense
 - armed forces (United States)
 - civil defense
 - ∞ defense
 - DMSP satellites
 - military technology
 - missile defense
 - space transportation system
 - weapons delivery
- definition**
 - RT accuracy
 - delineation
 - descriptions
 - dictionaries
 - ∞ measurement
 - nomenclatures
 - precision
 - resolution
- deflagration**
 - DEF A sudden or rapid burning, as opposed to a detonation or explosion.
 - GS combustion
 - . **deflagration**
 - RT backfire
 - fires
 - flashback
- deflating*
 - USE **inflatable structures**
 - pressure reduction**
- deflection**
 - RT bending
 - bending diagrams
 - camber
 - deformation
 - diffraction
 - dispersing
 - displacement
 - distortion
 - elastic deformation
 - flexing
 - Maxwell-Mohr method
 - reflection
 - refraction
 - scattering
 - structural strain
 - temperature inversions
 - torsion
 - variations
 - wave dispersion

deflectors

yokes

deflectors

DEF Plates, baffles, or the like that divert something in its movement or flow.

GS

deflectors
. blast deflectors
. flame deflectors

RT

attenuators
baffles
∞ diffusers
diverters
flow deflection
gust alleviators
reflectors
safety devices
shielding
spoilers

defluorination

GS chemical reactions

. **defluorination**

RT

fluorination
halogenation

defocusing

GS focusing

. **defocusing**

RT

∞ optics

defoliant

RT defoliation

foliage
forests
herbicides
leaves
plants (botany)
trees (plants)

defoliation

RT brush (botany)

defoliant
deforestation
forests
grasses
leaves
plants (botany)
trees (plants)

deforestation

RT biological diversity
biomass burning
clearings (openings)
conservation
defoliation
environment effects
forests

deformable mirrors

(added May 1998)

GS mirrors

. **deformable mirrors**

RT

adaptive optics
light modulation
phase modulation
segmented mirrors

deformation

DEF A change in the shape or size of a solid body.

GS

deformation
. axial strain
. elastic deformation
. . elastic bending
. . elastic buckling
. nuclear deformation
. plastic deformation
. static deformation
. tensile deformation
. wave front deformation

RT

bending
buckling
camber
collapse
corrugating
creep properties
damage
deflection
deformers
displacement

distortion
elongation
failure
flexing
fractures (materials)
indentation
kinking
mechanical properties
Portevin-le Chatelier effect
set
skewness
stiffness
strain distribution
structural failure
structural strain
temperature inversions
topology
torsion
twisting
volumetric strain
warpage
wrinkling

deformers

GS measuring instruments

. **deformers**

RT

deformation
dimensional measurement
extensometers
mechanical measurement
strain gages
stress measurement
tensometers

defrosting

RT deicing

heating
ice prevention
melting
refrigerating
refrigerators

degassing

DEF The deliberate removal of gas from a material, usually by application of heat under high vacuum. Used for bakeout.

UF

bakeout

GS

degassing

. deoxygenation
RT absorbers (equipment)
aeration
baking
castings
deoxidizing
desorption
gas evolution
occlusion
offgassing
outgassing
purging
scavenging
∞ separation

degenerate matter

DEF A state of matter found in white dwarf stars and other ultrahigh-density objects in which the electrons follow Fermi-Dirac statistics, i.e., the matter reaches a density high enough so that the pressure increases more and more rapidly to the point where it becomes independent of the temperature and is a function of the density only, thereby departing from the classical laws of physics.

GS matter (physics)

. **degenerate matter**

RT

antimatter
astrophysics
black holes (astronomy)
cosmic gases
critical pressure
density (mass/volume)
extraterrestrial matter
Fermi-Dirac statistics
high pressure
massive stars
naked singularities
neutron stars
nuclear fusion
∞ physics
pulsars

rotating matter
stellar cores
stellar evolution
stellar mass
supermassive stars
white dwarf stars

degeneration

RT atrophy
deterioration
negative feedback

degenerative feedback

USE **negative feedback**

degradation

DEF Gradual deterioration in performance.

GS **degradation**

. biodegradation
. thermal degradation
. wave degradation

RT

chemical attack
corrosion
cumulative damage
curing
damage
decay
decomposition
depolymerization
deterioration
discoloration
durability
embrittlement
erosion
hot corrosion
oxidation
pitting
preserving
rusting
scale (corrosion)
sterilization effects
thermal dissociation
weathering

degrees of freedom

DEF A mode of motion, either angular or linear, with respect to a coordinate system, independent of any other mode. A body in motion has six possible degrees of freedom, three linear and three angular.

RT equipartition theorem
experiment design
factor analysis
null hypothesis
phase rule
quality control
significance
three dimensional motion
torquers
∞ variance

DEHP

USE **diethyl hydrogen phosphite (DEHP)**

dehumidification

DEF The reduction, by any process, of the quantity of water vapor within a given space.

GS

. **dehumidification**

RT

condensing
cooling systems
dehydration
diffusion
humidity
refrigerating
∞ separation
silica gel

dehydrated food

RT consumables (spacecrew supplies)

dehydration
drying apparatus
∞ food
food processing
freeze drying
preserving
space flight feeding

dehydration

GS drying

. **dehydration**
 RT columns (process engineering)
 dehumidification
 dehydrated food
 dewatering
 evaporation
 freeze drying
 hydration
 plasmolysis
 ∞ separation
 silica gel
 thermogravimetry
 water loss

dehydrogenases

(added June 2004)

DEF Class of oxidoreductase enzymes that catalyze the transfer of hydrogen atoms from a substrate to an acceptor other than oxygen.

GS biopolymers
 . proteins
 . . enzymes
 . . . **dehydrogenases**
 organic compounds
 . proteins
 . . enzymes
 . . . **dehydrogenases**
 RT oxidase

dehydrogenation

GS chemical reactions
 . **dehydrogenation**
 RT columns (process engineering)
 hydroforming
 hydrogenation
 hydrogenolysis
 oxidation
 reduction (chemistry)

deicers

UF *deicing systems*
 RT aircraft icing
 airfoils
 antiicing additives
 deicing
 ∞ heaters
 heating equipment
 ice prevention

deicing

RT aircraft icing
 airfoils
 antiicing additives
 defrosting
 deicers
 ∞ heaters
 heating equipment
 ice prevention
 melting

*deicing systems*USE **deicers****Deimos**

DEF A satellite of Mars orbiting at a mean distance of 23,500 kilometers.

GS celestial bodies
 . natural satellites
 . . Mars satellites
 . . . **Deimos**
 RT Charon
 Mars (planet)
 Nozomi Mars Orbiter
 Phobos

deionization

DEF The removal of ions from a solution by ion exchange.

GS chemical reactions
 . **deionization**
 RT atomic recombination
 demineralizing
 exchanging
 ion recombination
 radiative recombination
 ∞ separation

softening

*dekatrons*USE **counters****delaminating**

RT anodic stripping
 debonding (materials)
 interlaminar stress
 peeling
 ∞ separation

Delaware

GS nations
 . United States
 . . **Delaware**
 RT Delaware River Basin (US)
 Delmarva Peninsula (DE-MD-VA)

Delaware Bay (US)

GS bays (topographic features)
 . **Delaware Bay (US)**
 RT Atlantic Ocean
 gulfs
 inlets (topography)
 New Jersey
 Pennsylvania

Delaware River Basin (US)

GS landforms
 . structural basins
 . . river basins
 . . . **Delaware River Basin (US)**
 RT Delaware
 New Jersey
 New York
 Pennsylvania
 rivers
 streams
 valleys

delay

RT dwell
 ∞ holding
 lateness
 stopping
 time lag
 ∞ time response
 transmission rate (communications)

delay circuits

GS circuits
 . **delay circuits**
 . . phantastrons
 RT acoustic delay lines
 circulators (phase shift circuits)
 comparator circuits
 phase shift circuits

delay lines

GS **delay lines**
 . acoustic delay lines
 . delay lines (computer storage)
 RT ∞ lines
 time lag

delay lines (computer storage)

DEF In electronic computers, devices for producing a time delay of a signal.

GS computer components
 . computer storage devices
 . . **delay lines (computer storage)**
 delay lines
 . **delay lines (computer storage)**
 RT shift registers

deletion

GS elimination
 . **deletion**
 RT disposal
 removal

*Delfin aircraft*USE **L-29 jet trainer****Delft camera**

GS optical equipment
 . cameras
 . . **Delft camera**
 photographic equipment
 . cameras

. . **Delft camera****delineation**

RT boundaries
 definition
 ∞ profiles

delivery

GS **delivery**
 . payload delivery (STS)
 . weapons delivery
 RT air drop operations
 airdrops
 cargo
 circulation
 hauling
 materials handling
 output
 ∞ receiving
 transportation
 trucks

Delmarva Peninsula (DE-MD-VA)

GS landforms
 . peninsulas
 . . **Delmarva Peninsula (DE-MD-VA)**
 RT Delaware
 Maryland
 Virginia

Delphi method (forecasting)

GS management methods
 . **Delphi method (forecasting)**
 predictions
 . forecasting
 . . technological forecasting
 . . . **Delphi method (forecasting)**
 RT estimating
 ∞ methodology
 operations research
 pattern method (forecasting)
 planning
 probe method (forecasting)
 profile method (forecasting)
 technology assessment

Delrin (trademark)

GS plastics
 . **Delrin (trademark)**
 RT resins

Delta 3 launch vehicle

(added October 1998)

GS launch vehicles
 . Delta launch vehicle
 . . **Delta 3 launch vehicle**

Delta 4 Heavy launch vehicle

(added September 2005)

DEF Member of the Boeing Delta 4 family of launch vehicles designed to launch heavy payloads (~28,124 pounds) into geosynchronous transfer orbit (GTO) using three common booster cores (CBCs). The first stage CBC is powered by the RS-68 engine; the two second stages are powered by the RL10B-2 engine with two sizes of expanded fuel and oxidizer tanks.

GS launch vehicles
 . Delta launch vehicle
 . . **Delta 4 Heavy launch vehicle**
 . heavy lift launch vehicles
 . . **Delta 4 Heavy launch vehicle**
 RT booster rocket engines
 Delta 4 launch vehicle
 liquid propellant rocket engines
 rocket launching
 spacecraft launching

Delta 4 launch vehicle

(added October 1998)

GS launch vehicles
 . Delta launch vehicle
 . . **Delta 4 launch vehicle**
 RT Delta 4 Heavy launch vehicle

delta antennas

GS antennas
 . **delta antennas**
 RT antenna design
 resonators

Delta Clipper

transmission lines

Delta Clipper

(added September 1994)

- GS launch vehicles
 - . reusable launch vehicles
 - . . single stage to orbit vehicles
 - . . . **Delta Clipper**
- reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft
 - . . . single stage to orbit vehicles
 - **Delta Clipper**
- RT aerospace planes
 - liquid propellant rocket engines
 - space transportation

Delta Dagger aircraft

USE **F-102 aircraft**

Delta Dart aircraft

USE **F-106 aircraft**

delta function

- GS analysis (mathematics)
 - . real variables
 - . . **delta function**
- functions (mathematics)
 - . **delta function**

Delta launch vehicle

- GS launch vehicles
 - . **Delta launch vehicle**
 - . . Delta 3 launch vehicle
 - . . Delta 4 Heavy launch vehicle
 - . . Delta 4 launch vehicle
- RT Anik 1
- Anik 2
- Anik satellites
- Beacon Explorer A
- ESSA 1 satellite
- ESSA 2 satellite
- ESSA 3 satellite
- ESSA 4 satellite
- ESSA 5 satellite
- ESSA 6 satellite
- ESSA 7 satellite
- ESSA 8 satellite
- ESSA 9 satellite
- Explorer 10 satellite
- Explorer 12 satellite
- Explorer 14 satellite
- Explorer 15 satellite
- Explorer 17 satellite
- Explorer 18 satellite
- Explorer 21 satellite
- Explorer 26 satellite
- Explorer 28 satellite
- Explorer 29 satellite
- Explorer 32 satellite
- Explorer 33 satellite
- Explorer 38 satellite
- Explorer 43 satellite
- Explorer 49 satellite
- Explorer 55 satellite
- International Magnetospheric Explorer
- OSO-1
- OSO-2
- OSO-4
- OSO-C
- outer planets explorers
- Pioneer 6 space probe
- Pioneer 7 space probe
- RCA Satcom satellites
- Space Shuttle upper stage D
- SYNCOM 1 satellite
- SYNCOM 2 satellite
- SYNCOM 3 satellite
- TIROS 2 satellite
- TIROS 3 satellite
- TIROS 4 satellite
- TIROS 5 satellite
- TIROS 6 satellite
- TIROS 7 satellite
- TIROS 8 satellite
- TIROS 9 satellite
- TIROS 10 satellite

delta modulation

- GS coding

- . signal encoding
 - . . pulse modulation
 - . . . pulse code modulation
 - **delta modulation**
- modulation
- . pulse modulation
 - . . pulse code modulation
 - . . . **delta modulation**
- RT pulse communication

delta wings

- DEF Triangularly shaped wings of aircraft.
Used for triangular wings.
- UF *triangular wings*
 - GS airfoils
 - . wings
 - . . low aspect ratio wings
 - . . . **delta wings**
 - . . swept wings
 - . . . sweptback wings
 - **delta wings**
 - planforms
 - . wing planforms
 - . . sweptback wings
 - . . . **delta wings**
 - RT arrow wings
 - AVRO 707 aircraft
 - caret wings
 - FD 2 aircraft
 - GA-5 aircraft
 - variable sweep wings
 - VATOL aircraft
 - waveriders
 - wing rock

deltas

- GS landforms
 - . **deltas**
 - . . Mississippi Delta (LA)
 - . . Rhone Delta (France)
- RT alluvium
- fans (landforms)
- rivers
- sands
- soils

demagnetization

- DEF The reduction of residual magnetism to an acceptable level.
- RT magnetic fields
 - ∞ reduction

demand (economics)

- GS economics
 - . **demand (economics)**
- RT consumption
- supplying

demand assignment multiple access

- DEF A technique of assigning communication resources on an "as needed basis" such as in satellite communications. Used for DAMA.
- UF *DAMA*
 - GS telecommunication
 - . multiple access
 - . . **demand assignment multiple access**
 - transmission
 - . signal transmission
 - . . data transmission
 - . . . multiple access
 - **demand assignment multiple access**
 - RT channel capacity
 - communication networks
 - communication satellites
 - satellite networks

demineralizing

- GS **demineralizing**
 - . bone demineralization
- RT crystallization
- deionization
- desalinization
- distillation
- ion exchanging
- osmosis
- purification
- reverse osmosis
- ∞ separation

- softening
- water treatment

Democratic Peoples Republic of Korea

USE **North Korea**

Democratic Republic of Congo

- SN (REPLACED THE TERM "ZAIRE" IN 1997; ALL OLDER RECORDS HAVE BEEN UPDATED WITH THE NEW FORM OF THE TERM)
- UF *Belgian Congo*
Congo (Kinshasa)
Zaire
- GS nations
 - . **Democratic Republic of Congo**
- RT Africa

demodulation

- RT amplitude modulation
- decoding
- demodulators
- ∞ detectors
- frequency modulation
- heterodyning
- intermodulation
- modulation
- phase modulation
- pulse modulation
- remodulation
- telecommunication

demodulators

- DEF Electronic devices which operate on an input of a modulated carrier to recover the modulating wave as an output.
- GS **demodulators**
 - . frequency compression
 - demodulators
 - . modems
 - . phase demodulators
 - . phase lock demodulators
 - RT amplitude modulation
 - decoders
 - decommutators
 - demodulation
 - frequency modulation
 - matched filters
 - modulation
 - modulators
 - phase modulation
 - pulse modulation

demography

- DEF Statistical study of human populations, especially with reference to size, density, distribution, and vital data.
- RT adults
 - census
 - communities
 - ∞ density
 - ∞ distribution
 - human beings
 - inhabitants
 - megalopolises
 - nations
 - sociology
 - ∞ statistics

demonstration

USE **proving**

demultiplexing

- DEF Separation of two or more signals that were previously combined by a compatible multiplexer and transmitted over a single channel.
- GS transmission
 - . **demultiplexing**
 - RT code division multiplexing
 - frequency division multiplexing
 - multiplexing
 - time division multiplexing
 - wavelength division multiplexing

denaturation (biopolymers)

USE **biopolymer denaturation**

dendrimers

- (added October 2000)
- DEF A class of polymeric macromolecules characterized by a regular highly-branched mo-

lecular architecture resembling a spherical starburst, and a synthesis process that permits nearly complete control over critical molecular design parameters, such as size, shape, surface/interior chemistry, flexibility, and topology. Because of these characteristics, dendrimers are seen as important elements in the manufacture of nanoscale materials and devices.

- UF *dendritic polymers*
hyperbranched polymers
- GS molecules
 - . macromolecules
 - . . **dendrimers**
- RT conducting polymers
dendritic crystals
nanostructure (characteristics)
organometallic polymers
- ∞ polymers
synthetic metals

dendrites

(added August 2004)

DEF Extensions of the nerve cell body. They are short and branched and receive stimuli from other neurons.

- GS cells (biology)
 - . neurons
 - . . **dendrites**
- RT nerves
nervous system

dendritic crystals

- GS crystals
 - . **dendritic crystals**
- RT dendrimers
isotropy
needles
whiskers (crystals)

dendritic drainage

USE **drainage patterns**

dendritic polymers

(added October 2000)

USE **dendrimers**

dendrochronology

DEF The use of annual growth rings in plant tissue to determine the age of the plant or tree. Used for tree ring dating.

- UF *tree ring dating*
- RT climatology
geochronology
periodic variations
timberline
trees (plants)

denitrogenation

- GS chemical reactions
 - . **denitrogenation**
- RT nitration

Denmark

- GS nations
 - . **Denmark**
- RT Danish space program
Europe
Greenland
Scandinavia

dense plasmas

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **dense plasmas**
 - plasma focus
 - strongly coupled plasmas
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **dense plasmas**
 - plasma focus
 - strongly coupled plasmas
- RT astrophysics
beta factor
electron scattering
high temperature plasmas
nuclear fusion
particle collisions

plasma compression
spheromaks
stellar structure

densification

- GS pressure
 - . **densification**
- RT agglomeration
chemical vapor infiltration
compacting
compressing
consolidation
Ludox (trademark)
pressurizing

densimeters

DEF Instruments for measuring the density or specific gravity of liquids, gases, or solids.

- GS measuring instruments
 - . **densimeters**
 - . . ultrasonic densimeters
- RT density (mass/volume)
density measurement
- ∞ instruments
- ∞ measurement

densitometers

DEF Instruments for the measurement of optical density (photographic transmission, photographic reflection, visual transmission, etc.) of a material, generally of a photographic image.

- GS measuring instruments
 - . **densitometers**
 - . . microdensitometers
- RT gamma ray absorptiometry
gravimeters
optical equipment
optical measurement
optical measuring instruments
photometers
photon absorptiometry
transmissometers

∞ density

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT atmospheric density
atom concentration
biomass
demography
density (mass/volume)
density (number/volume)
flux density
optical density
porosity
Rankine-Hugoniot relation

density (mass/volume)

DEF The mass per unit volume of a material at a specified temperature.

- UF *specific gravity*
- GS **density (mass/volume)**
 - . atmospheric density
 - . gas density
 - . space density
- RT absorptance
absorptivity
bulk modulus
buoyancy
compressibility
degenerate matter
densimeters
- ∞ density
density measurement
hydrometers
internal friction
isopycnic processes
Lewis numbers
opacity
permeability
- ∞ physical properties
porosity
pycnometers
stopping power
transmissivity
transmittance
transparence
ultrasonic densimeters
viscosity

void ratio
weight measurement

density (number/volume)

- GS **density (number/volume)**
 - . meteoroid concentration
 - . packing density
 - . particle density (concentration)
 - . . electron density (concentration)
 - . . . carrier density (solid state)
 - . . . electron density profiles
 - . . . ionospheric electron density
 - . . . magnetospheric electron density
 - . . electron distribution
 - . . . electron density profiles
 - . . ion density (concentration)
 - . . . ionospheric ion density
 - . . . magnetospheric ion density
 - . . . magnetospheric proton density
 - . . . proton density (concentration)
 - magnetospheric proton density
 - . . plasma density
 - . space density
- RT atmospheric density
- ∞ density

density (rate/area)

USE **flux density**

density distribution

- RT baroclinic waves
Fokker-Planck equation
Maxwell-Boltzmann density function
shock discontinuity
Taylor instability

density functional theory

(added February 2007)

DEF A quantum mechanical method used in physics and chemistry to investigate the electronic structure of many-body systems, in particular molecules and the condensed phases.

- RT atomic structure
electron density (concentration)
electron distribution
electron states
electronic structure
ground state
Hartree approximation
many body problem
quantum mechanics
- ∞ theories
- wave functions

density measurement

- GS **density measurement**
 - . gamma ray absorptiometry
 - . photon absorptiometry
 - . x ray density measurement
- RT chemical analysis
densimeters
density (mass/volume)
hydrometers
- ∞ measurement
mechanical measurement
ultrasonic densimeters
wind tunnel tests

density wave model

- GS models
 - . astronomical models
 - . . **density wave model**
- RT galactic structure
mass distribution
spiral galaxies
wave equations

dental calculi

- GS deposits
 - . calculi
 - . . **dental calculi**
- RT lithiasis
teeth
tooth diseases

dentistry

- GS medical science
 - . **dentistry**
- RT medical equipment
oral hygiene

deoxidizing

teeth
tooth diseases

deoxidizing

GS chemical reactions
. reduction (chemistry)
. . . **deoxidizing**
RT degassing
∞ deoxygenation
deoxygenation
scavenging

∞ deoxygenation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT deoxidizing
deoxygenation
sterilization effects

deoxygenation

GS degassing
. **deoxygenation**
RT deoxidizing
∞ deoxygenation
∞ reduction
∞ separation

deoxyribonucleic acid

DEF The molecule that encodes genetic information - a double-stranded molecule held together by weak bonds between base pairs of nucleotides. Used for DNA.

UF *DNA*
recombinant DNA

GS acids
. nucleic acids
. . . **deoxyribonucleic acid**
. . . complementary DNA
biopolymers
. nucleic acids
. . . **deoxyribonucleic acid**
. . . complementary DNA
organic compounds
. nucleic acids
. . . **deoxyribonucleic acid**
. . . complementary DNA
RT adenosine monophosphate
apoptosis
chromatin
cloning (biology)
gene expression
gene therapy
genes
genome
mutagenesis
plasmids
polymerase chain reaction
thymidine
thymine
transcription (genetics)

dependence

UF *dependency*
GS **dependence**
. spatial dependencies
. temperature dependence
. time dependence
RT group dynamics
sociology

dependency

USE **dependence**

dependent variables

DEF Variables considered as a function of other variables, the latter being called independent.

GS analysis (mathematics)
. **dependent variables**
RT complex variables
independent variables
observability (systems)
parameterization
real variables
∞ variable

depersonalization

RT artificial intelligence
automata theory
automatic control

∞ automation
cybernetics
detachment
disorders
man machine systems
mechanization
personality
personnel

depletion

GS **depletion**
. ozone depletion
RT consumption
depreciation
dissipation
elimination
energy policy
exhaustion
exploitation
life (durability)
losses
∞ reduction
removal
resources
utilization

deployment

RT game theory
logistics
military operations
military technology
∞ operations
personnel
strategy
tactics

depolarization

SN (EXCLUDES CONSIDERATION OF OPTICAL DEPOLARIZATION AND PARTICLE SPIN MISALIGNMENT)
DEF A decrease in the polarization of an electrode at a specified current density. Used for depolarizers.
UF *depolarizers*
RT electrolytic polarization
electrophysiology
polarization (charge separation)
∞ reduction
spike potentials

depolarizers

USE **depolarization**

depolymerization

GS chemical reactions
. **depolymerization**
RT degradation
deterioration
polymerization

deposition

UF *accretion*
GS **deposition**
. anodizing
. electrodeposition
. . . electroplating
. electroless deposition
. laser deposition
. . . pulsed laser deposition
. vapor deposition
. . . metalorganic chemical vapor deposition
. . . vacuum deposition
RT accumulations
coagulation
coating
coatings
deposits
electroforming
electron bombardment
forming techniques
fouling
magnetron sputtering
metal coatings
plating
precipitation (chemistry)
sediments
∞ separation
settling
sputtering

thermophoresis

deposits

SN (EXCLUDES BANK MINERAL AND GEOLOGICAL DEPOSITS)
GS **deposits**
. calculi
. . . dental calculi
. cryodeposits
RT coatings
corrosion
crude oil
deposition
plating
sediments
sludge

depreciation

RT depletion
deterioration
investments
life (durability)
wear

depressants

GS **depressants**
. central nervous system depressants
RT anesthesiology

∞ depression

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT detachment
disorders
emotions
∞ hollow
introversion
lethargy
low pressure
neurotic depression
psychotic depression
recession
schizophrenia
tectonics
topography

depressions (topography)

USE **structural basins**

depressurization

USE **pressure reduction**

deprivation

GS **deprivation**
. sensory deprivation
. sleep deprivation
. water deprivation
RT confining
isolation
stress (biology)
stress (physiology)

depth

GS dimensions
. **depth**
RT distance
height
thickness

depth measurement

RT bathymeters
core sampling
distance measuring equipment
echo sounding
∞ measurement
mechanical measurement
sounding

depth perception

USE **space perception**

derivation

RT deduction
∞ induction
∞ origins
parameterization

- ∞ sources
- derivation calculus*
- USE **differential calculus**
- dermatitis**
 - GS diseases
 - . infectious diseases
 - . . **dermatitis**
 - . . . contact dermatitis
 - RT bacterial diseases
 - dermatology
 - fungal diseases
 - itching
 - radiation hazards
 - radiation sickness
 - skin (anatomy)
- dermatology**
 - GS medical science
 - . **dermatology**
 - RT contact dermatitis
 - dermatitis
 - skin (anatomy)
- desalination**
 - RT demineralizing
 - distillation
 - osmosis
 - purification
 - reverse osmosis
 - salinity
 - vaporizing
 - water treatment
- desaturation**
 - RT drying
 - ∞ saturation
- descaling**
 - RT chemical cleaning
 - cleaning
 - metal finishing
 - pickling (metallurgy)
 - scale (corrosion)
 - ∞ separation
 - shot peening
- descent**
 - GS **descent**
 - . parachute descent
 - RT approach
 - ascent
 - flight paths
 - gliding
 - reentry
 - uncontrolled reentry (spacecraft)
- descent propulsion systems**
 - GS propulsion
 - . **descent propulsion systems**
 - propulsion system configurations
 - . **descent propulsion systems**
 - RT spacecraft propulsion
 - ∞ systems
- descent trajectories**
 - GS trajectories
 - . **descent trajectories**
 - . . reentry trajectories
 - RT ascent trajectories
 - atmospheric entry
 - ballistic trajectories
 - coasting flight
 - falling
 - flight mechanics
 - manned reentry
 - midcourse trajectories
 - missile trajectories
 - parabolic flight
 - reentry
 - reentry guidance
 - spacecraft trajectories
 - terminal guidance
- descriptions**
 - RT characterization
 - definition
 - nomenclatures
- representations
- descriptive geometry**
 - GS geometry
 - . Euclidean geometry
 - . . **descriptive geometry**
 - RT analytic geometry
 - engineering drawings
 - layouts
 - ∞ projection
 - projective geometry
 - toruses
- desensitizing**
 - RT corrosion prevention
 - protective coatings
 - rusting
- desert adaptation**
 - GS adaptation
 - . **desert adaptation**
 - RT survival
- desertification**
 - DEF The formation of a desert or the gradual expansion of a desertline into previously usable land, due to man-made or natural causes.
 - RT arid lands
 - barren land
 - Death Valley (CA)
 - desertline
 - deserts
 - drought
 - Earth environment
 - Gobi desert
 - land
 - land use
 - man environment interactions
 - Mojave Desert (CA)
 - oases
 - remote sensing
 - Sahara Desert (Africa)
 - steppes
 - wadis
- desertline**
 - RT arid lands
 - climatology
 - desertification
 - land
 - topography
- deserts**
 - GS land
 - . **deserts**
 - . . Gobi desert
 - . . Libyan desert
 - . . Mojave Desert (CA)
 - . . Sahara Desert (Africa)
 - RT arid lands
 - barren land
 - climatology
 - Coachella Valley (CA)
 - Death Valley (CA)
 - desertification
 - dunes
 - Earth resources
 - Imperial Valley (CA)
 - Kalahari Basin (Africa)
 - oases
 - Palo Verde Valley (CA)
 - playas
 - remote regions
 - Salton Sea (CA)
 - topography
 - wilderness
- desiccants**
 - DEF Chemicals used to absorb moisture.
 - RT absorbents
 - adsorbents
- desiccation*
- USE **drying**
- desiccators**
 - GS separators
 - . drying apparatus
- . . **desiccators**
- ∞ **design**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - UF *tailoring*
 - RT aerodynamic configurations
 - aircraft design
 - amplifier design
 - antenna design
 - computer aided design
 - computer design
 - computer systems design
 - construction
 - control systems design
 - design analysis
 - design optimization
 - design to cost
 - dimensions
 - drafting machines
 - engine design
 - engineering drawings
 - equipment specifications
 - estimating
 - experiment design
 - factorial design
 - functional design specifications
 - helicopter design
 - IPAD
 - layouts
 - lens design
 - logic design
 - missile design
 - nozzle design
 - optimization
 - planning
 - plant design
 - pressure vessel design
 - product development
 - reactor design
 - reliability
 - research
 - research and development
 - rocket engine design
 - satellite design
 - shape optimization
 - spacecraft design
 - structural design
 - structural design criteria
 - ∞ synthesis
 - systems engineering
- design analysis**
 - RT ∞ analyzing
 - control systems design
 - ∞ design
 - design optimization
 - logic design
 - maintainability
 - multidisciplinary design optimization
 - optimization
 - reliability
 - reliability analysis
 - reverse engineering
 - safety factors
 - sensitivity analysis
 - shape optimization
 - Taguchi methods
 - value engineering
- design of experiments*
- USE **experiment design**
- design optimization**
 - (added February 2001)
 - GS optimization
 - . **design optimization**
 - . . shape optimization
 - RT aircraft design
 - computer aided design
 - ∞ design
 - design analysis
 - evolvable hardware
 - genetic algorithms
 - sensitivity analysis
 - structural analysis
 - structural design
 - structural design criteria

design to cost

systems engineering

design to cost

DEF A process whereby cost factors are determined and calculated for the life cycle of a product as an integral part of its design.

- RT concurrent engineering
- cost analysis
- costs
- ∞ design
- life cycle costs
- production costs

desorption

DEF The process of removing sorbed gas.

- RT ∞ absorption
- adsorption
- degassing
- evolution (liberation)
- mischmetal
- outgassing
- permeating
- ∞ separation
- sublimation

despinning

USE **spin reduction**

destabilization

- RT spin reduction
- tumbling motion

Destiny Laboratory Module

(added February 2001)

DEF Component of the International Space Station providing equipment and support systems for research and technology development. Also provides support and control for the US segment of the Space Station.

UF *US Laboratory Module (ISS)*

- GS laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Destiny Laboratory Module**
- manned spacecraft
 - . manned orbital laboratories
 - . . **Destiny Laboratory Module**
- modules
 - . space station modules
 - . . **Destiny Laboratory Module**
- RT International Space Station
- spaceborne experiments

Destroyer aircraft

USE **B-66 aircraft**

destruction

- RT aborted missions
- accidents
- breaking
- cracking (fracturing)
- damage
- destructive tests
- failure
- fatigue (materials)
- flight hazards
- flight safety
- lethality
- spacecraft breakup
- stresses

destructive tests

- GS **destructive tests**
 - . burst tests
- RT bend tests
- compression tests
- corrosion tests
- destruction
- drop tests
- fatigue tests
- fiber pushout
- impact tests
- load tests
- ∞ materials tests
- nondestructive tests
- tensile tests
- ∞ tests
- vibration tests

wear tests

desulfurizing

- GS chemical reactions
 - . **desulfurizing**
- RT flue gases
- refining
- roasting

desynchronization (biology)

DEF The loss of synchronization between two or more rhythms so that they show independent periods.

- GS biological effects
 - . **desynchronization (biology)**
 - disorientation
 - . **desynchronization (biology)**
 - psychological effects
 - . **desynchronization (biology)**
- RT jet lag
- physiological responses
- rhythm (biology)
- zeitgebers

desynchronized sleep

USE **rapid eye movement state**

detachment

DEF A particular state of isolation in which man is separated or detached from his accustomed behavioral environment by inordinate physical and psychological distances. This condition may compromise his performance.

- RT anxiety
- boredom
- depersonalization
- ∞ depression
- disorders
- disorientation
- emotional factors
- human behavior
- ∞ inhibition
- introversion
- lethargy
- psychology
- psychoses

detection

- UF *sensing*
- GS **detection**
 - . aircraft detection
 - . change detection
 - . edge detection
 - . fault detection
 - . forest fire detection
 - . haze detection
 - . high altitude nuclear detection
 - . missile detection
 - . radar detection
 - . remote sensing
 - . signal detection
 - . . correlation detection
 - . asteroid detection
 - . chemical detection
 - . planet detection
 - . target recognition
 - . ultrasonic flaw detection
 - . . explosives detection
- RT acquisition
- data acquisition
- ∞ detectors
- early warning systems
- examination
- exploration
- gas detectors
- identifying
- inspection
- marking
- ∞ measurement
- missile signatures
- observation
- position (location)
- radar signatures
- signature analysis
- signatures
- sound localization
- sound ranging
- space observations (from Earth)
- surveillance
- target acquisition

targets

tracking (position)

warning

warning systems

∞ detectors

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Sensors or instruments employing a
- RT aircraft detection
- analyzers
- anticoincidence detectors
- autodynes
- character recognition
- correlation detection
- demodulation
- detection
- display devices
- FLIR detectors
- forest fire detection
- gas detectors
- hazards
- helmet mounted displays
- indicating instruments
- infrared detectors
- instrument receivers
- laser target designators
- life detectors
- measuring instruments
- mine detectors
- monitors
- multispectral linear arrays
- phase detectors
- radiation detectors
- radiation measuring instruments
- readers
- receivers
- remote sensors
- safety
- signal detection
- signal detectors
- squid (detectors)
- telecommunication
- transducers
- ultrasonic flaw detection
- ultraviolet detectors
- Venturi tubes
- warning
- warning systems

detergents

- RT ethylenediaminetetraacetic acids
- lubricating oils
- soaps
- surfactants

deterioration

- RT atrophy
- biodegradability
- biodegradation
- corrosion
- damage
- decay
- decomposition
- degeneration
- degradation
- depolymerization
- depreciation
- disintegration
- durability
- erosion
- erosive burning
- failure
- hot corrosion
- rusting
- soil erosion
- system failures
- wear
- wear resistance
- weathering

determinants

- GS algebra
- . **determinants**
- RT linear equations

- matrices (mathematics)
- determination*
USE **measurement**
- detonable gas mixtures**
GS gases
. gas mixtures
. . **detonable gas mixtures**
mixtures
. solutions
. . gas mixtures
. . . **detonable gas mixtures**
RT chemical explosions
firing (igniting)
flammability
flammable gases
gas explosions
gas-gas interactions
oxyacetylene
reacting flow
- detonation**
DEF A rapid chemical reaction which propagates at a supersonic velocity. Used for Chapman-Jouget flame.
UF *Chapman-Jouget flame*
RT chemical explosions
combustion
∞ discharge
explosions
firing (igniting)
flame propagation
initiation
percussion
primers (explosives)
propellant explosions
pulse detonation engines
pulsejet engines
rocket firing
shock waves
- detonation waves**
DEF Shock waves that accompany detonation and have a shock front followed by a region of decreasing pressure in which the reaction occurs.
GS elastic waves
. shock waves
. . **detonation waves**
RT combustible flow
flame propagation
gas explosions
ram accelerators
seismic waves
sound waves
∞ waves
- detonators**
GS explosive devices
. initiators (explosives)
. . **detonators**
igniters
. initiators (explosives)
. . **detonators**
RT caps (explosives)
exploding wires
explosives
fulminates
fuses (ordnance)
primers (explosives)
sodium azides
- deuterides**
GS hydrogen compounds
. deuterium compounds
. . **deuterides**
RT hydrides
- deuterium**
DEF A heavy isotope of hydrogen having one proton and one neutron in the nucleus. Used for hydrogen 2.
UF *hydrogen 2*
GS chemical elements
. hydrogen
. . hydrogen isotopes
. . . **deuterium**
. nuclides
. . isotopes
- . . . hydrogen isotopes
. . . . **deuterium**
gases
. hydrogen
. . hydrogen isotopes
. . . **deuterium**
heavy water
hydrogen fuels
hydrogen plasma
nuclear fuels
- RT
- deuterium compounds**
GS hydrogen compounds
. **deuterium compounds**
. . deuterides
. . deuterium fluorides
. . heavy water
RT ∞ chemical compounds
- deuterium fluoride lasers*
USE **DF lasers**
- deuterium fluorides**
DEF Fluorides of deuterium, a heavy isotope of hydrogen. Used for DF.
UF *DF*
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **deuterium fluorides**
. halides
. . fluorides
. . . **deuterium fluorides**
hydrogen compounds
. deuterium compounds
. . **deuterium fluorides**
RT DF lasers
- deuterium oxides*
USE **heavy water**
- deuterium plasma**
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . hydrogen plasma
. **deuterium plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . hydrogen plasma
. **deuterium plasma**
RT deuterons
hydrogen
- deuteron irradiation**
GS irradiation
. ion irradiation
. . **deuteron irradiation**
RT alpha particles
charged particles
nuclear fusion
particles
plasmas (physics)
proton irradiation
- deuterons**
DEF The nuclei of deuterium atoms.
GS ions
. **deuterons**
particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **deuterons**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **deuterons**
. elementary particles
. . **deuterons**
RT alpha particles
cosmic rays
deuterium plasma
photomagnetic effects
plasmas (physics)
Pomeranchuk theorem
- protons
- developers (photography)*
USE **photographic developers**
- developing nations**
RT Caribbean region
economic development
economic factors
nations
United Nations
- ∞ **development**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT angiogenesis
energy policy
evolution (development)
exploitation
growth
land use
management planning
missile design
personnel development
photographic developers
product development
rural land use
Starsite program
training analysis
urban development
- deviation**
DEF The variation from a specified dimension or design requirement, usually defining upper and lower limits.
RT aberration
abnormalities
asymmetry
∞ dispersion
distortion
divergence
∞ drift
eccentricity
heterogeneity
irregularities
nonsynchronization
variations
- ∞ **devices**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air bag restraint devices
alpha plasma devices
antiskid devices
bulk acoustic wave devices
chips (memory devices)
cyclotron resonance devices
error correcting devices
explosive devices
lift devices
lifting bodies
mechanical devices
nanostructures (devices)
NDM semiconductor devices
nuclear devices
photoelectrochemical devices
plasma display devices
positioning devices (machinery)
safety devices
self erecting devices
self repairing devices
solid state devices
surface acoustic wave devices
training devices
TRAPATT devices
- devitrification*
USE **crystallization**
- dew**
RT acid rain
frost
hydrometeors
precipitation (meteorology)
water vapor
- dew point**
DEF Temperature at which water vapor begins to condense.

dewatering

RT atmospheric moisture
condensing
hygrometers
saturation (chemistry)

Dewar systems

USE **cryogenic equipment**

dewatering

DEF Removal of water by draining, pumping, or other means.

RT dehydration
drying
pollution control
waste disposal
water reclamation

dewaxing

RT decontamination
refining

dewetting

USE **drying**

dextrans

GS biopolymers
. polysaccharides
. . **dextrans**
organic compounds
. carbohydrates
. . polysaccharides
. . . **dextrans**
. . sugars
. . . **dextrans**

DF

USE **deuterium fluorides**

DF lasers

DEF Gas lasers in which the active material is deuterium fluoride. Used for deuterium fluoride lasers.

UF *deuterium fluoride lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . **DF lasers**
RT deuterium fluorides

DH 106 aircraft

USE **Comet 4 aircraft**

DH 112 aircraft

UF *de Havilland DH 112 aircraft*
de Havilland Venom aircraft
Venom aircraft
GS attack aircraft
. fighter aircraft
. . **DH 112 aircraft**
de Havilland aircraft
. **DH 112 aircraft**
Hawker Siddeley aircraft
. **DH 112 aircraft**
jet aircraft
. **DH 112 aircraft**
monoplanes
. **DH 112 aircraft**
RT ∞ aircraft

DH 115 aircraft

UF *de Havilland DH 115 aircraft*
Vampire aircraft
GS attack aircraft
. **DH 115 aircraft**
de Havilland aircraft
. **DH 115 aircraft**
Hawker Siddeley aircraft
. **DH 115 aircraft**
jet aircraft
. **DH 115 aircraft**
monoplanes
. **DH 115 aircraft**
RT ∞ aircraft

DH 121 aircraft

UF *de Havilland DH 121 aircraft*
Trident aircraft
GS commercial aircraft
. **DH 121 aircraft**
de Havilland aircraft
. **DH 121 aircraft**

Hawker Siddeley aircraft
. **DH 121 aircraft**
jet aircraft
. turbofan aircraft
. . **DH 121 aircraft**
monoplanes
. **DH 121 aircraft**
passenger aircraft
. **DH 121 aircraft**
transport aircraft
. **DH 121 aircraft**
RT ∞ aircraft

DH 125 aircraft

UF *de Havilland DH 125 aircraft*
HS-125 aircraft
Jet Dragon aircraft
GS de Havilland aircraft
. **DH 125 aircraft**
general aviation aircraft
. **DH 125 aircraft**
Hawker Siddeley aircraft
. **DH 125 aircraft**
jet aircraft
. **DH 125 aircraft**
light aircraft
. **DH 125 aircraft**
monoplanes
. **DH 125 aircraft**
passenger aircraft
. **DH 125 aircraft**
transport aircraft
. **DH 125 aircraft**
RT ∞ aircraft

DHC 2 aircraft

DEF De Havilland Canada STOL utility aircraft. Used for DHC Beaver aircraft.
UF *DHC Beaver aircraft*
GS de Havilland aircraft
. **DHC 2 aircraft**
general aviation aircraft
. **DHC 2 aircraft**
jet aircraft
. **DHC 2 aircraft**
monoplanes
. **DHC 2 aircraft**
transport aircraft
. **DHC 2 aircraft**
RT ∞ aircraft

DHC 4 aircraft

UF *AC-1 aircraft*
Caribou aircraft
CV-2 aircraft
de Havilland DHC 4 aircraft
GS de Havilland aircraft
. **DHC 4 aircraft**
monoplanes
. **DHC 4 aircraft**
transport aircraft
. **DHC 4 aircraft**
utility aircraft
. **DHC 4 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **DHC 4 aircraft**
RT ∞ aircraft

DHC 5 aircraft

UF *Buffalo aircraft*
CV-7 aircraft
de Havilland DHC 5 aircraft
GS de Havilland aircraft
. **DHC 5 aircraft**
jet aircraft
. turboprop aircraft
. . **DHC 5 aircraft**
monoplanes
. **DHC 5 aircraft**
transport aircraft
. **DHC 5 aircraft**
utility aircraft
. **DHC 5 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **DHC 5 aircraft**

RT ∞ aircraft

DHC Beaver aircraft

USE **DHC 2 aircraft**

diabetes mellitus

GS diseases
. **diabetes mellitus**
RT carbohydrate metabolism
enzyme activity
insulin
pancreas
urinalysis

Diademe satellites

GS artificial satellites
. **Diademe satellites**

diagnosis

RT ∞ analyzing
anesthesiology
behavior
biomarkers
clinical medicine
diseases
examination
injuries
medical equipment
medical science
pathology
prognosis
psychology
psychometrics
telemedicine
veterinary medicine

diagrams

GS **diagrams**
. bending diagrams
. block diagrams
. circuit diagrams
. color-color diagram
. color-magnitude diagram
. creep diagrams
. Feynman diagrams
. Hertzsprung-Russell diagram
. Mollier diagram
. Nyquist diagram
. phase diagrams
. S-N diagrams
. stress-strain diagrams
. tephigrams
. Venn diagrams
. Voronoi diagrams
RT charts
drawings
geometry
graphic arts
visual aids

DIAL (lidar)

USE **differential absorption lidar**

DIAL satellite

GS artificial satellites
. scientific satellites
. . **DIAL satellite**
RT aeronomy
astronomical photometry
European space programs
satellite-borne instruments

diallyl compounds

RT allyl compounds
∞ chemical compounds

dials

UF *pointers*
RT display devices
indicating instruments

dialysis

GS **dialysis**
. electro dialysis
RT diaphragms (mechanics)
diffusion
extraction
permeating

∞ separation

diamagnetism

- UF *Meissner effect*
- GS magnetic properties
 - . **diamagnetism**
- RT Curie temperature
 - cyclotron resonance
 - electrical properties
 - ferromagnetism
 - paramagnetism

Diamant launch vehicle

- GS launch vehicles
 - . **Diamant launch vehicle**
- rocket vehicles
 - . multistage rocket vehicles
 - . . **Diamant launch vehicle**
- RT liquid propellant rocket engines
 - solid propellant rocket engines

diameters

DEF Lengths of the longest straight lines through the centers of the largest cross sections.

- GS dimensions
 - . **diameters**
- RT circumferences
 - geometry
 - radii
 - thickness

diamines

- GS organic compounds
 - . amines
 - . . **diamines**
 - . . . ethylenediamine
 - . . . guanidines
 - guanethidine
 - triaminoguanidinium azide

diamond films

(added November 1991)

- GS thin films
 - . **diamond films**
- RT amorphous silicon
 - coatings
 - diamonds
 - metal films
 - semiconducting films
 - space processing
 - vacuum deposition
 - vapor deposition

diamond pyramid hardness

(added October 2001)

USE **Vickers hardness**

diamond wings

USE **low aspect ratio wings**
swept wings

diamonds

DEF (A) An isometric mineral, representing a naturally occurring crystalline form of carbon dimorphous with graphite and being the hardest natural substance known. (B) Artificially produced crystallized carbon similar to the native form. (C) A crystalline mineral that resembles diamonds in brilliance.

- GS **diamonds**
 - . meteoritic diamonds
- RT abrasives
 - carbon
 - diamond films
 - single crystals

diaphragm (anatomy)

DEF Musculomembranous partition separating the abdominal and thoracic cavities.

- GS anatomy
 - . musculoskeletal system
 - . . muscles
 - . . . **diaphragm (anatomy)**
 - . . . respiratory system
 - . . **diaphragm (anatomy)**
- RT ∞ diaphragms

thorax

∞ diaphragms

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT diaphragm (anatomy)
 - diaphragms (mechanics)
 - electrolytic cells
 - membranes

diaphragms (mechanics)

- SN (NON-ANATOMICAL)
- UF *bladders (mechanics)*
- GS **diaphragms (mechanics)**
 - . expulsion bladders
- RT catholytes
 - dialysis
 - ∞ diaphragms
 - electrolytic cells
 - membrane structures
 - membranes
 - optical filters
 - osmosis
 - thin plates
 - thin walls
 - webs (sheets)
 - webs (supports)

diastole

- GS heart function
 - . **diastole**
- RT blood circulation
 - blood flow
 - blood pressure
 - cardiovascular system
 - diastolic pressure
 - heart
 - heart rate
 - systole

diastolic pressure

- GS pressure
 - . blood pressure
 - . . **diastolic pressure**
- RT cardiac ventricles
 - diastole

diatomic gases

- GS gases
 - . molecular gases
 - . . polyatomic gases
 - . . . **diatomic gases**

diatomic molecules

- GS molecules
 - . polyatomic molecules
 - . . **diatomic molecules**
- RT low molecular weights
 - methylidyne
 - Morse potential
 - triatomic molecules

diatoms (unicellular plants)

USE **algae**

DIB

(added February 1997)

USE **diffuse interstellar bands**

dibasic compounds

- RT ∞ chemical compounds
 - monomers

diborane

- GS boron compounds
 - . **diborane**
- hydrogen compounds
 - . hydrides
 - . . **diborane**

dibromides

- GS halogen compounds
 - . bromine compounds
 - . . bromides
 - . . . **dibromides**
 - . . halides
 - . . bromides

. . . **dibromides****dibutyl compounds**

- GS alkyl compounds
 - . **dibutyl compounds**
- RT ∞ chemical compounds
 - tetrabutyls

dicarboxylic acids

- GS acids
 - . carboxylic acids
 - . . **dicarboxylic acids**
- organic compounds
 - . carboxylic acids
 - . . **dicarboxylic acids**
- RT terephthalate

dichlorides

- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **dichlorides**
 - . . halides
 - . . chlorides
 - . . . **dichlorides**

dichlorodiphenyltrichloroethane

USE **DDT**

dichotomies

- GS classifications
 - . hierarchies
 - . . **dichotomies**

dichroism

- GS electromagnetic properties
 - . optical properties
 - . . **dichroism**
- RT color
 - isochromatics
 - light (visible radiation)
 - photoelasticity

dichromates

USE **chromates**

Dicke radiometers

- UF *Dicke type radiometers*
- GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . radiometers
 - **Dicke radiometers**
- RT bolometers
 - thermopiles

Dicke type radiometers

USE **Dicke radiometers**

dictionaries

- UF *glossaries*
- GS documents
 - . **dictionaries**
- RT abbreviations
 - coding
 - decoding
 - definition
 - nomenclatures
 - space glossaries
 - terminology

didymium

DEF A mixture of rare earth elements that is freed from cerium. It was once regarded as an element but contains chiefly neodymium and praseodymium and is usually associated with lanthanum. It is used in coloring glass for optical filters.

- RT lanthanum
 - neodymium
 - optical filters
 - praseodymium

dieldrin

- GS poisons
 - . pesticides
 - . . insecticides

dielectric loss

... **dieldrin**

dielectric constant
USE **permittivity**

dielectric loss
(added April 2000)
DEF The electric energy that is converted into heat in a dielectric material subjected to a changing electric field.
GS electrical properties
. dielectric properties
. . **dielectric loss**
losses
. **dielectric loss**
RT dielectrics
energy dissipation
permittivity

dielectric materials
USE **dielectrics**

dielectric permeability
GS permeability
. **dielectric permeability**
RT magnetic permeability

dielectric polarization
GS polarization (charge separation)
. **dielectric polarization**
RT dielectrics
electrets
electric fields

dielectric properties
GS electrical properties
. **dielectric properties**
. . dielectric loss
. . permittivity
RT antiferroelectricity
capacitance
ferroelectricity
 ∞ properties
Sommerfeld waves

dielectric waveguides
(added February 1998)
GS waveguides
. **dielectric waveguides**
RT dielectrics
microwave transmission
optical waveguides
waveguide antennas
waveguide filters

dielectrics
DEF Substances that contain few or no free charges and which can support electrostatic stresses. Used for dielectric materials.
UF *dielectric materials*
GS **dielectrics**
. lossless materials
. radome materials
RT barium titanates
capacitance switches
capacitive fuel gages
capacitors
ceramics
dielectric loss
dielectric polarization
dielectric waveguides
electrets
electric conductors
electrical insulation
electromagnetic surface waves
field mode theory
 ∞ insulated structures
insulators
magnetoelectric media
screen effect
spark gaps
sulfur hexafluoride

dielectronic satellite lines
USE **resonance lines**

Diels-Alder reactions
GS chemical reactions
. cycloaddition
. . **Diels-Alder reactions**

RT organic chemistry

diencephalon
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . **diencephalon**
. hypothalamus
. pineal gland
. thalamus
RT embryology

dienes
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . **dienes**
. . . . butadiene
. . . . heptadiene
. . . . hexadiene
. . . . polybutadiene

dies
RT casting
coining
cutters
extruding
injection molding
machine tools
molds
pultrusion
punches
rheocasting
stamping

diesel engines
GS engines
. internal combustion engines
. . **diesel engines**
. . piston engines
. . . **diesel engines**
RT locomotives

diesel fuels
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . **diesel fuels**
. . liquid fuels
. . . **diesel fuels**
products
. petroleum products
. . **diesel fuels**
RT automobile fuels
gasoline
internal combustion engines
kerosene

diethyl compounds
(added July 1992)
GS organic compounds
. **diethyl compounds**
. . diethyl ether
. . diethyl hydrogen phosphite (DEHP)
RT ethyl compounds
triethyl compounds

diethyl ether
GS ethers
. **diethyl ether**
organic compounds
. diethyl compounds
. . **diethyl ether**

diethyl hydrogen phosphite (DEHP)
UF *DEHP*
GS organic compounds
. diethyl compounds
. . **diethyl hydrogen phosphite (DEHP)**
phosphorus compounds
. **diethyl hydrogen phosphite (DEHP)**
RT ethyl compounds

diets
RT caloric requirements
fasting
 ∞ food

nutrition
space flight feeding

difference equations
GS analysis (mathematics)
. numerical analysis
. . **difference equations**
RT approximation
differences
differential equations
 ∞ equations
finite difference theory
linear evolution equations
nonlinear evolution equations
numerical stability

differences
RT difference equations
divergence
finite difference theory
gradients
variations

differential absorption lidar
(added September 1992)
UF *DIAL (lidar)*
GS radar
. optical radar
. . **differential absorption lidar**
RT absorption spectra
atmospheric sounding
backscattering
radar measurement
remote sensing

differential algebra
USE **differential calculus matrices (mathematics)**

differential amplifiers
GS amplifiers
. **differential amplifiers**
RT analog computers
error signals
operational amplifiers
transistor amplifiers

differential analyzers
DEF Analog computers designed and used primarily for solving differential equations.
RT algorithms
analog computers
computerized simulation
differential equations
digital computers
digital integrators

differential calculus
UF *derivation calculus*
differential algebra
GS analysis (mathematics)
. calculus
. . **differential calculus**
RT ∞ differentiation
differentiators
integral calculus
limits (mathematics)
minima
numerical differentiation
optimization
real variables

differential equations
UF *differential operators*
integrodifferential equations
GS analysis (mathematics)
. real variables
. . **differential equations**
. . . Blasius equation
. . . Chandrasekhar equation
. . . cosine series
. . . Duffing differential equation
. . . Falkner-Skan equation
. . . hyperbolic differential equations
. . . Lamé wave equations
. . . partial differential equations
. . . biharmonic equations
. . . Burger equation
. . . Cauchy-Riemann equations
. . . elliptic differential equations

. . . . Monge-Ampere equation
 Euler-Cauchy equations
 Ffowcs Williams-Hawkings equation
 Fokker-Planck equation
 Gauss equation
 Helmholtz vorticity equation
 Liouville equations
 parabolic differential equations
 Poisson equation
 vlasov equations
 Riccati equation
 vorticity equations
 Helmholtz vorticity equation
 RT Airy function
 alternating direction implicit methods
 asymptotic properties
 backward differencing
 Bessel functions
 Bethe-Salpeter equation
 bond graphs
 boundary layer equations
 boundary value problems
 calculus
 calculus of variations
 Cauchy problem
 Crank-Nicholson method
 difference equations
 differential analyzers
 Dirichlet problem
 distributed parameter systems
 ∞ equations
 Floquet theorem
 Fourier analysis
 Fourier-Bessel transformations
 functional integration
 Green's functions
 half planes
 Hankel functions
 Hill determinant
 ill-conditioned problems (mathematics)
 ill-posed problems (mathematics)
 integral equations
 integrals
 Lagrange multipliers
 Lamé functions
 Laplace transformation
 Liapunov functions
 linear equations
 linearity
 Lipschitz condition
 Mathieu function
 maximum principle
 Milne method
 Neumann problem
 nonlinear equations
 nonlinearity
 numerical analysis
 numerical differentiation
 numerical integration
 numerical stability
 operational calculus
 Pfaff equation
 potential theory
 predictor-corrector methods
 Riemann waves
 Riesz theorem
 Schauder fixpoint theorem
 Schmidt method
 spectral methods
 stability derivatives
 Sturm-Liouville theory
 vector analysis
 Whittaker functions

differential games
(added October 1998)

GS games
 . **differential games**
 RT minimax technique
 optimal control
 pursuit-evasion games
 stochastic processes
 zero sum games

differential geometry
 UF *nonEuclidian geometry*
 GS geometry

. **differential geometry**
 . . lie groups
 . . . spinor groups
 . . Riemann manifold
 . . tensor analysis
 RT analytic geometry
 ∞ analyzing
 curvature
 curves (geometry)
 invariant imbeddings
 lofting
 relativity

differential interferometry
 GS interferometry
 . **differential interferometry**
 RT flow visualization
 holography
 Schlieren photography

differential operators
 USE **differential equations operators (mathematics)**

differential pressure
 GS pressure
 . **differential pressure**
 RT pressure distribution
 pressure gradients
 pressure measurement

differential pulse code modulation
 DEF An efficient signal encoding method of reducing the transmission rate of digital signals. The basic principle of DPCM is to quantize code and transmit the difference between the actual sample and prediction value. Used for DPCM (modulation).
 UF *DPCM (modulation)*
 GS coding
 . signal encoding
 . . pulse modulation
 . . . pulse code modulation
 **differential pulse code modulation**
 modulation
 . pulse modulation
 . . pulse code modulation
 . . . **differential pulse code modulation**
 RT biternary code
 decommutators
 linear prediction
 P.A.C.M. telemetry
 PCM telemetry
 pulse communication
 pulse frequency modulation
 telemetry
 unified S band

differential thermal analysis
 USE **thermal analysis**

∞ **differentiation**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT TERMS LISTED BELOW)
 RT anatomy
 cytogenesis
 differential calculus
 differentiation (biology)
 discrimination

differentiation (biology)
 GS cytogenesis
 . **differentiation (biology)**
 RT anatomy
 biological diversity
 ∞ biology
 ∞ differentiation
 embryology
 interleukins
 morphology
 physiology

differentiators
 DEF In computer operations, devices whose output is proportional to the derivative of an input signal. In electronics, a transducer whose output waveform is the time derivative of its input waveform.

RT circuits
 differential calculus
 integrators

diffraction
 DEF The process by which the direction of radiation is changed so that it spreads into the geometric shadow region of an opaque or refractive object that lies in a radiation field. Used for interference monochromatization and Kirchhoff-Huygens principle.

UF *interference monochromatization Kirchhoff-Huygens principle*

GS **diffraction**
 . electron diffraction
 . Fresnel diffraction
 . neutron diffraction
 . pulse diffraction
 . wave diffraction
 . x ray diffraction

RT atmospheric scattering
 attenuation
 Bragg angle
 caustics (optics)
 crystal optics
 Debye-Scherrer method
 deflection
 diffractometers
 echelette gratings
 echelle gratings
 electromagnetic radiation
 geometrical theory of diffraction
 Huygens principle
 isochromatics
 Laue method
 Moire effects
 mosaics
 optical properties
 ray tracing
 refraction
 transmission
 wave dispersion
 wave propagation

diffraction gratings
 USE **gratings (spectra)**

diffraction limited cameras
 GS optical equipment
 . cameras
 . . **diffraction limited cameras**
 photographic equipment
 . cameras
 . . **diffraction limited cameras**
 RT astronomical photography
 spaceborne photography
 spaceborne telescopes

diffraction optics
 USE **diffractive optics**

diffraction paths
 RT Bragg angle
 electron trajectories
 holographic optical elements
 multipath transmission
 optical paths
 ∞ paths
 spherical waves

diffraction patterns
 UF *fringe patterns*
 GS distribution (property)
 . radiation distribution
 . . **diffraction patterns**
 . . . Kossel pattern
 . . . rainbows
 RT diffractometers
 Fresnel integrals
 Fresnel region
 fringe multiplication
 geometrical theory of diffraction
 holographic interferometry
 interferometry
 Moire fringes
 Moire interferometry
 null zones
 ∞ optics
 ∞ patterns
 phase contrast

diffraction propagation

Pomeranchuk theorem
signal fading
speckle holography
speckle interferometry
speckle patterns
underwater optics
very long base interferometry

diffraction propagation

DEF Wave propagation around objects, or over the horizon, by diffraction.

GS transmission
. wave propagation
. . **diffraction propagation**
RT diffraction radiation
geometrical optics
∞ optics
∞ propagation
spherical waves
underwater optics

diffraction radiation

DEF Electromagnetic radiation excited by an electron flux passing near a diffractive, periodic structure, such as a wiggler magnet in a free electron laser.

GS electromagnetic radiation
. **diffraction radiation**
RT bremsstrahlung
cyclotron resonance devices
diffraction propagation
electron beams
electron diffraction
free electron lasers
gratings (spectra)
laser outputs
light emission
maser outputs
masers
microwave emission
microwave oscillators
microwave tubes
microwaves
nonuniform magnetic fields
particle motion
relativistic electron beams
stimulated emission devices
transferred electron devices
tunable lasers
wave diffraction
wave excitation
wiggler magnets

diffraction telescopes

USE **spectroscopic telescopes**

diffractive optics

(added July 1995)

DEF Optical elements that add up scattered light from a multiple of disturbances in amplitude or phase to generate a transformed wavefront.

UF *diffraction optics*
RT display devices
holography
∞ optics
photopolymers

diffractionometers

GS measuring instruments
. optical measuring instruments
. . **diffractionometers**
optical equipment
. optical measuring instruments
. . **diffractionometers**
RT chemical analysis
diffraction
diffraction patterns
etalons
goniometers
interferometers
Mach-Zehnder interferometers
optical measurement
photogoniometers
spectrometers
wave front reconstruction

diffuse interstellar bands

(added February 1997)

UF *DIB*
GS spectra

. spectral bands
. . **diffuse interstellar bands**
RT interstellar chemistry
interstellar extinction
interstellar matter
molecular clouds
polycyclic aromatic hydrocarbons

diffuse radiation

DEF Radiant energy propagating in many different directions through a given small volume of space; to be contrasted with parallel radiation. Used for lunar scattering.

UF *lunar scattering*
RT heat transfer
light scattering
point sources
∞ radiation
specular reflection

∞ diffusers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Specially designed ducts, chambers, or sections, sometimes equipped with guide vanes, that decrease the velocity of a fluid, as air, and increases its pressure, as in jet engines, wind tunnels, etc. Used for shock diffusers.
UF *shock diffusers*
RT air conditioning
air conditioning equipment
attenuators
baffles
boundary layer separation
ceilings (architecture)
chokes
conical flow
deflectors
diffusion
diverters
engine inlets
exhaust diffusers
hypersonic inlets
∞ illumination
inlet flow
inlet nozzles
louvers
mixers
mufflers
∞ nozzles
porous walls
pressure recovery
separators
sprayers
supersonic diffusers
vaneless diffusers
ventilators

diffusion

DEF In an atmosphere, or in any gaseous system, the exchange of fluid parcels between regions, in apparently random motions of a scale too small to be treated by the equations of motion. In materials, the movement of atoms of one material into the crystal lattice of an adjoining material, e.g., penetration of the atoms in a ceramic coating into the lattice of the protected metal. In ion engines, the migration of neutral atoms through a porous structure incident to ionization at the emitting surface. Used for diffusion effect and perfusion.

UF *diffusion effect*
perfusion
GS **diffusion**
. ambipolar diffusion
. atmospheric diffusion
. gaseous diffusion
. . gaseous self-diffusion
. magnetic diffusion
. molecular diffusion
. particle diffusion
. . electron diffusion
. . ionic diffusion
. plasma diffusion
. self diffusion (solid state)
. self propagation
. species diffusion
. surface diffusion
. thermal diffusion

. turbulent diffusion
RT ∞ absorption
adsorption
air pollution
atmospheric scattering
chemical engineering
circulation
convection-diffusion equation
dehumidification
dialysis
∞ diffusers
diffusion length
diffusivity
dilution
dispersing
∞ dispersion
dissipation
dissolving
distillation
drying
∞ effects
Einstein equations
∞ equilibrium
evaporation
extraction
Ficks equation
gas-metal interactions
kinetic theory
mixing
nonpoint sources
osmosis
penetration
percolation
permeability
permeating
∞ propagation
radial flow
reflection
scattering
self absorption
∞ separation
sound propagation
sound waves
spraying
spreading
sublimation
surface properties
thermophoresis
transport properties

diffusion bonding

USE **diffusion welding**

diffusion coefficient

DEF The absolute value of the ratio of the molecular flux per unit area to the concentration gradient of a gas diffusing through a gas or a porous medium where the molecular flux is evaluated across a surface perpendicular to the direction of the concentration gradient.

GS coefficients
. **diffusion coefficient**
. . Soret coefficient
transport properties
. **diffusion coefficient**
. . Soret coefficient
RT attenuation coefficients
convection-diffusion equation
∞ equilibrium
Ficks equation
gaseous diffusion
Lewis numbers
mass flow rate
molecular diffusion
particle diffusion
reaction-diffusion equations

diffusion effect

USE **diffusion**

diffusion electrodes

GS electrodes
. **diffusion electrodes**
RT electrolytic cells
semiconductor devices

diffusion flames

GS flames
. **diffusion flames**
RT boundary layer combustion

- combustion
- Damkohler number
- diffusion length**
 - GS dimensions
 - . length
 - . . **diffusion length**
 - distance
 - . **diffusion length**
 - RT carrier transport (solid state)
 - diffusion
 - electron diffusion
 - minority carriers
 - particle diffusion
 - semiconductor devices
 - solar cells
- diffusion pumps**
 - GS pumps
 - . **diffusion pumps**
 - RT vacuum apparatus
 - vacuum pumps
- diffusion theory**
 - RT Einstein equations
 - Fokker-Planck equation
 - Jacobi integral
 - kinetic theory
 - Kirkendall effect
 - Monte Carlo method
 - ∞ theories
 - transport theory
- diffusion waves**
 - RT elastic waves
 - electron diffusion
 - electrostatic waves
 - ionic diffusion
 - kinetic theory
 - molecular diffusion
 - plasma diffusion
 - plasma waves
- diffusion welding**
 - UF *diffusion bonding*
 - GS welding
 - . pressure welding
 - . . **diffusion welding**
 - RT bonding
 - burners
 - Kirkendall effect
 - metal bonding
 - metal-metal bonding
- diffusion-convection equation*
- USE **convection-diffusion equation**
- diffusivity**
 - DEF A measure of the rate of diffusion of a substance, expressed as the diffusivity coefficient K.
 - RT diffusion
 - fluid mechanics
 - impedance
 - Kirkendall effect
 - mobility
 - NDM semiconductor devices
 - permeability
 - ∞ physical properties
 - ∞ resistance
 - solubility
 - thermodynamic properties
- difluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **difluorides**
 - calcium fluorides
 - fluorspar
 - . halides
 - . . fluorides
 - . . . **difluorides**
 - calcium fluorides
 - fluorspar
- difluoro compounds**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluoro compounds
- . . . **difluoro compounds**
- perfluoroalkane
- polytetrafluoroethylene
- teflon (trademark)
- RT ∞ chemical compounds
- difluorourea**
 - GS nitrogen compounds
 - . amides
 - . . ureas
 - . . . **difluorourea**
 - organic compounds
 - . amines
 - . . **difluorourea**
- digesting**
 - RT eating
 - enzymology
 - ∞ food
 - lysine
 - mastication
 - physiology
 - softening
- digestive system**
 - GS anatomy
 - . **digestive system**
 - . . esophagus
 - . . gastrointestinal system
 - . . . appendix (anatomy)
 - . . . intestines
 - rectum
 - stomach
 - . . mouth
 - . . lips (anatomy)
 - . . pancreas
 - . . salivary glands
 - . . teeth
 - . . tongue
 - RT abdomen
 - enzyme activity
 - enzymology
 - gall
 - organs
 - saliva
 - ∞ systems
- digital cameras**
(added July 1998)
 - GS optical equipment
 - . cameras
 - . . **digital cameras**
 - photographic equipment
 - . cameras
 - . . **digital cameras**
 - RT CCD cameras
 - digital systems
 - digital techniques
 - photogrammetry
 - television cameras
 - video equipment
- digital circuits*
- USE **digital electronics**
- digital command systems**
 - RT numerical control
 - remote control
 - servocontrol
 - ∞ systems
- digital communication*
- USE **pulse communication**
- digital computers**
 - DEF Computers which operate with information, numerical or otherwise, represented in a digital form.
 - GS data processing equipment
 - . computers
 - . . **digital computers**
 - . . . CDC 160-A computer
 - . . . CDC 1604 computer
 - . . . CDC 3100 computer
 - . . . CDC 3200 computer
 - . . . CDC 3600 computer
 - . . . CDC 3800 computer
 - . . . CDC 6000 series computers
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
 - CDC 7000 series computers
 - CDC 7600 computer
 - CDC 8090 computer
 - CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - CDC Cyber 74 computer
 - CDC Cyber 174 computer
 - CDC Cyber 203 computer
 - CDC Cyber 205 computer
 - CDC Star 100 computer
 - EAI 680 computer
 - EAI 8400 computer
 - EAI 8900 computer
 - EMR 6050 computer
 - Ferranti Mercury computer
 - GE computers
 - GE 625 computer
 - GE 635 computer
 - Hewlett-Packard computers
 - Honeywell computers
 - DDP 516 computer
 - Honeywell 600/6000 computer
 - Honeywell ADEPT computer
 - Honeywell DDP 116 computer
 - IBM 360 computer
 - IBM 370 computer
 - IBM 650 computer
 - IBM 704 computer
 - IBM 709 computer
 - IBM 1130 computer
 - IBM 1401 computer
 - IBM 1410 computer
 - IBM 1620 computer
 - IBM 2250 computer
 - IBM 7030 computer
 - IBM 7040 computer
 - IBM 7044 computer
 - IBM 7070 computer
 - IBM 7074 computer
 - IBM 7090 computer
 - IBM 7094 computer
 - ICL computers
 - Iliac computers
 - Iliac 3 computer
 - Iliac 4 computer
 - microcomputers
 - personal computers
 - IBM personal computers
 - Macintosh personal computers
 - minicomputers
 - Nova computers
 - Modcomp II computer
 - Modcomp IV computer
 - parallel computers
 - massively parallel processors
 - Connection Machine
 - MIMD (computers)
 - SIMD (computers)
 - PDP 15 computer
 - PDP computers
 - PDP 7 computer
 - PDP 8 computer
 - PDP 9 computer
 - PDP 10 computer
 - PDP 11 computer
 - PDP 11/20 computer
 - PDP 11/40 computer
 - PDP 11/45 computer
 - PDP 11/50 computer
 - PDP 11/70 computer
 - PDP 12 computer
 - Philco 2000 computer
 - Raytheon computers
 - RCA spectra 70 computer
 - SDS 900 series computers
 - SDS 930 computer
 - SDS 9300 computer
 - SEL computers
 - sequential computers
 - SIGMA 5 computer
 - SIGMA computers
 - SIGMA 9 computer
 - Solomon computers
 - Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer

digital data

- Univac 1110 computer
- . . . Univac 80 computer
- . . . Univac 418 computer
- . . . Univac 490 computer
- . . . Univac 494 computer
- . . . Univac 1230 computer
- . . . Univac Larc computer
- . . . VAX computers
 - VAX-11 series computers
 - VAX-11/780 computer
- RT analog computers
- analog to digital converters
- associative processing (computers)
- CDC computers
- computer compatible tapes
- computer program integrity
- computer programs
- computer systems programs
- data processing
- DDP computers
- differential analyzers
- hybrid computers
- IBM computers
- logic circuits
- Turing machines
- Univac computers

digital data

- GS **digital data**
 - . digital elevation models
- RT analog data
- binary data
 - ∞ data
 - data converters
 - data processing
 - video compression
 - video data

digital electronics

DEF The use of circuits in which there are usually only two states possible at any point. The two states can represent any of a variety of binary digits (bits) of information. Used for digital circuits.

- UF *digital circuits*
- RT analog to digital converters
- binary digits
- circuits
- computer components
- digital systems
- digital techniques
- digital to analog converters
- ∞ electronics
- logical elements

digital elevation models

(added September 2002)

DEF Digital data files consisting of terrain elevations for ground positions at regularly spaced horizontal intervals.

- GS digital data
 - . **digital elevation models**
 - models
 - . **digital elevation models**
- RT elevation
- radar maps
- relief maps
- satellite altimetry
- terrain
- terrain analysis
- topography

digital filters

DEF Computational means of attenuating undesired frequencies in sets of time-dependent data.

- GS electromagnetic wave filters
 - . electric filters
 - . . **digital filters**
 - . . . FIR filters
 - . . . IIR filters
- RT ∞ filters
- microwave filters

digital integrators

- GS circuits
 - . **digital integrators**
 - integrators
 - . **digital integrators**
- RT binary integration

- differential analyzers
- functional integration
- numerical integration

digital navigation

- GS digital systems
 - . **digital navigation**
 - navigation
 - . **digital navigation**
- RT air navigation
- dead reckoning
- inertial navigation
- polar navigation
- space navigation
- surface navigation

digital radar systems

- GS digital systems
 - . **digital radar systems**
- RT airborne radar
- antiradiation missiles
- data processing equipment
- radar detection
- radar equipment
- radar receivers
- radar scanning
- radar targets
- radar tracking
- radar transmission
- signal analysis
- surveillance radar
- tracking radar

digital simulation

- GS models
 - . mathematical models
 - . . **digital simulation**
 - simulation
 - . computerized simulation
 - . . **digital simulation**
- RT analog simulation
- biological models (mathematics)
- computer systems simulation
- war games

digital spacecraft television

- GS communication equipment
 - . spacecraft television
 - . . **digital spacecraft television**
 - telecommunication
 - . pulse communication
 - . . **digital spacecraft television**
 - . spacecraft television
 - . . **digital spacecraft television**
 - television systems
 - . digital television
 - . . **digital spacecraft television**
 - . spacecraft television
 - . . **digital spacecraft television**
- RT wireless communication

digital systems

- UF *binary systems (digital)*
- ternary systems (digital)*
- GS **digital systems**
 - . digital navigation
 - . digital radar systems
- RT analog to digital converters
- binary codes
- binary digits
- biternary code
- data systems
- digital cameras
- digital electronics
- ∞ systems
- systems integration
- telecommunication

digital techniques

- RT BCH codes
- bistable circuits
- coding
- computer programming
- digital cameras
- digital electronics
- error correcting codes
- error detection codes
- ∞ methodology
- numerical control
- shift registers

- terminal area energy management
- vector quantization

digital television

DEF Television in which picture redundancy is reduced or eliminated by transmitting only the data needed to define motion in the picture, as represented by changes in the areas of continuous white or black.

- GS television systems
 - . **digital television**
 - . . digital spacecraft television
- RT high definition television
- pulse communication
- television transmission
- video compression

digital to analog converters

- GS data converters
 - . **digital to analog converters**
- RT analog to digital converters
 - ∞ converters
 - digital electronics
 - peripheral equipment (computers)
 - plotters
 - signal encoding
 - x-y plotters

digital to voice translators

- UF *DIVOT (voice translators)*
- RT computers
 - ∞ translators
 - vocoders
 - voice data processing

digital transducers

- GS transducers
 - . **digital transducers**
- RT interdigital transducers

digitalis

- GS drugs
- . **digitalis**

digitizers

USE **analog to digital converters**

digits

- SN (EXCLUDES FINGERS AND TOES)
- GS symbols
 - . alphanumeric characters
 - . . **digits**
 - . . . binary digits
- RT ∞ codes
- decimals
- integers
- number theory
- ∞ numbers

dihedral angle

- GS geometry
 - . Euclidean geometry
 - . . angles (geometry)
 - . . . **dihedral angle**
- RT lateral stability

dihedral effect

USE **lateral stability**

dihydrazine

- GS hydrazines
- . **dihydrazine**

dihydrides

- GS hydrogen compounds
- . hydrides
- . . **dihydrides**

dihydroxyphenylalanine

USE **dopa**

diisocyanates

- GS esters
 - . isocyanates
 - . . **diisocyanates**
 - nitrogen compounds
 - . cyano compounds
 - . . isocyanates

- . . . **diisocyanates**
- dikes (geology)*
- USE **rock intrusions**
- dilatation*
- USE **stretching**
- dilatational waves**
- GS elastic waves
- . **dilatational waves**
- RT longitudinal waves
- P waves
- S waves
- seismic waves
- ∞ shear
- stretching
- ∞ waves
- dilatometers*
- USE **extensometers**
- dilatometry**
- RT extensometers
- ∞ measurement
- thermal expansion
- diluents**
- RT additives
- ∞ agents
- combustion products
- contaminants
- dispersions
- exhaust gases
- solvents
- dilution**
- GS **dilution**
- . geometric dilution of precision
- RT attenuation
- concentration (composition)
- diffusion
- dispersing
- disposal
- dissipation
- dissolving
- low concentrations
- mixing
- purity
- ∞ reduction
- waste disposal
- dimenhydrinate**
- GS drugs
- . antihistaminics
- . . **dimenhydrinate**
- organic compounds
- . amines
- . . **dimenhydrinate**
- . cyclic compounds
- . . heterocyclic compounds
- . . . **dimenhydrinate**
- dimensional analysis**
- RT ∞ applications of mathematics
- aspect ratio
- dimensionless numbers
- dimensions
- fibers (mathematics)
- fineness ratio
- fluid flow
- parameterization
- scaling laws
- similarity numbers
- thickness ratio
- units of measurement
- dimensional measurement**
- RT deformeters
- distance measuring equipment
- ellipsometry
- ∞ measurement
- micrometers
- size determination
- dimensional stability**
- GS mechanical properties
- . **dimensional stability**
- . . structural stability
- . . . shell stability
- stability
- . static stability
- . . **dimensional stability**
- . . . structural stability
- shell stability
- RT aspect ratio
- creep properties
- curl (materials)
- dynamic stability
- Roche limit
- thermal stability
- tolerances (mechanics)
- dimensionless numbers**
- GS **dimensionless numbers**
- . Biot number
- . Froude number
- . Grashof number
- . Hartmann number
- . Laval number
- . Lewis numbers
- . Mach number
- . mixing ratios
- . Nusselt number
- . Peclet number
- . Prandtl number
- . Rayleigh number
- . Reynolds number
- . . high Reynolds number
- . . low Reynolds number
- . Bond number
- . Brinkman number
- . Richardson number
- . Schmidt number
- . similarity numbers
- . Stanton number
- . Strouhal number
- RT dimensional analysis
- fluid flow
- heat transfer
- ∞ numbers
- scaling laws
- dimensions**
- GS **dimensions**
- . depth
- . diameters
- . film thickness
- . fractals
- . height
- . . scale height
- . length
- . . diffusion length
- . radii
- . . Larmor radius
- . target thickness
- . width
- RT amplitudes
- ∞ design
- dimensional analysis
- distance
- drawings
- engineering drawings
- fineness ratio
- geometry
- magnitude
- particle size distribution
- relativistic effects
- ∞ span
- thickness
- topology
- units of measurement
- volume
- dimercaprol**
- GS sulfur compounds
- . thiols
- . . **dimercaprol**
- dimerization**
- GS synthesis (chemistry)
- . polymerization
- . . **dimerization**
- RT copolymerization
- dimers**
- GS oligomers
- . **dimers**
- prepolymers
- . **dimers**
- RT monomers
- trimers
- dimethyl compounds**
- (added July 1992)
- GS organic compounds
- . **dimethyl compounds**
- . . dimethylhydrazines
- RT methyl compounds
- trimethyl compounds
- dimethylhydrazines**
- GS hydrazines
- . **dimethylhydrazines**
- organic compounds
- . amines
- . . **dimethylhydrazines**
- . dimethyl compounds
- . . **dimethylhydrazines**
- RT aerozine
- methylhydrazine
- monomethylhydrazines
- diminution*
- USE **reduction**
- dimming**
- RT brightness
- light emission
- ∞ reduction
- dimpling**
- RT bulging
- metal working
- stamping
- Dining Philosophers Problem**
- RT distributed processing
- interprocessor communication
- problem solving
- synchronism
- dinitrates**
- GS nitrogen compounds
- . nitrates
- . . **dinitrates**
- diodes**
- UF *p-i-n diodes*
- GS electronic equipment
- . **diodes**
- . . crystal rectifiers
- . . plasma diodes
- . . semiconductor diodes
- . . . avalanche diodes
- cryosar
- Barritt diodes
- . . . germanium diodes
- . . . Gunn diodes
- transferred electron devices
- . . . junction diodes
- MIM diodes
- step recovery diodes
- . . . light emitting diodes
- . . . parametric diodes
- . . . photodiodes
- . . . Schottky diodes
- . . . tunnel diodes
- resonant tunneling diodes
- . . . varactor diodes
- . . thermionic diodes
- . . . cesium diodes
- RT electron tubes
- ion implantation
- p-i-n junctions
- rectifiers
- semiconductor devices
- solions
- TRAPATT devices
- triodes
- varactor diode circuits
- Diode-Transistor-Logic integ circuits*
- USE **DTL integrated circuits**
- Dione**
- DEF One of the natural satellites of Saturn orbiting at a mean distance of 378,000 kilometers.
- GS celestial bodies
- . natural satellites

diophantine equation

- . . icy satellites
 - . . . **Dione**
 - . . Saturn satellites
 - . . . **Dione**
- RT Saturn (planet)

diophantine equation

- GS number theory
- . **diophantine equation**
- RT ∞ equations

diorite

- GS rocks
- . igneous rocks
 - . . **diorite**
- RT minerals
- soils

dioxides

- GS chalcogenides
- . oxides
 - . . **dioxides**
 - . . . carbon dioxide
 - . . . flint
 - . . . hydrogen peroxide
 - . . . silicon dioxide
 - . . . quartz
 - coesite
 - stishovite
 - . . . sulfur dioxides
- RT Karl Fischer reagent
- peroxides
- sulfur oxides
- thorium oxides
- titanium oxides

diphenyl compounds

- GS organic compounds
- . hydrocarbons
 - . . **diphenyl compounds**
 - . . . diphenyl hydantoin
- RT ∞ chemical compounds

diphenyl hydantoin

- GS drugs
- . antihistaminics
 - . . **diphenyl hydantoin**
- organic compounds
- . amines
 - . . **diphenyl hydantoin**
 - . hydrocarbons
 - . . diphenyl compounds
 - . . . **diphenyl hydantoin**

diphosphates

- GS phosphorus compounds
- . phosphates
 - . . **diphosphates**
 - . . . adenosine diphosphate

diphtheria

- GS diseases
- . infectious diseases
 - . . bacterial diseases
 - . . . **diphtheria**
- RT toxic diseases

diplexers

- GS antenna components
- . antenna couplers
 - . . **diplexers**
- circuits
- . **diplexers**
- communication equipment
- . **diplexers**
- couplers
- . antenna couplers
 - . . **diplexers**
- RT couples
- radar antennas
- radar equipment
- television equipment
- transformers

dipolar ions

- (added October 2001)
- USE **zwitterions**

dipole antennas

- SN (SINGLE DIPOLE ANTENNAS)
- DEF A straight radiator, usually fed in the

center, and producing a maximum of radiation in the plane normal to its axis. The length specified is the overall length. SN (single dipole antennas)

- GS antennas
- . directional antennas
 - . . **dipole antennas**
- RT antenna arrays
- antenna design
- backfire antennas
- ∞ dipoles
- directors (antenna elements)
- lens antennas
- linear arrays
- log periodic antennas
- log spiral antennas
- monopole antennas
- omnidirectional antennas
- parasitic elements (antennas)
- radar antennas
- turnstile antennas
- Yagi antennas

dipole moments

- GS moments
- . **dipole moments**
 - . . electric moments
 - . . magnetic moments
- RT domains
- electrical properties
- magnetic domains
- magnetic properties
- Van der Waals forces

∞ dipoles

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Systems composed of two, separated, equal electric or magnetic charges of opposite sign.
- RT dipole antennas
- electric charge
- electric dipoles
- magnetic dipoles
- magnetic poles
- monopoles
- orbiting dipoles
- polarity
- ∞ poles
- quadrupoles
- zwitterions

dipping

- RT baths
- coatings
- quenching (cooling)
- submerging
- wetting

Dirac equation

- GS wave equations
- . **Dirac equation**
- RT ∞ equations
- field theory (physics)
- Klein-Gordon equation
- Lorentz transformations
- quantum theory

direct broadcast satellites

DEF Domestic satellites used for direct TV transmission to home receivers. Used for DBS (satellites).

- UF *DBS (satellites)*
- GS artificial satellites
- . communication satellites
 - . . **direct broadcast satellites**
- RT broadcasting
- domestic satellite communications
- systems
- satellite television
- satellite transmission
- space commercialization
- space law
- telecommunication
- television transmission

direct current

- UF *DC (current)*
- GS electric current
- . **direct current**
- RT alternating current

current converters (AC to DC)

homopolar generators

inverted converters (DC to AC)

voltage converters (DC to DC)

direct current generators

- USE **DC generators**

direct lift controls

- RT ∞ control
- lift devices

direct numerical simulation

(added October 1997)

DEF A computationally intensive numerical approach used in computational fluid dynamics, which leads to the nearly exact solution of a system of nonlinear, unsteady, time-dependent, three-dimensional equations. Applications include aerodynamics, turbulent combustion, energy transfer theory and non-Newtonian effects.

UF *DNS (numerical analysis)*

- GS analysis (mathematics)
- . numerical analysis
 - . . **direct numerical simulation**
- simulation

direct numerical simulation

- RT computational fluid dynamics
- low Reynolds number
- Navier-Stokes equation
- reacting flow
- turbulent flow

direct power generators

- UF *energy converters*
- GS electric generators
- . **direct power generators**
 - . . DC generators
 - . . . homopolar generators
 - . . electrostatic generators
 - . . fuel cells
 - . . . biochemical fuel cells
 - . . . hydrogen oxygen fuel cells
 - . . . molten carbonate fuel cells
 - . . . phosphoric acid fuel cells
 - . . . regenerative fuel cells
 - . . . solid oxide fuel cells
 - . . magnetohydrodynamic generators
 - . . photoelectric generators
 - . . . photovoltaic cells
 - . . . solar cells
 - vertical junction solar cells
 - . . primary batteries
 - . . . alkaline batteries
 - . . . dry cells
 - magnesium cells
 - nickel zinc batteries
 - . . . metal air batteries
 - zinc-oxygen batteries
 - . . . sodium sulfur batteries
 - . . . thermal batteries
 - . . radioisotope batteries
 - . . . SNAP 7
 - . . . SNAP 9A
 - . . . SNAP 11
 - . . . SNAP 13
 - . . . SNAP 15
 - . . . SNAP 17
 - . . . SNAP 19
 - . . . SNAP 21
 - . . . SNAP 23
 - . . . SNAP 27
 - . . . SNAP 29
 - . . . thermionic converters
 - . . . SNAP 13
 - . . . solar blankets
 - . . . thermoelectric generators
 - . . . SNAP 3
 - . . . SNAP 7
 - . . . SNAP 9A
 - . . . SNAP 10A
 - . . . SNAP 11
 - . . . SNAP 15
 - . . . SNAP 17
 - . . . SNAP 19
 - . . . SNAP 21
 - . . . SNAP 23
 - . . . SNAP 27
 - . . . SNAP 29
 - . . . solar sea power plants

RT auxiliary power sources
 ∞ converters
 electric batteries
 electric cells
 electric energy storage
 energy absorption films
 energy conversion
 energy conversion efficiency
 ∞ generators
 heat generation
 photoelectric cells
 solar generators
 solar total energy systems
 spacecraft power supplies

∞ **direction**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT autonomy
 azimuth
 bearing (direction)
 directivity
 line of sight
 management
 reversing

direction finders (radio)
 USE **radio direction finders**

direction finding
 DEF A procedure or process for locating or localizing the origin of radar, acoustical, or optical emissions.
 RT bearing (direction)
 radio direction finders
 signal processing

directional antennas
 DEF Antennas that radiate or receive radio signals more efficiently in some directions than in others. Used for tracking antennas.
 UF *tracking antennas*
 GS antennas
 . **directional antennas**
 . . dipole antennas
 . . helical antennas
 . . horn antennas
 . . lens antennas
 . . log periodic antennas
 . . loop antennas
 . . radar antennas
 . . . radant
 . . reflector antennas
 . . . parabolic antennas
 . . . two reflector antennas
 . . rhombic antennas
 . . slot antennas
 . . steerable antennas
 . . inertialess steerable antennas
 . . Yagi antennas

RT antenna arrays
 antenna gain
 antenna radiation patterns
 backlobes
 boresight error
 boresights
 endfire arrays
 microwave antennas
 microwave coupling
 missile antennas
 monopulse antennas
 omnidirectional antennas
 parasitic elements (antennas)
 radio antennas
 Sommerfeld approximation

directional control
 UF *vector control*
 GS attitude control
 . **directional control**
 . . thrust vector control

RT aircraft control
 automatic control
 ∞ control
 helicopter control
 jet control
 lateral control
 longitudinal control
 manual control

missile control
 ∞ reaction control
 rocket engine control
 satellite attitude control
 satellite control
 yaw

directional couplers
 GS antenna components
 . antenna couplers
 . . **directional couplers**
 couplers
 . antenna couplers
 . . **directional couplers**

RT coupling
 couplings
 impedance matching
 microstrip transmission lines
 microwave coupling
 transmission lines
 yokes

directional solidification (crystals)
 DEF Controlled solidification (crystal growth) of molten metal in a casting so as to provide feed metal to the solidifying front of the casting.
 GS crystallization
 . **directional solidification (crystals)**
 growth
 . crystal growth
 . . **directional solidification (crystals)**
 solidification
 . **directional solidification (crystals)**

RT containerless melts
 eutectic composites
 phase transformations

directional stability
 DEF The property of an aircraft, rocket, etc., enabling it to restore itself from a yawing or sideslipping condition.
 GS dynamic characteristics
 . dynamic stability
 . . motion stability
 . . . attitude stability
 **directional stability**
 gyroscopic stability
 stability
 . dynamic stability
 . . motion stability
 . . . attitude stability
 **directional stability**
 gyroscopic stability

RT aerodynamic stability
 aircraft stability
 controllability
 flow stability
 horizontal orientation
 hovering stability
 lateral oscillation
 lateral stability
 longitudinal stability
 rotary stability
 spacecraft stability
 stability augmentation
 vertical orientation
 yaw

directivity
 DEF The ability of an antenna to radiate or receive more energy in some directions.
 RT alignment
 anisotropy
 collimation
 crystallography
 ∞ direction
 field strength
 instrument orientation
 isotropy
 look angles (electronics)
 ∞ orientation

directories
 DEF Alphabetical, geographical, or classified listings by field of persons, organizations, programs and/or objects such as instruments, devices, and products. Use of this term excludes directories in computers.

RT handbooks
 manuals

directors (antenna elements)
 GS antenna components
 . parasitic elements (antennas)
 . . **directors (antenna elements)**
 antennas
 . parasitic elements (antennas)
 . . **directors (antenna elements)**

RT dipole antennas
 radio receivers
 reflectometers
 reflectors
 rods
 Yagi antennas

Dirichlet problem
 GS boundary value problems
 . **Dirichlet problem**
 differential equations
 hyperbolic differential equations
 ∞ problems

dirigibles
 USE **airships**

dirt
 GS soils
 . **dirt**

RT contaminants
 dust
 impurities
 particles
 rocks

DIS
 (added December 1996)
 USE **distributed interactive simulation**

disabilities
 UF *handicaps*
 RT auditory defects
 blindness
 frustration
 ∞ inhibition
 paralysis
 wheelchairs

disarmament
 RT armed forces (foreign)
 armed forces (United States)
 international cooperation
 weapons

disasters
 DEF Large-scale drought, glacier movement, floods, fires, storms, etc.
 RT accidents
 casualties
 emergencies
 first aid
 sabotage

∞ **discharge**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT detonation
 dispersing
 disposal
 drainage
 effluents
 ejection
 electric discharges
 electrodeless discharges
 elimination
 emission
 exhausting
 expellants
 explosions
 outlets
 releasing
 relieving
 ring discharge
 unloading
 venting

discharge coefficient
 GS coefficients
 . flow coefficients

dischargers

- . . **discharge coefficient**
- RT axial flow
- flow velocity
- influence coefficient
- mass flow factors
- nozzle flow
- nozzle geometry
- nozzle thrust coefficients
- wall flow

discharge tubes

- USE **gas discharge tubes**

dischargers

- GS **dischargers**
 - . static dischargers
- RT dissipation
- neutralizers

disciplining

- RT liabilities
- morale
- penalties

discoloration

- RT color
- damage
- degradation
- fading
- staining

disconnect devices

- UF *disconnectors*
- RT circuit breakers
- connectors
- decoupling
- dumping
- ejection
- electric connectors
- electric fuses
- electric relays
- ∞ relay
- releasing

disconnectors

- USE **disconnect devices**

discontinuity

DEF A break in sequence or continuity of anything.

- GS **discontinuity**
 - . shock discontinuity
- RT analysis (mathematics)
- catastrophe theory
- Gibbs phenomenon
- incoherence
- vortex streets

Discos (satellite attitude control)

DEF A satellite orbit "Disturbance COmpensation System" designed to maintain an object (proof object) in correct orbit by detecting forces and compensating for them by using thrusters.

- RT attitude stability
- Nova satellites
- satellite perturbation
- spacecraft stability
- Transit satellites

Discoverer recovery capsules

- UF *DRC (capsule)*
- GS space capsules
- . **Discoverer recovery capsules**
- RT recovery parachutes
- spacecraft recovery

Discoverer satellites

- GS artificial satellites
- . **Discoverer satellites**
- RT Agena A rocket vehicle
- Agena B rocket vehicle
- Agena rocket vehicles
- Thor Agena launch vehicle

discovering

- USE **exploration**

Discovery (Orbiter)

- UF *Space Shuttle Orbiter 103*
- GS manned spacecraft
- . space shuttles

- . . Space Shuttle orbiters
- . . . **Discovery (Orbiter)**
- reentry vehicles
- . recoverable spacecraft
- . . reusable spacecraft
- . . . space shuttles
- Space Shuttle orbiters
- **Discovery (Orbiter)**

- RT manned space flight
- Space Shuttle mission 41-D
- Space Shuttle mission 51-A
- Space Shuttle mission 51-C
- Space Shuttle mission 51-D
- Space Shuttle mission 51-G
- Space Shuttle mission 51-I
- ∞ spacecraft

discrete address beacon system

DEF Radar beacon system with discretely addressable transponders and a ground-air-ground data link for automated air traffic control (FAA).

- GS landing aids
- . airport beacons
- . . **discrete address beacon system**
- navigation aids
- . beacons
- . . airport beacons
- . . . **discrete address beacon system**
- . . radar beacons
- . . . **discrete address beacon system**
- radar equipment
- . radar beacons
- . . **discrete address beacon system**
- RT air traffic control
- data links
- ground-air-ground communication
- secondary radar
- ∞ systems

discrete cosine transform

(added March 1994)

- UF *DCT (mathematics)*
- GS transformations (mathematics)
- . **discrete cosine transform**
- RT data compression
- discrete functions
- image processing
- signal processing
- video compression

discrete functions

- GS functions (mathematics)
- . **discrete functions**
- RT discrete cosine transform
- discretization (mathematics)
- distribution functions
- histograms
- normal density functions
- Poisson density functions
- probability density functions
- probability distribution functions
- statistical analysis

discretization (mathematics)

(added June 1997)

- GS analysis (mathematics)
- . numerical analysis
- . . approximation
- . . . **discretization (mathematics)**
- RT discrete functions

discriminant analysis (statistics)

DEF A linear combination of a set of N variables that will classify (into two different classes) the events or items for which the measurements of the N variables are available, with the smallest proportion of misclassifications. Used for discriminant functions.

- UF *discriminant functions*
- GS functions (mathematics)
- . **discriminant analysis (statistics)**
- statistical analysis
- . **discriminant analysis (statistics)**
- RT ∞ classifying
- multivariate statistical analysis
- populations

temporal logic

discriminant functions

- USE **discriminant analysis (statistics)**

discrimination

- GS **discrimination**
 - . sensory discrimination
 - . . brightness discrimination
 - . . tactile discrimination
 - . . visual discrimination
 - . spectral mixture analysis
- RT acuity
- comparator circuits
- ∞ differentiation
- selectivity
- signal detection
- signal detectors
- target recognition

discriminators

DEF In general, a circuit in which output depends upon the difference between an input signal and a reference signal.

- GS circuits
- . **discriminators**
- . . Fraunhofer line discriminators
- . . frequency discriminators
- RT analog computers
- anticoincidence detectors
- comparators
- error signals
- intermodulation
- RC circuits

∞ discussion

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT conferences
- evaluation
- examination
- reports
- reviewing

diseased vegetation

- USE **plant diseases**

diseases

SN (RESTRICTED TO DISEASES IN ANIMALS INCLUDING MAN--FOR DISEASES IN PLANTS SEE PLANT DISEASES)

- GS **diseases**
 - . albinism
 - . anemias
 - . arteriosclerosis
 - . arthritis
 - . ataxia
 - . atelectasis
 - . bone demineralization
 - . colic
 - . cyanosis
 - . diabetes mellitus
 - . encephalitis
 - . epilepsy
 - . eye diseases
 - . . asthenopia
 - . . astigmatism
 - . . cataracts
 - . . conjunctivitis
 - . . glaucoma
 - . . keratitis
 - . . phoria
 - . fat embolisms
 - . fibrosis
 - . . cystic fibrosis
 - . . headache
 - . . heart diseases
 - . . . angina pectoris
 - . . . coronary artery disease
 - . . . infarction
 - . . . myocardial infarction
 - . . . infectious diseases
 - . . . airborne infection
 - . . . bacterial diseases
 - . . . cholera
 - . . . diphtheria
 - . . . keratitis
 - . . . syphilis
 - . . . tuberculosis
 - . . . typhoid

. . . typhus
 . . . conjunctivitis
 . . . dermatitis
 . . . contact dermatitis
 . . . fungal diseases
 . . . hepatitis
 . . . meningitis
 . . . parasitic diseases
 . . . viral diseases
 . . . acquired immunodeficiency syndrome
 . . . influenza
 . . . poliomyelitis
 . . . smallpox
 . kidney diseases
 . kidney stones
 . nephritis
 . lithiasis
 . metabolic diseases
 . narcolepsy
 . neurasthenia
 . neuritis
 . occupational diseases
 . osteoporosis
 . paralysis
 . Parkinson disease
 . pulmonary lesions
 . radiation sickness
 . respiratory diseases
 . . . aerosinusitis
 . . . asthma
 . . . emphysema
 . . . influenza
 . . . pneumonia
 . . . tuberculosis
 . rheumatic diseases
 . tachycardia
 . thrombopenia
 . thrombosis
 . tooth diseases
 . toxic diseases
 . . benzene poisoning
 . . beryllium poisoning
 . . carbon monoxide poisoning
 . . carbon tetrachloride poisoning
 . . hydrocarbon poisoning
 . . lead poisoning
 . tumors
 . . neoplasms
 . . . cancer
 leukemias
 . ulcers
 . urolithiasis
 RT animal models
 chronic conditions
 creatinine
 cures
 diagnosis
 disorders
 etiology
 medical science
 necrosis
 pathogenesis
 pathological effects
 plant diseases
 pneumothorax
 prophylaxis
 signs and symptoms
 symptomology
 therapy
 vaccines
 veterinary medicine

dishes

USE **parabolic reflectors**

disilicides

GS silicon compounds
 . silicides
 . . **disilicides**
 RT silanes
 silicates

disinfectants

USE **antiseptics**

disintegration

RT atomizing
 comminution
 crushers

crushing
 damage
 decay
 decomposition
 deterioration
 flaking
 grinding (comminution)
 ionization
 lysogenesis

disk galaxies

DEF Galaxies consisting of a central bulge of a spheroidal aggregation of stars and a surrounding disk of stars fanning outward in a thin layer.

GS celestial bodies
 . galaxies
 . . **disk galaxies**
 RT astrophysics
 barred galaxies
 blazars
 elliptical galaxies
 galactic clusters
 galactic evolution
 galactic halos
 galactic nuclei
 galactic rotation
 galactic structure
 local group (astronomy)
 radio galaxies
 spiral galaxies
 star clusters
 Virgo galactic cluster

disk operating system (DOS)

(added October 1988)

DEF A program with which the computer performs such mundane but useful tasks as storing, locating, and retrieving files on disk, reading the keyboard, and issuing display and print information.

GS computer programs
 . computer systems programs
 . . operating systems (computers)
 . . . **disk operating system (DOS)**
 RT assembler routines
 compilers
 computer information security
 computer systems design
 ∞ disks
 graphical user interface
 input/output routines
 magnetic disks
 ∞ routines
 ∞ systems

∞ **disks**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT actuator disks
 disk operating system (DOS)
 disks (shapes)
 intervertebral disks
 magnetic disks

disks (shapes)

GS **disks (shapes)**
 . actuator disks
 . intervertebral disks
 . rotating disks
 RT accretion disks
 aerodynamic configurations
 bodies of revolution
 circular plates
 ∞ disks
 ∞ plates
 video disks

dislocations (materials)

GS **dislocations (materials)**
 . crystal dislocations
 . . edge dislocations
 . . screw dislocations
 RT displacement
 flow theory
 ∞ materials

disorders

GS disorientation
 . **disorders**

RT chronic conditions
 depersonalization
 ∞ depression
 detachment
 diseases
 ∞ disturbances
 dithers
 emotional factors
 human behavior
 jet lag
 psychology
 psychoses
 violence

disorientation

SN (EXCLUDES PHYSICAL OR MATHEMATICAL MISALIGNMENT)
 GS **disorientation**
 . desynchronization (biology)
 . disorders
 . jet lag
 RT biological effects
 Coriolis effect
 detachment
 dithers
 dizziness
 irrationality
 misalignment
 psychological effects
 psychology
 staggering
 weightlessness

dispatching

USE **distributing**

dispensers

RT distributors
 ejectors
 feeders
 materials handling
 rollers
 sprayers

dispersing

SN (OF MATERIALS OR PARTICLES)
 RT agitation
 assimilation
 chemical release modules
 circulation
 cloud dispersal
 colloid
 deflection
 diffusion
 dilution
 ∞ discharge
 ∞ dispersion
 dispersions
 disposal
 dissipation
 distributing
 ∞ distribution
 entrainment
 exhausting
 fog dispersal
 homogenizing
 Langevin formula
 permeating
 pollution transport
 ∞ reduction
 releasing
 scattering
 ∞ separation
 shaking
 spraying
 spreading
 stirring
 suspending (mixing)
 swirling

∞ **dispersion**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT deviation
 diffusion
 dispersing
 dispersions
 dust
 Kramers-Kronig formula
 magnetic dispersion

dispersion strengthening

mixers
random errors
statistical analysis
variability
wave dispersion

dispersion precipitation hardening
USE **precipitation hardening**

dispersion strengthening

(added February 1994)

GS **dispersion strengthening**
. oxide dispersion strengthening

RT alloys
hardening (materials)
heat resistant alloys
∞ metallurgy
∞ strength

dispersions

DEF A two-phase system consisting of finely divided particles dispersed in a solid, liquid, or gas.

GS mixtures
. **dispersions**
. . . colloids
. . . aerosols
. . . . fog
. . . colloidal propellants
. . emulsions
. . . photographic emulsions
. . . . nuclear emulsions
. . liquid-gas mixtures
. . . aerosols
. . . . fog
. . plastisols
. . . smoke

RT Brownian movements
colloidal generators
crop dusting
diluent
dispersing
∞ dispersion
dust
ferrofluids
fog dispersal
fumes
mist
particles
particulates
slurries
slurry propellants
suspending (mixing)
∞ suspensions

displacement

DEF A vector quantity that specifies the change of position of a body the change of position of a body or particle usually measured from the mean position or position of rest.

GS **displacement**
. crack opening displacement

RT amplitudes
bending
bias
boresight error
deflection
deformation
dislocations (materials)
distortion
divergence
engines
flexible spacecraft
heaving
kinking
level (quantity)
magnitude
∞ motion
nutiation
positioning
skewness
temperature inversions
variations
vibration

displacement measurement

SN (MEASUREMENT IN CHANGE OF POSITION)

GS mechanical measurement
. **displacement measurement**

RT boresight error
shearography

display devices

UF *data readout systems*
display systems
visual displays

GS display devices

. approach indicators
. flat panel displays
. flow direction indicators
. . wind vanes
. gyro horizons
. head-up displays
. helmet mounted displays
. kinoforn
. microvision landing aid
. plasma display devices
. position indicators
. . plan position indicators
. . radio direction finders
. . spacecraft position indicators
. radarscopes
. . plan position indicators
. speed indicators
. . tachometers

RT airborne surveillance radar
aircraft equipment
aircraft instruments
audio visual equipment
automatic typewriters
blinking
cancellation circuits
cathode ray tubes
charts
cockpit weather information systems
computer graphics
consoles
control boards
crew procedures (inflight)
crew procedures (preflight)
data recorders

∞ detectors
dials
diffractive optics
electrochromism
flight control
flight instruments
flying spot scanners
graphical user interface
human-computer interface
image reconstruction
image tubes
imagery
images
indicating instruments
instrument landing systems
instrument receivers
∞ instruments
light emitting diodes
lists
man machine systems
map matching guidance
monitors
navigation aids
perceptual errors
photographs
photopolymers
picture tubes
planetariums
∞ plots
plotters
plotting
printers (data processing)
promotion
radar
radar resolution
rapid ballistics identification
raster scanning
reading
readout
real time operation
receivers
remote consoles
scientific visualization
∞ screens
situational awareness
solar compasses
∞ strip

∞ systems
target simulators
TERCOM
video data
video equipment
viewing
visual aids
visual control
warning systems

display systems

USE **display devices**

disposal

GS **disposal**
. waste disposal
. . composting
. . hazardous material disposal (in space)

RT agitation
∞ containers
decontamination
deletion
dilution
∞ discharge
dispersing
dissipation
distributing
∞ distribution
dumping
ejection
elimination
emptying
exhausting
expulsion
isolation
jettisoning
materials handling
materials recovery
removal
sinks
spreading
∞ storage
unloading

disrupting

RT ∞ interference
rupturing

dissection

RT autopsies
pathology

dissipation

UF *dissipators*

GS **dissipation**
. energy dissipation
. ohmic dissipation
RT atmospheric turbulence
attenuation
damping
decontamination
depletion
diffusion
dilution
dischargers
dispersing
disposal
exhausting
pollution
purification
∞ reduction
removal
waste disposal

dissipators

USE **dissipation**

dissociation

DEF The separation of a complex molecule into constituents by collision with a second body, or by absorption of a photon. The product of dissociation of a molecule is two ions, one positively charged and one negatively charged. Used for molecular dissociation.

UF *molecular dissociation*

GS **dissociation**
. autoionization
. biodegradability
. gas dissociation

- . photodissociation
- . radiolysis
- . thermal dissociation
- RT atomic recombination
- chemical equilibrium
- Debye-Huckel theory
- decomposition
- electrodissolution
- heat of dissociation
- ionization
- molecular diffusion
- molecular interactions
- dissolution*
- USE **dissolving**
- dissolved gases**
- DEF Gases in solution.
- GS gases
- . **dissolved gases**
- RT aeration
- dissolving
- mixtures
- oxygenation
- solubility
- solutions
- dissolved organic matter**
- (added October 1997)
- UF *gelbstoff*
- RT chlorophylls
- organic solids
- phytoplankton
- sea water
- sediments
- solutes
- water color
- water pollution
- dissolving**
- UF *dissolution*
- GS mixing
- . **dissolving**
- RT aeration
- chemical attack
- chemical cleaning
- cleaning
- compounding
- corrosion
- diffusion
- dilution
- dissolved gases
- extraction
- homogenizing
- leaching
- precipitation (chemistry)
- ∞ separation
- softening
- solubility
- solutes
- ∞ solution
- solvent retention
- solvents
- washing
- dissymmetry*
- USE **asymmetry**
- distance**
- GS **distance**
- . Debye length
- . diffusion length
- . miss distance
- . optical slant range
- . radar range
- . radio range
- . range and range rate tracking
- . reentry range
- RT aircraft performance
- aircraft specifications
- altitude
- depth
- dimensions
- focusing
- geometry
- height
- length
- position (location)
- proximity
- radar navigation
- ∞ range
- range (extremes)
- takeoff runs
- ∞ travel
- Tully-Fisher relation
- distance measuring equipment**
- DEF A radio aid to navigation which provides distance information by measuring total round trip time of transmission from an integrator to a transponder and return.
- GS measuring instruments
- . **distance measuring equipment**
- . . altimeters
- . . . laser altimeters
- . . . radio altimeters
- . . geodimeters
- . . range finders
- . . . optical range finders
- laser range finders
- . . stadimeters
- . . tellurometers
- RT automatic flight control
- automatic landing control
- Decca navigation
- depth measurement
- dimensional measurement
- LOFAC navigation system
- loran
- lunar ranging
- micrometers
- navigation
- navigation aids
- omnidirectional radio ranges
- position indicators
- radar
- radar equipment
- radar measurement
- radar navigation
- radio navigation
- range errors
- Shoran
- solar compasses
- sonar
- sound ranging
- distance perception*
- USE **space perception**
- distillation**
- GS **distillation**
- . stripping (distillation)
- RT chemical fractionation
- concentrating
- condensing
- deminerlizing
- desalinization
- diffusion
- evaporation
- flashing (vaporizing)
- materials recovery
- purging
- purification
- rectification
- refining
- ∞ separation
- tar sands
- vaporizing
- washing
- distillation equipment**
- RT columns (process engineering)
- condensers (liquefiers)
- ∞ equipment
- stills
- distortion**
- DEF An undesired change in waveform. In a system used for transmission or reproduction of sound, a failure by the system to transmit or reproduce a received waveform with exactness. An undesired change in the dimensions or shape of a structure as, distortion of a fuel tank due to abnormal stresses or extreme temperature gradients.
- GS **distortion**
- . flow distortion
- . signal distortion
- . surface distortion
- RT aberration
- abnormalities
- astigmatism
- asymmetry
- bending
- buckling
- camber
- deflection
- deformation
- deviation
- displacement
- expansion
- failure
- flexing
- folding
- frequency pulling
- geometric accuracy
- ghosts
- heaving
- refraction
- skewness
- stretching
- swelling
- temperature inversions
- twisting
- variations
- warpage
- wrinkling
- distributed amplifiers**
- GS amplifiers
- . **distributed amplifiers**
- RT frequency response
- transmission lines
- distributed Bragg reflector lasers*
- USE **DBR lasers**
- distributed feedback lasers**
- DEF Lasers containing a periodic medium which provides the necessary feedback for laser action.
- GS stimulated emission devices
- . lasers
- . . **distributed feedback lasers**
- RT DBR lasers
- feedback amplifiers
- feedback control
- heterojunction devices
- laser outputs
- lasing
- semiconductor lasers
- solid state lasers
- distributed interactive simulation**
- (added December 1996)
- SN ((Multiple simultaneous use of simulation in networks))
- UF *DIS*
- GS simulation
- . computerized simulation
- . . **distributed interactive simulation**
- RT computer networks
- distributed processing
- distributed memory**
- (added April 1997)
- GS memory (computers)
- . **distributed memory**
- RT architecture (computers)
- distributed processing
- interprocessor communication
- multiprocessing (computers)
- parallel processing (computers)
- distributed parameter systems**
- RT control theory
- differential equations
- independent variables
- integral equations
- linear circuits
- linear systems
- network analysis
- nonlinear systems
- ∞ systems
- distributed processing**
- DEF Processing with multiple small computers that are capable of operating independently but can communicate over a network with each other and/or a central computer.

distributing

GS data processing
 . **distributed processing**
 . . grid computing (computer networks)
RT architecture (computers)
client server systems
computer networks
computer systems design
Dining Philosophers Problem
distributed interactive simulation
distributed memory
microprocessors
service oriented architecture
transputers
VSAT (network)
wide area networks

distributing

UF *dispatching*
RT allocations
assimilation
commercial energy
dispersing
disposal
∞ distribution
 domestic energy
 ∞ food
 industrial energy
 inventory controls
 materials handling
 positioning
 proportion
 resource allocation
 transportation
 transportation energy

∞ distribution

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT allocations
assimilation
brightness distribution
circulation distribution
demography
dispersing
disposal
distributing
distribution (property)
geographic distribution
kurtosis
load distribution (forces)
mass distribution
materials handling
positioning
pressure distribution
spectral energy distribution
statistical distributions
thrust distribution
transportation

distribution (property)

UF *pattern distribution*
GS **distribution (property)**
 . angular distribution
 . Boltzmann distribution
 . brightness distribution
 . charge distribution
 . current distribution
 . electron distribution
 . . electron density profiles
 . energy distribution
 . . spectral energy distribution
 . flow distribution
 . force distribution
 . frequency distribution
 . . kurtosis
 . hole distribution (electronics)
 . hole distribution (mechanics)
 . interference lift
 . ion distribution
 . load distribution (forces)
 . mass distribution
 . moment distribution
 . neutron distribution
 . pressure distribution
 . radial distribution
 . radiation distribution
 . . antenna radiation patterns
 . . . sidelobes

 . . diffraction patterns
 . . . Kossel pattern
 . . . rainbows
 . spatial distribution
 . . horizontal distribution
 . . vertical distribution
 . . . star distribution
 . . geographic distribution
 . strain distribution
 . stress distribution
 . . stress concentration
 . temperature distribution
 . velocity distribution
RT chemical composition
∞ cross sections
∞ distribution
 dynamic characteristics
 field theory (physics)
 gradients
 jet lift
 lift
 ∞ patterns
 ∞ profiles
 rotor lift
 statistical distributions
 synthetic arrays
 zero lift

distribution functions

DEF The density functions or number of particles per unit volume of phase space. The distribution functions are a function of the three space coordinates and the three velocity coordinates.

GS functions (mathematics)
 . **distribution functions**
 . . probability distribution functions
RT Chapman-Enskog theory
discrete functions
maximum entropy method
∞ nets
 probability theory
 statistical distributions

distribution moments

UF *statistical moments*
GS moments
 . **distribution moments**
 . . mean
 . . orthogonality
 . . standard deviation
RT average
median (statistics)
method of moments
mode (statistics)
skewness
statistical distributions
variance (statistics)

distributors

RT commutators
dispensers
feeders
ignition systems
internal combustion engines
materials handling
rollers
sprayers

District of Columbia

GS nations
 . United States
 . . **District of Columbia**
RT Potomac River Valley (MD-VA-WV)

disturbance theory

USE **perturbation theory**

∞ disturbances

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bursts
disorders
electromagnetic interference
ionospheric disturbances
ionospheric storms
magnetic disturbances
perturbation
radio auroras
radio bursts

solar activity
storms
sudden ionospheric disturbances
vortices

disturbing functions

GS functions (mathematics)
 . **disturbing functions**
RT perturbation theory

disulfides

GS chalcogenides
 . sulfides
 . . **disulfides**
 . . . carbon disulfide
 sulfur compounds
 . sulfides
 . . **disulfides**
 . . . carbon disulfide

ditches

RT canals
irrigation
landforms
troughs

∞ ditching

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ditching (landing)
excavation

ditching (excavation)

USE **excavation**

ditching (landing)

GS crashes
 . crash landing
 . . **ditching (landing)**
 landing
 . **ditching (landing)**
RT aircraft accidents
∞ ditching
 glide landings
 water landing

dithers

GS shaking
 . **dithers**
 shivering
 . **dithers**
RT disorders
disorientation
emotional factors
human behavior
∞ inhibition
 irrationality
 vacillation

dithiols

USE **thiols**

diuresis

RT body fluids
edema
urination
vasopressins

diuretics

GS **diuretics**
 . aminophylline
RT acetazolamide
ureas

diurnal rhythms

USE **circadian rhythms**

diurnal variations

GS variations
 . periodic variations
 . . **diurnal variations**
RT cycles
darkness
daytime
magnetic variations
night
nocturnal variations
photoperiod
tropopause

wind variations

divergence

DEF The expansion or spreading out of a vector field; also a precise measure thereof. A static instability of a lifting surface or of a body on a vehicle wherein the aerodynamic loads tending to deform surface or body are greater than the elastic restoring forces.

GS **divergence**
 . magnetic charge density
 RT catastrophe theory
 convergence
 deviation
 differences
 displacement
 ∞ drift
 Fourier analysis
 functions (mathematics)
 geostrophic wind
 refraction
 series (mathematics)
 series expansion
 variations
 vortices

divergent nozzles

RT conical nozzles
 exhaust nozzles
 nozzle geometry
 nozzle walls
 ∞ nozzles
 rocket nozzles
 thrust chambers
 wind tunnel nozzles

diverters

GS **diverters**
 . divertors (fusion reactors)
 RT baffles
 blast deflectors
 bypasses
 deflectors
 ∞ diffusers
 dividers
 flame deflectors
 ∞ separation
 separators
 shielding
 valves

divertors (fusion reactors)

(added March 1995)
 GS diverters
 . **divertors (fusion reactors)**
 RT limiters (fusion reactors)
 magnetic field configurations
 plasma control
 tokamak devices

dividers

SN (EXCLUDES VOLTAGE AND FREQUENCY DIVIDERS)
 GS separators
 . **dividers**
 RT baffles
 ∞ barriers
 curtains
 diverters
 panels
 spacers

divides (landforms)

GS landforms
 . **divides (landforms)**
 RT drainage patterns
 mountains
 watersheds

dividing (mathematics)

GS number theory
 . **dividing (mathematics)**
 RT arithmetic
 computation
 congruences
 ∞ division
 quotients

diving (underwater)

GS submerged bodies
 . **diving (underwater)**

RT barotrauma
 decompression sickness
 human tolerances
 medical phenomena
 physiological effects
 underwater physiology
 underwater tests

∞ division

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT cell division
 dividing (mathematics)
 number theory
 ∞ separation
 subdivisions
 subsidiaries

DIVOT (voice translators)

USE **digital to voice translators**

dizziness

(added August 2004)
 DEF An imprecise term which may refer to a sense of spatial disorientation, motion of the environment, or lightheadedness.
 GS signs and symptoms
 . **dizziness**
 RT acceleration stresses (physiology)
 disorientation
 motion sickness

Djibouti

(added February 1989)
 GS nations
 . **Djibouti**
 RT Africa

DME-A satellite

USE **Explorer 31 satellite**

DMSP satellites

DEF Satellites of the defense meteorological satellite program, a program sponsored by the United States Air Force System Command's Space Division which provides timely global imagery and specialized meteorological data for supporting a variety of Department of Defense operations. Used for Defense Meteorological Satellite Program.

UF *Defense Meteorological Satellite Program*

GS artificial satellites
 . meteorological satellites
 . . **DMSP satellites**
 military spacecraft
 . **DMSP satellites**

RT air defense
 ∞ defense
 defense program
 meteorology
 photomapping
 photoreconnaissance
 remote sensing
 satellite-borne photography

DNA

USE **deoxyribonucleic acid**

DNS (numerical analysis)

(added October 1997)
 USE **direct numerical simulation**

DO-27 aircraft

UF *Dornier DO-27 aircraft*
 GS Dornier aircraft
 . **DO-27 aircraft**
 general aviation aircraft
 . **DO-27 aircraft**
 light aircraft
 . **DO-27 aircraft**
 monoplanes
 . **DO-27 aircraft**
 passenger aircraft
 . **DO-27 aircraft**
 RT ∞ aircraft

DO-28 aircraft

UF *Dornier DO-28 aircraft*
 GS Dornier aircraft

. **DO-28 aircraft**
 general aviation aircraft
 . **DO-28 aircraft**
 light aircraft
 . **DO-28 aircraft**
 monoplanes
 . **DO-28 aircraft**
 passenger aircraft
 . **DO-28 aircraft**
 RT ∞ aircraft

DO-31 aircraft

UF *Dornier DO-31 aircraft*
 GS Dornier aircraft
 . **DO-31 aircraft**
 jet aircraft
 . turboprop aircraft
 . . **DO-31 aircraft**
 monoplanes
 . **DO-31 aircraft**
 transport aircraft
 . **DO-31 aircraft**
 V/STOL aircraft
 . **DO-31 aircraft**
 RT ∞ aircraft

DO-328 aircraft

(added September 1994)
 GS commercial aircraft
 . **DO-328 aircraft**
 Dornier aircraft
 . **DO-328 aircraft**
 jet aircraft
 . turboprop aircraft
 . . **DO-328 aircraft**
 passenger aircraft
 . **DO-328 aircraft**
 transport aircraft
 . **DO-328 aircraft**
 RT ∞ aircraft

docking

(added May 2005)
 GS maneuvers
 . **docking**
 . . autonomous docking
 . . offshore docking
 . . spacecraft docking
 RT interception
 mooring
 multiple docking adapters

document indexing

(added April 2000)
 USE **indexing (information science)**

document markup languages

(added July 1995)
 DEF Standardized nomenclatures that specify the organization of complex text (including technical and scientific notation, graphics, and images) and define the document type, data elements within the document, and the relationship between data elements for electronically prepared, stored, interchanged, and published documents.

UF *DSSSL*
HTML
HYTIME
markup languages
SGML
SPDL

GS languages
 . **document markup languages**
 RT documentation
 electronic publishing
 human-computer interface
 hypertext
 information transfer
 printing
 standards

document storage

RT data storage
 documentation
 ∞ files
 reproduction (copying)

documentation

∞ storage

documentation

SN (LIMITED TO WRITTEN MATERIAL THAT ACCOMPANIES, EXPLAINS, SPECIFIES OR DESCRIBES EQUIPMENT OR SYSTEMS)
DEF The assembling, coding, and disseminating of recorded knowledge.
GS literature
RT acquisition
bibliographies
biography
case histories
catalogs (publications)
conferences
data retrieval
document markup languages
document storage
documents
histories
indexes (documentation)
information
information dissemination
information resources management
information retrieval
knowledge
lessons learned
libraries
news
records
∞ reference systems
reports
selective dissemination of information
space glossaries
summaries
technical writing
technology transfer
translating

documents

UF *publications*
GS **documents**
. abstracts
. bibliographies
. catalogs (publications)
. . . astronomical catalogs
. congressional reports
. dictionaries
. drawings
. . . engineering drawings
. . . blueprints
. handbooks
. . . user manuals (computer programs)
. manuals
. . . installation manuals
. . . user manuals (computer programs)
. papers
. periodicals
. postlaunch reports
. Presidential reports
. proposals
. records
. . . video disks
. supplements
. textbooks
. texts
. theses
RT conferences
copyrights
documentation
electronic publishing
format
hardware utilization lists
indexes (documentation)
information retrieval
libraries
literature
reports
technology transfer

Dodge satellite

GS artificial satellites
. **Dodge satellite**

doghouses (electronics)

DEF Small enclosures placed at the base of transmitting antenna towers to house antenna tuning equipment.
GS housings

. doghouses (electronics)

radar equipment

. doghouses (electronics)

RT enclosures
radar antennas

dogs

GS animals
. vertebrates
. . . mammals
. . . **dogs**
RT wolves

dollies

GS surface vehicles
. **dollies**
RT carriages
materials handling
sleds
trucks
undercarriages

dolomite (mineral)

DEF A common rock-forming rhombohedral material consisting of calcium, magnesium, and carbonates. It is used for refractory products.

GS carbon compounds
. carbonates
. . **dolomite (mineral)**
magnesium compounds
. **dolomite (mineral)**
minerals
. **dolomite (mineral)**
RT aggregates
limestone
rocks
sedimentary rocks

dolphins

GS animals
. vertebrates
. . . mammals
. . . marine mammals
. . . . **dolphins**

domain wall

RT domains
ferroelasticity
magnetic domains
∞ motion

domains

GS **domains**
. magnetic domains
RT dipole moments
domain wall
electrical properties
range (extremes)

∞ domes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT domes (geology)
domes (structural forms)

domes (geology)

GS geology
. **domes (geology)**
RT anticlines
∞ domes
geosynclines
synclines

domes (structural forms)

GS shells (structural forms)
. **domes (structural forms)**
. . radomes
RT ∞ cupolas
∞ domes
hemispherical shells
housings
pressure vessels
protuberances

domestic energy

RT allocations
commercial energy
distributing
economic factors
∞ energy

energy consumption
energy conversion
industrial energy
solar cooling
solar houses
transportation energy
water heating

domestic satellite communications systems

RT communication satellites
direct broadcast satellites
microwave transmission
RCA Satcom satellites
satellite networks
satellite transmission
∞ systems

dominance

GS **dominance**
. eye dominance
RT genetics

Dominica

GS landforms
. islands
. . West Indies
. . . **Dominica**
nations
. **Dominica**

Dominican Republic

GS nations
. **Dominican Republic**
RT Caribbean region
Caribbean Sea

Domino propellants

GS propellants
. high energy propellants
. . **Domino propellants**
RT plasticizers
rocket oxidizers
solid rocket propellants

Donatello Logistics Module (ISS)
(added April 2005)

USE **Multi-Purpose Logistics Modules**

Donnell equations

RT buckling
∞ equations
stress analysis

donor materials

GS semiconductors (materials)
. **donor materials**
RT antisite defects
carrier density (solid state)
doping (materials)
electrons
holes (electron deficiencies)
∞ materials
modulation doping

doors

UF *exits (doors)*
RT air locks
apertures
curtains
egress
entrances
floors
gates (openings)
hatches
ingress (spacecraft passageway)
openings
outlets
∞ thresholds
windows (apertures)

dopa

DEF An intermediate organic compound produced by oxidation of tyrosine by tyramine; also, an intermediate product in the synthesis of both epinephrine and melanin. Used for dihydroxyphenylalanine.

UF *dihydroxyphenylalanine*
GS acids
. amino acids
. . **dopa**

organic compounds
 . amino acids
 . . **dopa**
 RT ∞ chemical compounds
 dopamine
 melanin
 oxidation
 pigments

dopamine
 (added June 1997)
 RT catecholamine
 dopa
 drugs
 epinephrine
 neurophysiology
 neurotransmitters
 norepinephrine

doped crystals
 GS crystals
 . **doped crystals**
 RT crystal growth
 crystal optics
 crystal structure
 doping (materials)
 fullerides
 gadolinium-gallium garnet
 MODFETS
 modulation doping
 neutron transmutation doping

dopes
 RT additives
 fillers
 finishes
 gels
 primers (coatings)
 sealers

doping (additives)
 USE **additives**

doping (materials)
 (added June 2003)
 DEF The incorporation of impurities into silicon or other semiconductor materials in order to modify the conductivity or other electrical properties of these materials
 GS **doping (materials)**
 . modulation doping
 . neutron transmutation doping
 RT additives
 crystal lattices
 donor materials
 doped crystals
 ion implantation
 semiconductor devices
 semiconductors (materials)

Doppler effect
 DEF The change in frequency with which energy reaches a receiver when the receiver and the energy source are in motion relative to each other. Used for DOVAP and stellar Doppler shift.
 UF *DOVAP*
stellar Doppler shift
 GS **Doppler effect**
 . Doppler-Fizeau effect
 RT blue shift
 ∞ effects
 elastic waves
 electromagnetic radiation
 Fizeau effect
 frequency shift
 optical heterodyning
 radial velocity
 red shift
 satellite doppler positioning
 stellar motions

Doppler navigation
 DEF Dead reckoning performed automatically by a device which gives a continuous indication of position by integrating the speed derived from measurement of the Doppler effect of echoes from directed beams of radiant energy transmitted from the craft.
 GS navigation

. **Doppler navigation**
 RT air navigation
 all-weather air navigation
 dead reckoning
 radar navigation
 radio navigation
 satellite doppler positioning

Doppler radar
 DEF Radar which utilizes the Doppler effect to determine the radial component of velocities of relative radar targets or to select targets having particular radial velocities.
 GS radar
 . **Doppler radar**
 . . multistatic radar
 . . pulse Doppler radar
 . . . monopulse radar
 . . . Shuttle Imaging Radar
 RT airborne radar
 coherent radar
 continuous wave radar
 monopulse radar
 moving target indicators
 polystation doppler tracking system
 pulse radar
 radar detection
 radar equipment
 radar navigation
 radar networks
 radar tracking
 satellite doppler positioning
 sodar
 surveillance radar

Doppler-Fizeau effect
 DEF The Doppler effect applied to a source of light. When the distance between the observer and the source of light is diminishing, the lines of the spectrum are displaced towards the violet, and, when the distance is increasing, they are displaced toward the red, the displacement being proportional to the relative velocity of approach or recession.
 GS Doppler effect
 . **Doppler-Fizeau effect**
 RT blue shift
 ∞ effects
 Fizeau effect
 frequency shift
 radar navigation
 red shift
 stellar motions

Dornier aircraft
 GS **Dornier aircraft**
 . DO-27 aircraft
 . DO-28 aircraft
 . DO-31 aircraft
 . DO-328 aircraft
 RT ∞ aircraft

Dornier DO-27 aircraft
 USE **DO-27 aircraft**

Dornier DO-28 aircraft
 USE **DO-28 aircraft**

Dornier DO-31 aircraft
 USE **DO-31 aircraft**

Dornier paraglider rocket vehicle
 GS rocket vehicles
 . single stage rocket vehicles
 . . **Dornier paraglider rocket vehicle**
 . sounding rockets
 . . **Dornier paraglider rocket vehicle**
 RT liquid propellant rocket engines

dorsal sections
 RT anatomy
 posterior sections

dosage
 UF *dose*
 GS **dosage**
 . radiation dosage
 . sublethal dosage
 RT biological effects
 dosimeters

drugs
 radiation measurement

dose
 USE **dosage**

dosimeters
 DEF Instruments for measuring the ultraviolet in solar and sky radiation. Devices worn by persons working around radioactive material, which indicate the dose of radiation to which they have been exposed. Used for dosimetry.
 UF *dosimetry*
 GS measuring instruments
 . radiation measuring instruments
 . . radiation detectors
 . . . **dosimeters**
 . . . threshold detectors (dosimeters)
 RT actinometers
 dosage
 exposure
 flux (rate)
 flux density
 Geiger counters
 ionization chambers
 irradiation
 neutron counters
 nuclear emulsions
 photographic measurement
 proportional counters
 radiant flux density
 radiation counters
 radiation dosage
 radiation effects
 radiation hazards
 radiation measurement
 radiobiology

dosimetry
 USE **dosimeters**

double base propellants
 DEF Solid rocket propellants using two unstable compounds, such as nitrocellulose and nitroglycerin. The unstable compounds used in a double based propellant do not require a separate oxidizer. Used for cordite.
 UF *cordite*
 GS propellants
 . **double base propellants**
 . . double base rocket propellants
 RT cellulose nitrate
 composite propellants
 endothermic fuels
 explosives
 nitroglycerin
 plastisols
 pyrotechnics

double base rocket propellants
 GS gels
 . **double base rocket propellants**
 propellants
 . double base propellants
 . . **double base rocket propellants**
 . rocket propellants
 . . solid rocket propellants
 . . . **double base rocket propellants**
 . solid propellants
 . . solid rocket propellants
 . . . **double base rocket propellants**
 RT cellulose nitrate
 composite propellants
 explosives
 nitroglycerin

double cusps
 UF *osculations*
 GS geometry
 . cusps (mathematics)
 . . **double cusps**
 RT ∞ cusps

double precision arithmetic
 GS number theory
 . arithmetic
 . . **double precision arithmetic**
 RT arithmetic and logic units

double sideband transmission

∞ numbers

double sideband transmission

- GS transmission
 - . electromagnetic wave transmission
 - . . radio transmission
 - . . . **double sideband transmission**
 - . signal transmission
 - . . radio transmission
 - . . . **double sideband transmission**
- RT modulation
 - sidebands
 - single sideband transmission
 - television transmission
 - wave propagation

double stars

DEF Stars which appear as single points of light to the eye but which can be resolved into two points by a telescope. A double star is not necessarily a binary, a two star system revolving about a common center, but may be an optical double, two unconnected stars in the same line of sight.

- GS celestial bodies
 - . stars
 - . . **double stars**
 - . . . binary stars
 - cataclysmic variables
 - companion stars
 - Nemesis (star)
 - eclipsing binary stars
 - dwarf novae
 - Lambda Tauri stars
 - Zeta Aurigae star
 - Sigma Orionis
 - symbiotic stars
 - x ray binaries
- RT astrometry
 - stellar motions

double-layer capacitors

(added September 2003)

USE **electrochemical capacitors**

doughnut shape wheels

USE **toroidal wheels**

Douglas aircraft

- GS McDonnell Douglas aircraft
 - . **Douglas aircraft**
 - . . A-1 aircraft
 - . . A-3 aircraft
 - . . A-4 aircraft
 - . . B-66 aircraft
 - . . C-9 aircraft
 - . . C-47 aircraft
 - . . C-54 aircraft
 - . . C-118 aircraft
 - . . C-124 aircraft
 - . . C-133 aircraft
 - . . D-558 aircraft
 - . . DC 3 aircraft
 - . . DC 7 aircraft
 - . . DC 8 aircraft
 - . . DC 9 aircraft
 - . . DC 10 aircraft
 - . . PD-808 aircraft
 - . . X-3 aircraft
- RT ∞ aircraft

Douglas D-558 aircraft

USE **D-558 aircraft**

Douglas DC-3 aircraft

USE **DC 3 aircraft**

Douglas DC-7 aircraft

USE **DC 7 aircraft**

Douglas DC-8 aircraft

USE **DC 8 aircraft**

Douglas DC-9 aircraft

USE **DC 9 aircraft**

Douglas PD-808 aircraft

USE **PD-808 aircraft**

DOVAP

USE **Doppler effect**

downbursts

(added March 1991)

- GS storms
 - . storms (meteorology)
 - . . **downbursts**
 - . . . microbursts (meteorology)
- RT aviation meteorology
 - flight hazards
 - thunderstorms
 - vertical air currents
 - wind shear

down-converters

- GS frequency converters
 - . **down-converters**
- RT ∞ converters
 - frequency dividers

downlinking

DEF The transmission of signals (data, information, etc.) from satellites to ground terminals.

- RT carrier to noise ratios
 - communication satellites
 - frequency reuse
 - ground stations
 - microwave transmission
 - satellite transmission
 - transmission efficiency
 - uplinking

downrange

DEF The airspace extending downstream on a given rocket test range.

- RT ballistic ranges
 - ballistic trajectories
 - flight tests
 - impact prediction
 - missile ranges
 - recovery zones
 - test ranges
 - touchdown
 - trajectories

Downrange Antimissile Measurement Program

- UF *DAMP program*
- GS programs
 - . **Downrange Antimissile Measurement Program**
- RT ∞ measurement

downrange measurement

- RT ∞ measurement
 - test ranges

downtime

DEF A period during which equipment is not operating correctly because of machine failure.

- GS time
 - . **downtime**
- RT failure
 - inventory management
 - logistics
 - maintenance
 - malfunctions
 - MTBF
 - reliability
 - spare parts
 - system failures
 - turnaround (STS)

downwash

- RT backwash
 - ∞ draft
 - ground effect (aerodynamics)
 - helicopter wakes
 - lift augmentation
 - peripheral jet flow
 - upwash
 - wakes

DPCM (modulation)

USE **differential pulse code modulation**

Draconid meteoroids

- GS celestial bodies
 - . meteoroid showers
 - . . **Draconid meteoroids**
 - . meteoroids
 - . . **Draconid meteoroids**

RT Giacobini-Zinner comet

∞ draft

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boundary layers
 - downwash
 - draft (gas flow)
 - drafting (drawing)
 - upwash
 - wakes

draft (gas flow)

- RT ∞ draft
 - flues
 - ventilation

drafting (drawing)

- RT ∞ draft
 - ∞ drawing
 - drawings
 - graphic arts

drafting machines

- RT computer aided design
 - ∞ design
 - ∞ machinery

drag

DEF A retarding force acting upon the direction of motion of the body. It is a component of the total fluid forces acting on the body. Used for drag effect.

- UF *drag effect*
- GS dynamic characteristics
 - . **drag**
 - . . electrostatic drag
 - . . friction drag
 - . . . aerodynamic drag
 - supersonic drag
 - viscous drag
 - induced drag
 - minimum drag
 - pressure drag
 - supersonic drag
 - wave drag
 - interference drag
 - satellite drag
- RT aerodynamic configurations
 - aerodynamics
 - boundary layers
 - ∞ drag coefficients
 - drag measurement
 - friction
 - gravitation
 - ground effect (aerodynamics)
 - lift
 - skin friction
 - wakes

drag balance

USE **aerodynamic balance**
lift drag ratio

drag chutes

- UF *drogue parachutes*
- GS brakes (for arresting motion)
 - . aerodynamic brakes
 - . . **drag chutes**
 - drag devices
 - . aerodynamic brakes
 - . . **drag chutes**
 - parachutes
 - . **drag chutes**
- RT aircraft brakes
 - airdrops
 - ballutes
 - ribbon parachutes
 - towed bodies

∞ drag coefficients

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The ratios of drag to the products of dynamic pressures and reference areas.
- RT aerodynamic coefficients
 - aerodynamic drag
 - drag

- hydrodynamic coefficients
- drag devices**
 UF *dragulators*
 GS **drag devices**
 . aerodynamic brakes
 . . ballutes
 . . drag chutes
 . . split flaps
 . . wing flaps
 . . . leading edge flaps
 . . . leading edge slats
 . . . trailing edge flaps
 . . . vortex flaps
 . spoilers
 RT abort apparatus
 aircraft brakes
 boundary layer control
 brakes (for arresting motion)
 control surfaces
 flaps (control surfaces)
 lift devices
 skin friction
 vortex alleviation
- drag effect*
 USE **drag**
- drag force anemometers**
 DEF Instruments for measuring both the static and dynamic velocity head and flow in high frequency, unsteady flow.
 GS measuring instruments
 . anemometers
 . . **drag force anemometers**
 RT flow measurement
 ∞ instruments
 velocity measurement
- drag measurement**
 GS mechanical measurement
 . **drag measurement**
 RT aerodynamic drag
 drag
 electrostatic drag
 flow measurement
 ∞ measurement
 measuring instruments
- drag reduction**
 RT aerodynamic drag
 fluid flow
 friction
 induced drag
 lift drag ratio
 ∞ reduction
 riblets
 winglets
- dragulators*
 USE **brakes (for arresting motion)**
drag devices
- drainage**
 UF *draining*
runoffs
 RT ∞ discharge
 evacuating (vacuum)
 excavation
 flood control
 hydrology
 hydrology models
 irrigation
 liquid wastes
 mines (excavations)
 permeability
 ∞ pumping
 seepage
 sewers
 sumps
 tunneling (excavation)
 waste disposal
 water flow
 water runoff
 water tables
- drainage patterns**
 UF *dendritic drainage*
interlacing drainage
radial drainage patterns
- rectangular drainage*
 RT arroyos
 divides (landforms)
 flood damage
 hydrology
 irrigation
 Mississippi River (US)
 ∞ patterns
 precipitation (meteorology)
 tributaries
 water erosion
 water flow
 watersheds
- draining*
 USE **drainage**
- ∞ **drawing**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT bundle drawing
 cold drawing
 drafting (drawing)
 drawings
 extruding
 layouts
 metal drawing
 pulling
 records
 stretch forming
 stretching
 tempering
- drawings**
 UF *elevations (drawings)*
 GS documents
 . **drawings**
 . . engineering drawings
 . . . blueprints
 RT charts
 ∞ cross sections
 diagrams
 dimensions
 drafting (drawing)
 ∞ drawing
 graphic arts
 inks
 layouts
 ∞ plans
 ∞ projection
 representations
 reproduction (copying)
 specifications
 ∞ tracing
 visual aids
- DRC (capsule)*
 USE **Discoverer recovery capsules**
- dreams**
 RT rapid eye movement state
 sleep
- dredged materials**
 DEF Sand, mud, silt, gravel, etc., recovered from the bottoms of harbors, canals, etc., during dredging operations.
 RT channel flow
 ∞ channels
 ∞ materials
 sediments
- dredging**
 DEF Mechanical or hydraulic excavation of underwater material. Used in maintaining and building of channels and ports as well as underwater mining of sand, gravel, and minerals.
 RT artificial harbors
 harbors
 mineral deposits
 mining
 underwater resources
- ∞ **drift**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT deviation
 divergence
 drift (instrumentation)
- drift rate
 flight paths
 ionospheric drift
 stability
- drift (instrumentation)**
 UF *instrument drift*
 RT accuracy
 circuit reliability
 ∞ drift
 drift rate
 dynamic stability
 errors
 instrument errors
 static stability
 tolerances (mechanics)
- drift rate**
 DEF The amount of drift, in any of its several senses, per unit time. Drift rate has many specific meanings in different fields. The type of drift rate should always be specified.
 GS rates (per time)
 . **drift rate**
 RT ∞ drift
 drift (instrumentation)
 ionospheric drift
 mobility
 orbit perturbation
 orbital mechanics
 rotating plasmas
 stability
 trajectory control
- drill bits**
 GS cutters
 . **drill bits**
 tools
 . **drill bits**
 RT bits
 drilling
 drills
- drilling**
 GS **drilling**
 . laser drilling
 RT boreholes
 core sampling
 cutting
 drill bits
 drills
 exploration
 machining
 micromachining
 natural gas exploration
 offshore energy sources
 oil exploration
 oil fields
 penetration
 perforating
 piercing
 tunneling (excavation)
 wells
- drills**
 GS cutters
 . **drills**
 tools
 . **drills**
 RT boring machines
 compressed air
 drill bits
 drilling
 machine tools
 taps
- drinking**
 GS ingestion (biology)
 . **drinking**
 RT beverages
 swallowing
- ∞ **drives**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT mechanical drives
 motivation
 propulsion
 sex
 sleep

drone aircraft

wind tunnel drives

drogue parachutes

USE **drag chutes**

drogues

USE **towed bodies**

drone aircraft

DEF Remotely controlled aircraft. Used for drone helicopters.

UF *drone helicopters*

GS drone vehicles

. **drone aircraft**

. . target drone aircraft

. . . Firebee 2 target drone aircraft

. . . Jindivik target aircraft

. . . pilotless aircraft

. **drone aircraft**

. . target drone aircraft

. . . Firebee 2 target drone aircraft

. . . Jindivik target aircraft

RT ∞ aircraft

antisubmarine warfare aircraft

DAST program

light aircraft

∞ military aircraft

oblique wings

remotely piloted vehicles

research aircraft

V/STOL aircraft

drone helicopters

USE **drone aircraft**

helicopters

drone vehicles

GS **drone vehicles**

. drone aircraft

. . target drone aircraft

. . . Firebee 2 target drone aircraft

. . . Jindivik target aircraft

RT ∞ military aircraft

pilotless aircraft

Sandpiper target missile

∞ vehicles

∞ winged vehicles

Drones for Aerodynamic and Struct Test

USE **DAST program**

drooped airfoils

DEF A baseline airfoil with an abrupt change in cross-section at about midspan from the fuselage. The outboard portion of the wing has a cross-section with a nearly flat bottom and a drooped (downward) leading edge in relation to the inboard baseline wing.

GS aerodynamic configurations

. **drooped airfoils**

aircraft configurations

. **drooped airfoils**

airfoils

. **drooped airfoils**

RT body-wing configurations

wing roots

wings

∞ **drop**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT drops (liquids)

gradients

drop calorimeters

GS measuring instruments

. calorimeters

. . **drop calorimeters**

RT bomb calorimeters

flame calorimeters

heat measurement

high temperature tests

temperature measuring instruments

drop size

DEF The diameter of a drop if it is approximately spherical; otherwise, the approximate shape and appropriate dimensions must be described.

RT cloud physics

clouds (meteorology)

condensates

condensing

fog

humidity

hydrogen clouds

nucleation

particle diffusion

particle size distribution

∞ precipitation

precipitation particle measurement

raindrops

size distribution

drop tests

UF *drop weight tests*

RT Charpy impact test

destructive tests

impact testing machines

impact tests

notch tests

shock tests

∞ tests

drop towers

DEF Large devices for low gravity processing of molten material which consist of either a capsule which is dropped, or a drop tube where containerless low gravity studies are conducted or both. Used for drop tubes.

UF *drop tubes*

RT falling spheres

gravitational effects

low gravity manufacturing

microgravity

weightlessness

drop transfer

GS transferring

. **drop transfer**

RT arc melting

melting

plasma jets

refining

drop tubes

USE **drop towers**

drop weight tests

USE **drop tests**

dropouts

DEF Discrete variations in signal levels during the reproduction of recorded data which result in data reduction errors.

RT circuit breakers

electric contacts

electric switches

switches

drops (liquids)

DEF Small bodies of liquid held together primarily by surface tension. Used for liquid drops.

UF *liquid drops*

GS particles

. **drops (liquids)**

. . raindrops

RT air pollution

Bond number

condensation nuclei

condensing

∞ drop

hydrometers

sprayers

thermocapillary migration

dropsondes

DEF Radiosondes equipped with a parachute, dropped from an aircraft to transmit measurements of atmospheric conditions as it descends.

GS measuring instruments

. meteorological instruments

. . **dropsondes**

. sondes

. . **dropsondes**

RT meteorological balloons

radiosondes

rawinsondes

Drosophila

GS animals

. invertebrates

. . arthropods

. . . insects

. . . . **Drosophila**

RT chironomus flies

drought

UF *drought conditions*

RT arid lands

conservation

desertification

floods

hydrology

potable water

precipitation (meteorology)

water consumption

water management

water pollution

water reclamation

drought conditions

USE **drought**

drowsiness

USE **sleep**

drug therapy

USE **chemotherapy**

drugs

UF *chemotherapeutic agents*

GS **drugs**

. adrenergics

. aminophylline

. anesthetics

. . chloroform

. . cyclopropane

. . methyl chloride

. . novocain

. . antiadrenergics

. . antibiotics

. . actinomycin

. . penicillin

. . pleurotin

. . streptomycin

. . tetracyclines

. . anticonvulsants

. . antidiuretics

. . antidotes

. . antiemetics and antinauseants

. . antihistaminics

. . dimenhydrinate

. . diphenyl hydantoin

. . promethazine

. . antihypertensive agents

. . antiinfectives and antibacterials

. . antiradiation drugs

. . cysteamine

. . central nervous system depressants

. . cholinergics

. . anticholinergics

. . cortisone

. . cysteine

. . decongestants

. . digitalis

. . epinephrine

. . ergotamine

. . hemostatics

. . histamines

. . insulin

. . methamphetamine

. . motion sickness drugs

. . muscle relaxants

. . narcotics

. . morphine

. . Nembutal (trademark)

. . pentobarbital sodium

. . reserpine

. . psychotropic drugs

. . marijuana

. . sedatives

. . stimulants

. . atropine

. . caffeine

. . central nervous system stimulants

. . norepinephrine

. tranquilizers
 . trimethadione
 . vasoconstrictor drugs
 . . hypertensin
 . . serotonin
 . vasodilator agents
 RT alkaloids
 analgesia
 anesthesiology
 bioflavonoids
 biotin
 chemical defense
 chemotherapy
 cures
 dopamine
 dosage
 ethers
 ∞ medicine
 pentobarbital
 pharmacology
 phenobarbital
 psychopharmacology
 quinoline
 salicylates
 sublethal dosage
 thiophenes
 vaccines
 vitamins

drumlins
 USE **glacial drift**

∞ **drums**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ∞ barrels
 ∞ cylinders
 drums (containers)
 magnetic drums
 magnetic storage

drums (containers)
 SN (EXCLUDE MAGNETIC COMPUTER MEMORIES)
 RT barrels (containers)
 ∞ buckets
 cans
 ∞ containers
 ∞ cylinders
 ∞ drums
 tanks (containers)

dry cells
 GS electric generators
 . direct power generators
 . . primary batteries
 . . . **dry cells**
 magnesium cells
 nickel zinc batteries
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . **dry cells**
 magnesium cells
 nickel zinc batteries
 RT metal air batteries
 nickel cadmium batteries
 storage batteries
 thermal batteries

dry friction
 GS friction
 . **dry friction**
 RT abrasion
 kinetic friction
 sliding friction
 static friction

dry heat
 GS heat
 . **dry heat**
 RT geothermal resources
 geothermal technology
 high temperature environments
 humidity
 ovens

drydocks
 RT ∞ ports

sea launching

dryers (equipment)
 USE **drying apparatus**

drying
 UF *desiccation*
dewetting
 GS **drying**
 . dehumidification
 . dehydration
 . freeze drying
 RT ∞ absorption
 baking
 concentrating
 curing
 desaturation
 dewatering
 diffusion
 enthalpy
 evaporation
 firing (igniting)
 roasting
 ∞ separation
 silica gel
 water loss

drying apparatus
 UF *dryers (equipment)*
 GS separators
 . **drying apparatus**
 . . desiccators
 RT absorbers (equipment)
 columns (process engineering)
 condensers (liquefiers)
 dehydrated food
 evaporators
 furnaces

DS1 (space mission)
 (added October 1998)
 USE **Deep Space 1 Mission**

DSIF (instrumentation facility)
 USE **Deep Space Instrumentation Facility**

DSN (space network)
 USE **Deep Space Network**

DSN helicopter
 USE **QH-50 helicopter**

DSSSL
 USE **document markup languages**

DTA (analysis)
 USE **thermal analysis**

DTL integrated circuits
 UF *Diode-Transistor-Logic integ circuits*
 GS circuits
 . integrated circuits
 . . **DTL integrated circuits**
 RT electronic packaging
 large scale integration
 microminiaturization
 molecular electronics
 transistor circuits

DTMB-111 ground effect machine
 USE **ground effect machines**

DTMB-430 ground effect machine
 USE **ground effect machines**

Dual Air Density Explorer
 UF *DAD Explorer*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Dual Air Density Explorer**

dual frequency radar
 USE **multispectral radar**

dual mode propulsion
 USE **hybrid propulsion**

dual spin spacecraft
 RT OSO-7

∞ spacecraft
 spacecraft stability
 spin stabilization

dual thrust nozzles
 GS rocket nozzles
 . **dual thrust nozzles**
 RT ∞ nozzles
 thrust

dual wing configurations
 DEF A configuration of two wings of nearly the same planform and area, one behind the other.
 RT biplanes
 joined wings
 tandem wing aircraft
 wings

duality principle
 DEF Principle that for any theorem in electric circuit analysis there is a dual theorem in which quantities are replaced with dual quantities. Examples are current and voltage or impedance and admittance.
 RT ∞ analyzing
 circuits
 equivalent circuits
 network analysis
 ∞ paths
 ∞ principles
 signal flow graphs

duality theorem
 DEF Theorem which states that if either of two dual linear programming problems has a solution, then so does the other.
 GS theorems
 . **duality theorem**
 RT homology
 isomorphism
 ∞ mathematics
 ∞ relationships

dubnium
 (added May 1998)
 GS chemical elements
 . **dubnium**
 RT rutherfordium
 seaborgium

duct geometry
 DEF The shape and dimensions of ports or other openings designed for passage of fluids (gases, liquids, or mixtures) in or external to engines.
 GS geometry
 . **duct geometry**
 RT air flow
 annular ducts
 circular tubes
 dump combustors
 fluid flow
 intake systems
 openings
 spatial marching

ducted bodies
 RT annular ducts
 axisymmetric bodies
 bluff bodies
 blunt bodies
 ∞ bodies
 ducts
 intake systems
 nacelles
 nose inlets
 shrouds
 slender bodies
 two dimensional bodies

ducted fan engines
 DEF Aircraft engines incorporating a fan or propeller enclosed in a duct; especially jet engines in which an enclosed fan or propeller is used to ingest ambient air to augment the gases of combustion in the jetstream.
 GS engines
 . air breathing engines
 . . gas turbine engines

ducted fans

- . . . jet engines
- turbojet engines
- **ducted fan engines**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- **ducted fan engines**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- **ducted fan engines**
- RT turbofan engines

ducted fans

DEF Fans enclosed in ducts.

RT blowers
fan blades

∞ fans

- lift fans
- propeller fans
- ring wings
- shrouded propellers
- turbofans
- ventilation fans

ducted flow

GS fluid flow

- . internal flow
- . . **ducted flow**
- . . . Knudsen flow

RT air flow
cavity flow
channel flow
choked flow
corner flow
dump combustors
flow geometry
flow noise
fuel flow
heat transmission
wall flow

ducted propellers

USE **shrouded propellers**

ducted rocket engines

GS engines

- . rocket engines
- . . **ducted rocket engines**

RT booster rocket engines

∞ hybrid rocket engines

- internal combustion engines
- liquid propellant rocket engines
- restartable rocket engines
- solid propellant rocket engines
- sustainer rocket engines

ductile-brittle transition

(added February 1994)

SN ((INCLUDES BOTH DUCTILE-TO-BRITTLE AND BRITTLE-TO-DUCTILE TRANSITIONS))

UF *brittle-ductile transition*

RT brittleness
ductility
fracture strength
plastic deformation

∞ transition

- transition temperature
- yield strength

ductility

GS mechanical properties

- . **ductility**

RT brittleness
compressive strength
creep properties
ductile-brittle transition
elongation
fatigue (materials)
flattening
fractography
fracture strength
hardness
impact strength
malleability
metal drawing
notch strength
plastic properties

- shear properties
- softness
- stress relaxation
- stretching
- temper (metallurgy)
- tensile strength
- toughness
- Tresca flow
- weldability

ducts

DEF Specifically, tubes or passages that confine and conduct fluids, as passages for the flow of air to compressors of gas turbine engines, or pipes leading air to superchargers.

GS ducts

- . acoustic ducts
- . air ducts
- . annular ducts

RT baffles
cavities

∞ channels

- ducted bodies
- exhaust systems
- flues
- intake systems
- nose inlets
- openings
- orifices
- outlets
- pipes (tubes)
- plenum chambers
- ports (openings)
- scoops
- throats

∞ tubes

- ventilation
- vents
- windows (apertures)

Duffing differential equation

GS algebra

- . nonlinear equations
- . . **Duffing differential equation**
- . . . analysis (mathematics)
- . . . real variables
- . . . differential equations
- . . . **Duffing differential equation**
- . . . nonlinear equations
- . . . **Duffing differential equation**

RT ∞ equations
probability theory

dullness

USE **luster**

dummies

RT decoys
models
simulators

dummy loads

USE **impedance loading**
output

dump combustors

DEF Combustors having a means of reducing flow velocity and forming recirculation zones through the sudden enlargement area between the inlet duct and the combustion chamber.

GS combustion chambers

- . **dump combustors**

RT combustible flow
combustion efficiency
duct geometry
ducted flow
engine parts
flame holders
flow velocity
inlet flow
ramjet engines
rocket engines

dumping

RT disconnect devices
disposal
ejection
emptying
expulsion

- jettisoning
- materials handling
- oil slicks
- releasing
- spilling
- spreading
- unloading

Dunaliella

GS plants (botany)

- . algae
- . . **Dunaliella**

dunes

DEF Low mounds, ridges, banks, or hills of loose, windblown granular material, usually sand, capable of movement. Used for barchans, coastal dunes, and sand dunes.

UF *barchans*
coastal dunes
sand dunes

GS landforms

- . **dunes**

RT beaches
coasts
deserts
lagoons
Sahara Desert (Africa)
sands
topography
wind effects

Dungeys wind shear mechanism

USE **wind shear**

dunite

GS rocks

- . igneous rocks
- . . **dunite**

RT minerals
olivine
peridotite
soils

duochromators

RT electromagnetic radiation

∞ generators

- light sources
- measuring instruments
- monochromators
- radiation sources
- spectrophotometers

duoplasmatrons

GS ion sources

- . plasmatrons
- . . **duoplasmatrons**
- . . . plasma generators
- . . . plasmatrons
- . . . **duoplasmatrons**

RT electric discharges
ion propulsion
plasma propulsion
plasmas (physics)
sputtering

duplex operation

DEF The operation of associated transmitting and receiving apparatus in which the processes of transmission and reception are concurrent.

RT ∞ metallurgy
phase shift circuits
switching circuits

duplexers

DEF Devices which permit a single antenna system to be used for both transmitting and receiving. Duplexers should not be confused with diplexers, devices permitting an antenna system to be used simultaneously or separately by two transmitters.

RT circuits
circulators (phase shift circuits)
magic tees
monopulse radar
receivers
switching circuits

- transmitters
- duplicating*
USE **reproduction (copying)**
- durability**
RT aircraft survivability
corrosion
cumulative damage
damage
degradation
deterioration
∞ endurance
life (durability)
long term effects
mechanical properties
∞ physical properties
quality
reliability
∞ resistance
ruggedness
stability
vulnerability
wear
- duration*
USE **time**
- durene**
GS organic compounds
. cyclic compounds
. cyclic hydrocarbons
. . . **durene**
. hydrocarbons
. cyclic hydrocarbons
. . . **durene**
- dust**
DEF An imprecise term referring to particulates capable of temporary suspension in air or other gases - also particles smaller than an arbitrary selected size.
GS particles
. **dust**
. . . cosmic dust
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . zodiacal dust
. . . lunar dust
. . . terrestrial dust belt
RT aerosols
air pollution
Aitken nuclei
cleaning
∞ clouds
combustion products
contaminants
dirt
∞ dispersion
dispersions
dusty plasmas
fumes
particulates
pollen
powder (particles)
R Coronae Borealis stars
sands
smoke
space debris
- dust collectors**
GS accumulators
. **dust collectors**
separators
. **dust collectors**
RT air filters
electrostatic precipitators
exhaust systems
precipitators
- dust storms**
GS storms
. storms (meteorology)
. . . **dust storms**
RT atmospheric electricity
atmospheric physics
Mars (planet)
Mars environment
Mars surface
- wind effects
- dusty plasmas**
(added May 2001)
DEF Ionized gases containing small particles of solid matter, which are charged and interact through a Coulomb repulsion. They behave much like a colloidal suspension, exhibiting for example crystalline, liquid, and gas phases, and a melting/freezing phase transition.
GS particles
. charged particles
. . . energetic particles
. . . . plasmas (physics)
. **dusty plasmas**
. corpuscular radiation
. . . energetic particles
. . . . plasmas (physics)
. **dusty plasmas**
RT dust
planetary rings
plasma clouds
plasma composition
plasma-particle interactions
space plasmas
strongly coupled plasmas
- dwarf galaxies**
DEF Galaxies with low luminosity.
GS celestial bodies
. galaxies
. . . **dwarf galaxies**
RT local group (astronomy)
- dwarf novae**
DEF Short period binary systems in which a red quasi-main sequence star fills its Roche lobe and transfers matter, via an accretion disk, onto a white dwarf.
GS celestial bodies
. stars
. . . double stars
. . . . binary stars
. eclipsing binary stars
. **dwarf novae**
. . . main sequence stars
. . . . dwarf stars
. **dwarf novae**
. . . variable stars
. . . . novae
. **dwarf novae**
RT Hercules nova
stellar mass accretion
stellar mass ejection
superhumps (astronomy)
white dwarf stars
- dwarf planets**
(added September 2006)
DEF Celestial bodies that are in orbit around the Sun, have sufficient mass for their self-gravity to overcome rigid body forces so that they assume a hydrostatic equilibrium (nearly round) shape, have not cleared the neighborhood around their orbits, and are not satellites of a planet.
GS celestial bodies
. **dwarf planets**
. . . Ceres asteroid
. . . Pluto (planet)
RT asteroids
Kuiper belt
- dwarf stars**
GS celestial bodies
. stars
. . . main sequence stars
. . . . **dwarf stars**
. dwarf novae
. flare stars
. red dwarf stars
RT brown dwarf stars
cataclysmic variables
F stars
G stars
K stars
late stars
Nemesis (star)
subdwarf stars
subgiant stars
- white dwarf stars
- dwel**
RT delay
ignition systems
timing devices
- dyadics**
GS algebra
. polynomials
. . . **dyadics**
RT vectors (mathematics)
- dye lasers**
GS stimulated emission devices
. lasers
. . . organic lasers
. . . . **dye lasers**
RT dyes
infrared lasers
laser outputs
liquid lasers
optical communication
rhodamine
tuning
two-wavelength lasers
- dyes**
GS **dyes**
. methylene blue
. rhodamine
. thiazine (trademark)
RT acriflavine
aniline
anthraquinones
azines
azo compounds
chromophores
dye lasers
∞ markers
methylene
phenanthrene
stilbene
- dynamic characteristics**
UF *dynamic properties*
GS **dynamic characteristics**
. drag
. . . electrostatic drag
. . . friction drag
. . . . aerodynamic drag
. supersonic drag
. viscous drag
. . . induced drag
. . . minimum drag
. . . pressure drag
. . . . supersonic drag
. wave drag
. interference drag
. satellite drag
. . . dynamic pressure
. . . dynamic stability
. . . combustion stability
. . . flame stability
. . . control stability
. . . frequency stability
. . . motion stability
. . . . aerodynamic stability
. aircraft stability
. hovering stability
. attitude stability
. directional stability
. gyroscopic stability
. lateral stability
. longitudinal stability
. flow stability
. boundary layer stability
. flame stability
. magnetohydrodynamic stability
. Weibel instability
. Goertler instability
. Taylor instability
. low speed stability
. rotary stability
. gyroscopic stability
. spacecraft stability
. gravitational instability
. . . flow characteristics
. . . flow distribution
. . . flow stability

dynamic control

- . . . boundary layer stability
- . . . flame stability
- . . . magnetohydrodynamic stability
- Weibel instability
- . . . Goertler instability
- . . . Taylor instability
- . . flow velocity
- . . . solar wind velocity
- . lift
- . . interference lift
- . . jet lift
- . . rotor lift
- . . zero lift
- . transient response

RT accuracy
aerodynamic balance
aerodynamic characteristics
amplification
automatic control
automatic control valves
bandwidth

- ∞ characteristics
- ∞ control
 - damping
 - distribution (property)
 - dynamic range
- ∞ dynamics
- ∞ equilibrium
- errors
- frequency response
- hysteresis
- impedance
- linearity
- ocean dynamics
- precision
- ∞ properties
- range (extremes)
- reaction time
- reliability
- remote control
- resolution
- resonant frequencies
- rotor dynamics
- sensitivity
- stability
- time constant
- transfer functions

dynamic control

GS automatic control
. **dynamic control**

RT adaptive control
aeroservoelasticity

- ∞ control
- control theory
- ∞ dynamics
- feedback control
- inverse kinematics
- model reference adaptive control
- robot control
- robot dynamics

dynamic loads

DEF Loads imposed by dynamic action, as distinguished from a static load. Specifically, with respect to aircraft, rockets, or spacecraft, a load due to an acceleration of craft, as imposed by gusts, by maneuvering, by landing, by firing rockets, etc.

GS loads (forces)
. **dynamic loads**

- . . aerodynamic loads
- . . . blast loads
- . . . gust loads
- . . cyclic loads
- . . rolling contact loads
- . . thrust loads
- . . transient loads
- . . . gust loads
- . . . impact loads
- . . . landing loads
- . . . shock loads
- blast loads
- . . variable amplitude loading
- . . vibratory loads
- . . wing loading

RT axial compression loads
axial loads
compression loads

- critical loading
- ∞ dynamics
- edge loading
- gas-solid interactions
- NASTRAN
- random loads
- static loads
- structural design criteria
- transverse loads
- wind pressure

dynamic models

DEF Models of aircraft or other objects having their linear dimensions and weight and moments of inertia reproduced in scale in proportion to the original.

GS models
. **dynamic models**

RT aircraft models
biological models (mathematics)
bond graphs

- ∞ dynamics
- large eddy simulation
- mathematical models
- ocean models
- Petri nets
- powered models
- similarity theorem
- spacecraft models
- static models
- systems simulation
- wind tunnel models

dynamic modulus of elasticity

GS mechanical properties
. elastic properties
. . modulus of elasticity
. . . **dynamic modulus of elasticity**

RT ∞ dynamics
ultrasonic tests

dynamic pressure

DEF The pressure of a fluid resulting from its motion, equal to one half the fluid density times the fluid velocity squared. In incompressible flow, dynamic pressure is the difference between total pressure and static pressure.

GS dynamic characteristics
. **dynamic pressure**
pressure

RT blast loads
contact loads

- ∞ dynamics
- impact loads
- kinetic theory
- overpressure
- Riemann waves

dynamic programming

GS optimization
. mathematical programming
. . **dynamic programming**
research

RT ∞ applications of mathematics
Bellman theory
constraints
critical path method
decision theory

- ∞ dynamics
- formalism
- linear programming
- mathematical models
- nonlinear systems
- operations research
- ∞ programming
- steepest descent method

dynamic properties

USE **dynamic characteristics**

dynamic range

(added August 1991)

SN (LIMITED TO SIGNAL
DETECTION/MODULATION)

DEF The range of a signal detector or transmitter between the smallest and largest detectable signal levels which can be detected without inducing changes in its gain characteristics;

usually expressed in decibels.

GS range (extremes)
. **dynamic range**

RT amplification
amplifiers
dynamic characteristics
equipment specifications
frequency ranges
frequency response
microchannel plates
modulation
ratios
signal detection
signal to noise ratios

dynamic response

GS responses
. **dynamic response**
. . transient response

RT aeroservoelasticity
amplification
damping

- ∞ dynamics
- fiber orientation
- frequency domain analysis
- frequency response
- impedance
- modal response
- parameter identification
- ramp functions
- reaction time
- response bias
- rotor dynamics
- sensitivity
- step functions
- stroking tests
- system identification
- time constant
- time domain analysis
- transfer functions

dynamic stability

DEF The characteristics of a body, such as an aircraft or rocket, that causes it, when disturbed from an original state of steady flight or motion, to damp the oscillations set up by restoring moments and gradually return to its original state; specifically, the aerodynamic characteristics.

GS dynamic characteristics
. **dynamic stability**

- . . combustion stability
- . . . flame stability
- . . control stability
- . . frequency stability
- . . motion stability
- . . . aerodynamic stability
- . . . aircraft stability
- hovering stability
- . . . attitude stability
- directional stability
- gyroscopic stability
- lateral stability
- longitudinal stability
- . . . flow stability
- boundary layer stability
- flame stability
- magnetohydrodynamic stability
- Weibel instability
- Goertler instability
- Taylor instability
- . . . low speed stability
- . . . rotary stability
- gyroscopic stability
- . . . spacecraft stability
- . . gravitational instability
- stability
- . **dynamic stability**
 - . . combustion stability
 - . . . flame stability
 - . . control stability
 - . . frequency stability
 - . . motion stability
 - . . . aerodynamic stability
 - . . . aircraft stability
 - hovering stability
 - attitude stability
 - directional stability
 - gyroscopic stability

- lateral stability
- longitudinal stability
- flow stability
- boundary layer stability
- flame stability
- magnetohydrodynamic stability
- Weibel instability
- Goertler instability
- Taylor instability
- low speed stability
- rotary stability
- gyroscopic stability
- spacecraft stability
- gravitational instability

- RT coning motion
- counterbalances
- damping
- dimensional stability
- drift (instrumentation)
- ∞ dynamics
- horizontal orientation
- missing mass (astrophysics)
- resonant vibration
- rotor dynamics
- spacecraft motion
- stable oscillations
- static stability
- surface stability
- systems stability
- transient response
- vertical orientation

dynamic structural analysis

- UF *structural dynamics*
- GS structural analysis
 - . **dynamic structural analysis**
 - . . flutter analysis
- RT aeroservoelasticity
- ∞ dynamics
 - Euler-Bernoulli beams
 - flat plates
 - Mindlin plates
 - shock spectra

dynamic tests

- RT aerodynamic stability
- ∞ dynamics
 - flight tests
 - low speed stability
 - motion stability
 - spin dynamics
 - spin tests
 - static tests
- ∞ tests
 - vibration tests

dynamical systems

- RT attractors (mathematics)
- control theory
- mathematical models
- nonlinear systems
- systems simulation

∞ **dynamics**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Study of the motion of a system of material particles under the influence of forces, especially those which originate outside the system under consideration.
- RT aerodynamics
 - aerostatics
 - aerothermodynamics
 - astrodynamics
 - biodynamics
 - chiral dynamics
 - computational fluid dynamics
 - continuum mechanics
 - dynamic characteristics
 - dynamic control
 - dynamic loads
 - dynamic models
 - dynamic modulus of elasticity

- dynamic pressure
- dynamic programming
- dynamic response
- dynamic stability
- dynamic structural analysis
- dynamic tests
- elastodynamics
- electrodynamics
- equations of motion
- field theory (physics)
- fluid dynamics
- fluid mechanics
- gas dynamics
- geodynamics
- group dynamics
- Hamiltonian functions
- hemodynamics
- hydrodynamics
- kinematics
- kinetics
- magnetohydrodynamics
- mechanics (physics)
- molecular dynamics
- momentum
- momentum transfer
- nutiation
- ocean dynamics
- plasma dynamics
- quantum chromodynamics
- rarefied gas dynamics
- resonant frequencies
- resonant vibration
- robot dynamics
- rotor dynamics
- spin dynamics
- stabilizers (fluid dynamics)
- statics
- terradynamics
- thermodynamics
- variational principles
- velocity
- vibration

Dynamics Explorer 1 satellite

- DEF A twin satellite of Dynamics Explorer 2 satellite designed to study the magnetosphere, ionosphere, and atmosphere coupling.
- GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . Dynamics Explorer satellites
 - **Dynamics Explorer 1 satellite**

Dynamics Explorer 2 satellite

- DEF A twin satellite of Dynamics Explorer 1 satellite designed to study the magnetosphere, ionosphere, and atmosphere coupling.
- GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . Dynamics Explorer satellites
 - **Dynamics Explorer 2 satellite**

Dynamics Explorer satellites

- DEF Two satellites that have been designed to occupy different orbits and supply comparative data for studying the boundary region between earth and space. Of the 24 goals of the program, one half require both satellite's data, one fourth one satellite's data and one fourth the other satellite's data. The satellites were launched together in August of 1981.
- GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Dynamics Explorer satellites**
 - Dynamics Explorer 1 satellite
 - Dynamics Explorer 2 satellite

dynamite

- GS explosives
- . **dynamite**

- RT nitroglycerin

dynamo theory

- RT Earth core
- geomagnetism
- solar convection (astronomy)
- stellar convection
- telluric currents
- ∞ theories

dynamometers

- DEF Instruments for measuring power or force; specifically, instruments for measuring the power, torque, or thrust of aircraft engines or rockets. Used for electrodynamicometers.
- UF *electrodynamometers*
- GS electric generators
 - . rotating generators
 - . . **dynamometers**
 - . . . measuring instruments
 - **dynamometers**
- RT ergometers
- mechanical measurement
- ∞ test equipment
 - thrust measurement
 - torquemeters

dynamos

- USE **rotating generators**

Dyna-Soar space glider

- USE **X-20 aircraft**

dynodes

- GS electrodes
- . **dynodes**
- RT camera tubes
- photomultiplier tubes
- secondary emission

Dyson theory

- RT Heisenberg theory
- quantum mechanics
- ∞ theories

dyspnea

- DEF Difficult or labored breathing.
- GS rates (per time)
 - . respiratory rate
 - . . **dyspnea**
 - . . . signs and symptoms
 - **dyspnea**

dysprosium

- GS chemical elements
 - . rare earth elements
 - . . **dysprosium**
 - . . . dysprosium isotopes
 - metals
 - rare earth elements
 - **dysprosium**
 - dysprosium isotopes

dysprosium 161

- USE **dysprosium isotopes**

dysprosium compounds

- GS rare earth compounds
 - . **dysprosium compounds**
- RT ∞ chemical compounds
- ∞ metal compounds

dysprosium isotopes

- UF *dysprosium 161*
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **dysprosium isotopes**
 - rare earth elements
 - dysprosium
 - **dysprosium isotopes**
 - metals
 - rare earth elements
 - dysprosium
 - **dysprosium isotopes**

E

E glass

DEF A low alkali lime borosilicate glass made into glass fiber filaments used in composite materials.

- GS glass
 - . **E glass**
 - .. S glass
- RT composite materials
 - glass fiber reinforced plastics
 - glass fibers
 - silicon dioxide

E layers

USE **E region**

E region

SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 90 AND 150 KM)
 DEF A portion of the ionosphere extending from about 90 to 150 km. In daylight, the electron density has one maximum at about 105 km. and is dependent upon solar activity and the solar zenith angle. At night the E region nearly disappears except at high latitudes where particle precipitation can produce ionization at altitudes greater than those experienced under sunlight conditions.

- UF *E layers*
 - night E layer*
- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... **E region**
 - E-1 layer
 - E-2 layer
 - sporadic E layer regions
 - . **E region**
 - .. E-1 layer
 - .. E-2 layer
 - .. sporadic E layer
- RT lower ionosphere
 - upper ionosphere

E-1 layer

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... E region
 - **E-1 layer** regions
 - . E region
 - .. **E-1 layer**
- RT sporadic E layer

E-2 aircraft

- UF *Hawkeye aircraft*
 - W2F aircraft*
- GS AWACS aircraft
 - . **E-2 aircraft**
 - Grumman aircraft
 - . **E-2 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - .. **E-2 aircraft**
- RT ∞ aircraft
 - command and control
 - early warning systems
 - ∞ military aircraft
 - passenger aircraft
 - turboprop engines

E-2 layer

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... E region
 - **E-2 layer** regions
 - . E region
 - .. **E-2 layer**
- RT sporadic E layer

E-3A aircraft

- GS AWACS aircraft
 - . **E-3A aircraft**
 - Boeing aircraft
 - . **E-3A aircraft**
- RT ∞ aircraft

command and control
 early warning systems
 ∞ military aircraft

E-4A aircraft

- UF *AABNCP*
 - Advanced Airborne Command Post*
 - Boeing 747B aircraft*
- GS AWACS aircraft
 - . **E-4A aircraft**
 - Boeing aircraft
 - . **E-4A aircraft**
- RT ∞ aircraft
 - command and control
 - early warning systems
 - ∞ military aircraft

EAI 680 computer

- GS data processing equipment
 - . computers
 - .. analog computers
 - ... **EAI 680 computer**
 - .. digital computers
 - ... **EAI 680 computer**

EAI 8400 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - ... **EAI 8400 computer**

EAI 8900 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - ... **EAI 8900 computer**

EAM (physical chemistry)
(added February 1998)

USE **embedded atom method**

EAP (polymers)
(added June 2000)

USE **electroactive polymers**

ear

- GS anatomy
 - . sense organs
 - .. **ear**
 - ... eardrums
 - ... eustachian tubes
 - ... labyrinth
 - cochlea
 - Corti organ
 - otolith organs
 - semicircular canals
 - vestibules
 - .. middle ear
- RT artificial ears
 - auditory perception
 - endolymph
 - hearing
 - labyrinthectomy
 - mastoids
 - otolaryngology
 - otology

ear pressure test

- GS physiological tests
 - . **ear pressure test**
- RT middle ear pressure
 - pressure
 - vertigo
 - vestibular tests

ear protectors

- GS protectors
 - . **ear protectors**
- RT noise injuries
 - noise reduction

eardrums

- GS anatomy
 - . sense organs
 - .. ear
 - ... **eardrums**
- RT eustachian tubes
 - middle ear pressure

semicircular canals

Early Apollo Surface Experiments Package
 USE **EASEP**

Early Bird satellites

- GS artificial satellites
 - . active satellites
 - .. SYNCOM satellites
 - ... **Early Bird satellites**
 - . communication satellites
 - .. SYNCOM satellites
 - ... **Early Bird satellites**
 - . synchronous satellites
 - .. SYNCOM satellites
 - ... **Early Bird satellites**
- RT ATS
 - Comsat program

early stars

- GS celestial bodies
 - . stars
 - .. **early stars**
 - ... hot stars
 - A stars
 - B stars
 - shell stars
 - Sigma Orionis
 - blue stars
 - O stars
 - white dwarf stars
 - Wolf-Rayet stars
- RT late stars
 - main sequence stars
 - star formation

early warning systems

- GS warning systems
 - . **early warning systems**
 - .. Ballistic Missile Early Warning System
- RT air defense
 - AWACS aircraft
 - Cobra Dane (radar) detection
 - E-2 aircraft
 - E-3A aircraft
 - E-4A aircraft
 - missile detection
 - over-the-horizon radar
 - radar targets
 - radar tracking
 - Synchronous Earth Observatory satellite
 - ∞ systems
 - warning

earphones

DEF Electroacoustic transducers operating from an electrical system to an acoustical system and intended to be closely coupled acoustically to the ear. Used for headsets.

- UF *headsets*
- GS audio equipment
 - . **earphones**
- RT acoustics
 - auditory perception
 - interphones
 - sound transmission
 - telephones

Earth & Ocean Physics Applications Program

- UF *EOPAP*
- GS programs
 - . NASA programs
 - .. NASA space programs
 - ... **Earth & Ocean Physics Applications Program**
 - . projects
 - .. **Earth & Ocean Physics Applications Program**
 - . space programs
 - .. NASA space programs
 - ... **Earth & Ocean Physics Applications Program**
- RT oceanography

∞ research projects

Earth (planet)

DEF That planet of the solar system which is fifth in size of the 9 major planets, and third (between Venus and Mars) in order of distance from the sun (about 93 million miles). Major data for the Earth: equatorial radius: 6,378 kilometers (3,963. 5 miles); polar radius: 6,357 kilometers (3,941 miles); equatorial circumference: 40,075 kilometers (24,902 miles).

- UF *world*
- GS celestial bodies
 - . planets
 - . . terrestrial planets
 - . . . **Earth (planet)**
- RT asteroid collisions
 - Earth sciences
 - Eastern Hemisphere
 - geodesy
 - geoelectricity
 - geography
 - geology
 - geomagnetism
 - geophysics
 - ∞ globes
 - planetary craters
 - polar caps
 - terrestrial radiation
 - Western hemisphere

Earth albedo

DEF The fraction of the solar incident radiation that is reflected off the Earth and back into space.

- GS albedo
 - . **Earth albedo**
- RT absorptance
 - cosmic ray albedo
 - Earth radiation budget
 - Earth radiation budget experiment
 - Ebert spectrometers
 - lunar albedo
 - reflectance
 - terrestrial radiation

Earth analogs

(added June 2004)

DEF Structures, processes, or phenomena that occur on Earth, or have occurred in the Earths geologic past, extrapolated to other planets.

- GS analogies
 - . **Earth analogs**
- RT astronomical models
 - comparison
 - Earth planetary structure
 - planetary atmospheres
 - planetary geology
 - simulation
 - terrain analysis

Earth atmosphere

- GS **Earth atmosphere**
 - . chemosphere
 - . free atmosphere
 - . heterosphere
 - . homosphere
 - . lower atmosphere
 - . . troposphere
 - . . . tropopause
 - . middle atmosphere
 - . . mesosphere
 - . . . mesopause
 - . . stratosphere
 - . . . ozonosphere
 - . . . stratopause
 - . midlatitude atmosphere
 - . primitive Earth atmosphere
 - . upper atmosphere
 - . . Earth ionosphere
 - . . . E region
 - E-1 layer
 - E-2 layer
 - sporadic E layer
 - . . . lower ionosphere
 - . . . D region
 - . . . upper ionosphere
 - F region
 - F 1 region

- F 2 region
- . . exosphere
- . . thermosphere
- . . . turbopause
- RT acoustic sounding
- aerospace environments
- air
- air pollution
- air quality
- airglow
- ∞ atmospheres
- atmospheric circulation
- atmospheric composition
- atmospheric electricity
- atmospheric entry
- Atmospheric General Circulation Experiment
- auroras
- bioastronautics
- CERES (experiment)
- Earth magnetosphere
- environments
- geopotential height
- global air pollution
- GRACE mission
- greenhouse effect
- meteor trails
- MISR (radiometry)
- OPEN Project
- planetary atmospheres
- plasmasphere
- radiation belts
- satellite atmospheres
- scale height
- superrotation
- teleconnections (meteorology)
- weathering

Earth axis

DEF Any one of a set of mutually perpendicular reference axes established with the upright axis (the Z axis) pointing to the center of the Earth, used in describing the position or performance of an aircraft or other body in flight. The Earth axes may remain fixed or may move with the aircraft or other object.

- GS axes (reference lines)
 - . axes of rotation
 - . . **Earth axis**
- RT Chandler wobble
 - coordinates
 - Earth orientation
 - geodesy
 - polar wandering (geology)

Earth core

- GS cores
 - . planetary cores
 - . . **Earth core**
 - lithosphere
 - . **Earth core**
- RT core-mantle boundary
 - dynamo theory
 - geophysical fluids
 - structural properties (geology)

Earth crust

- UF *crustal dynamics*
- GS crusts
 - . planetary crusts
 - . . **Earth crust**
 - lithosphere
 - . **Earth crust**
- RT coesite
 - continental drift
 - core sampling
 - cratons
 - crustal fractures
 - Earth mantle
 - earthquake damage
 - faults (geology)
 - lunar crust
 - massifs
 - plates (tectonics)
 - San Andreas Fault
 - sea floor spreading
 - stishovite

structural properties (geology)

Earth cryosphere

(added June 1996)

DEF The part of the Earths surface that is perennially frozen - the zone of the Earth where ice and frozen ground are formed.

- RT air land interactions
 - air water interactions
- ∞ cryospheres
- ice environments
- meteorology
- permafrost
- polar caps
- snow cover

Earth currents

USE **telluric currents**

Earth Energy Budget Experiment

USE **LZEEBE satellite**

Earth environment

- GS environments
 - . **Earth environment**
- RT air pollution
 - arid lands
 - desertification
 - magnetosheath

Earth figure

USE **geodesy**

Earth gravitation

- GS gravitation
 - . **Earth gravitation**
- RT geomagnetism
 - geopotential
 - geopotential height
 - GRACE mission
 - gravitational fields
 - gravity anomalies

Earth hydrosphere

DEF That part of the Earth that consists of the oceans, seas, lakes, and rivers. Used for hydrosphere (Earth).

- UF *hydrosphere (Earth)*
- RT biosphere
 - hydrological cycle
 - hydrology
 - lakes
 - limnology
 - oceans
 - seas

Earth ionosphere

- SN (ALTITUDES ABOVE APPROXIMATELY 50 KM)
- GS Earth atmosphere
 - . upper atmosphere
 - . . **Earth ionosphere**
 - . . . E region
 - E-1 layer
 - E-2 layer
 - sporadic E layer
 - . . . lower ionosphere
 - D region
 - . . . upper ionosphere
 - F region
 - F 1 region
 - F 2 region
- RT atmospheric ionization
 - chemosphere
 - CRRES (satellite)
 - Earth magnetosphere
 - Earth-ionosphere waveguide
 - electrojets
 - exosphere
 - field aligned currents
 - heterosphere
 - homosphere
 - Intasat satellite
 - ion concentration
 - ion density (concentration)
 - ∞ ionospheres
 - ionospheric propagation
 - ionospheric storms
 - ∞ layers
 - magnetosphere-ionosphere coupling
 - mesosphere

Earth limb

midlatitude atmosphere
Polar/GGS spacecraft
regions
satellite atmospheres
shear layers
space weather
thermosphere

Earth limb

GS planetary limb
. **Earth limb**
RT astronomy
libration
∞ limbs

Earth magnetosphere

GS environments
. **Earth magnetosphere**
. . . geomagnetic tail
. . . magnetopause
. . . magnetosheath
RT AMPTE (satellites)
barium ion clouds
Chapman-Ferraro problem
Cluster Mission
corotation
CRRES (satellite)
Earth atmosphere
Earth ionosphere
exosphere
field aligned currents
geomagnetic hollow
geomagnetism
GEOS satellites (ESA)
heterosphere
IMAGE satellite
International Magnetospheric Explorer
International Magnetospheric Study
KP index
magnetic fields
∞ magnetospheres
neutral sheets
OPEN Project
planetary magnetospheres
plasma clouds
plasmopause
plasma sphere
polar cusps
Polar/GGS spacecraft
radiation belts
radiation trapping
satellite atmospheres
screen effect
solar planetary interactions
solar terrestrial interactions
solar wind velocity
space plasmas
space weather
thermosphere
Wind/GGS spacecraft

Earth magnetotail

USE **geomagnetic tail**

Earth mantle

DEF The zone of the Earth below the crust and above the core (to a depth of 3480 km), which is divided into the upper mantle and the lower mantle, with a transition zone between. Used for mantle (Earth structure).

UF *mantle (Earth structure)*
GS lithosphere
. **Earth mantle**
planetary mantles
. **Earth mantle**
RT asthenosphere
coesite
core-mantle boundary
Earth crust
lunar mantle
plates (tectonics)
regolith
sea floor spreading
siderophile elements
stishovite
structural properties (geology)

subduction (geology)

∞ Earth motion

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Chandler wobble
Earth movements
Earth orientation
Earth rotation
polar wandering (geology)
solar orbits

Earth movements

GS **Earth movements**
. earthquakes
. landslides
RT avalanches
crevasses
crustal fractures
∞ Earth motion
earthquake damage
geodynamics
large aperture seismic array
neotectonics
sea floor spreading
seismic waves
seismology
tectonics
tsunami waves

Earth observations (from space)

DEF The acquisition of Earth surface data from aircraft or spacecraft.

GS observation
. **Earth observations (from space)**
. . . satellite observation
RT aerial photography
Aqua spacecraft
Aura spacecraft
CALIPSO (Pathfinder satellite)
CERES (experiment)
CloudSat
data acquisition
Earth Observing System (EOS)
Earthnet
Feature Identification and Location
Exper
International Geosphere-Biosphere program
Landsat satellites
MODIS (radiometry)
multispectral band scanners
multispectral photography
observation scheduling
photography
Shuttle Imaging Radar
SPOT (French satellite)
Terra spacecraft

Earth Observing System (EOS)

DEF NASA's orbital multisensor observatory system for the long term acquisition of Earth sciences data to be operated in conjunction with an integrated ground-based science information system. This international system will become operational in 1995 when the first of four polar platforms will be launched. The first and third will be launched under U.S. auspices. The second under ESA auspices and the last under Japanese auspices.

UF *EOS*
GS **Earth Observing System (EOS)**
. Aqua spacecraft
. Aura spacecraft
. CALIPSO (Pathfinder satellite)
. CloudSat
. Terra spacecraft
RT Advanced Microwave Sounding Unit
CERES (experiment)
data products
Earth observations (from space)
EOS data and information system
Ice, Cloud and Land Elevation Satellite
information systems
Landsat 6
Landsat 7
MISR (radiometry)
Mission to Planet Earth

remote sensing
space platforms
space station payloads
space station polar platforms

Earth orbital environments

UF *GEO environments*
Geosynchronous Earth Orbital Environments
LEO environments
low Earth orbital environments
GS environments
. aerospace environments
. . **Earth orbital environments**
. . . extraterrestrial environments
. . . **Earth orbital environments**
RT extraterrestrial radiation
low Earth orbits
microgravity
near Earth objects
space weather
spacecraft glow

Earth orbital rendezvous

UF *EOB (rendezvous)*
GS maneuvers
. orbital maneuvers
. . orbital rendezvous
. . . **Earth orbital rendezvous**
rendezvous
. space rendezvous
. . orbital rendezvous
. . . **Earth orbital rendezvous**
RT lunar orbital rendezvous
orbital mechanics
rendezvous trajectories
spacecraft trajectories
transfer orbits

Earth orbiting space stations

USE **space stations**

Earth orbits

SN (ORBITS AROUND THE EARTH)
GS orbits
. **Earth orbits**
. . geosynchronous orbits
. . low Earth orbits
. . twenty-four hour orbits
RT apogees
Apollo asteroids
circular orbits
circumlunar trajectories
elliptical orbits
equatorial orbits
Hansen lunar theory
Hill lunar theory
Hill method
lunar orbits
Near Earth Asteroid Rendezvous Mission
orbital lifetime
orbital mechanics
parking orbits
perigees
planetary orbits
polar orbits
satellite orbits
spacecraft orbits
stationary orbits
transfer orbits

Earth orientation

RT Chandler wobble
Earth axis
∞ Earth motion
Earth rotation
nutiation
polar wandering (geology)
precession

Earth planetary structure

RT asthenosphere
continental drift
Earth analogs
geology
geophysics
hydrology
lithosphere
oceanography

- planetary composition
- planetary structure
- plates (tectonics)
- primitive Earth atmosphere
- structural properties (geology)
- ∞ structures
- tectonics

Earth radiation

USE **terrestrial radiation**

Earth radiation budget

- GS energy budgets
- . **Earth radiation budget**
- RT atmospheric heat budget
- atmospheric radiation
- ∞ budgets
- CERES (experiment)
- Earth albedo
- Earth radiation budget experiment
- heat budget
- Surface Meteorology and Solar Energy project
- Surface Radiation Budget project
- terrestrial radiation
- TRMM satellite

Earth radiation budget experiment

DEF Radiation measurements to determine the spatial and temporal variations of the Earth's radiance. The measurements have continued for the past two decades beginning with Explorer 7 in 1959 and through Nimbus 6 and 7. Used for ERBE.

UF *ERBE*

- GS payloads
- . Space Shuttle payloads
- . . **Earth radiation budget experiment**

- RT albedo
- CERES (experiment)
- Earth albedo
- Earth radiation budget
- ∞ radiation
- radiation measuring instruments
- terrestrial radiation

Earth resources

DEF Power sources and renewable or non-renewable materials occurring naturally on Earth.

- GS resources
- . **Earth resources**
- . . forests
- . . . rain forests
- . . fossil fuels
- . . . coal
- anthracite
- lignite
- solvent refined coal
- . . . crude oil
- . . natural gas
- . . . liquefied natural gas
- . . . peat
- . . . shale oil
- . . glaciers
- . . icebergs
- . . kerogen
- . . land ice
- . . marine resources
- . . oil fields
- . . range resources
- . . springs (water)
- . . tar sands
- . . thermal resources
- . . . geothermal resources
- geysers
- . . underwater resources
- . . water resources
- . . . aquifers

- RT alfalfa
- arid lands
- Baltic Shield (Europe)
- bedrock
- birds
- brush (botany)
- chaparral
- coastal ecology
- coastal plains
- corn

- cotton
- crop growth
- crop identification
- deciduous trees
- deserts
- Earthnet
- energy policy
- energy technology
- environment management
- environment pollution
- environmental surveys
- EROS (satellites)
- farm crops
- farmlands
- fishes
- flats (landforms)
- ∞ food
- forest management
- geographic applications program
- geothermal energy conversion
- grains (food)
- granite
- grasslands
- Great Basin (US)
- Great Lakes (North America)
- Great Salt Lake (UT)
- ground water
- habitats
- hay
- ice mapping
- imagery
- kettles (geology)
- keys (islands)
- land use
- Large Area Crop Inventory Experiment
- lava
- leguminous plants
- limestone
- mammals
- marshlands
- millet
- mineral deposits
- minerals
- Mississippi River (US)
- NASA Interactive Planning System
- oats
- oceanography
- photography
- photomapping
- plants (botany)
- reconnaissance
- regolith
- remote sensing
- remote sensors
- resources management
- rivers
- rocks
- rural land use
- sands
- sandstones
- scanning
- shales
- soils
- sorghum
- spaceborne photography
- spectral reconnaissance
- SPOT (French satellite)
- strip mining
- sugar beets
- sugar cane
- sunflowers
- surface water
- surveillance
- terrain analysis
- thermal mapping
- tidepower
- timber identification
- timber inventory
- tributaries
- vegetation
- vineyards
- waterwave energy
- waterwave energy conversion
- wharves

windpower utilization

Earth Resources Experiment Package
USE **EREP**

Earth Resources Information System

- GS information systems
- . **Earth Resources Information System**
- RT data systems
- EOS data and information system
- NASA programs
- programs
- Skylab program
- ∞ systems

Earth Resources Observation Satellites

USE **EROS (satellites)**

Earth Resources Program

- GS programs
- . NASA programs
- . . NASA space programs
- . . . **Earth Resources Program**
- Earth Resources Survey Program
- SEASAT program
- . . space programs
- . . . NASA space programs
- . . . **Earth Resources Program**
- Earth Resources Survey Program
- SEASAT program
- RT Apollo applications program
- change detection
- geographic applications program
- infrared radiometers
- Large Area Crop Inventory Experiment
- plant stress
- satellite observation
- Skylab program

Earth resources shuttle imaging radar

USE **Shuttle Imaging Radar**

Earth Resources Survey aircraft

- RT aerial photography
- aerial reconnaissance
- ∞ aircraft
- photogeology
- photoreconnaissance
- reconnaissance aircraft

Earth Resources Survey Program

- GS programs
- . NASA programs
- . . NASA space programs
- . . . Earth Resources Program
- **Earth Resources Survey Program**
- SEASAT program
- . . space programs
- . . . NASA space programs
- . . . Earth Resources Program
- **Earth Resources Survey Program**
- SEASAT program
- RT Apollo applications program
- Skylab program

Earth Resources Technology Satellite 1

USE **Landsat 1**

Earth Resources Technology Satellite B

USE **Landsat 2**

Earth Resources Technology Satellite C

USE **Landsat 3**

Earth Resources Technology Satellite D

USE **Landsat 4**

Earth Resources Technology Satellite E

USE **Landsat E**

Earth Resources Technology Satellite F

USE **Landsat F**

Earth Resources Technology Satellites

USE **Landsat satellites**

Earth rotation

- GS gyration

Earth sciences

- . rotation
- . . **Earth rotation**
- RT Chandler wobble
- ∞ Earth motion
- Earth orientation
- sidereal time
- superrotation

Earth sciences
(added December 1991)

- RT atmospheric physics
- Earth (planet)
- ecology
- geochemistry
- geodynamics
- geology
- geomagnetism
- geophysics
- hydrodynamics
- hydrology
- meteorology
- oceanography
- seismology

Earth shape

- USE **geodesy**

Earth surface

- GS lithosphere
- . **Earth surface**
- RT cratons
- crustal fractures
- equatorial regions
- geodetic accuracy
- marshlands
- ocean surface
- planetary surfaces
- structural properties (geology)
- ∞ surfaces
- terradyamics
- topography

Earth terminal measurement system

DEF NBS system for measuring electromagnetic parameters of communication satellites and ground stations relative to antenna gain, ratio of carrier power to operating noise temperature, and satellite effective isotropic power.

- RT communication satellites
- electromagnetic measurement
- electronic equipment tests
- ground support equipment
- ∞ measurement
- radio relay systems
- ∞ systems
- ∞ test equipment

Earth terminals

DEF Portable or stationary ground-based equipment used to transmit and receive signals and other data via satellites in communications networks.

- GS stations
- . ground stations
- . . **Earth terminals**
- RT carrier to noise ratios
- communication equipment
- radio relay systems
- satellite communication
- satellite transmission
- spacecraft communication
- television systems
- VSAT (network)

Earth tides

- GS tides
- . **Earth tides**
- RT atmospheric tides
- lunar tides

Earth Viewing Applications Laboratory

- UF *EVAl*
- GS laboratories
- . space laboratories
- . . **Earth Viewing Applications Laboratory**
- payloads
- . Space Shuttle payloads

- . . **Earth Viewing Applications Laboratory**
- RT SAIL project

Earth-ionosphere waveguide
(added August 1991)

DEF A natural waveguide consisting of the atmospheric duct formed by the ionospheric D region and the surface of the Earth making possible long-range communications in the 10KHz frequency range.

- GS waveguides
- . **Earth-ionosphere waveguide**
- RT D region
- Earth ionosphere
- ionospheric propagation
- plasmaguides
- radio transmission
- very low frequencies

Earth-Mars trajectories

- GS trajectories
- . spacecraft trajectories
- . . interplanetary trajectories
- . . . **Earth-Mars trajectories**
- RT elliptical orbits
- Mars exploration
- Mars missions
- orbital mechanics
- transfer orbits

Earth-Mercury trajectories

- GS trajectories
- . spacecraft trajectories
- . . interplanetary trajectories
- . . . **Earth-Mercury trajectories**
- RT elliptical orbits
- orbital mechanics
- transfer orbits

Earth-Moon system

- RT Charon
- gravitational fields
- gravitational waves
- lunar retroreflectors
- moon
- natural satellites
- orbital mechanics
- solar system
- ∞ systems
- two body problem

Earth-Moon trajectories

- GS trajectories
- . spacecraft trajectories
- . . lunar trajectories
- . . . **Earth-Moon trajectories**
- RT Apollo 5 flight
- Apollo 6 flight
- Apollo 7 flight
- Apollo 8 flight
- Apollo 9 flight
- Apollo 10 flight
- Apollo 11 flight
- Apollo 12 flight
- Apollo 13 flight
- Apollo 14 flight
- Apollo 15 flight
- Apollo 16 flight
- Apollo 17 flight
- circumlunar trajectories
- cislunar space
- interplanetary trajectories
- lunar flight
- lunar orbits
- moon-Earth trajectories
- parking orbits
- rendezvous trajectories
- round trip trajectories
- transfer orbits

Earthnet

- RT Earth observations (from space)
- Earth resources
- ESA satellites
- European space programs
- Landsat satellites
- remote sensors

- synthetic aperture radar

earthquake damage

- GS damage
- . **earthquake damage**
- RT Earth crust
- Earth movements
- geological faults
- microseisms
- seismic energy
- seismic waves
- seismology
- shock waves
- tsunami waves

earthquake resistance

DEF Structural strength of natural geological formations reacting to seismic forces.

- GS mechanical properties
- . **earthquake resistance**
- RT crustal fractures
- earthquakes
- fracture strength
- impact strength
- landforms
- ∞ resistance
- seismic waves
- shock resistance
- shock waves
- tremors

earthquake resistant structures

DEF Buildings and other structures designed for maximum safety and protection from the effects of earthquakes.

- RT concrete structures
- elastic bending
- ∞ elastic systems
- seismic waves
- shock waves
- structural vibration
- ∞ structures

earthquakes

DEF Sudden motions or tremblings in the Earth caused by the abrupt release of slowly accumulated strain.

- GS Earth movements
- . **earthquakes**
- RT crustal fractures
- earthquake resistance
- geological faults
- large aperture seismic array
- microseisms
- planetary quakes
- plates (tectonics)
- Rouse belts
- San Andreas Fault
- San Andreas Fault experiment
- seismic waves
- seismology
- shock waves
- subduction (geology)
- tremors
- tsunami waves

Earth-Venus trajectories

- GS trajectories
- . spacecraft trajectories
- . . interplanetary trajectories
- . . . **Earth-Venus trajectories**
- RT ∞ astronautics
- flight optimization
- interplanetary flight
- ∞ missions
- orbits
- space missions
- space navigation
- spacecraft reentry
- transfer orbits

EASEP

- UF *Early Apollo Surface Experiments Package*
- GS packages
- . instrument packages
- . . **EASEP**
- RT ∞ instruments
- lunar exploration
- payloads

∞ surfaces

East Germany
 UF *German Democratic Republic*
Peoples Democratic Republic of Germany

GS nations
 . **East Germany**

RT Central Europe
 Europe
 German space program
 Germany
 West Germany

East Pakistan
 USE **Bangladesh**

Eastern Hemisphere
 RT Earth (planet)
 geography
 ∞ hemispheres
 Western hemisphere

eating
 GS ingestion (biology)
 . **eating**

RT digesting

∞ food
 mastication
 space flight feeding
 swallowing
 synthetic food

Ebert spectrometers
 GS measuring instruments
 . optical measuring instruments
 . . **Ebert spectrometers**
 . radiation measuring instruments
 . . **Ebert spectrometers**
 . spectrometers
 . . **Ebert spectrometers**
 optical equipment
 . optical measuring instruments
 . . **Ebert spectrometers**

RT Earth albedo
 filter wheel infrared spectrometers
 infrared spectrometers
 ultraviolet spectrometers

EBF
 USE **externally blown flaps**

EBR-1 reactor
 USE **Experimental Breeder Reactor 1**

EBR-2 reactor
 USE **Experimental Breeder Reactor 2**

ebullition
 USE **boiling**

EBWR (reactor)
 USE **experimental boiling water reactors**

EC-121 aircraft
 USE **C-121 aircraft**

EC-135 aircraft
 USE **C-135 aircraft**

Eccentric Geophysical Observatory
 USE **EGO**

Eccentric Orbit Geophysical Observatory
 USE **EGO**

eccentric orbits
 GS orbits
 . **eccentric orbits**

RT circular orbits
 elliptical orbits
 Exosat satellite
 Lissajous figures

eccentricity
 RT abnormalities
 asymmetry
 balancing
 concentricity
 deviation
 ellipticity

elongation
 skewness
 symmetry
 variability
 variations

eccentrics
 UF *cranks*
 RT cams
 linkages

echelette gratings
 GS gratings (spectra)
 . **echelette gratings**

RT diffraction
 echelle gratings
 reflection

echelle gratings
(added August 1988)
 GS gratings (spectra)
 . **echelle gratings**

RT diffraction
 echelette gratings
 reflection

echelon faults
 USE **geological faults**

Echo 1 carrier rocket
 USE **Thor Delta launch vehicle**

Echo 1 satellite
 UF *A-11 satellite*
 GS artificial satellites
 . passive satellites
 . . Echo satellites
 . . . **Echo 1 satellite**

RT Thor Delta launch vehicle

Echo 2 satellite
 UF *A-12 satellite*
 GS artificial satellites
 . passive satellites
 . . Echo satellites
 . . . **Echo 2 satellite**
 unmanned spacecraft
 . **Echo 2 satellite**

Echo project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Echo project**
 . projects
 . . **Echo project**
 . space programs
 . . NASA space programs
 . . . **Echo project**

RT communication satellites
 passive satellites

Echo satellites
 GS artificial satellites
 . passive satellites
 . . **Echo satellites**
 . . . Echo 1 satellite
 . . . Echo 2 satellite

RT Agena B rocket vehicle
 Agena rocket vehicles

echo sounding
 GS sounding
 . **echo sounding**

RT deep scattering layers
 depth measurement
 echoes
 navigation aids
 sodar
 sonar
 sound localization
 sound ranging
 underwater acoustics

echo suppressors
 GS circuits
 . **echo suppressors**
 suppressors
 . **echo suppressors**

RT noise reduction
 pulse radar

radiotelephones
 sonar
 switches
 telephony
 voice communication

echocardiography
 GS bioengineering
 . biometrics
 . . cardiology
 . . . phonocardiography
 **echocardiography**

RT cardiac ventricles
 heart diseases
 heart function

echoencephalography
 DEF A diagnostic technique in which pulses of ultrasonic waves are beamed through the head from both sides, and echoes from the midstructures of the brain are recorded as graphic tracings.

GS bioengineering
 . biometrics
 . . **echoencephalography**

RT bioinstrumentation
 brain
 electrophysiology
 medical electronics
 medical equipment

echoes
 DEF Waves that have been reflected or otherwise returned with sufficient magnitude and delay to be detected as a wave distinct from that directly transmitted. In radar, a pulse of reflected radiofrequency energy; the appearance on a radar indicator of the energy returned from a target.

GS **echoes**
 . auroral echoes
 . lunar echoes
 . . lunar radar echoes
 . radar echoes
 . . angels (radar)
 . clutter
 . . lunar radar echoes
 . . solar radar echoes
 . . Venus radar echoes
 . radio echoes
 . signal reflection

RT acoustics
 cepstral analysis
 echo sounding
 ground effect (communications)
 noise (sound)
 reverberation

eclipse project
 GS programs
 . projects
 . . **eclipse project**

eclipses
 DEF The reductions in visibility or disappearances of nonluminous bodies by passing into the shadows cast by another nonluminous body. The apparent cutting off, wholly or partially, of the light from a luminous body by a dark body coming between it and the observer.

GS **eclipses**
 . lunar eclipses
 . solar eclipses

RT eclipsing binary stars
 lunar shadow
 occultation
 penumbras
 umbras

eclipsing binary stars
 GS celestial bodies
 . stars
 . . double stars
 . . . binary stars
 **eclipsing binary stars**
 dwarf novae
 Lambda Tauri stars
 Zeta Aurigae star

RT accretion disks
 cataclysmic variables

ecliptic

eclipses
stellar occultation
superhumps (astronomy)
symbiotic stars
variable stars
x ray binaries

ecliptic

DEF The apparent annual path of the sun among the stars; the intersection of the plane of the Earth's orbit with the celestial sphere. The ecliptic is a great circle of the celestial sphere inclined at an angle of about 23 degrees 27 minutes to the celestial equator.

RT planets
solar orbits
zodiac

eclogite

GS rocks
. igneous rocks
. . . **eclogite**
RT gadolinium-gallium garnet
garnets
pyroxenes
soils

ecological systems

USE **ecosystems**

ecology

DEF The study of the environmental relations of organisms. Used for ecological systems.

GS **ecology**
. coastal ecology
RT biochemical oxygen demand
∞ biology
biometeorology
carbon cycle
Central Atlantic Regional Ecol Test Site
closed ecological systems
coastal plains
Earth sciences
ecosystems
endangered species
energy policy
environments
Gaia hypothesis
habitability
habitats
phenology
predators
symbiosis
vegetation growth

e-commerce

(added April 2000)

USE **electronic commerce**

econometrics

DEF The application of mathematics and statistical techniques to the testing and quantifying of economic theories and the solution of economic problems.

RT ∞ applications of mathematics
economics
gross national product
statistical correlation

economic analysis

RT allocations
comparison
cost analysis
cost estimates
costs
economy
efficiency
management
operating costs
value engineering

economic development

RT commerce
developing nations
economy
geographic distribution
geography
industries
land use

manufacturing
resources
space industrialization
urban development

economic factors

RT allocations
budgeting
commercial energy
costs
developing nations
domestic energy
economy
efficiency
energy policy
feasibility analysis
industrial energy
insurance (contracts)
management
reserves
resources
transportation energy

economic impact

DEF The impact on the economy from whatever cause.

GS impact
. **economic impact**
RT costs
environments
industries
investments
resources

economics

DEF Study of the production, distribution, and consumption of goods and services.

GS **economics**
. demand (economics)
RT costs
econometrics
evaluation
fiduciaries
income
international trade
investments
prejudices
progress
recession
resources
statistical analysis

economy

RT cost estimates
decision making
economic analysis
economic development
economic factors
financial management
low cost
management planning
recycling

ecosystems

UF *ecological systems*
RT closed ecological systems
ecology
endangered species
food chain
Gaia hypothesis
predators
∞ systems

ECS

USE **European Communications Satellite**

Ecuador

GS nations
. **Ecuador**
RT South America

eddies

USE **vortices**

Eddington approximation

GS analysis (mathematics)
. numerical analysis
. . . approximation

. . . Eddington approximation

eddy currents

SN (LIMITED TO ELECTRIC CURRENTS)
DEF Electric currents caused to flow in a conductor by the time or space variation, or both, of an applied magnetic field.

GS electric current
. **eddy currents**
RT braking
electric conductors
electrical properties
hysteresis
losses
magnetic properties
∞ physical properties
plasma currents
vorticity transport hypothesis

eddy diffusion

USE **turbulent diffusion**

eddy viscosity

DEF The turbulent transfer of momentum by eddies giving rise to an internal fluid friction, in a manner analogous to the action of molecular viscosity in laminar flow, but taking place on a much larger scale.

GS transport properties
. viscosity
. . . **eddy viscosity**
RT Baldwin-Lomax turbulence model
flow characteristics
flow resistance
internal friction
large eddy simulation
turbulent flow
viscous drag
viscous flow

edema

GS signs and symptoms
. **edema**
RT body fluids
diuresis
water balance

edge cracks

(added October 1997)

GS fractures (materials)
. cracks
. . . **edge cracks**
RT cracking (fracturing)
edge loading
edges
stress intensity factors
surface cracks

edge detection

(added January 1990)

UF *boundary detection (imagery)*
GS detection
. **edge detection**
RT computer vision
image analysis
image processing
pattern recognition
scene analysis

edge dislocations

UF *slip bands*
GS defects
. crystal defects
. . . crystal dislocations
. . . **edge dislocations**
dislocations (materials)
. crystal dislocations
. . . **edge dislocations**
RT ∞ bands
kink bands
screw dislocations

edge loading

GS loads (forces)
. **edge loading**
RT aerodynamic loads
compression loads
dynamic loads
edge cracks
static loads

wing loading

edges
 GS **edges**
 . leading edges
 . . blunt leading edges
 . . sharp leading edges
 . trailing edges
 . . blunt trailing edges

RT edge cracks
 margins
 rims
 scalloping
 sides
 tips

editing
 RT data processing
 data reduction
 editing routines (computers)
 format
 technical writing

editing routines (computers)
 GS computer programs
 . **editing routines (computers)**
 RT computer systems programs
 data processing
 editing

EDTA
 USE **ethylenediaminetetraacetic acids**

education
 UF *instructions*
teaching
training
 GS **education**
 . ejection training
 . flight training
 . . pilot training
 . . space flight training
 . . . astronaut training
 . gunnery training
 . maintenance training
 . programmed instruction
 . . computer assisted instruction

RT behavior
 communicating
 creativity
 educational resources
 experience
 human factors engineering
 human resources
 instructors
 knowledge
 learning
 learning theory
 lectures
 memory
 ∞ orientation
 psychometrics
 qualifications
 retraining
 safety management
 schools
 students
 ∞ tests
 textbooks
 training analysis
 training devices
 transfer of training
 universities

educational resources
(added April 2004)
 DEF Products produced for educational or training purposes.
 GS **educational resources**
 . textbooks
 RT education
 learning
 manuals

educational television
 GS telecommunication
 . **educational television**
 television systems
 . **educational television**
 RT closed circuit television

color television
 communication equipment
 learning
 networks
 stereotelevision
 training devices

EEG (electroencephalograms)
 USE **electroencephalography**

effective perceived noise levels
 UF *EPNL*
 GS level (quantity)
 . **effective perceived noise levels**
 RT acoustic measurement
 acoustics
 loudness
 ∞ noise
 noise (sound)
 noise intensity
 noise reduction
 sound intensity

effectiveness
 GS **effectiveness**
 . cost effectiveness
 . system effectiveness
 RT antenna gain
 efficiency

∞ **effectors**
(added September 1989)
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT actuators
 control equipment
 end effectors
 manipulators

∞ **effects**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *affects*
 RT atmospheric effects
 Auger effect
 Barkhausen effect
 Bauschinger effect
 biological effects
 Brillouin effect
 brown wave effect
 capture effect
 causes
 Cerenkov radiation
 chemical effects
 Coanda effect
 compressibility effects
 Compton effect
 Coriolis effect
 diffusion
 Doppler effect
 Doppler-Fizeau effect
 electro-optical effect
 environment effects
 Ettingshausen effect
 Faraday effect
 field effect transistors
 Fizeau effect
 Forbush decreases
 galvanomagnetic effects
 gravitational effects
 green wave effect
 greenhouse effect
 ground effect (aerodynamics)
 ground effect (communications)
 ground effect machines
 Gunn effect
 Hall effect
 hydrodynamic ram effect
 isotope effect
 Jahn-Teller effect
 jet blast effects
 Joule-Thomson effect
 ∞ Kerr effects
 Kerr electrooptical effect
 Kerr magneto-optical effect
 Kirkendall effect
 Kondo effect
 long term effects
 lunar effects

lunar gravitational effects
 Luxembourg effect
 magnetic effects
 Magnus effect
 Moire effects
 Mossbauer effect
 Nernst-Ettingshausen effect
 nonohmic effect
 nuclear explosion effect
 Overhauser effect
 pathological effects
 Peltier effects
 Penning effect
 photoelectric effect
 photoelectromagnetic effects
 photomagnetic effects
 photomechanical effect
 photovoltaic effect
 physiological effects
 pinch effect
 POGO effects
 Portevin-le Chatelier effect
 Poynting-Robertson effect
 pressure effects
 proximity effect (electricity)
 psychological effects
 radiation effects
 Ramsauer effect
 reentry effects
 relativistic effects
 scale effect
 Schach effect
 screen effect
 Seebeck effect
 solar activity effects
 Stark effect
 sterilization effects
 Suhl effect
 Sunyaev-Zeldovich effect
 surface effect ships
 surface roughness effects
 sweep effect
 temperature effects
 thermoacoustic effects
 thermomagnetic effects
 turbulence effects
 Umkehr effect
 vacuum effects
 vibration effects
 view effects
 Voigt effect
 wind effects
 Zeeman effect
 Zener effect

efferent nervous systems
 UF *motor systems (biology)*
 GS anatomy
 . nervous system
 . . **efferent nervous systems**
 RT sensorimotor performance
 ∞ systems

effervescence
 RT boiling
 bubbles
 surface properties

efficiency
 GS **efficiency**
 . charge efficiency
 . combustion efficiency
 . compressor efficiency
 . energy conversion efficiency
 . nozzle efficiency
 . power efficiency
 . propulsive efficiency
 . . propeller efficiency
 . thermodynamic efficiency
 . transmission efficiency
 RT aircraft production costs
 comfort
 commonality
 compression ratio
 computer systems performance
 cost incentives
 cost reduction
 costs
 economic analysis
 economic factors

effluents

effectiveness
 feasibility
 figure of merit
 human factors engineering
 incentive techniques
 indexes (ratios)
 optimization
 ∞ performance
 productivity
 ratios
 utilization

effluents

RT air pollution
 contaminants
 ∞ discharge
 environment protection
 exhaust gases
 filtration
 liquid wastes
 reaction products
 settling
 sewage
 sewers
 volcanic eruptions
 waste disposal
 wastes

efflux

RT emission
 output

effort

RT abilities
 consistency
 fatigue (biology)
 ∞ performance
 physical work

effusives

GS **effusives**
 . lava
 RT cones (volcanoes)
 igneous rocks
 Mars volcanoes
 rocks
 volcanoes
 volcanology

EGCR (reactor)

USE **experimental gas cooled reactors**

eggs

GS cells (biology)
 . gametocytes
 . . **eggs**
 . . . zygotes
 RT embryos
 fetuses
 ∞ food
 ovaries

EGO

UF *Eccentric Geophysical Observatory*
Eccentric Orbit Geophysical Observatory
 EGO
 GS artificial satellites
 . geophysical satellites
 . . OGO
 . . . **EGO**
 observatories
 . geophysical observatories
 . . OGO
 . . . **EGO**
 RT Agena B rocket vehicle
 Atlas launch vehicles
 POGO

egress

RT air locks
 doors
 hatches
 ingress (spacecraft passageway)
 openings
 outlets

Egypt

GS nations
 . **Egypt**

RT Africa

EH-101 helicopter

(added April 1997)
 UF *Heliliner (helicopter)*
Merlin (helicopter)
 GS V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **EH-101 helicopter**
 RT ∞ aircraft
 commercial aircraft
 military helicopters

EHW (computers)

(added September 2001)

USE **evolvable hardware**

eigenfunctions

USE **eigenvectors**

eigenstates

USE **eigenvectors**

eigenvalues

UF *characteristic equations*
characteristic functions
 GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **eigenvalues**
 RT eigenvectors
 flux vector splitting
 Hill determinant
 Jacobi matrix method
 Jordan form
 polynomials
 roots of equations

eigenvectors

UF *characteristic equations*
characteristic functions
eigenfunctions
eigenstates
 GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **eigenvectors**
 . . vectors (mathematics)
 . . . **eigenvectors**
 RT eigenvalues
 Jacobi matrix method
 Mathieu function
 polynomials

eikonal equation

GS wave equations
 . **eikonal equation**
 RT ∞ equations
 geometrical optics
 Pomeranchuk theorem
 refracted waves
 wave fronts
 ∞ waves

Einstein equations

GS analysis (mathematics)
 . real variables
 . . **Einstein equations**
 RT Brownian movements
 diffusion
 diffusion theory
 ∞ equations
 equations of motion
 grand unified theory
 kinetic equations
 probability theory

Einstein Observatory

USE **HEAO 2**

einsteinium

GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **einsteinium**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements

. . . . **einsteinium**
 metals
 . actinide series
 . . transuranium elements
 . . . **einsteinium**
 RT einsteinium compounds

einsteinium compounds

GS actinide series compounds
 . **einsteinium compounds**
 RT einsteinium

EISCAT radar system (Europe)

DEF The European Incoherent Scatter Radar system. Used for European Incoherent Scatter Radar.

UF *European Incoherent Scatter Radar*
 GS radar

. incoherent scatter radar
 . . **EISCAT radar system (Europe)**

RT incoherent scattering
 international cooperation
 ionospheric propagation
 radar scattering
 radar transmission
 ∞ systems
 ultrahigh frequencies

ejecta

DEF Matter ejected during impact cratering processes, usually meteoritic.

RT cratering
 craters
 debris
 ejection
 fragments
 impact damage
 Mars craters
 meteorite craters
 meteoritic damage
 projectile cratering
 Wolf-Rayet stars

ejection

GS **ejection**
 . stellar mass ejection
 . . coronal mass ejection
 RT bailout
 ∞ discharge
 disconnect devices
 disposal
 dumping
 ejecta
 ejectors
 emission
 emptying
 escape (abandonment)
 escape systems
 evacuating (transportation)
 evacuating (vacuum)
 exhausting
 expulsion
 expulsion bladders
 flushing
 jettison systems
 jettisoning
 materials handling
 parachute descent
 releasing
 removal
 shedding
 throwing
 unloading

ejection injuries

GS injuries
 . **ejection injuries**
 RT bailout
 pilot training

ejection seats

GS onboard equipment
 . aircraft equipment
 . . **ejection seats**
 . . . flying ejection seats
 safety devices
 . **ejection seats**
 . . flying ejection seats
 seats
 . **ejection seats**

. . flying ejection seats
 RT abort apparatus
 aircraft safety
 bailout
 cockpits
 ejectors
 escape capsules
 escape systems
 jettison systems
 ∞ propellant actuated devices
ejection training
 GS education
 . **ejection training**
 RT astronaut training
 bailout
 escape (abandonment)
 flight training
 parachute descent
 pilot training
ejectors
 DEF Devices consisting of a nozzle, mixing tube, and diffuser utilizing the kinetic energy of a fluid from a low pressure region by direct mixing and ejecting both streams.
 RT dispensers
 ejection
 ejection seats
 exhaust diffusers
 exhaust nozzles
 exhaust systems
 flying ejection seats
 injectors
 jet engines
 jet pumps
 materials handling
 pumps
 rocket engines
 sprayers
 vacuum pumps
Ekman layer
 DEF The layer of transition between the surface boundary layer of the atmosphere, where the shearing stress is constant, and the free atmosphere, which is treated as an ideal fluid in approximate geostrophic equilibrium.
 RT atmospheric boundary layer
 boundary layer transition
 ∞ layers
 mixing layers (fluids)
 porous boundary layer control
 turbulent boundary layer
ekranoplanes
 (added December 1999)
 USE **wing-in-ground effect vehicles**
el Nino
 DEF A warming of the surface waters of the eastern equatorial Pacific Ocean that occurs at irregular intervals of 1-2 years, usually lasting 1-2 years.
 GS circulation
 . water circulation
 . . water currents
 . . . ocean currents
 **el Nino**
 RT air water interactions
 Madden-Julian Oscillation
 ocean temperature
 Pacific Ocean
 periodic variations
 quasi-biennial oscillation
 Southern Oscillation
 tropical meteorology
El Salvador
 GS nations
 . **El Salvador**
 RT Central America
Elara
 (added July 1995)
 DEF A natural satellite of Jupiter, orbiting at a mean distance of 11,737,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . Jupiter satellites

. . . **Elara**
 RT Jupiter (planet)
elastic anisotropy
 GS anisotropy
 . plastic anisotropy
 . . **elastic anisotropy**
elastic bars
 GS bars
 . **elastic bars**
elastic bending
 GS bending
 . **elastic bending**
 deformation
 . elastic deformation
 . . **elastic bending**
 RT earthquake resistant structures
elastic bodies
 RT ∞ bodies
 ∞ elastic systems
 elastodynamics
 elastostatics
 plastic bodies
elastic buckling
 GS buckling
 . **elastic buckling**
 deformation
 . elastic deformation
 . . **elastic buckling**
 RT failure modes
elastic collisions
 USE **elastic scattering**
elastic constants
 USE **elastic properties**
elastic cylinders
 RT ∞ cylinders
 cylindrical bodies
 cylindrical shells
elastic damping
 GS damping
 . **elastic damping**
 . . viscoelastic damping
 elastodynamics
 . **elastic damping**
 . . viscoelastic damping
 RT resonance testing
 vibration damping
 viscous damping
elastic deformation
 GS deformation
 . **elastic deformation**
 . . elastic bending
 . . elastic buckling
 RT axial strain
 bending
 Bordoni peaks
 deflection
 elastodynamics
 elastostatics
 flexible spacecraft
 plane strain
 plastic deformation
 prestressing
 strain distribution
 strain energy release rate
 stress-strain relationships
 stretching
 structural strain
 tensile deformation
elastic media
 GS media
 . **elastic media**
 RT elastodynamics
 elastostatics
elastic modulus
 USE **modulus of elasticity**
elastic plates
 GS structural members
 . plates (structural members)

. . **elastic plates**
 RT plastic bodies
 plastic plates
elastic properties
 DEF Properties of materials by virtue of which they tend to recover their original size and shape immediately after removal of the forces causing deformation. Used for elastic constants and elasticity.
 UF *elastic constants*
elasticity
 GS mechanical properties
 . **elastic properties**
 . . aeroelasticity
 . . . aeroservoelasticity
 . . . aerothermoelasticity
 . . anelasticity
 . . elastoplasticity
 . . hydroelasticity
 . . hypoelasticity
 . . magnetostriction
 . . modulus of elasticity
 . . . dynamic modulus of elasticity
 . . photoelasticity
 . . . photoviscoelasticity
 . . proportional limit
 . . thermoelasticity
 . . . aerothermoelasticity
 . . viscoelasticity
 . . . photoviscoelasticity
 . . . thermoviscoelasticity
 . . ferroelasticity
 RT Airy function
 biharmonic equations
 compressive strength
 elastodynamics
 elastometers
 elastostatics
 Euler-Bernoulli beams
 flexibility
 Hookes law
 hybrid structures
 influence coefficient
 microsonics
 microyield strength
 ∞ physical properties
 piezoelectricity
 plastic properties
 Poisson ratio
 propellant properties
 ∞ properties
 resilience
 softness
 strain energy release rate
 stress tensors
 tensile properties
 tensile strength
 yield strength
elastic scattering
 UF *elastic collisions*
 GS scattering
 . **elastic scattering**
 RT atomic collisions
 ∞ coherence
 coherent scattering
 electron scattering
 Glauber theory
 inelastic scattering
 nuclear scattering
 photon-electron interaction
 Pomeranchuk theorem
elastic sheets
 RT girder webs
 ∞ sheets
 webs (sheets)
 webs (supports)
elastic shells
 GS shells (structural forms)
 . **elastic shells**
 RT anisotropic shells

elastic systems

- plastic shells
- elastic stability*
- USE **damping**
- elastic strength*
- USE **proportional limit**
- ∞ **elastic systems**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT earthquake resistant structures
- elastic bodies
- ∞ systems
- elastic waves**
- UF *expansion waves*
- loading waves*
- pressure waves*
- rarefaction waves*
- GS **elastic waves**
- . capillary waves
- . . gravity waves
- . . . baroclinic waves
- . . ripples
- . coherent acoustic radiation
- . compression waves
- . dilatational waves
- . ionic waves
- . magnetoelastic waves
- . . magnetoacoustic waves
- . magnetohydrodynamic waves
- . . plasma waves
- . . . electrostatic waves
- . P waves
- . phonons
- . . phonon beams
- . polarized elastic waves
- . S waves
- . . SH waves
- . seismic waves
- . . Love waves
- . . microseisms
- . . Rayleigh waves
- . shock waves
- . . detonation waves
- . . interplanetary shock waves
- . . Mach cones
- . . normal shock waves
- . . oblique shock waves
- . . Riemann waves
- . . sonic booms
- . sound waves
- . . electroacoustic waves
- . . ion acoustic waves
- . . Lamb waves
- . . noise (sound)
- . . . aircraft noise
- blade slap noise
- jet aircraft noise
- propeller noise
- sonic booms
- . . . engine noise
- rocket engine noise
- . . . flow noise
- . . . thermal noise
- aerodynamic noise
- blade slap noise
- propeller noise
- screech tones
- . stress waves
- . Tollmien-Schlichting waves
- . ultrasonic radiation
- . unloading waves
- RT acoustic propagation
- acoustic simulation
- acoustics
- aeolian tones
- background noise
- backward waves
- cnoidal waves
- coherent radiation
- combustion vibration
- continuous radiation
- cylindrical waves
- diffusion waves
- Doppler effect
- elastodynamics
- elastohydrodynamics
- Lame wave equations
- longitudinal waves
- magnetohydrodynamic stability
- plane waves
- polarized radiation
- pressure
- pulsed radiation
- ∞ radiation
- radiation distribution
- radiation pressure
- rarefaction
- reflected waves
- refracted waves
- sine waves
- solitary waves
- sound transmission
- spherical waves
- stress propagation
- surface waves
- transverse waves
- traveling waves
- tropospheric waves
- underwater acoustics
- vibration
- wave dispersion
- ∞ waves
- elasticity*
- USE **elastic properties**
- elasticizers*
- USE **plasticizers**
- elastin**
- GS biopolymers
- . proteins
- . . **elastin**
- organic compounds
- . proteins
- . . **elastin**
- RT albumins
- elastodynamics**
- GS **elastodynamics**
- . elastic damping
- . . viscoelastic damping
- . . . elastohydrodynamics
- RT ∞ dynamics
- elastic bodies
- elastic deformation
- elastic media
- elastic properties
- elastic waves
- elastostatics
- electrorheological fluids
- elastohydrodynamics**
- GS elastodynamics
- . **elastohydrodynamics**
- mechanics (physics)
- . fluid mechanics
- . . fluid dynamics
- . . . hydrodynamics
- **elastohydrodynamics**
- . . . hydromechanics
- . . . hydrodynamics
- **elastohydrodynamics**
- RT ball bearings
- elastic waves
- friction measurement
- lubrication
- rotating cylinders
- squeeze films
- water waves
- elastomers**
- DEF Macromolecular materials which, at room temperature, are capable of recovering substantially in size and shape after removal of a deforming force.
- GS **elastomers**
- . rubber
- . . synthetic rubbers
- . . . Adiprene (trademark)
- . . . Buna (trademark)
- . . . silicone rubber
- RTV-40 rubber (trademark)
- RTV-60 rubber (trademark)
- . . . Viton rubber (trademark)
- . . . vulcanized elastomers
- RTV-40 rubber (trademark)
- RTV-60 rubber (trademark)
- . . . chloroprene resins
- RT latex
- organic materials
- plastics
- ∞ polymers
- solithanes
- sponges (materials)
- thioplastics
- elastometers**
- GS measuring instruments
- . **elastometers**
- RT elastic properties
- extensometers
- strain gages
- elastoplasticity**
- GS mechanical properties
- . elastic properties
- . . **elastoplasticity**
- . plastic properties
- . . **elastoplasticity**
- RT J integral
- plastic bodies
- plastic plates
- plastic shells
- superplastic forming
- elastostatics**
- RT elastic bodies
- elastic deformation
- elastic media
- elastic properties
- elastodynamics
- statics
- Elber equation**
- DEF In fatigue crack propagation studies, the effective stress range ratio $U = 0.5 + 0.4R$, where R is the stress ratio.
- RT crack closure
- cracks
- cyclic loads
- ∞ equations
- fractography
- fracture mechanics
- microcracks
- stress concentration
- stress cycles
- elbow (anatomy)**
- GS anatomy
- . limbs (anatomy)
- . . arm (anatomy)
- . . . **elbow (anatomy)**
- . musculoskeletal system
- . . joints (anatomy)
- . . . **elbow (anatomy)**
- appendages
- . arm (anatomy)
- . . **elbow (anatomy)**
- RT humerus
- ulna
- Eldo launch vehicle**
- GS launch vehicles
- . **Eldo launch vehicle**
- rocket vehicles
- . multistage rocket vehicles
- . . **Eldo launch vehicle**
- RT Ariane launch vehicle
- Blue Streak launch vehicle
- Europa launch vehicles
- European 1 spacecraft
- European Space Agency
- Electra aircraft**
- GS commercial aircraft
- . **Electra aircraft**
- jet aircraft
- . turboprop aircraft
- . . **Electra aircraft**
- Lockheed aircraft
- . **Electra aircraft**
- monoplanes
- . **Electra aircraft**
- passenger aircraft
- . **Electra aircraft**

transport aircraft
 . **Electra aircraft**
 RT ∞ aircraft

electrets
 RT capacitors
 Curie temperature
 dielectric polarization
 dielectrics
 electric energy storage
 electric fields
 energy storage
 magnets
 polarization (charge separation)

electric aircraft
 USE **fly by wire control**

electric appliances
 USE **electric equipment**

electric arcs
 DEF (1) a luminous discharge of electricity through a gas. (2) A prolonged electrical discharge or series of prolonged discharges between two electrodes with no physical contact between them.
 GS electric current
 . electric discharges
 . . **electric arcs**
 . . . carbon arcs
 . . . mercury arcs
 RT arc chambers
 arc discharges
 arc generators
 ∞ arcs
 coronas
 electrical faults
 flashover
 gas discharges
 glow discharges
 ionization
 light sources
 lightning
 magnetohydrodynamics
 planotrons
 plasma generators
 plasmas (physics)
 Saha equations
 short circuits

electric automobiles
 GS surface vehicles
 . motor vehicles
 . . automobiles
 . . . **electric automobiles**
 . . electric motor vehicles
 . . . **electric automobiles**
 RT transportation

electric batteries
 SN (INCLUDES BOTH RECHARGEABLE OR STORAGE BATTERIES AND NON-RECHARGEABLE BATTERIES FOR GENERATING CURRENT FROM A STORED CHEMICAL ENERGY SOURCE)
 UF *batteries*
 GS electrochemical cells
 . **electric batteries**
 . . nickel iron batteries
 . . primary batteries
 . . . alkaline batteries
 . . . dry cells
 magnesium cells
 nickel zinc batteries
 . . . metal air batteries
 zinc-oxygen batteries
 . . . sodium sulfur batteries
 . . thermal batteries
 . . Redox cells
 . . storage batteries
 . . . lead acid batteries
 . . . nickel cadmium batteries
 . . . nickel hydrogen batteries
 . . . nickel zinc batteries
 . . . silver cadmium batteries
 . . . silver hydrogen batteries
 . . . silver zinc batteries
 . . . zinc-bromide batteries
 . . . zinc-chlorine batteries
 . . lithium batteries

. . wet cells
 . . . lithium sulfur batteries
 RT auxiliary power sources
 battery chargers
 charge efficiency
 chemical auxiliary power units
 direct power generators
 ∞ electric cells
 ∞ electric power
 electrodes
 electrolytes
 electrolytic cells
 electromotive forces
 ∞ energy sources
 energy storage
 nonaqueous electrolytes
 ∞ power supplies
 pulse charging
 radioisotope batteries
 roadway powered vehicles
 space station power supplies
 spacecraft power supplies
 voltage converters (DC to DC)

electric bridges
 GS circuits
 . **electric bridges**
 . . wire bridge circuits
 . . . Wheatstone bridges
 RT ∞ bridges
 capacitors
 electrical measurement
 measuring instruments
 solid state devices

∞ **electric cells**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT amplifiers
 direct power generators
 electric batteries
 electric generators
 electrochemical cells
 electrolytic cells
 fission electric cells
 fuel cells
 Kerr cells
 lead acid batteries
 lithium sulfur batteries
 nonaqueous electrolytes
 photoelectric cells
 sodium sulfur batteries
 solar cells
 wet cells

electric charge
 GS **electric charge**
 . electric dipoles
 . . orbiting dipoles
 . electrostatic charge
 . ion charge
 . space charge
 . traveling charge
 RT capacitance
 ∞ charging
 ∞ dipoles
 electrical properties
 electrometers
 polarity
 polarization (charge separation)
 pulse charging
 SCATHA satellite

electric choppers
 SN (DEVICES FOR CONVERTING DC TO AC)
 UF *choppers (electric)*
 RT amplifiers
 mechanical oscillators

electric circuits
 USE **circuits**

electric coils
 GS **electric coils**
 . magnetic coils
 . . field coils
 . . magnet coils
 RT chokes
 ∞ coils
 ignition systems

impedance
 magnetic cores
 transformers

electric conductors
 UF *electrical leads*
 GS conductors
 . **electric conductors**
 . . beam leads
 . . conducting polymers
 . . electric wire
 RT ∞ conduction
 dielectrics
 eddy currents
 electrical insulation
 electrical resistivity
 electrostatic shielding
 insulators
 resistors
 semiconductors (materials)
 Sommerfeld waves
 thermal conductors
 transmission lines

electric connectors
 DEF Connecting devices, ordinarily designed for use in a fixed location to which a wire or wires of a circuit may be attached and that are arranged for the insertion of a plug. Used for jacks (electrical).
 UF *connectors (electric)*
jacks (electrical)
 GS connectors
 . **electric connectors**
 RT beam leads
 circuits
 disconnect devices
 electric terminals
 flat conductors
 ∞ jacks
 optical interconnects
 switches

electric contacts
 UF *contacts (electric)*
 RT brushes
 brushes (electrical contacts)
 commutators
 contact potentials
 contact resistance
 dropouts
 flat conductors
 ∞ relay
 ∞ sliding contact
 sliding friction
 switches

electric control
 UF *electrohydraulic control*
 RT automatic control
 ∞ control
 control equipment
 control systems design
 electronic control
 engine control
 numerical control
 optical control
 remote control
 solenoid valves
 voltage controlled oscillators

electric corona
 DEF A luminous, and often audible, electric discharge that is intermediate in nature between a spark discharge (with, usually, its single discharge channel) and a non point discharge (with its diffuse, quiescent, nonluminous character). Used for corona discharges.
 UF *corona discharges*
 GS coronas
 . **electric corona**
 electric current
 . electric discharges
 . . **electric corona**
 RT atmospheric electricity
 electrohydrodynamics
 glow discharges
 ionization
 solar corona

electric current

static electricity

electric current

- UF *amperage*
- electroseismic effect*
- Hall currents*
- photocurrents*
- GS **electric current**
 - . alternating current
 - . beam currents
 - . Brillouin flow
 - . direct current
 - . eddy currents
 - . electric discharges
 - . . . arc discharges
 - . . . electric arcs
 - carbon arcs
 - mercury arcs
 - . . . electric corona
 - . . . electric sparks
 - . . . electrodeless discharges
 - . . . flashover
 - . . . glow discharges
 - . . . lightning
 - ball lightning
 - cloud-to-cloud discharges
 - cloud-to-ground discharges
 - intracloud discharges
 - leaders (meteorology)
 - stepped leaders
 - multipactor discharges
 - Penning discharge
 - radio frequency discharge
 - Saint Elmo fire
 - Townsend discharge
 - gas discharges
 - toroidal discharge
 - ring discharge
 - . . . external surface currents
 - . . . field aligned currents
 - . . . Birkeland currents
 - . . . high current
 - . . . ionospheric currents
 - . . . Birkeland currents
 - . . . electrojets
 - auroral electrojets
 - equatorial electrojet
 - . . . Pedersen currents
 - . . . critical current
 - . . . dark current
 - . . . line current
 - . . . low currents
 - . . . plasma currents
 - . . . ring currents
 - . . . short circuit currents
 - . . . telluric currents
 - . . . threshold currents
 - RT ammeters
 - circuits
 - current converters (AC to DC)
 - current density
 - current regulators
 - current sheets
 - ∞ currents
 - ∞ electric power
 - electrical resistivity
 - electricity
 - high voltages
 - hydroelectricity
 - inverted converters (DC to AC)
 - Kirchhoff law of networks
 - levitation melting
 - Lienard potential
 - low conductivity
 - micromilliammeters
 - Ohms law
 - power conditioning
 - system generated electromagnetic pulses
 - transmission lines
 - volt-ampere characteristics

electric dipoles

- GS electric charge
- . **electric dipoles**
 - . . . orbiting dipoles
- RT ∞ dipoles
- magnetic dipoles

zwitterions

electric discharges

- DEF The flowing of electricity through a gas, resulting in the emission of radiation that is characteristic of the gas and the intensity of the current.
- GS electric current
- . **electric discharges**
 - . . . arc discharges
 - . . . electric arcs
 - carbon arcs
 - mercury arcs
 - electric corona
 - . . . electric sparks
 - . . . electrodeless discharges
 - . . . flashover
 - . . . glow discharges
 - . . . lightning
 - ball lightning
 - cloud-to-cloud discharges
 - cloud-to-ground discharges
 - intracloud discharges
 - leaders (meteorology)
 - stepped leaders
 - multipactor discharges
 - Penning discharge
 - radio frequency discharge
 - Saint Elmo fire
 - Townsend discharge
 - gas discharges
 - toroidal discharge
 - ring discharge
 - RT avalanches
 - coronas
 - ∞ discharge
 - duoplasmatrons
 - electron emission
 - electrostatic charge
 - ∞ flash
 - ionization
 - lightning suppression
 - Molniya satellites
 - plasma currents
 - space charge
 - Zener effect

electric energy storage

- GS energy storage
- . **electric energy storage**
- RT capacitors
- direct power generators
- electrets
- electrochemical capacitors
- inductors
- potential energy

∞ electric equipment

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *electric appliances*
- RT airborne equipment
- circuits
- current regulators
- electric generators
- electric power transmission
- electricity
- electromechanical devices
- electronic equipment
- heating equipment
- homopolar generators
- lighting equipment
- logistics
- miniature electronic equipment
- motors
- solenoid valves
- utilities
- voltage converters (AC to AC)
- voltage converters (DC to DC)
- welding machines

electric equipment tests

- SN (CHECKOUT OF ELECTRICAL EQUIPMENT)
- RT electrical measurement
- electronic equipment tests
- ground tests

∞ tests

electric field strength

- GS field strength
- . **electric field strength**
- RT Coulomb potential
- ∞ force
- H waves
- ∞ strength

electric fields

- UF *electrostatic fields*
- RT barium ion clouds
- cavitons
- constitutive equations
- Coulomb potential
- crossed fields
- crystal field theory
- dielectric polarization
- electrets
- electrodynamics
- electromagnetism
- electromechanics
- electrostatic charge
- electrostatics
- external surface currents
- field emission
- field strength
- ∞ fields
- Lienard potential
- magnetic fields
- Pedersen currents
- permittivity
- polarity
- spacecraft charging
- spark gaps
- Stark effect
- static electricity

electric filters

- GS electromagnetic wave filters
- . **electric filters**
 - . . . bandstop filters
 - . . . crystal filters
 - . . . digital filters
 - . . . FIR filters
 - . . . IIR filters
 - . . . microwave filters
 - . . . radar filters
 - . . . radio filters
 - . . . tracking filters
 - . . . waveguide filters
- RT adaptive filters
- bandpass filters
- capacitors
- circuits
- electronic filters
- ∞ filters
- high pass filters
- infrared filters
- Kalman filters
- linear filters
- low pass filters
- nonlinear filters
- optical filters
- RC circuits
- receivers
- reduced order filters
- resistors
- transformers
- tunable filters
- ultraviolet filters
- Wiener filtering

electric furnaces

- DEF Furnaces whose heat is derived from electrical energy, generally achieved through resistance heating. Materials research and space processing are research uses.
- GS heating equipment
- . furnaces
- . . **electric furnaces**
- RT ∞ materials
- space processing

electric fuses

- RT circuit protection
- disconnect devices

- ∞ fuses
- electric generators**
 - UF *electric power conversion*
 - electrogenerators*
 - power generators*
 - GS **electric generators**
 - . AC generators
 - . . linear alternators
 - . . static alternators
 - . direct power generators
 - . . DC generators
 - . . . homopolar generators
 - . . electrostatic generators
 - . . fuel cells
 - . . . biochemical fuel cells
 - . . . hydrogen oxygen fuel cells
 - . . . molten carbonate fuel cells
 - . . . phosphoric acid fuel cells
 - . . . regenerative fuel cells
 - . . . solid oxide fuel cells
 - . . magnetohydrodynamic generators
 - . . photoelectric generators
 - . . . photovoltaic cells
 - solar cells
 - vertical junction solar cells
 - . . primary batteries
 - . . . alkaline batteries
 - . . . dry cells
 - magnesium cells
 - nickel zinc batteries
 - . . . metal air batteries
 - zinc-oxygen batteries
 - . . . sodium sulfur batteries
 - . . . thermal batteries
 - . . . radioisotope batteries
 - SNAP 7
 - SNAP 9A
 - SNAP 11
 - SNAP 13
 - SNAP 15
 - SNAP 17
 - SNAP 19
 - SNAP 21
 - SNAP 23
 - SNAP 27
 - SNAP 29
 - . . thermionic converters
 - . . . SNAP 13
 - . . . solar blankets
 - . . thermoelectric generators
 - . . . SNAP 3
 - . . . SNAP 7
 - . . . SNAP 9A
 - . . . SNAP 10A
 - . . . SNAP 11
 - . . . SNAP 15
 - . . . SNAP 17
 - . . . SNAP 19
 - . . . SNAP 21
 - . . . SNAP 23
 - . . . SNAP 27
 - . . . SNAP 29
 - . . solar sea power plants
 - . . rotating generators
 - . . . amplidynes
 - . . . dynamometers
 - . . . homopolar generators
 - . . . turbogenerators
 - ASTEC solar turboelectric generator
 - . . . solar generators
 - solar auxiliary power units
 - ASTEC solar turboelectric generator
 - . . . solar cells
 - vertical junction solar cells
 - . . . solar dynamic power systems
 - RT aircraft power supplies
 - arc generators
 - armatures
 - auxiliary power sources
 - brushes
 - brushes (electrical contacts)
 - closed cycles
 - cogeneration
 - combined cycle power generation
 - ∞ conversion
 - ∞ converters
 - ∞ electric cells
 - ∞ electric equipment
 - electrical engineering
 - electromotive forces
 - ∞ energy sources
 - ∞ generators
 - nuclear electric power generation
 - ∞ power
 - power conditioning
 - ∞ power supplies
 - SNAP
 - solar ponds (heat storage)
 - static inverters
 - thermonuclear power generation
 - tide powered generators
 - windmills (windpowered machines)
 - windpowered generators
 - electric hybrid vehicles**
 - DEF Surface vehicles which utilize propulsion systems of both electric motors and conventional internal combustion engines.
 - GS surface vehicles
 - . **electric hybrid vehicles**
 - RT automobiles
 - internal combustion engines
 - ∞ rotating electrical machines
 - ∞ vehicles
 - electric ignition**
 - GS ignition
 - . **electric ignition**
 - RT igniters
 - ignition systems
 - spark ignition
 - squibs
 - starting
 - electric impulses*
 - USE **electric pulses**
 - electric moments**
 - GS electrical properties
 - . **electric moments**
 - moments
 - . dipole moments
 - . . **electric moments**
 - RT magnetic moments
 - polarization (charge separation)
 - electric motor vehicles**
 - GS surface vehicles
 - . motor vehicles
 - . . **electric motor vehicles**
 - . . . electric automobiles
 - RT automated transit vehicles
 - automobiles
 - crawler tractors
 - research vehicles
 - roadway powered vehicles
 - test vehicles
 - tractors
 - trucks
 - ∞ vehicles
 - electric motors**
 - GS electromechanical devices
 - . **electric motors**
 - . . asynchronous motors
 - . . induction motors
 - . . micromotors
 - . . piezoelectric motors
 - . . stepping motors
 - . . synchronous motors
 - . . torque motors
 - motors
 - . **electric motors**
 - . . asynchronous motors
 - . . induction motors
 - . . micromotors
 - . . piezoelectric motors
 - . . stepping motors
 - . . synchronous motors
 - . . torque motors
 - RT amplidynes
 - armatures
 - brushes
 - brushes (electrical contacts)
 - circuits
 - commutators
 - decommutators
 - power factor controllers
 - ∞ rotating electrical machines
 - servomechanisms
 - servomotors
 - stators
 - transformers
 - electric networks**
 - GS networks
 - . **electric networks**
 - RT impedance matching
 - sneak circuit analysis
 - voltage controlled oscillators
 - electric outlets**
 - RT ∞ power transmission
 - electric potential**
 - DEF In electrostatics, the work done in moving unit positive charge from infinity to the point whose potential is being specified. Used for voltage.
 - UF *voltage*
 - GS potential energy
 - . **electric potential**
 - . . bioelectric potential
 - . . contact potentials
 - . . Coulomb potential
 - . . high voltages
 - . . Lienard potential
 - . . low voltage
 - . . open circuit voltage
 - . . photovoltages
 - . . quantum wells
 - . . . photoexcitation
 - . . spike potentials
 - . . threshold voltage
 - RT Barritt diodes
 - bias
 - capacitance-voltage characteristics
 - electromotive forces
 - Gibbs-Helmholtz equations
 - ionization potentials
 - Kirchhoff law of networks
 - overvoltage
 - ∞ potential
 - potentiometers (instruments)
 - power conditioning
 - static electricity
 - transconductance
 - volt-ampere characteristics
 - ∞ **electric power**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - UF *electrical energy*
 - RT auxiliary power sources
 - electric batteries
 - electric current
 - electric power plants
 - electric propulsion
 - electrical properties
 - electricity
 - electrification
 - geothermal energy utilization
 - hydroelectricity
 - induction motors
 - Poynting theorem
 - tokamak devices
 - turbogenerators
 - utilities
 - voltage converters (AC to AC)
 - voltage converters (DC to DC)
 - electric power conversion*
 - USE **electric generators**
 - electric power plants**
 - GS **electric power plants**
 - . fuel cell power plants
 - . nuclear power plants
 - . . Enrico Fermi atomic power plant
 - . . Hallam Nuclear Power Facility
 - . . ML-1 nuclear power plant
 - . solar thermal electric power plants
 - RT cogeneration
 - combined cycle power generation
 - ∞ electric power
 - electrical engineering

electric power supplies

- ∞ facilities
- flue gases
- fly ash
- hydroelectric power stations
- integrated energy systems
- Modular Integrated Utility System
- ∞ power plants
- solar sea power plants

electric power supplies

- GS **electric power supplies**
 - . aircraft power supplies
 - . solar dynamic power systems
 - . space station power supplies
 - . spacecraft power supplies
- RT auxiliary power sources
- compulsators
- induction motors
- line current
- payload delivery (STS)
- ∞ power supplies

electric power transmission

- GS transmission
 - . **electric power transmission**
- RT circuit protection
- circuits
- ∞ conduction
- ∞ electric equipment
- electrical engineering
- electrification
- hydroelectric power stations
- poles (supports)
- power lines
- ∞ power transmission
- superconducting power transmission
- transmission circuits
- transmission lines
- transmission loss
- underground transmission lines

electric propulsion

- SN (EXCLUDES PROPULSION USING ELECTRIC MOTORS AS PRIME MOVERS)
- DEF A general term encompassing all the various types of propulsion in which the propellant consists of charged electrical particles which are accelerated by electrical or magnetic fields, or both; for example, electrostatic propulsion, electromagnetic propulsion, and electrothermal propulsion.
- GS propulsion
 - . **electric propulsion**
 - . . electromagnetic propulsion
 - . . . magnetic sails
 - . . electrostatic propulsion
 - . . . ion propulsion
 - . . laser propulsion
 - . . plasma propulsion
 - . . solar electric propulsion
- RT arc jet engines
- ∞ electric power
- Hall thrusters
- low thrust propulsion
- marine propulsion
- nuclear electric propulsion
- plasma power sources
- RIFT (reactor in flight test)
- SERT 1 spacecraft
- SERT 2 spacecraft
- space station propulsion
- spacecraft propulsion
- two stage plasma engines
- underwater propulsion

electric pulses

- UF *electric impulses*
- GS pulses
 - . **electric pulses**
- RT electromagnetic missiles
- electromagnetic pulses
- pulse amplitude
- pulse duration
- pulse generators
- pulse modulation
- pulse rate
- ∞ signals

system generated electromagnetic pulses

electric reactors

- GS **electric reactors**
 - . saturable reactors
- RT capacitors
- circuit protection
- ∞ reactors
- resistors
- transformers

electric relays

- SN (EXCLUDES COMMUNICATION SYSTEM REPEATERS)
- GS switches
 - . **electric relays**
- RT armatures
- circuit breakers
- disconnect devices
- interruption
- ∞ relay
- selectors
- solenoid valves
- solenoids
- switching circuits
- time lag

electric rocket engines

- GS engines
 - . rocket engines
 - . . **electric rocket engines**
 - . . . electrostatic engines
 - ion engines
 - cesium engines
 - Hall thrusters
 - mercury ion engines
 - RIT engines
 - . . . electrothermal engines
 - arc jet engines
 - pulsed jet engines
 - resistojet engines
 - . . . plasma engines
 - magnetoplasmadynamic thrusters
 - pulsed inductive thrusters
 - pulsed plasma thrusters
 - two stage plasma engines
 - VASIMR (propulsion system)
- RT magnetic nozzles
- microrocket engines
- restartable rocket engines
- SERT 1 spacecraft
- SERT 2 spacecraft
- space electric rocket tests
- sustainer rocket engines
- Vernier engines

electric sparks

- UF *spark discharges*
- GS electric current
 - . electric discharges
 - . . **electric sparks**
 - sparks
 - . **electric sparks**
- RT flashover
- gas discharges
- ionization
- lightning
- spark chambers
- spark gaps
- spark ignition
- spark plugs
- static electricity

electric stimuli

- RT ∞ stimuli

electric switches

- GS switches
 - . **electric switches**
 - . . cryotrons
 - . . stepping switches
 - . . thermostats
 - . . vacuum arc switches
- RT contactors
- cryostats
- current regulators
- dropouts
- electronic control

pressure switches

solenoid valves

switching circuits

voltage regulators

electric terminals

- RT electric connectors
- network analysis
- ∞ terminals

electric welding

- GS welding
 - . fusion welding
 - . . **electric welding**
 - . . . arc welding
 - gas tungsten arc welding
 - plasma arc welding
 - electroslog welding
 - flash welding
- RT electron beam welding
- pressure welding
- spot welds
- welding machines

electric wire

- UF *electric wiring*
- GS conductors
 - . electric conductors
 - . . **electric wire**
 - wire
 - . **electric wire**
- RT bus conductors
- circuits
- communication cables
- electrical insulation
- exploding wires
- flat conductors
- power lines
- transmission lines
- wire bridge circuits

electric wiring

- USE **electric wire wiring**

electrical breakdown

- USE **electrical faults**

electrical conductivity

- USE **electrical resistivity**

electrical conductivity meters

- GS measuring instruments
 - . conductivity meters
 - . . **electrical conductivity meters**
- RT ohmmeters

electrical energy

- USE **electric power**

electrical engineering

DEF Branch of engineering related to the design, development, and operation of electrical devices and systems.

- RT electric generators
- electric power plants
- electric power transmission
- ∞ electronics
- ∞ engineering
- ∞ power transmission
- systems engineering
- transmission lines
- turbogenerators

electrical faults

- UF *electrical breakdown*
- voltage breakdown*
- GS **electrical faults**
 - . short circuits
- RT ∞ breakdown
- circuit protection
- electric arcs
- failure
- ∞ faults
- flashover
- sneak circuit analysis
- spark gaps

electrical grounding

- RT circuit protection
- circuits

noise reduction
transformers

electrical impedance

UF *admittance*
impittance
GS electrical properties
 . **electrical impedance**
 . . . electrical resistance
 contact resistance
 Hall resistance
 skin resistance
 . . . transconductance
 . . reactance
 impedance
 . **electrical impedance**
 . . . electrical resistance
 contact resistance
 Hall resistance
 skin resistance
 . . . transconductance
 . . reactance
RT capacitance
impedance matching
impedance measurement
inductance
latch-up
ohmmeters
Smith chart

electrical insulation

DEF A material of relatively low electrical conductivity and high dielectric strength, usually used to support or provide electrical separation for conductors, in which a voltage applied between two points on or within the material produces a small and sometimes negligible current.
UF *nonconductors*
GS insulation
 . **electrical insulation**
RT asbestos
circuit protection
dielectrics
electric conductors
electric wire
excitons
∞ insulated structures
insulators
wiring

electrical leads

USE **electric conductors**

electrical measurement

SN (MEASUREMENT OF ELECTRICAL PROPERTIES, QUANTITIES, OR CONDITIONS)
UF *voltage measurement*
GS **electrical measurement**
 . coulometry
 . polarography
RT ammeters
bolometers
coulometers
electric bridges
electric equipment tests
electromagnetic measurement
electrometers
electronic equipment tests
flowmeters
impedance measurement
magnetometers
∞ measurement
measuring instruments
micromilliammeters
mismatch (electrical)
ohmmeters
oscillographs
potentiometers (instruments)
wattmeters

electrical properties

UF *Bardeen approximation*
GS **electrical properties**
 . antiferroelectricity
 . capacitance
 . capacitance-voltage characteristics
 . carrier mobility
 . . . electron mobility
 . . . hole mobility

. . charge distribution
. . dielectric properties
. . . dielectric loss
. . . permittivity
. . electric moments
. . electrical impedance
. . . electrical resistance
. . . . contact resistance
. . . . Hall resistance
. . . . skin resistance
. . . transconductance
. . reactance
. . electrical resistivity
. . ionospheric conductivity
. . magneto-resistivity
. . photoconductivity
. . plasma conductivity
. . superconductivity
. . . Kondo effect
. . electrostriction
. . ferroelectricity
. . inductance
. . proximity effect (electricity)
. . photovoltaic effect
. . piezoelectricity
. . pyroelectricity

RT ∞ conductivity
crystal oscillators
diamagnetism
dipole moments
domains
eddy currents
electric charge
∞ electric power
electricity
electromagnetic properties
field strength
hysteresis
impedance
magnetic properties
open circuit voltage
optical properties
photoelectric emission
photoelectricity
∞ physical properties
∞ properties
 quality control
∞ resistance
∞ solid state physics
 standing wave ratios

electrical resistance

GS electrical properties
 . electrical impedance
 . . **electrical resistance**
 . . . contact resistance
 . . . Hall resistance
 . . . skin resistance
 . . . transconductance
 impedance
 . electrical impedance
 . . **electrical resistance**
 . . . contact resistance
 . . . Hall resistance
 . . . skin resistance
 . . . transconductance
RT galvanic skin response
∞ high resistance
 linear circuits
∞ low resistance
 Manganin (trademark)
 ohmmeters
 Ohms law
 RC circuits
 reactance
∞ resistance
 RL circuits
 RLC circuits

electrical resistivity

DEF A factor such that the conduction-current density is equal to the electric field in the material divided by resistivity.
UF *electrical conductivity*
electroconductivity
resistivity
GS electrical properties
 . **electrical resistivity**
 . . ionospheric conductivity

. . magneto-resistivity
. . photoconductivity
. . plasma conductivity
. . superconductivity
. . . Kondo effect
transport properties
 . **electrical resistivity**
 . . ionospheric conductivity
 . . magneto-resistivity
 . . photoconductivity
 . . plasma conductivity
 . . superconductivity
 . . . Kondo effect
RT air conductivity
atmospheric conductivity
carrier mobility
∞ conductivity
 electric conductors
 electric current
 electromigration
 Hall resistance
 high temperature superconductors
 low conductivity
 open circuit voltage
 plasma currents
∞ resistance

electrically suspended gyroscopes
USE **electrostatic gyroscopes**

electricity

GS **electricity**
 . alternating current
 . atmospheric electricity
 . . ionospheric currents
 . . . Birkeland currents
 . . . electrojets
 auroral electrojets
 equatorial electrojet
 . . . Pedersen currents
 . geoelectricity
 . . telluric currents
 . hydroelectricity
 . static electricity
RT electric current
∞ electric equipment
∞ electric power
 electrical properties
 electromagnetism
∞ electronics
 lightning
 Maxwell equation
 Ohms law
 photoelectricity
 piezoelectricity
 proximity effect (electricity)

electrification

RT ∞ electric power
 electric power transmission
∞ power transmission
 transmission lines

electroacoustic transducers

DEF Transducers for receiving waves from an electric system and delivering waves to an acoustic system, or vice versa. Microphones and earphones are electroacoustic transducers.
GS transducers
 . sound transducers
 . . **electroacoustic transducers**
 . . . hydrophones
 . . . loudspeakers
 . . . microphones
RT electroacoustics
interdigital transducers
surface acoustic wave devices

electroacoustic waves

GS elastic waves
 . sound waves
 . . **electroacoustic waves**
RT electroacoustics
electromagnetic radiation
plasma waves
pressure sensors
wave interaction

electroacoustics

∞ waves

electroacoustics

GS acoustics

. **electroacoustics**

RT electroacoustic transducers

electroacoustic waves

sound transducers

surface acoustic wave devices

ultrasonic wave transducers

ultrasonics

electroactive polymers

(added June 2000)

UF *EAP (polymers)*

RT actuators

conducting polymers

electromechanical devices

electrorheological fluids

electrostriction

microelectromechanical systems

∞ polymers

robot arms

electroanesthesia

GS anesthesia

. **electroanesthesia**

RT electronarcosis

electrocardiograms

USE **electrocardiography**

electrocardiography

UF *electrocardiograms*

GS bioengineering

. biometrics

. . . cardiology

. . . **electrocardiography**

RT ballistocardiography

body measurement (biology)

electrophysiology

heart diseases

medical electronics

muscles

phonocardiography

vectorcardiography

electrocatalysts

UF *fuel cell catalysts*

GS catalysts

. **electrocatalysts**

RT fuel cells

electrochemical capacitors

(added September 2003)

DEF Devices that store energy in the electric field of an electrochemical double-layer.

UF *double-layer capacitors*

supercapacitors

ultracapacitors

GS capacitors

. **electrochemical capacitors**

RT electric energy storage

electrochemical cells

DEF Electrochemical systems consisting of an anode and a cathode in metallic contact and immersed in an electrolyte. (The anode and cathode may be different metals or dissimilar areas on the same metal surface).

GS **electrochemical cells**

. electric batteries

. . nickel iron batteries

. . primary batteries

. . . alkaline batteries

. . . dry cells

. . . . magnesium cells

. . . . nickel zinc batteries

. . . . metal air batteries

. . . . zinc-oxygen batteries

. . . sodium sulfur batteries

. . . thermal batteries

. . Redox cells

. . storage batteries

. . . lead acid batteries

. . . nickel cadmium batteries

. . . nickel hydrogen batteries

. . . nickel zinc batteries

. . . silver cadmium batteries

. . . silver hydrogen batteries

. . . silver zinc batteries

. . . zinc-bromide batteries

. . . zinc-chlorine batteries

. . lithium batteries

. . wet cells

. . . lithium sulfur batteries

. fuel cells

. . biochemical fuel cells

. . hydrogen oxygen fuel cells

. . molten carbonate fuel cells

. . phosphoric acid fuel cells

. . regenerative fuel cells

. . solid oxide fuel cells

RT ∞ cells

∞ electric cells

electrochemistry

photoelectric cells

photoelectrochemical devices

photovoltaic cells

electrochemical corrosion

GS corrosion

. **electrochemical corrosion**

RT electrodisolution

electrolysis

metal-water reactions

electrochemical machining

UF *electrolytic grinding*

GS machining

. chemical machining

. . **electrochemical machining**

RT electropolishing

electrochemical oxidation

GS chemical reactions

. oxidation

. . **electrochemical oxidation**

electrochemical synthesis

(added January 2000)

DEF A chemical synthesis reaction that is induced by an electric current.

UF *electrosynthesis*

GS synthesis (chemistry)

. **electrochemical synthesis**

RT electrochemistry

electrolysis

polymerization

electrochemistry

DEF The branch of science and technology which deals with transformations between chemical and electrical energy.

GS **electrochemistry**

. electrolysis

. . coulometry

. photoelectrochemistry

RT ∞ chemistry

corrosion

coulometers

electrochemical cells

electrochemical synthesis

electrochromism

electrodeposition

electrodes

electrodissolution

electrolytes

electrolytic cells

electrophysics

fuel cells

glass electrodes

nonaqueous electrolytes

oxidation-reduction reactions

Redox cells

electrochromism

DEF A phenomenon whereby a select number of solid materials will change color when an electric field is applied.

RT chromophores

color

display devices

electrochemistry

electro-optics

thin films

electroconductivity

USE **electrical resistivity**

electrocuteaneous communication

GS communicating

. **electrocuteaneous communication**

RT perception

sensory perception

touch

electrode dark current

(added October 1997)

USE **dark current**

electrode film barriers

RT ∞ barriers

electrodes

∞ films

polarization (charge separation)

thin films

electrode materials

RT anions

anodes

anodic coatings

cathodes

cathodic coatings

cell anodes

cell cathodes

electrodes

mischmetal

photocathodes

photoelectric cells

photoelectric materials

photoelectrochemical devices

polypyrroles

tube anodes

electrodeless discharges

GS electric current

. electric discharges

. . **electrodeless discharges**

RT ∞ discharge

gas discharges

glow discharges

lightning

Penning discharge

radio frequency discharge

ring discharge

toroidal discharge

Townsend discharge

electrodeposition

GS deposition

. **electrodeposition**

. . electroplating

RT

cathodic coatings

cell cathodes

coulometers

electrochemistry

electroforming

electroless deposition

electrolysis

electrolytes

electrolytic cells

electrophoresis

electrowinning

metal matrix composites

metal powder

plating

powder metallurgy

reduction (chemistry)

electrodermal response

USE **galvanic skin response**

electrodes

DEF Terminals at which electricity passes from one medium into another. The positive electrodes are called the anodes; the negative electrodes are called the cathodes. In semiconductor devices, elements that perform one or more of the functions of emitting or collecting electrons or holes, or of controlling their movements by electric fields. In electron tubes, conducting elements that perform one or more of the functions of emitting, collecting, or control-

ling by electromagnetic fields, the movements of electrons or ions.

- GS **electrodes**
 - . anodes
 - . . cell anodes
 - . . shell anodes
 - . . tube anodes
 - . cathodes
 - . . cell cathodes
 - . . hollow cathodes
 - . . tube cathodes
 - . . . cold cathodes
 - . . . hot cathodes
 - . . . photocathodes
 - . . . thermionic cathodes
 - . . . tunnel cathodes
 - . diffusion electrodes
 - . dynodes
 - . glass electrodes
 - . implanted electrodes (biology)
 - . ion selective electrodes
 - . plasma electrodes
 - . solid electrodes
 - . tube grids
- RT
 - cold cathode tubes
 - electric batteries
 - electrochemistry
 - electrode film barriers
 - electrode materials
 - electrolysis
 - electroplating
 - electrorefining
 - electrowinning
 - graphite
 - photomultiplier tubes
 - phototubes
 - Tafel law
 - transconductance

electrodialysis

- GS dialysis
 - . **electrodialysis**
- RT colloids
- hydrometallurgy
- ∞ separation

electrodissolution

- RT dissociation
- electrochemical corrosion
- electrochemistry
- electrolysis

electrodynamics

DEF The science dealing with the forces and energy transformations of electric currents and the magnetic fields associated with them.

- GS **electrodynamics**
 - . electrohydrodynamics
 - . electromechanics
 - . quantum electrodynamics
- RT Born-Infeld theory
- ∞ dynamics
 - electric fields
 - electromagnetic interactions
 - electromechanical devices
 - line current
 - Maxwell equation
 - ponderomotive forces
 - traveling charge

electrodynamometers

USE **dynamometers**

electroencephalogram

USE **electroencephalography**

electroencephalography

- UF *EEG (electroencephalograms)*
- electroencephalogram*
- GS bioengineering
 - . biometrics
 - . . **electroencephalography**
- RT arousal
- body measurement (biology)
- brain
- electrophysiology
- medical electronics

medical equipment

electroepitaxy

DEF Crystal growth process achieved by passing an electric current through the substrate solution.

- GS growth
 - . crystal growth
 - . . epitaxy
 - . . . **electroepitaxy**
- RT crystals
 - hydrothermal crystal growth
 - liquid phases
 - traveling solvent method

electroerosion

USE **spark machining**

electroexplosive devices

USE **initiators (explosives)**

electroforming

- GS forming techniques
 - . **electroforming**
- RT deposition
 - electrodeposition
 - electroless deposition
 - electroplating
 - spark machining

electrogenerators

USE **electric generators**

electrohydraulic control

USE **electric control hydraulic control**

electrohydraulic forming

- GS forming techniques
 - . cold working
 - . . **electrohydraulic forming**
- RT explosive forming
- metal working

electrohydrodynamics

- GS electrodynamics
 - . **electrohydrodynamics**
 - mechanics (physics)
 - . fluid mechanics
 - . . fluid dynamics
 - . . . hydrodynamics
 - **electrohydrodynamics**
 - . . hydromechanics
 - . . . hydrodynamics
 - **electrohydrodynamics**
- RT electric corona
- electrokinetics
- electron gas
- electron mobility
- ion distribution
- ionic mobility
- magnetohydrodynamics

electrojets

DEF Laterally limited, relatively intense electric currents located in the ionosphere.

- GS electric current
 - . ionospheric currents
 - . . **electrojets**
 - . . . auroral electrojets
 - . . . equatorial electrojet
- electricity
 - . atmospheric electricity
 - . . ionospheric currents
 - . . . **electrojets**
 - auroral electrojets
 - equatorial electrojet
- RT Birkeland currents
- Earth ionosphere
- geomagnetism
- ionospheric conductivity
- ionospheric drift
- ring currents

electrokinetics

- GS kinetics
 - . **electrokinetics**
- RT electrohydrodynamics
- electromagnetic fields
- electromechanics

electrophysics

electroless deposition

DEF Controlled autocatalytic reduction method of depositing coatings.

- GS deposition
 - . **electroless deposition**
- RT coatings
 - electrodeposition
 - electroforming
 - metal coatings
 - plating
 - vacuum deposition
 - vapor deposition

electroluminescence

DEF Emission of light caused by an application of electric fields to solids or gases. In gas electroluminescence, light is emitted when the kinetic energy of electron or ions accelerated in an electric field is transferred to the atoms or molecules of the gas in which the discharge takes place. Used for electroluminescent lamps.

- UF *electroluminescent lamps*
- GS emission
 - . light emission
 - . . luminescence
 - . . . **electroluminescence**
- RT electro-optics
- light emitting diodes
- light sources
- porous silicon

electroluminescent lamps

USE **electroluminescence luminaires**

electrolysis

DEF The production of chemical changes by the passage of current through an electrolyte.

- GS electrochemistry
 - . **electrolysis**
 - . . coulometry
- RT corrosion
 - coulometers
 - cracking (chemical engineering)
 - current density
 - decomposition
 - electrochemical corrosion
 - electrochemical synthesis
 - electrodeposition
 - electrodes
 - electrodissolution
 - electrolytes
 - electrolytic cells
 - electroplating
 - hydrogen production
 - ionic mobility
 - metathesis
 - passivity
 - photolysis
 - reduction (chemistry)
 - Tafel law
 - water splitting

electrolyte metabolism

- GS metabolism
 - . **electrolyte metabolism**
- RT aerospace medicine
- aldosterone
- blood plasma
- body fluids
- physiological effects
- potassium
- sodium
- weightlessness

electrolytes

- GS conductors
 - . **electrolytes**
 - . . anolytes
 - . . catholytes
 - . . ion exchange membrane electrolytes
 - . . jumpers
 - . . molten salt electrolytes
 - . . nonaqueous electrolytes
 - . . solid electrolytes
- RT conducting fluids
- Debye-Huckel theory

electrolytic cells

electric batteries
electrochemistry
electrodeposition
electrolysis
electrolytic cells
electroplating
electrorefining
electrowinning
fuel cells
ions
nonelectrolytes
primary batteries
Redox cells
storage batteries
wet cells

electrolytic cells

DEF Unit apparatus in which electrochemical reactions are produced by applying electrical energy, or which supply electrical energy as a result of chemical reactions and which include two or more electrodes and one or more electrolytes contained in a suitable vessel. Used for galvanic cells.

UF *galvanic cells*

RT ∞ cells

∞ diaphragms
diaphragms (mechanics)
diffusion electrodes
electric batteries
∞ electric cells
electrochemistry
electrodeposition
electrolysis
electrolytes
electroplating
electrorefining
electrowinning
ionic mobility
lead acid batteries
nonaqueous electrolytes
phosphoric acid fuel cells

electrolytic grinding

USE **electrochemical machining**

electrolytic polarization

GS polarization (charge separation)

. **electrolytic polarization**

RT depolarization
magnesium cells

electrolytic polishing

USE **electropolishing**

electromagnetic absorption

UF *ionospheric absorption*
light absorption

magnetic absorption
optical absorption

GS energy absorption
. radiation absorption
. . **electromagnetic absorption**

. . . auroral absorption
. . . gamma ray absorption
. . . infrared absorption
. . . microwave absorption
. . . multiphoton absorption
. . . photoabsorption
. . . polar cap absorption
. . . ultraviolet absorption
. . . x ray absorption

RT absorbers (materials)

absorbance
∞ absorption
absorption spectra
absorptivity
activation
atmospheric attenuation
attenuation
Beer law
Bouguer law
Chandrasekhar equation
electromagnetic properties
excitation
fading
fluorescence
gamma ray absorptiometry
irradiation
laser induced fluorescence

light scattering
molecular absorption
Mossbauer effect
nuclear physics
opacity
optical properties
optical reflection
pair production
perfectly matched layers
photodecomposition
photodissociation
photon absorptiometry
photoproduction
radar absorbers
radar attenuation
radiation shielding
radio attenuation
reflection
resonant frequencies
signal fading
solar energy absorbers
Townsend avalanche
transmission
transmittance
transparence
wave attenuation
wave propagation

electromagnetic acceleration

DEF The use of perpendicular components of electric and magnetic fields to accelerate a current carrier.

RT ∞ acceleration

electromagnetic interactions
magnetic fields
mass drivers
particle acceleration
plasma accelerators

electromagnetic compatibility

GS compatibility

. **electromagnetic compatibility**

RT atmospheric

crosstalk
electronic countermeasures
electronic warfare

∞ interference

noise spectra
radio frequency interference

electromagnetic control

USE **electromagnets**

remote control

electromagnetic coupling

(added September 1988)

GS coupling

. **electromagnetic coupling**

. . microwave coupling
. . . optical coupling

RT electromagnetic interactions

laser plasma interactions
magnetosphere-ionosphere coupling
plasma-electromagnetic interaction

electromagnetic deduction

USE **magnetic induction**

electromagnetic environment experiment

DEF Shuttleborne radio frequency experiment.

GS payloads

. Space Shuttle payloads
. . **electromagnetic environment experiment**

electromagnetic fields

GS **electromagnetic fields**

. far fields
. near fields
. . system generated electromagnetic pulses

RT Abrikosov theory

biomagnetism
blackout (propagation)
electrokinetics
electromagnetism
electromechanics
external surface currents
field mode theory

field strength
field theory (physics)
grand unified theory
magnetic field configurations
magnetic field inversions
magnetic fields
quantum electrodynamics
reciprocity theorem
solar magnetic field
Sommerfeld approximation
squeezed states (quantum theory)
stellar magnetic fields
unified field theory
whistlers
Yang-Mills fields

electromagnetic hammers

GS tools

. hammers

. . **electromagnetic hammers**

RT

forming techniques
magnetic coils
magnetic forming
metal working

electromagnetic interactions

GS **electromagnetic interactions**

. photoproduction
. plasma-electromagnetic interaction
. . laser plasma interactions

RT

biomagnetism
electrodynamics
electromagnetic acceleration
electromagnetic coupling
electrostatics
electroweak interactions (field theory)
electroweak model
elementary particle interactions
Feynman diagrams
grand unified theory
∞ interactions
meson-meson interactions
photonuclear reactions
plasma resonance
quantum mechanics
unified field theory
wave interaction
wave-particle interactions

electromagnetic interference

GS **electromagnetic interference**

. crosstalk
. . ionospheric cross modulation
. jamming

. radio frequency interference

. . blackout (propagation)

. . . polar radio blackout

. . . chirp

. . . chirp signals

. . . electromagnetic noise

. . . atmospheric

. . . . ionospherics

. dawn chorus

. hiss

. sudden enhancement of

atmospherics

. . . . whistlers

. . . . cosmic noise

. . . . ionospheric noise

. . . . whistlers

. . . . shot noise

. . . . white noise

. . . . thermal noise

. . . . cochannel interference

. . . . ionospheric cross modulation

RT ∞

disturbances

electronic countermeasures

electronic warfare

environments

feedback

ground effect (communications)

∞ interference

interference immunity

noise reduction

SCATHA satellite

signal to noise ratios

- system generated electromagnetic pulses
- electromagnetic measurement**
 - SN (MEASUREMENT OF ELECTROMAGNETIC PROPERTIES, QUANTITIES OR CONDITIONS)
 - GS **electromagnetic measurement**
 - . electromagnetic noise measurement
 - RT Barkhausen effect
Earth terminal measurement system
electrical measurement
electromagnetism
infrared detectors
magnetic measurement
magnetic transducers
 - ∞ measurement
signal measurement
- electromagnetic missiles**

(added January 1992)

 - RT electric pulses
external surface currents
missiles
picosecond pulses
pulse communication
pulse modulation
wave attenuation
wave degradation
wave propagation
- electromagnetic noise**
 - UF *radiation noise*
radio frequency noise
 - GS electromagnetic interference
. radio frequency interference
. . . **electromagnetic noise**
. . . . atmospherics
. ionospherics
. dawn chorus
. hiss
. sudden enhancement of atmospherics
. whistlers
. . . . cosmic noise
. . . . ionospheric noise
. whistlers
. . . . shot noise
. . . . white noise
. . . . thermal noise
 - RT background noise
background radiation
blackout (propagation)
channel noise
chirp signals
extraterrestrial radiation
ground effect (communications)
microwaves
millimeter waves
 - ∞ noise
noise generators
noise intensity
noise reduction
noise spectra
noise storms
noise temperature
radar receivers
 - ∞ radiation
radio receivers
radio spectra
radio waves
random noise
signal to noise ratios
solar radio emission
squelch circuits
submillimeter waves
- electromagnetic noise measurement**
 - GS electromagnetic measurement
. **electromagnetic noise measurement**
 - RT cosmic noise
 - ∞ measurement
thermal noise
white noise
- electromagnetic propagation*
- USE **electromagnetic wave transmission**
- electromagnetic properties**
 - GS **electromagnetic properties**
- . Faraday effect
. inductance
. . . proximity effect (electricity)
. Kerr magneto-optical effect
. magnetoresistivity
. optical properties
. . . absorptance
. . . absorptivity
. . . birefringence
. . . . Kerr electro-optical effect
. . . brightness
. . . . sky brightness
. . . brightness distribution
. . . color
. . . . iridescence
. . . . stellar color
. . . . water color
. . . dichroism
. . . luminosity
. . . . stellar luminosity
. . . opacity
. . . optical bistability
. . . optical reflection
. . . phosphorescence
. . . photoconductivity
. . . photoviscoelasticity
. . . radiance
. . . reflectance
. . . . bidirectional reflectance
. . . . spectral reflectance
. . . refractivity
. . . . photorefractivity
. . . . stigmatism
. . . translucence
. . . transmissivity
. . . transmittance
. . . transparency
. . . turbidity
. . . photoelasticity
. . . photoviscoelasticity
- RT carrier mobility
clarity
electrical properties
electromagnetic absorption
gamma ray absorption
gyrotropism
magnetic properties
∞ physical properties
polarization (waves)
∞ properties
- electromagnetic propulsion**
 - GS propulsion
. electric propulsion
. . . **electromagnetic propulsion**
. . . magnetic sails
. . . low thrust propulsion
. . . **electromagnetic propulsion**
. . . magnetic sails
. . . spacecraft propulsion
. . . **electromagnetic propulsion**
. . . magnetic sails
 - RT electrostatic propulsion
ion propulsion
magnetoplasmadynamic thrusters
mass drivers
photonic propulsion
plasma propulsion
pulsed inductive thrusters
pulsed plasma thrusters
- electromagnetic pulses**
 - UF *EMP (electromagnetism)*
 - GS electromagnetic radiation
. **electromagnetic pulses**
. . . system generated electromagnetic pulses
pulsed radiation
. **electromagnetic pulses**
. . . system generated electromagnetic pulses
pulses
. **electromagnetic pulses**
. . . system generated electromagnetic pulses
 - RT electric pulses
external surface currents
picosecond pulses
pulse communication
- pulse modulation
pulse radar
radar transmission
- electromagnetic pumps**
 - SN (ENCOMPASSES DEVICES FOR MATERIALS HANDLING ONLY--EXCLUDES OPTICAL AND PARTICLE ENERGIZING DEVICES)
 - GS pumps
. **electromagnetic pumps**
 - RT fuel pumps
- electromagnetic radiation**
 - DEF Energy propagated through space or through material media in the form of an advancing disturbance in electric and magnetic fields existing in space or in media. The term radiation, alone, is used commonly for this type of energy, although it actually has a broader meaning. Used for electromagnetic waves and wave radiation.
 - UF *electromagnetic waves*
wave radiation
 - GS **electromagnetic radiation**
. bremsstrahlung
. Cerenkov radiation
. coherent electromagnetic radiation
. . . coherent light
. . . laser beams
. . . diffraction radiation
. . . electromagnetic pulses
. . . system generated electromagnetic pulses
. . . electromagnetic surface waves
. . . gamma ray beams
. . . gamma rays
. . . gamma ray bursts
. . . H waves
. . . infrared radiation
. . . far infrared radiation
. . . near infrared radiation
. . . kilometric waves
. . . light (visible radiation)
. . . coherent light
. . . gegenschein
. . . polarized light
. . . sky radiation
. . . . airglow
. . . . geocoronal emissions
. . . . nightglow
. . . . twilight glow
. . . dayglow
. . . elves
. . . sprites (atmospheric physics)
. . . sunlight
. . . zodiacal light
. . . light beams
. . . laser beams
. . . modulated continuous radiation
. . . monochromatic radiation
. . . nonequilibrium radiation
. . . nonthermal radiation
. . . cyclotron radiation
. . . ion cyclotron radiation
. . . synchrotron radiation
. . . photon beams
. . . planetary radiation
. . . plasmons
. . . polarized electromagnetic radiation
. . . polarized light
. . . synchrotron radiation
. . . radio waves
. . . . decametric waves
. . . . extraterrestrial radio waves
. . . . galactic radio waves
. . . . North Polar Spur (astronomy)
. . . . radio bursts
. solar radio bursts
. type 2 bursts
. type 3 bursts
. type 4 bursts
. type 5 bursts
. solar radio emission
. solar radio bursts
. type 2 bursts
. type 3 bursts
. type 4 bursts
. type 5 bursts

electromagnetic scattering

- . . . cosmic microwave background radiation
 - . . long wave radiation
 - . . radio emission
 - . . . CN emission
 - . . . hydroxyl emission
 - . . . radio bursts
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - solar radio emission
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . . short wave radiation
 - . . . microwaves
 - centimeter waves
 - cosmic microwave background radiation
 - decimeter waves
 - microwave emission
 - millimeter waves
 - submillimeter waves
 - . . . sky waves
 - . . . whistlers
 - . Sommerfeld waves
 - . terrestrial radiation
 - . thermal radiation
 - . . black body radiation
 - . . phonon beams
 - . tropospheric radiation
 - . ultraviolet radiation
 - . . extreme ultraviolet radiation
 - . . far ultraviolet radiation
 - . . . Lyman alpha radiation
 - . . . Lyman beta radiation
 - . . . near ultraviolet radiation
 - . . ultraviolet emission
 - . x rays
 - . . cosmic x rays
 - . . solar x-rays
 - . photosynthetically active radiation
 - RT aerospace environments
 - antennas
 - atmospheric radiation
 - atmospheric refraction
 - backward waves
 - beams (radiation)
 - coherent radiation
 - continuous radiation
 - corpuscular radiation
 - cosmic rays
 - cylindrical waves
 - diffraction
 - Doppler effect
 - duochromators
 - electroacoustic waves
 - electromagnetism
 - extraterrestrial radiation
 - far fields
 - flux (rate)
 - flux density
 - galactic radiation
 - gamma ray absorption
 - gauge invariance
 - glare
 - harmonic radiation
 - incident radiation
 - incoherent scattering
 - interstellar radiation
 - ionizing radiation
 - Kerr electrooptical effect
 - light emission
 - magneto-optics
 - near fields
 - nonlinear optics
 - nuclear radiation
 - phase velocity
 - photons
 - Plancks constant
 - polarized radiation
 - Poynting theorem
 - ∞ propagation
 - propagation velocity
 - pulsed radiation

- radar
 - ∞ radiation
 - radiation chemistry
 - radiation distribution
 - radiation hazards
 - radiation laws
 - radiation pressure
 - radiation sources
 - radiative transfer
- ∞ rays
 - reflected waves
 - reflection
 - refracted waves
 - Ronchi test
 - scattering
 - sine waves
 - solar radiation
 - solitary waves
 - spectral emission
 - spectral energy distribution
 - spherical waves
 - spontaneous emission
 - Stefan-Boltzmann law
 - stellar radiation
 - stratosphere radiation
 - telecommunication
 - Thomson scattering
 - transmission
 - transverse waves
 - traveling waves
 - ultraviolet astronomy
 - VLF emission recorders
 - wave amplification
 - wave dispersion
 - wave generation
- ∞ waves
 - whispering gallery modes
 - white holes (astronomy)

electromagnetic rocket engines
(added April 2001)

USE **plasma engines**

electromagnetic scattering

- GS scattering
 - . wave scattering
 - . . **electromagnetic scattering**
 - . . . ionospheric F-scatter propagation
 - . . . light scattering
 - halos
 - microwave scattering
 - Mie scattering
 - Rayleigh scattering
 - Raman spectra
 - Thomson scattering
 - x ray scattering
- RT atmospheric attenuation
 - atmospheric scattering
 - finite difference time domain method
 - magnetic dispersion
 - optical coatings
 - perfectly matched layers
 - reciprocity theorem

electromagnetic shielding

- GS shielding
 - . **electromagnetic shielding**
 - . . radio frequency shielding
- RT magnetic shielding
 - radiation shielding

electromagnetic spectra

DEF Spectra of known electromagnetic radiations, extending from the shortest cosmic rays, through gamma rays, x rays, ultraviolet radiation, visible radiation, and including microwave and all other wavelengths of radio energy.

- GS spectra
 - . radiation spectra
 - . . **electromagnetic spectra**
 - . . . gamma ray spectra
 - . . . infrared spectra
 - . . . line spectra
 - Balmer series
 - D lines
 - electronic spectra
 - Fraunhofer lines
 - H lines
 - H alpha line
 - H beta line

- H gamma line
- K lines
- Lyman spectra
- Paschen series
- Rydberg series
- telluric lines
- . . . radio spectra
 - microwave spectra
 - . . . Raman spectra
- . . stellar spectra
 - . . . solar spectra
 - . . . UBV spectra
 - . . . ultraviolet spectra
 - . . . vibrational spectra
 - . . . visible spectrum
 - . . . x ray spectra
- RT absorption spectra
 - astronomical spectroscopy
 - electronic warfare
 - emission spectra
 - energy spectra
 - light (visible radiation)
 - molecular spectra
 - noise spectra
 - spectral correlation
 - spectral reconnaissance

electromagnetic surface waves

- GS electromagnetic radiation
 - . **electromagnetic surface waves**
 - surface waves
 - . **electromagnetic surface waves**
- RT dielectrics
 - propagation modes
 - radio waves
- ∞ surfaces
 - waveguides
- ∞ waves

electromagnetic wave filters

- GS **electromagnetic wave filters**
 - . bandpass filters
 - . crystal filters
 - . tracking filters
 - . electric filters
 - . bandstop filters
 - . crystal filters
 - . digital filters
 - . . FIR filters
 - . . IIR filters
 - . . microwave filters
 - . . radar filters
 - . . radio filters
 - . . tracking filters
 - . . waveguide filters
 - . matched filters
 - . optical filters
 - . . birefringent filters
 - . . infrared filters
 - . . ultraviolet filters
- RT absorbers (materials)
 - adaptive filters
 - attenuators
 - correlation detection
- ∞ filters
 - high pass filters
 - linear filters
 - low pass filters
 - nonlinear filters
 - screen effect

electromagnetic wave transmission

- UF *electromagnetic propagation*
- GS transmission
 - . **electromagnetic wave transmission**
 - . . light transmission
 - . . . light scattering
 - halos
 - . . . microwave attenuation
 - . . . radar transmission
 - . . . radio transmission
 - double sideband transmission
 - ionospheric propagation
 - ionospheric F-scatter propagation
 - . . . microwave transmission
 - . . . multipath transmission
 - . . . short wave radio transmission
 - . . . single sideband transmission

... spread spectrum transmission
 ... transequatorial propagation
 ... transhorizon radio propagation
 ... scatter propagation
 ... ionospheric F-scatter propagation
 ... television transmission
 RT atmospheric attenuation
 attenuation
 Fermat principle
 incoherent scattering
 lossy media
 magnetoionic
 plasma decay
 plasmaguides
 radar attenuation
 radio attenuation
 radome materials
 screen effect
 transmission efficiency
 wave propagation
 whispering gallery modes

electromagnetic waves

USE **electromagnetic radiation**

electromagnetics

USE **electromagnetism**

electromagnetism

DEF Magnetism produced by an electric current. The science dealing with the physical relations between electricity and magnetism. Used for electromagnetics.

UF *electromagnetics*

GS **electromagnetism**

. magnetostatics

RT Barkhausen effect

Biot-Savart law

computational electromagnetics

electric fields

electricity

electromagnetic fields

electromagnetic measurement

electromagnetic radiation

electromagnets

electrophysics

grand unified theory

magnet coils

magnetic coils

magnetic field inversions

magnetic fields

magnetic properties

magnetoconductivity

unified field theory

electromagnets

UF *electromagnetic control*

GS magnets

. **electromagnets**

. . high field magnets

. . superconducting magnets

RT electromagnetism

field coils

magnet coils

racetracks (particle accelerators)

solenoids

electromechanical devices

GS **electromechanical devices**

. microelectromechanical systems

. . microoptoelectromechanical systems

. electric motors

. piezoelectric actuators

. . asynchronous motors

. . induction motors

. . micromotors

. . piezoelectric motors

. . stepping motors

. . synchronous motors

. . torque motors

RT ∞ electric equipment

electroactive polymers

electrodynamics

electromechanics

∞ equipment

homopolar generators

electromechanics

GS electrodynamics

. electromechanics

RT circuits
 electric fields
 elektrokinetiks
 electromagnetic fields
 electromechanical devices
 electrostatics
 magnetic field inversions
 magnetic fields
 Maxwell equation
 mechanics (physics)

electrometers

DEF Instruments for measuring differences of electric potential.

GS measuring instruments

. **electrometers**

RT electric charge

electrical measurement

electron counters

galvanometers

potentiometers (instruments)

voltmeters

wattmeters

electromigration

RT electrical resistivity

electron mobility

hole mobility

ionic mobility

polarization (charge separation)

thermocapillary migration

thermomigration

electromotive forces

DEF Forces capable of maintaining a potential difference, and thus a current, within a circuit. They can be established by chemical action or by mechanical work.

GS **electromotive forces**

. ponderomotive forces

RT electric batteries

electric generators

electric potential

Ohms law

open circuit voltage

electromyograms

USE **electromyography**

electromyographs

USE **electromyography**

electromyography

DEF The study of the response of a muscle to an electric stimulation. Used for electromyograms and electromyographs.

UF *electromyograms*

electromyographs

GS bioengineering

. biometrics

. . **electromyography**

RT electrophysiology

medical electronics

myoelectricity

electron acceleration

DEF The acceleration of electrons by action of solar cosmic rays.

GS rates (per time)

. acceleration (physics)

. . **electron acceleration**

RT ∞ acceleration

cosmic rays

electrons

extraterrestrial radiation

particle beams

solar cosmic rays

electron accelerators

GS particle accelerators

. **electron accelerators**

. . betatrons

RT ∞ accelerators

linear accelerators

synchrotrons

Van de Graaff accelerators

electron affinity

GS affinity

. electron affinity

RT anions
 molecular ions
 negative electron affinity
 semiconductors (materials)

electron attachment

GS **electron attachment**

. nucleophiles

RT ∞ attachment

gas ionization

ionization

electron avalanche

DEF The process in which a relatively small number of free electrons in a gas that is subjected to a strong electric field accelerate, ionize gas atoms by collision, and thus form new free electrons to undergo the same process in cumulative fashion.

GS avalanches

. **electron avalanche**

RT CATT devices

channel multipliers

free electrons

gas discharges

Townsend avalanche

electron beam welding

GS welding

. fusion welding

. . **electron beam welding**

RT arc welding

electric welding

spiking

electron beams

DEF Specifically, focused streams of electrons used for neutralization of the positively charged ion beam in an ion engine. Also used to melt or weld materials with externally high melting points.

GS beams (radiation)

. particle beams

. . **electron beams**

. . . relativistic electron beams

particles

. corpuscular radiation

. . electron radiation

. . . **electron beams**

. . . relativistic electron beams

RT beam injection

beam neutralization

beam plasma amplifiers

beta particles

Brillouin flow

diffraction radiation

electron cyclotron heating

ionizing radiation

magnetic lenses

monoscopes

nanofabrication

plasma jets

scalping

scanning electron microscopy

transmission electron microscopy

electron bombardment

RT ∞ bombardment

deposition

particle beams

plasma jets

relativistic electron beams

sputtering

electron bunching

GS bunching

. **electron bunching**

RT catchers

convection currents

klystrons

traveling wave tubes

velocity modulation

electron capture

GS nuclear reactions

. nuclear interactions

. . nuclear capture

. . . **electron capture**

. . spin-orbit interactions

electron clouds

- . . . **electron capture**
- particle interactions
- . elementary particle interactions
- . . nuclear capture
- . . . **electron capture**
- . nuclear interactions
- . . nuclear capture
- . . . **electron capture**
- . . spin-orbit interactions
- . . . **electron capture**
- spin
- . spin-orbit interactions
- . . **electron capture**
- RT capture effect
- many electron effects

electron clouds

- RT ∞ clouds
- orbitrons
- space charge

electron collisions

- USE **electron scattering**

electron compounds

- USE **intermetallics**

electron counters

- UF *electron detectors*
- GS measuring instruments
- . counters
- . . radiation counters
- . . . **electron counters**
- . radiation measuring instruments
- . . radiation counters
- . . . **electron counters**
- RT electrometers
- ionization chambers

electron cyclotron heating

DEF A type of radio frequency plasma heating in which high-power microwave energy is introduced into the plasma region.

- GS heating
- . plasma heating
- . . **electron cyclotron heating**
- RT electron beams
- electron cyclotron resonance
- electron guns
- klystrons
- magnetic pumping

electron cyclotron resonance

- (added June 1997)
- GS resonance
- . cyclotron resonance
- . . **electron cyclotron resonance**
- RT cyclotron resonance devices
- electron cyclotron heating
- plasma heating
- plasma resonance

electron decay rate

- GS rates (per time)
- . decay rates
- . . **electron decay rate**
- RT muons
- secondary cosmic rays

electron density (concentration)

- GS density (number/volume)
- . particle density (concentration)
- . . **electron density (concentration)**
- . . . carrier density (solid state)
- . . . electron density profiles
- . . . ionospheric electron density
- . . . magnetospheric electron density
- RT atmospheric composition
- atmospheric density
- atom concentration
- density functional theory
- free electrons
- ion density (concentration)
- plasma density
- plasma frequencies
- radiation belts
- semiconductors (materials)

space density

electron density profiles

- GS density (number/volume)
- . particle density (concentration)
- . . electron density (concentration)
- . . . **electron density profiles**
- . . electron distribution
- . . . **electron density profiles**
- distribution (property)
- . electron distribution
- . . **electron density profiles**
- gradients
- . **electron density profiles**
- RT angular distribution
- atmospheric electricity
- atmospheric ionization

electron detectors

- USE **electron counters**

electron diffraction

DEF The phenomenon, or the technique of producing diffraction patterns through the incidence of electrons as a function of kinetic energy.

- GS diffraction
- . **electron diffraction**
- RT Bragg angle
- diffraction radiation
- x ray diffraction

electron diffusion

- GS diffusion
- . particle diffusion
- . . **electron diffusion**
- RT ambipolar diffusion
- diffusion length
- diffusion waves
- gaseous self-diffusion
- ionic diffusion
- plasma diffusion
- thermal diffusion

electron distribution

- GS density (number/volume)
- . particle density (concentration)
- . . **electron distribution**
- . . . electron density profiles
- distribution (property)
- . **electron distribution**
- . . electron density profiles
- RT charge distribution
- current distribution
- density functional theory
- Thomas-Fermi model
- vertical distribution

electron emission

- GS emission
- . particle emission
- . . **electron emission**
- . . . field emission
- . . . photoelectric emission
- . . . secondary emission
- RT cathodes
- electric discharges
- emitters
- negative electron affinity
- pair production
- photoelectric materials
- photoelectron spectroscopy
- photoelectrons
- photoionization
- radio frequency discharge
- self sustained emission
- stimulated emission
- thermal emission
- thermionic emission
- thermionics
- work functions

electron energy

- UF *electron temperature*
- electronic levels*
- GS particle energy
- . **electron energy**
- . . electron states
- RT activation energy
- electronic structure

- electrostatic probes
- ∞ energy
- forbidden bands
- Hartree-Fock-Slater method
- interfacial energy
- ionospheric temperature
- kinetic energy
- noise temperature
- plasmas (physics)
- proton energy
- space temperature
- surface energy
- temperature

electron flux

- USE **electrons flux (rate)**

electron flux density

- SN (LIMITED TO ELECTRON EMISSION OR DETECTION RATE PER UNIT AREA)
- UF *electron intensity*
- GS rates (per time)
- . flux density
- . . radiant flux density
- . . . particle flux density
- **electron flux density**
- RT irradiance
- radiancy
- solar flux density

electron gas

- RT cosmic gases
- electrohydrodynamics
- free electrons
- ionized gases
- plasmions
- quantum Hall effect
- rarefied gases
- screen effect
- superconductors (materials)

electron guns

- DEF Electrode structures which produce and may control, focus, deflect, and converge one or more electron beams.
- RT cathode ray tubes
- crossed field guns
- electron cyclotron heating
- flying spot scanners
- ∞ guns
- magnetic lenses
- particle accelerators
- plasma guns
- tube anodes
- tube cathodes
- tube grids

electron holes

- USE **holes (electron deficiencies)**

electron impact

- GS impact
- . **electron impact**
- RT ion impact
- point impact
- proton impact

electron intensity

- USE **electron flux density**

electron interactions

- USE **electron scattering**

electron ionization

- USE **ionization**

electron irradiation

- GS irradiation
- . **electron irradiation**
- RT auroral irradiation
- ion irradiation
- secondary emission

electron mass

- GS mass
- . particle mass
- . . **electron mass**

- RT electrons
- electron microscopes**
 - GS microscopes
 - . **electron microscopes**
 - RT field emission
 - ion microscopes
 - magnetic lenses
 - microanalysis
 - optical microscopes
 - photomicrography
 - replicas
 - scanning electron microscopy
 - scanning tunneling microscopy
- electron microscopy**
 - DEF The interpretive application of an electron microscope for the magnification of materials that cannot be properly seen with an optical microscope.
 - GS microscopy
 - . **electron microscopy**
 - .. scanning electron microscopy
 - .. scanning tunneling microscopy
 - .. transmission electron microscopy
 - RT field emission
 - ion microscopes
 - magnetic lenses
 - microanalysis
 - phase contrast
- electron mobility**
 - GS electrical properties
 - . carrier mobility
 - .. **electron mobility**
 - mobility
 - . carrier mobility
 - .. **electron mobility**
 - transport properties
 - . carrier mobility
 - .. **electron mobility**
 - RT ambipolar diffusion
 - atomic mobilities
 - charge carriers
 - electrohydrodynamics
 - electromigration
 - high electron mobility transistors
 - hole mobility
 - majority carriers
 - minority carriers
 - modulation doping
 - NDM semiconductor devices
 - semiconductor plasmas
 - single electron transistors
 - ∞ solid state physics
 - square wells
- electron multipliers*
 - USE **photomultiplier tubes**
- electron optics**
 - DEF The science that deals with the propagation of electrons, as light optics deals with light and its phenomena.
 - RT atom optics
 - beam switching
 - Brillouin flow
 - cathode ray tubes
 - electro-optics
 - flying spot scanners
 - ion optics
 - ∞ optics
 - particle trajectories
 - steering
- electron orbitals**
 - GS orbitals
 - . **electron orbitals**
 - RT configuration interaction
 - electronic structure
 - excimers
- electron oscillations**
 - GS oscillations
 - . **electron oscillations**
 - RT oscillator strengths
 - plasma oscillations
- transient oscillations
- electron paramagnetic resonance**
 - UF *electron spin resonance*
 - GS resonance
 - . magnetic resonance
 - .. paramagnetic resonance
 - ... **electron paramagnetic resonance**
 - RT Jahn-Teller effect
- electron paths*
 - USE **electron trajectories**
- electron phonon interactions**
 - RT ∞ interactions
 - particle interactions
 - plasma-particle interactions
 - polarons
 - superconductivity
 - thermodynamic coupling
- electron photography**
 - GS imagery
 - . photography
 - .. **electron photography**
 - RT black and white photography
- electron photon cascades**
 - RT bremsstrahlung
 - ∞ cascades
 - cosmic ray showers
 - pair production
 - secondary cosmic rays
- electron plasma**
 - GS particles
 - . charged particles
 - .. energetic particles
 - ... plasmas (physics)
 - ... **electron plasma**
 - corpuscular radiation
 - .. energetic particles
 - ... plasmas (physics)
 - ... **electron plasma**
 - RT electron-positron plasmas
 - helium plasma
 - high temperature plasmas
 - Landau damping
 - metallic plasmas
 - plasma waves
 - plasma-particle interactions
 - rarefied plasmas
 - relativistic plasmas
 - thermal plasmas
- electron precipitation**
 - GS particle precipitation
 - . **electron precipitation**
 - particles
 - . corpuscular radiation
 - .. **electron precipitation**
 - RT auroras
 - ∞ precipitation
 - proton precipitation
 - radiation belts
 - secondary cosmic rays
 - trapped particles
- electron pressure**
 - GS pressure
 - . radiation pressure
 - .. **electron pressure**
- electron probes**
 - DEF Narrow beams of electrons used to scan or illuminate an object or screen.
 - GS measuring instruments
 - . **electron probes**
 - RT chemical analysis
 - irradiation
 - microwave plasma probes
 - spectrometers
- electron pumping**
 - RT energy transfer
 - excimer lasers
 - gas lasers
 - lasers
 - nuclear pumping
- nuclear radiation
 - optical pumping
 - population inversion
- ∞ pumping
 - stimulated emission
 - stimulated emission devices
- electron radiation**
 - SN (LIMITED TO RADIATION CONSISTING OF ELECTRONS--EXCLUDES ELECTROMAGNETIC RADIATION)
 - GS particles
 - . corpuscular radiation
 - .. **electron radiation**
 - ... beta particles
 - ... electron beams
 - ... relativistic electron beams
 - RT bremsstrahlung
 - nuclear radiation
 - plasma radiation
 - proton irradiation
 - ∞ radiation
 - radiation effects
- electron recombination**
 - GS recombination reactions
 - . **electron recombination**
 - .. radiative recombination
 - RT ion recombination
 - neutral particles
- electron ring accelerators*
 - USE **storage rings (particle accelerators)**
- electron runaway (plasma physics)**
 - DEF High acceleration of electrons in a collisional plasma caused by a suddenly applied electric field (which greatly reduces the collision cross section of the electrons).
 - GS scattering
 - . electron scattering
 - .. **electron runaway (plasma physics)**
 - RT collisional plasmas
 - high acceleration
 - plasma physics
 - scattering cross sections
- electron scattering**
 - UF *electron collisions*
 - electron interactions*
 - GS scattering
 - . **electron scattering**
 - .. electron runaway (plasma physics)
 - RT atomic collisions
 - dense plasmas
 - elastic scattering
 - inelastic scattering
 - ion scattering
 - many electron effects
 - nuclear reactions
 - nuclear scattering
 - particle interactions
 - photon-electron interaction
 - Ramsauer effect
 - recoil ions
 - relativistic electron beams
 - transmission electron microscopy
 - Umklapp process
- electron sources**
 - RT ∞ energy sources
 - ion sources
 - ∞ power supplies
 - radiation sources
 - ∞ sources
- electron spectroscopy**
 - DEF The study and interpretation of atomic, molecular, and solid state structure based on x ray induced electron emission from substances.
 - GS spectroscopy
 - . **electron spectroscopy**
 - RT absorption spectra
 - emission spectra
 - infrared spectroscopy
 - molecular spectroscopy
 - optical emission spectroscopy

electron spin

x ray absorption

electron spin

GS spin
. particle spin
. . **electron spin**
RT angular momentum
nuclear spin
spin dynamics

electron spin resonance

USE **electron paramagnetic resonance**

electron states

GS level (quantity)
. energy levels
. . **electron states**
particle energy
. electron energy
. . **electron states**
RT density functional theory
electronic structure
excimers
excitation
ground state
many electron effects
noise temperature

electron sweeping

USE **sweep frequency**

electron telescopes

USE **particle telescopes**

electron temperature

USE **electron energy**

electron trajectories

DEF The paths of electrons. Used for electron paths.

UF *electron paths*

GS trajectories
. particle trajectories
. . **electron trajectories**

RT diffraction paths
magnetic rigidity
radiation belts

electron transfer

RT backward wave tubes
charge exchange
charge transfer
oxidation
transferred electron devices
transferring

electron transitions

RT atomic theory
Auger effect
Auger spectroscopy
Balmer series
band structure of solids
Bohr theory
conduction bands
excimers
excitation
forbidden transitions
Franck-Condon principle
Jahn-Teller effect
lasing
many electron effects
nuclear capture
optical transition
oscillator strengths
Paschen series
Rydberg series
 ∞ transition
transition probabilities
x ray lasers
xenon chloride lasers
xenon fluoride lasers

electron tubes

DEF Devices in which conduction by electrons takes place through a vacuum of gaseous medium within a gas tight envelope.

GS **electron tubes**
. camera tubes
. . image dissector tubes
. . orthicons

. . . image orthicons
. . vidicons
. . . return beam vidicons
. . . . thermicons
. cold cathode tubes
. phototubes
. . . photomultiplier tubes
. . . . frequency modulation
photomultipliers

. gas discharge tubes
. . ignitrons
. . thyratrons
. image tubes
. . thermicons
. thermionic diodes
. . cesium diodes
. vacuum tubes
. . cathode ray tubes
. . . monoscopes
. . . picture tubes
. . cesium diodes
. . microwave tubes
. . . telescopes
. . . cyclotron resonance devices
. . . klystrons
. . . magnetrons
. . . . nigotrons
. . . planotrons
. . . traveling wave tubes
. . . . backward wave tubes
. helitrons
. carcinotrons
. . vacuum tube oscillators

RT cavity resonators
circuits
crossed field amplifiers
diodes
fiber optics
 ∞ heaters
modulators
orbitrons
oscillators
pentodes
rectifiers
resonators
tetrodes
transconductance
triodes
tube grids
 ∞ tubes
tunnel cathodes
velocity modulation
x ray tubes

electron tunneling

UF *tunnel resistors*
RT energy levels
Josephson effect
MIM diodes
quantum dots
resonant tunneling
scanning tunneling microscopy
semiconductors (materials)
single electron transistors
superconductivity
tunnel diodes
tunnel junctions
 ∞ tunneling

electronarcosis

RT electroanesthesia
electrophysiology

electron-hole drops

DEF Exciton condensations exhibiting the properties of electrically conducting plasmas which form in germanium and silicon crystals at sufficiently low cryogenic temperatures.

RT carrier density (solid state)
luminescence
magnetic fields
optical pumping
phase transformations
plasma density
plasma equilibrium
semiconductor plasmas

single event upsets

electronic aircraft

DEF Designation for tactical electronic warfare aircraft.

RT ∞ aircraft
automatic control
electronic countermeasures

electronic amplifiers

USE **amplifiers**

electronic bulletin boards

(added September 1993)

UF *computer bulletin boards*
RT communication networks
computer conferencing
electronic mail
Internet resources
internets
websites
World Wide Web

electronic commerce

(added April 2000)

DEF The buying and selling of goods and services via the Internet or other computer communications network.

UF *e-commerce*

GS commerce
. **electronic commerce**
RT computer information security
electronic mail
Internet resources
websites
World Wide Web

electronic control

RT automatic control
cascade control
 ∞ control
control equipment
control systems design
controllers
current regulators
electric control
electric switches
feedback control
hydraulic control
optical control
pneumatic control
remote control
Terminal Configured Vehicle Program
voltage regulators

electronic countermeasures

GS countermeasures
. **electronic countermeasures**
. . antiradar coatings
. . chaff
RT deception
electromagnetic compatibility
electromagnetic interference
electronic aircraft
electronic warfare
jamming
optical countermeasures
radar detection
radio frequency interference
stealth technology

electronic equipment

DEF Equipment in which electricity is conducted principally by electrons moving through a vacuum, gas, or semiconductor.

GS **electronic equipment**
. diodes
. . crystal rectifiers
. . plasma diodes
. . semiconductor diodes
. . . avalanche diodes
. . . . cryosar
. . . . Barritt diodes
. . . germanium diodes
. . . Gunn diodes
. . . . transferred electron devices
. . . junction diodes
. . . . MIM diodes
. . . . step recovery diodes
. . . light emitting diodes

- . . . parametric diodes
- . . . photodiodes
- . . . Schottky diodes
- . . . tunnel diodes
- resonant tunneling diodes
- . . . varactor diodes
- . . . thermionic diodes
- . . . cesium diodes
- . . . electronic filters
- . . . electronic modules
- . . . micromodules
- . . . electronic packaging
- . . . electronic recording systems
- . . . electronic transducers
- . . . miniature electronic equipment
- . . . solid state devices
- . . . cryotrons
- . . . crystal rectifiers
- . . . metal-nitride-oxide-semiconductors
- . . . multispectral linear arrays
- . . . semiconductor devices
- avalanche diodes
- cryosar
- Barritt diodes
- charge transfer devices
- bucket brigade devices
- charge coupled devices
- charge injection devices
- germanium diodes
- heterojunction devices
- high electron mobility transistors
- MODFETS
- junction diodes
- MIM diodes
- step recovery diodes
- light emitting diodes
- metal oxide semiconductors
- CMOS
- ITO (semiconductors)
- SOS (semiconductors)
- MIM (semiconductors)
- MIS (semiconductors)
- MOM (semiconductors)
- MSM (semiconductors)
- NDM semiconductor devices
- neuristors
- parametric diodes
- photodiodes
- photovoltaic cells
- solar cells
- vertical junction solar cells
- Schottky diodes
- semiconductor lasers
- aluminum gallium arsenide lasers
- gallium arsenide lasers
- quantum cascade lasers
- quantum well lasers
- YLF lasers
- SOI (semiconductors)
- thermistors
- thyristors
- silicon controlled rectifiers
- transferred electron devices
- transistor amplifiers
- transistors
- bipolar transistors
- field effect transistors
- charge flow devices
- JFET
- MODFETS
- high electron mobility transistors
- MODFETS
- junction transistors
- JFET
- phototransistors
- silicon transistors
- SOS (semiconductors)
- single electron transistors
- cascode devices
- quantum well infrared photodetectors
- resonant tunneling diodes
- TRAPATT devices
- varactor diodes
- varistors
- SIS (semiconductors)
- SIS (superconductors)
- solid state lasers

- . . . aluminum gallium arsenide lasers
- . . . DBR lasers
- . . . fiber lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . ruby lasers
- YAG lasers
- YLF lasers
- spacecraft electronic equipment
- RT antenna components
- bubble technique
- ∞ electric equipment
- ∞ electronics
- ∞ equipment
- radiation hardening
- spherical antennas
- system generated electromagnetic pulses

electronic equipment tests

- SN (CHECKOUT OF ELECTRONIC EQUIPMENT)
- RT Earth terminal measurement system
- electric equipment tests
- electrical measurement
- environmental tests
- fault detection
- nondestructive tests
- oscilloscopes
- quality control
- resonance testing
- self tests
- stability tests
- ∞ test equipment
- ∞ tests
- vibration tests

electronic filters

- GS electronic equipment
- . **electronic filters**
- RT electric filters
- ∞ filters
- FIR filters

electronic levels

- USE **electron energy energy levels**

electronic mail

- UF *e-mail*
- GS telecommunication
- . **electronic mail**
- RT communication networks
- communication satellites
- computer conferencing
- computer networks
- data transmission
- electronic bulletin boards
- electronic commerce
- electronic publishing
- Internet resources
- internets

electronic modules

- GS electronic equipment
- . **electronic modules**
- . . micromodules
- modules
- . **electronic modules**
- . . micromodules
- RT ∞ hardware
- miniature electronic equipment
- modularity
- subminiaturization

electronic packaging

- GS electronic equipment
- . **electronic packaging**
- packaging
- . **electronic packaging**
- RT circuit boards
- DTL integrated circuits
- encapsulating
- hybrid circuits
- integrated circuits
- large scale integration
- linear integrated circuits
- medium scale integration
- micromodules

- printed circuits
- thick films
- TTL integrated circuits

electronic photography

- USE **electro-optical photography**

electronic publishing

- (added July 1995)
- RT computer conferencing
- document markup languages
- documents
- electronic mail
- hypertext
- information dissemination
- multimedia
- printing

electronic recording systems

- GS electronic equipment
- . **electronic recording systems**
- RT recording instruments
- ∞ systems
- tape recorders

electronic signal measurement

- USE **signal measurement**

electronic spectra

- SN (EMISSION OR ABSORPTION MOLECULAR SPECTRA OF AN ELECTRON TRANSITION)
- GS molecular properties
- . molecular spectra
- . **electronic spectra**
- spectra
- . energy spectra
- . **electronic spectra**
- . molecular spectra
- . **electronic spectra**
- . radiation spectra
- . . electromagnetic spectra
- . . . line spectra
- **electronic spectra**
- RT absorption spectra
- emission spectra
- Lyman spectra
- spectral bands
- vibrational spectra

electronic structure

- (added April 1999)
- SN (THE TERM "ATOMIC STRUCTURE" WAS USED FOR THIS CONCEPT PRIOR TO MAY 1999)
- RT atomic structure
- band structure of solids
- density functional theory
- electron energy
- electron orbitals
- electron states
- energy bands
- energy gaps (solid state)
- energy levels
- Fermi liquids

electronic switches

- USE **switching circuits**

electronic transducers

- GS electronic equipment
- . **electronic transducers**
- transducers
- . **electronic transducers**
- RT magnetic transducers
- ∞ sensors
- ultrasonic wave transducers

electronic warfare

- DEF Military action involving the use of electromagnetic energy to determine, exploit, reduce, or prevent hostile use of the electromagnetic spectrum, and action which retains friendly use of the electromagnetic spectrum.
- GS military operations
- . **electronic warfare**
- warfare
- . **electronic warfare**
- RT air defense
- antiradar coatings
- chaff
- combat

deception
 electromagnetic compatibility
 electromagnetic interference
 electromagnetic spectra
 electronic countermeasures
 evasive actions
 jamming
 missile detection
 peacetime
 radar detection
 radio frequency interference
 stealth technology
 strategy

∞ **electronics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Study and application of the motions of electrons through vacuum and gaseous, conducting, or semiconducting media. Used for photoelectronics.

UF *photoelectronics*
 RT *astrionics*

avionics
 digital electronics
 electrical engineering
 electricity
 electronic equipment
 electrophysics
 medical electronics
 microelectronics
 molecular electronics
 nucleonics
 quantum electronics
 radio electronics
 thermionics
 transistor circuits
 volt-ampere characteristics

electron-ion recombination

GS recombination reactions
 . **electron-ion recombination**
 . . radiative recombination
 RT ion recombination
 plasma control

electronography

RT electrophysiology
 printing

electron-positron annihilation

USE **positron annihilation**

electron-positron pairs

(added September 1988)

GS particles
 . elementary particles
 . . **electron-positron pairs**
 RT annihilation reactions
 charged particles
 electron-positron plasmas
 electrons
 pair production
 positron annihilation
 positrons

electron-positron plasmas

(added September 1988)

GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **electron-positron plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **electron-positron plasmas**

RT electron plasma

electron-positron pairs
 electrons
 positrons
 relativistic plasmas

electrons

DEF Particles of very small mass, carrying a unit negative or positive charge. Negative electrons, surrounding the nucleus (i.e., orbital electrons) are present in all atoms. Their number is equal to the number of positive charges (or protons) in the particular nucleus. The term

electron, when used alone, commonly refers to a negative electron. A positive electron is usually called a positron, and a negative electron is sometimes called a negatron.

UF *electron flux*

GS *nonrelativistic electrons*

particles
 . charged particles
 . . energetic particles
 . . . **electrons**
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 . corpuscular radiation
 . . energetic particles

. . . **electrons**
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 . elementary particles
 . . fermions
 . . . leptons
 **electrons**
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons

. **electrons**
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons

RT acceptor materials
 beta particles
 Bohr magneton
 cosmic rays
 donor materials
 electron acceleration
 electron mass
 electron-positron pairs
 electron-positron plasmas
 excitons
 holes (electron deficiencies)
 Lewis base
 majority carriers
 ∞ materials
 minority carriers
 muonium
 n-type semiconductors
 nuclear radiation
 Pomeranchuk theorem
 quantum numbers
 radiation belts
 semiconductors (materials)
 Suhl effect

electronystagmography

GS bioengineering
 . biometrics
 . . **electronystagmography**
 . . . physiological tests
 . . . **electronystagmography**
 RT eye examinations
 eye movements
 nystagmus
 ophthalmology

electro-optical effect

RT ∞ effects
 ∞ Kerr effects
 light modulation

nonlinear optics

∞ optics

electro-optical photography

UF *electronic photography*
 GS imagery
 . photography
 . . **electro-optical photography**
 RT astronomical photography
 black and white photography
 image resolution
 Lallemand cameras
 optical measurement
 ∞ optics
 streak photography

electro-optical switching

USE **optical switching**

electro-optics

GS electrophysics
 . **electro-optics**
 RT acousto-optics
 birefringence
 charge injection devices
 electrochromism
 electroluminescence
 electron optics
 integrated optics
 Kerr electrooptical effect
 laser microscopy
 light modulators
 light valves
 magneto-optics
 optical computers
 optical control
 optical relay systems
 optical switching
 ∞ optics
 optoelectronic devices
 photonics
 position sensing
 pushbroom sensor modes
 Stark effect
 tunable filters

electrophoresis

DEF The movement of colloidal particles produced by the application of an electric potential. Used for continuous flow electrophoresis.

UF *continuous flow electrophoresis*

RT bioprocessing
 colloids
 electrodeposition
 electroplating
 ∞ microgravity applications
 particle motion

electrophotometers

UF *photoelectric photometers*
 GS measuring instruments
 . optical measuring instruments
 . . photometers
 . . . **electrophotometers**
 . . . radiation measuring instruments
 . . . photometers
 **electrophotometers**
 optical equipment
 . optical measuring instruments
 . . photometers
 . . . **electrophotometers**
 RT electrophotometry

electrophotometry

GS chemical tests
 . chemical analysis
 . . **electrophotometry**
 . . . optical measurement
 . . . photometry
 . . . **electrophotometry**
 RT colorimetry
 electrophotometers
 electrophysics
 ∞ materials tests
 microanalysis
 photometers
 pixels
 qualitative analysis
 quantitative analysis
 spectroscopic analysis

- spectroscopy
- electrophysics**
- GS **electrophysics**
 . electro-optics
 . molecular electronics
- RT electrochemistry
 electrokinetics
 electromagnetism
- ∞ electronics
 electrophotometry
- ∞ physics
 ∞ science
 theoretical physics
- electrophysiology**
- GS physiology
 . **electrophysiology**
- RT body measurement (biology)
 depolarization
 echoencephalography
 electrocardiography
 electroencephalography
 electromyography
 electronarcosis
 electronography
 electroplethysmography
 electroretinography
 His bundle
 information processing (biology)
 ion channels (biology)
 myelin sheath
 nerve fibers
 nervous system
 neurology
 ∞ science
- electroplating**
- GS coating
 . **electroplating**
 coatings
 . **electroplating**
 deposition
 . electrodeposition
 . . **electroplating**
 plating
 . **electroplating**
- RT baths
 cathodic coatings
 current density
 electrodes
 electroforming
 electrolysis
 electrolytes
 electrolytic cells
 electrophoresis
 metallizing
 nickel plate
 protective coatings
 surface finishing
- electroplethysmography**
- GS bioengineering
 . biometrics
 . . body measurement (biology)
 . . . **electroplethysmography**
 . . . plethysmography
 . . . **electroplethysmography**
- RT blood circulation
 electrophysiology
 medical electronics
- electropolishing**
- DEF The improvement in surface finish of a metal effected by making it anodic in an appropriate solution. Used for electrolytic polishing.
- UF *electrolytic polishing*
- GS metal finishing
 . **electropolishing**
 polishing
 . metal polishing
 . . **electropolishing**
- RT electrochemical machining
 metallography
 surface finishing
- electrorefining**
- GS refining
 . **electrorefining**
- RT electrodes
- electrolytes
 electrolytic cells
 electrowinning
- electroretinography**
- GS bioengineering
 . biometrics
 . . **electroretinography**
- RT electrophysiology
 medical electronics
 retina
- electrorheological fluids**
(added June 1990)
- UF *ER fluids*
- RT elastodynamics
 electroactive polymers
 magnetorheological fluids
 rheology
 smart materials
- electroseismic effect*
- USE **electric current**
seismic waves
- ∞ **electroslag process**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT electroslag refining
 electroslag welding
- electroslag refining**
- GS refining
 . **electroslag refining**
- RT arc melting
 ∞ electroslag process
 resistance heating
- electroslag welding**
- GS welding
 . fusion welding
 . . electric welding
 . . . **electroslag welding**
- RT ∞ electroslag process
- electrostatic bonding**
- DEF Use of the particle-attracting property of electrostatic charges to bond particles of one charge to those of the opposite charge.
- RT binding energy
 coverings
 encapsulating
 energy technology
 glass
 solar arrays
 solar cells
- electrostatic charge**
- GS electric charge
 . **electrostatic charge**
- RT capacitance
 charge distribution
 ∞ charging
 electric discharges
 electric fields
 electrostatics
 SCATHA satellite
 static electricity
 xerography
- electrostatic drag**
- GS dynamic characteristics
 . drag
 . . **electrostatic drag**
- RT drag measurement
 satellite drag
- electrostatic engines**
- DEF Electric rocket engines that use charge potential differences to accelerate propellant ions.
- GS engines
 . rocket engines
 . . electric rocket engines
 . . . **electrostatic engines**
 ion engines
 cesium engines
 Hall thrusters
 mercury ion engines
 RIT engines
- RT arc jet engines
 microrocket engines
 restartable rocket engines
 sustainer rocket engines
 Vernier engines
- electrostatic erosion*
- USE **spark machining**
- electrostatic fields*
- USE **electric fields**
- electrostatic generators**
- GS electric generators
 . direct power generators
 . . **electrostatic generators**
- RT arc generators
- ∞ generators
 klystrons
 magnetrons
 rotating generators
 voltage generators
- electrostatic gyroscopes**
- UF *electrically suspended gyroscopes*
ESG (gyroscopes)
- GS gyroscopes
 . **electrostatic gyroscopes**
- RT levitation
- electrostatic plasma*
- USE **plasmas (physics)**
- electrostatic precipitators**
- GS separators
 . precipitators
 . . **electrostatic precipitators**
- RT adsorption
 air purification
 air sampling
 dust collectors
 fly ash
 ∞ separation
- electrostatic probes**
- UF *Langmuir probes*
- GS measuring instruments
 . plasma probes
 . . **electrostatic probes**
 . . radiation measuring instruments
 . . **electrostatic probes**
- RT electron energy
 plasma frequencies
 radiation counters
 SCATHA satellite
- electrostatic propulsion**
- GS propulsion
 . electric propulsion
 . . **electrostatic propulsion**
 . . . ion propulsion
 . . low thrust propulsion
 . . **electrostatic propulsion**
 . . . ion propulsion
 . . spacecraft propulsion
 . . **electrostatic propulsion**
 . . . ion propulsion
- RT electromagnetic propulsion
 plasma propulsion
- electrostatic shielding**
- GS shielding
 . **electrostatic shielding**
- RT electric conductors
 SCATHA satellite
- electrostatic waves**
- GS elastic waves
 . magnetohydrodynamic waves
 . . plasma waves
 . . . **electrostatic waves**
- RT diffusion waves
 ionic waves
 longitudinal waves
 magnetoelastic waves
 shock waves
 wave-particle interactions
- electrostatics**
- GS statics
 . **electrostatics**

electrostriction

RT Born-Infeld theory
electric fields
electromagnetic interactions
electromechanics
electrostatic charge
magnetostatics
Poisson equation
static electricity

electrostriction

DEF The phenomenon wherein some dielectric materials experience an elastic strain when subjected to an electric field, this strain being independent of polarity of the field.

GS electrical properties
. **electrostriction**
mechanical properties
. **electrostriction**
RT electroactive polymers
magnetostriction
piezoelectricity
smart materials

electrosynthesis

(added January 2000)

USE **electrochemical synthesis**

electrothermal engines

DEF Electric rocket engines that use electric energy to heat the propellant and add additional enthalpy.

GS engines
. rocket engines
. . . electric rocket engines
. . . . **electrothermal engines**
. arc jet engines
. pulsed jet engines
. resistojet engines
RT high temperature propellants
ion engines
nuclear electric propulsion
plasma engines
restartable rocket engines
sustainer rocket engines

electroweak interactions (field theory)

(added April 1994)

GS particle interactions
. elementary particle interactions
. . . **electroweak interactions (field theory)**
RT electromagnetic interactions
electroweak model
 ∞ interactions
standard model (particle physics)
weak interactions (field theory)

electroweak model

(added April 1994)

UF *standard electroweak model*
Weinberg-Salam Gauge Model
GS field theory (physics)
. gauge theory
. . . unified field theory
. . . . **electroweak model**
models
. **electroweak model**
RT electromagnetic interactions
electroweak interactions (field theory)
Higgs bosons
particle theory
quantum theory
standard model (particle physics)
weak interactions (field theory)

electrowinning

DEF The production of metals by electrolysis with insoluble anodes in solutions derived from ores or other materials.

RT electrodeposition
electrodes
electrolytes
electrolytic cells
electrorefining

Elektron 1 satellite

GS artificial satellites
. meteorological satellites
. . . Elektron satellites

. . . **Elektron 1 satellite**

Elektron 2 satellite

GS artificial satellites
. meteorological satellites
. . . Elektron satellites
. . . . **Elektron 2 satellite**

Elektron 4 satellite

GS artificial satellites
. meteorological satellites
. . . Elektron satellites
. . . . **Elektron 4 satellite**

Elektron satellites

GS artificial satellites
. meteorological satellites
. . . **Elektron satellites**
. . . . Elektron 1 satellite
. . . . Elektron 2 satellite
. . . . Elektron 4 satellite

element abundance

USE **abundance**

elementary excitations

UF *quasi-particles*
GS **elementary excitations**
. excitons
. magnons
. phonons
. . . phonon beams
. plasmons
. polarons
RT many body problem

elementary particle interactions

GS particle interactions
. **elementary particle interactions**
. . . electroweak interactions (field theory)
. . . high energy interactions
. . . strong interactions (field theory)
. . . meson-meson interactions
. . . meson-nucleon interactions
. . . nuclear capture
. . . electron capture
. . . nucleon-nucleon interactions
. . . weak energy interactions
. . . weak interactions (field theory)
. . . proton-antiproton interactions
RT angular distribution
electromagnetic interactions
 ∞ interactions
ion atom interactions
Mandelstam representation
particle decay
photon-electron interaction
transverse momentum
Veneziano model

elementary particles

GS particles
. **elementary particles**
. . . antiparticles
. . . antineutrinos
. . . antinucleons
. . . antiprotons
. . . positrons
. . . beta particles
. . . bosons
. . . . alpha particles
. . . . Higgs bosons
. . . . mesons
. eta-mesons
. hyperons
. xi hyperons
. kaons
. meson resonance
. X mesons
. muons
. omega-mesons
. pions
. vector mesons
. rho-mesons
. sigma-mesons
. . . photons
. . . xi hyperons
. . . deuterons
. . . electron-positron pairs

. . . fermions
. . . baryons
. . . . hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
. eta-mesons
. . . leptons
. . . . antineutrinos
. . . . electrons
. conduction electrons
. free electrons
. high energy electrons
. relativistic electron beams
. hot electrons
. N electrons
. negatrons
. photoelectrons
. pi-electrons
. polarons
. solar electrons
. muons
. neutrinos
. solar neutrinos
. positrons
. meson resonance
. X mesons
. . . neutrons
. . . . cold neutrons
. . . . fast neutrons
. . . . photonucleons
. . . . solar neutrons
. . . . thermal neutrons
. . . protons
. . . . recoil protons
. . . . solar protons
. . . hadrons
. . . baryons
. . . . hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
. mesons
. eta-mesons
. hyperons
. xi hyperons
. kaons
. meson resonance
. X mesons
. muons
. omega-mesons
. pions
. vector mesons
. rho-mesons
. sigma-mesons
. . . hypothetical particles
. . . magnetic monopoles
. . . nucleons
. . . gluons
. . . gravitinos
. . . gravitons
. . . partons
. . . quarks
. . . tachyons
. . . weakly interacting massive particles
RT atomic structure
bubble chambers
charged particles
de Broglie wavelengths
geocyclotrons
hypernuclei
instantons
ionizing radiation
neutron scattering
nuclear interactions
nuclear particles
nuclear radiation
nuclei (nuclear physics)
particle accelerators
Pomeranchuk theorem
positron annihilation
quantum theory
radiation belts
standard model (particle physics)

∞ elements

SN (USE OF A MORE SPECIFIC TERM IS

RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT atoms
chemical elements
hahnium
heavy elements
isoparametric finite elements
light elements
logical elements
neutral atoms
nuclear fuel elements
orbital elements
rutherfordium
tasks

elevation
RT altimetry
altitude
contours
digital elevation models
head (fluid mechanics)
hydrostatic pressure
hydrostatics
hypsography
low altitude
pressure heads
topography

elevation angle
UF *almucantar*
GS geometry
. Euclidean geometry
. . . angles (geometry)
. . . **elevation angle**
RT altitude
azimuth
datum (elevation)
field of view
look angles (tracking)
topography

elevations (drawings)
USE **drawings**

elevator illusion
GS psychological effects
. illusions
. . . optical illusion
. . . **elevator illusion**
RT visual perception

elevators (control surfaces)
GS airfoils
. **elevators (control surfaces)**
control surfaces
. **elevators (control surfaces)**
RT ailerons
 ∞ control
elevons
horizontal tail surfaces
hydrofoils
stabilizers (fluid dynamics)
 ∞ surfaces
tabs (control surfaces)
tail assemblies
tail surfaces

elevators (lifts)
GS **elevators (lifts)**
. space elevators
RT conveyors
escalators
 ∞ jacks
 ∞ lifts
winches

elevons
GS airfoils
. **elevons**
control surfaces
. **elevons**
RT ailerons
elevators (control surfaces)
lateral control
tabs (control surfaces)

elimination
GS **elimination**
. deletion
RT attenuation
cancellation

decontamination
depletion
 ∞ discharge
disposal
evacuating (transportation)
evacuating (vacuum)
exclusion
exhaust systems
exhausting
Gaussian elimination
pollution
purification
 ∞ reduction
rejection
 ∞ separation
stopping
waste disposal

ellipses
DEF Plane curves constituting the locus of all points the sum of whose distances from two fixed points called focuses or foci is constant; an elongated circle.
GS geometry
. Euclidean geometry
. . . analytic geometry
. . . . conics
. . . . **ellipses**
RT circles (geometry)

ellipsoids
DEF Surfaces whose plane sections (cross sections) are all ellipses or circles, or the solid enclosed by such a surface. Used for Izsak ellipsoid.
UF *Izsak ellipsoid*
GS symmetrical bodies
. **ellipsoids**
RT bodies of revolution
ellipticity
ogives

ellipsometers
DEF Instruments for determining the ellipticity of polarized light. Used to measure the thickness of very thin transparent films.
GS measuring instruments
. optical measuring instruments
. . . **ellipsometers**
optical equipment
. optical measuring instruments
. . . **ellipsometers**
RT ellipsometry
photometers
polarimeters

ellipsometry
(added December 1989)
RT dimensional measurement
ellipsometers
ellipticity
film thickness
 ∞ measurement
optical measurement
polarized light

elliptic differential equations
GS analysis (mathematics)
. real variables
. . . differential equations
. . . . partial differential equations
. . . . **elliptic differential equations**
. Monge-Ampere equation
RT ∞ equations
half spaces
maximum principle

elliptic functions
UF *elliptic integrals*
GS analysis (mathematics)
. complex variables
. . . meromorphic functions
. . . . **elliptic functions**
functions (mathematics)
. meromorphic functions
. . . **elliptic functions**
RT Jacobi integral

Weierstrass functions

elliptic integrals
USE **elliptic functions**

elliptical cylinders
RT circular cylinders
 ∞ cylinders
cylindrical bodies
cylindrical shells

elliptical galaxies
GS celestial bodies
. galaxies
. . . **elliptical galaxies**
RT disk galaxies
galactic clusters
local group (astronomy)
peculiar galaxies
Population II stars
ring galaxies
shell galaxies
spiral galaxies
star clusters
Virgo galactic cluster

elliptical orbits
UF *Hohmann trajectories*
Hohmann transfer orbits
GS orbits
. **elliptical orbits**
. . . transfer orbits
. . . . interplanetary transfer orbits
RT aphelions
apogees
apsides
circular orbits
Earth orbits
Earth-Mars trajectories
Earth-Mercury trajectories
eccentric orbits
ellipticity
equatorial orbits
Euler-Lambert equation
low Earth orbits
lunar orbits
orbital mechanics
PAS
perigees
perihelions
planetary orbits
polar orbits
satellite orbits
solar orbits
spacecraft orbits

elliptical plasmas
DEF Confined non-circular plasmas.
GS particles
. charged particles
. . . energetic particles
. . . . plasmas (physics)
. **elliptical plasmas**
. corpuscular radiation
. . . energetic particles
. . . . plasmas (physics)
. **elliptical plasmas**
RT magnetohydrodynamic stability
plasma control
toroidal plasmas

elliptical polarization
DEF The polarization of a wave radiated by an electric vector rotating in a plane and simultaneously varying in amplitude so as to describe an ellipse.
GS polarization (waves)
. **elliptical polarization**
RT circular polarization
magnetoionics

ellipticity
DEF The amount by which a spheroid differs from a circle, calculated by dividing the difference in the length of the axes by the length of the major axis.
GS shapes
. **ellipticity**
RT eccentricity
ellipsoids

elongation

ellipsometry
elliptical orbits
flattening
oblate spheroids

elongation

RT angles (geometry)
deformation
ductility
eccentricity
expansion
mechanical properties
plastic deformation
stretching
superplasticity
tensile deformation
tensile strength

elution

UF *elutriation*
RT adsorption
extraction
flushing
leaching
purification
∞ separation
washing

elutriation

USE **elution**

elves

(added January 2000)

DEF Transient air glow events observed near 90 km, nearly simultaneously with a strong cloud-to-ground lightning stroke. They often precede sprites, which may occur at lower altitudes a few milliseconds later. It is believed that elves are the result of wave heating by very low frequency (VLF) radio pulses emitted by the lightning discharge current.

GS atmospheric radiation
. sky radiation
. . **elves**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . **elves**

RT atmospheric electricity
atmospheric ionization
cloud-to-ground discharges
lightning
sprites (atmospheric physics)
thunderstorms

e-mail

(added April 2000)

USE **electronic mail**

emanation

USE **emission**

embedded atom method

(added February 1998)

DEF A semiempirical calculation method developed by Daw and Baskes for determining the energetics of atoms in a bulk environment. The original form of the method was based on density functional theory and was intended primarily for tight-packed transition metals. More recent modifications have extended the applicability of the method to a large number of elements in the periodic table.

UF *EAM (physical chemistry)*
MEAM (physical chemistry)
modified embedded atom method

RT alloys
crystal defects
grain boundaries
interatomic forces
metals
∞ methodology
molecular dynamics
potential energy

embedded computer systems

DEF Computer systems physically incorporated into larger systems whose primary function is not data processing.

GS data processing equipment

. computers
. . **embedded computer systems**
. . . airborne/spaceborne computers

RT Ada (programming language)

embedding

RT acceleration protection
encapsulating
insertion

embolisms

DEF Large amounts of air in the blood stream which, when reaching the heart, cause it to fail; small amounts are resorbed and cause no symptoms.

GS **embolisms**
. aeroembolism
. fat embolisms

RT blood vessels
clotting
coagulation
infarction

embossing

DEF Raising in relief on a surface.
RT braille

embrittlement

DEF The severe loss of ductility or toughness or both, of a material, usually a metal or alloy.

GS **embrittlement**
. hydrogen embrittlement
RT brittle materials
brittleness
degradation
time temperature parameter

embryology

RT ∞ biology
diencephalon
differentiation (biology)
embryos
fetuses
neuroblasts
reproduction (biology)

embryos

RT eggs
embryology
fetuses
seeds
zygotes

emerald

USE **beryl**

emergencies

RT accidents
disasters
fail-safe systems

emergency breathing techniques

RT ∞ breathing
∞ methodology
pressure breathing
respirators
resuscitation

emergency landing

(added March 2002)

DEF Unscheduled aircraft or spacecraft landing necessitated by an unexpected problem.

GS landing
. **emergency landing**
RT abort trajectories
aircraft accidents
aircraft landing
aircraft safety
crash landing
engine failure
flight safety
hard landing
spacecraft landing

emergency life sustaining systems

GS support systems
. life support systems
. . **emergency life sustaining systems**

. . . AEPS

RT Assured Crew Return Vehicle
environmental control
escape capsules
floats
high altitude breathing
medical equipment
oxygen supply equipment
portable life support systems
pressurized cabins
protective clothing
safety
safety devices
survival equipment
∞ systems

emergency locator transmitters

DEF Aircraft distress signal equipment with a radio beacon on a specific emergency frequency and used for locating downed aircraft. The set is activated by the impact of the crash.

GS transmitters
. **emergency locator transmitters**

emerging

RT emission
emissivity
emittance

emission

UF *emanation*
GS **emission**
. acoustic emission
. exhaust emission
. light emission
. . incandescence
. . luminescence
. . . bioluminescence
. . . cathode glow
. . . cathodoluminescence
. . . chemiluminescence
. . . electroluminescence
. . . fluorescence
. . . . laser induced fluorescence
. . . . phosphorescence
. . . . resonance fluorescence
. . . . x ray fluorescence
. . . lunar luminescence
. . . optical resonance
. . . photoluminescence
. . . triboluminescence
. . . . x ray fluorescence
. . . shock wave luminescence
. . . sonoluminescence
. . . spacecraft glow
. . . thermoluminescence
. microwave emission
. particle emission
. . electron emission
. . field emission
. . . photoelectric emission
. . . secondary emission
RT ion emission
. neutron emission
. thermionic emission
. photoionization
. radio emission
. . CN emission
. . hydroxyl emission
. . radio bursts
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . solar radio emission
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. self sustained emission
. spectral emission
. spontaneous emission
. stimulated emission
. thermal emission
. . thermionic emission
. ultraviolet emission
. water masers
RT airglow

atomic recombination
bursts
decay
∞ discharge
efflux
ejection
emerging
emitters
excitation
ionizing radiation
irradiation
nuclear reactions
pair production
quantum theory
∞ radiation
radioactive decay
radioactivity
releasing
selection rules (nuclear physics)
sputtering

emission spectra

SN (LIMITED TO ELECTROMAGNETIC RADIATION OF ANY WAVELENGTH EMITTED FROM EXCITED MATTER--EXCLUDES PARTICLE SPECTRA)
DEF The spectra of wavelengths and relative intensities of electromagnetic radiation emitted by a given radiator. Each radiating substance has a unique, characteristic emission spectrum, just as every medium of transmission has its individual absorption spectrum.
GS spectra
. radiation spectra
. . . **emission spectra**
RT absorption spectra
atomic recombination
Balmer series
blue shift
continuous radiation
D lines
electromagnetic spectra
electron spectroscopy
electronic spectra
flame spectroscopy
gamma ray spectra
gamma rays
H alpha line
H beta line
H gamma line
H II regions
H lines
hydroxyl emission
infrared spectra
K lines
laser-induced breakdown spectroscopy
line spectra
Lyman spectra
molecular spectra
molecular spectroscopy
nuclear radiation
optical emission spectroscopy
optical transition
Paschen series
photoluminescent bands
plasma spectra
Raman spectra
Rydberg series
Schumann-Runge bands
solar spectra
solar spectrometers
spectral signatures
spectrum analysis
spontaneous emission
stellar spectra
Swan bands
symbiotic stars
ultraviolet emission
ultraviolet spectra
Vegard-Kaplan bands
visible spectrum
x ray stars
x rays

emissivity

DEF A property of a material, measured as the emittance of a specimen of the material that is thick enough to be completely opaque and

has an optically smooth surface. Used for photoemissivity.

UF *photoemissivity*
GS thermodynamic properties
. thermophysical properties
. . . **emissivity**
RT black body radiation
brightness
emerging
emittance
hohlraums
incandescence
luminosity
nongray atmospheres
nongray gas
optical measurement
radiance
radiant flux density
Stefan-Boltzmann law
surface properties
temperature
thermal emission

emissographs

USE **actinometers**
recording instruments

emittance

RT emerging
emissivity
flux (rate)
luminosity
luminous intensity
optical properties
radiance
radiant flux density
spectral emission
thermodynamic properties

emitters

GS **emitters**
. thermionic cathodes
. thermionic emitters
RT electron emission
emission
semiconductors (materials)
thermophotovoltaic conversion

emotional factors

RT angina pectoris
detachment
disorders
dithers
feedback
frustration
human reactions
moods
panic
phobias
psychological factors
psychology
sensory feedback
sensory stimulation

emotions

RT ∞ depression
fear
fear of flying
frustration
human behavior
laughing
moods
panic
psychological effects
psychology
sensory feedback

EMP (electromagnetism)
(added May 1997)

USE **electromagnetic pulses**

empennage

USE **tail assemblies**

emphysema

GS diseases
. respiratory diseases
. . . **emphysema**

RT occupational diseases

employee relations

RT ∞ cooperation
human relations
personnel
personnel development
personnel management
position (title)
production management
retirement
wage surveys

employment

RT personnel selection
∞ tests

emptying

RT disposal
dumping
ejection
expulsion
expulsion bladders
jettisoning
materials handling
releasing
removal
spilling
spreading
unloading

EMR 6050 computer

GS data processing equipment
. computers
. . . digital computers
. . . **EMR 6050 computer**

emulsions

DEF Suspensions of fine particle or globules of one or more liquids in another liquid.
GS mixtures
. dispersions
. . . **emulsions**
. . . photographic emulsions
. . . nuclear emulsions
RT Brownian movements
colloids
slurries
solutions

enamels

DEF Thin ceramic coatings, usually of high glass content, applied to a substrate, generally a metal.
GS coatings
. **enamels**
finishes
. **enamels**
RT porcelain

enantiomeric compounds

(added August 1998)

USE **enantiomers**

enantiomers

(added August 1998)

DEF Isomeric pairs whose crystalline forms or molecular structures are non-superimposable mirror images.

UF *enantiomeric compounds*
enantiomorphs

GS isomers
. **enantiomers**

RT chirality
crystal structure
isomorphism
molecular structure
stereochemistry
symmetry

enantiomorphs

(added August 1998)

USE **enantiomers**

encapsulated microcircuits

DEF Microelectronic circuits enclosed in plastic.
GS circuits
. integrated circuits
. . . **encapsulated microcircuits**

encapsulating

RT microelectronics

encapsulating

GS coating
. **encapsulating**
coatings
. **encapsulating**
RT canning
electronic packaging
electrostatic bonding
embedding
∞ imbeddings
materials handling
packaging
plastic coatings
potting compounds
protective coatings
sealing
sheaths

Enceladus

DEF A satellite of Saturn orbiting at a mean distance of 238,000 kilometers.
GS celestial bodies
. natural satellites
. . . icy satellites
. . . **Enceladus**
. . . Saturn satellites
. . . **Enceladus**
RT Saturn (planet)

encephalitis

GS diseases
. **encephalitis**
RT bacterial diseases
brain
viral diseases

Encke comet

DEF A very faint comet with a periodicity of 3.3 years which is the shortest of any known comet.
GS celestial bodies
. comets
. . . **Encke comet**
RT Comet Nucleus Tour

Encke method

RT ∞ methodology

enclosure

RT ∞ casing
 housings
 packaging

enclosures

RT air locks
asteroid capture
∞ barriers
biopaks
closures
compartments
∞ containers
coverings
doghouses (electronics)
∞ envelopes
housings
∞ pens
perforated shells
pressure chambers
protectors
rooms
safety devices
shells (structural forms)
shielding
shipyards
walls

encoders

USE **coders**

encoding

USE **coding**

encounters

RT crashes
scattering

end effectors

UF *fingers (robotics)*
hands (robotics)

mechanical fingers

mechanical hands

robot fingers

robot hands

RT ∞ effectors
manipulators
robot arms
robot dynamics
robotics
robots
tactile sensors (robotics)
torque sensors (robotics)

end moraines

USE **glacial drift**

end plates

GS structural members
. plates (structural members)
. . . **end plates**
RT anisotropic plates
bulkheads
circular plates
closures
flat plates
shallow shell equations

endangered species

DEF Living organisms (except plants) whose populations have diminished to such low levels that survival may require extraordinary conservation procedures. Changes in size and quality of the ecology are considered the cause of the possible extinction of some species.

RT animals
birds
ecology
ecosystems
habitats
pollution
toxicity
wildlife

Endeavour (orbiter)

(added June 1989)

UF *Space Shuttle Orbiter 105*

GS manned spacecraft
. space shuttles
. . . Space Shuttle orbiters
. . . **Endeavour (orbiter)**
reentry vehicles
. recoverable spacecraft
. reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. . . . **Endeavour (orbiter)**
RT Challenger (Orbiter)
∞ spacecraft

endfire arrays

GS arrays
. antenna arrays
. . linear arrays
. . . **endfire arrays**
. . . . Yagi antennas
RT backfire antennas
directional antennas

endocrine glands

GS anatomy
. glands (anatomy)
. . **endocrine glands**
. . . adrenal gland
. . . gonads
. . . ovaries
. . . testes
. . . hypothalamus
. . . pancreas
. . . parathyroid gland
. . . pineal gland
. . . pituitary gland
. . . thymus gland
. . . thyroid gland
RT endocrinology
estrogens

endocrine secretions

GS secretions
. **endocrine secretions**
. . hormones

. . . corticosteroids
. . . . aldosterone
. . . . hydrocorticosteroid
. . . . cortisone
. . . . glucocorticoids
. . . estrogens
. . . hypertension
. . . pituitary hormones
. . . . adrenocorticotropin (ACTH)
. . . vasopressins
. . . prostaglandins
. . . thyroxine
. . insulin

endocrine systems

RT endocrinology
glands (anatomy)
hormones
mineral metabolism
∞ systems

endocrinology

GS medical science
. **endocrinology**
RT endocrine glands
endocrine systems

endolymph

GS body fluids
. **endolymph**
RT ear

endoplasmic reticulum

GS organelles
. **endoplasmic reticulum**
. . sarcoplasmic reticulum
RT cells (biology)
cytoplasm

endoscopes

UF *borescopes*
GS medical equipment
. **endoscopes**
optical equipment
. **endoscopes**
RT inspection

endothelium

GS tissues (biology)
. **endothelium**
RT blood vessels
cells (biology)

endothermic fuels

GS fuels
. chemical fuels
. . **endothermic fuels**
RT cryogenic rocket propellants
double base propellants
gaseous rocket propellants
hydrocarbon fuels
propellant decomposition

endothermic reactions

GS chemical reactions
. **endothermic reactions**
RT association reactions
exothermic reactions
heat sinks
pyrolysis
thermal decomposition

endotoxins

GS poisons
. **endotoxins**
toxins and antitoxins
. **endotoxins**
RT bacteriology
toxicology

endrin

GS epoxy compounds
. **endrin**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **endrin**
RT insecticides

end-to-end data systems

DEF Comprehensive data systems which

demonstrate the processing of sensor data to the user thus reducing data fragmentation.

GS **end-to-end data systems**

. needs (data system)

RT ∞ data

data acquisition

data processing

data systems

∞ systems

∞ **endurance**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT durability

fatigue (biology)

fatigue (materials)

human performance

human tolerances

enemy personnel

GS personnel

. **enemy personnel**

RT armed forces (foreign)

Energetic Particle Explorer A

USE **Explorer 12 satellite**

Energetic Particle Explorer B

USE **Explorer 14 satellite**

Energetic Particle Explorer C

USE **Explorer 15 satellite**

Energetic Particle Explorer D

USE **Explorer 26 satellite**

energetic particles

DEF Charged particles having energies equaling or exceeding a hundred MeV

GS particles

. charged particles

. . **energetic particles**

. . . electrons

. . . . conduction electrons

. . . . free electrons

. . . . high energy electrons

. relativistic electron beams

. . . . hot electrons

. . . . N electrons

. . . . negatrons

. . . . photoelectrons

. . . . pi-electrons

. . . . polarons

. . . . solar electrons

. . . nuclei (nuclear physics)

. . . . alpha particles

. . . . deuterons

. even-even nuclei

. . . . heavy nuclei

. . . . hypernuclei

. . . . odd-even nuclei

. . . . odd-odd nuclei

. . . . tritons

. . . plasmas (physics)

. . . . argon plasma

. . . . beta particles

. . . . boundary layer plasmas

. . . . cold plasmas

. . . . collisional plasmas

. strongly coupled plasmas

. . . . collisionless plasmas

. . . . cosmic plasma

. . . . cylindrical plasmas

. . . . dense plasmas

. . . . plasma focus

. strongly coupled plasmas

. . . . electron plasma

. . . . electron-positron plasmas

. . . . elliptical plasmas

. . . . helium plasma

. . . . high temperature plasmas

. . . . hydrogen plasma

. deuterium plasma

. . . . laser plasmas

. . . . metallic plasmas

. cesium plasma

. . . . uranium plasmas

. . . . microplasmas

. . . . nitrogen plasma

. . . . nonequilibrium plasmas

. . . . nonuniform plasmas

. . . . oxygen plasma

. . . . rarefied plasmas

. . . . relativistic plasmas

. . . . rotating plasmas

. . . . semiconductor plasmas

. . . . space plasmas

. solar wind

. . . . stellar winds

. . . . dusty plasmas

. . . . spherical plasmas

. . . . thermal plasmas

. . . . toroidal plasmas

. . . corpuscular radiation

. . **energetic particles**

. . . electrons

. . . . conduction electrons

. . . . free electrons

. . . . high energy electrons

. relativistic electron beams

. . . . hot electrons

. . . . N electrons

. . . . negatrons

. . . . photoelectrons

. . . . pi-electrons

. . . . polarons

. . . . solar electrons

. . . nuclei (nuclear physics)

. . . . alpha particles

. . . . deuterons

. . . . even-even nuclei

. . . . heavy nuclei

. . . . hypernuclei

. . . . odd-even nuclei

. . . . odd-odd nuclei

. . . . tritons

. . . plasmas (physics)

. . . . argon plasma

. . . . beta particles

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. . . . cold plasmas

. . . . collisional plasmas

. strongly coupled plasmas

. . . . collisionless plasmas

. . . . cosmic plasma

. . . . cylindrical plasmas

. . . . dense plasmas

. . . . plasma focus

. strongly coupled plasmas

. . . . electron plasma

. . . . electron-positron plasmas

. . . . elliptical plasmas

. . . . helium plasma

. . . . high temperature plasmas

. . . . hydrogen plasma

. . . . deuterium plasma

. . . . laser plasmas

. . . . metallic plasmas

. . . . cesium plasma

. . . . uranium plasmas

. . . . microplasmas

. . . . nitrogen plasma

. . . . nonequilibrium plasmas

. . . . nonuniform plasmas

. . . . oxygen plasma

. . . . rarefied plasmas

. . . . relativistic plasmas

. . . . rotating plasmas

. . . . semiconductor plasmas

. . . . space plasmas

. solar wind

. . . . stellar winds

. . . . dusty plasmas

. . . . spherical plasmas

. . . . thermal plasmas

. . . . toroidal plasmas

RT Advanced Composition Explorer

galactic cosmic rays

radio jets (astronomy)

solar cosmic rays

Energiya launch vehicle

(added April 1995)

GS launch vehicles

. heavy lift launch vehicles

. . **Energiya launch vehicle**

RT international cooperation

Russian Space Program

space commercialization

∞ **energy**

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Any quantity with dimensions which can be represented as mass times length squared

RT

activation energy

Bernstein energy principle

binding energy

chemical energy

commercial energy

dark energy

domestic energy

electron energy

energy conservation

energy conversion efficiency

energy of formation

enthalpy

entropy

exergy

flux (rate)

flux density

free energy

gravitational binding energy

heat

hydrogen-based energy

industrial energy

interfacial energy

internal energy

kinetic energy

lattice energy

molecular energy levels

nuclear binding energy

particle energy

potential energy

proton energy

radiant heating

seismic energy

solar energy

solar total energy systems

stacking fault energy

strain energy methods

surface energy

thermal energy

thermonuclear power generation

transportation energy

waterwave energy

work

energy absorption

UF *nonreflection*

GS **energy absorption**

. moderation (energy absorption)

. . thermalization (energy absorption)

. . . neutron thermalization

. . . radiation absorption

. . . electromagnetic absorption

. . . auroral absorption

. . . gamma ray absorption

. . . infrared absorption

. . . microwave absorption

. . . multiphoton absorption

. . . photoabsorption

. . . polar cap absorption

. . . ultraviolet absorption

. . . x ray absorption

. . molecular absorption

. . self absorption

. . thermal absorption

. . polar cap absorption

RT absorbers (materials)

∞ absorption

damping

energy conversion efficiency

gamma ray absorptiometry

heat sinks

infrared radiation

light (visible radiation)

photon absorptiometry

shock absorbers

sound transmission

vibration isolators

energy absorption films

GS thin films

. **energy absorption films**

RT ∞ absorption

energy bands

- aluminum oxides
- coatings
- direct power generators
- Golay detector cells
- monomolecular films
- photoelectric cells
- photothermal conversion
- selective surfaces
- semiconducting films
- thermochromic coatings

energy bands

- GS **energy bands**
 - . Bloch band
 - . conduction bands
 - . forbidden bands
- RT ∞ bands
 - electronic structure
 - excitons
 - laser windows
 - quantum wells
 - spectral bands
 - windows (intervals)

energy budgets

DEF Quantitative descriptions of the total energy exchange into and out of a given physical or ecological system; may include radiation heat, kinetic, and biological process.

- GS **energy budgets**
 - . Earth radiation budget
 - . heat budget
 - . . atmospheric heat budget
- RT atmospheric energy sources
- ∞ budgets
 - exergy

energy conservation

- GS conservation
 - . **energy conservation**
- RT ∞ energy
 - energy policy
 - exergy
 - power factor controllers
 - residential energy
 - resource allocation
 - resources
 - thermochromic coatings

energy consumption

- GS consumption
 - . **energy consumption**
- RT
 - coal utilization
 - commercial energy
 - domestic energy
- ∞ energy sources
 - fuel consumption
 - industrial energy

energy conversion

DEF The change of a working substance or natural power into a more useable form of energy such as electricity or mechanical motion.

- GS **energy conversion**
 - . biomass energy production
 - . geothermal energy conversion
 - . ocean thermal energy conversion
 - . satellite solar energy conversion
 - . solar energy conversion
 - . . photothermal conversion
 - . . . thermophotovoltaic conversion
 - . . photovoltaic conversion
 - . . . thermophotovoltaic conversion
 - . . solar total energy systems
 - . waterwave energy conversion

- RT cogeneration
- commercial energy
- ∞ conversion
 - direct power generators
 - domestic energy
 - geothermal energy extraction
 - hydrogen production
 - hydrothermal systems
 - industrial energy
 - integrated energy systems
 - laser power beaming
 - lignite
 - organic wastes (fuel conversion)
 - power beaming
 - power conditioning

- satellite solar power stations
- solar ponds (heat storage)
- solar sea power plants
- space industrialization
- transportation energy
- waste energy utilization

energy conversion efficiency

- GS efficiency
 - . **energy conversion efficiency**
- RT carrier transport (solid state)
- ∞ conversion
 - direct power generators
- ∞ energy
 - energy absorption
 - engines
 - exergy
 - fuel cells
- ∞ generators
 - motors
 - open circuit voltage
 - photothermal conversion
 - power conditioning
 - power factor controllers
 - quantum efficiency
 - Redox cells
 - spectrophotovoltaics
 - thermophotovoltaic conversion
 - tide powered generators
 - transducers
 - volumetric efficiency
 - waterwave energy conversion

energy converters

USE **direct power generators**

energy density

USE **flux density**

energy dissipation

DEF The difference between energy input and output as a result of transfer of energy between two points. Used for energy loss.

- UF *energy loss*
- GS dissipation
 - . **energy dissipation**
- RT dielectric loss
- exergy
- friction
- insertion loss
- Lagrange similarity hypothesis
- losses
- nonadiabatic theory
- ∞ power loss
- traveling charge

energy distribution

- GS distribution (property)
 - . **energy distribution**
 - . . spectral energy distribution
- RT equipartition theorem
- flux density
- force distribution
- integrated energy systems
- quantum mechanics
- statistical mechanics

Energy Efficiency Transport program

USE **ACEE program**

energy equipartition

USE **equipartition theorem**

energy exchange

USE **energy transfer**

energy gaps (solid state)

DEF A range of forbidden energies in the band theory of solids. Used for bandgap.

- UF *bandgap*
- GS gaps
 - . **energy gaps (solid state)**
- RT band structure of solids
- blue shift
- electronic structure
- MODFETS
- modulation doping
- quantum well lasers
- quantum wells
- solid state

∞ solid state physics

energy levels

DEF Any one of different values of energy which a particle, atom, or molecule may adopt under conditions where the possible values are restricted by quantizing conditions. Used for electronic levels.

- UF *electronic levels*
- GS level (quantity)
 - . **energy levels**
 - . . atomic energy levels
 - . . electron states
 - . . ground state
 - . . molecular energy levels
 - . . . intermolecular forces
 - . . . rotational states
 - . . . vibrational states
 - . . yrast state
- RT atomic excitations
- atomic structure
- electron tunneling
- electronic structure
- excitation
- Fermi surfaces
- molecular excitation
- nuclear capture
- nuclear models
- nuclear quadrupole resonance
- nuclear spin
- nuclear structure
- population inversion
- quantum numbers
- quantum theory

energy loss

USE **energy dissipation**

energy methods

- GS structural analysis
 - . **energy methods**
 - . . Bernstein energy principle
 - . . strain energy methods
- RT Castigliano variational theorem
- matrices (mathematics)
- ∞ methodology
- stress analysis

energy of formation

- GS chemical energy
 - . **energy of formation**
- RT ∞ energy
 - free energy
 - molecular energy levels

energy policy

- GS policies
 - . **energy policy**
- RT abundance
- availability
- coal
- coal gasification
- coal liquefaction
- coal utilization
- conservation
- crude oil
- depletion
- ∞ development
- Earth resources
- ecology
- economic factors
- energy conservation
- fuel oils
- fuels
- hydrocarbon fuels
- land use
- lignite
- logistics
- mining
- ∞ nuclear energy
- nuclear fuels
- oil exploration
- oils
- operating costs
- pollution
- refining
- renewable energy
- reserves
- resource allocation
- resources

- safety
- energy requirements**
 - RT ∞ energy sources
 - fuel consumption
 - ∞ power supplies
- ∞ **energy sources**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT atmospheric energy sources
 - auxiliary power sources
 - biomass energy production
 - electric batteries
 - electric generators
 - electron sources
 - energy consumption
 - energy requirements
 - energy technology
 - geothermal resources
 - heat sources
 - lithium sulfur batteries
 - ocean thermal energy conversion
 - plasma power sources
 - point sources
 - propellants
 - rectifiers
 - renewable energy
 - spacecraft power supplies
 - tidepower
 - waterwave energy conversion
- energy spectra**
 - GS spectra
 - . **energy spectra**
 - . . electronic spectra
 - . . neutron spectra
 - RT absorption spectra
 - electromagnetic spectra
 - gamma ray astronomy
 - GRIST (telescope)
 - mass spectra
 - molecular spectra
 - plasma spectra
 - power spectra
 - radiation spectra
 - shock spectra
 - spectral energy distribution
 - spectrophotovoltaics
 - vibrational spectra
- energy storage**
 - UF *energy storage devices*
 - GS **energy storage**
 - . electric energy storage
 - . heat storage
 - . magnetic energy storage
 - RT capacitors
 - compressed air
 - electrets
 - electric batteries
 - flywheels
 - fuel cells
 - fuels
 - geothermal energy utilization
 - heat sources
 - inductors
 - lead acid batteries
 - nickel hydrogen batteries
 - ∞ nuclear energy
 - potential energy
 - Redox cells
 - regenerators
 - roadway powered vehicles
 - space station power supplies
 - springs (elastic)
 - ∞ storage
 - superconductors (materials)
- energy storage devices*
- USE **energy storage**
- energy technology**
 - GS technologies
 - . **energy technology**
 - . . geothermal technology
 - RT biomass energy production
 - coal utilization
 - combined cycle power generation
 - Earth resources
- electrostatic bonding
- ∞ energy sources
- fuel cell power plants
- gas recovery
- geothermal energy extraction
- heat engines
- hydrocarbon fuel production
- hydrogen-based energy
- lignite
- magnetic energy storage
- offshore energy sources
- oil recovery
- phosphoric acid fuel cells
- photoelectrochemical devices
- photothermal conversion
- quantum efficiency
- renewable energy
- residential energy
- solar cooling
- solar energy conversion
- solar houses
- space cooling (buildings)
- Trombe walls
- waste heat
- energy transfer**
 - UF *energy exchange*
 - GS **energy transfer**
 - . linear energy transfer (LET)
 - RT acoustic coupling
 - antenna couplers
 - coupling circuits
 - cyclotron resonance
 - electron pumping
 - gas transport
 - gas-liquid interactions
 - heat transfer
 - Heisenberg theory
 - Lagrange similarity hypothesis
 - mass transfer
 - momentum transfer
 - nonadiabatic conditions
 - nonisothermal processes
 - nuclear pumping
 - plasma heating
 - Poynting theorem
 - radiative transfer
 - terminal ballistics
 - transferring
 - wave rotors
- engine airframe integration**
 - DEF Physics of the interface between the engine and the airframe.
 - RT aerodynamic characteristics
 - aerodynamic configurations
 - aircraft design
 - aircraft engines
 - airframes
- engine analyzers**
 - GS measuring instruments
 - . analyzers
 - . . **engine analyzers**
- engine control**
 - DEF Any control for regulating the power and speed of an engine, such as the throttle, mixture control, manifold pressure regulator, fuel pressure control, or supercharger control.
 - GS **engine control**
 - . rocket engine control
 - . turbojet engine control
 - RT air start
 - aircraft control
 - automatic control
 - combustion control
 - ∞ control
 - electric control
 - flight instruments
 - fuel control
 - hydraulic control
 - manual control
 - pneumatic control
 - remote control
 - spacecraft control
 - speed control
 - temperature control
 - thrust control
- variable stream control engines
- engine coolants**
 - DEF Liquids used in an engine cooling system to transfer heat from the engine to the radiator.
 - GS coolants
 - . **engine coolants**
 - RT cooling
 - cooling systems
- engine design**
 - GS **engine design**
 - . rocket engine design
 - RT aircraft design
 - computer aided design
 - ∞ design
 - helicopter design
 - missile design
 - nozzle design
 - product development
 - reactor design
 - spacecraft design
 - Stirling engines
 - volumetric efficiency
- engine failure**
 - GS failure
 - . **engine failure**
 - RT aborted missions
 - ∞ cut-off
 - emergency landing
 - ingestion (engines)
 - ∞ stalling
- engine inlets**
 - GS intake systems
 - . air intakes
 - . . **engine inlets**
 - RT bypass ratio
 - cavity flow
 - ∞ diffusers
 - hypersonic inlets
 - inlet airframe configurations
 - inlet nozzles
 - inlet temperature
 - internal compression inlets
 - nacelles
- engine monitoring instruments**
 - GS measuring instruments
 - . **engine monitoring instruments**
 - RT fault detection
 - flight instruments
 - systems health monitoring
- engine noise**
 - GS elastic waves
 - . sound waves
 - . . noise (sound)
 - . . . **engine noise**
 - rocket engine noise
 - RT aircraft noise
 - aircraft runup
 - jet aircraft noise
 - propeller noise
 - quiet engine program
- engine parts**
 - RT carburetors
 - clutches
 - combustion chambers
 - ∞ components
 - dump combustors
 - flywheels
 - internal combustion engines
 - pistons
 - retirement for cause
 - rocket linings
 - spare parts
 - turbine blades
 - turbine wheels
 - valves
 - wave rotors
- engine primers**
 - RT internal combustion engines
 - ∞ primers

engine starters

starting

engine relight (in-flight)
USE **air start**

engine starters
GS starters
 . **engine starters**
RT engines
 internal combustion engines
 jet engines

engine testing laboratories
GS laboratories
 . **engine testing laboratories**
 test facilities
 . **engine testing laboratories**
RT engines

engine tests
GS **engine tests**
 . cold flow tests
 . preferring tests
 . space electric rocket tests
 . static firing
RT aircraft runup
altitude tests
captive tests
flight tests
fuel tests
full scale tests
ground tests
lubricant tests
missile tests
nondestructive tests
prelaunch tests
propellant tests
propulsive efficiency
rocket engine design
rocket test facilities
SERT 1 spacecraft
SERT 2 spacecraft
static tests
Stirling engines
test firing
test stands
testing time
∞ tests
 vibration tests

∞ **engineering**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The useful application of scientific or other systematic knowledge of the properties of matter and the sources of energy in nature.
RT aeronautical engineering
aerospace engineering
aircraft production costs
anthropometry
bioengineering
bioinstrumentation
biometrics
biotelemetry
body measurement (biology)
chemical engineering
concurrent engineering
electrical engineering
environmental engineering
human factors engineering
man machine systems
mechanical engineering
production engineering
reactor technology
reliability engineering
software engineering
structural engineering
systems engineering
underwater engineering
value engineering

engineering development
USE **product development**

engineering drawings
UF *mechanical drawings*
GS documents
 . drawings
 . **engineering drawings**
 . . . blueprints

RT circuit diagrams
descriptive geometry
∞ design
 dimensions
 graphic arts
 layouts
 lofting
 reproduction (copying)

engineering management
GS management
 . industrial management
 . **engineering management**
RT allocations
∞ budgets
 goals
 manpower
 priorities
 research management
 resource allocation
 resources

engineering test reactors
UF *ETR (reactors)*
GS nuclear reactors
 . **engineering test reactors**
RT reactor design
 reactor technology

Engineering Test Satellites
(added October 1997)
SN (LIMITED TO THE JAPANESE ETS SERIES OF SATELLITES)
UF *ETS series satellites*
GS artificial satellites
 . **Engineering Test Satellites**
 Japanese spacecraft
 . **Engineering Test Satellites**

engineers
(added November 1992)
GS manpower
 . **engineers**
 personnel
 . **engineers**
RT awards
 scientists

engines
SN (LIMITED TO MACHINES WITH SELF-CONTAINED POWER SOURCES FOR CONTINUOUS OPERATION--SEE MOTORS FOR MACHINES UTILIZING EXTERNAL POWER SOURCES FOR NORMAL OPERATION)
DEF Machines or apparatus that convert energy, especially heat energy, into work. Used for gas generator engines.
UF *gas generator engines*
GS **engines**
 . air breathing engines
 . . . gas turbine engines
 . . . hydrogen engines
 . . . jet engines
 . . . T-58 engine
 . . . ramjet engines
 integral rocket ramjets
 low volume ramjet engines
 pulsejet engines
 supersonic combustion ramjet engines
 turboramjet engines
 . . . turbojet engines
 Bristol-Siddeley Olympus 593 engine
 Bristol-Siddeley Viper engine
 ducted fan engines
 J-33 engine
 J-34 engine
 J-47 engine
 J-52 engine
 J-57 engine
 J-58 engine
 J-65 engine
 J-69-T-25 engine
 J-71 engine
 J-73 engine
 J-75 engine
 J-79 engine
 J-85 engine
 J-93 engine
 RA-28 engine
 turbofan engines
 Bristol-Siddeley BS 53 engine
 CF-700 engine
 convertible fan-shaft engines
 J-97 engine
 TF-30 engine
 TF-34 engine
 TF-41 engine
 turboprop engines
 T-34 engine
 T-38 engine
 T-53 engine
 T-55 engine
 T-56 engine
 T-63 engine
 T-64 engine
 T-74 engine
 T-76 engine
 T-78 engine
 turboramjet engines
 . . . aircraft engines
 . . . convertible fan-shaft engines
 . . . helicopter engines
 . . . J-52 engine
 . . . J-58 engine
 . . . J-97 engine
 . . . T-34 engine
 . . . T-38 engine
 . . . T-55 engine
 . . . T-63 engine
 . . . T-76 engine
 . . . T-78 engine
 . . . turboramjet engines
 . . . aircraft engines
 . . . convertible fan-shaft engines
 . . . helicopter engines
 . . . J-52 engine
 . . . J-58 engine
 . . . J-97 engine
 . . . T-34 engine
 . . . T-38 engine
 . . . T-55 engine
 . . . T-63 engine
 . . . T-76 engine
 . . . T-78 engine
 . . . turboramjet engines
 . . . aircraft engines
 . . . convertible fan-shaft engines
 . . . external combustion engines
 . . . Stirling engines
 . . . internal combustion engines
 . . . diesel engines
 . . . gas turbine engines
 . . . hydrogen engines
 . . . jet engines
 . . . T-58 engine
 . . . ramjet engines
 integral rocket ramjets
 low volume ramjet engines
 pulsejet engines
 supersonic combustion ramjet engines
 turboramjet engines
 . . . turbojet engines
 Bristol-Siddeley Olympus 593 engine
 Bristol-Siddeley Viper engine
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 turboprop engines
 T-34 engine
 T-38 engine
 T-53 engine
 T-55 engine
 T-56 engine
 T-63 engine
 T-64 engine
 T-74 engine

- T-76 engine
- T-78 engine
- turboramjet engines
- .. helicopter engines
- .. rotary engines
- .. Wankel engines
- .. JATO engines
- .. Marquardt R4D engine
- .. piston engines
- .. diesel engines
- .. free-piston engines
- .. Stirling engines
- .. rocket engines
- .. booster rocket engines
- .. AJ-10 engine
- .. Algol engine
- .. apogee boost motors
- .. H-1 engine
- .. LR-87-AJ-5 engine
- .. M-1 engine
- .. M-55 engine
- .. MA-2 engine
- .. MA-3 engine
- .. MA-5 engine
- .. Nike booster rocket engines
- .. P-1 engine
- .. rocket engine 9KS-11000
- .. Space Shuttle Boosters
- .. Advanced Solid Rocket Motor (STS)
- .. X-405 engine
- .. ducted rocket engines
- .. electric rocket engines
- .. electrostatic engines
- .. ion engines
- cesium engines
- Hall thrusters
- mercury ion engines
- RIT engines
- .. electrothermal engines
- .. arc jet engines
- .. pulsed jet engines
- .. resistojet engines
- .. plasma engines
- .. magnetoplasmadynamic thrusters
- .. pulsed inductive thrusters
- .. pulsed plasma thrusters
- .. two stage plasma engines
- .. VASIMR (propulsion system)
- .. HEUS rocket engines
- .. hot water rocket engines
- .. hybrid propellant rocket engines
- .. lithergol rocket engines
- .. liquid propellant rocket engines
- .. AJ-10 engine
- .. F-1 rocket engine
- .. H-1 engine
- .. hydrazine engines
- .. hydrogen oxygen engines
- .. J-2 engine
- .. M-1 engine
- .. RL-10-A-1 engine
- .. RL-10-A-3 engine
- .. liquid air cycle engines
- .. LR-62-RM-2 engine
- .. LR-87-AJ-5 engine
- .. LR-91-AJ-5 engine
- .. MA-2 engine
- .. MA-3 engine
- .. MA-5 engine
- .. oxygen-hydrocarbon rocket engines
- .. RL-10 engines
- .. RL-10-A-1 engine
- .. RL-10-A-3 engine
- .. pulse detonation engines
- .. Space Shuttle Main Engine
- .. X-405 engine
- .. XLR-99 engine
- .. YLR-91-AJ-1 engine
- .. M-100 engine
- .. microrocket engines
- .. Orbit Maneuvering Engine (Space Shuttle)
- .. nozzleless rocket engines
- .. nuclear engine for rocket vehicles
- .. nuclear ramjet engines
- .. nuclear rocket engines

- .. nuclear lightbulb engines
- .. restartable rocket engines
- .. retrorocket engines
- .. BE-3 engine
- .. reusable rocket engines
- .. solid propellant rocket engines
- .. Algol engine
- .. apogee boost motors
- .. ASROC engine
- .. Hercules engine
- .. M-46 engine
- .. M-55 engine
- .. M-56 engine
- .. M-57 engine
- .. Nike booster rocket engines
- .. P-1 engine
- .. SL-3 rocket engine
- .. Space Shuttle Boosters
- .. Advanced Solid Rocket Motor (STS)
- .. SYNCOM apogee engines
- .. TX-77 engine
- .. TX-354 engine
- .. X-248 engine
- .. X-254 engine
- .. X-258 engines
- .. X-258-B1 engine
- .. X-259 engine
- .. XM-33 engine
- .. sustainer rocket engines
- .. turborocket engines
- .. ullage rocket engines
- .. upper stage rocket engines
- .. Vernier engines
- .. control rockets
- .. SYNCOM apogee engines
- .. aerospike engines
- .. rocket-based combined-cycle engines
- .. torpedo engines
- .. turborocket engines
- .. ullage rocket engines
- .. Vernier engines
- .. control rockets
- .. SYNCOM apogee engines
- .. turbine engines
- .. gas turbine engines
- .. hydrogen engines
- .. jet engines
- .. T-58 engine
- .. ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turboramjet engines
- turbojet engines
- Bristol-Siddeley Olympus 593 engine
- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
- J-34 engine
- J-47 engine
- J-52 engine
- J-57 engine
- J-58 engine
- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine

- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- RT auxiliary propulsion
- carburetors
- combustion chambers
- displacement
- energy conversion efficiency
- engine starters
- engine testing laboratories
- exhaust systems
- expendable stages (spacecraft)
- fuel consumption
- fuel systems
- geothermal energy conversion
- heat engines
- heat sources
- ignition systems
- lubrication
- ∞ machinery
- missile components
- motors
- ∞ power plants
- propulsion
- reaction products
- shutdowns
- speed regulators
- supersonic combustion
- thermodynamic efficiency
- thermodynamics
- transportation energy
- turbines
- ∞ vehicles
- England**
- GS nations
- .. United Kingdom
- .. **England**
- RT Europe
- English Channel**
- RT Atlantic Ocean
- France
- North Sea
- United Kingdom
- English language**
- GS languages
- .. **English language**
- RT speech
- words (language)
- engraving**
- RT etching
- printing
- enhanced vision**
- (added June 1995)
- UF *EVS*
- GS *synthetic vision*
- vision
- .. **enhanced vision**
- RT aircraft landing
- landing aids
- multisensor applications
- night vision
- visibility
- enhancement*
- USE **augmentation**
- enlarging*
- USE **expansion**
- ENO schemes*
- USE **essentially non-oscillatory schemes**
- enrichment**
- GS **enrichment**
- .. isotopic enrichment
- .. jet membrane process
- RT beneficiation
- concentrating
- purification

Enrico Fermi atomic power plant

refining
upgrading

Enrico Fermi atomic power plant

GS electric power plants
. nuclear power plants
. . . **Enrico Fermi atomic power plant**
nuclear electric power generation
. nuclear power plants
. . . **Enrico Fermi atomic power plant**
RT breeder reactors
fast nuclear reactors
liquid metal cooled reactors
∞ power plants

Enskog-Chapman theory

USE **Chapman-Enskog theory**

enstatite

GS chalcogenides
. oxides
. . . pyroxenes
. . . **enstatite**
magnesium compounds
. **enstatite**
minerals
. pyroxenes
. . . **enstatite**
silicon compounds
. silicates
. . . pyroxenes
. . . **enstatite**
RT chondrule
igneous rocks
regolith
rocks
soils

enstrophy

USE **vorticity**

Enterprise (Orbiter)

UF *Space Shuttle Orbiter 101*
GS manned spacecraft
. space shuttles
. . . Space Shuttle orbiters
. . . **Enterprise (Orbiter)**
reentry vehicles
. recoverable spacecraft
. . . reusable spacecraft
. . . . space shuttles
. . . . Space Shuttle orbiters
. . . . **Enterprise (Orbiter)**
RT manned space flight
∞ spacecraft

enthalpy

DEF A mathematically defined thermodynamic function of state. Used for heat content.

UF *heat content*

GS heat

. **enthalpy**
. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
thermodynamic properties

. **enthalpy**
. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization

RT adiabatic conditions
drying
∞ energy
entropy
free energy
Gibbs-Helmholtz equations
heat measurement
Joule-Thomson effect
Mollier diagram
specific heat
thermochemistry

thermodynamics

enthalpy-entropy diagrams

USE **Mollier diagram**

entire functions

UF *integral functions*
GS analysis (mathematics)
. complex variables
. . analytic functions
. . . **entire functions**
functions (mathematics)
. analytic functions
. . **entire functions**

entomology

RT insecticides
insects
∞ science
∞ zoology

entrainment

RT aeration
aerosols
blowing
Coanda effect
dispersing
spraying
suspending (mixing)

entrances

RT curtains
doors
intake systems
∞ thresholds
transfer tunnels

entrapment

RT accumulators
confusion
escape (abandonment)
radiation belts
tangling
traps

entropy

DEF A measure of the extent to which the energy of a system is unavailable.

GS thermodynamic properties

. **entropy**

RT Crocco method

∞ energy
enthalpy
exergy
heat
maximum entropy method
Mollier diagram
nonisentropicity
Shannon-Wiener measure
tephigrams
thermochemistry
thermodynamics

entropy (statistics)

DEF A factor or quantity that is a function of a mechanical system and is equal to the logarithm of the probability of the particular arrangement in that state.

GS **entropy (statistics)**

. maximum entropy method

. minimum entropy method

RT ∞ statistics

∞ entry

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT atmospheric entry
reentry

entry guidance (STS)

DEF The precise steering commands for trajectory from initial penetration of the Earth's atmosphere until the terminal area guidance is activated at an Earth-relative speed (about 2500 fps).

GS guidance (motion)

. **entry guidance (STS)**

RT atmospheric entry
flight control
hypersonic reentry

pointing control systems
space shuttles
Space Transportation System flights
spacecraft reentry
terminal guidance

enumeration

RT counting
lists
number theory

∞ envelopes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT coverings
enclosures
flight envelopes
limits (mathematics)
stellar envelopes

environment effects

SN (EFFECTS ON ENVIRONMENT)

RT air pollution
coastal ecology
coastal water
contaminants
contamination
debris
deforestation
∞ effects
environments
eutrophication
exhaust gases
greenhouse effect
habitats
ice environments
man environment interactions
marine biology
marine environments
metabolic wastes
noise pollution
poisons
pollution
sewage
soil erosion
thermal pollution
waste disposal
wastes
water pollution
water quality
water resources
wetlands
wildlife

environment management

GS management
. **environment management**
RT conservation
Earth resources
environmental cleanup
environmental monitoring
land management
land use
man environment interactions
resources management
waste management
water management
water resources

environment models

GS models
. **environment models**
RT atmospheric models
climate models
exobiology
test chambers

environment pollution

DEF Alterations of the natural environment that are harmful to life; normally as produced by human activities.

GS pollution

. **environment pollution**

. . air pollution
. . . global air pollution
. . . indoor air pollution
. . soil pollution
. . water pollution
. . . oil pollution

RT aerobiology

aerosols
 air sampling
 biomass burning
 clean energy
 Earth resources
 environmental monitoring
 environmental surveys
 human wastes
 metabolic wastes
 noise pollution
 oil slicks
 poisons
 pollution monitoring
 pollution transport
 radioactive wastes
 thermal pollution
 waste disposal

environment protection

GS protection
 . **environment protection**
 RT air pollution
 Central Atlantic Regional Ecol Test Site
 effluents
 environmental cleanup
 environmental monitoring
 planetary protection
 pollution
 radioactive wastes
 waste disposal
 water pollution

environment simulation

GS simulation
 . **environment simulation**
 . . acoustic simulation
 . . altitude simulation
 . . space environment simulation
 . . thermal simulation
 . . . weightlessness simulation
 neutral buoyancy simulation
 RT atmospheric entry simulation
 atmospheric models
 environmental tests
 flight simulation
 virtual reality

environment simulators

GS simulators
 . **environment simulators**
 . . Lunar Gravity Simulator
 . . solar simulators
 . . space simulators
 . . . clinostats
 . . . High Vacuum Orbital Simulator
 . . . Langley complex coordinator
 RT test chambers

environmental chambers

USE **test chambers**

environmental chemistry

DEF Collective term comprising the complex chemical relationships involving the atmosphere, climatology, air and water pollution, fuels, pesticides, energy, biochemistry, geochemistry, etc.

GS **environmental chemistry**
 . aérothermochemistry
 . atmospheric chemistry
 . geochemistry
 . . biogeochemistry
 . marine chemistry
 RT air pollution

∞ chemistry
 climatology
 hydrocarbon fuels
 pesticides
 smog
 waste disposal
 water pollution

environmental cleanup

(added February 1999)

GS cleaning
 . **environmental cleanup**
 RT decontamination
 environment management
 environment protection

hazardous wastes
 oil pollution
 oil slicks
 pollution control
 reclamation
 soil pollution
 waste disposal
 waste treatment
 water pollution
 water treatment

environmental control

GS **environmental control**
 . pollution control
 RT antiseptics
 artificial gravity
 automatic control
 biosatellites
 cabin atmospheres
 clean rooms
 ∞ control
 emergency life sustaining systems
 environments
 habitability
 manned reentry
 manned spacecraft
 pressurized cabins
 resources management
 spacecraft cabin atmospheres
 spacecraft environments
 temperature control
 test chambers
 weather modification
 windshields

environmental engineering

RT ∞ aerospace sciences
 clean energy
 climatology
 comfort
 ∞ engineering
 environments
 heating
 human factors engineering
 illuminating
 life sciences
 life support systems
 meteorology
 physiological effects
 psychological effects
 shelters
 space heating (buildings)
 Starsite program
 temperature control
 temperature distribution
 terraforming
 ventilation
 waste disposal
 waste management

environmental index

RT physiological tests

environmental laboratories

GS laboratories
 . **environmental laboratories**
 test facilities
 . **environmental laboratories**
 RT human factors laboratories
 test chambers

environmental monitoring

RT ambience
 biomarkers
 environment management
 environment pollution
 environment protection
 infrared radiometers
 meteorology
 monitors
 oceanography
 water sampling
 weather forecasting

environmental quality

GS quality
 . **environmental quality**
 . . air quality
 . . water quality
 RT air pollution

contaminants
 environments
 Global Air Sampling Program
 marine biology
 noise pollution
 pollution
 thermal pollution
 water pollution

Environmental Research Satellites

UF *Octahedral Research Satellites*
 GS artificial satellites
 . scientific satellites
 . . **Environmental Research Satellites**
 . . . ERS 17
 . . . ERS 18
 . . . Intasat satellite
 RT Atlas Agena launch vehicles

environmental surveys

SN (LIMITED TO INDEXING ENVIRONMENTAL IMPACT STATEMENTS)
 RT aerosols
 air pollution
 Earth resources
 environment pollution
 human wastes
 metabolic wastes
 poisons
 pollution
 pollution control
 radioactive wastes
 thermal pollution
 waste disposal
 water pollution

environmental temperature

USE **ambient temperature**

environmental tests

GS **environmental tests**
 . cold weather tests
 . corrosion tests
 . . corrosion test loops
 . . salt spray tests
 . high temperature tests
 . low temperature tests
 . underwater tests
 . . neutral buoyancy simulation
 RT ASSET project
 electronic equipment tests
 environment simulation
 field tests
 high altitude tests
 ∞ materials tests
 orbital space tests
 physiological tests
 psychological tests
 reverberation chambers
 spin tests
 test chambers
 ∞ tests
 thermal cycling tests
 thermal vacuum tests
 vibration tests

environmental transport

(added March 2005)

DEF The transport of a substance through an environmental medium.

GS **environmental transport**
 . pollution transport

environments

DEF External conditions or the sum of such conditions, in which pieces of equipment, living organisms, or systems operate as in temperature environment, vibration environment, or space environment. Environments are usually specified by a range of values, and may be either natural or artificial.

GS **environments**
 . aerospace environments
 . . cislunar space
 . . deep space
 . . . interplanetary space
 . . . interstellar space
 . . Earth orbital environments
 . Earth environment

Envisat-1 satellite

- . Earth magnetosphere
- . . geomagnetic tail
- . . magnetopause
- . . magnetosheath
- . extraterrestrial environments
- . . cislunar space
- . . deep space
- . . . interplanetary space
- . . . interstellar space
- . . Earth orbital environments
- . . . lunar environment
- lunar atmosphere
- . . planetary environments
- Mars environment
- Mars atmosphere
- planetary atmospheres
- helium hydrogen atmospheres
- Jupiter atmosphere
- Mars atmosphere
- Mercury atmosphere
- Neptune atmosphere
- planetary ionospheres
- Pluto atmosphere
- Saturn atmosphere
- Uranus atmosphere
- Venus atmosphere
- Venus clouds
- planetary magnetospheres
- planetary magnetotails
- . . . satellite atmospheres
- lunar atmosphere
- Titan atmosphere
- . . . stellar atmospheres
- chromosphere
- solar atmosphere
- solar transition region
- frictionless environments
- heterosphere
- high altitude environments
- high gravity environments
- high temperature environments
- ice environments
- inner radiation belt
- low temperature environments
- marine environments
- midlatitude atmosphere
- rotating environments
- spacecraft environments
- thermal environments
- RT adiabatic conditions
- air
- air pollution
- air quality
- ambience
- ∞ atmospheres
- coastal ecology
- coastal plains
- controlled atmospheres
- Earth atmosphere
- ecology
- economic impact
- electromagnetic interference
- environment effects
- environmental control
- environmental engineering
- environmental quality
- global air pollution
- gravitation
- habitability
- habitats
- human factors engineering
- humidity
- life support systems
- nonpoint sources
- ∞ performance
- physiological effects
- plants (botany)
- pressure
- programming environments
- psychological effects
- regimes
- temperature
- thermal pollution
- vacuum effects
- weightlessness

Envisat-1 satellite

(added August 2000)

DEF Polar-orbiting Earth observation satel-

lite designed to provide continuous global measurements including high- and medium-resolution radar and optical images from its Advanced Synthetic Aperture Radar (ASAR) and Medium-Resolution Imaging Spectrometer (MERIS). Acquired data will support Earth science research and allow monitoring of environmental and climatic changes.

GS artificial satellites

- . ESA satellites
- . . **Envisat-1 satellite**
- ESA spacecraft
- . ESA satellites
- . . **Envisat-1 satellite**

RT ERS-2 (esa satellite)

- imaging spectrometers
- remote sensing
- satellite observation
- satellite-borne radar
- synthetic aperture radar

enzyme activity

GS metabolism

- . **enzyme activity**
- . . fermentation

RT bioconversion

- diabetes mellitus
- digestive system
- enzyme inhibitors
- lysosomes
- tyrosine

enzyme inhibitors

(added August 2004)

DEF Compounds or agents that combine with an enzyme in such a manner as to prevent the normal substrate-enzyme combination and the catalytic reaction.

GS inhibitors

- . **enzyme inhibitors**

RT active sites (chemistry)

- biochemistry
- catalytic activity
- enzyme activity

enzymes

GS biopolymers

- . proteins
- . . **enzymes**
- . . . aldolase
- . . . amidase
- . . . carbonic anhydrase
- . . . catalase
- . . . cholinesterase
- . . . cytochromes
- . . . dehydrogenases
- . . . hexokinase
- . . . lysozyme
- . . . nuclease
- . . . oxidase
- . . . papain
- . . . pepsin
- . . . phosphatases
- . . . protease
- . . . renin
- . . . thrombin
- . . . trypsin
- organic compounds
- . proteins
- . . **enzymes**
- . . . aldolase
- . . . amidase
- . . . carbonic anhydrase
- . . . catalase
- . . . cholinesterase
- . . . cytochromes
- . . . dehydrogenases
- . . . hexokinase
- . . . lysozyme
- . . . nuclease
- . . . oxidase
- . . . papain
- . . . pepsin
- . . . phosphatases
- . . . protease
- . . . renin
- . . . thrombin
- . . . trypsin

RT activation (biology)

- catalysts

coenzymes

enzymology

enzymology

GS biochemistry

- . **enzymology**

RT digesting

- digestive system
- enzymes
- metabolism
- nitrogen metabolism
- phosphatases

EOCR (reactor)

USE **experimental organic cooled reactors**

EOGO

USE **EGO**

EOLE satellites

GS artificial satellites

- . French satellites
- . . **EOLE satellites**
- . . . meteorological satellites
- . . . **EOLE satellites**

RT French space program

- GEOLE satellites
- geophysical satellites

EOPAP

USE **Earth & Ocean Physics Applications Program**

EOR (rendezvous)

USE **Earth orbital rendezvous**

EOS

USE **Earth Observing System (EOS)**

EOS AM-1 spacecraft

(added June 1999)

USE **Terra spacecraft**

EOS data and information system

(added April 1995)

DEF A system to manage data resulting from NASA's Earth Observing Systems's science research satellites and field measurement programs, and other data essential for interpreting these measurements.

UF **EOSDIS**

GS information systems

. **EOS data and information system**

RT Earth Observing System (EOS)

- Earth Resources Information System
- remote sensing
- satellite observation
- scientific satellites

EOS PM (satellite)

(added May 2005)

USE **Aqua spacecraft**

EOS-A

USE **Landsat E**

EOS-B

USE **Landsat F**

EOSDIS

USE **EOS data and information system**

eosinophils

DEF A type of white blood cell or leukocyte which stains a red color with eosin stain; normally about 2 to 3 percent of white cells in the blood but tending to decrease during stressful situations and thus usable as an index for stress.

GS cells (biology)

- . blood cells
- . . leukocytes
- . . . **eosinophils**

- RT cytoplasm
- EPE-A**
USE **Explorer 12 satellite**
- EPE-B**
USE **Explorer 14 satellite**
- EPE-C**
USE **Explorer 15 satellite**
- EPE-D**
USE **Explorer 26 satellite**
- ephemerides**
DEF Periodical publications tabulating the predicted positions of celestial bodies at regular intervals, such as daily, and containing other data of interest to astronomers. A publication giving similar information useful to a navigator is called an almanac.
GS **ephemerides**
. planet ephemerides
astronomical catalogs
celestial mechanics
ephemeris time
orbits
position (location)
- ephemeris time**
DEF The uniform measure of time defined by the laws of dynamics and determined in principle from the orbital motions of the planets, specifically, the orbital motion of the Earth as represented by Newcomb's Tables of the sun.
GS time
. **ephemeris time**
ephemerides
universal time
- epicardium**
GS anatomy
. circulatory system
. . . cardiovascular system
. . . heart
. . . . **epicardium**
membranes
. **epicardium**
tissues (biology)
. **epicardium**
- epicycloids**
GS geometry
. curves (geometry)
. . . **epicycloids**
. Euclidean geometry
. . . analytic geometry
. . . . **epicycloids**
RT cusps (mathematics)
- epidemiology**
DEF The branch of medicine that studies the sources, distribution, and determinants of diseases and injuries in human populations.
GS medical science
. **epidemiology**
RT infectious diseases
vaccines
veterinary medicine
- epidermis**
GS anatomy
. skin (anatomy)
. . . **epidermis**
RT contact dermatitis
- epilepsy**
GS diseases
. **epilepsy**
RT cramps
human pathology
shaking
- Epimetheus**
(added July 1995)
DEF A natural satellite of Saturn, orbiting at a mean distance of 151,422 kilometers. .
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Epimetheus**
- RT Saturn (planet)
- epinephrine**
DEF The active sympathomimetic hormone from the adrenal medulla in most species. It stimulates both the alpha- and beta- adrenergic systems, causes systemic vasoconstriction and gastrointestinal relaxation, stimulates the heart, and dilates bronchi and cerebral vessels. It is used in asthma and cardiac failure and to delay absorption of local anesthetics.
UF *adrenaline*
GS drugs
. **epinephrine**
organic compounds
. amines
. . catecholamine
. . . **epinephrine**
RT adrenal gland
dopamine
heart rate
hormones
neurotransmitters
stimulants
- epitaxy**
DEF The oriented growth of a crystalline substance on a substrate of the same or different crystalline substance.
GS growth
. crystal growth
. . **epitaxy**
. . . atomic layer epitaxy
. . . electroepitaxy
. . . liquid phase epitaxy
. . . molecular beam epitaxy
. . . vapor phase epitaxy
RT bipolar transistors
crystal lattices
crystal structure
junction transistors
laser deposition
pulsed laser deposition
- epithelium**
GS tissues (biology)
. **epithelium**
RT anatomy
histology
peritoneum
skin (anatomy)
- EPNL**
USE **effective perceived noise levels**
- epochs**
USE **time measurement**
- epoxidation**
GS chemical reactions
. **epoxidation**
RT oxidation
- epoxides**
USE **epoxy compounds**
- epoxy compounds**
UF *epoxides*
GS **epoxy compounds**
. endrin
. ethylene oxide
. hyoscine
. propylene oxide
RT ∞ chemical compounds
ethers
- epoxy matrix composites**
DEF High strength compositions consisting of epoxy resin and a reinforcing matrix of filaments or fibers of glass, metal, or other materials.
GS composite materials
. polymer matrix composites
. . **epoxy matrix composites**
. . . boron-epoxy composites
. . . graphite-epoxy composites
RT aramid fiber composites
aramid fibers
braided composites
fiber orientation
- low density research
 ∞ materials
 ∞ matrices
matrix materials
pultrusion
sandwich structures
woven composites
- epoxy resins**
DEF Viscous liquids or brittle solids containing epoxide groups that can be crosslinked into final form by means of a chemical reaction with a variety of setting agents used with or without heat.
GS plastics
. synthetic resins
. . thermosetting resins
. . . **epoxy resins**
. . . . phenolic epoxy resins
resins
. synthetic resins
. . thermosetting resins
. . . **epoxy resins**
. . . . phenolic epoxy resins
RT adhesives
boron reinforced materials
boron-epoxy composites
coatings
glass transition temperature
graphite-epoxy composites
lay-up
prepregs
resin matrix composites
- equalizers (circuits)**
RT attenuators
frequency response
phase shift
signal processing
- ∞ **equations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *balance equations*
forced vibratory motion equations
RT adiabatic equations
approximation
Bernoulli theorem
Bethe-Salpeter equation
biharmonic equations
Blasius equation
Boltzmann transport equation
Boltzmann-Vlasov equation
Born approximation
boundary layer equations
Brillouin-Wigner equation
Burger equation
Cauchy-Riemann equations
Chandrasekhar equation
Chaplygin equation
conservation equations
constitutive equations
continuity equation
convection-diffusion equation
cubic equations
difference equations
differential equations
diophantine equation
Dirac equation
Donnell equations
Duffing differential equation
eikonal equation
Einstein equations
Elber equation
elliptic differential equations
equations of motion
equations of state
equilibrium equations
Euler equations of motion
Euler-Cauchy equations
Euler-Lagrange equation
Euler-Lambert equation
Faddeev equations
Falkner-Skan equation
Ficks equation
flow equations
Fokker-Planck equation
Fredholm equations
Gauss equation

equations of motion

- Gibbs adsorption equation
- ∞ Gibbs equations
- Gibbs-Helmholtz equations
- Glimm method
- Hamilton-Jacobi equation
- ∞ Helmholtz equations
- Helmholtz vorticity equation
- Hugoniot equation of state
- hydrodynamic equations
- hyperbolic differential equations
- identities
- inhour equation
- integral equations
- kinematic equations
- kinetic equations
- Klein-Gordon equation
- Korteweg-DeVries equation
- Krook equation
- Lame wave equations
- Landau-Ginzburg equations
- Laplace equation
- linear equations
- linear evolution equations
- linearization
- Liouville equations
- macroscopic equations
- Mathieu function
- Maxwell equation
- Monge-Ampere equation
- Navier-Stokes equation
- nonholonomic equations
- nonlinear equations
- nonlinear evolution equations
- Orr-Sommerfeld equations
- parabolic differential equations
- partial differential equations
- Pfaff equation
- Poisson equation
- polynomials
- primitive equations
- quadratic equations
- quartic equations
- Rayleigh equations
- reaction-diffusion equations
- Reynolds equation
- roots of equations
- Saha equations
- Schrodinger equation
- semiempirical equations
- shallow shell equations
- simultaneous equations
- singular integral equations
- Stokes-Beltrami equation
- thermodynamics
- vlasov equations
- Volterra equations
- Von Karman equation
- vorticity equations
- wave equations
- Wiener Hopf equations

equations of motion

DEF A set of equations which give information regarding the motion of a body or of a point in space as a function of time when initial position and initial velocity are known. Used for motion equations.

UF *motion equations*

GS **equations of motion**

- . Euler equations of motion
- . Euler-Lagrange equation
- . kinetic equations
- . . hydrodynamic equations
- . . . Burnett equations
- . . . Helmholtz vorticity equation
- . . kinematic equations
- . Navier-Stokes equation
- . Reynolds equation

RT

- autonomy
- Bethe-Salpeter equation
- celestial mechanics
- classical mechanics
- computational fluid dynamics
- continuity equation
- control moment gyroscopes
- ∞ dynamics
- Einstein equations
- ∞ equations
- equilibrium equations

- Hamilton-Jacobi equation
- inertia principle
- kinematics
- Lissajous figures
- Mach inertia principle
- moments of inertia
- motion aftereffects
- spinning unguided rocket trajectory
- stability
- systems stability
- trajectories
- trajectory analysis
- variable mass systems
- von Zeipel method

equations of state

DEF Equations relating temperature, pressure, and volume of a system in thermodynamic equilibrium. Used for state equations.

UF *state equations*

GS **equations of state**

- . Hugoniot equation of state
- adiabatic equations
- BBGKY hierarchy
- Bose geometry
- compressibility
- continuity equation
- ∞ equations
- equilibrium equations
- ideal fluids
- ideal gas
- kinetic theory
- Mollier diagram
- real gases
- thermodynamics
- virial coefficients

equatorial atmosphere

DEF The composition and characteristics of the Earth's atmosphere at and/or near the equator.

RT ∞ atmospheres

- atmospheric composition
- meteorological parameters
- middle atmosphere
- quasi-biennial oscillation
- TRMM satellite
- tropical meteorology
- tropical regions

equatorial electrojet

GS electric current

- . ionospheric currents
- . . electrojets
- . . . **equatorial electrojet**

electricity

- . atmospheric electricity
- . . ionospheric currents
- . . . electrojets
- **equatorial electrojet**

RT auroral electrojets

equatorial orbits

DEF Inclined orbits with an inclination of zero degrees. The plane of an equatorial orbit contains the equator of the primary body.

GS orbits

- . **equatorial orbits**
- . . stationary orbits

RT circular orbits

- Earth orbits
- elliptical orbits
- geosynchronous orbits
- lunar orbits
- orbital mechanics
- planetary orbits
- polar orbits
- satellite orbits
- spacecraft orbits
- twenty-four hour orbits

equatorial regions

DEF Areas on or near the Earth's equator; regions between the Tropic of Cancer and the Tropic of Capricorn (23 degrees 27 minutes North or South of the Equator).

GS regions

- . **equatorial regions**

RT arid lands

- Earth surface

tropical regions

equators

DEF The primary great circle of a sphere or spheroid, such as the Earth, perpendicular to the polar axis; or a line resembling or approximating such a circle.

GS **equators**

- . lunar equator
- . magnetic equator

RT coordinates

- rotating spheres
- transequatorial propagation

∞ equilibrium

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

DEF A state of dynamic balance between the opposing actions, reactions, or velocities of a reversible process.

RT acid base equilibrium

- aerostatics
- balance
- balancing
- body sway test
- chemical equilibrium
- diffusion
- diffusion coefficient
- dynamic characteristics
- equilibrium equations
- heat of dissociation
- homeostasis
- isostasy
- liquid-vapor equilibrium
- loads (forces)
- Maxwell-Mohr method
- nonequilibrium conditions
- Onsager relationship
- plasma equilibrium
- relaxation (mechanics)
- relaxation time
- stability
- stabilization
- statics
- steady state
- systems stability
- thermodynamic equilibrium
- thermodynamic properties
- thermodynamics
- transition points
- unsteady state
- variability
- water balance

equilibrium diagrams

USE **phase diagrams**

equilibrium equations

RT analysis (mathematics)

∞ equations

- equations of motion
- equations of state
- ∞ equilibrium

equilibrium flow

DEF Gas flow in which energy is constant along streamlines and the composition of the gas at any point is not time dependent. Used for steady state flow.

UF *steady state flow*

GS fluid flow

- . gas flow
- . . **equilibrium flow**
- . . . frozen equilibrium flow
- . . . shifting equilibrium flow

RT Eyring theory

- heat transmission
- nonequilibrium flow
- plasma equilibrium
- quasi-steady states
- steady flow

equilibrium methods

SN (LIMITED TO STRUCTURAL ANALYSIS)

GS structural analysis

- . **equilibrium methods**

RT matrix methods

∞ methodology

variational principles

equinoxes

DEF One of two points of intersection of the ecliptic and the celestial equator occupied by the sun when its declination is zero degrees.

RT seasons
solar position
solstices
winter

equipartition theorem

UF *energy equipartition*

GS theorems

. **equipartition theorem**

RT degrees of freedom
energy distribution
kinetic energy
specific heat

∞ equipment

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *apparatus*

RT abort apparatus
absorbers (equipment)
accumulators (computers)
air conditioning equipment
airborne equipment
aircraft equipment
airport surface detection equipment
audio equipment
automatic test equipment
bedding equipment
bombing equipment
breathing apparatus
communication equipment
computer storage devices
consoles
cryogenic computer storage
cryogenic equipment
data processing equipment
distillation equipment
electromechanical devices
electronic equipment
ground support equipment
handling equipment

∞ hardware

heating equipment
hydraulic equipment
laboratory equipment
lighting equipment
lunar based equipment
lunar excavation equipment
mechanical devices
medical equipment
miniature electronic equipment
onboard equipment
peripheral equipment (computers)
photographic equipment
pneumatic equipment
portable equipment
radar equipment
rigging
safety devices
self erecting devices
service life
spacecraft equipment
survival equipment
syringes
television equipment

∞ test equipment
wind tunnel apparatus
x ray apparatus

equipment specifications

GS specifications
. **equipment specifications**

RT aircraft production
commonality

∞ design

dynamic range
functional design specifications
maintenance
procurement

equipotentials

GS fluid flow
. potential flow

. . **equipotentials**

RT ∞ flow graphs
flow nets

equivalence

GS mathematical logic
. set theory

. . **equivalence**

RT parity
partitions (mathematics)

equivalent circuits

GS circuits

. **equivalent circuits**

RT duality principle
network analysis
network synthesis
superposition (mathematics)

ER fluids

USE **electrorheological fluids**

ER-2 aircraft

USE **U-2 aircraft**

ERBE

USE **Earth radiation budget experiment**

erbium

GS chemical elements
. rare earth elements
. . **erbium**
. . . erbium isotopes
metals
. rare earth elements
. . **erbium**
. . . erbium isotopes

erbium 169

USE **erbium isotopes**

erbium 171

USE **erbium isotopes**

erbium alloys

GS alloys
. rare earth alloys
. . **erbium alloys**

erbium compounds

GS rare earth compounds
. **erbium compounds**
RT ∞ chemical compounds
∞ metal compounds

erbium isotopes

UF *erbium 169*
erbium 171
GS chemical elements
. nuclides
. . isotopes
. . . **erbium isotopes**
. rare earth elements
. . erbium
. . . **erbium isotopes**
metals
. rare earth elements
. . erbium
. . . **erbium isotopes**

erection

USE **construction**

EREP

UF *Earth Resources Experiment Package*

GS packages
. instrument packages
. . **EREP**

RT ∞ instruments

Skylab 1
Skylab 2
Skylab 3
Skylab 4

ergodic process

RT information theory
probability theory
stochastic processes

thermodynamics

ergometers

DEF Instruments for measuring muscular work.

GS measuring instruments

. **ergometers**

RT dynamometers

ergonomics

USE **human factors engineering**

ergotamine

GS bases (chemical)

. alkaloids

. . **ergotamine**

drugs

. **ergotamine**

nitrogen compounds

. alkaloids

. . **ergotamine**

organic compounds

. amines

. . **ergotamine**

. cyclic compounds

. . heterocyclic compounds

. . . alkaloids

. . . . **ergotamine**

EROS (satellites)

UF *Earth Resources Observation Satellites*

GS artificial satellites

. **EROS (satellites)**

RT Earth resources
oceanography
remote sensors
satellite observation
scanning
terrain analysis

EROS asteroid

(added March 1996)

GS celestial bodies

. asteroids

. . **EROS asteroid**

RT Near Earth Asteroid Rendezvous Mission

EROS project

USE **Experimental Reflector Orbital Shot Proj**

erosion

DEF Progressive loss of original material from a solid surface due to mechanical interaction between that surface and a fluid, a multi-component fluid, or impinging liquid or solid particles. Used for scars (geology).

UF *scars (geology)*

GS **erosion**

. rain erosion

. soil erosion

. water erosion

. wind erosion

RT

ablation

abrasion

arroyos

atmospheric effects

cavitation corrosion

cavitation flow

corrosion

degradation

deterioration

erosive burning

etching

fretting

hot corrosion

hydrogeology

impingement

inliers (landforms)

metal surfaces

metal-water reactions

pitting

plateaus

rain impact damage

ravines

rivers

soil science

space weathering

erosive burning

- spark machining
- surface reactions
- tribology
- valleys
- wave resistance
- wear
- wear tests
- weathering
- wind effects

erosive burning

DEF Combustion of solid propellants accompanied with nonsteady, high velocity flows of product gases across burning propellant surfaces.

- GS combustion
 - . **erosive burning**
- RT burnout
- combustion temperature
- deterioration
- erosion
- exhaust gases
- fuel combustion
- hypersonic combustion
- oxidation
- pitting
- propellant combustion
- smoldering
- solid propellant combustion
- tribology

error analysis

- GS analysis (mathematics)
 - . numerical analysis
 - . . **error analysis**
- RT ∞ analyzing
 - ∞ applications of mathematics
 - backpropagation (artificial intelligence)
 - bit error rate
 - boresight error
 - censored data (mathematics)
 - fault tolerance
 - ill-conditioned problems (mathematics)
 - mean square values
 - probability theory
 - range errors
 - Rayleigh distribution
 - root-mean-square errors
 - sensitivity analysis
 - systematic errors

error band

USE **accuracy**

error correcting codes

DEF Codes in which each telegraph or data signal conforms to specific rules of construction so that departures from this construction in the received signals can be automatically detected, and permits the automatic correction, at the received terminal, of some or all of the errors. Note: Such codes require more signal elements than are necessary to convey the basic information.

- GS **error correcting codes**
 - . Reed-Solomon codes
- RT automatic repeat request
- bit error rate
- ∞ codes
- concatenated codes
- digital techniques
- redundancy encoding

error correcting devices

- RT BCH codes
- correction
- ∞ devices
- instrument compensation
- redundancy encoding

error detection codes

DEF Codes in which each expression conforms to specific rules of construction, so that if certain errors occur in an expression the resulting expression will not conform to the rules of construction and thus the presence of errors is detected. Note: Such codes require more signal elements than are necessary to convey the fundamental information.

- RT bit error rate
- ∞ codes
- coding
- computer programs
- computer systems programs
- digital techniques
- fault detection
- fault tolerance
- information theory
- parity
- proving
- quality control
- redundancy
- redundancy encoding

error functions

- GS functions (mathematics)
 - . **error functions**
- RT statistical distributions

error signals

DEF Voltages the magnitude of which are proportional to the difference between an actual and a desired position.

- RT automatic repeat request
- bit error rate
- comparators
- compensators
- differential amplifiers
- discriminators
- errors
- false alarms
- loop transfer recovery
- phase error
- position errors
- range errors
- signal mixing
- ∞ signals
- slewing

errors

DEF In mathematics, the difference between the true value and a calculated or observed value. Use for invalidity.

- UF *invalidity*
- GS **errors**
 - . instrument errors
 - . phase error
 - . pilot error
 - . position errors
 - . . boresight error
 - . random errors
 - . range errors
 - . root-mean-square errors
 - . systematic errors
 - . truncation errors
 - . velocity errors
- RT accuracy
- bias
- ∞ compensation
- computer program integrity
- confidence
- consistency
- correction
- drift (instrumentation)
- dynamic characteristics
- error signals
- hysteresis
- linearity
- malfunctions
- median (statistics)
- optical correction procedure
- precision
- quality control
- range (extremes)
- reliability
- resolution
- response bias
- ∞ scaling
- ∞ tests
- tolerances (mechanics)

ERS 17

- GS artificial satellites
 - . scientific satellites
 - . . Environmental Research Satellites
 - . . . **ERS 17**

- RT Atlas Agena launch vehicles

ERS 18

- GS artificial satellites
 - . scientific satellites
 - . . Environmental Research Satellites
 - . . . **ERS 18**
- RT Atlas Agena launch vehicles

ERS-1 (ESA satellite)

DEF A European Space Agency remote sensing satellite designed to monitor global oceans, coastal zones and polar regions. It is scheduled for launch on an Ariane 4 expendable launch vehicle in 1990.

- GS artificial satellites
 - . ESA satellites
 - . . **ERS-1 (ESA satellite)**
 - . . maritime satellites
 - . . . **ERS-1 (ESA satellite)**
- ESA spacecraft
 - . ESA satellites
 - . . **ERS-1 (ESA satellite)**
- RT European Space Agency

ERS-2 (esa satellite)

(added February 1996)

- GS artificial satellites
 - . ESA satellites
 - . . **ERS-2 (esa satellite)**
- ESA spacecraft
 - . ESA satellites
 - . . **ERS-2 (esa satellite)**
- RT Envisat-1 satellite
- European Space Agency

ERTS

USE **Landsat satellites**

ERTS-A

USE **Landsat 1**

ERTS-B

USE **Landsat 2**

ERTS-C

USE **Landsat 3**

ERTS-D

USE **Landsat 4**

ERTS-E

USE **Landsat E**

ERTS-F

USE **Landsat F**

eruptions (volcanology)

(added October 2001)

USE **volcanic eruptions**

erythrocytes

- UF *red blood cells*
- GS cells (biology)
 - . blood cells
 - . . **erythrocytes**
 - . . . reticulocytes
- RT blood cell count
- bone marrow
- carboxyhemoglobin
- hematocrit
- hematocrit ratio
- hemoglobin
- hemolysis
- leukocytes
- monocytes
- oxyhemoglobin

ES-3A aircraft

USE **S-3 aircraft**

ESA

USE **European Space Agency**

ESA satellites

- SN (EUROPEAN SPACE AGENCY SATELLITES)
- UF *ESRO satellites*
- European Space Research Organization sat*
- GS artificial satellites

ESA satellites
 .. Aerosat satellites
 .. COS-B satellite
 .. ERS-1 (ESA satellite)
 .. ERS-2 (esa satellite)
 .. ESRO 1 satellite
 .. ESRO 2 satellite
 .. ESRO 4 satellite
 .. European Communications Satellite
 .. Exosat satellite
 .. GEOS satellites (ESA)
 .. HEOS satellites
 .. HEOS A satellite
 .. HEOS B satellite
 .. Hipparcos satellite
 .. Infrared Space Observatory (ISO)
 .. L-Sat
 .. Magellan ultraviolet astronomy satellite
 .. Marecs maritime satellites
 .. Marots (ESA)
 .. METEOSAT satellite
 .. OTS (ESA)
 .. TD satellites
 .. TD-1 satellite
 .. Envisat-1 satellite
 .. XMM-Newton telescope

ESA spacecraft
ESA satellites
 .. Aerosat satellites
 .. COS-B satellite
 .. ERS-1 (ESA satellite)
 .. ERS-2 (esa satellite)
 .. ESRO 1 satellite
 .. ESRO 2 satellite
 .. ESRO 4 satellite
 .. European Communications Satellite
 .. Exosat satellite
 .. GEOS satellites (ESA)
 .. HEOS satellites
 .. HEOS A satellite
 .. HEOS B satellite
 .. Hipparcos satellite
 .. Infrared Space Observatory (ISO)
 .. L-Sat
 .. Magellan ultraviolet astronomy satellite
 .. Marecs maritime satellites
 .. Marots (ESA)
 .. METEOSAT satellite
 .. OTS (ESA)
 .. TD satellites
 .. TD-1 satellite
 .. Envisat-1 satellite
 .. XMM-Newton telescope

RT Earthnet
 European Space Agency
 European space programs
 international cooperation
 SOHO Mission

ESA spacecraft
 DEF Spacecraft of the European Space Agency.
 GS **ESA spacecraft**
 . Columbus space station
 . ESA satellites
 .. Aerosat satellites
 .. COS-B satellite
 .. ERS-1 (ESA satellite)
 .. ERS-2 (esa satellite)
 .. ESRO 1 satellite
 .. ESRO 2 satellite
 .. ESRO 4 satellite
 .. European Communications Satellite
 .. Exosat satellite
 .. GEOS satellites (ESA)
 .. HEOS satellites
 .. HEOS A satellite
 .. HEOS B satellite
 .. Hipparcos satellite
 .. Infrared Space Observatory (ISO)
 .. L-Sat
 .. Magellan ultraviolet astronomy satellite
 .. Marecs maritime satellites

.. Marots (ESA)
 .. METEOSAT satellite
 .. OTS (ESA)
 .. TD satellites
 .. TD-1 satellite
 .. Envisat-1 satellite
 .. XMM-Newton telescope
 . Giotto mission
 . Huygens probe

RT ∞ spacecraft

Esaki diodes
 USE **tunnel diodes**

escalators
 RT elevators (lifts)
 ladders
 ∞ lifts
 stairways

∞ **escape**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Of a particle or larger body: to achieve an escape velocity and a flightpath outward from a primary body so as neither to fall back to the body nor to orbit it.
 RT escape (abandonment)
 escape capsules
 escape rockets
 escape systems
 escape velocity
 leakage

escape (abandonment)
 RT bailout
 ejection
 ejection training
 entrapment
 ∞ escape
 escape rockets
 escape systems
 jettison systems
 jettisoning
 parachute descent

escape capsules
 GS safety devices
 . **escape capsules**
 space capsules
 . **escape capsules**
 RT abort apparatus
 aborted missions
 Assured Crew Return Vehicle
 ejection seats
 emergency life sustaining systems
 ∞ escape
 flying ejection seats
 high altitude environments
 launch escape systems
 lunar escape devices
 paracone
 pressurized cabins
 X-38 crew return vehicle

escape rockets
 DEF Small rocket engines attached to the leading end of an escape tower, which may be used to provide additional thrust to the capsule to obtain separation of the capsule from the booster vehicle in an emergency.
 GS safety devices
 . **escape rockets**
 RT abort apparatus
 aborted missions
 ∞ escape
 escape (abandonment)
 launch escape systems
 lunar escape devices
 ∞ rockets
 ∞ spacecraft

escape systems
 GS **escape systems**
 . launch escape systems
 RT bailout
 ejection
 ejection seats
 ∞ escape
 escape (abandonment)

jettison systems
 paracone
 safety factors
 ∞ systems

escape velocity
 DEF The radial speed which a particle or larger body must attain in order to escape from the gravitational field of a planet, satellite, or star. Used for parabolic velocity.
 UF *parabolic velocity*
 GS rates (per time)
 . **escape velocity**
 velocity
 . **escape velocity**
 RT ∞ escape
 high speed
 hyperbolic trajectories
 ∞ hypervelocity
 orbital velocity
 planetary gravitation
 Schwarzschild metric
 velocity errors

escarpments
 DEF Long, more or less continuous cliffs or relatively steep slopes facing in one general direction, breaking the continuity of the land by separating two level or gently sloping surfaces, and produced by erosion or by faulting. Used for scarps.
 UF *scarps*
 GS landforms
 . **escarpments**
 RT cliffs
 slopes
 topography

Escherichia
 GS microorganisms
 . bacteria
 .. **Escherichia**

ESG (gyroscopes)
 USE **electrostatic gyroscopes**

eskers
 USE **glacial drift**

Eskimos
 RT anthropology
 culture (social sciences)

ESO (observatory)
(added June 1996)
 USE **European Southern Observatory**

esophagus
 GS anatomy
 . digestive system
 .. **esophagus**

ESRO
 USE **European Space Agency**

ESRO 1 satellite
 GS artificial satellites
 . ESA satellites
 .. **ESRO 1 satellite**
 ESA spacecraft
 . ESA satellites
 .. **ESRO 1 satellite**
 RT European Space Agency
 European space programs

ESRO 2 satellite
 GS artificial satellites
 . ESA satellites
 .. **ESRO 2 satellite**
 ESA spacecraft
 . ESA satellites
 .. **ESRO 2 satellite**
 RT European Space Agency
 European space programs

ESRO 4 satellite
 GS artificial satellites
 . ESA satellites
 .. **ESRO 4 satellite**
 ESA spacecraft
 . ESA satellites

ESSA 1 satellite

RT . . . **ESRO 4 satellite**
auroras
European Space Agency
European space programs
particle density (concentration)
scientific satellites

ESRO satellites

USE **ESA satellites**

ESSA 1 satellite

UF *OT-3*
GS artificial satellites
. meteorological satellites
. . . ESSA satellites
. . . **ESSA 1 satellite**
RT Delta launch vehicle

ESSA 2 satellite

UF *OT-2*
GS artificial satellites
. meteorological satellites
. . . ESSA satellites
. . . **ESSA 2 satellite**
RT Delta launch vehicle

ESSA 3 satellite

UF *TOS-A*
GS artificial satellites
. meteorological satellites
. . . ESSA satellites
. . . **ESSA 3 satellite**
RT Delta launch vehicle

ESSA 4 satellite

GS artificial satellites
. meteorological satellites
. . . ESSA satellites
. . . **ESSA 4 satellite**
RT Delta launch vehicle

ESSA 5 satellite

GS artificial satellites
. meteorological satellites
. . . ESSA satellites
. . . **ESSA 5 satellite**
RT Delta launch vehicle

ESSA 6 satellite

GS artificial satellites
. meteorological satellites
. . . ESSA satellites
. . . **ESSA 6 satellite**
RT Delta launch vehicle

ESSA 7 satellite

GS artificial satellites
. meteorological satellites
. . . ESSA satellites
. . . **ESSA 7 satellite**
RT Delta launch vehicle

ESSA 8 satellite

GS artificial satellites
. meteorological satellites
. . . ESSA satellites
. . . **ESSA 8 satellite**
RT Delta launch vehicle

ESSA 9 satellite

GS artificial satellites
. meteorological satellites
. . . ESSA satellites
. . . **ESSA 9 satellite**
RT Delta launch vehicle

ESSA satellites

DEF A series of NASA and NOAA satellites launched to monitor the Earth's weather. Those funded by NASA are called TIROS, those funded by NOAA are called ESSA.

GS artificial satellites
. meteorological satellites
. . . **ESSA satellites**
. . . ESSA 1 satellite
. . . ESSA 2 satellite
. . . ESSA 3 satellite
. . . ESSA 4 satellite
. . . ESSA 5 satellite
. . . ESSA 6 satellite
. . . ESSA 7 satellite

. . . ESSA 8 satellite
. . . ESSA 9 satellite
RT cloud photography
Nimbus satellites
satellite observation
TIROS satellites

essentially non-oscillatory schemes

(added September 1990)

UF *ENO schemes*
GS analysis (mathematics)
. numerical analysis
. . . approximation
. . . **essentially non-oscillatory schemes**
RT finite difference theory
hyperbolic differential equations
TVD schemes

esters

GS **esters**
. acrylates
. alkylates
. aspartates
. Carbamates (tradenname)
. . urethanes
. . carboxylates
. chloroformate
. cobalt acetates
. cyanurates
. glutamates
. glycerides
. isocyanates
. . diisocyanates
. . fulminates
. lactates
. lead acetates
. maleates
. meprobamate
. nitrate esters
. . isopropyl nitrate
. . propyl nitrate
. octoates
. organic nitrates
. . cellulose nitrate
. . nitroforms
. . . hydrazine nitroform
. . nitroglycerin
. . PETN
. phthalates
. polycarbonates
. Lexan (trademark)
. polyesters
. polyethylene terephthalate
. sodium chlorodifluoroacetates
. sodium salicylates
. stearates
. sulfonates
. triacetin
RT acetates
acetyl compounds
citrates
cyanates
lipids
nitrosyls
organic compounds
phosphatases
plasticizers
salicylates
Skydrol (trademark)

estimates

GS **estimates**
. cost estimates
RT allocations
comparison
confidence limits
contingency
contracts
damage assessment
estimating
evaluation
forecasting
likelihood ratio
management methods
management planning
noise prediction (aircraft)
parameter identification
predictions
production management

project planning
quality control
reliability
reserves
risk
statistical analysis
statistical tests
∞ statistics
subcontracts
system identification
value

estimating

DEF A procedure for making a statistical inference about the numerical values of one or more unknown population parameters from the observed values in a sample.

GS **estimating**
. orbital position estimation
. parameter identification
. system identification
RT autoregressive moving average
budgeting
contracts
costs
counting
critical path method
Delphi method (forecasting)
∞ design
estimates
∞ estimators
evaluation
feasibility
forecasting
∞ measurement
mission planning
numerical differentiation
pattern method (forecasting)
probe method (forecasting)
profile method (forecasting)
projects
quality control
reserves
risk
sampling
standard deviation
statistical analysis
statistical tests
∞ statistics
technological forecasting
value

∞ estimators

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT correlation
cost estimates
estimating
parameterization
personnel

Estonia

GS nations
. **Estonia**
RT Baltic sea
Europe

estrogens

GS organic compounds
. lipids
. . . steroids
. . . **estrogens**
secretions
. endocrine secretions
. . . hormones
. . . **estrogens**
RT endocrine glands
sex glands

estuaries

DEF (A) The seaward end or the widened funnel-shaped tidal mouth of a river valley where fresh water comes into contact with seawater and where tidal effects are evident. ley due to the rise of sea level.

UF *outlets (geology)*
RT bays (topographic features)
Chesapeake Bay (US)
coasts

- fisheries
geography
harbors
oceanography
rivers
tidal flats
tides
tributaries
- etalons**
DEF Two adjustable parallel mirrors mounted so that either one may serve as one of the mirrors in a Michelson interferometer; used to measure distance in terms of wavelengths of spectral lines.
GS measuring instruments
. interferometers
. . . **etalons**
. optical measuring instruments
. . . **etalons**
mirrors
. **etalons**
optical equipment
. optical measuring instruments
. . . **etalons**
RT astronomical interferometry
diffractometers
Fabry-Perot interferometers
flatness
goniometers
optical measurement
photogoniometers
reflectors
Ronchi test
Sagnac effect
specular reflection
telescopes
very long base interferometry
- eta-mesons**
GS particles
. elementary particles
. . . bosons
. . . mesons
. . . . **eta-mesons**
. . . fermions
. . . . **eta-mesons**
. . . hadrons
. . . mesons
. . . . **eta-mesons**
. nuclear particles
. . . bosons
. . . mesons
. . . . **eta-mesons**
RT baryons
charged particles
omega-mesons
rho-mesons
sigma-mesons
- etchants**
RT corrosion
etching
- etching**
GS **etching**
. plasma etching
RT corrosion
engraving
erosion
etchants
metallography
photoresists
pitting
ultrasonic cleaning
- ethane**
GS organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . alkanes
. . . . **ethane**
RT hydrocarbon fuels
- ethane nitrile*
USE **acetonitrile**
- ethanol*
USE **ethyl alcohol**
- Ethernet**
(added January 2000)
- DEF Computer network protocol originally developed in the 1970s for local area network technology; uses carrier sense multiple access with collision detection (CSMA/CD), coaxial cable, and broadcast transmission.
GS protocol (computers)
. **Ethernet**
RT carrier sense multiple access
computer networks
local area networks
- ethers**
GS **ethers**
. acetals
. anisole
. diethyl ether
. gallamine triethiodide
. polyphenyl ether
RT anesthetics
drugs
epoxy compounds
organic compounds
PEEK
propargyl groups
- ethics**
DEF The standards of conduct and moral judgment of a group, religion, profession, etc.
RT ∞ methodology
norms
research
- Ethiopia**
GS nations
. **Ethiopia**
RT Africa
- ethnic factors**
DEF The complex patterns of behavior which distinguish an ethnic group.
GS sociology
. social factors
. . . **ethnic factors**
RT American Indians
communities
culture (social sciences)
group dynamics
race factors
- ethoxy ethylene**
GS organic compounds
. ethylene compounds
. . **ethoxy ethylene**
- ethyl alcohol**
UF *ethanol*
GS hydroxyl compounds
. alcohols
. . **ethyl alcohol**
RT atmospheric energy sources
carbohydrates
- ethyl compounds**
RT ∞ chemical compounds
diethyl compounds
diethyl hydrogen phosphite (DEHP)
tetraethyl orthosilicate
triethyl compounds
- ethylene**
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkenes
. . . . **ethylene**
. . . . vinylidene
RT hydrocarbon fuels
plant growth regulators
polyethylenes
- ethylene compounds**
GS organic compounds
. **ethylene compounds**
. . chloroethylene
. . . trichloroethylene
. . . ethoxy ethylene
. . . ethylene dihydrazine
. . . ethylenediamine
. . . ethylenediaminetetraacetic acids
. . . succinonitrile
- RT ∞ chemical compounds
- ethylene cyanide*
(added April 2004)
USE **succinonitrile**
- ethylene dihydrazine**
GS hydrazines
. **ethylene dihydrazine**
organic compounds
. ethylene compounds
. . **ethylene dihydrazine**
- ethylene oxide**
GS epoxy compounds
. **ethylene oxide**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **ethylene oxide**
RT bactericides
chemical sterilization
decontamination
oxides
spacecraft sterilization
- ethylenediamine**
GS organic compounds
. amines
. . diamines
. . . **ethylenediamine**
. ethylene compounds
. . **ethylenediamine**
- ethylenediaminetetraacetic acids**
UF *EDTA*
GS acids
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . **ethylenediaminetetraacetic acids**
organic compounds
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . **ethylenediaminetetraacetic acids**
. ethylene compounds
. . **ethylenediaminetetraacetic acids**
RT acetates
detergents
- etiology**
DEF The doctrine of causes, particularly the causes and reasons for diseases.
RT case histories
causes
diseases
prevention
- ETR (reactors)*
USE **engineering test reactors**
- ETS series satellites*
(added October 1997)
USE **Engineering Test Satellites**
- Ettingshausen coolers*
USE **Ettingshausen effect thermoelectric cooling**
- Ettingshausen effect**
UF *Ettingshausen coolers*
RT cooling systems
 ∞ effects
temperature effects
thermoelectric cooling
thermoelectricity
thermomagnetic cooling
thermomagnetic effects
- Euclidean geometry**
UF *Euclidean space*
GS geometry
. **Euclidean geometry**
. . analytic geometry
. . . catenaries
. . . circumferences
. . . conics
. . . ellipses

eudiometers

- hyperbolas
- parabolas
- cycloids
- epicycloids
- loci
- . . . Mercator projection
- quadrants
- S curves
- Gompertz curves
- spheroids
- oblate spheroids
- prolate spheroids
- tangents
- toruses
- trigonometry
- . . . angles (geometry)
- angle of attack
- zero angle of attack
- . . . Bragg angle
- . . . Brewster angle
- . . . dihedral angle
- . . . elevation angle
- . . . look angles (electronics)
- . . . look angles (tracking)
- . . . sweep angle
- sweepback
- leading edge sweep
- . . Cartesian coordinates
- . . circles (geometry)
- . . . great circles
- . . descriptive geometry
- . . lines (geometry)
- . . . chords (geometry)
- . . . geodesic lines
- . . points (mathematics)
- . . . fixed points (mathematics)
- . . . inflection points
- . . polygons
- . . . hexagons
- . . . tetragons
- parallelograms
- rhomboids
- rectangles
- squares (mathematics)
- trapezoids
- . . . triangles
- . . polyhedrons
- . . . cubes (mathematics)
- . . . icosahedrons
- . . . octahedrons
- . . . parallelepipeds
- . . . pyramids
- . . . rhombohedrons
- . . . tetrahedrons
- . . projective geometry
- . . Mercator projection
- . . radii
- . . . Larmor radius

RT

- coordinates
- curves (geometry)
- phase-space integral
- polytopes
- Riemann manifold
- Sobolev space
- spheres

Euclidean space

USE **Euclidean geometry**

eudiometers

- GS measuring instruments
 - . **eudiometers**
- RT gas mixtures
 - spark ignition

Euglena

- GS animals
 - . protozoa
 - . . Flagellata
 - . . . **Euglena**
- microorganisms
 - . protozoa
 - . . Flagellata
 - . . . **Euglena**
- RT algae

eukaryotes

- GS cells (biology)
 - . **eukaryotes**
- RT bacteria

- biological evolution
- cytology
- molecular biology
- prokaryotes

Euler buckling

- GS buckling
 - . **Euler buckling**
- RT stress analysis

Euler equations of motion

- GS equations of motion
 - . **Euler equations of motion**
- RT ∞ equations
 - Godunov method
 - hydrodynamics
 - moments of inertia
 - primitive equations
 - rigid structures
 - upwind schemes (mathematics)

Euler-Bernoulli beam theory (added April 1998)

USE **Euler-Bernoulli beams**

Euler-Bernoulli beams

(added April 1998)

- UF *Euler-Bernoulli beam theory*
- GS structural members
 - . beams (supports)
 - . . **Euler-Bernoulli beams**
- RT axial strain
 - bending
 - bending vibration
 - dynamic structural analysis
 - elastic properties
 - mathematical models
 - partial differential equations
 - structural analysis
 - Timoshenko beams

Euler-Cauchy equations

- GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . partial differential equations
 - **Euler-Cauchy equations**
- RT complex variables
 - conformal mapping
- ∞ equations
 - vector analysis

Eulerian nutation

USE **Chandler wobble**

Euler-Lagrange equation

- UF *Lagrange equations of motion*
- GS equations of motion
 - . **Euler-Lagrange equation**
- RT calculus of variations
 - Castigliano variational theorem
 - classical mechanics
- ∞ equations
 - extremum values
 - Lagrangian function

Euler-Lambert equation

- RT elliptical orbits
 - ∞ equations

Eureca (ESA)

DEF A Space Shuttle launched retrievable autonomous space platform being developed by the European Space Agency. First launch is scheduled for 1991 with first retrieval 6 months later. Used for European Retrievable Carrier.

- UF *European Retrievable Carrier*
- GS space platforms
 - . **Eureca (ESA)**
- RT space shuttles

Europa

DEF A satellite of Jupiter orbiting at a mean distance of 671,000 kilometers. Also called Jupiter II.

- GS celestial bodies
 - . natural satellites
 - . . icy satellites
 - . . . **Europa**
- . . Jupiter satellites

- . . . Galilean satellites

- **Europa**

- RT Charon
 - extraterrestrial oceans
 - extraterrestrial water
 - Jupiter (planet)

Europa 1 launch vehicle

- GS launch vehicles
 - . Europa launch vehicles
 - . . **Europa 1 launch vehicle**

Europa 2 launch vehicle

- GS launch vehicles
 - . Europa launch vehicles
 - . . **Europa 2 launch vehicle**
- RT COS-B satellite

Europa 3 launch vehicle

- GS launch vehicles
 - . Europa launch vehicles
 - . . **Europa 3 launch vehicle**

Europa 4 launch vehicle

- GS launch vehicles
 - . Europa launch vehicles
 - . . **Europa 4 launch vehicle**

Europa launch vehicles

- GS launch vehicles
 - . **Europa launch vehicles**
 - . . Europa 1 launch vehicle
 - . . Europa 2 launch vehicle
 - . . Europa 3 launch vehicle
 - . . Europa 4 launch vehicle
- RT Ariane launch vehicle
 - Eldo launch vehicle
 - European Space Agency
 - European space programs
- ∞ vehicles

Europe

- GS continents
 - . **Europe**
 - . . Central Europe
- RT Albania
 - Alps Mountains (Europe)
 - Andorra
 - Armenia
 - Austria
 - Azerbaijan
 - Baltic Shield (Europe)
 - Belarus
 - Belgium
 - Bosnia and Herzegovina
 - Bulgaria
 - Carpathian Mountains (Europe)
 - Commonwealth of Independent States
 - Croatia
 - Czech Republic
 - Czechoslovakia
 - Denmark
 - East Germany
 - England
 - Estonia
 - European Union
 - Finland
 - France
 - Georgia (Eurasia)
 - Germany
 - Gibraltar
 - Greece
 - Hungary
 - Iceland
 - Italy
 - Latvia
 - Liechtenstein
 - Lithuania
 - Luxembourg
 - Middle East
 - Moldova
 - Monaco
 - nations
 - Netherlands
 - Northern Ireland
 - Norway
 - Poland
 - Portugal
 - Romania

Russian Federation
 San Marino
 Scotland
 Serbska Republic
 Slovakia
 Spain
 Sweden
 Switzerland
 Turkey
 U.S.S.R.
 Ukraine
 United Kingdom
 Vatican City
 Wales
 West Germany
 Yugoslavia

European 1 spacecraft

GS artificial satellites
 . **European 1 spacecraft**
 RT Eldo launch vehicle

European Airbus

UF *Airbus*
 GS commercial aircraft
 . **European Airbus**
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . . A-380 aircraft
 jet aircraft
 . **European Airbus**
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . . A-380 aircraft
 passenger aircraft
 . **European Airbus**
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . . A-380 aircraft
 transport aircraft
 . **European Airbus**
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . . A-380 aircraft
 RT ∞ aircraft
 international cooperation

European Communications Satellite

UF *ECS*
 GS artificial satellites
 . communication satellites
 . . **European Communications Satellite**
 . . ESA satellites
 . . **European Communications Satellite**
 ESA spacecraft
 . ESA satellites
 . . **European Communications Satellite**
 RT European space programs
 OTS (ESA)

European Incoherent Scatter Radar

USE **EISCAT radar system (Europe)**

European Large Telecomm Satellite

USE **L-Sat**

European Retrievable Carrier

USE **Eureca (ESA)**

European Southern Observatory

(added June 1996)

DEF An astronomical observatory with several telescopes at La Silla, Chile. It was established by and is jointly operated by Belgium, Denmark, France, Germany, Italy, the Nether-

lands, Sweden, and Switzerland.

UF *ESO (observatory)*
 GS observatories
 . astronomical observatories
 . . **European Southern Observatory**
 RT Chile
 international cooperation

European Space Agency

DEF An international organization acting on behalf of its member states (Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom).

UF *ESA*
ESRO
European Space Research Organization

GS organizations

. **European Space Agency**

RT Ariane launch vehicle
 Cassini mission
 Columbus module
 Cupola Module
 Eldo launch vehicle
 ERS-1 (ESA satellite)
 ERS-2 (esa satellite)
 ESA satellites
 ESRO 1 satellite
 ESRO 2 satellite
 ESRO 4 satellite
 Europa launch vehicles
 European space programs
 European Union
 EXPOS (Spacelab payload)
 Geosari project
 ICL computers
 LIRTS (telescope)
 Marots (ESA)
 Mars Express
 METEOSAT satellite
 space programs

European space programs

GS programs
 . space programs
 . . **European space programs**
 . . . Austrian space program
 . . . Belgian space program
 . . . Czechoslovakian space program
 . . . Danish space program
 . . . Finnish space program
 . . . French space program
 . . . German space program
 . . . Greek space program
 . . . Hungarian space program
 . . . Icelandic space program
 . . . Italian space program
 . . . Luxembourg space program
 . . . Netherlands space program
 . . . Norwegian space program
 . . . Portuguese space program
 . . . Spanish space program
 . . . Swedish space program
 . . . Swiss space program
 . . . Turkish space program
 . . . UK space program

RT Aerosat satellites
 AMPTE (satellites)
 Ariane 4 launch vehicle
 Ariane 5 launch vehicle
 Ariane launch vehicle
 Azur satellite
 Cassini mission
 Cluster Mission
 Committee on Space Research
 COS-B satellite
 DIAL satellite
 Earthnet
 ESA satellites
 ESRO 1 satellite
 ESRO 2 satellite
 ESRO 4 satellite
 Europa launch vehicles
 European Communications Satellite
 European Space Agency
 European Union
 Exosat satellite
 foreign policy
 French satellites

GEOS satellites (ESA)
 HEOS satellites
 Hipparcos satellite
 Infrared Space Observatory (ISO)
 International Magnetospheric Study
 International Satellite Geodesy
 Experiment
 IRIS satellites
 man tended free flyers
 Marecs maritime satellites
 Mars Express
 METEOSAT satellite
 OTS (ESA)
 Quasat
 SOHO Mission
 space missions
 Symphonie satellites

European Space Research Organization

USE **European Space Agency**

European Space Research Organization sat

USE **ESA satellites**

European Union

(added June 2005)

RT Europe
 European Space Agency
 European space programs
 federations
 international cooperation
 international law
 North Atlantic Treaty Organization (NATO)
 United Nations

europium

GS chemical elements
 . rare earth elements
 . . **europium**
 . . . europium isotopes
 metals
 . rare earth elements
 . . **europium**
 . . . europium isotopes

europium compounds

GS rare earth compounds
 . **europium compounds**
 RT ∞ chemical compounds
 ∞ metal compounds

europium isotopes

GS chemical elements
 . nuclides
 . . isotopes
 . . . **europium isotopes**
 . rare earth elements
 . . europium
 . . . **europium isotopes**
 metals
 . rare earth elements
 . . europium
 . . . **europium isotopes**

eustachian tubes

GS anatomy
 . sense organs
 . . ear
 . . . **eustachian tubes**
 RT eardrums
 ∞ tubes

eutectic alloys

GS alloys
 . **eutectic alloys**
 binary systems (materials)
 . binary mixtures
 . . eutectics
 . . . **eutectic alloys**
 mixtures
 . binary mixtures
 . . eutectics
 . . . **eutectic alloys**
 RT alloying
 bismuth alloys
 lamella (metallurgy)
 superplasticity

eutectic composites

whisker composites

eutectic composites

DEF Composite materials with a metal matrix of a mixture of solids including eutectoids.

GS composite materials
. metal matrix composites
. . . **eutectic composites**

RT alloys
directional solidification (crystals)
eutectics
fracture strength
∞ matrices
metals
mixtures
precipitation hardening

eutectic diagrams

USE **phase diagrams**

eutectics

GS binary systems (materials)
. binary mixtures
. . . **eutectics**
. . . . eutectic alloys
mixtures
. binary mixtures
. . . **eutectics**
. . . . eutectic alloys

RT alloying
alloys
eutectic composites
liquid phases
phase diagrams
solid phases
solutions
syntectic alloys

eutrophication

DEF The process by which waters become more eutrophic; especially the artificial or natural enrichment of a lake by an influx of nutrients required for the growth of aquatic plants such as algae that are vital for fish and animal life.

RT environment effects
lakes
∞ nutrients

EUVE

USE **Extreme Ultraviolet Explorer satellite**

euxenite

GS minerals
. **euxenite**
RT niobates
oxides
titanates

EVA

USE **extravehicular activity**

∞ evacuating

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT evacuating (transportation)
evacuating (vacuum)

evacuating (transportation)

SN (LIMITED TO CLEARANCE OF PERSONNEL, ANIMALS, OR MATERIAL FROM A GIVEN LOCALITY)

DEF The organized withdrawal or removal of people from a place or area as a protective measure.

RT C-9 aircraft
casualties
civil defense
ejection
elimination
∞ evacuating
hospitals
mobile quarantine facility
removal
transportation
unloading

evacuating (vacuum)

UF *gas evacuating*
RT drainage
ejection

elimination

∞ evacuating
exhausting
gas pockets
purging
removal
suction
vacuum
vacuum pumps
venting
vents

EVAL

USE **Earth Viewing Applications Laboratory**

evaluation

DEF The process of determining whether an item or activity meets the specified criteria.

GS **evaluation**

. training evaluation
RT accelerated life tests
acceptability
∞ analyzing
approach and landing tests (STS)

assessments
certification
∞ classifying
comparison
computer systems performance
correlation
costs
criteria
crop identification

∞ discussion
economics
estimates
estimating
examination
feasibility
figure of merit
forecasting

∞ indication
inspection
management
∞ measurement
normalizing (statistics)
observation
∞ performance
performance prediction
position (title)
proving
quality
ranking
ratings
rejection
reserves
reviewing
risk assessment
selection
statistical correlation
technology assessment

∞ tests
timber identification
value

evanescence

RT evanescent waves
evaporation
surface properties
transpiration

evanescent waves

(added March 1998)

GS surface waves
. **evanescent waves**
RT acoustic impedance
evanescence
fiber optics
internal waves
plane waves
propagation modes
reflected waves
wave propagation
∞ waves

evaporation

DEF The physical process by which a liquid or solid is transformed into the gaseous state; the opposite of condensation.

GS phase transformations
. vaporizing
. . . **evaporation**
. . . . evapotranspiration
. . . . propellant evaporation
. . . . transpiration

RT

boiling
concentrating
condensing
dehydration
diffusion
distillation
drying
evanescence
evaporative cooling
evaporography
flashing (vaporizing)
gas-liquid interactions
gas-metal interactions
hydrological cycle
liquid-vapor interfaces
perspiration
reservoirs
respiratory system
∞ separation
skin (anatomy)
sublimation
volatility
water loss

evaporation rate

DEF The mass of material evaporated per unit time from unit surface of a liquid or solid. The number of molecules of a given substance evaporated per second per square centimeter from the free surface of the condensed phase.

GS rates (per time)
. **evaporation rate**
RT heat transfer coefficients

evaporative cooling

GS cooling
. **evaporative cooling**
. . . film cooling
. . . sweat cooling
RT capillary pumped loops
cooling systems
cryogenic fluid storage
evaporation
propellant evaporation
surface cooling

evaporators

GS heating equipment
. vaporizers
. . . **evaporators**
separators
. **evaporators**
RT air conditioning equipment
atomizers
concentrators
condensers (liquefiers)
cooling systems
drying apparatus
heat exchangers
refrigerating machinery

evaporography

RT evaporation
images
infrared radiation
photography

evapotranspiration

DEF Loss of water from a land area through transpiration of plants and evaporation from the soil and surface-water bodies. Also, the volume of water lost through evapotranspiration.

GS phase transformations
. vaporizing
. . . evaporation
. . . . **evapotranspiration**
RT transpiration
vadose water

evasive actions

GS maneuvers
. **evasive actions**
RT electronic warfare
obstacle avoidance

- pursuit-evasion games
tactics
terrain following
warfare
- evasive satellites**
GS artificial satellites
. **evasive satellites**
maneuverable spacecraft
. **evasive satellites**
RT military spacecraft
- evection*
USE **lunar orbits**
orbit perturbation
solar gravitation
- even-even nuclei**
GS particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **even-even nuclei**
. corpuscular radiation
. energetic particles
. . . nuclei (nuclear physics)
. . . . **even-even nuclei**
RT nuclear structure
odd-even nuclei
odd-odd nuclei
- evening**
RT daytime
night
sunset
- event horizon**
(added August 1990)
DEF The smallest radius of observable events around a black hole.
GS horizon
. **event horizon**
RT black holes (astronomy)
cosmology
gravitation theory
naked singularities
relativity
Schwarzschild metric
white holes (astronomy)
- events**
GS **events**
. consecutive events
RT occurrences
probability density functions
probability theory
statistical analysis
statistical distributions
stochastic processes
- Everglades (FL)**
RT Florida
- evoked response (psychophysiology)**
RT physiological responses
psychophysiology
- ∞ evolution**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT biogeny
chemical evolution
evolution (development)
evolution (liberation)
existence
- evolution (development)**
GS **evolution (development)**
. biological evolution
. . abiogenesis
. chemical evolution
. galactic evolution
. lunar evolution
. planetary evolution
. solar system evolution
. stellar evolution
. . star formation
. . stellar mass accretion
RT ∞ biology
∞ development
- ∞ evolution**
extinction
gene expression
genetics
growth
heredity
interstellar extinction
ontogeny
species diffusion
- evolution (liberation)**
GS **evolution (liberation)**
. gas evolution
RT boiling
desorption
∞ evolution
outgassing
transpiration
vaporizing
- evolvable hardware**
(added September 2001)
DEF Reconfigurable hardware devices that can be dynamically changed by evolutionary algorithms or other adaptive processes.
UF *EHW (computers)*
GS reconfigurable hardware
. **evolvable hardware**
RT design optimization
field-programmable gate arrays
genetic algorithms
∞ hardware
integrated circuits
logic circuits
logic design
neural nets
self repairing devices
- EVS*
USE **enhanced vision**
- exactness*
USE **precision**
- examination**
GS **examination**
. eye examinations
RT acceptability
∞ analyzing
characterization
clinical medicine
comparison
conical scanning
detection
diagnosis
∞ discussion
evaluation
exploration
inspection
investigation
∞ measurement
observation
∞ performance
proving
reviewing
scanning
∞ tests
training evaluation
ultrasonic flaw detection
- excavation**
DEF The act or process of removing soil and/or rock materials from one location and transporting them to another. It includes digging, blasting, breaking, loading, and hauling, either at the surface or underground. Also, a pit, cavity, hole, or other uncovered cutting produced by excavation or the material dug out in making a channel or cavity. Used for ditching (excavation)
UF *ditching (excavation)*
GS **excavation**
. tunneling (excavation)
RT boreholes
construction
∞ ditching
drainage
exploration
foundations
lunar excavation equipment
materials handling
- mineral deposits
mineral exploration
mining
pits (excavations)
strip mining
underground structures
- ∞ exchangers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT heat exchangers
- exchanging**
GS **exchanging**
. charge exchange
. . resonance charge exchange
. gas exchange
. ion exchanging
. spin exchange
RT ∞ conversion
deionization
∞ separation
∞ shift
transferring
- excimer lasers**
DEF Molecular lasers using vibronic transitions whose lasing medium is a dimer that exists in the excited state and dissociates in the ground state.
GS stimulated emission devices
. lasers
. . gas lasers
. . . **excimer lasers**
RT electron pumping
fluorides
halogens
laser deposition
laser outputs
lasing
optical pumping
pulsed laser deposition
∞ rare gas compounds
xenon chloride lasers
xenon fluoride lasers
- excimers**
DEF Molecules characterized by repulsive or very weakly bound ground electronic states.
RT electron orbitals
electron states
electron transitions
intermolecular forces
molecular energy levels
∞ rare gas compounds
- excitation**
DEF Addition of energy to a nuclear, atomic or molecular system transferring it to another energy state. Used for excited states.
UF *excited states*
GS **excitation**
. atomic excitations
. molecular excitation
. photoexcitation
. self excitation
. wave excitation
. . acoustic excitation
. . harmonic excitation
RT activation
actuation
atomic energy levels
auroral ionization
auroral irradiation
electromagnetic absorption
electron states
electron transitions
emission
energy levels
frequency response
ionization
irradiation
laser induced fluorescence
metastable state
radiation trapping
relaxation time
rotons
starting

excitons

transition probabilities

excited states

USE **excitation**

excitons

GS elementary excitations
. **excitons**
RT carrier mobility
electrical insulation
electrons
energy bands
holes (electron deficiencies)
ionic crystals
light (visible radiation)
optical properties
photoelectromagnetic effects
plasmons
positronium
semiconductors (materials)
spectra
Suhl effect

exclusion

RT elimination
isolation
Pauli exclusion principle
rejection
∞ separation

excretion

RT expulsion
feces
human wastes
perspiration
urine

executive aircraft

USE **general aviation aircraft**
passenger aircraft

executive systems (computers)

USE **operating systems (computers)**

exercise

USE **physical exercise**

exercise physiology

GS physiology
. **exercise physiology**
RT circulatory system
human body
locomotion
muscular tonus
physical exercise
physical fitness
physiochemistry
physiological effects
respiratory physiology
sports medicine
stress (biology)
stress (physiology)

exergic energy

(added December 2000)

USE **exergy**

exergy

(added December 2000)

DEF The maximum amount of external-energy that could be drawn from a system or form of energy in relation to a certain reference environment. Exergy is not considered to be a form of energy but a designation of the quality of energy.

UF *exergic energy*

RT ∞ energy
energy budgets
energy conservation
energy conversion efficiency
energy dissipation
entropy
power efficiency
thermodynamic efficiency
thermodynamic properties
thermodynamics

waste energy utilization

exertion

USE **physical work**

exhalation

RT alveolar air
expired air
respirometers

exhaust clouds

DEF Clouds formed from the exhaust aerosols of launch vehicle engines and boosters at liftoff. Used for ground clouds and launch clouds.

UF *ground clouds*
launch clouds

RT aerosols
∞ clouds
exhaust gases
launch vehicles
launching
launching sites
rocket exhaust
rocket launching

exhaust diffusers

RT conical nozzles
∞ diffusers
ejectors
∞ jet nozzles
supersonic diffusers
vaneless diffusers

exhaust emission

DEF The movement of gaseous or other particles and radiation from the nozzle of a rocket or other reaction engine.

GS emission
. **exhaust emission**

RT gas-gas interactions
gas-metal interactions
high temperature gases
infrared radiation
jet exhaust
particle emission
pollution transport
releasing
thermal emission
volatile organic compounds

exhaust flow simulation

GS simulation
. **exhaust flow simulation**
RT flow distribution
mathematical models
wind tunnels

exhaust gases

UF *exhaust jets*
GS gases
. **exhaust gases**
. . flue gases
RT air pollution
∞ blasts
combustion efficiency
combustion products
diluents
effluents
environment effects
erosive burning
exhaust clouds
exhausting
fumes
gas mixtures
gas recovery
infrared suppression
jet blast effects
jet exhaust
nozzle flow
odors
particulates
pollution transport
propulsion
reaction products
rocket exhaust
smog
smoke
smoke abatement
vapors

waste disposal
waste energy utilization
wastes

exhaust jets

USE **exhaust gases**

exhaust nozzles

GS **exhaust nozzles**
. convergent-divergent nozzles
. plug nozzles
. spike nozzles
. turbine exhaust nozzles
RT air ducts
annular nozzles
base heating
conical nozzles
divergent nozzles
ejectors
∞ flow
infrared suppression
inlet nozzles
jet engines
∞ jet nozzles
nozzle flow
nozzle inserts
∞ nozzles
openings
outlets
rocket engines
skirts

exhaust systems

RT afterburning
air conditioning
air pollution
blowers
chimneys
condensers (liquefiers)
cooling systems
ducts
dust collectors
ejectors
elimination
engines
exhausting
flues
fuel tank pressurization
intake systems
internal combustion engines
manifolds
mufflers
openings
outlets
pipe nozzles
plenum chambers
ports (openings)
rocket exhaust
∞ systems
temperature control
ventilation
ventilators
vents
waste disposal

exhaust velocity

DEF The velocity of gases or particles (exhaust stream) that exhaust through the nozzle or a reaction engine, relative to the nozzle.

GS rates (per time)
. **exhaust velocity**

velocity
. **exhaust velocity**

RT acoustic velocity
critical velocity
expulsion
flow velocity

exhausting

RT blowing
breathing vibration
consumption
decontamination
∞ discharge
dispersing
disposal
dissipation
ejection
elimination
evacuating (vacuum)

exhaust gases
 exhaust systems
 relieving
 removal
 ventilation
 venting

exhaustion

RT consumption
 depletion
 fatigue (biology)
 hyperkinesia

existence

RT cosmology
 ∞ evolution
 life span
 validity

existence theorems

GS analysis (mathematics)
 . real variables
 . . **existence theorems**
 theorems
 . **existence theorems**
 RT problem solving
 roots of equations

exits (doors)

USE **doors**

exobiology

DEF Field of biology that deals with the search for extraterrestrial life and the conditions that may give rise to life on other planets or elsewhere in the Universe. May also be defined to include the study of effects of extraterrestrial environments on living organisms. Used for astrobiology and space biology.

UF *astrobiology*
space biology
 RT aerospace environments
 Apollo extension system
 bioastronautics
 ∞ biology
 biomarkers
 carbonaceous meteorites
 chemical evolution
 environment models
 extraterrestrial life
 extraterrestrial water
 life support systems
 lunar environment
 Mars Pathfinder
 panspermia
 planetary environments
 planetary protection
 spacecraft contamination
 spacecraft environments
 spacecraft sterilization
 terraforming

exophilia

USE **heterophilia**

exoplanet detection

(added January 2003)
 USE **planet detection**

exoplanets

(added April 2001)
 USE **extrasolar planets**

EXOS satellites

GS artificial satellites
 . scientific satellites
 . . **EXOS satellites**
 . . . EXOS-A satellite
 . . . EXOS-B satellite
 . . . EXOS-C satellite
 . . . EXOS-D satellite
 Japanese spacecraft
 . **EXOS satellites**
 . . EXOS-A satellite
 . . EXOS-B satellite
 . . EXOS-C satellite
 . . EXOS-D satellite

EXOS sounding rocket

GS rocket vehicles

. multistage rocket vehicles
 . . **EXOS sounding rocket**
 . . sounding rockets
 . . . **EXOS sounding rocket**
 RT Honest John rocket vehicle
 Nike-Ajax missile
 solid propellant rocket engines
 XM-33 engine

EXOS-A satellite

(added February 1992)
 UF *Kyokko satellite*
 GS artificial satellites
 . scientific satellites
 . . EXOS satellites
 . . . **EXOS-A satellite**
 Japanese spacecraft
 . EXOS satellites
 . . **EXOS-A satellite**

Exosat satellite

UF *HELOS (satellite)*
High Eccentric Lunar Occultation Satellite
 GS artificial satellites
 . ESA satellites
 . . **Exosat satellite**
 . . scientific satellites
 . . . **Exosat satellite**
 ESA spacecraft
 . ESA satellites
 . . **Exosat satellite**
 RT eccentric orbits
 European space programs
 lunar occultation
 x ray astronomy
 x ray sources

EXOS-B satellite

UF *Jikiken satellite*
 GS artificial satellites
 . scientific satellites
 . . EXOS satellites
 . . . **EXOS-B satellite**
 Japanese spacecraft
 . EXOS satellites
 . . **EXOS-B satellite**

EXOS-C satellite

UF *Ohzora satellite*
 GS artificial satellites
 . scientific satellites
 . . EXOS satellites
 . . . **EXOS-C satellite**
 Japanese spacecraft
 . EXOS satellites
 . . **EXOS-C satellite**

EXOS-D satellite

(added February 1992)
 UF *Akebono satellite*
 GS artificial satellites
 . scientific satellites
 . . EXOS satellites
 . . . **EXOS-D satellite**
 Japanese spacecraft
 . EXOS satellites
 . . **EXOS-D satellite**

exoskeletons

RT anatomy
 arthropods
 body composition (biology)
 bones
 connective tissue
 musculoskeletal system

exosolar planets

(added April 2001)
 USE **extrasolar planets**

exosphere

SN (ALTITUDES ABOVE APPROXIMATELY 500 KM)
 DEF The outermost, or topmost, portion of the atmosphere. Its lower boundary is the critical level of escape, variously estimated at 500 to 1000 kilometers above the Earth's surface.
 GS Earth atmosphere
 . upper atmosphere
 . . **exosphere**

RT Earth ionosphere
 Earth magnetosphere
 heterosphere
 planetary magnetotails
 radiation belts
 thermosphere

exothermic reactions

GS chemical reactions
 . **exothermic reactions**
 RT association reactions
 combustion
 combustion chemistry
 combustion synthesis
 endothermic reactions
 incendiary ammunition
 pyrolysis
 thermal decomposition

expandable structures

GS **expandable structures**
 . bellows
 . inflatable structures
 . . air bag restraint devices
 . . balloons
 . . . high altitude balloons
 jimsphere balloons
 skyhook balloons
 superpressure balloons
 meteorological balloons
 jimsphere balloons
 ROBIN balloons
 . . . microballoons
 . . . tethered balloons
 . . ballutes
 . . gas bags
 . . inflatable gliders
 . . inflatable spacecraft
 . . . Beacon satellites
 Beacon Explorer A
 Explorer 22 satellite
 RT expulsion bladders
 folding structures
 large space structures
 orbital assembly
 space erectable structures
 ∞ spacecraft
 ∞ structures
 variable geometry structures

expansion

UF *enlarging*
 GS **expansion**
 . gas expansion
 . Karhunen-Loeve expansion
 . Prandtl-Meyer expansion
 . series expansion
 . thermal expansion
 RT adiabatic conditions
 distortion
 elongation
 extensions
 inflating
 rarefaction
 relaxation (mechanics)
 swelling
 thermal buckling

expansion waves

USE **elastic waves**

expectancy hypothesis

GS hypotheses
 . **expectancy hypothesis**
 RT Monte Carlo method
 probability density functions
 statistical analysis
 statistical distributions

expectation

RT contingency
 decision theory
 Fisher information
 forecasting
 reliability

expeditions

RT exploration
 ∞ missions

expellants

space flight

expellants

RT cough
∞ discharge
expulsion
flushing

expendable stages (spacecraft)

RT booster recovery
booster rocket engines
engines
multistage rocket vehicles
recoverable spacecraft
reusable spacecraft
rocket engines
space shuttles
stage separation

experience

RT education
lessons learned
qualifications
upgrading

experiment design

SN (LIMITED TO DESIGN OF
EXPERIMENTS--EXCLUDES
PROTOTYPES)
UF *design of experiments*
GS **experiment design**
. factorial design
RT covariance
degrees of freedom
∞ design
factor analysis
laboratories
mathematical models
operations research
orthogonality
quality control
regression analysis
statistical analysis
systems engineering
Taguchi methods
variance (statistics)

experimental aircraft

USE **research aircraft**

experimental boiling water reactors

UF *EBWR (reactor)*
GS nuclear reactors
. liquid cooled reactors
. water cooled reactors
. . . boiling water reactors
. . . . **experimental boiling water reactors**
. nuclear research and test reactors
. . **experimental boiling water reactors**
. water moderated reactors
. . **experimental boiling water reactors**

Experimental Breeder Reactor 1

UF *EBR-1 reactor*
GS nuclear reactors
. breeder reactors
. . **Experimental Breeder Reactor 1**
. fast nuclear reactors
. . **Experimental Breeder Reactor 1**
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **Experimental Breeder Reactor 1**
. nuclear research and test reactors
. . **Experimental Breeder Reactor 1**

Experimental Breeder Reactor 2

UF *EBR-2 reactor*
GS nuclear reactors
. breeder reactors
. . **Experimental Breeder Reactor 2**
. fast nuclear reactors
. . **Experimental Breeder Reactor 2**
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **Experimental Breeder Reactor 2**
. nuclear research and test reactors

. . . Experimental Breeder Reactor 2

experimental gas cooled reactors

UF *EGCR (reactor)*
GS nuclear reactors
. gas cooled reactors
. . **experimental gas cooled reactors**
. nuclear research and test reactors
. . **experimental gas cooled reactors**

experimental organic cooled reactors

UF *EOCR (reactor)*
GS nuclear reactors
. liquid cooled reactors
. . organic cooled reactors
. . . **experimental organic cooled reactors**
. nuclear research and test reactors
. . **experimental organic cooled reactors**
. organic moderated reactors
. . **experimental organic cooled reactors**

Experimental Reflector Orbital Shot Proj

UF *EROS project*
GS programs
. projects
. . **Experimental Reflector Orbital Shot Proj**

experimental STOL transport rsch airplane

USE **Questol aircraft**

experimentation

GS **experimentation**
. Physics and Chemistry Experiment in Space
RT critical experiments
exploration
investigation
laboratories
phenomenology
spaceborne experiments

expert systems

(added August 1990)
DEF Computer programs that manipulate symbolic information to produce the same results as human experts would. They deal with uncertain data and make decisions on that data. Input and design relies on human experts. Used for knowledge based systems.
GS information systems
. knowledge based systems
. . **expert systems**
RT artificial intelligence
belief networks
C (programming language)
computer programming
decision support systems
knowledge bases (artificial intelligence)
knowledge representation
∞ logic
logic programming
natural language processing
pilot support systems
Prolog (programming language)
systems health monitoring

expiration

RT ∞ breathing
death
expired air
expulsion
mortality
respiration

expired air

GS gases
. gas mixtures
. . air
. . . **expired air**
mixtures
. solutions
. . gas mixtures
. . . air

. . . . expired air

RT alveolar air
exhalation
expiration
gas composition
metabolic wastes
rebreathing
respiration

exploding conductor circuits

USE **circuits**
exploding wires

exploding conductors

USE **exploding wires**

exploding wires

UF *exploding conductor circuits*
exploding conductors
GS explosive devices
. initiators (explosives)
. . **exploding wires**
igniters
. initiators (explosives)
. . **exploding wires**
wire
. **exploding wires**
RT boosters (explosives)
caps (explosives)
conductors
detonators
electric wire
plasma generators
primers (explosives)
radiation transport
shock waves
wire bridge circuits

exploitation

RT beneficiation
depletion
∞ development
exploration
geology
land use
mines (excavations)
mining
reserves
strip mining

exploration

DEF The search for deposits of useful minerals or fossil fuels; prospecting, including under the oceans. It may include geologic reconnaissance, e.g., remote sensing, photogeology, geophysical and geochemical methods, and both surface and underground investigations. Used for discovering and prospecting.

UF *discovering prospecting*

GS exploration

. mineral exploration
. natural gas exploration
. oil exploration
. space exploration
. . lunar exploration
. . Mars exploration

RT boreholes
detection
drilling
examination
excavation
expeditions
experimentation
exploitation
geological surveys
geology
geothermal technology
investigation
mines (excavations)
OSS-1 payload
research
reserves
sampling
space flight
surveys
underground acoustics

Explorer 1 satellite

GS artificial satellites

Explorer 30 satellite

LARGOS satellite	. . Explorer satellites	<i>Radio Astronomy Explorer B</i>
PAGEOS satellite	. . . Explorer 39 satellite	<i>RAE 1</i>
Explorer 30 satellite	RT Scout launch vehicle	<i>RAE 2</i>
UF <i>SE-A</i>	Explorer 40 satellite	<i>RAE B</i>
GS artificial satellites	UF <i>Injun 5 satellite</i>	GS artificial satellites
. . scientific satellites	GS artificial satellites	. . scientific satellites
. . Explorer satellites	. . scientific satellites	. . Explorer satellites
. . . Explorer 30 satellite	. . Explorer satellites	. . . Explorer 49 satellite
RT Scout launch vehicle	. . . Explorer 40 satellite	RT Delta launch vehicle
Explorer 31 satellite	RT Scout launch vehicle	Explorer 50 satellite
UF <i>DME-A satellite</i>	Explorer 41 satellite	UF <i>IMP-8</i>
GS artificial satellites	UF <i>IMP-5</i>	<i>IMP-J</i>
. . scientific satellites	<i>IMP-G</i>	GS artificial satellites
. . Explorer satellites	GS artificial satellites	. . scientific satellites
. . . Explorer 31 satellite	. . scientific satellites	. . Explorer satellites
RT Thor Agena launch vehicle	. . Explorer satellites	. . . Explorer 50 satellite
Explorer 32 satellite	. . . Explorer 41 satellite	Explorer 51 satellite
UF <i>AE-B satellite</i>	<i>Explorer 42 satellite</i>	UF <i>AE-C satellite</i>
GS artificial satellites	USE Uhuru satellite	<i>Atmosphere Explorer C</i>
. . scientific satellites	Explorer 43 satellite	GS artificial satellites
. . Explorer satellites	UF <i>IMP-6</i>	. . scientific satellites
. . . Explorer 32 satellite	<i>IMP-I</i>	. . Explorer satellites
RT Delta launch vehicle	GS artificial satellites	. . . Explorer 51 satellite
Explorer 33 satellite	. . scientific satellites	Explorer 52 satellite
UF <i>AIMP-1</i>	. . Explorer satellites	DEF The Hawkeye 1 satellite in the Explorer series. Used for Hawkeye 1 satellite.
<i>AIMP-D</i>	. . . Explorer 43 satellite	UF <i>Hawkeye 1 satellite</i>
<i>IMP-D</i>	RT Delta launch vehicle	GS artificial satellites
GS artificial satellites	Explorer 44 satellite	. . scientific satellites
. . scientific satellites	DEF The tenth in a series of solar radiation monitoring satellites launched from Wallops Island, VA on July 8, 1971, to measure x rays and ultraviolet radiation from the sun. It was operational until June 3, 1978. Used for Solrad 10 satellite.	. . Explorer satellites
. . Explorer satellites	UF <i>Solrad 10 satellite</i>	. . . Explorer 52 satellite
. . . Explorer 33 satellite	GS artificial satellites	Explorer 53 satellite
RT Delta launch vehicle	. . scientific satellites	GS artificial satellites
Explorer 34 satellite	. . Explorer satellites	. . scientific satellites
UF <i>IMP-4</i>	. . . Explorer 44 satellite	. . Explorer satellites
<i>IMP-F</i>	Explorer 45 satellite	. . Explorer satellites
GS artificial satellites	DEF One in a long series of NASA scientific satellites used to study the atmosphere, ionosphere, magnetosphere, interplanetary space, etc.	. . Explorer satellites
. . scientific satellites	GS artificial satellites	. . astronomical observatories
. . Explorer satellites	. . geophysical satellites	. . astronomical observatories
. . . Explorer 34 satellite	. . . Explorer 45 satellite	. . astronomical satellites
RT Thor Agena launch vehicle	. . Explorer satellites	. . . SAS
Explorer 35 satellite	. . . Explorer 45 satellite	. . . Explorer 53 satellite
UF <i>AIMP-2</i>	Explorer 46 satellite	. . Explorer satellites
<i>AIMP-E</i>	DEF A satellite designed to study meteoroid protective ability of spacecraft launched from Wallops Island, VA on August 13, 1972. Two scientific experiments also on board were to determine the size and the velocity of meteoroids. The velocity experiment failed to work due to excessive heat. Used for Meteoroid Technology Satellite.	. . Explorer satellites
<i>IMP-E</i>	UF <i>Meteoroid Technology Satellite</i>	. . . Explorer 53 satellite
GS artificial satellites	GS artificial satellites	RT SAS-3
. . scientific satellites	. . scientific satellites	Explorer 54 satellite
. . Explorer satellites	. . Explorer satellites	UF <i>AE-D satellite</i>
. . . Explorer 35 satellite	. . . Explorer 46 satellite	<i>Atmosphere Explorer D</i>
RT Thor Agena launch vehicle	Explorer 47 satellite	GS artificial satellites
Explorer 36 satellite	UF <i>IMP-7</i>	. . scientific satellites
GS artificial satellites	<i>IMP-H</i>	. . Explorer satellites
. . geodetic satellites	GS artificial satellites	. . . Explorer 55 satellite
. . . Explorer 36 satellite	. . scientific satellites	RT Delta launch vehicle
. . scientific satellites	. . Explorer satellites	Explorer 55 satellite
. . Explorer satellites	. . . Explorer 47 satellite	UF <i>AE-E satellite</i>
. . . Explorer 36 satellite	Explorer 48 satellite	<i>Atmosphere Explorer E</i>
RT active satellites	GS artificial satellites	GS artificial satellites
ANNA satellites	. . scientific satellites	. . scientific satellites
celestial geodesy	. . Explorer satellites	. . Explorer satellites
GEOS 2 satellite	. . . Explorer 48 satellite	. . . Explorer 55 satellite
LARGOS satellite	RT SAS	RT Delta launch vehicle
PAGEOS satellite	SAS-2	<i>Explorer 71 satellite</i>
Thor Agena launch vehicle	Explorer 49 satellite	(added November 2000)
Explorer 37 satellite	UF <i>Radio Astronomy Explorer 2</i>	USE Advanced Composition Explorer
GS artificial satellites	Explorer 47 satellite	<i>Explorer 73 satellite</i>
. . scientific satellites	UF <i>IMP-7</i>	(added November 2000)
. . Explorer satellites	<i>IMP-H</i>	USE Transition Region and Coronal Explorer
. . . Explorer 37 satellite	GS artificial satellites	<i>Explorer 74 satellite</i>
RT Scout launch vehicle	. . scientific satellites	(added November 2000)
Explorer 38 satellite	. . Explorer satellites	USE Submillimeter Wave Astronomy Satellite
UF <i>RAE-1</i>	. . . Explorer 47 satellite	<i>Explorer 77 satellite</i>
GS artificial satellites	Explorer 48 satellite	(added November 2000)
. . scientific satellites	GS artificial satellites	USE Far UV Spectroscopic Explorer
. . Explorer satellites	. . scientific satellites	<i>Explorer 78 satellite</i>
. . . Explorer 38 satellite	. . Explorer satellites	(added November 2000)
RT Delta launch vehicle	. . . Explorer 48 satellite	USE IMAGE satellite
Explorer 39 satellite	RT SAS	Explorer satellites
GS artificial satellites	SAS-2	GS artificial satellites
. . scientific satellites	Explorer 49 satellite	

. scientific satellites
 . . . **Explorer satellites**
 . . . Applications Explorer Satellites
 . . . Cosmic Background Explorer satellite
 . . . Dual Air Density Explorer
 . . . Dynamics Explorer satellites
 Dynamics Explorer 1 satellite
 Dynamics Explorer 2 satellite
 . . . Explorer 1 satellite
 . . . Explorer 2 satellite
 . . . Explorer 3 satellite
 . . . Explorer 4 satellite
 . . . Explorer 5 satellite
 . . . Explorer 6 satellite
 . . . Explorer 7 satellite
 . . . Explorer 8 satellite
 . . . Explorer 9 satellite
 . . . Explorer 10 satellite
 . . . Explorer 11 satellite
 . . . Explorer 12 satellite
 . . . Explorer 14 satellite
 . . . Explorer 15 satellite
 . . . Explorer 16 satellite
 . . . Explorer 17 satellite
 . . . Explorer 18 satellite
 . . . Explorer 19 satellite
 . . . Explorer 20 satellite
 . . . Explorer 21 satellite
 . . . Explorer 22 satellite
 . . . Explorer 23 satellite
 . . . Explorer 24 satellite
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 . . . Explorer 26 satellite
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 . . . Explorer 28 satellite
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 . . . Explorer 31 satellite
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 . . . Explorer 34 satellite
 . . . Explorer 35 satellite
 . . . Explorer 36 satellite
 . . . Explorer 37 satellite
 . . . Explorer 38 satellite
 . . . Explorer 39 satellite
 . . . Explorer 40 satellite
 . . . Explorer 41 satellite
 . . . Explorer 43 satellite
 . . . Explorer 44 satellite
 . . . Explorer 45 satellite
 . . . Explorer 46 satellite
 . . . Explorer 47 satellite
 . . . Explorer 48 satellite
 . . . Explorer 49 satellite
 . . . Explorer 50 satellite
 . . . Explorer 51 satellite
 . . . Explorer 52 satellite
 . . . Explorer 53 satellite
 . . . Explorer 54 satellite
 . . . Explorer 55 satellite
 . . . Extreme Ultraviolet Explorer satellite
 . . . Far UV Spectroscopic Explorer
 . . . IMP
 . . . International Magnetospheric Explorer
 . . . International Sun Earth Explorers
 International Sun Earth Explorer 1
 International Sun Earth Explorer 2
 International Sun Earth Explorer 3
 . . . Advanced Composition Explorer
 . . . IMAGE satellite
 . . . Micrometeoroid Explorer satellites
 . . . Radio Astronomy Explorer satellite
 . . . Solar Mesosphere Explorer
 . . . Submillimeter Wave Astronomy Satellite
 . . . Transition Region and Coronal Explorer
 . . . Uhuru satellite
 . . . X Ray Timing Explorer
 RT IUE
 Juno 1 launch vehicle

Jupiter C rocket vehicle
 meteoroid dust clouds
 micrometeoroids
 outer planets explorers
 Scout project
 Thor Delta launch vehicle
 zodiacal dust

explosion suppression

DEF Any method used to confine or suppress an explosion.
 RT fire prevention
 foams
 retardants

explosions

DEF The sudden production of large quantities of gases, usually hot, from much smaller amounts of gases, liquids, or solids.

GS **explosions**
 . aerial explosions
 . chemical explosions
 . . gas explosions
 . . propellant explosions
 . nuclear explosions
 . . thermonuclear explosions
 . underground explosions
 . underwater explosions
 RT accidents
 backfire
 blast loads
 ∞ blasts
 bursts
 combustion
 detonation
 ∞ discharge
 explosive decompression
 explosives
 fires
 flame propagation
 ∞ flash
 flashback
 hazards
 hydrocarbon combustion
 implosions
 reactor safety
 Riemann waves
 safety
 shock waves
 sound pressure
 spontaneous combustion
 warning systems

explosive decompression

GS pressure reduction
 . **explosive decompression**
 RT explosions
 implosions
 pressure recovery
 pressurized cabins

explosive devices

UF *cartridge actuated devices*
 GS **explosive devices**
 . bombs (ordnance)
 . initiators (explosives)
 . . boosters (explosives)
 . . caps (explosives)
 . . detonators
 . . exploding wires
 . . primers (explosives)
 . nuclear devices
 . shaped charges
 . torpedoes
 RT actuators
 ammunition
 ∞ charging
 ∞ devices
 explosives detection
 igniters
 ∞ propellant actuated devices
 warheads

explosive forming

GS forming techniques
 . cold working
 . . **explosive forming**
 metal working
 . **explosive forming**
 RT bulging

deep drawing
 electrohydraulic forming
 extruding
 shaped charges

explosive gases

USE **flammable gases**

explosive welding

GS bonding
 . **explosive welding**
 welding
 . pressure welding
 . . **explosive welding**
 RT cladding
 metal bonding
 metal joints
 metal working
 metal-metal bonding

explosives

GS **explosives**
 . BSX
 . cellulose nitrate
 . dynamite
 . HMX
 . hydrazine nitroform
 . hydrogen azides
 . nitrasol explosives
 . octol (explosive)
 . pentolite
 . RDX
 . styphnates
 . TATB
 . tetryl
 . trinitrotoluene
 RT ammonium picrates
 ammunition
 azides (organic)
 bombs (ordnance)
 burning rate
 case bonded propellants
 ∞ charging
 chemical explosions
 chemical fuels
 composite propellants
 detonators
 double base propellants
 double base rocket propellants
 explosions
 fires
 flammable gases
 fulminates
 gun propellants
 guns (ordnance)
 hazardous materials
 nitroglycerin
 nitroguanidine
 nitromethane
 nuclear weapons
 ordnance
 PETN
 plastic propellants
 potassium perchlorates
 powder (particles)
 propellants
 pyrophoric materials
 pyrotechnics
 shaped charges
 sodium azides
 TAGN
 torpedoes
 warheads

explosives detection

(added September 1995)
 GS detection
 . chemical detection
 . . **explosives detection**
 RT airport security
 explosive devices
 ion mobility spectroscopy
 terrorism

exponential functions

GS analysis (mathematics)
 . complex variables
 . . **exponential functions**
 . . . logarithms
 functions (mathematics)

exponents

. transcendental functions
. . . **exponential functions**
. . . logarithms
RT Fourier analysis
hyperbolic functions
orthogonal functions
Poisson density functions
probability density functions
statistical analysis
Weibull density functions

exponents

GS number theory
. **exponents**
RT arithmetic
fractals
logarithms

exports

USE **international trade**

EXPOS (Spacelab payload)

DEF X ray spectropolarimetry payload for Spacelab. Used for X Ray Spectropolarimetry Payload.
UF *X Ray Spectropolarimetry Payload*
GS payloads
. **EXPOS (Spacelab payload)**
RT European Space Agency
Spacelab

exposure

GS **exposure**
. weathering
. . space weathering
. photoperiod
RT atmospheric effects
bearing (direction)
bioavailability
cold tolerance
dosimeters
irradiation
photography
position (location)
positioning
radiation dosage
time
trinitrotoluene

expressions (mathematics)

USE **formulas (mathematics)**

expulsion

RT acceleration (physics)
circuit protection
disposal
dumping
ejection
emptying
excretion
exhaust velocity
expellants
expiration
fluid flow
gravity gradient satellites
jettisoning
particle emission
pressurizing
removal
unloading

expulsion bladders

GS diaphragms (mechanics)
. **expulsion bladders**
RT bellows
ejection
emptying
expandable structures
fuel tank pressurization
fuel tanks
pressurizing
propellant storage
propellant tanks

storage tanks

extars

USE **x ray stars**

extended duration space flight

USE **long duration space flight**

extensions

GS **extensions**
. prolongation
RT accessories
adapters
contracts
decontamination
expansion
filling
fittings
insurance (contracts)
revisions
supplements

extensometers

DEF Devices for determining the elongation of a specimen as it is strained. Used for dilatometers.
UF *dilatometers*
GS measuring instruments
. **extensometers**
RT deformeters
dilatometry
elastometers
mechanical measurement
strain gages
stress measurement
tensometers
thermal expansion
transducers

external combustion engines

GS engines
. **external combustion engines**
. . Stirling engines
RT automobile engines
boilers
gas turbine engines
internal combustion engines
piston engines

external store separation

UF *store release*
RT nacelles
pods (external stores)
protuberances
 ∞ separation
 ∞ storage
wing tanks
wing-fuselage stores

external stores

GS **external stores**
. pods (external stores)
RT nacelles
protuberances
 ∞ storage
wing tanks
wing-fuselage stores

external surface currents

GS electric current
. **external surface currents**
RT ∞ currents
electric fields
electromagnetic fields
electromagnetic missiles
electromagnetic pulses
levitation melting
photoelectric emission
spacecraft charging
 ∞ surfaces
system generated electromagnetic pulses

external tanks

UF *Shuttle Superlightweight Tank*
SLWT (propellant tank)
GS tanks (containers)
. **external tanks**
RT fuel tanks
nacelles

propellant tanks
Space Shuttle Ascent Stage
storage tanks
wing tanks

externally blown flaps

UF *blown flaps*
EBF
GS airfoils
. flaps (control surfaces)
. . **externally blown flaps**
. . . upper surface blown flaps
control surfaces
. flaps (control surfaces)
. . **externally blown flaps**
. . . upper surface blown flaps
RT blowing
jet flaps
lift
lift devices
powered lift aircraft
short takeoff aircraft
spanwise blowing
wing flaps
wing nacelle configurations

extinction

GS **extinction**
. interstellar extinction
RT Cenozoic Era
Cretaceous-Tertiary boundary
evolution (development)
extinguishing
fading
fluorescence
laser induced fluorescence
Nemesis (star)

extinguishers

USE **fire extinguishers**

extinguishing

UF *flame quenching*
GS **extinguishing**
. flameout
RT burnout
combustion
extinction
occultation
 ∞ quenching
quenching (cooling)

extraction

GS **extraction**
. geothermal energy extraction
. ion extraction
. solvent extraction
RT beds (process engineering)
beneficiation
centrifuges
centrifuging
columns (process engineering)
concentrating
dialysis
diffusion
dissolving
elution
filtration
furnaces
hydrolysis
leaching
material absorption
materials recovery
melting
osmosis
percolation
recycling
refining
removal
 ∞ separation
solvents
sorption
washers (cleaners)

extragalactic light

USE **extraterrestrial radiation**

extragalactic media

USE **intergalactic media**

extragalactic radio sources

GS celestial bodies

- . radio sources (astronomy)
- . . . **extragalactic radio sources**
- radio galaxies
- radio jets (astronomy)
- RT BL Lacertae objects
- blazars
- extraterrestrial radiation
- extraterrestrial radio waves
- quasars
- radiation sources
- radio astronomy
- radio emission
- ∞ sources

extrapolation

- RT finite difference theory
- forecasting
- interpolation
- periodic variations
- quality control
- statistical analysis
- ∞ tests
- time series analysis
- trends

extrasensory perception

- UF *parapsychology*
- GS perception
- . sensory perception
- . . . **extrasensory perception**

extrasolar planet detection
(added January 2003)

USE **planet detection**

extrasolar planets

- UF *exoplanets*
- extrasolar planets*
- GS celestial bodies
- . planets
- . . . **extrasolar planets**
- RT gas giant planets
- hypothetical planets
- planet detection
- planetary systems

extraterrestrial communication

- GS telecommunication
- . space communication
- . . . **extraterrestrial communication**
- RT information dissemination
- interplanetary communication
- radio telemetry

extraterrestrial environments

- GS environments
- . **extraterrestrial environments**
- . . . cislunar space
- . . . deep space
- . . . interplanetary space
- . . . interstellar space
- . . . Earth orbital environments
- . . . lunar environment
- lunar atmosphere
- . . . planetary environments
- Mars environment
- Mars atmosphere
- planetary atmospheres
- helium hydrogen atmospheres
- Jupiter atmosphere
- Mars atmosphere
- Mercury atmosphere
- Neptune atmosphere
- planetary ionospheres
- Pluto atmosphere
- Saturn atmosphere
- Uranus atmosphere
- Venus atmosphere
- Venus clouds
- planetary magnetospheres
- planetary magnetotails
- satellite atmospheres
- lunar atmosphere
- Titan atmosphere
- stellar atmospheres
- chromosphere
- solar atmosphere
- solar transition region
- RT aerospace environments
- high gravity environments

- long duration space flight
- Mars bases
- Mercury surface
- space exploration
- space weathering
- spacecraft environments
- Venus surface

extraterrestrial intelligence

DEF Intelligent life existing elsewhere than on Earth.

- GS intelligence
- . **extraterrestrial intelligence**
- RT interstellar communication
- interstellar travel
- Project SETI
- space communication
- unidentified flying objects

extraterrestrial life

DEF Life forms evolved and existing outside the terrestrial biosphere.

- GS life sciences
- . **extraterrestrial life**
- RT aerospace environments
- biofilms
- biomarkers
- biosatellites
- exobiology
- extraterrestrial water
- life detectors
- panspermia
- Phoenix Mars Lander
- planetary protection

extraterrestrial matter

- GS **extraterrestrial matter**
- . cosmic gases
- . . interplanetary gas
- . . interstellar gas
- . cosmic plasma
- . interstellar matter
- . . cosmic dust
- . . . interplanetary dust
- meteoroid dust clouds
- zodiacal dust
- . . dark matter
- . . interstellar gas
- RT cosmochemistry
- degenerate matter
- matter (physics)
- negative matter
- Venus fly trap rocket vehicle

extraterrestrial oceans

(added June 2001)
SN (EXCLUDES MAGMA OCEANS)
DEF Extensive bodies of water on planets and moons.

- UF *planetary oceans*
- satellite oceans*
- GS oceans
- . **extraterrestrial oceans**
- RT Callisto
- Europa
- extraterrestrial water
- planetary surfaces
- satellite surfaces

extraterrestrial radiation

DEF Electromagnetic or particle radiation emitted from a source beyond the Earth atmosphere. Used for extragalactic light and space radiation.

- UF *extragalactic light*
- space radiation*
- GS **extraterrestrial radiation**
- . extraterrestrial radio waves
- . . galactic radio waves
- . . . North Polar Spur (astronomy)
- . . radio bursts
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- solar radio emission
- solar radio bursts
- type 2 bursts
- type 3 bursts

- type 4 bursts
- type 5 bursts
- . . cosmic microwave background radiation
- . galactic radiation
- . . galactic cosmic rays
- . . galactic radio waves
- . . . North Polar Spur (astronomy)
- . . galactic winds
- . gamma ray bursts
- . gegenschein
- . interstellar radiation
- . lunar radiation
- . planetary radiation
- . primary cosmic rays
- . . solar cosmic rays
- . solar radiation
- . . circumsolar radiation
- . . solar corpuscular radiation
- . . . solar electrons
- . . . solar neutrinos
- . . . solar neutrons
- . . . solar protons
- . . solar cosmic rays
- . . solar radio emission
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . solar wind
- . . solar x-rays
- . . sunlight
- . stellar radiation
- . . stellar winds
- . zodiacal light
- RT aerospace environments

- ∞ aerospace sciences
- atmospheric radiation
- background radiation
- corpuscular radiation
- cosmic rays
- cosmic x rays
- CRRES (satellite)
- Earth orbital environments
- electromagnetic noise
- electromagnetic radiation
- electron acceleration
- extragalactic radio sources
- light (visible radiation)
- Lyman alpha radiation
- Lyman beta radiation
- microwave emission
- polarized electromagnetic radiation
- polarized radiation
- ∞ radiation
- radiation belts
- radiative transfer
- radio jets (astronomy)
- radio waves
- ∞ rays
- relic radiation
- synchrotron radiation
- system generated electromagnetic pulses
- terrestrial radiation
- x rays

extraterrestrial radio waves

- UF *cosmic radio waves*
- GS electromagnetic radiation
- . radio waves
- . . **extraterrestrial radio waves**
- . . . galactic radio waves
- North Polar Spur (astronomy)
- radio bursts
- solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- solar radio emission
- solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . . cosmic microwave background radiation

extraterrestrial resources

extraterrestrial radiation
 . **extraterrestrial radio waves**
 . . galactic radio waves
 . . . North Polar Spur (astronomy)
 . . radio bursts
 . . . solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . . solar radio emission
 . . . solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . . cosmic microwave background radiation

RT centimeter waves
 extragalactic radio sources
 microwave emission
 microwaves
 millimeter waves
 radio astronomy
 radio emission
 radio frequency interference
 radio jets (astronomy)
 radio sources (astronomy)

extraterrestrial resources
 GS resources
 . **extraterrestrial resources**
 . . lunar resources

RT in situ resource utilization
 lunar exploration
 planetary bases
 space exploration
 space logistics

extraterrestrial roving vehicles
 USE **roving vehicles**

extraterrestrial water
(added May 2005)
 DEF Water beyond the surface, lithosphere, hydrosphere, and atmosphere of the Earth; includes the water content of interstellar matter, comets, planets, and satellites.

GS water
 . **extraterrestrial water**

RT Europa
 exobiology
 extraterrestrial life
 extraterrestrial oceans
 icy satellites
 Mars (planet)
 Mars Reconnaissance Orbiter
 Phoenix Mars Lander
 planetary composition

extravehicular activity
 SN (ACTIVITY OUTSIDE THE SPACECRAFT)
 DEF Activities by crew members conducted outside the spacecraft pressure hull or within the cargo bay when the cargo bay doors are open.

UF EVA
spacewalks

RT ∞ activity
 AEPS
 aerospace environments
 Apollo extension system
 astronaut locomotion
 astronaut maneuvering equipment
 Crew Equipment Translation Aid (ISS)
 extravehicular mobility units
 IMLSS
 intravehicular activity
 man operated propulsion systems
 manned maneuvering units
 manned space flight
 orbital workers
 self maneuvering units
 space flight
 space maintenance
 Space Shuttle payloads
 umbilical connectors
 weightlessness

extravehicular mobility units
 SN (LIMITED TO SPACE SUIT UNITS OF

THAT NAME DESIGNED FOR THE SPACE TRANSPORTATION SYSTEM)
 DEF Independent anthropometric space suit systems that provide crew members with environmental protection, life support, mobility, communications, and visibility while performing various extravehicular activities.

GS clothing
 . protective clothing
 . . pressure suits
 . . . space suits
 **extravehicular mobility units**
 . suits
 . . pressure suits
 . . . space suits
 **extravehicular mobility units**

RT astronaut locomotion
 astronaut maneuvering equipment
 Crew Equipment Translation Aid (ISS)
 extravehicular activity
 IMLSS
 life support systems
 self maneuvering units
 space transportation system

extrema
 USE **range (extremes)**

Extreme Ultraviolet Explorer satellite
 DEF An Explorer satellite carrying scientific instruments for scanning the sky in the 100-900 Angstrom region of the spectrum to study the very hot celestial bodies (white dwarfs, for example). Used for EUVE.

UF EUVE
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Extreme Ultraviolet Explorer satellite**

RT IUE
 ultraviolet astronomy

extreme ultraviolet radiation
 DEF Ultraviolet emission in the 100-1000 Angstrom range.

GS electromagnetic radiation
 . ultraviolet radiation
 . . **extreme ultraviolet radiation**

RT beams (radiation)
 ionizing radiation
 Magellan ultraviolet astronomy satellite
 ∞ radiation
 solar radiation

extremely high frequencies
 SN (30 TO 300 GHZ)
 UF *K band*
KA band
V band

GS frequencies
 . radio frequencies
 . . microwave frequencies
 . . . **extremely high frequencies**

RT ACTS
 millimeter waves

extremely low frequencies
 SN (BELOW 300 HZ)
 UF *ultralow frequencies*

GS frequencies
 . radio frequencies
 . . **extremely low frequencies**

RT audio frequencies
 low frequencies
 Seafarer project

extremum values
 DEF In statistics, the upper or lower bound of the random variable which is not expected to be exceeded by a specified percentage of the population within a given confidence interval.

GS analysis (mathematics)
 . real variables
 . . **extremum values**
 . . . limits (mathematics)
 . . . maxima
 . . . minima
 Cramer-Rao bounds

RT Euler-Lagrange equation

functions (mathematics)
 optimization
 ∞ peaks
 probability theory

extroversion
 RT behavior
 human behavior
 psychology

extruding
 UF *hot extruding*
 GS forming techniques
 . **extruding**
 . . pultrusion

RT casting
 cladding
 cold working
 dies
 ∞ drawing
 explosive forming
 injection molding
 intrusion
 metal spinning
 metal working
 piercing
 pressing (forming)
 squeeze casting
 wet spinning

eye (anatomy)
 GS anatomy
 . sense organs
 . . **eye (anatomy)**
 . . . choroid membranes
 . . . conjunctiva
 . . . cornea
 . . . oculomotor nerves
 . . . pupils
 . . . retina
 fovea

RT accommodation
 color vision
 face (anatomy)
 head (anatomy)
 lenses
 miosis
 nystagmus
 ophthalmodynamometry
 ophthalmology
 optometry
 photoreceptors
 vestibular nystagmus
 vision

eye diseases
 GS diseases
 . **eye diseases**
 . . asthenopia
 . . astigmatism
 . . cataracts
 . . conjunctivitis
 . . glaucoma
 . . keratitis
 . . phoria
 . . blindness
 . . hyperopia
 . . ophthalmology

eye dominance
 GS dominance
 . **eye dominance**

RT vision

eye examinations
 GS examination
 . **eye examinations**

RT electronystagmography
 haploscopes
 ophthalmology

eye movements
 GS **eye movements**
 . nystagmus
 . . vestibular nystagmus
 . Saccadic eye movements

RT blinking
 electronystagmography
 head movement
 oculometers

rapid eye movement state
visual tasks

eye protection

GS protection
. **eye protection**
RT flash blindness
goggles
sunglasses

visors

eyepieces

GS optical equipment
. **eyepieces**
RT binoculars
contact lenses
lenses
microscopes
periscopes
reticles

sunglasses
telescopes

Eyring theory

GS kinetic theory
. transport theory
. . **Eyring theory**
RT equilibrium flow
fluid dynamics
 ∞ theories

F

F 1 region

- GS Earth atmosphere
 - . upper atmosphere
 - . . Earth ionosphere
 - . . . upper ionosphere
 - F region
 - **F 1 region**
- regions
- . F region
- . . **F 1 region**

F 2 region

- GS Earth atmosphere
 - . upper atmosphere
 - . . Earth ionosphere
 - . . . upper ionosphere
 - F region
 - **F 2 region**
 - regions
 - . F region
 - . . **F 2 region**
- RT spread F
transequatorial propagation

F centers

- USE **color centers**

F displays

- USE **F region**

F layer

- USE **F region**

F region

SN (ALTITUDES ABOVE APPROXIMATELY 160 KM)

DEF A portion of the ionosphere extending from about 150 to 1000 km. The F region is subdivided into the F1 (150 to 250 km) and the F2 (250 to 1000 km) regions. The F2 region generally has the largest electron density and it persists throughout the night. The F region is the one most commonly used for long range high frequency propagation.

- UF *F displays*
F layer
night F layer
 - GS Earth atmosphere
 - . upper atmosphere
 - . . Earth ionosphere
 - . . . upper ionosphere
 - **F region**
 - F 1 region
 - F 2 region
 - regions
 - . **F region**
 - . . F 1 region
 - . . F 2 region
- RT plasma bubbles
radio transmission

F stars

- GS celestial bodies
 - . stars
 - . . **F stars**
- RT blue stars
dwarf stars
G stars
giant stars
main sequence stars
stellar spectra

F-1 rocket engine

- GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **F-1 rocket engine**
- RT booster rocket engines
Nova launch vehicles
Saturn launch vehicles

F-2 aircraft

- UF *Hawker Hunter aircraft*
Hunter F-2 aircraft
- GS attack aircraft
 - . fighter aircraft
 - . . **F-2 aircraft**
- Hawker Siddeley aircraft
- . **F-2 aircraft**

- jet aircraft
- . **F-2 aircraft**
- monoplanes
- . **F-2 aircraft**
- RT ∞ aircraft

F-4 aircraft

- UF *F-110 aircraft*
F4H aircraft
Phantom aircraft
RF-4 aircraft
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-4 aircraft**
 - jet aircraft
 - . **F-4 aircraft**
 - McDonnell Douglas aircraft
 - . McDonnell aircraft
 - . . **F-4 aircraft**
 - monoplanes
 - . **F-4 aircraft**
 - supersonic aircraft
 - . **F-4 aircraft**
- RT ∞ aircraft
J-79 engine

F4H aircraft

- USE **F-4 aircraft**

F-5 aircraft

- UF *Freedom Fighter aircraft*
N-156 aircraft
 - GS attack aircraft
 - . COIN aircraft
 - . . **F-5 aircraft**
 - . fighter aircraft
 - . . **F-5 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **F-5 aircraft**
 - monoplanes
 - . **F-5 aircraft**
 - Northrop aircraft
 - . **F-5 aircraft**
 - supersonic aircraft
 - . **F-5 aircraft**
- RT ∞ aircraft

F-8 aircraft

- UF *Crusader aircraft*
F8U aircraft
RF-8 aircraft
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-8 aircraft**
 - jet aircraft
 - . **F-8 aircraft**
 - Ling-Temco-Vought aircraft
 - . **F-8 aircraft**
 - monoplanes
 - . **F-8 aircraft**
 - single engine aircraft
 - . **F-8 aircraft**
 - supersonic aircraft
 - . **F-8 aircraft**
- RT ∞ aircraft

F8U aircraft

- USE **F-8 aircraft**

F-9 aircraft

- UF *Cougar aircraft*
F9F aircraft
Panther aircraft
- GS attack aircraft
 - . fighter aircraft
 - . . **F-9 aircraft**
- Grumman aircraft
- . **F-9 aircraft**
- jet aircraft
- . **F-9 aircraft**
- monoplanes
- . **F-9 aircraft**
- single engine aircraft
- . **F-9 aircraft**

- RT ∞ aircraft

F9F aircraft

- USE **F-9 aircraft**

F-14 aircraft

- GS attack aircraft
 - . fighter aircraft
 - . . **F-14 aircraft**
 - Grumman aircraft
 - . **F-14 aircraft**
 - jet aircraft
 - . **F-14 aircraft**
 - supersonic aircraft
 - . **F-14 aircraft**
- RT ∞ aircraft

F-15 aircraft

- GS attack aircraft
 - . fighter aircraft
 - . . **F-15 aircraft**
 - jet aircraft
 - . **F-15 aircraft**
 - supersonic aircraft
 - . **F-15 aircraft**
- RT ∞ aircraft

F-16 aircraft

- UF *YF-16 aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-16 aircraft**
 - jet aircraft
 - . **F-16 aircraft**
 - single engine aircraft
 - . **F-16 aircraft**
 - supersonic aircraft
 - . **F-16 aircraft**
- RT ∞ aircraft

F-17 aircraft

- UF *YF-17 aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - . . **F-17 aircraft**
 - jet aircraft
 - . **F-17 aircraft**
 - monoplanes
 - . **F-17 aircraft**
 - supersonic aircraft
 - . **F-17 aircraft**
- RT ∞ aircraft
F-18 aircraft

F-18 aircraft

- GS attack aircraft
 - . fighter aircraft
 - . . **F-18 aircraft**
 - jet aircraft
 - . **F-18 aircraft**
 - McDonnell Douglas aircraft
 - . **F-18 aircraft**
 - Northrop aircraft
 - . **F-18 aircraft**
- RT ∞ aircraft
F-17 aircraft

F-20 aircraft

- GS attack aircraft
 - . fighter aircraft
 - . . **F-20 aircraft**
- jet aircraft
- . **F-20 aircraft**
- Northrop aircraft
- . **F-20 aircraft**

F-22 aircraft

- (added August 1993)
- UF *advanced tactical fighter*
ATF
YF-22 aircraft
- GS attack aircraft
 - . fighter aircraft
 - . . **F-22 aircraft**
- jet aircraft
- . **F-22 aircraft**
- supersonic aircraft
- . **F-22 aircraft**

- RT ∞ aircraft
- F-27 aircraft**
 UF *Fokker F 27 aircraft*
Fokker Friendship aircraft
 GS Fokker aircraft
 . **F-27 aircraft**
 jet aircraft
 . turboprop aircraft
 . . **F-27 aircraft**
 monoplanes
 . **F-27 aircraft**
 passenger aircraft
 . **F-27 aircraft**
 transport aircraft
 . **F-27 aircraft**
 RT ∞ aircraft
- F-28 helicopter**
 GS light aircraft
 . **F-28 helicopter**
 passenger aircraft
 . **F-28 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . rigid rotor helicopters
 **F-28 helicopter**
- F-28 transport aircraft**
 UF *Fellowship aircraft*
Fokker F 28 aircraft
 GS commercial aircraft
 . **F-28 transport aircraft**
 Fokker aircraft
 . **F-28 transport aircraft**
 jet aircraft
 . turbofan aircraft
 . . **F-28 transport aircraft**
 monoplanes
 . **F-28 transport aircraft**
 passenger aircraft
 . **F-28 transport aircraft**
 transport aircraft
 . **F-28 transport aircraft**
 RT ∞ aircraft
- F-80 aircraft*
 USE **T-33 aircraft**
- F-84 aircraft**
 GS attack aircraft
 . fighter aircraft
 . . **F-84 aircraft**
 jet aircraft
 . **F-84 aircraft**
 monoplanes
 . **F-84 aircraft**
 Republic aircraft
 . **F-84 aircraft**
 single engine aircraft
 . **F-84 aircraft**
 RT ∞ aircraft
- F-86 aircraft**
 UF *Sabre aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **F-86 aircraft**
 jet aircraft
 . **F-86 aircraft**
 monoplanes
 . **F-86 aircraft**
 North American aircraft
 . **F-86 aircraft**
 single engine aircraft
 . **F-86 aircraft**
 RT ∞ aircraft
- F-89 aircraft**
 GS attack aircraft
 . fighter aircraft
 . . **F-89 aircraft**
 jet aircraft
 . **F-89 aircraft**
 monoplanes
 . **F-89 aircraft**
 Northrop aircraft
 . **F-89 aircraft**
- RT ∞ aircraft
- F-94 aircraft**
 GS attack aircraft
 . fighter aircraft
 . . **F-94 aircraft**
 jet aircraft
 . **F-94 aircraft**
 Lockheed aircraft
 . **F-94 aircraft**
 monoplanes
 . **F-94 aircraft**
 single engine aircraft
 . **F-94 aircraft**
 RT ∞ aircraft
- F-100 aircraft**
 UF *Super Sabre aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **F-100 aircraft**
 jet aircraft
 . **F-100 aircraft**
 monoplanes
 . **F-100 aircraft**
 North American aircraft
 . **F-100 aircraft**
 single engine aircraft
 . **F-100 aircraft**
 supersonic aircraft
 . **F-100 aircraft**
 RT ∞ aircraft
- F-101 aircraft**
 UF *JF 101 aircraft*
Voodoo aircraft
 GS attack aircraft
 . fighter aircraft
 . . **F-101 aircraft**
 jet aircraft
 . **F-101 aircraft**
 McDonnell Douglas aircraft
 . McDonnell aircraft
 . . **F-101 aircraft**
 single engine aircraft
 . **F-101 aircraft**
 supersonic aircraft
 . **F-101 aircraft**
 RT ∞ aircraft
- F-102 aircraft**
 UF *Delta Dagger aircraft*
YF-102 aircraft
 GS attack aircraft
 . fighter aircraft
 . . **F-102 aircraft**
 General Dynamics aircraft
 . **F-102 aircraft**
 jet aircraft
 . **F-102 aircraft**
 monoplanes
 . **F-102 aircraft**
 single engine aircraft
 . **F-102 aircraft**
 supersonic aircraft
 . **F-102 aircraft**
 tailless aircraft
 . **F-102 aircraft**
 RT ∞ aircraft
- F-104 aircraft**
 UF *Canadair CF-104 aircraft*
CF-104 aircraft
Starfighter aircraft
 GS attack aircraft
 . fighter aircraft
 . . **F-104 aircraft**
 jet aircraft
 . **F-104 aircraft**
 Lockheed aircraft
 . **F-104 aircraft**
 monoplanes
 . **F-104 aircraft**
 single engine aircraft
 . **F-104 aircraft**
 supersonic aircraft
 . **F-104 aircraft**
- RT ∞ aircraft
- F-105 aircraft**
 UF *Thunderchief aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **F-105 aircraft**
 jet aircraft
 . **F-105 aircraft**
 monoplanes
 . **F-105 aircraft**
 Republic aircraft
 . **F-105 aircraft**
 single engine aircraft
 . **F-105 aircraft**
 RT ∞ aircraft
- F-106 aircraft**
 UF *Delta Dart aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **F-106 aircraft**
 General Dynamics aircraft
 . **F-106 aircraft**
 jet aircraft
 . **F-106 aircraft**
 monoplanes
 . **F-106 aircraft**
 single engine aircraft
 . **F-106 aircraft**
 supersonic aircraft
 . **F-106 aircraft**
 tailless aircraft
 . **F-106 aircraft**
 RT ∞ aircraft
- F-110 aircraft*
 USE **F-4 aircraft**
- F-111 aircraft**
 UF *LASV*
TFX aircraft
 GS attack aircraft
 . bomber aircraft
 . . **F-111 aircraft**
 General Dynamics aircraft
 . **F-111 aircraft**
 Grumman aircraft
 . **F-111 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **F-111 aircraft**
 supersonic aircraft
 . **F-111 aircraft**
 RT ∞ aircraft
 mission adaptive wings
 variable sweep wings
- F-117A aircraft**
(added April 1991)
 GS attack aircraft
 . fighter aircraft
 . . **F-117A aircraft**
 jet aircraft
 . **F-117A aircraft**
 RT ∞ aircraft
 aircraft detection
 bomber aircraft
- FAB (programming language)*
 USE **FORTRAN**
- fabrication**
 GS **fabrication**
 . nanofabrication
 . space manufacturing
 RT assembling
 assembling
 construction
 low gravity manufacturing
 manufacturing
 production management
 rapid prototyping
 resin film infusion
 resin transfer molding
 self assembly

fabrics

squeeze casting

fabrics

- UF *cloth*
- GS **fabrics**
 - . crepe
 - . Dacron (trademark)
 - . felts
 - . Fortisan (trademark)
 - . gauze
 - . linen
 - . parachute fabrics
 - . silk
 - . wool
- RT clothing
 - coatings
 - cotton
 - fibers
- ∞ films
 - flame retardants
 - geotechnical fabrics
 - gores
 - interlayers
 - laminates
 - mesh
 - micarta
 - multilayer insulation
 - reinforcing materials
 - ribbons
- ∞ sheets
 - socks
 - textiles
 - weaving
 - webbing
 - webs (sheets)
 - wire cloth
 - woven composites

Fabry-Perot interferometers

- GS measuring instruments
 - . interferometers
 - . . **Fabry-Perot interferometers**
- RT etalons
 - microwave interferometers
 - plasma diagnostics

Fabry-Perot lasers

USE **lasers**

Fabry-Perot spectrometers

- GS measuring instruments
 - . radiation measuring instruments
 - . . **Fabry-Perot spectrometers**
 - . spectrometers
 - . . **Fabry-Perot spectrometers**
- RT actinometers
 - airglow
 - auroral spectroscopy
 - optical equipment
 - optical measuring instruments

face (anatomy)

- GS anatomy
 - . **face (anatomy)**
 - . . chin
 - . . forehead
 - . . mouth
 - . . . lips (anatomy)
 - . . nose (anatomy)
- RT eye (anatomy)
 - head (anatomy)

face centered cubic lattices

- UF *FCC lattices*
- GS crystal lattices
 - . cubic lattices
 - . . **face centered cubic lattices**
- RT body centered cubic lattices
 - close packed lattices
 - cluster variation method
 - crystals

facets

USE **flat surfaces**

∞ facilities

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT airports
 - electric power plants

- ground handling
- industrial areas
- industrial plants
- land use
- launching bases
- logistics
- logistics management
- military air facilities
- mobile quarantine facility
- research facilities
- roads
- site selection
- sites
- Solar Cell Calibration Facility
- stations
- terminal facilities
- test facilities
- X Ray Astrophysics Facility

facsimile communication

(added September 1992)

- UF *facsimile transmission*
- fax*
- GS telecommunication
 - . communication
 - . . **facsimile communication**
 - . . . automatic picture transmission
- RT interplanetary communication
 - Iridium network
 - lunar communication
 - satellite communication
 - spacecraft communication
 - teletypewriter systems
 - television systems
 - transoceanic communication
 - wireless communication

facsimile transmission

USE **facsimile communication**

factor analysis

- GS statistical analysis
 - . **factor analysis**
- RT autoregressive processes
 - correlation
 - covariance
 - degrees of freedom
 - experiment design
 - factorization
 - matrices (mathematics)
 - orthogonality
 - regression analysis
 - statistical tests
 - variability
 - variance (statistics)

factorial design

- GS experiment design
 - . **factorial design**
- RT ∞ design
 - mathematical models
 - sensitivity analysis
 - statistical analysis

factorials

- GS analysis (mathematics)
 - . combinatorial analysis
 - . . **factorials**
- RT binomial coefficients
 - gamma function

factories

USE **industrial plants**

factorization

- DEF Process or instance of factoring.
- GS **factorization**
 - . Cholesky factorization
- RT algorithms
 - factor analysis
 - finite element method
 - real variables

factors

USE **variable**

faculae

DEF Large patches of bright material forming a veined network in the vicinity of sunspots. They appear to be more permanent than sun-

spots and are probably due to elevated clouds of luminous gas. Used for plages (faculae) and solar faculae.

- UF *plages (faculae)*
- solar faculae*
- GS stellar activity
 - . solar activity
 - . . **faculae**

- RT ∞ activity
 - chromosphere
 - photosphere
 - starspots
 - sunspots

Faddeev equations

- RT ∞ equations
 - particle collisions
 - scattering amplitude
 - wave scattering

fading

- GS **fading**
 - . signal fading
 - . . Rayleigh fading
 - . . selective fading
- RT attenuation
 - bleaching
 - color
 - discoloration
 - electromagnetic absorption
 - extinction
 - reception diversity
 - signal fading rate
 - wave dispersion

fahrenheit temperature scale

USE **temperature scales**

fail-safe systems

DEF Systems used to minimize risk in case of malfunction.

- RT ∞ automation
 - emergencies
 - fault tolerance
 - safety devices
 - safety management
 - self tests
- ∞ systems

failure

- GS **failure**
 - . burnthrough (failure)
 - . engine failure
 - . structural failure
 - . system failures
- RT aborted missions
- ∞ breakdown
 - buckling
 - burn-in
 - collapse
 - corrosion
 - cracking (fracturing)
 - cumulative damage
 - deformation
 - destruction
 - deterioration
 - distortion
 - downtime
 - electrical faults
 - failure analysis
 - fatigue (materials)
 - flashover
 - fractures (materials)
 - malfunctions
 - Mills ratio
 - rupturing
 - shearing
 - short circuits
 - structural strain
 - temperature inversions
 - wear

failure analysis

DEF Subsequent to failure, the logical, systematic examination of an item, its construction, application, and documentation to identify the failure mode and determine the failure mechanism and its basic cause.

- RT acoustic emission
- ∞ analyzing

burn-in
burst tests
failure
fatigue life
fault detection
fault tolerance
fiber pullout
lessons learned
life (durability)
Mills ratio
MTBF
preventive maintenance
probability density functions
reliability
risk assessment
statistical analysis
trend analysis

failure modes

GS modes
. **failure modes**
RT buckling
cracks
elastic buckling
fault detection
fiber pushout
kink bands
kinking
∞ mode
mode (statistics)
MTBF
shearing

faint object camera

DEF One of the five components of the first scientific payload of the Hubble Space Telescope. The faint object camera will be used to observe extremely faint astronomical objects with wavelengths between 120 and 700 nm.

GS optical equipment
. cameras
. . **faint object camera**
photographic equipment
. cameras
. . **faint object camera**
RT astronomical photography
Hubble Space Telescope
infrared photography
optical measuring instruments
spaceborne astronomy
spaceborne telescopes
ultraviolet photography

faint objects

GS celestial bodies
. **faint objects**
RT galaxies
stars

fainting

USE **syncope**

Fairchild military aircraft

USE **Fairchild-Hiller aircraft**

Fairchild-Hiller aircraft

UF *Fairchild military aircraft*
GS **Fairchild-Hiller aircraft**
. C-119 aircraft
. C-123 aircraft
. OH-5 helicopter
. OH-23 helicopter
. XC-142 aircraft
RT ∞ aircraft

Fairey aircraft

GS **Fairey aircraft**
. FD 2 aircraft
RT ∞ aircraft

Fairey Delta 2 aircraft

USE **FD 2 aircraft**

fairings

GS symmetrical bodies
. streamlined bodies
. . **fairings**
RT aerodynamic configurations
aircraft structures
canopies

cowlings
fillets
housings
landing gear
nacelles
ogives
perforated shells
protectors
protuberances
sheaths
shells (structural forms)
∞ spinners
streamlining
wing roots

Faith 7

GS manned spacecraft
. Mercury spacecraft
. . **Faith 7**
reentry vehicles
. recoverable spacecraft
. . Mercury spacecraft
. . . **Faith 7**
soft landing spacecraft
. Mercury spacecraft
. . **Faith 7**
space capsules
. Mercury spacecraft
. . **Faith 7**
RT Mercury MA-2 flight
Mercury MA-9 flight

Falcon missile

GS missiles
. air to air missiles
. . **Falcon missile**
. antiaircraft missiles
. . **Falcon missile**
RT M-46 engine
solid propellant rocket engines

Falkner-Skan equation

GS analysis (mathematics)
. real variables
. . differential equations
. . . **Falkner-Skan equation**
RT Blasius equation
boundary layer separation
∞ equations
laminar flow
Prandtl-Meyer expansion
wedge flow

falling

RT atmospheric entry
descent trajectories
particle motion
∞ precipitation
sinking
vertical motion

falling spheres

GS symmetrical bodies
. bodies of revolution
. . spheres
. . . **falling spheres**
RT balls
drop towers
free fall
globules
raindrops
spheroids

fallout

UF *washout (radioactivity)*
RT air pollution
fission products
fission weapons
nuclear explosion effect
nuclear explosions
nuclear meteorology
post-blast nuclear radiation
∞ radiation
radiation effects
radiation hazards
radioactive contaminants
∞ radioactive debris

radioactivity

false alarms

DEF In general, the unwanted detection of input noise. In radar, an indication of a detected target even though one does not exist, due to noise or interference levels exceeding the set threshold of detection.
RT error signals
signal to noise ratios
warning systems

fan blades

DEF One or more revolving vanes attached to a rotary hub and operated by a motor.
RT compressor blades
ducted fans
∞ fans
propeller blades
rotary wings
turbine blades
turbomachine blades
ventilation fans

fan in wing aircraft

GS **fan in wing aircraft**
. XV-5 aircraft
RT ∞ aircraft
lift fans
research aircraft
short takeoff aircraft
tilt wing aircraft
V/STOL aircraft
vertical takeoff aircraft

fanlift devices

USE **lift fans**

∞ **fans**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT actuator disks
air conditioning equipment
air ducts
antenna radiation patterns
blowers
compressor rotors
compressors
ducted fans
fan blades
propeller fans
turbofans
ventilation fans
wind tunnel drives

fans (landforms)

DEF Gently sloping, fan-shaped masses of detritus forming sections of very low shaped cones commonly at places where there is a notable decrease in gradient; specifically, alluvial fans. Also fan-shaped masses of congealed lava that formed on steep slopes by the continual changing direction of flow. Used for bajadas.

UF *bajadas*
GS landforms
. **fans (landforms)**
RT alluvium
canyons
clays
deltas
gravels
mud
sands
sediments

far fields

DEF (1- antennas) Those regions of the field of an antenna where the angular field distribution is essentially independent of the distance from a specified point in the antenna region. (2-fiber optics) The regions, far from source, where the diffraction pattern is substantially the same as that at infinity. (mobile communication) The regions of the field of an antenna where the angular field distance is essentially independent of the distance from the antenna. Used for Fraunhofer region.

UF *Fraunhofer region*
GS electromagnetic fields

far infrared radiation

- . **far fields**
 - RT antenna radiation patterns
 - electromagnetic radiation
 - field theory (physics)
 - Fresnel region
 - laser arrays
 - near fields
 - noise propagation
 - radiant flux density
- far infrared radiation**
- SN (30 MICRONS TO ABOUT 1000 MICRONS)
 - GS electromagnetic radiation
 - . infrared radiation
 - . . **far infrared radiation**
 - RT long wave radiation
 - near infrared radiation
 - ∞ radiation
 - radio waves
 - short wave radiation
 - submillimeter waves
 - terrestrial radiation
- far ultraviolet radiation**
- SN (200 TO 2000 ANGSTROMS)
 - UF *vacuum ultraviolet radiation*
 - GS electromagnetic radiation
 - . ultraviolet radiation
 - . . **far ultraviolet radiation**
 - . . . Lyman alpha radiation
 - . . . Lyman beta radiation
 - RT bremsstrahlung
 - Magellan ultraviolet astronomy satellite
 - near ultraviolet radiation
 - ∞ radiation
 - ultraviolet telescopes
 - x rays

Far UV Spectroscopic Explorer

DEF High-orbit, ultraviolet space observatory covering the wavelength range of 90. 5-119. 5 nm. The primary objective of FUSE is to use high-resolution spectroscopy at far ultraviolet wavelengths to study the origin and evolution of the lightest elements (hydrogen and deuterium) created shortly after the Big Bang, and the forces and processes involved in the evolution of galaxies, stars, and planetary systems.

UF *Explorer 77 satellite*
FUSE (satellite)

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Far UV Spectroscopic Explorer**

Faraday dark space

- RT gas discharge tubes
- glow discharges

Faraday effect

- UF *Faraday rotation*
- GS electromagnetic properties
- . **Faraday effect**
- RT circulators (phase shift circuits)
- ∞ effects
- Hall generators
- Kerr magneto-optical effect
- magneto-optics
- optical measurement
- optical properties
- polarization (waves)
- polarized electromagnetic radiation
- rotation

Faraday rotation

USE **Faraday effect**

farm crops

- GS **farm crops**
- . alfalfa
- . coffee
- . cotton
- . fruits
- . grains (food)
- . . barley
- . . corn
- . . millet
- . . oats
- . . rice

- . . sorghum
- . . wheat
- . hay
- . leguminous plants
- . . soybeans
- . potatoes
- . spinach
- . sugar beets
- . sugar cane
- . sunflowers
- . tomatoes
- RT agriculture
- AgRISTARS project
- botany
- crop calendars
- crop dusting
- crop growth
- crop inventories
- crop vigor
- ∞ crops
- curing
- Earth resources
- farmlands
- frost damage
- grasses
- grasslands
- irrigation
- Large Area Crop Inventory Experiment
- locusts
- orchards
- planting
- plants (botany)
- plowing
- seeds
- vineyards

farmlands

- UF *croplands*
plowed fields
- GS land
- RT **farmlands**
- agriculture
- agrophysical units
- crop growth
- crop identification
- crop inventories
- crop vigor
- ∞ crops
- Earth resources
- farm crops
- grasses
- grasslands
- hay
- irrigation
- land use
- plains
- planting
- plowing
- regional planning
- rural areas
- rural land use
- sod
- sugar beets
- sugar cane

fast Fourier transformations

- UF *FFT*
- GS analysis (mathematics)
- . functional analysis
- . . integral transformations
- . . . Fourier transformation
- **fast Fourier transformations**
- functions (mathematics)
- . Fourier transformation
- . . **fast Fourier transformations**
- transformations (mathematics)
- . integral transformations
- . . Fourier transformation
- . . . **fast Fourier transformations**
- RT vortex in cell technique
- Walsh function

fast neutrons

DEF Neutrons of energy exceeding some threshold that must be specified (typically 0. 1 or MeV); often associated with those neutrons predominantly responsible for displacement damage of materials in neutron radiation fields.

GS nuclear radiation

- . **fast neutrons**
 - particles
 - . elementary particles
 - . . fermions
 - . . . neutrons
 - **fast neutrons**
 - . neutral particles
 - . . neutrons
 - . . . **fast neutrons**
 - RT baryons
 - nucleons
 - thermal neutrons
- fast nuclear reactors**
- GS nuclear reactors
 - . **fast nuclear reactors**
 - . . Experimental Breeder Reactor 1
 - . . Experimental Breeder Reactor 2
 - . . fast oxide reactors
 - . . fast test reactors
 - . . gas cooled fast reactors
 - . . liquid metal fast breeder reactors
 - RT Enrico Fermi atomic power plant
 - nuclear power reactors

fast oxide reactors

- GS nuclear reactors
- . fast nuclear reactors
- . . **fast oxide reactors**
- RT nuclear power reactors

fast test reactors

- GS nuclear reactors
- . fast nuclear reactors
- . . **fast test reactors**
- RT ∞ reactors

fasteners

- GS **fasteners**
- . anchors (fasteners)
- . bolts
- . . rock bolts
- . . tiebolts
- . locks (fasteners)
- . nuts (fasteners)
- . pins
- . rivets
- . screws
- . washers (spacers)
- . zippers
- RT adhesives
- ∞ bands
- ∞ belts
- brackets
- cables (ropes)
- chains
- clamps
- clips
- closures
- connectors
- couplings
- fittings
- holders
- hooks
- inserts
- interference fit
- joints (junctions)
- latches
- linkages
- locking
- lugs
- mooring
- ribbons
- sleeves
- spacers
- ∞ spikes
- splicing
- splines
- straps
- structural members
- studs (structural members)
- ∞ tapes
- unions (connectors)
- wire

fasting

- RT aerospace medicine
- diets
- food intake

hypoxia

fat embolisms

- GS diseases
 - . fat embolisms embolisms
 - . fat embolisms
- RT aeroembolism
 - blood vessels
 - cardiovascular system
 - heart diseases

fatigue (biology)

DEF State of the human organism after exposure to any time of physical or psychological stress (e.g., pilot fatigue).

- GS **fatigue (biology)**
 - . auditory fatigue
 - . flight fatigue
 - . muscular fatigue
- RT asthenopia
- ∞ biology
 - damage
 - effort
 - ∞ endurance
 - exhaustion
 - human factors engineering
 - hyperkinesia
 - massaging
 - ∞ performance
 - physical exercise
 - sleep deprivation
 - stress (biology)
 - stress (physiology)
 - stress (psychology)
 - workloads (psychophysiology)
 - work-rest cycle

fatigue (materials)

DEF A weakening or deterioration of metal or other material occurring under load, especially under repeated cyclic, or continued loading. Used for strain fatigue and structural fatigue.

- UF *strain fatigue*
- structural fatigue*
- GS **fatigue (materials)**
 - . acoustic fatigue
 - . bending fatigue
 - . metal fatigue
 - . thermal fatigue
 - . volumetric strain
- RT Bauschinger effect
 - crack closure
 - crack geometry
 - crack propagation
 - cracking (fracturing)
 - cracks
 - creep properties
 - crystal dislocations
 - cycles
 - damage
 - destruction
 - ductility
 - ∞ endurance
 - failure
 - fractography
 - fretting
 - fretting corrosion
 - hardness
 - ∞ materials
 - mechanical properties
 - notch sensitivity
 - plastic properties
 - residual strength
 - shear properties
 - shot peening
 - S-N diagrams
 - stress concentration
 - stress cycles
 - stress ratio
 - stress relaxation
 - stress relieving
 - stresses
 - structural failure
 - surface defects
 - system failures
 - temperature inversions
 - thermal stresses

vibration

fatigue diagramsUSE **S-N diagrams****fatigue life**

DEF The number of cycles of stress or strain of a specified character that a given specimen sustains before failure of a specified nature occurs.

- GS life (durability)
 - . **fatigue life**
 - mechanical properties
 - . **fatigue life**
- RT accelerated life tests
 - blowouts
 - Coffin-Manson law
 - combined stress
 - failure analysis
 - interference fit
 - Palmgren-Miner rule
 - retirement for cause
 - service life
 - short cracks
 - S-N diagrams
 - stress cycles

fatigue testing machines

- RT acoustic emission
- ∞ machinery
- ∞ test equipment

fatigue tests

- RT bending
 - Coffin-Manson law
 - creep tests
 - destructive tests
 - ferrography
 - impact testing machines
 - impact tests
 - load tests
 - ∞ materials tests
 - notch strength
 - notch tests
 - resonance testing
 - S-N diagrams
 - specimen geometry
 - static tests
 - stress concentration
 - stress cycles
 - stress ratio
 - tensile tests
 - testing time
 - ∞ tests
 - thermal cycling tests
 - Weibull density functions
 - weld tests

fats

- GS organic compounds
 - . lipids
 - . . **fats**
- RT adipose tissues
 - ∞ food
 - greases
 - myelin
 - ∞ nutrients
 - oils
 - palmitic acid
 - synthetic food

fatty acids

- GS acids
 - . carboxylic acids
 - . . **fatty acids**
 - . . . acetic acid
 - ethylenediaminetetraacetic acids
 - iodoacetic acid
 - acetylsalicylic acid
 - . . . benzoic acid
 - benzilic acid
 - benzoic acid
 - . . . lipoic acid
 - . . . oleic acid
 - . . . palmitic acid
 - . . . propionic acid
 - . . . sebacic acid
 - . . . valeric acid
 - organic compounds
 - . carboxylic acids
 - . . **fatty acids**

- . . . acetic acid
- ethylenediaminetetraacetic acids
- iodoacetic acid
- acetylsalicylic acid
- . . . benzoic acid
- . . . benzoic acid
- . . . lipoic acid
- . . . oleic acid
- . . . palmitic acid
- . . . propionic acid
- . . . sebacic acid
- . . . valeric acid

- RT ∞ aliphatic compounds
 - castor oil
 - ∞ nutrients

fault detection

(added September 1993)

- GS detection
 - . **fault detection**
- RT electronic equipment tests
 - engine monitoring instruments
 - error detection codes
 - failure analysis
 - failure modes
 - fault tolerance
 - maintenance
 - reliability engineering
 - system failures
 - systems health monitoring

fault mechanicsUSE **fracture mechanics****fault tolerance**

DEF The capability of systems to function despite one or more critical failures, by use of redundant circuits or functions and/or reconfigurable elements.

- RT error analysis
 - error detection codes
 - fail-safe systems
 - failure analysis
 - fault detection
 - reliability engineering

fault trees

DEF Acyclic directed graphs used in the analysis or prediction of faults and defects.

- GS trees (mathematics)
 - . **fault trees**
- RT graphs (charts)
 - topology

faults

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT electrical faults
 - geological faults
 - landforms
 - massifs
 - seamounts
 - test pattern generators

faunaUSE **animals****fax**USE **facsimile communication****fayalite**

- GS iron compounds
 - . **fayalite**
 - minerals
 - . **fayalite**
 - silicon compounds
 - . silicates
 - . . **fayalite**

FBFM (modulation)USE **feedback frequency modulation****FBL control**USE **fly by light control****FBM (missiles)**USE **fleet ballistic missiles****FCC lattices**USE **face centered cubic lattices****FD 2 aircraft**UF *Fairey Delta 2 aircraft*

FDL-5 reentry vehicle

GS Fairey aircraft
. **FD 2 aircraft**
jet aircraft
. **FD 2 aircraft**
monoplanes
. **FD 2 aircraft**
research vehicles
. research aircraft
. . **FD 2 aircraft**
tailless aircraft
. **FD 2 aircraft**
RT ∞ aircraft
delta wings

FDL-5 reentry vehicle
GS lifting bodies
. lifting reentry vehicles
. . **FDL-5 reentry vehicle**
reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . **FDL-5 reentry vehicle**

FDMA
USE **frequency division multiple access**

FDTD (mathematics)
(added April 1999)
USE **finite difference time domain method**

fear
GS phobias
. **fear**
. . fear of flying
RT anxiety
emotions
neuroses
panic
psychoses

fear of flying
GS phobias
. fear
. . **fear of flying**
RT anxiety
emotions
neuroses

feasibility
RT cost analysis
costs
efficiency
estimating
evaluation

feasibility analysis
RT cost analysis
economic factors
management planning
research management
systems analysis
technology assessment

Feather River Basin (CA)
GS landforms
. structural basins
. . river basins
. . . **Feather River Basin (CA)**
RT California
rivers

feathering
RT propeller blades
propellers

feature extraction
USE **pattern recognition**

Feature Identification and Location Exper
SN (FEATURE IDENTIFICATION AND LOCATION EXPERIMENT)
RT Earth observations (from space)
image processing
pattern recognition
remote sensing
remote sensors
scene analysis

Space Shuttle payloads

feces
GS wastes
. metabolic wastes
. . human wastes
. . . **feces**
RT excretion
perspiration
urine

federal budgets
RT allocations
appropriations
∞ budgets
contracts
cost estimates
financial management
government procurement
procurement management

Federal Republic of Germany
USE **West Germany**

federations
GS organizations
. **federations**
. . bureaus (organizations)
RT European Union
institutions
international cooperation
nations
teams
unionization
United Nations

feed systems
RT cold flow tests
feeding (supplying)
fuel tanks
intake systems
pumps
∞ systems

feedback
DEF The return of a portion of the output of a device to the input; positive feedback adds to the input, negative feedback subtracts from the input. Information such as progress or results, returned to an originating source. In aeronautics, the transmittal of forces initiated by aerodynamic action on control surfaces or rotor blades to the cockpit controls; the forces so transmitted.

GS **feedback**
. biofeedback
. . sensory feedback
. negative feedback
. nonlinear feedback
. positive feedback
RT compensators
complexity
control theory
cybernetics
electromagnetic interference
emotional factors
oscillations
oscillators
screech tones
∞ systems
transfer functions

feedback amplifiers
GS amplifiers
. **feedback amplifiers**
RT distributed feedback lasers
nonlinear feedback
operational amplifiers
oscillators
phantastrons
positive feedback
power amplifiers
self oscillation
servoamplifiers
transistor amplifiers
voltage amplifiers

feedback circuits
GS circuits
. **feedback circuits**
RT feedforward control

transfer functions

feedback control
DEF A control system in which the controlled quantity is measured and compared with a standard representing the desired performance. Any deviation from the standard is fed back into the control system in such a sense that it will reduce the deviation of the controlled quantity from the standard.
UF *closed loop systems*
GS automatic control
. **feedback control**
. . cascade control
RT adaptive control
adaptive optics
automatic frequency control
automatic gain control
∞ automation
biofeedback
∞ control
control equipment
control systems design
control theory
distributed feedback lasers
dynamic control
electronic control
H-2 control
H-infinity control
inverse kinematics
Kalman-Schmidt filtering
linear parameter-varying control
linear quadratic Gaussian control
linear quadratic regulator
loop transfer functions
loop transfer recovery
machine learning
MIMO (control systems)
model reference adaptive control
multivariable control
negative feedback
nonlinear feedback
observability (systems)
optical control
optimal control
proportional control
robot control
robustness (mathematics)
sampled data systems
servocontrol
servomechanisms
SISO (control systems)
stability augmentation
Terminal Configured Vehicle Program
tracking problem

feedback frequency modulation
UF *FBFM (modulation)*
GS coding
. signal encoding
. . frequency modulation
. . . **feedback frequency modulation**
modulation
. frequency modulation
. . **feedback frequency modulation**
RT phase locked systems

feeders
SN (FOR FLUID AND PARTICULATE MATERIALS)
RT conveyors
dispensers
distributors
feeding (supplying)
fuel systems
injectors
intake systems
loading operations
materials handling
mixers

feedforward control
GS automatic control
. **feedforward control**
RT adaptive control
∞ automation
∞ control
control theory
feedback circuits
model reference adaptive control

- optimal control
- feeding (supplying)**
 RT feed systems
 feeders
 injection
 input
 ∞ loading
 materials handling
- feelings*
 USE **sensory feedback**
- feet (anatomy)**
 DEF The lower, pedal extremities of the legs.
 GS anatomy
 . limbs (anatomy)
 . leg (anatomy)
 . . . **feet (anatomy)**
 appendages
 . leg (anatomy)
 . . . **feet (anatomy)**
- feldspars**
 DEF A group of abundant rock-forming minerals of the family of anhydrous silicates.
 GS aluminum compounds
 . aluminum silicates
 . . . **feldspars**
 . . . plagioclase
 minerals
 . **feldspars**
 . . plagioclase
 silicon compounds
 . silicates
 . . aluminum silicates
 . . . **feldspars**
 plagioclase
 RT andesite
 anorthosite
 felsite
 igneous rocks
- Fellowship aircraft*
 USE **F-28 transport aircraft**
- felsite**
 DEF A light colored, fine grained igneous rock composed chiefly of quartz or feldspar.
 GS rocks
 . igneous rocks
 . . **felsite**
 RT feldspars
 minerals
 quartz
- felts**
 GS fabrics
 . **felts**
 RT wool
- females**
 UF *women*
 RT adults
 children
 gynecology
 human beings
 males
 menstruation
 sex
 sex factor
 zygotes
- femur**
 GS anatomy
 . musculoskeletal system
 . . bones
 . . . **femur**
 RT knee (anatomy)
 leg (anatomy)
- ∞ **fences**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT airfoil fences
 fences (barriers)
- tracking stations
- fences (barriers)**
 RT ∞ barriers
 boundaries
 ∞ fences
 gates (openings)
- Fermat principle**
 DEF The principle which states that the path along which electromagnetic radiation travels between any two points will be that path for which the elapsed time for the travel is a minimum.
 RT electromagnetic wave transmission
 light transmission
 multipath transmission
 optical thickness
 velocity
- fermentation**
 GS chemical reactions
 . **fermentation**
 metabolism
 . enzyme activity
 . . **fermentation**
 RT bioconversion
 butyric acid
- Fermi Gamma-ray Space Telescope**
(added August 2008)
 DEF Gamma-ray astronomy observatory in low-Earth orbit, comprised of the Large Area Telescope and the GLAST Burst Monitor, used to explore the extreme Universe, dark matter composition, black hole material acceleration, and the high-energy behavior of gamma-ray bursts. The observatory will also be used to investigate solar flares, pulsars, and cosmic ray origins.
 UF *Gamma-ray Large Area Space Telescope*
GLAST
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . **Fermi Gamma-ray Space Telescope**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **Fermi Gamma-ray Space Telescope**
 telescopes
 . gamma ray telescopes
 . . **Fermi Gamma-ray Space Telescope**
 . . spaceborne telescopes
 . . **Fermi Gamma-ray Space Telescope**
 RT cosmic rays
 gamma ray astronomy
 spaceborne astronomy
- Fermi liquids**
 GS liquids
 . cryogenic fluids
 . . **Fermi liquids**
 RT cryogenics
 electronic structure
- Fermi surfaces**
 RT Brillouin zones
 cyclotron resonance
 energy levels
 magnetoresistivity
 ∞ surfaces
 transition probabilities
- Fermi-Dirac statistics**
 DEF The statistics of an assembly of identical half-integer spin particles; such particles have wave functions antisymmetrical with respect to particle interchange and satisfy the Pauli exclusion principle.
 RT bosons
 degenerate matter
 fermions
 quantum mechanics
 quantum statistics
- ∞ statistics
- fermions**
 GS particles
 . elementary particles
 . . **fermions**
 . . . baryons
 . . . hyperons
 xi hyperons
 omega-mesons
 rho-mesons
 sigma-mesons
 eta-mesons
 . . . leptons
 antineutrinos
 electrons
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 muons
 neutrinos
 solar neutrinos
 positrons
 . . . meson resonance
 X mesons
 . . . neutrons
 . . . cold neutrons
 . . . fast neutrons
 . . . photoneutrons
 . . . solar neutrons
 . . . thermal neutrons
 . . . protons
 . . . recoil protons
 solar protons
 RT Fermi-Dirac statistics
 heavy fermion systems
 particle decay
 Pauli exclusion principle
 quantum statistics
 supersymmetry
- fermium**
 GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **fermium**
 . . . nuclides
 . . . isotopes
 radioactive isotopes
 transuranium elements
 **fermium**
 metals
 . actinide series
 . . transuranium elements
 . . . **fermium**
- Ferranti Mercury computer**
 GS data processing equipment
 . computers
 . . digital computers
 . . . **Ferranti Mercury computer**
- ferrates**
 GS iron compounds
 . **ferrates**
 . . barium ferrates
- ferric ions**
 GS ions
 . metal ions
 . . **ferric ions**
 RT iron
- ferrimagnetic materials**
 GS magnetic materials
 . **ferrimagnetic materials**
 RT ferromagnetic materials
 ∞ materials
- ferrimagnetism**
 GS magnetic properties
 . **ferrimagnetism**

ferrimagnets

- RT ferrimagnets
magnons
- ferrimagnets**
- GS magnets
 - . ferrimagnets
- RT ferrimagnetism
permanent magnets
- ferrites**
- DEF Solid solutions of carbon in alpha-iron.
- GS iron compounds
 - . ferrites
- RT austenite
ferritic stainless steels
gadolinium-gallium garnet
gyrators
iron alloys
magnetic cores
microstructure
pearlite
spinel
steels
yttrium-aluminum garnet
yttrium-iron garnet
- ferritic stainless steels**
- GS alloys
 - . iron alloys
 - . . steels
 - . . . stainless steels
 - **ferritic stainless steels**
- RT chromium steels
ferrites
heat treatment
magnetic properties
mechanical properties
- ferroalloys*
- USE **iron alloys**
- ferrocenes**
- GS iron compounds
 - . ferrocenes
 - . . alkylferrocene
 - organometallic compounds
 - . ferrocenes
 - . . alkylferrocene
- ferroelastic materials**
(added June 1998)
- GS **ferroelastic materials**
 - . shape memory alloys
 - . . nitinol alloys
- RT ceramics
ferroelasticity
ferroelectric materials
- ∞ materials
smart materials
- ferroelasticity**
(added June 1998)
- GS mechanical properties
 - . elastic properties
 - . . **ferroelasticity**
- RT crystal structure
domain wall
ferroelastic materials
ferroelectricity
phase transformations
shape memory alloys
smart materials
- ferroelectric materials**
(added March 1997)
- RT barium titanates
ceramics
ferroelastic materials
ferroelectricity
ferromagnetic materials
lead zirconate titanates
liquid crystals
- ∞ materials
- ∞ polymers
smart materials
thin films
- ferroelectricity**
- GS electrical properties
 - . ferroelectricity

- RT antiferroelectricity
Curie temperature
dielectric properties
ferroelasticity
ferroelectric materials
microwave switching
- ferrofluids**
- GS liquids
 - . ferrofluids
- magnetic materials
 - . ferromagnetic materials
 - . . ferrofluids
- RT dispersions
- ∞ fluids
magnetorheological fluids
microparticles
suspending (mixing)
- ∞ suspensions
working fluids
- ferrography**
- DEF A technique for the isolation and analysis of wear particles in a lubricant.
- RT fatigue tests
metallography
wear tests
- ferromagnetic films**
- GS magnetic materials
 - . ferromagnetic materials
 - . . ferromagnetic films
 - thin films
 - . ferromagnetic films
- ferromagnetic materials**
- GS magnetic materials
 - . ferromagnetic materials
 - . . ferrofluids
 - . . ferromagnetic films
 - . . magnetite
 - . . Permalloys (trademark)
- RT ferrimagnetic materials
ferroelectric materials
magnetorheological fluids
magnets
- ∞ materials
permanent magnets
smart materials
yokes
- ferromagnetic resonance**
- GS resonance
 - . magnetic resonance
 - . . ferromagnetic resonance
- RT magnetic fields
paramagnetic resonance
- ferromagnetism**
- GS magnetic properties
 - . ferromagnetism
- RT antiferromagnetism
Curie temperature
Curie-Weiss law
diamagnetism
Ising model
Langevin formula
magnetic cores
magnetic dispersion
magnets
magnons
- ferrous metals**
- GS metals
 - . ferrous metals
- RT alloys
chemical elements
iron
iron isotopes
- ∞ metallurgy
- ferry spacecraft**
- UF *space buses*
- GS maneuverable spacecraft
 - . ferry spacecraft
- manned spacecraft
 - . ferry spacecraft
- RT Astro vehicle
cargo spacecraft
Columbus space station

- MARS (Manned Reusable Spacecraft)
reentry vehicles
rendezvous spacecraft
reusable spacecraft
soft landing spacecraft
space stations
- fertility**
- RT breeding (reproduction)
fertilization
reproduction (biology)
reproductive systems
zygotes
- fertilization**
- RT birth
fertility
in vitro methods and tests
recombination reactions
- ∞ reproduction
spermatozoa
zygotes
- fertilizers**
- RT ammonia
ammonium nitrates
ashes
cultivation
planting
ureas
vegetation growth
- FET (transistors)*
- USE **field effect transistors**
- fetuses**
- UF *foetuses*
- RT birth
eggs
embryology
embryos
reproduction (biology)
reproductive systems
- fever**
- RT body temperature
hyperthermia
skin temperature (biology)
- Feynman diagrams**
- GS diagrams
 - . Feynman diagrams
- RT electromagnetic interactions
Minkowski space
particle interactions
quantum electrodynamics
- FFAR rocket vehicle*
- USE **Folding Fin aircraft rocket vehicle**
- Ffowcs Williams-Hawkings equation**
(added December 2006)
- DEF A governing equation of noise generation by sources on, and the fluid motion in the vicinity of a moving surface based on the acoustic analogy. It is an inhomogeneous linear wave equation. The inhomogeneous terms of this equation are known as thickness, loading, and quadrupole (nonlinear) source terms.
- UF *FW-H equation*
- GS algebra
 - . linear equations
 - . . Ffowcs Williams-Hawkings equation
- analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . partial differential equations
 - Ffowcs Williams-Hawkings equation
- . linear equations
 - . . . Ffowcs Williams-Hawkings equation
- wave equations
 - . Ffowcs Williams-Hawkings equation
- RT aeroacoustics
aerodynamic noise
aircraft noise

- blade slap noise
 - computational aeroacoustics
 - flow noise
 - noise prediction
 - noise prediction (aircraft)
 - propeller noise
 - rotor aerodynamics
 - surface noise interactions
 - wave propagation
- FFT**
USE **fast Fourier transformations**
- FGM (materials)**
USE **functionally gradient materials**
- FH-1100 helicopter**
USE **OH-5 helicopter**
- Fiat aircraft**
GS **Fiat aircraft**
. G-91 aircraft
. G-95/4 aircraft
. G-222 aircraft
RT ∞ aircraft
- Fiat G-91 aircraft**
USE **G-91 aircraft**
- Fiat G-95/4 aircraft**
USE **G-95/4 aircraft**
- Fiat G-222 aircraft**
USE **G-222 aircraft**
- fiber bridging**
USE **crack bridging**
- fiber composites**
DEF Structural materials consisting of combinations of metals or alloys or plastics reinforced with one or more types of fibers.
GS composite materials
. **fiber composites**
. . . aramid fiber composites
. . . braided composites
. . . carbon fiber reinforced plastics
. . . carbon-phenolic composites
. . . glass fiber reinforced plastics
. . . woven composites
RT aluminum boron composites
aluminum graphite composites
aramid fibers
boron fibers
boron reinforced materials
boron-epoxy composites
Borsic (tradename)
carbon fibers
carbon-carbon composites
carbon-silicon carbide composites
ceramic fibers
chemical vapor infiltration
composite wrapping
crack bridging
debonding (materials)
fiber pullout
fiber pushout
fiber volume fraction
fiber-matrix interfaces
filament winding
functionally gradient materials
graphite
graphite-epoxy composites
hybrid composites
kink bands
kinking
laminates
matrix materials
metal fibers
metal matrix composites
micarta
polymer matrix composites
pultrusion
reinforced plastics
reinforcing fibers
reinforcing materials
resin transfer molding
sheet molding compounds
stacking sequence (composite materials)
- superhybrid materials
- three dimensional composites

fiber lasers
(added October 1997)
GS electronic equipment
. solid state devices
. . solid state lasers
. . . **fiber lasers**
stimulated emission devices
. lasers
. . solid state lasers
. . . **fiber lasers**
. . waveguide lasers
. . . **fiber lasers**

RT fiber optics
laser materials
laser pumping
light amplifiers
optical fibers
optical pumping
semiconductor lasers

fiber optics
DEF The technique of transmitting light through long thin, flexible fibers of glass, plastic, or other transparent materials.
RT Cassegrain optics
crystal optics
electron tubes
evanescent waves
fiber lasers
fly by light control
geometrical optics
gradient index optics
light emitting diodes
light transmission
numerical aperture
optical fibers
∞ optics
optoelectronic devices
photonics
physical optics
plastic fibers
Sagnac effect
scintillating fibers
smart structures
vidicons

fiber orientation
RT aramid fibers
boron fibers
ceramic fibers
composite materials
dynamic response
epoxy matrix composites
fiber volume fraction
glass fiber reinforced plastics
impact loads
lay-up
mechanical properties
∞ orientation
reinforcing fibers
stacking sequence (composite materials)

fiber pullout
UF *fiber release*
GS releasing
. **fiber pullout**
RT adhesive bonding
carbon fibers
ceramic matrix composites
composite materials
failure analysis
fiber composites
fiber pushout
fibers
interfacial energy
∞ materials tests
metal matrix composites
reinforcing fibers

fiber pushout
(added September 1999)
GS releasing
. **fiber pushout**
RT ceramic matrix composites
composite materials
debonding (materials)

 - destructive tests
 - failure modes
 - fiber composites
 - fiber pullout
 - fiber-matrix interfaces
 - fibers
 - interfacial energy
 - ∞ materials tests
 - metal matrix composites
 - reinforcing fibers

fiber release
USE **fiber pullout**

fiber strength
GS mechanical properties
. **fiber strength**
RT aramid fibers
bending
boron fibers
ceramic fibers
compressive strength
fiber volume fraction
Hookes law
Poisson ratio
shear strength
∞ strength
tensile strength

fiber volume fraction
(added April 1992)
GS composition (property)
. concentration (composition)
. . **fiber volume fraction**
ratios
. **fiber volume fraction**
RT composite materials
fiber composites
fiber orientation
fiber strength
reinforcing fibers

fiberboard
USE **boards (paper)**

fiberglass
USE **glass fibers**

fiber-matrix interfaces
(added July 1994)
GS interfaces
. **fiber-matrix interfaces**
RT composite materials
fiber composites
fiber pushout
interfacial energy
matrix materials
reinforcing fibers

fibers
UF *fibrous materials*
Refrasil (trademark)
GS **fibers**
. cotton fibers
. hair
. linen
. metal fibers
. microfibers
. optical fibers
. . scintillating fibers
. plastic fibers
. reinforcing fibers
. . aramid fibers
. . . Kevlar (trademark)
. . boron fibers
. . carbon fibers
. silk
. synthetic fibers
. . aramid fibers
. . . Kevlar (trademark)
. . ceramic fibers
. . Dacron (trademark)
. . Fortisan (trademark)
. . glass fibers
. . Nylon (trademark)
. . rayon
. . Vycor
. wool
RT boron reinforced materials
carbon fiber reinforced plastics

fibers (mathematics)

composite materials
cordage
cotton
fabrics
fiber pullout
fiber pushout
∞ filaments
glass fiber reinforced plastics
metal matrix composites
netting (materials/structures)
papers
polymeric films
reinforcing materials
slivers
strands
textiles
wet spinning
whiskers (crystals)
yarns

fibers (mathematics)

RT canonical forms
dimensional analysis
function space
group theory
homotopy theory
manifolds (mathematics)
topology

Fibonacci numbers

RT number theory
∞ numbers
set theory

fibrillation

GS heart function
. fibrillation
RT heart diseases
muscles
seismocardiography

fibrin

GS biopolymers
. proteins
. . fibrin
body fluids
. blood
. . fibrin
organic compounds
. proteins
. . fibrin
RT blood coagulation
coagulation
fibrinogen
thrombin

fibrinogen

GS biopolymers
. proteins
. . globulins
. . . fibrinogen
body fluids
. blood
. . fibrinogen
organic compounds
. proteins
. . globulins
. . . fibrinogen
RT fibrin
hemostatics
homeostasis
thrombin

fibroblasts

GS cells (biology)
. fibroblasts
RT cytoplasm
osteoblasts
tendons
tissues (biology)

fibrosis

GS diseases
. fibrosis
. . cystic fibrosis

RT tissues (biology)

fibrous materials

USE **fibers**

Ficks equation

RT diffusion
diffusion coefficient
∞ equations
reaction-diffusion equations
Tafel law

fidelity

USE **accuracy**

fiduciaries

RT economics
finance
management

field aligned currents

(added September 1988)

DEF Electric currents aligned along magnetic fields.

GS electric current
. field aligned currents

. . Birkeland currents

RT aeronomy
atmospheric electricity
Earth ionosphere
Earth magnetosphere
geoelectricity
geomagnetic tail
geomagnetism
geophysics
ionospheric currents
lines of force
magnetic field reconnection
Pedersen currents
plasma currents
telluric currents
upper atmosphere

field army ballistic missiles

GS missiles
. ballistic missiles
. . field army ballistic missiles
RT intermediate range ballistic missiles
short range ballistic missiles

field coils

GS electric coils
. magnetic coils
. . field coils
RT electromagnets
helical inducers
magnet coils

field effect transistors

UF *cascode MOSFET*
FET (transistors)
IGFET

MESFETs
MISFETs
MOSFET

GS *unipolar transistors*

electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . field effect transistors
. charge flow devices
. JFET
. MODFETs

RT cascode devices
∞ effects
high electron mobility transistors
indium aluminum arsenides
ion implantation
SOI (semiconductors)

field emission

GS emission
. particle emission
. . electron emission
. . . field emission

RT electric fields
electron microscopes
electron microscopy
magnetic fields

scanning electron microscopy
secondary emission
transmission electron microscopy
Zener effect

field intensity meters

SN (EMPLOY THIS TERM WHEN TYPE OF FIELD INVOLVED IS NOT SPECIFIED—OTHERWISE USE A MORE SPECIFIC TERM)

GS measuring instruments
. field intensity meters

RT actinometers
flux density
magnetometers
noise meters

field mode theory

RT cavity resonators
dielectrics
electromagnetic fields
laser modes
optical resonators
propagation modes
∞ theories

field of view

DEF The area or solid angle that can be viewed through or scanned by an optical instrument.

GS viewing
. field of view

RT bearing (direction)
conical scanning
elevation angle
∞ fields
look angles (tracking)
visual fields

field sails

USE **magnetic sails**

field strength

DEF For any physical field, the flux density, intensity, or gradient of the field at the point in question.

GS field strength
. electric field strength
. magnetic flux

RT acoustic properties
directivity
electric fields
electrical properties
electromagnetic fields
flux density
gravitational fields
isotropy
magnetic diffusion
magnetic fields
magnetic properties
∞ orientation
permittivity
∞ strength

field tests

(added November 1998)

SN (EXCLUDES TESTS OF ELECTRIC, MAGNETIC, OR ELECTROMAGNETIC FIELDS)

DEF Tests carried out in the actual setting in which the subject device is intended to operate.

RT environmental tests
performance tests
∞ tests

field theory (algebra)

GS field theory (algebra)
. cubic equations
. quadratic equations

RT ∞ fields
Green's functions
homomorphisms
nonlinear equations
∞ theories

field theory (physics)

UF *ambit*
force fields
Wightman theory

GS field theory (physics)
. crystal field theory
. gauge theory

- . . quantum chromodynamics
- . . unified field theory
- . . . electroweak model
- . . . standard model (particle physics)
- . grand unified theory
- RT antenna radiation patterns
- attraction
- boson fields
- closure law
- crossed fields
- Dirac equation
- distribution (property)
- ∞ dynamics
- electromagnetic fields
- far fields
- ∞ fields
- flow distribution
- flux (rate)
- flux density
- function space
- geomagnetism
- gravitational fields
- Green's functions
- light-cone expansion
- magnetic field inversions
- magnetic fields
- magnetostatic fields
- many body problem
- multipolar fields
- nuclear physics
- null zones
- ∞ physics
- Pomeranchuk theorem
- potential fields
- pressure distribution
- quantum electrodynamics
- quantum theory
- radiation distribution
- relativity
- self consistent fields
- sound fields
- string theory
- strong interactions (field theory)
- supergravity
- supersymmetry
- temperature distribution
- tensors
- ∞ theories
- traveling charge
- weak interactions (field theory)
- Yang-Mills fields
- Yang-Mills theory
- zero point energy

field-programmable gate arrays

(added April 2000)

- GS circuits
- . gates (circuits)
- . . **field-programmable gate arrays**
- . integrated circuits
- . . **field-programmable gate arrays**
- reconfigurable hardware
- . programmable logic devices
- . . **field-programmable gate arrays**
- RT evolvable hardware

∞ **fields**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boson fields
- electric fields
- field of view
- field theory (algebra)
- field theory (physics)
- gravitational fields
- magnetic fields
- military air facilities
- self consistent fields
- visual fields

fighter aircraft

- UF *Interceptor aircraft*
- GS attack aircraft
- . **fighter aircraft**
- . . Alpha jet aircraft
- . . DH 112 aircraft
- . . F-2 aircraft
- . . F-4 aircraft
- . . F-5 aircraft

- . . F-8 aircraft
- . . F-9 aircraft
- . . F-14 aircraft
- . . F-15 aircraft
- . . F-16 aircraft
- . . F-17 aircraft
- . . F-18 aircraft
- . . F-20 aircraft
- . . F-22 aircraft
- . . F-84 aircraft
- . . F-86 aircraft
- . . F-89 aircraft
- . . F-94 aircraft
- . . F-100 aircraft
- . . F-101 aircraft
- . . F-102 aircraft
- . . F-104 aircraft
- . . F-105 aircraft
- . . F-106 aircraft
- . . F-117A aircraft
- . . FV-12A aircraft
- . . G-91 aircraft
- . . G-95/4 aircraft
- . . GA-5 aircraft
- . . Harrier aircraft
- . . Jaguar aircraft
- . . JAS-39 aircraft
- . . jet provost aircraft
- . . MiG aircraft
- . . Mirage aircraft
- . . . Mirage 3 aircraft
- . . P-51 aircraft
- . . P-1127 aircraft
- . . P-1154 aircraft
- . . Saab 37 aircraft
- . . Scimitar aircraft
- . . Vampire MK 35 aircraft
- . . YF-12 aircraft

- RT ∞ aircraft
- highly maneuverable aircraft
- ∞ interceptors
- jet aircraft
- ∞ military aircraft
- ∞ military aviation
- MRCA aircraft
- single engine aircraft
- STOVL aircraft
- supersonic aircraft
- training aircraft
- V/STOL aircraft
- X-31 aircraft

figure of merit

- RT acceptability
- ∞ analyzing
- criteria
- efficiency
- evaluation
- modulation transfer function
- optical transfer function
- ∞ performance
- Q factors
- quality
- selection
- value

filament winding

- UF *filament wound construction*
- GS winding
- . **filament winding**
- RT ceramic fibers
- composite wrapping
- fiber composites
- isotensoid structures
- laminates
- metal fibers
- netting (materials/structures)
- preimpregnation

filament wound construction

USE **filament winding**

∞ **filaments**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boron fibers
- carbon fibers
- cathodes
- ceramic fibers

- cordage
- fibers
- ionizers
- reinforcing materials
- resistors
- strands
- vortex filaments
- wet spinning
- whiskers (crystals)
- wire

filaments (solar physics)

USE **solar prominences**

file maintenance (computers)

- GS maintenance
- . **file maintenance (computers)**
- RT checkout
- computer programming
- computers
- program verification (computers)
- programmers
- ∞ programming

∞ **files**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT document storage
- files (tools)

files (tools)

- GS tools
- . **files (tools)**
- RT abrasion
- ∞ files
- scrapers

fillers

- RT additives
- ∞ cells
- dopes
- opacifiers
- paints
- pigments
- primers (coatings)
- reinforcement (structures)
- resins
- sealers
- sizing materials
- varnishes

fillets

- RT fairings
- joints (junctions)
- seams (joints)
- welding

filling

- GS **filling**
- . refilling
- RT accumulations
- ∞ charging
- extensions
- injection
- input
- ∞ loading
- replenishment
- supplying

film boiling

- GS phase transformations
- . vaporizing
- . . boiling
- . . . **film boiling**
- RT heat transfer
- Leidenfrost phenomenon
- nucleate boiling

film condensation

- GS condensing
- . **film condensation**
- RT condensers (liquefiers)
- cooling
- heat transfer

film cooling

DEF The cooling of a body or surface, such as the inner surface of a rocket combustion chamber, by maintaining a thin fluid layer over the affected area.

film thickness

- GS cooling
 - . evaporative cooling
 - . . **film cooling**
 - . liquid cooling
 - . . **film cooling**
- RT liquid injection
- surface cooling
- sweat cooling

film thickness

- GS dimensions
 - . **film thickness**
- RT ellipsometry
 - thickness

∞ films

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT biofilms
- coatings
- corrosion prevention
- electrode film barriers
- fabrics
- fluid films
- helium film
- Kapton (trademark)
- laminates
- Langmuir-Blodgett films
- magnetic films
- membranes
- metal films
- monomolecular films
- oxide films
- papers
- photographic film
- polymeric films
- semiconducting films
- silicon films
- squeeze films
- superconducting films
- thermoplastic films
- thick films
- thin films
- video tapes
- webs (sheets)

filter wheel infrared spectrometers

- GS measuring instruments
 - . optical measuring instruments
 - . . infrared spectrometers
 - . . . **filter wheel infrared spectrometers**
 - . radiation measuring instruments
 - . . actinometers
 - . . . infrared spectrometers
 - **filter wheel infrared spectrometers**
 - . . infrared instruments
 - . . . infrared spectrometers
 - **filter wheel infrared spectrometers**
 - . spectrometers
 - . . infrared spectrometers
 - . . . **filter wheel infrared spectrometers**
 - optical equipment
 - . optical measuring instruments
 - . . infrared spectrometers
 - . . . **filter wheel infrared spectrometers**
- RT Ebert spectrometers
- ∞ filters
- infrared spectrophotometers
- solar spectrometers

filtergrams

- RT optical filters
- solar instruments
- solar physics
- solar spectra

filtering

USE **filtration**

∞ filters

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT absorbers (materials)
- adaptive filters

- air filters
- attenuators
- bandpass filters
- bandstop filters
- birefringent filters
- crystal filters
- digital filters
- electric filters
- electromagnetic wave filters
- electronic filters
- filter wheel infrared spectrometers
- FIR filters
- fluid filters
- Gabor filters
- high pass filters
- image filters
- Kalman filters
- linear filters
- low pass filters
- matched filters
- monochromatic radiation
- nonlinear filters
- optical filters
- radar filters
- radio filters
- reduced order filters
- separators
- spatial filtering
- tunable filters

filtration

- UF *filtering*
- GS **filtration**
 - . spatial filtering
- RT activated carbon
- beds (process engineering)
- beneficiation
- concentrating
- ∞ concentration
- concentrators
- effluents
- extraction
- fluid filters
- hydrometallurgy
- materials recovery
- percolation
- precipitation (chemistry)
- ∞ screening
- ∞ separation
- sewage treatment
- size separation
- water treatment

finance

- RT accounting
- commerce
- fiduciaries
- gross national product
- investments
- management planning
- marketing
- risk
- wage surveys

financial management

- GS management
 - . **financial management**
- RT aircraft production costs
- allocations
- budgeting
- cost analysis
- cost estimates
- costs
- economy
- federal budgets
- launch costs
- life cycle costs
- procurement management

∞ fine

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT fine structure
- fineness
- fineness ratio
- fines

fine structure

- UF *multiplets*

- RT alpha decay
- atomic structure
- ∞ fine
- hyperfine structure
- line spectra
- spectral energy distribution
- ∞ structures

fineness

- RT coarseness
- ∞ fine
- fineness ratio
- particle size distribution
- purity
- quality
- size (dimensions)
- textures

fineness ratio

DEF The ratio of the length of a body to its maximum diameter or to some equivalent dimension -- said especially of a body such as an airship hull or rocket.

- GS ratios
 - . aspect ratio
 - . . **fineness ratio**
- RT dimensional analysis
- dimensions
- ∞ fine
- fineness
- oblate spheroids
- shape optimization
- slender bodies
- thickness ratio

fines

- GS particles
 - . powder (particles)
 - . . **fines**
- RT ∞ fine
- ∞ flour
- fractions
- particle size distribution
- ∞ screening

fingers

- GS anatomy
 - . limbs (anatomy)
 - . . hand (anatomy)
 - . . . **fingers**
 - appendages
 - . hand (anatomy)
 - . . **fingers**
- RT sense organs

fingers (robotics)

USE **end effectors**

finishes

- GS **finishes**
 - . enamels
 - . glazes
 - . lacquers
- RT ceramic coatings
- coatings
- corrosion
- dopes
- impregnating
- luster
- machining
- metallizing
- paints
- plating
- polishing
- primers (coatings)
- protective coatings
- sizing (surface treatment)
- sprayed coatings
- surface finishing
- surface properties
- varnishes
- veneers
- waxes

finite difference theory

- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **finite difference theory**

- finite difference time domain method
- RT computational aeroacoustics
 - Crank-Nicholson method
 - difference equations
 - differences
 - essentially non-oscillatory schemes
 - extrapolation
 - flux difference splitting
 - flux vector splitting
 - Godunov method
 - grid generation (mathematics)
 - interpolation
 - multigrid methods
 - perfectly matched layers
 - significance
 - ∞ theories
 - time marching
 - TVD schemes
 - upwind schemes (mathematics)
 - vortex in cell technique
- finite difference time domain method**
 - (added April 1999)
 - UF *FDTD (mathematics)*
 - GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . finite difference theory
 - **finite difference time domain method**
 - . time domain analysis
 - . . **finite difference time domain method**
 - RT computational electromagnetics
 - electromagnetic scattering
- finite element method**
 - UF *hybrid-Trefftz finite element method*
 - GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **finite element method**
 - procedures
 - . **finite element method**
 - RT ∞ applications of mathematics
 - boundary value problems
 - Cholesky factorization
 - computational fluid dynamics
 - computational mechanics
 - conjugates
 - Crank-Nicholson method
 - factorization
 - fracture mechanics
 - grid generation (mathematics)
 - isoparametric finite elements
 - iterative solution
 - matrices (mathematics)
 - meshfree methods
 - ∞ methodology
 - Mindlin plates
 - minimal surfaces
 - multigrid methods
 - NASTRAN
 - panel method (fluid dynamics)
 - patch tests
 - perfectly matched layers
 - shape functions
 - solid mechanics
 - Trefftz method
 - unstructured grids (mathematics)
- finite impulse response filters*
 - USE **FIR filters**
- finite volume method**
 - DEF A moving mesh method for analyzing transonic flow over airfoils.
 - GS analysis (mathematics)
 - . numerical analysis
 - . . **finite volume method**
 - . . . Godunov method
 - procedures
 - . **finite volume method**
 - . . Godunov method
 - RT boundary value problems
 - ∞ methodology
 - TVD schemes
- unstructured grids (mathematics)
- finite-state machines*
 - USE **Turing machines**
- Finland**
 - GS nations
 - . **Finland**
 - RT Europe
 - Finnish space program
 - Scandinavia
- finned bodies**
 - RT aerodynamic configurations
 - ∞ bodies
 - bodies of revolution
 - cooling fins
 - fins
 - heat exchangers
 - missile bodies
 - nose fins
 - projectiles
 - symmetrical bodies
- Finnish space program**
 - (added November 1990)
 - GS programs
 - . space programs
 - . . European space programs
 - . . . **Finnish space program**
 - RT Finland
- fins**
 - DEF Fixed or adjustable airfoils or vanes attached longitudinally to an aircraft, rocket, or a similar body to provide a stabilizing effect. Also, a flat plate of structure, as a cooling fin. Used for vertical fins.
 - UF *vertical fins*
 - GS **fins**
 - . cooling fins
 - . nose fins
 - RT aerial rudders
 - airfoils
 - airframes
 - ∞ blades
 - control surfaces
 - finned bodies
 - hydrofoils
 - missile components
 - rudders
 - sails
 - stabilizers (fluid dynamics)
 - tail assemblies
 - vanes
 - winglets
- fiords**
 - DEF Arms of the sea having steep sides, deep bottoms, and shallow sills separating them from the sea.
 - GS landforms
 - . **fiords**
 - RT cliffs
 - geology
 - inlets (topography)
 - Norway
 - oceanography
 - water
- FIR filters**
 - DEF Physically unrealizable nonrecursive digital filters. Used for finite impulse response filters.
 - UF *finite impulse response filters*
 - GS electromagnetic wave filters
 - . electric filters
 - . . digital filters
 - . . . **FIR filters**
 - RT bandpass filters
 - electronic filters
 - ∞ filters
 - IIR filters
 - microwave filters
 - radar filters
 - recursive functions
- FIRE (climatology)**
 - (added August 1991)
 - UF *First ISCCP Regional Experiment*
- GS programs
 - . projects
 - . . **FIRE (climatology)**
- RT climatology
 - cloud cover
 - clouds (meteorology)
 - remote sensing
 - satellite observation
- fire control**
 - SN (LIMITED TO CONTROL OF THE FIRING OF WEAPONS--EXCLUDES FIRE PREVENTION AND FIRE FIGHTING)
 - RT bombing equipment
 - ∞ control
 - firing (igniting)
 - gunfire
 - gunnery training
 - range finders
 - weapon systems
 - weapons
- fire control circuits**
 - GS circuits
 - . **fire control circuits**
 - RT ∞ control
- fire damage**
 - GS damage
 - . **fire damage**
 - RT ashes
 - charring
 - combustion
 - fires
 - flames
 - fumes
 - smoke
 - soot
- fire extinguishers**
 - UF *chemical extinguishers*
 - RT fire fighting
 - fire prevention
 - firebreaks
 - fires
 - flammability
 - foams
 - halon
- fire fighting**
 - SN (EXCLUDES FIRE CONTROL--CONTROL OF THE FIRING OF WEAPONS)
 - RT breathing apparatus
 - fire extinguishers
 - fire prevention
 - firebreaks
 - fires
 - flammability
 - foams
- fire point**
 - RT flammability
 - flash point
 - spontaneous combustion
- fire prevention**
 - SN (EXCLUDES FIRE CONTROL--CONTROL OF THE FIRING OF WEAPONS)
 - GS prevention
 - . **fire prevention**
 - RT accident prevention
 - explosion suppression
 - fire extinguishers
 - fire fighting
 - firebreaks
 - fireproofing
 - fires
 - flame retardants
 - forest fires
 - high pressure oxygen
 - safety
 - safety devices
 - safety management
 - smoke detectors
 - spontaneous combustion
 - warning

fireballs

warning systems

fire resistance

USE **flammability**

fire retardants

USE **flame retardants**

∞ fireballs

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT bolides
nuclear explosions

Firebee 2 target drone aircraft

GS drone vehicles
. drone aircraft
. . target drone aircraft
. . . **Firebee 2 target drone aircraft**
light aircraft
. **Firebee 2 target drone aircraft**
pilotless aircraft
. drone aircraft
. . target drone aircraft
. . . **Firebee 2 target drone aircraft**
research vehicles
. research aircraft
. . **Firebee 2 target drone aircraft**
Ryan aircraft
. **Firebee 2 target drone aircraft**
supersonic aircraft
. **Firebee 2 target drone aircraft**

RT ∞ aircraft
∞ military aircraft
targets
∞ winged vehicles

firebreaks

GS clearings (openings)
. **firebreaks**

RT combustion
conservation
fire extinguishers
fire fighting
fire prevention
fires
flames
forest fires
forests

fireflies

DEF Flying insects which produce light by bioluminescence.

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **fireflies**

fireproofing

RT fire prevention
nonflammable materials
safety

fires

GS **fires**
. forest fires

RT accidents
backfire
burns (injuries)
combustion
control surfaces
deflagration
explosions
explosives
fire damage
fire extinguishers
fire fighting
fire prevention
firebreaks
firing (igniting)
flames
flashback
hazards
safety
Saint Elmo fire
smoldering

warning systems

firewalls (computers)

(added January 2003)

DEF Computers, routers, and/or communications devices that filter access to a protected network. They may also consist of a collaboration of such components geared toward protecting networks from intrusion from the Internet while allowing users inside the network access to services on the Internet, such as Web and e-mail services.

GS security
. computer security
. . **firewalls (computers)**

RT access control
computer information security
computer networks
computer systems design
intrusion detection (computers)

fireworks

USE **pyrotechnics**

firing (igniting)

GS **firing (igniting)**
. rocket firing
. . retrofiring
. . test firing
. . . static firing

RT burning time
detonable gas mixtures
detonation
drying
fire control
fires
flammable gases
gunfire
ignition
pulsejet engines
starting

firing time

USE **burning time**

firmware

DEF Hardwired software which often encompasses microcodes.

RT computer components
computer programming
∞ hardware
microprocessors
microprogramming
RISC processors

first aid

RT accidents
chemical defense
cures
disasters
kits
medical equipment
medical science
medical services
resuscitation
splints
stretchers
tourniquets
transfusion

First ISCCP Regional Experiment

USE **FIRE (climatology)**

Fischer-Tropsch process

RT catalysis
catalytic activity
reaction kinetics
synthesis (chemistry)
synthetic fuels

fish

USE **fishes**

Fishbowl Operation

RT high altitude tests
nuclear explosions
∞ operations
Vela satellites

Fisher information

(added March 2004)

DEF A fundamental quantity in statistical inference that describes an attribute or property of a distribution with known form but uncertain parameter values.

RT Cramer-Rao bounds
expectation
information theory
likelihood ratio

fisheries

DEF Place for harvesting fish or other aquatic life, especially in sea waters.

RT aquaculture
estuaries
fishes
fishing
marine biology
marine resources
sea water
shallow water
tidal flats
wetlands

fishes

UF *fish*

GS animals
. vertebrates
. . **fishes**
. . . schools (fish)
. . . sharks

RT aquaculture
Earth resources
fisheries
fishing
∞ food
ichthyology
∞ nutrients
poikilothermia
red tide
squama
wildlife

fishing

(added November 1992)

RT fisheries
fishes
industries
schools (fish)

fish tailing

USE **yaw**

fission fuels

GS fissionable materials
. **fissile fuels**
fuels
. nuclear fuels
. . **fissile fuels**

RT fissium
gaseous fission reactors
nuclear fission
nuclear reactors
radioactive materials

fissile materials

USE **fissionable materials**

fission

DEF The splitting of an atomic nucleus into two more-or-less equal fragments.

RT blankets (fission reactors)
fuel production
nuclear fuels
splitting

fission electric cells

GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . space power reactors
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A

nuclear electric power generation
 . nuclear auxiliary power units
 . . SNAP
 . . . **fission electric cells**
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . space power reactors
 . . . **fission electric cells**
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . nuclear power reactors
 . . space power reactors
 . . . **fission electric cells**
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 nuclear reactors
 . nuclear power reactors
 . . space power reactors
 . . . **fission electric cells**
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 RT ∞ electric cells
 radioisotope batteries
 space power unit reactors

fission products
 DEF The large variety of smaller atoms, including cesium and strontium, left over by the splitting of uranium and plutonium, usually caused by the absorption of a neutron.
 GS products
 . **fission products**
 RT chain reactions (nuclear physics)
 fallout
 high energy interactions
 nuclear fission
 nuclear particles
 nuclear pumping
 nuclear radiation
 radioactive materials
 radioactive wastes
 radioactivity

fission weapons
 UF *atomic bombs*
 GS weapons
 . nuclear weapons
 . . **fission weapons**
 RT fallout
 nuclear devices
 thermonuclear explosions

fissionable materials
 DEF Materials containing nuclides capable of undergoing fission only by fast neutrons with energy greater than 1MeV, e.g., thorium-232 and uranium-238. Used for fissile materials.
 UF *fissile materials*
 GS **fissionable materials**
 . fissile fuels
 RT gaseous fission reactors
 ∞ materials
 nozzle flow
 nuclear fuels
 plutonium
 radioactive materials
 uranium

fissium
 GS fuels
 . nuclear fuels
 . . **fissium**
 RT fissile fuels

fissures (geology)
 DEF Extensive cracks in rocks.
 RT folds (geology)
 geological faults
 structural properties (geology)

tectonics
fitness
 GS **fitness**
 . flight fitness
 . physical fitness
 RT qualifications

fitting
 RT adaptation
 adjusting
 alignment
 assembling
 fittings
 goodness of fit
 interference fit
 ∞ joining
 matching
 positioning

fittings
 RT accessories
 adapters
 closures
 connectors
 couplings
 extensions
 fasteners
 fitting
 inserts
 joints (junctions)
 linkages
 sleeves
 U bends
 unions (connectors)

Fitzgerald-Lorentz contraction
 USE **Lorentz contraction**

fix
 USE **fixing**

fixed point arithmetic
 GS number theory
 . arithmetic
 . . **fixed point arithmetic**
 RT computer programs
 computers
 data processing

fixed points (mathematics)
 DEF Positional notation in which corresponding places in different quantities are occupied by coefficients of the same power of the base. Notation in which the base point is assumed to remain fixed with respect to one end of the numeric expressions.
 GS geometry
 . Euclidean geometry
 . . points (mathematics)
 . . . **fixed points (mathematics)**
 . topology
 . . **fixed points (mathematics)**
 RT manifolds (mathematics)
 mapping

fixed wings
 UF *fixed-wing aircraft*
 GS airfoils
 . wings
 . . **fixed wings**
 RT cambered wings
 cruciform wings
 flexible wings
 low aspect ratio wings
 rigid wings
 slender wings
 swept wings
 thin wings
 twisted wings
 uncambered wings
 unswept wings

fixed-wing aircraft
 USE **aircraft configurations**
fixed wings

∞ **fixing**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *fix*
 RT maintenance
 navigation
 position (location)
 positioning

fixtures
 RT brackets
 ∞ hardware
 jigs
 luminaires
 tools

Fizeau effect
 RT Doppler effect
 Doppler-Fizeau effect
 ∞ effects

Flagellata
 GS animals
 . protozoa
 . . **Flagellata**
 . . . Euglena
 . . . trypanosome
 microorganisms
 . protozoa
 . . **Flagellata**
 . . . Euglena
 . . . trypanosome

flakes
 GS particles
 . **flakes**
 RT flaking
 metal powder
 powder (particles)

flaking
 RT atomizing
 chipping
 comminution
 cutting
 disintegration
 flakes
 fracturing
 peeling
 ∞ separation
 spalling
 splitting
 wear

flame calorimeters
 GS measuring instruments
 . calorimeters
 . . **flame calorimeters**
 RT bomb calorimeters
 drop calorimeters
 heat measurement
 high temperature tests
 temperature measuring instruments

flame deflectors
 DEF In a vertical launch, any of variously designed obstructions that intercept hot gases of rocket engines so as to deflect them away from the ground or from a structure. In captive tests, elbows in the exhaust conduits or flame buckets that deflect the flame into the open.
 GS deflectors
 . **flame deflectors**
 RT backfire
 baffles
 blast deflectors
 diverters
 flashback
 launching pads
 safety devices
 shielding
 test stands

flame fronts
 USE **flame propagation**

flame holders
 GS holders
 . **flame holders**
 RT combustion chambers
 dump combustors
 flameout

flame ionization

flames

flame interaction
USE **chemical reactions**
flame propagation

flame ionization
GS ionization
. gas ionization
. . **flame ionization**

flame plating
GS plating
. **flame plating**
RT coating
welding

flame probes
GS measuring instruments
. **flame probes**
RT gas analysis
manometers
temperature measuring instruments

flame propagation
UF *Chapman-Jouget flame*
combustion waves
flame fronts
flame interaction
GS propagation (extension)
. **flame propagation**
RT backfire
boundary layer combustion
burning rate
combustible flow
combustion
combustion physics
Damkohler number
detonation
detonation waves
explosions
flames
flammability
flashback
gas explosions
gas-metal interactions
ignition
premixed flames
pressure oscillations
pressure pulses
∞ propagation
reacting flow
turbulent combustion
turbulent flames

flame quenching
USE **extinguishing**
quenching (cooling)

flame retardants
UF *fire retardants*
GS retardants
. **flame retardants**
RT antimisting fuels
fabrics
fire prevention
flammability
halon
ignition limits
inorganic compounds
polybrominated biphenyls
synthetic fibers

flame spectroscopy
GS spectroscopy
. **flame spectroscopy**
spectrum analysis
. **flame spectroscopy**
RT emission spectra
gas spectroscopy
line spectra
optogalvanic spectroscopy
qualitative analysis
spectroscopic analysis

flame spraying
GS spraying
. **flame spraying**
. . HVOF thermal spraying
RT coating

coatings
metal spraying
metallizing
plasma spraying

flame stability
GS dynamic characteristics
. dynamic stability
. . combustion stability
. . . **flame stability**
. . motion stability
. . . flow stability
. . . . **flame stability**
. flow characteristics
. . flow stability
. . . **flame stability**
stability
. dynamic stability
. . combustion stability
. . . **flame stability**
. . motion stability
. . . flow stability
. . . . **flame stability**
RT flameout
turbulent flames

flame temperature
GS temperature
. **flame temperature**
RT combustion chemistry
combustion temperature

flameout
DEF Unintended loss of combustion in turbine engines resulting in the loss of engine power.
UF *blowoff (combustion)*
GS extinguishing
. **flameout**
RT combustion
combustion chambers
flame holders
flame stability
gas turbine engines
jet engines

flames
UF *jet flames*
laminar flames
GS **flames**
. diffusion flames
. premixed flames
. turbulent flames
RT combustion
fire damage
firebreaks
fires
flame holders
flame propagation
∞ flares
forest fires
fuels
smog
turbulent combustion

flammability
DEF Those characteristics of a material that pertain to its relative ease of ignition and relative ability to sustain combustion. Used for combustibility and fire resistance.
UF *combustibility*
fire resistance
RT burning rate
combustion
detonable gas mixtures
fire extinguishers
fire fighting
fire point
flame propagation
flame retardants
flammable gases
flash point
ignition
ignition limits
ignition temperature
pyrophoric materials
∞ resistance
smoldering

spontaneous combustion

flammable gases
UF *explosive gases*
GS gases
. **flammable gases**
. . gaseous fuels
. . . natural gas
. . . . liquefied natural gas
. . liquefied natural gas
. . pyrogen
RT chemical explosions
detonable gas mixtures
explosives
firing (igniting)
flammability
gas explosions
hazards

flange wrinkling
GS wrinkling
. **flange wrinkling**
RT buckling

flanges
RT connectors
metal plates

flap control
USE **aircraft control**
flaps (control surfaces)

flaperons
DEF Airplane control surfaces that serve the function of both aileron and flap.
GS airfoils
. ailerons
. . **flaperons**
. . flaps (control surfaces)
. . **flaperons**
control surfaces
. ailerons
. . **flaperons**
. . flaps (control surfaces)
. . . **flaperons**
RT aerodynamic brakes

flapping
RT airfoil oscillations
flutter
resonant vibration
rotor aerodynamics
shaking
undamped oscillations
vibration
wing oscillations

flapping hinges
GS hinges
. **flapping hinges**
RT rotary wings
rotor aerodynamics

flaps (control surfaces)
UF *flap control*
GS airfoils
. **flaps (control surfaces)**
. . externally blown flaps
. . . upper surface blown flaps
. . flaperons
. . jet flaps
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
control surfaces
. **flaps (control surfaces)**
. . externally blown flaps
. . . upper surface blown flaps
. . flaperons
. . jet flaps
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
RT aerodynamic brakes

- brakes (for arresting motion)
- ∞ control
 - drag devices
 - GAW-2 airfoil
 - lift devices
 - spoilers
- ∞ surfaces

flare stars

- DEF Members of a class of dwarf stars that show sudden intensive outbursts of energy. Used for UV Ceti stars.
- UF *UV Ceti stars*
- GS celestial bodies
 - . stars
 - . . late stars
 - . . . cool stars
 - **flare stars**
 - . . main sequence stars
 - . . . dwarf stars
 - **flare stars**
 - . . variable stars
 - . . . **flare stars**
- RT cataclysmic variables
 - M stars
 - solar flares
 - stellar activity
 - stellar flares
 - symbiotic stars

flared bodies

- RT afterbodies
 - aircraft configurations
- ∞ flares
 - spacecraft configurations
 - symmetrical bodies

∞ **flares**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT flames
 - flared bodies
 - illuminating
 - lighting equipment
 - luminaires
 - pyrotechnics
 - runway lights
 - solar flares
 - Solar Maximum Mission
 - solar terrestrial interactions
 - stellar activity
 - stellar flares

∞ **flash**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *light duration*
- RT electric discharges
 - explosions
 - flash welding
 - flashing (vaporizing)
 - light (visible radiation)
 - radiography
 - solar flares

flash blindness

- GS blindness
 - . **flash blindness**
- RT eye protection
 - light adaptation
 - vision

flash lamps

- UF *flash tubes*
- GS lighting equipment
 - . luminaires
 - . . **flash lamps**
 - . . . alkali vapor lamps
- RT light sources
 - xenon lamps

flash point

- DEF The temperature at which a substance, such as fuel oil, will give off a vapor that will flash or burn momentarily when ignited.
- GS temperature
 - . ignition temperature
 - . . **flash point**
- RT combustion temperature

- fire point
- flammability
- ignition
- spontaneous combustion
- vapor pressure
- volatility

flash tubes

USE **flash lamps**

flash welding

- GS welding
 - . fusion welding
 - . . electric welding
 - . . . **flash welding**
- RT ∞ flash
 - pressure welding

flashback

- DEF Backward burning of a flame into the lip of a burner or torch.
- RT backfire
 - combustion
 - deflagration
 - explosions
 - fires
 - flame deflectors
 - flame propagation

flashing (vaporizing)

- DEF The evaporation of a heated liquid as a consequence of rapid pressure reduction.
- GS phase transformations
 - . vaporizing
 - . . **flashing (vaporizing)**
- RT distillation
 - evaporation
 - ∞ flash
 - prevaporization
 - ∞ separation

flashover

- GS electric current
 - . electric discharges
 - . . **flashover**
- RT electric arcs
 - electric sparks
 - electrical faults
 - failure

flasks

- RT bottles
 - glassware

flat coaxial transmission lines

USE **microstrip transmission lines**

flat conductors

- GS conductors
 - . **flat conductors**
 - . . beam leads
- RT bus conductors
 - circuits
 - connectors
 - electric connectors
 - electric contacts
 - electric wire
 - wire
 - wiring

flat layers

- RT flatness
 - ∞ layers
 - planar structures
 - strata
 - stratification

flat panel displays

- (added September 1994)
- GS display devices
 - . **flat panel displays**
- RT avionics
 - consoles
 - human factors engineering
 - imaging techniques
 - indicating instruments

flat patterns

- DEF Shape of a part or parts put in 3 space in its undefined condition.
- RT castings

molds

flat plates

- GS structural members
 - . plates (structural members)
 - . . **flat plates**
- RT annular plates
 - Blasius equation
 - Blasius flow
 - circular plates
 - dynamic structural analysis
 - end plates
 - flatness
 - fluid mechanics
 - heat transfer
 - metal plates
 - panels
 - parallel plates
 - planar structures
 - plate theory
 - ∞ plates
 - rectangular plates
 - ∞ sheets
 - slabs
 - thick plates
 - thin plates

flat surfaces

- UF *facets*
- RT Cosserat surfaces
 - flatness
 - planar structures
 - ∞ surface geometry
 - surface properties
 - ∞ surfaces

flatness

- GS shapes
 - . **flatness**
- RT concavity
 - contours
 - convexity
 - etalons
 - flat layers
 - flat plates
 - flat surfaces
 - flattening
 - interferometers
 - mechanical properties
 - planar structures
 - roughness
 - ∞ surface geometry

flats (landforms)

- DEF A general term for level or nearly level surfaces or small areas of land marked by little or no relief such as plains. Also, nearly level regions that visibly display lower relief than their surroundings. Used for adobe flats and salt flats.
- UF *adobe flats*
- salt flats*
- GS landforms
 - . **flats (landforms)**
 - . . tidal flats
- RT Earth resources
 - marshlands
 - mesas
 - plains
 - salt beds

flattening

- RT ductility
 - ellipticity
 - flatness
 - leveling
 - metal working
 - oblate spheroids
 - ∞ rolling
 - smoothing

flatworms

- GS animals
 - . invertebrates
 - . . worms
 - . . . **flatworms**
- RT infestation

flavor (particle physics)

- DEF The specific identifiers of quarks which

fleet ballistic missiles

distinguish various combinations of electric charge and mass.

- RT hadrons
- particle interactions
- particle theory
- ∞ physics
- quantum theory
- quark models
- quarks
- theoretical physics

flaw detection

USE **nondestructive tests**

flaws

USE **defects**

fleet ballistic missiles

UF *FBM (missiles)*

GS missiles

. surface to surface missiles

. . . **fleet ballistic missiles**

. . . . Polaris A1 missile

. . . . Polaris A2 missile

. . . . Polaris A3 missile

. . . . Poseidon missiles

. . . . Subroc missile

RT ballistic missile submarines

guided missile submarines

intercontinental ballistic missiles

intermediate range ballistic missiles

sea launching

Fleet Satellite Communication System

DEF Global communication system utilizing satellites. Used for FLEETSATCOM and FLT-SATCOM.

UF *Fleetsatcom*

Fltsatcom

GS telecommunication

. Defense Communications Satellite System

. . . **Fleet Satellite Communication System**

RT communication satellites

Marisat satellites

microwave transmission

military technology

NASCOM network

navy

radio communication

∞ systems

ultrahigh frequencies

Fleetsatcom

USE **Fleet Satellite Communication System**

flexibility

DEF That property of a material by virtue of which it may be bowed repeatedly without undergoing rupture. That property of a material by virtue of which it may be flexed or bowed repeatedly without undergoing rupture. Used for nonrigidity.

UF *nonrigidity*

GS mechanical properties

. **flexibility**

RT bending

elastic properties

flexing

nonuniformity

plastic properties

∞ rigidity

softness

stiffness

versatility

flexible bodies

GS **flexible bodies**

. flexible spacecraft

RT ∞ bodies

hybrid structures

inflatable structures

flexible spacecraft

DEF Space vehicles (usually space structures or rotating satellites) whose surfaces and/or appendages may be subject to elastic flexural deformations (vibrations).

GS aerospace vehicles

. **flexible spacecraft**

flexible bodies

. **flexible spacecraft**

RT artificial satellites

displacement

elastic deformation

flexing

large space structures

satellite control

satellite orientation

satellite rotation

shape control

∞ spacecraft

spacecraft control

spacecraft motion

structural vibration

vibration damping

flexible wings

UF *Rogallo wings*

GS airfoils

. wings

. . . **flexible wings**

. . . . parawings

RT fixed wings

gliders

hang gliders

infinite span wings

inflatable structures

rigid wings

thin wings

twisted wings

XV-8A aircraft

flexing

UF *flexure*

RT bending

camber

∞ chambers

curvature

deflection

deformation

distortion

flexibility

flexible spacecraft

folding

heaving

loading moments

flexors

GS anatomy

. musculoskeletal system

. . . muscles

. . . . **flexors**

RT joints (anatomy)

Flexowriters (trademark)

USE **automatic typewriters**

flexural strength

(added September 1995)

DEF DEF The bending load that a material can withstand without fracturing - it's resistance to fracture.

UF *bending strength*

GS mechanical properties

. fracture strength

. . . **flexural strength**

RT bend tests

bending fatigue

static loads

∞ strength

flexure

USE **flexing**

flicker

RT critical flicker fusion

light transmission

flicker fusion frequency

USE **critical flicker fusion**

∞ **flight**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The movement of an object through the atmosphere or through space, sustained by aerodynamic, aerostatic, or reaction forces, or

by orbital speed; especially the movement of a man-operated or man-controlled device, such as a rocket, a space probe, a space vehicle, or an aircraft. Used for flying, high altitude flight, and high speed flight.

UF *flying*

high altitude flight

high speed flight

RT aerodynamics

∞ aeronautics

balloon flight

climbing flight

coasting flight

cruising flight

flight altitude

flight control

flight mechanics

flight optimization

flight paths

flight safety

flight tests

flight time

formation flying

free flight

gliding

horizontal flight

hypersonic flight

long duration space flight

lunar flight

meteorological flight

parabolic flight

rocket flight

soaring

space flight

steering

suborbital flight

supersonic flight

trajectories

transition flight

transoceanic flight

transonic flight

turning flight

vertical flight

visual flight

flight altitude

GS altitude

. **flight altitude**

RT air traffic control

ceiling (aircraft capability)

∞ flight

midaltitude

flight characteristics

DEF Characteristics exhibited by an aircraft, rocket, or the like in flight, such as a tendency to stall or to yaw, or an ability to remain stable at certain speeds. Used for flight performance and flying qualities.

UF *flight performance*

flying qualities

GS **flight characteristics**

. flight envelopes

. pilot ratings

. . . Cooper-Harper ratings

RT

aerodynamics

aircraft maneuvers

aircraft performance

aircraft specifications

airspeed

buffeting

ceiling (aircraft capability)

∞ characteristics

controllability

flight control

flutter

helicopter performance

highly maneuverable aircraft

in-flight simulation

low speed stability

maneuverability

∞ performance

quality

flight clothing

GS clothing

. **flight clothing**

RT coveralls

garments

goggles

helmets
pressure suits
protective clothing

flight computers

USE **airborne/spaceborne computers**

flight conditions

GS conditions
. **flight conditions**
RT aircraft icing
aviation meteorology
cloud cover
cockpit weather information systems
instrument flight rules
meteorological services
storms (meteorology)
visual flight
weather forecasting

flight control

GS **flight control**
. automatic flight control
. . automatic landing control
. fly by light control
. fly by tube control
. fly by wire control
. thrust vector control
RT aerobatics
air traffic control
aircraft control
aircraft instruments
aircraft survivability
attitude control
attitude indicators
automated en route ATC
automatic control
automatic pilots
∞ control
control configured vehicles
control stability
control sticks
control surfaces
display devices
entry guidance (STS)
∞ flight
flight characteristics
flight management systems
formation flying
ground based control
ground support equipment
guidance (motion)
helicopter control
in-flight monitoring
in-flight simulation
instrument approach
instrument landing systems
maneuverability
maneuvers
missile control
navigation
navigation aids
navigation instruments
pointing control systems
radio navigation
remote control
rocket engine control
solar compasses
spacecraft control
stability augmentation
turbojet engine control

flight crews

UF *aircrews*
GS personnel
. crews
. . **flight crews**
. . . spacecrews
. flying personnel
. . **flight crews**
. . . spacecrews
RT aircraft pilots
crew procedures (inflight)
crew procedures (preflight)
crew size
flight fatigue
navigators

pilots (personnel)

flight envelopes

DEF The bounds within which a certain flight system can operate, especially a graphic representation of these bounds showing interrelationships of operational parameters.

GS flight characteristics
. **flight envelopes**
RT aerodynamic characteristics
aerodynamic stability
aircraft control
aircraft maneuvers
aircraft performance
aircraft stability
∞ envelopes
flight tests
helicopter performance
maneuverability
terrain following

flight fatigue

GS fatigue (biology)
. **flight fatigue**
RT aerospace medicine
flight crews
∞ flight stress
flight stress (biology)
pilot performance

flight fitness

GS fitness
. **flight fitness**
RT ∞ flight stress
flying personnel
physical examinations
physical fitness

flight hazards

GS hazards
. **flight hazards**
. . meteoroid hazards
RT air piracy
air traffic
aircraft accidents
aircraft hazards
aircraft icing
aircraft safety
aircraft spin
aviation meteorology
bird-aircraft collisions
birds
collisions
crash landing
crashes
destruction
downbursts
microbursts (meteorology)
midair collisions
noise (sound)
operational hazards
toxic hazards
weather

flight instruments

GS **flight instruments**
. approach indicators
. attitude indicators
. . gyro horizons
. automatic pilots
. flight test instruments
. horizon scanners
. radio altimeters
RT air navigation
airborne equipment
aircraft control
aircraft equipment
aircraft instruments
altimeters
bubble technique
cockpit weather information systems
compasses
display devices
engine control
engine monitoring instruments
head-up displays
instrument approach
instrument flight rules
instrument landing systems
∞ instruments

landing instruments
Light Airborne Multipurpose System
measuring instruments
navigation instruments
night flights (aircraft)
onboard equipment
position indicators
radar
radio direction finders
rate of climb indicators
recording instruments
satellite instruments
solar compasses
spacecraft instruments
spacecraft position indicators
speed indicators
star trackers
TERCOM

flight load recorders

GS aircraft instruments
. flight recorders
. . **flight load recorders**
data recorders
. flight recorders
. . **flight load recorders**
measuring instruments
. flight recorders
. . **flight load recorders**
recording instruments
. flight recorders
. . **flight load recorders**
RT strain gages

flight management systems

GS management systems
. **flight management systems**
RT air navigation
air traffic control
airborne/spaceborne computers
automatic flight control
automatic landing control
avionics
computer techniques
flight control
ground based control
navigation aids
onboard data processing
pilot support systems
situational awareness
systems engineering

flight mechanics

GS mechanics (physics)
. **flight mechanics**
RT aerodynamics
ascent trajectories
descent trajectories
∞ flight
missile trajectories
orbit calculation
orbit decay
orbital mechanics
∞ platforms
reentry trajectories
rendezvous
rendezvous trajectories
space flight
space mechanics
spacecraft reentry
spacecraft trajectories
thrust programming
trajectories
trajectory measurement
trajectory optimization

flight nurses

GS personnel
. medical personnel
. . **flight nurses**
RT crews

flight operations

DEF Collective term for ground support operations by flight crew or support personnel preparatory to space flight, or tasks performed by crew during flight.

GS **flight operations**
. crew procedures (inflight)
RT aircraft maintenance

flight optimization

- crew procedures (preflight)
- ground handling
- onboard equipment
- preflight operations
- refueling

flight optimization

- GS optimization
 - . **flight optimization**
- RT burning time
 - Earth-Venus trajectories
- ∞ flight
 - great circles
 - orbital mechanics
 - orbits
 - parking orbits
 - space flight
 - thrust programming
 - trajectories
 - trajectory optimization

flight paths

DEF Paths made or followed in the air or in space by an aircraft or rocket; the continuous series of positions occupied by a flying body; more strictly, the path of the center of gravity of the flying body, referred to the Earth or other fixed reference.

- GS **flight paths**
 - . glide paths
- RT air navigation
 - air traffic
 - air traffic control
 - aircraft instruments
 - aircraft maneuvers
 - airspace
 - approach
 - approach control
 - area navigation
 - caustic lines
 - climbing flight
 - collision avoidance
 - collisions
 - descent
- ∞ drift
- ∞ flight
 - gliding
 - Global Positioning System
 - great circles
 - ground tracks
 - guidance (motion)
 - horizontal flight
 - missile trajectories
 - National Airspace Utilization System
 - navigation
 - navigation aids
 - orbits
- ∞ paths
 - reentry
 - rocket flight
 - satellite ground tracks
 - solar compasses
 - swath width
 - Tacan
 - trajectories
 - turning flight
 - uncontrolled reentry (spacecraft)
 - vertical flight
 - visual flight

flight performance

USE **flight characteristics**

flight plans

- RT air navigation
 - air traffic
 - air traffic control
 - approach
 - instrument flight rules
 - National Airspace Utilization System
- ∞ plans
 - routes
 - thrust programming
 - weather

flight recorders

- GS aircraft instruments
 - . **flight recorders**
 - . . flight load recorders
 - data recorders

- . **flight recorders**
- . . flight load recorders
- measuring instruments
- . **flight recorders**
- . . flight load recorders
- recording instruments
- . **flight recorders**
- . . flight load recorders

flight rules

- GS rules
 - . **flight rules**
 - . . instrument flight rules
 - . . visual flight rules
- RT air navigation
 - air traffic control
 - collision avoidance
 - National Airspace Utilization System
 - National Aviation System
 - noise reduction

flight safety

- GS safety
 - . **flight safety**
- RT aerospace safety
 - air piracy
 - air traffic control
 - aircraft accidents
 - aircraft approach spacing
 - aircraft hazards
 - aircraft icing
 - aircraft safety
 - aircraft spin
 - all-weather landing systems
 - aviation meteorology
 - collision avoidance
 - crashes
 - crashworthiness
 - destruction
 - emergency landing
- ∞ flight
- ∞ flight stress
 - flying ejection seats
 - midair collisions
 - onboard equipment
 - runway incursions
 - safety devices
 - self sealing
 - terrorism
 - visual flight

flight simulation

- GS simulation
 - . **flight simulation**
 - . . in-flight simulation
- RT acoustic simulation
 - altitude simulation
 - analog simulation
 - computerized simulation
 - control simulation
 - environment simulation
 - landing simulation
 - motion simulation
 - scene generation
 - space environment simulation
 - space flight
 - systems simulation
 - training simulators
 - virtual reality
 - weightlessness simulation

flight simulators

DEF Training devices or apparatus that simulate certain conditions of flight or of flight operations.

- GS simulators
 - . training simulators
 - . . **flight simulators**
 - . . . cockpit simulators
 - training devices
 - . training simulators
 - . . **flight simulators**
 - . . . cockpit simulators
- RT atmospheric entry simulation
 - centrifuges
 - control simulation
 - cryogenic wind tunnels
 - in-flight simulation
 - Langley complex coordinator
 - lunar orbit and landing simulators

- ∞ missile simulators
- motion simulation
- motion simulators
- pilot training
- space environment simulation
- space simulators
- test facilities
- training devices
- wind tunnels

flight stability tests

- GS flight tests
 - . **flight stability tests**
 - stability tests
 - . **flight stability tests**
- RT aerodynamic stability
- ∞ tests

∞ flight stress

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT flight fatigue
 - flight fitness
 - flight safety
 - human factors engineering
 - space flight stress
 - stress analysis
 - stresses

flight stress (biology)

- SN (EXCLUDES MECHANICAL STRESS AND AND STRAIN)
- GS stress (biology)
 - . **flight stress (biology)**
 - . . space flight stress
- RT acceleration (physics)
 - biological effects
- ∞ biology
 - flight fatigue
 - jet lag
 - physiological factors
 - psychological factors
 - stress (physiology)
 - stress (psychology)
 - weightlessness

flight surgeons

- GS personnel
 - . medical personnel
 - . . surgeons
 - . . . **flight surgeons**

flight technical error

USE **pilot error**

flight termination systems

USE **abort apparatus**

flight test instruments

- GS flight instruments
 - . **flight test instruments**
- RT aircraft instruments
 - rocket-borne instruments
 - spacecraft instruments

flight test vehicles

DEF Test vehicles for the conduct of flight tests either to test its own capabilities or to carry equipment requiring flight tests.

- GS test vehicles
 - . **flight test vehicles**
- RT ∞ aircraft
 - launch vehicles
 - missiles
 - research aircraft
- ∞ spacecraft
- ∞ vehicles
 - X-36 aircraft

flight tests

DEF Tests by means of actual or attempted flight to see how an aircraft, spacecraft, space-air vehicle, or missile flies. Tests of a component part of a flying vehicle, or of an object carried in such a vehicle, to determine its suitability or reliability in terms of its intended function by making it endure actual flight.

- GS **flight tests**
 - . flight stability tests
- RT air start

- aircraft design
- altitude tests
- certification
- DAST program
- downrange
- dynamic tests
- engine tests
- ∞ flight
 - flight envelopes
 - free flight test apparatus
 - full scale tests
 - ground tests
 - high altitude tests
 - highly maneuverable aircraft
 - in-flight monitoring
 - in-flight simulation
 - missile design
 - missile tests
 - postmission analysis (spacecraft)
 - space electric rocket tests
 - stability tests
- ∞ tests
 - vibration tests
 - wing flow method tests
- flight time**
 - DEF The time from the moment an aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing.
 - GS time
 - . **flight time**
 - RT air traffic control
 - burning time
 - ∞ flight
 - testing time
 - trajectories
 - transit time
 - turnaround (STS)
 - windows (intervals)
- flight training**
 - GS education
 - . **flight training**
 - . . pilot training
 - . . space flight training
 - . . . astronaut training
 - RT ejection training
 - flying personnel
 - training simulators
- ∞ **flight vehicles**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT aircraft configurations
 - ground effect machines
 - hypersonic vehicles
 - lunar flying vehicles
 - missiles
 - reentry vehicles
 - research vehicles
 - rocket vehicles
 - ∞ vehicles
- flint**
 - GS chalcogenides
 - . oxides
 - . . dioxides
 - . . . **flint**
 - silicon compounds
 - . **flint**
 - RT quartz
- flip-flops**
 - DEF Devices having two stable states and two input terminals (or types of input signals) each of which corresponds with one of the two states. The circuits remain in either state until caused to change to the other state by application of the corresponding signal. Similar bistable devices with an input which allows it to act as a single-stage binary counter. Used for bistable amplifiers.
 - UF *bistable amplifiers*
 - GS circuits
 - . bistable circuits
 - . . **flip-flops**
 - . . multivibrators
 - . . **flip-flops**
- RT computer storage devices
 - data storage
 - fluid switching elements
 - fluidic circuits
 - oscillators
- FLIR detectors**
 - DEF Forward-looking infrared detectors for sensing all emissions of heat or light. Used for forward looking infrared detectors.
 - UF *forward looking infrared detectors*
 - GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . radiometers
 - infrared detectors
 - **FLIR detectors**
 - . . infrared instruments
 - . . . infrared detectors
 - **FLIR detectors**
 - RT ∞ detectors
 - infrared radar
 - ∞ sensors
- float zones**
 - RT crystal growth
 - melts (crystal growth)
 - silicon
 - solar cells
 - space processing
 - zone melting
- floating**
 - RT ballast (mass)
 - buoyancy
 - floats
- floating point arithmetic**
 - GS number theory
 - . arithmetic
 - . . **floating point arithmetic**
 - RT computer programs
 - computers
 - data processing
- floats**
 - UF *flotation systems*
 - RT ballast (mass)
 - buoys
 - emergency life sustaining systems
 - floating
 - inflatable structures
 - landing gear
 - life rafts
 - rafts
 - separators
- flocculating**
 - RT agglomeration
 - coagulation
 - coalescing
 - colloiding
 - concentrating
 - flotation
 - micelles
 - precipitation (chemistry)
 - settling
 - water treatment
- flood control**
 - DEF The prevention or reduction of damage caused by flooding, as by containing water in reservoirs removed from areas where it would do damage, improving channel capacity to convey water past or through critical areas with the least amount of damage, and diverting excess water into bypasses or floodways.
 - RT canals
 - ∞ control
 - dams
 - drainage
 - hydrology
 - rainstorms
 - storm damage
 - storms (meteorology)
 - watersheds
- flood damage**
 - GS damage
 - . **flood damage**
- RT drainage patterns
 - hydrology
 - landslides
 - precipitation (meteorology)
 - seepage
 - storms
 - storms (meteorology)
 - tides
 - water erosion
 - water flow
- flood plains**
 - DEF The surfaces or strips of relatively smooth land adjacent to river channels, constructed by the present rivers in their existing regimens and covered with water when the rivers overflow.
 - GS land
 - . plains
 - . . **flood plains**
 - landforms
 - . plains
 - . . **flood plains**
 - RT floods
 - hydrogeology
 - hydrology
- flood predictions**
 - GS predictions
 - . **flood predictions**
 - RT floods
 - hydrogeology
 - hydrology
 - precipitation (meteorology)
 - rain
 - rainstorms
 - ∞ showers
 - storms (meteorology)
 - weather forecasting
- floods**
 - DEF Rising bodies of water (as in streams, lakes, seas, or behind dams) that overtop their natural or artificial confines and that cover land not normally underwater. Especially, any relatively high streamflows that overflow their banks in any reach of the stream, or that are measured by gage height of discharge quantity.
 - RT alluvium
 - drought
 - flood plains
 - flood predictions
 - hydrology
 - hydrology models
 - Mississippi River (US)
 - precipitation (meteorology)
 - storm damage
 - storms
 - storms (meteorology)
 - tides
 - water flow
 - water management
 - watersheds
- floors**
 - UF *decks (floors)*
 - RT basements
 - buildings
 - ceilings (architecture)
 - doors
 - ∞ platforms
 - substructures
 - tiles
 - walls
- Floquet theorem**
 - GS theorems
 - . **Floquet theorem**
 - RT differential equations
 - linear equations
 - periodic functions
- flora*
 - USE **plants (botany)**
- Florida**
 - GS nations
 - . United States
 - . . **Florida**
 - RT Everglades (FL)

flotation

Gulf of Mexico
Merritt Island (FL)

flotation

RT activation
beneficiation
classifiers
coagulation
concentrating
flocculating
fluid rotor gyroscopes
foaming
levitation
∞ separation
settling
size separation
suspension systems (vehicles)
water treatment

flotation systems

USE **floats**

∞ flour

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT fines
flour (food)

flour (food)

RT ∞ flour
∞ food
millet
powder (particles)

∞ flow

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF A stream or movement of air or other fluid, or the rate of fluid movement, in the open or in a duct, pipe, or passage; specifically, an airflow.
RT aerodynamics
annular flow
Brillouin flow
cavity flow
circulation
corner flow
creep properties
cross flow
exhaust nozzles
flow equations
flow velocity
fluid flow
grazing flow
heat transmission
information flow
interactional aerodynamics
inviscid flow
low density flow
mass flow
orifice flow
outlet flow
panel method (fluid dynamics)
plastic flow
reacting flow
shear flow
solids flow
steady flow
transonic flow
unsteady flow
viscous flow

flow chambers

RT ∞ chambers

flow characteristics

GS dynamic characteristics
. **flow characteristics**
. . flow distribution
. . flow stability
. . . boundary layer stability
. . . flame stability
. . . magnetohydrodynamic stability
. . . . Weibel instability
. . . . Goertler instability
. . . Taylor instability
. . flow velocity
. . . solar wind velocity
RT barotropic flow

∞ characteristics
critical flow
cross flow
eddy viscosity
inviscid flow
laminar flow
nonuniform flow
outlet flow
reattached flow
separated flow
steady flow
Strouhal number
subcritical flow
supercritical flow
turbulence
turbulent flow
viscosity
viscous flow

flow charts

DEF Graphical representations of sequences of operations using symbols to represent the operations. Flow charts are more detailed representations than diagrams.

GS charts

. **flow charts**

RT block diagrams
computer programming
data flow analysis
∞ flow graphs
mathematical models

flow coefficients

GS coefficients
. **flow coefficients**
. . discharge coefficient
RT aerodynamic coefficients
attenuation coefficients
mass flow factors
nozzle thrust coefficients
reflectance
transport properties

flow deflection

RT computational fluid dynamics
deflectors
flow distribution
flow velocity
Prandtl-Meyer expansion

flow direction indicators

GS display devices
. **flow direction indicators**
. . wind vanes
measuring instruments
. indicating instruments
. . **flow direction indicators**
. . . wind vanes

flow distortion

GS distortion
. **flow distortion**
RT aerodynamic coefficients
fluid flow
horseshoe vortices
multiphase flow
Orr-Sommerfeld equations
oscillating flow
small perturbation flow
vortices
wing tip vortices

flow distribution

UF *flow fields*
flow patterns
GS distribution (property)
. **flow distribution**
dynamic characteristics
. flow characteristics
. . **flow distribution**
RT boundary layer flow
boundary layer separation
boundary layer thickness
cavitation flow
Chapman-Enskog theory
exhaust flow simulation
field theory (physics)
flow deflection
∞ flow graphs
hydrodynamic coefficients

isothermal flow
method of characteristics
numerical flow visualization
particle image velocimetry
reattached flow
rheoelectrical simulation
separated flow
stagnation point
Strouhal number
three dimensional bodies
trapped vortices
velocity distribution
vortex sheets
water tunnel tests
wind tunnel tests

flow equations

GS **flow equations**

. boundary layer equations
. . Blasius equation
. Chaplygin equation
. Navier-Stokes equation
. Reynolds equation
. Von Karman equation
. vorticity equations
. . Helmholtz vorticity equation
. Burnett equations
RT Baldwin-Lomax turbulence model
Bernoulli theorem
computational fluid dynamics
convection-diffusion equation
∞ equations
∞ flow
fluid flow
k-epsilon turbulence model
particle in cell technique
Percus method
Rayleigh equations
Reynolds averaging
space-time CE/SE method
turbulence models

flow fields

USE **flow distribution**

flow geometry

GS geometry
. **flow geometry**
RT annular flow
axial flow
axisymmetric flow
backward facing steps
bypass ratio
channel flow
coaxial flow
core flow
cross flow
ducted flow
helical flow
horseshoe vortices
inlet airframe configurations
inlet flow
laminar flow
meridional flow
nozzle flow
one dimensional flow
parallel flow
radial flow
steady flow
stratified flow
three dimensional flow
two dimensional flow
wedge flow

∞ flow graphs

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT equipotentials
flow charts
flow distribution
signal flow graphs

flow measurement

GS mechanical measurement
. **flow measurement**
. . particle image velocimetry
RT anemometers
annuli
drag force anemometers

drag measurement
 flowmeters
 fluid flow
 gas meters
 hot-film anemometers
 hot-wire anemometers
 laser doppler velocimeters
 ∞ measurement
 multiphase flow
 nonintrusive measurement
 ∞ nozzles
 orifices
 pitot tubes
 pneumatic probes
 pressure measurement
 pressure sensitive paints
 rheology
 solids flow
 velocity measurement
 Venturi tubes
 water flow
 wind velocity

flow nets

RT equipotentials
 seepage

flow noise

(added March 2000)

DEF Noise produced by the flow of fluids around or through a body; the pressure variations associated with a turbulent flow field.

GS elastic waves
 . sound waves
 . . noise (sound)
 . . . **flow noise**
 aerodynamic noise
 blade slap noise
 propeller noise
 screech tones

RT aeroacoustics
 ducted flow
 Fflowcs Williams-Hawkings equation
 nozzle flow
 pipe flow
 underwater acoustics

flow patterns

USE **flow distribution**

flow rate

USE **flow velocity**

flow regulators

GS control equipment
 . regulators
 . . **flow regulators**
 . . . fuel flow regulators
 RT flowmeters
 oxygen regulators
 pressure regulators

flow resistance

GS friction
 . **flow resistance**
 . . friction drag
 . . . aerodynamic drag
 supersonic drag
 . . . viscous drag
 RT eddy viscosity
 ∞ high resistance
 ∞ low resistance
 ∞ resistance
 skin friction
 viscosity

flow separation

USE **boundary layer separation**
separated flow

flow stability

UF *hydrodynamic stability*
 GS dynamic characteristics
 . dynamic stability
 . . motion stability
 . . . **flow stability**
 boundary layer stability
 flame stability
 magnetohydrodynamic stability
 Weibel instability

. . . . Goertler instability
 Taylor instability
 . flow characteristics
 . . **flow stability**
 . . . boundary layer stability
 . . . flame stability
 . . . magnetohydrodynamic stability
 Weibel instability
 . . . Goertler instability
 . . . Taylor instability
 stability
 . dynamic stability
 . . motion stability
 . . . **flow stability**
 boundary layer stability
 flame stability
 magnetohydrodynamic stability
 Weibel instability
 Goertler instability
 Taylor instability

RT aerodynamic stability
 baroclinic instability
 directional stability
 fluid flow
 hydrodynamic equations
 hydrofoil oscillations
 Kelvin-Helmholtz instability
 laminar flow
 lateral stability
 longitudinal stability
 low speed stability
 Orr-Sommerfeld equations
 rotary stability
 steady flow
 Strouhal number
 supersonic diffusers
 systems stability
 turbulent flow
 unsteady flow
 viscous fluids
 Von Karman equation
 vortex breakdown
 vortex filaments
 vortices
 vorticity

flow theory

GS **flow theory**
 . mixing length flow theory
 RT aerodynamics
 boundary layer equations
 continuum mechanics
 convection-diffusion equation
 dislocations (materials)
 fluid flow
 fluid mechanics
 hydrodynamic equations
 hydrodynamics
 Lighthill method
 mass flow
 Navier-Stokes equation
 Orr-Sommerfeld equations
 panel method (fluid dynamics)
 pneumatics
 rheology
 solids flow
 ∞ theories

flow velocity

DEF The volume per time unit given to the flow of gasses or other fluid substances which emerge from an orifice, pump, turbine, or passes along a conduit or channel. Used for flow rate.
 UF *flow rate*
 GS dynamic characteristics
 . flow characteristics
 . . **flow velocity**
 . . . solar wind velocity
 rates (per time)
 . **flow velocity**
 . . solar wind velocity
 velocity
 . **flow velocity**
 . . solar wind velocity
 RT Biot-Savart law
 choked flow
 discharge coefficient
 dump combustors

exhaust velocity
 ∞ flow
 flow deflection
 hydrodynamic coefficients
 hypersonic flow
 hypervelocity flow
 laser anemometers
 low speed
 mass flow rate
 parallel flow
 particle image velocimetry
 subsonic flow
 supersonic flow
 transonic flow
 unsteady flow
 velocity distribution
 velocity measurement
 vortex lattice method
 vortex precession

flow visualization

UF *visualization of flow*
 GS **flow visualization**
 . numerical flow visualization
 RT differential interferometry
 fluid flow
 hydraulic analogies
 particle image velocimetry
 pressure sensitive paints
 Schlieren photography
 shadowgraph photography
 water tunnel tests
 wind tunnel models

flowmeters

GS measuring instruments
 . **flowmeters**
 . . gas meters
 . . hot-wire flowmeters
 . . rheometers
 RT electrical measurement
 flow measurement
 flow regulators
 fluid flow
 fuel gages
 hot-wire anemometers
 mechanical measurement
 orifices
 pitot tubes
 pressure gages
 pressure measurement
 sonic anemometers
 speed indicators
 turbine instruments
 velocity measurement
 Venturi tubes
 vortex precession

FLOX

UF *fluorine-liquid oxygen*
 GS liquids
 . cryogenic fluids
 . . **FLOX**
 oxidizers
 . rocket oxidizers
 . . **FLOX**
 RT fluorine
 liquid oxygen

Fllsatcom

USE **Fleet Satellite Communication System**

fluctuation

USE **variations**

fluctuation theory

RT homogeneous turbulence
 squeezed states (quantum theory)
 statistical mechanics
 ∞ theories

flue gases

DEF Gaseous combustion products from a furnace.
 GS gases
 . exhaust gases
 . . **flue gases**
 RT air pollution
 combustion products

fluence

desulfurizing
 electric power plants
 flues
 pollution control
 scrubbers

fluence

RT health physics
 ionizing radiation
 radiation counters

fluierics

GS fluidics
 . **fluierics**
 RT fluid amplifiers
 fluid switching elements
 fluidic circuits
 hydraulic analogies

flues

RT chimneys
 draft (gas flow)
 ducts
 exhaust systems
 flue gases
 vents

fluid amplification

USE **fluid amplifiers**

fluid amplifiers

UF *fluid amplification*
fluid jet amplifiers
 GS amplifiers
 . **fluid amplifiers**
 . . jet amplifiers
 RT amplification
 automatic control valves
 boundary layer control
 Coanda effect
 convergent nozzles
 fluierics
 fluidic circuits
 fluidics
 hydraulic equipment
 pneumatic equipment
 pressure recovery
 turbulent flow
 turbulent jets
 wall jets

fluid boundaries

GS boundaries
 . **fluid boundaries**
 . . gas-solid interfaces
 . . jet boundaries
 . . liquid-liquid interfaces
 . . liquid-solid interfaces
 . . liquid-vapor interfaces
 interfaces
 . **fluid boundaries**
 . . gas-solid interfaces
 . . jet boundaries
 . . liquid-liquid interfaces
 . . liquid-solid interfaces
 . . liquid-vapor interfaces
 RT backward facing steps
 boundary layers
 cavity flow
 free boundaries
 heat transfer
 interface stability
 liquid levels
 liquid surfaces
 pressure gradients

fluid dynamics

UF *cascades (fluid dynamics)*
 GS mechanics (physics)
 . fluid mechanics
 . . **fluid dynamics**
 . . . computational fluid dynamics
 . . . gas dynamics
 . . . aerodynamics
 aerothermodynamics
 hypersonics
 rotor aerodynamics
 supersonics
 unsteady aerodynamics
 . . . interactional aerodynamics

. . . . rarefied gas dynamics
 . . . hydrodynamics
 elasto-hydrodynamics
 . . . electrohydrodynamics
 magnetohydrodynamics
 . . . rotors

. . . vortex shedding

RT continuity equation
 convection

∞ dynamics
 Eyring theory
 fluid management
 flux vector splitting
 gas-solid interactions

geophysical fluids
 Glimm method

∞ hydraulics

hydromechanics
 kinetics
 Magnus effect
 ocean dynamics
 panel method (fluid dynamics)
 piston theory

primitive equations
 quasi-steady states

∞ science

slamming
 stagnation point
 steady state
 streamlining
 thermohydraulics
 turbulence
 unsteady state
 vortex filaments

fluid filled shells

DEF Shells of revolution containing a gas or liquid.

GS shells (structural forms)
 . **fluid filled shells**
 . . liquid filled shells

RT hydrodynamic ram effect
 propellant tanks
 reinforced shells
 shell stability

∞ storage

tanks (containers)
 ∞ vessels

fluid films

GS **fluid films**
 . squeeze films

RT ∞ films
 gas bearings
 liquid-solid interfaces

fluid filters

UF *mass filters*
particulate filters

GS separators
 . **fluid filters**
 . . air filters

RT centrifuges
 concentrators

∞ filters

filtration
 fluidized bed processors
 sieves
 sizing screens

fluid flow

UF *induced fluid flow*
rotational flow

GS **fluid flow**
 . adiabatic flow
 . axial flow
 . axisymmetric flow
 . . annular flow
 . . Karman-Bodewadt flow
 . barotropic flow
 . base flow
 . Beltrami flow
 . blood flow
 . capillary flow
 . cascade flow
 . choked flow
 . coaxial flow
 . compressible flow
 . . Ringleb flow
 . . transonic flow

. conical flow
 . convective flow
 . . Rayleigh-Benard convection
 . . Benard cells
 . . buoyancy-driven flow
 . core flow
 . corner flow
 . counterflow
 . critical flow
 . cross flow
 . free flow
 . fuel flow
 . . propellant transfer
 . gas flow
 . . air flow
 . . . air currents
 jet streams (meteorology)
 meridional flow
 vertical air currents
 . . continuum flow
 . . cooling flows (astrophysics)
 . . equilibrium flow
 . . frozen equilibrium flow
 . . . shifting equilibrium flow
 . . free molecular flow
 . . Knudsen flow
 . . molecular flow
 . . . slip flow
 . . . transition flow
 . . nonequilibrium flow
 . . pipe flow
 . . head (fluid mechanics)
 . . head flow
 . . pressure heads
 . . helical flow
 . . hypersonic flow
 . . hypervelocity flow
 . . incompressible flow
 . . Stokes flow
 . . internal flow
 . . cavity flow
 . . channel flow
 . . . open channel flow
 . . ducted flow
 . . . Knudsen flow
 . . inlet flow
 . . nozzle flow
 . . pipe flow
 . . inviscid flow
 . . stagnation flow
 . . isothermal flow
 . . jet flow
 . . air jets
 . . jet mixing flow
 . . peripheral jet flow
 . . supersonic jet flow
 . . laminar flow
 . . Blasius flow
 . . Hartmann flow
 . . stratified flow
 . . liquid flow
 . . open channel flow
 . . water flow
 . . low density flow
 . . magnetohydrodynamic flow
 . . mass flow
 . . multiphase flow
 . . two phase flow
 . . nonNewtonian flow
 . . nonuniform flow
 . . one dimensional flow
 . . orifice flow
 . . outlet flow
 . . parallel flow
 . . wedge flow
 . . pipe flow
 . . three dimensional flow
 . . . Karman-Bodewadt flow
 . . . secondary flow
 . . plastic flow
 . . Tresca flow
 . . potential flow
 . . equipotentials
 . . radial flow
 . . reacting flow
 . . combustable flow
 . . recirculative fluid flow
 . . reversed flow
 . . shear flow

- . single-phase flow
- . small perturbation flow
- . solids flow
- . steady flow
- .. Couette flow
- .. Hartmann flow
- .. Ringleb flow
- . steam flow
- . subcritical flow
- . subsonic flow
- . supercritical flow
- . supersonic flow
- .. supersonic jet flow
- . turbulent flow
- .. cavitation flow
- .. . supercavitating flow
- . two dimensional flow
- .. Couette flow
- .. Ringleb flow
- . uniform flow
- .. Blasius flow
- . unsteady flow
- .. oscillating flow
- . viscous flow
- .. boundary layer flow
- .. . reattached flow
- .. . secondary flow
- .. . separated flow
- boundary layer separation
- .. Couette flow
- .. Karman-Bodewadt flow
- .. Stokes flow
- . wall flow
- RT acoustic streaming
- annular ducts
- Bernoulli theorem
- boundary layers
- canals
- Cartan space
- chemical engineering
- circulation
- coaxial nozzles
- ∞ conductivity
- convection currents
- ∞ currents
- dimensional analysis
- dimensionless numbers
- drag reduction
- duct geometry
- expulsion
- ∞ flow
- flow distortion
- flow equations
- flow measurement
- flow stability
- flow theory
- flow visualization
- flowmeters
- fluidics
- ∞ fluids
- friction
- Froude number
- geophysical fluid flow cells
- heat transmission
- ∞ hydraulics
- hydrodynamics
- hydromechanics
- injection
- labyrinth seals
- leakage
- Lewis numbers
- Magnus effect
- Manning theory
- materials handling
- mechanical engineering
- ocean currents
- ocean surface
- pipes (tubes)
- planetary waves
- pressure gradients
- Rayleigh waves
- Reynolds number
- skin friction
- solar convection (astronomy)
- stellar convection
- streams
- supersonic boundary layers
- surges
- syringes

- thermohydraulics
- ultrasonic cleaning
- vortices
- wing flow method tests
- fluid injection**
- GS injection
- . **fluid injection**
- .. gas injection
- .. liquid injection
- .. . deep well injection (wastes)
- .. . water injection
- RT channel flow
- fuel injection
- inlet flow
- laminar mixing
- nozzle flow
- secondary injection

fluid jet amplifiers
 USE **fluid amplifiers**
jet amplifiers

fluid jets

- GS **fluid jets**
- . air jets
- . free jets
- . gas jets
- . hydraulic jets
- . vapor jets
- RT jet amplifiers
- jet flow
- jet mixing flow
- jet streams (meteorology)
- ∞ jets
- plasma jets

fluid logic

- RT computer design
- fluidic circuits
- fluidics
- ∞ logic
- logic circuits

fluid management

DEF The isolation and separation of liquids from gas in a storage vessel which operates in a reduced or zero gravity environment using liquid acquisition devices such as those used in the Space Shuttle RCS tankage.

- RT cryogenic fluid storage
- cryogenic fluids
- cryogenic rocket propellants
- fluid dynamics
- fuel control
- microgravity

fluid mechanics

DEF The experimental and mathematical study of the mechanical properties of gases and liquids at rest and in motion.

- GS mechanics (physics)
- . **fluid mechanics**
- .. fluid dynamics
- .. . computational fluid dynamics
- .. . gas dynamics
- aerodynamics
- aerothermodynamics
- hypersonics
- rotor aerodynamics
- supersonics
- unsteady aerodynamics
- interactional aerodynamics
- rarefied gas dynamics
- .. . hydrodynamics
- elasto-hydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- rotors
- vortex shedding
- hydromechanics
- hydrodynamics
- elasto-hydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- hydrostatics
- magnetohydrostatics
- pneumatics
- RT aerostatics
- ∞ bleeding

- continuum mechanics
- diffusivity
- ∞ dynamics
- flat plates
- flow theory
- fluidics
- ∞ hydraulics
- hydrodynamic equations
- incompressibility
- kinetics
- Maxwell fluids
- micropolar fluids
- ∞ science
- statics
- supercritical fluids
- thermodynamics

fluid power

- RT compressible fluids
- fluid pressure
- fluidic circuits
- fluidics
- hydraulic control
- hydraulic equipment
- ∞ hydraulics
- hydrodynamics
- incompressible fluids
- pneumatic control
- pneumatic equipment
- pneumatics
- ∞ power
- ∞ pressure drop
- working fluids

fluid pressure

- GS pressure
- . **fluid pressure**
- .. water pressure
- RT beta factor
- fluid power
- fluidics
- ∞ fluids
- hydraulic fluids

fluid rotor gyroscopes

- GS gyroscopes
- . rotary gyroscopes
- .. **fluid rotor gyroscopes**
- RT flotation
- gimbals

fluid shifts (biology)
(added August 2004)

DEF Translocation of body fluids from one compartment to another, such as from the vascular to the interstitial compartments. Fluid shifts are associated with profound changes in vascular permeability and water-electrolyte imbalance. The shift can also be from the lower body to the upper body as in conditions of weightlessness.

- GS biological effects
- . **fluid shifts (biology)**
- RT aerospace medicine
- body fluids
- gravitational physiology
- lower body negative pressure
- orthostatic tolerance
- physiological effects

fluid switching elements

- GS circuits
- . switching circuits
- .. **fluid switching elements**
- switches
- . switching circuits
- .. **fluid switching elements**
- RT acoustic streaming
- automatic control valves
- flip-flops
- flueries
- fluidic circuits
- fluidics
- hydraulic equipment
- pneumatic equipment

fluid transmission lines

- GS transmission lines
- . **fluid transmission lines**
- RT hydraulic fluids

fluidic circuits

transmission fluids
working fluids

fluid transpiration

USE **transpiration**

fluidic circuits

GS circuits

. **fluidic circuits**

RT flip-flops

fluierics

fluid amplifiers

fluid logic

fluid power

fluid switching elements

fluidics

fly by tube control

microfluidic devices

fluidics

GS **fluidics**

. fluierics

RT amplification

∞ control

fluid amplifiers

fluid flow

fluid logic

fluid mechanics

fluid power

fluid pressure

fluid switching elements

fluidic circuits

hydraulic analogies

hydraulic control

internal flow

∞ logic

microfluidic devices

pneumatic circuits

pneumatic control

pneumatic equipment

pneumatics

fluidized bed processors

RT beds (process engineering)

chemical reactors

fluid filters

furnaces

separators

∞ fluids

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

anisotropic fluids

binary fluids

body fluids

cerebrospinal fluid

compressible fluids

conducting fluids

cryogenic fluids

ferrofluids

fluid flow

fluid pressure

gases

gyroscope fluids

high temperature fluids

hydraulic fluids

ideal fluids

incompressible fluids

liquids

magnetorheological fluids

Maxwell fluids

micropolar fluids

Newtonian fluids

nonequilibrium flow

nonNewtonian fluids

rheology

rotating fluids

serums

siphoning

solids

supercritical fluids

superfluidity

transmission fluids

viscous fluids

weightless fluids

working fluids

fluid-solid interactions

DEF The interactions of a rigid or elastic structure with an incompressible or compress-

ible fluid. Airblast loading and response, acoustic interaction, aeroelasticity, and hydroelasticity comprise its major divisions.

GS **fluid-solid interactions**

. gas-solid interactions

. . gas-metal interactions

RT gas-solid interfaces

∞ interactions

liquid-solid interfaces

surface reactions

fluorescence

DEF Emission of light or other radiant energy as a result of and only during absorption of radiation of a different wavelength from some other source. Used for fluorescent emission.

UF *fluorescent emission*

GS emission

. light emission

. . luminescence

. . . **fluorescence**

. . . . laser induced fluorescence

. . . . phosphorescence

. . . . resonance fluorescence

. . . . x ray fluorescence

RT electromagnetic absorption

extinction

Mossbauer effect

phosphors

photoexcitation

photoluminescence

plasma radiation

rhodamine

temperature sensitive paints

triboluminescence

fluorescent emission

USE **fluorescence**

fluorides

GS halogen compounds

. fluorine compounds

. . **fluorides**

. . . antimony fluorides

. . . barium fluorides

. . . boron fluorides

. . . chlorine fluorides

. . . compound A

. . . cryolite

. . . deuterium fluorides

. . . difluorides

. . . . calcium fluorides

. fluorspar

. . . hydrofluoric acid

. . . metal fluorides

. . . . aluminum fluorides

. . . . beryllium fluorides

. . . . cadmium fluorides

. . . . calcium fluorides

. fluorspar

. . . . cesium fluorides

. . . . chromium fluorides

. . . . cobalt fluorides

. . . . copper fluorides

. . . . lanthanum fluorides

. . . . lithium fluorides

. . . . magnesium fluorides

. . . . nickel fluorides

. . . . plutonium fluorides

. . . . protactinium fluorides

. . . . sodium fluorides

. . . . strontium fluorides

. . . . thorium fluorides

. . . . tungsten fluorides

. . . . uranium fluorides

. . . . zinc fluorides

. . . . zirconium fluorides

. . . nitrogen fluorides

. . . nitril fluorides

. . . oxyfluorides

. . . oxygen fluorides

. . . ozone fluoride

. . . perchloryl fluorides

. . . polyvinyl fluoride

. . . sulfur fluorides

. . . . sulfur hexafluoride

. . . . technetium fluorides

. . . halides

. . . **fluorides**

. . . . antimony fluorides

. . . barium fluorides

. . . boron fluorides

. . . chlorine fluorides

. . . compound A

. . . cryolite

. . . deuterium fluorides

. . . difluorides

. . . . calcium fluorides

. fluorspar

. . . hydrofluoric acid

. . . metal fluorides

. . . . aluminum fluorides

. . . . beryllium fluorides

. . . . cadmium fluorides

. . . . calcium fluorides

. fluorspar

. . . . cesium fluorides

. . . . chromium fluorides

. . . . cobalt fluorides

. . . . copper fluorides

. . . . lanthanum fluorides

. . . . lithium fluorides

. . . . magnesium fluorides

. . . . nickel fluorides

. . . . plutonium fluorides

. . . . protactinium fluorides

. . . . sodium fluorides

. . . . strontium fluorides

. . . . thorium fluorides

. . . . tungsten fluorides

. . . . uranium fluorides

. . . . zinc fluorides

. . . . zirconium fluorides

. . . nitrogen fluorides

. . . nitril fluorides

. . . oxyfluorides

. . . oxygen fluorides

. . . ozone fluoride

. . . perchloryl fluorides

. . . polyvinyl fluoride

. . . sulfur fluorides

. . . . sulfur hexafluoride

. . . . technetium fluorides

RT excimer lasers

fluorination

GS chemical reactions

. halogenation

. . **fluorination**

RT defluorination

fluorine

GS chemical elements

. halogens

. . **fluorine**

. . . fluorine isotopes

. . . liquid fluorine

RT FLOX

oxidizers

fluorine compounds

GS halogen compounds

. **fluorine compounds**

. . fluorides

. . . antimony fluorides

. . . barium fluorides

. . . boron fluorides

. . . chlorine fluorides

. . . compound A

. . . cryolite

. . . deuterium fluorides

. . . difluorides

. . . . calcium fluorides

. fluorspar

. . . hydrofluoric acid

. . . metal fluorides

. . . . aluminum fluorides

. . . . beryllium fluorides

. . . . cadmium fluorides

. . . . calcium fluorides

. fluorspar

. . . . cesium fluorides

. . . . chromium fluorides

. . . . cobalt fluorides

. . . . copper fluorides

. . . . lanthanum fluorides

. . . . lithium fluorides

. . . . magnesium fluorides

. . . . nickel fluorides

. . . . plutonium fluorides

- protactinium fluorides
- sodium fluorides
- strontium fluorides
- thorium fluorides
- tungsten fluorides
- uranium fluorides
- zinc fluorides
- zirconium fluorides
- . . . nitrogen fluorides
- . . . nitril fluorides
- . . . oxyfluorides
- . . . oxygen fluorides
- . . . ozone fluoride
- . . . perchloryl fluorides
- . . . polyvinyl fluoride
- . . . sulfur fluorides
- . . . sulfur hexafluoride
- . . . technetium fluorides
- . . . fluorite
- . . . fluoro compounds
- . . . cryolite
- . . . difluoro compounds
- . . . perfluoroalkane
- . . . polytetrafluoroethylene
- teflon (trademark)
- . . . fluorine organic compounds
- fluoroamines
- nitrofluoroamines
- trifluoroamine oxide
- fluorocarbons
- fluorohydrocarbons
- carbon tetrafluoride
- chlorofluoromethane
- polytetrafluoroethylene
- teflon (trademark)
- fluoropolymers
- polytetrafluoroethylene
- teflon (trademark)
- KEL-F
- polyvinyl fluoride
- perfluoroalkane
- perfluoroguanidine
- . . . fluorosilicates
- . . . tetrafluorohydrazine

RT ∞ chemical compounds
halocarbons

fluorine isotopes

- GS chemical elements
- . halogens
- . fluorine
- . . **fluorine isotopes**
- . nuclides
- . isotopes
- . . **fluorine isotopes**

fluorine organic compounds

- UF *organic fluorine compounds*
- GS halogen compounds
- . fluorine compounds
- . fluoro compounds
- . . **fluorine organic compounds**
- . . . fluoroamines
- nitrofluoroamines
- trifluoroamine oxide
- fluorocarbons
- fluorohydrocarbons
- carbon tetrafluoride
- chlorofluoromethane
- polytetrafluoroethylene
- teflon (trademark)
- fluoropolymers
- polytetrafluoroethylene
- teflon (trademark)
- KEL-F
- polyvinyl fluoride
- perfluoroalkane
- perfluoroguanidine
- organic compounds
- . **fluorine organic compounds**
- . . fluoroamines
- . . . nitrofluoroamines
- . . . trifluoroamine oxide
- . . fluorocarbons
- . . fluorohydrocarbons
- . . . carbon tetrafluoride
- . . . chlorofluoromethane
- . . . polytetrafluoroethylene
- teflon (trademark)

- . . fluoropolymers
- . . . polytetrafluoroethylene
- teflon (trademark)
- KEL-F
- . . . polyvinyl fluoride
- . . . perfluoroalkane
- . . . perfluoroguanidine

RT ∞ chemical compounds

fluorine-liquid oxygen
USE **FLOX**

fluorite

- GS calcium compounds
- . **fluorite**
- halogen compounds
- . fluorine compounds
- . . **fluorite**
- minerals
- . **fluorite**

fluoro compounds

- GS halogen compounds
- . fluorine compounds
- . . **fluoro compounds**
- . . . cryolite
- . . . difluoro compounds
- . . . perfluoroalkane
- . . . polytetrafluoroethylene
- teflon (trademark)
- . . . fluorine organic compounds
- fluoroamines
- nitrofluoroamines
- trifluoroamine oxide
- fluorocarbons
- fluorohydrocarbons
- carbon tetrafluoride
- chlorofluoromethane
- polytetrafluoroethylene
- teflon (trademark)
- fluoropolymers
- polytetrafluoroethylene
- teflon (trademark)
- KEL-F
- polyvinyl fluoride
- perfluoroalkane
- perfluoroguanidine
- . . . fluorosilicates
- . . . tetrafluorohydrazine

RT ∞ chemical compounds
halocarbons

fluoroamines

- GS halogen compounds
- . fluorine compounds
- . fluoro compounds
- . fluorine organic compounds
- . . . **fluoroamines**
- nitrofluoroamines
- trifluoroamine oxide
- organic compounds
- . amines
- . **fluoroamines**
- . . nitrofluoroamines
- . . trifluoroamine oxide
- . fluorine organic compounds
- . . **fluoroamines**
- . . . nitrofluoroamines
- . . trifluoroamine oxide

fluorocarbons

- DEF All compounds containing fluorine and carbon (including other elements).
- GS carbon compounds
- . halocarbons
- . . **fluorocarbons**
- halogen compounds
- . fluorine compounds
- . fluoro compounds
- . . fluorine organic compounds
- . . . **fluorocarbons**
- . . . halocarbons
- . . . **fluorocarbons**
- organic compounds
- . fluorine organic compounds
- . . **fluorocarbons**

RT chlorofluorocarbons
fluorohydrocarbons
fluoropolymers

- halon

fluorohydrocarbons

- GS halogen compounds
- . fluorine compounds
- . fluoro compounds
- . . fluorine organic compounds
- . . . **fluorohydrocarbons**
- carbon tetrafluoride
- chlorofluoromethane
- polytetrafluoroethylene
- teflon (trademark)
- organic compounds
- . fluorine organic compounds
- . . **fluorohydrocarbons**
- . . . carbon tetrafluoride
- . . . chlorofluoromethane
- . . . polytetrafluoroethylene
- teflon (trademark)
- . hydrocarbons
- . . **fluorohydrocarbons**
- . . . carbon tetrafluoride
- . . . chlorofluoromethane
- . . . polytetrafluoroethylene
- teflon (trademark)

RT fluorocarbons
freon
refrigerants
Viton rubber (trademark)

fluoromica
USE **fluorosilicates**
mica

fluorophlogopite

- GS minerals
- . mica
- . . **fluorophlogopite**

fluoroplastics
USE **fluoropolymers**

fluoropolymers

- DEF A family of polymers based on fluorine replacement of hydrogen atoms in hydrocarbon molecules. Compounds are characterized by chemical inertness, thermal stability, and low coefficient of friction. Used for fluoroplastics.
- UF *fluoroplastics*
- GS halogen compounds
- . fluorine compounds
- . fluoro compounds
- . . fluorine organic compounds
- . . . **fluoropolymers**
- polytetrafluoroethylene
- teflon (trademark)
- KEL-F
- polyvinyl fluoride
- organic compounds
- . fluorine organic compounds
- . . **fluoropolymers**
- . . . polytetrafluoroethylene
- teflon (trademark)
- KEL-F
- . . . polyvinyl fluoride

RT fluorocarbons
plastics
 ∞ polymers

fluoroscopy

- RT medical equipment
- x ray analysis

fluorosilicates

- UF *fluoromica*
- GS halogen compounds
- . fluorine compounds
- . fluoro compounds
- . . **fluorosilicates**
- silicon compounds
- . silicates
- . . **fluorosilicates**

RT minerals

fluorspar

- GS calcium compounds
- . calcium fluorides
- . . **fluorspar**
- halogen compounds
- . fluorine compounds

flushing

. . . fluorides
 difluorides
 calcium fluorides
 **fluorspar**
 metal fluorides
 calcium fluorides
 **fluorspar**
 . halides
 . . fluorides
 . . . difluorides
 calcium fluorides
 **fluorspar**
 metal fluorides
 calcium fluorides
 **fluorspar**
 . . metal halides
 . . . metal fluorides
 calcium fluorides
 **fluorspar**
 minerals
 . **fluorspar**

flushing

RT cleaning
 ejection
 elution
 expellants
 leaching
 purging
 purification
 ∞ separation
 venting
 washing
 waste water

fluting

USE **grooving**

flutter

DEF An aeroelastic self excited vibration in which the external source of energy is the airstream and which depends on the elastic, inertial and dissipative forces of the system in addition to the aerodynamic forces. Used for aerodynamic buzz and aeromagneto flutter.

UF *aerodynamic buzz*
aeromagneto flutter

GS vibration
 . structural vibration
 . . **flutter**
 . . . panel flutter
 . . . subsonic flutter
 . . . supersonic flutter
 . . . transonic flutter

RT aerodynamic noise
 aerodynamic stability
 aeroelastic research wings
 aeroelasticity
 aeroservoelasticity
 airfoil oscillations
 bending
 bending vibration
 boundary layer control
 buffeting
 compressibility effects
 DAST program
 flapping
 flight characteristics
 forced vibration
 hovering
 hydrofoil oscillations
 influence coefficient
 missile vibration
 random vibration
 resonant vibration
 self induced vibration
 shaking
 spacecraft motion
 turbulence effects
 undamped oscillations
 unsteady aerodynamics
 vibration simulators
 vibration tests
 vibrational stress
 wing oscillations

flutter analysis

GS structural analysis
 . dynamic structural analysis
 . . **flutter analysis**

RT aeroelastic research wings
 airfoil oscillations
 structural vibration
 unsteady aerodynamics

∞ flux

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF The rate of flow of some quantity, often used in reference to the flow of some form of energy. In nuclear physics generally, the number of radioactive particles per unit volume times their mean velocity.

RT flux (rate)
 flux density
 flux difference splitting
 flux quantization
 fluxes
 level (quantity)

flux (rate per unit area)

USE **flux density**

flux (rate)

SN (LIMITED TO THE TOTAL EMANATION OF ENERGY, MATERIAL OR PARTICLES FROM A SINGLE SOURCE PER UNIT TIME--SEE FLUX DENSITY FOR ENERGY, MATERIAL OR PARTICLE RATE PER UNIT AREA)

DEF The total emanation of energy, material or particles from a single source per unit time. Used for electron flux, neutron flux, and particle flux.

UF *electron flux*
neutron flux

GS *particle flux*
 rates (per time)
 . **flux (rate)**
 . . heat flux
 . . magnetic flux
 . . solar flux

RT beta particles
 brightness
 corpuscular radiation
 dosimeters
 electromagnetic radiation
 emittance

∞ energy
 field theory (physics)

∞ flux

flux density
 gamma rays
 ∞ intensity
 level (quantity)
 luminous intensity
 magnetic circuits
 magnetic induction
 magnetostatics
 particle beams
 particle diffusion
 ∞ power
 radiant flux density
 ∞ radiation
 Stefan-Boltzmann law

flux density

SN (LIMITED TO ENERGY, MATERIAL OR PARTICLE RATE PER UNIT AREA, THE QUANTITY USUALLY MEASURED--SEE FLUX (RATE) FOR TOTAL EMANATION FROM A SINGLE SOURCE PER UNIT TIME)

DEF The flux (rate of flow) of any quantity, usually a form of energy, through a unit area of specified surface. (Note that this is not a volumetric density like radiant density.) Used for density (rate/area), energy density, flux (rate per unit area), and flux mapping.

UF *density (rate/area)*
energy density
flux (rate per unit area)
flux mapping

GS rates (per time)
 . **flux density**
 . . current density
 . . photon density
 . . radiant flux density
 . . . irradiance
 illuminance
 solar constant
 . . . lumens

. . . luminous intensity
 illuminance
 luminance
 . . . particle flux density
 electron flux density
 neutron flux density
 proton flux density
 . . . radiance
 . . . radiancy
 . . . solar flux density
 . . . solar constant
 . . sound intensity
 . . . zero sound

RT alpha particles
 angular distribution
 atom concentration
 ∞ density
 dosimeters
 electromagnetic radiation
 ∞ energy
 energy distribution
 field intensity meters
 field strength
 field theory (physics)

∞ flux

flux (rate)
 gamma rays
 heat flux
 ∞ intensity
 irradiation
 level (quantity)
 loudness
 mass distribution
 meteoroid concentration
 Onsager phenomenological coefficient
 ∞ power
 power spectra
 protons
 ∞ radiation
 radiation distribution
 radiation hazards
 remanence
 scattering functions
 Solar Maximum Mission
 sound pressure
 spectra
 x ray density measurement

flux difference splitting

(added May 1995)

UF *Roe flux difference splitting scheme*

GS analysis (mathematics)
 . numerical analysis
 . . **flux difference splitting**
 splitting

. **flux difference splitting**
 RT computational fluid dynamics
 finite difference theory

∞ flux

flux vector splitting

flux mapping

USE **flux density**
mapping

flux pinning

DEF In superconductors, the interaction between the magnetic and the metallurgical microstructures. It controls the critical current density in a given superconducting material.

GS pinning

. **flux pinning**

RT lines of force
 magnetic flux
 superconductivity
 trapped magnetic fields
 trapping

flux pumps

DEF Cryogenic DC generators.

RT magnetic coils
 magnetic fields
 superconducting magnets
 superconductivity

flux quantization

RT ∞ flux

magnetic flux

superconductors (materials)

flux transfer events

(added July 1989)

GS magnetic properties
 . magnetoactivity

. . . **flux transfer events**

RT aeronomy
 geomagnetism
 interplanetary magnetic fields
 lines of force
 magnetic effects
 magnetic field configurations
 magnetic field reconnection
 magnetic fields
 magnetic flux
 magnetopause
 magnetosphere-ionosphere coupling
 space plasmas

flux vector splitting

DEF The splitting of the nonlinear flux vectors of the conservation law form of the inviscid gasdynamic equations into subvectors by similarity transformations so that each subvector has associated with it a specified eigenvalue spectrum.

GS analysis (mathematics)
 . numerical analysis
 . . **flux vector splitting**
 splitting

. **flux vector splitting**

RT computation
 computational fluid dynamics
 eigenvalues
 finite difference theory
 fluid dynamics
 flux difference splitting
 panel method (fluid dynamics)
 vector analysis
 vectors (mathematics)
 vortex lattice method

fluxes

RT brazing

∞ flux

limestone
 soldering
 welding

fluxmeters

USE **magnetic measurement measuring instruments**

fly ash

DEF Fine particulate, essentially noncombustible refuse, carried in a gas stream from a furnace.

GS ashes

. **fly ash**

RT air pollution
 coal
 combustion products
 electric power plants
 electrostatic precipitators
 particulates
 pollution control

fly by light control

(added December 1992)

UF *FBL control*

GS flight control

. **fly by light control**

RT aircraft control
 fiber optics
 optical fibers

fly by tube control

DEF A fluidic flight control for aircraft in which a hydraulic control signal link connects the pilot's controls to the control surface actuators.

GS flight control

. **fly by tube control**

RT aircraft control
 ∞ control
 fluidic circuits
 hydraulic equipment

servoamplifiers

fly by wire control

UF *electric aircraft*

GS flight control

. **fly by wire control**

RT aircraft control
 ∞ control
 ground based control
 spacecraft control

flyby missions

DEF Interplanetary missions in which the vehicle passes close to the target planet but does not impact it or go into orbit around it.

GS space missions

. **flyby missions**

. . . Giotto mission

. . . Grand Tours

. . . . Mariner Jupiter-Saturn flyby

. . . . Mariner Jupiter-Uranus flyby

. . . . Voyager 1977 mission

. . . Comet Nucleus Tour

. . . Comet Rendezvous Asteroid Flyby Mission

. . . Deep Impact Mission

. . . Mariner Venus-Mercury 1973

. . . Mariner-Mercury 1973

. . . Near Earth Asteroid Rendezvous Mission

. . . New Horizons mission

. . . Stardust Mission

RT asteroid missions

Clementine spacecraft

Deep Space 1 Mission

Galileo project

Galileo spacecraft

interplanetary flight

long duration space flight

lunar flight

Mariner Mark 2 Spacecraft

Mariner program

∞ missions

outer planets explorers

space flight

swingby technique

TOPS (spacecraft)

Vega project

Voyager 1 spacecraft

Voyager 2 spacecraft

flying

USE **flight**

Flying Bedstead aircraft

USE **flying platforms**

Flying Crane helicopter

USE **H-17 helicopter**

flying ejection seats

GS onboard equipment

. aircraft equipment

. . . ejection seats

. . . . **flying ejection seats**

safety devices

. ejection seats

. . **flying ejection seats**

seats

. ejection seats

. . **flying ejection seats**

RT abort apparatus

aircraft safety

bailout

cockpits

ejectors

escape capsules

flight safety

jet engines

protection

flying in formation

(added October 2001)

USE **formation flying**

flying personnel

GS personnel

. **flying personnel**

. . . astronauts

. . . . orbital workers

. . . cosmonauts
 . . . flight crews
 . . . spacecrews
 . . . pilots (personnel)
 aircraft pilots
 test pilots

RT flight fitness
 flight training
 navigators

flying platform stability

USE **aerodynamic stability flying platforms**

flying platforms

UF *Flying Bedstead aircraft flying platform stability*

GS V/STOL aircraft

. vertical takeoff aircraft

. . **flying platforms**

RT ∞ aircraft

ground effect machines

jet aircraft

observation aircraft

∞ platforms

reconnaissance aircraft

research aircraft

∞ subsonic aircraft

VZ-8 aircraft

flying qualities

USE **flight characteristics**

flying spot scanners

GS optical equipment

. optical scanners

. . **flying spot scanners**

scanners

. optical scanners

. . **flying spot scanners**

RT display devices

electron guns

electron optics

image tubes

oscilloscopes

phototubes

picture tubes

television equipment

video equipment

flying wing aircraft

USE **tailless aircraft**

flying wing configurations

(added April 2001)

USE **blended-wing-body configurations**

flywheels

GS rotating bodies

. rotors

. . **flywheels**

wheels

. **flywheels**

RT

balancing

counter-rotating wheels

energy storage

engine parts

mechanical engineering

reaction wheels

FM (modulation)

USE **frequency modulation**

FM/PM (modulation)

DEF Phase modulation of a carrier by sub-carrier(s) which is (are) frequency modulated by information.

GS coding

. signal encoding

. . frequency modulation

. . . **FM/PM (modulation)**

. . . phase modulation

. . . . **FM/PM (modulation)**

modulation

. frequency modulation

. . **FM/PM (modulation)**

. . phase modulation

. . . **FM/PM (modulation)**

foaming

RT data transmission

foaming

RT beneficiation
flotation
foams
metal foams
∞ separation
surface properties
swirling
wetting

foams

UF *cellular materials (non biological)*
GS **foams**
. metal foams
RT aerogels
bubbles
colloids
explosion suppression
fire extinguishers
fire fighting
foaming
low density materials
∞ materials
polyurethane foam
styrofoam (trademark)

focal plane arrays

USE **focal plane devices**

focal plane devices

DEF Radiation sensitive devices positioned at the focal area of electromagnetic detectors. Used for focal plane arrays.
UF *focal plane arrays*
RT arrays
charge coupled devices
infrared detectors
linear arrays
mosaics
photodiodes
quantum well infrared photodetectors

foci

GS **foci**
. plasma focus
RT ∞ centers
focusing
geometry
loci
∞ optics
points (mathematics)
resolution

focusing

GS **focusing**
. defocusing
. prefocusing
. self focusing
RT accommodation
adjusting
astigmatism
cameras
distance
foci
Fresnel lenses
geometrical optics
gravitational lenses
image contrast
image enhancement
laser cutting
laser drilling
lenses
panoramic cameras
solar reflectors
steering
stigmatism
thermal lensing
vignetting

foetuses

USE **fetuses**

fog

DEF A loose term applied to visible aerosols in which the dispersed phase is liquid. Formation by condensation is usually implied. In meteorology, a dispersion of water or ice.
GS mixtures

. dispersions
. . colloids
. . . aerosols
. . . . **fog**
. . liquid-gas mixtures
. . . aerosols
. . . . **fog**
particles
. aerosols
. . **fog**

RT anvil clouds
aviation meteorology
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
drop size
haze
haze detection
hydrometeors
mist
precipitation (meteorology)
smog
smoke
steam
stratus clouds
visibility

fog dispersal

GS weather modification
. **fog dispersal**
RT aerosols
climatology
cloud physics
clouds (meteorology)
dispersing
dispersions
mist
precipitation (meteorology)

foil bearings

GS bearings
. **foil bearings**
RT gas bearings
journal bearings

∞ foils

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED-CONSULT THE TERMS LISTED BELOW)
RT airfoils
foils (materials)
hydrofoils
multilayer insulation

foils (materials)

GS **foils (materials)**
. metal foils
RT airfoils
∞ foils
hydrofoils
∞ materials
multilayer insulation
thin plates

Fokker aircraft

GS **Fokker aircraft**
. F-27 aircraft
. F-28 transport aircraft
RT ∞ aircraft

Fokker bond testers

USE **adhesion tests**

Fokker F 27 aircraft

USE **F-27 aircraft**

Fokker F 28 aircraft

USE **F-28 transport aircraft**

Fokker Friendship aircraft

USE **F-27 aircraft**

Fokker-Planck equation

GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Fokker-Planck equation**
RT Boltzmann transport equation
Brownian movements
density distribution

diffusion theory
∞ equations
ionized gases
stochastic processes

folding

UF *crimping*
RT bending
binding
curl (materials)
distortion
flexing
kinking

Folding Fin aircraft rocket vehicle

UF *FFAR rocket vehicle*
GS rocket vehicles
. **Folding Fin aircraft rocket vehicle**
RT ∞ aircraft
solid propellant rocket engines

folding structures

UF *Rogallo wings*
telescoping structures
GS **folding structures**
. sailwings
RT antennas
balloons
ballutes
expandable structures
furlable antennas
inflatable space structures
inflatable structures
paddles
parachutes
paragliders
parawings
rotary wings
space erectable structures
spacecraft structures
∞ structures
variable geometry structures
variable sweep wings

folds (geology)

DEF Curves or bends of a planar structure such as rock strata, bedding planes, foliation, or cleavage. Folds are usually a product of deformation, although their definition is descriptive and not genetic and may include primary structures. Used for nappes.
UF *nappes*
RT Earth crust
fissures (geology)
geological faults
Great Basin (US)
∞ layers
outcrops
rocks
seamounts
strata
stratification

foliage

RT brown wave effect
canopies (vegetation)
deciduous trees
defoliant
green wave effect
herbicides
leaves
locusts
plants (botany)
timber vigor

folic acid

UF *vitamin M*
GS acids
. amino acids
. . **folic acid**
. . carboxylic acids
. . **folic acid**
nitrogen compounds
. **folic acid**
organic compounds
. amino acids
. . **folic acid**
. . carboxylic acids
. . **folic acid**
. cyclic compounds

. . heterocyclic compounds
 . . . **folic acid**
 vitamins
 . **folic acid**

∞ **food**

SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)

RT alfalfa
 barley
 beverages
 broths
 caloric requirements
 canning
 carbohydrates
 citrus trees
 consumables (spacecrew supplies)
 corn
 decontamination
 dehydrated food
 diets
 digesting
 distributing
 Earth resources
 eating
 eggs
 fats
 fishes
 flour (food)
 food chain
 food production (in space)
 frozen foods
 fruits
 gelatins
 hay
 leguminous plants
 milk
 millet
 nutrition
 oats
 orchards
 peppers
 potatoes
 preserving
 proteins
 provisioning
 rations
 services
 soybeans
 space flight feeding
 space rations
 spinach
 starches
 sugar cane
 sugars
 synthetic food
 tomatoes
 vegetables
 vineyards
 vitamins
 yeast

food chain

DEF The scheme of feeding relationships
 by trophic levels which unites member species
 of a biological community.

RT animals
 ecosystems

∞ food
 plants (botany)

food intake

RT fasting
 space flight feeding
 synthetic food

food processing

DEF The transformation of foodstuffs into
 forms for easy packaging, greater palatability,
 longer storage, etc.

GS **food processing**
 . canning
 . preserving

RT dehydrated food
 frozen foods

∞ processing

food production (in space)

RT closed ecological systems

consumables (spacecrew supplies)

∞ food
 ∞ production
 space flight feeding
 space rations

footprints

DEF Ground patterns or contours of an
 acoustical or microwave nature that are predict-
 able and measurable.

RT aircraft noise
 antenna radiation patterns
 mathematical models

forbidden bands

GS energy bands

. **forbidden bands**

RT band structure of solids

∞ bands
 electron energy
 free electrons
 lattice vibrations
 wave equations

forbidden transitions

RT electron transitions
 Franck-Condon principle
 quantum theory
 selection rules (nuclear physics)

∞ solid state physics

∞ transition
 wave functions

Forbush decreases

DEF The observed decreases in cosmic ray
 activity in the Earth's atmosphere about a day
 after a solar flare. Used for Forbush effect.

UF *Forbush effect*

RT cosmic rays

∞ effects
 magnetic storms
 solar flares
 solar furnaces
 solar storms

Forbush effect

USE **Forbush decreases**

∞ **force**

SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)

DEF The cause of the acceleration of mate-
 rial bodies measured by the rate of change of
 momentum produced on a free body. Used for
 repulsion.

UF *repulsion*
 acceleration (physics)

RT aerodynamic forces
 attraction
 centrifugal force
 centripetal force
 electric field strength
 high impulse
 inertia
 kinetics
 lines of force
 loads (forces)
 Lorentz force
 newton
 nonconservative forces
 null zones
 ponderomotive forces
 pressure
 pulling
 pushing
 thrust
 thrust measurement
 torque
 torsion
 Van der Waals forces
 weight (mass)
 zero force curves

force distribution

UF *lift distribution*
normal force distribution

GS distribution (property)

. **force distribution**

RT aerodynamic coefficients
 aerodynamic loads

angular distribution
 charge distribution
 energy distribution
 influence coefficient
 lift drag ratio
 loads (forces)
 mass distribution
 moment distribution
 scale effect
 stress concentration
 stress distribution
 stress intensity factors
 sweep effect
 thrust distribution
 transverse loads
 wing loading

force fields

USE **field theory (physics)**

force vector recorders

DEF Instrumentation for recording force dis-
 placements in a variety of disciplines.

GS measuring instruments
 . **force vector recorders**
 recording instruments

. **force vector recorders**

RT ∞ instruments

forced convection

GS convection

. **forced convection**

RT blowing
 convective heat transfer
 free convection
 heat transfer
 laminar flow
 Prandtl number
 Rayleigh-Benard convection
 Stanton number

forced oscillation

USE **forced vibration**

forced vibration

DEF An oscillation of a system in which the
 response is imposed by the excitation. If the
 excitation is periodic and continuing, the oscilla-
 tion is steady state. Used for forced oscillation
 and forced vibratory motion equations.

UF *forced oscillation*
forced vibratory motion equations

GS vibration

. **forced vibration**

RT flutter
 free vibration
 random vibration
 self excitation
 self induced vibration

forced vibratory motion equations

USE **equations**

forced vibration

force-free magnetic fields

GS magnetic fields

. **force-free magnetic fields**

RT magnetic field configurations
 magnetic flux
 magnetohydrodynamic stability
 solar flares
 solar magnetic field

forearm

GS anatomy
 . limbs (anatomy)
 . . arm (anatomy)
 . . . **forearm**
 appendages
 . arm (anatomy)
 . . **forearm**

forebodies

GS **forebodies**
 . noses (forebodies)
 . . nose cones
 . . . ablative nose cones
 . . . rocket nose cones

RT afterbodies
 aircraft structures

forecasting

bluff bodies
blunt bodies
blunt leading edges
∞ bows
centerbodies
cylindrical bodies
hammerhead configuration
leading edges
sharp leading edges

forecasting

UF *forecasts*
GS predictions
. **forecasting**
. . . technological forecasting
. . . Delphi method (forecasting)
. . . pattern method (forecasting)
. . . probe method (forecasting)
. . . profile method (forecasting)
. . . weather forecasting
. . . long range weather forecasting
. . . nowcasting
. . . numerical weather forecasting
. . . statistical weather forecasting

RT ∞ analyzing
budgeting
confidence limits
correlation
curve fitting
estimates
estimating
evaluation
expectation
extrapolation
hindcasting
management
management methods
management planning
mathematical models
maximum likelihood estimates
mission planning
noise prediction (aircraft)
operations research
planning
probability theory
project planning
∞ projection
regression analysis
regression coefficients
reliability
reserves
risk
scheduling
statistical analysis
statistical distributions
systems engineering
time series analysis
trends

forecasts

USE **forecasting**

forehead

GS anatomy
. face (anatomy)
. . **forehead**
RT head (anatomy)
skull

foreign bodies

RT aircraft hazards
∞ bodies
injuries
meteorites

foreign policy

GS policies
. **foreign policy**
. . . international relations
. . . international cooperation
. . . . outer space treaty
RT ∞ budgets
European space programs

International Hydrological Decade

foreign trade

USE **international trade**

forensic sciences

USE **law (jurisprudence)**

forest fire detection

GS detection
. **forest fire detection**
RT aerial photography
∞ detectors
haze detection
infrared detectors
infrared instruments
infrared photography
infrared radiometers
infrared scanners
measuring instruments
radiometers
satellite-borne photography
surveillance

forest fires

GS fires
. **forest fires**
RT air pollution
ashes
biomass burning
combustion
fire prevention
firebreaks
flames
forests
smoke
wastes

forest management

GS management
. resources management
. . **forest management**
. . . reforestation
RT conservation
Earth resources
forests
land use
regional planning
timber inventory

forests

UF *lumbering areas*
GS resources
. Earth resources
. . **forests**
. . . rain forests
RT Amazon region (South America)
canopies (vegetation)
clearings (openings)
conifers
conservation
deciduous trees
defoliants
defoliation
deforestation
firebreaks
forest fires
forest management
herbicides
logging (industry)
plants (botany)
reforestation
regional planning
silviculture
timber identification
timber inventory
timber vigor
timberline
trees (plants)
wilderness

forging

UF *metal forging*
GS forming techniques
. **forging**
. . metal working
. **forging**
RT ausforming
billets

bulging
casting
coining
cold working
heat treatment
hot isostatic pressing
hot pressing
hot working
piercing
pressing (forming)
rheocasting
∞ rolling
squeeze casting
stamping

forks

RT conveyors
hooks

form

USE **shapes**

form factors

RT approximation
coupling coefficients
functional analysis
harmonic analysis
rectifiers
scattering coefficients
series (mathematics)
square waves
transducers
∞ variable
waveforms
x ray scattering

form perception

USE **space perception**

formaldehyde

GS aldehydes
. **formaldehyde**
RT phenol formaldehyde

formalism

RT computer programming
dynamic programming
hardware description languages
linear programming
∞ logic
nonlinear programming
parameterization
programming languages

format

RT computer programming
documents
editing
frames (data processing)
printouts
records
syntax
texts

formates

GS **formates**
. chloroformate
. nitroformates
RT formic acid
formyl ions

∞ formation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED -- CONSULT THE TERMS LISTED BELOW)
RT formations
growth
nucleation
stratigraphy

formation flying

(added October 2001)

DEF Coordinated and closely synchronized flight of two or more aircraft or spacecraft in a relatively close spatial configuration.

UF *flying in formation*

GS positioning

. **formation flying**

RT aerobatics
air navigation
aircraft maneuvers

- ∞ flight
 - flight control
 - orbital maneuvers
 - satellite constellations
 - satellite control
 - satellite networks
 - space navigation
 - spacecraft control
 - spacecraft guidance
 - spacecraft maneuvers
 - stationkeeping
 - formation heat*
 - USE **heat of formation**
 - formations**
 - RT contacts (geology)
 - ∞ formation
 - fracturing
 - gas injection
 - geological faults
 - geology
 - geophysics
 - Great Basin (US)
 - ∞ layers
 - mountains
 - outcrops
 - outliers (landforms)
 - paleontology
 - perforating
 - permeability
 - petrology
 - porosity
 - rocks
 - shatter cones
 - soils
 - stairsteps
 - stratigraphy
 - terraces (landforms)
 - wettability
 - formhydroxamic acid**
 - GS acids
 - . carboxylic acids
 - . . . **formhydroxamic acid**
 - nitrogen compounds
 - . amides
 - . . . **formhydroxamic acid**
 - organic compounds
 - . carboxylic acids
 - . . . **formhydroxamic acid**
 - formic acid**
 - GS acids
 - . carboxylic acids
 - . . . **formic acid**
 - organic compounds
 - . carboxylic acids
 - . . . **formic acid**
 - RT formates
 - formyl ions
 - formica**
 - RT laminates
 - ∞ polymers
 - thermosetting resins
 - forming techniques**
 - SN (TECHNIQUES OF SHAPING ITEM)
 - UF *metal forming*
 - GS **forming techniques**
 - . casting
 - . . centrifugal casting
 - . . investment casting
 - . . propellant casting
 - . . rheocasting
 - . . sand casting
 - . . slip casting
 - . . squeeze casting
 - . cold working
 - . . cold rolling
 - . . electrohydraulic forming
 - . . explosive forming
 - . . electroforming
 - . . extruding
 - . . pultrusion
 - . . forging
 - . . hot working
 - . . ausforming
 - . . injection molding
 - . magnetic forming
 - . . metal drawing
 - . . metal spinning
 - . . . hydrosponning
 - . . pressing (forming)
 - . . . blanking (cutting)
 - . . . coining
 - . . . hot pressing
 - . . . stamping
 - . . . hot isostatic pressing
 - . . resin transfer molding
 - . . roll forming
- RT ∞ blanking
 - cutting
 - deposition
 - electromagnetic hammers
 - hot machining
 - laser cutting
 - machining
 - metal grinding
 - metal working
 - spraying
 - upsetting
- forms (paper)**
 - RT blanks
 - data acquisition
- ∞ **formulas**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT computation
 - formulas (mathematics)
 - formulations
 - Kramers-Kronig formula
- formulas (mathematics)**
 - UF *expressions (mathematics)*
 - GS mathematical logic
 - . **formulas (mathematics)**
 - . . Bethe-Heitler formula
 - RT ∞ formulas
 - ∞ mathematics
- formulations**
 - RT admixtures
 - ∞ composition
 - ∞ formulas
 - ingredients
 - mixtures
 - parameterization
 - stoichiometry
- formyl ions**
 - GS ions
 - . molecular ions
 - . . **formyl ions**
 - . . positive ions
 - . . . cations
 - . . . **formyl ions**
 - radicals
 - . **formyl ions**
 - RT atmospheric chemistry
 - formates
 - formic acid
 - hydroxyl radicals
 - interstellar chemistry
 - interstellar matter
- forsterite**
 - GS magnesium compounds
 - . **forsterite**
 - minerals
 - . olivine
 - . . **forsterite**
 - silicon compounds
 - . silicates
 - . . **forsterite**
 - RT refractories
- Forth (programming language)**
 - (added December 1992)
 - GS languages
 - . programming languages
 - . . **Forth (programming language)**
 - RT computer programming
- Fortisan (trademark)**
 - GS biopolymers
 - . polysaccharides
 - . . cellulose
 - . . . **Fortisan (trademark)**
- fabrics
 - . **Fortisan (trademark)**
- fibers
 - . synthetic fibers
 - . . **Fortisan (trademark)**
- organic compounds
 - . carbohydrates
 - . . polysaccharides
 - . . . cellulose
 - **Fortisan (trademark)**
- RT parachute fabrics
- FORTAN**
 - UF *FAB (programming language)*
 - GS languages
 - . programming languages
 - . . **FORTAN**
 - RT Cobol
 - compilers
 - computer programming
 - PL/1
- forward facing steps**
 - (added December 1995)
 - RT backward facing steps
 - boundary layer flow
 - separated flow
- forward looking infrared detectors*
 - USE **FLIR detectors**
- forward scattering**
 - DEF The scattering of radiant energy into the hemisphere of space bounded by a plane normal to the direction of the incident radiation and lying on the side toward which the incident radiation was advancing; the opposite of backward scatter.
 - GS scattering
 - . **forward scattering**
 - RT backscattering
 - inverse scattering
 - light scattering
 - nuclear scattering
 - scatter propagation
- fossil fuels**
 - DEF A general term for any hydrocarbons that may be used for fuel; chiefly petroleum, natural gas, and coal.
 - GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . **fossil fuels**
 - coal
 - anthracite
 - lignite
 - solvent refined coal
 - crude oil
 - natural gas
 - liquefied natural gas
 - peat
 - . . . shale oil
 - resources
 - . Earth resources
 - . . **fossil fuels**
 - . . . coal
 - anthracite
 - lignite
 - solvent refined coal
 - . . . crude oil
 - . . . natural gas
 - liquefied natural gas
 - . . . peat
 - . . . shale oil
 - RT carbonaceous materials
 - underwater resources
- fossil meteorite craters*
 - USE **fossils meteorite craters**
- fossils**
 - DEF Remains, traces, or imprints of an organism preserved in the Earth's crust sometime in the geologic past. Used for fossil meteorite craters.
 - UF *fossil meteorite craters*

Foster theory

RT archaeology
paleobiology
paleontology
particle tracks
radioactive age determination

Foster theory

RT network analysis
reactance
resonance
∞ theories

fouling

GS **fouling**
. antifouling
RT biofilms
contamination
corrosion
deposition
ice formation
plugging
retarding

foundations

UF *bases (foundations)*
structural foundations
GS **foundations**
. pile foundations
RT basements
∞ bases
caissons
concrete structures
excavation
geotechnical engineering
overconsolidation
∞ pad
pavements
skirts
structural members
∞ structures
substructures
supports
underground structures

foundries

GS industrial plants
. **foundries**
RT furnaces
∞ metallurgy
molds

four body problem

RT celestial mechanics
many body problem
orbits
perturbation
∞ problems
three body problem

Fourier analysis

DEF The representation of physical or mathematical data by the use of the Fourier series of Fourier integral.

GS analysis (mathematics)
. **Fourier analysis**
. . . Fourier series
RT autocorrelation
data compression
differential equations
divergence
exponential functions
frequency distribution
harmonic analysis
harmonic excitation
harmonic functions
harmonic generations
harmonic oscillation
harmonics
information theory
kurtosis
linear transformations
measure and integration
operational calculus
periodic functions
periodic variations
real variables
simple harmonic motion
time series analysis

wavelet analysis

Fourier law

GS laws
. **Fourier law**
RT thermal conductivity

Fourier series

GS analysis (mathematics)
. calculus
. . . series (mathematics)
. . . **Fourier series**
. Fourier analysis
. . **Fourier series**
. real variables
. . series (mathematics)
. . . **Fourier series**
RT Gibbs phenomenon

Fourier transformation

GS analysis (mathematics)
. functional analysis
. . integral transformations
. . . **Fourier transformation**
. . . . fast Fourier transformations
functions (mathematics)
. **Fourier transformation**
. . fast Fourier transformations
transformations (mathematics)
. integral transformations
. . **Fourier transformation**
. . . fast Fourier transformations
RT BBGKY hierarchy
Gabor transformation
holographic spectroscopy
maximum entropy method
Walsh function
wavelet analysis

Fourier-Bessel transformations

GS analysis (mathematics)
. calculus
. . **Fourier-Bessel transformations**
. functional analysis
. . integral transformations
. . . **Fourier-Bessel transformations**
. real variables
. . **Fourier-Bessel transformations**
functions (mathematics)
. **Fourier-Bessel transformations**
transformations (mathematics)
. integral transformations
. . **Fourier-Bessel transformations**
RT differential equations
series (mathematics)

four-wave mixing

(added April 1992)
GS conjugation
. phase conjugation
. . **four-wave mixing**
RT atom optics
coherent light
collimation
laser beams
light amplifiers
light beams
nonlinear optics
optical bistability
phase coherence
signal mixing
wave interaction

fovea

DEF The central part of the retina, which contains a high concentration of the color sensitive receptors known as cones.

GS anatomy
. sense organs
. . eye (anatomy)
. . . retina
. . . . **fovea**
RT Saccadic eye movements

FR-1 satellite

GS artificial satellites
. French satellites

. . **FR-1 satellite**

fractals

DEF Highly irregular geometrical figures such as snowflakes or the boundary of a cloud whose capacity dimension is not an integer. The capacity dimension characterizes the measuring of the number of different size superimposed squares needed to cover the geometric shape. By the use of differing size boxes, one is able to determine the capacity dimension.

GS dimensions
. **fractals**
geometry
. **fractals**
RT ∞ applications of mathematics
coordinates
exponents
half spaces
∞ mathematics
ratios
set theory
∞ space
strange attractors

fractionation

GS **fractionation**
. chemical fractionation
. hydrocracking
RT refining
retort processing
∞ separation
solvent refined coal

fractions

SN (EXCLUDES MATHEMATICAL CONCEPTS)
RT ∞ components
fines
particle size distribution
ratios

fractography

GS imagery
. photography
. . **fractography**
RT brittleness
crack closure
crack geometry
crack propagation
ductility
Elber equation
fatigue (materials)
fractures (materials)
∞ metallurgy

fracture mechanics

UF *fault mechanics*
Mohr circles
GS mechanics (physics)
. solid mechanics
. . **fracture mechanics**
RT bend tests
burst tests
caustics (optics)
computational mechanics
crack bridging
crack closure
crack initiation
crack opening displacement
crack propagation
Elber equation
finite element method
fracturing
Griffith crack
hole geometry (mechanics)
isoparametric finite elements
J integral
micromechanics
plane strain
residual strength
rock mechanics
rupturing
short cracks
soil mechanics
strain distribution
stress distribution
stress intensity factors
stress tensors

time temperature parameter

fracture resistance

USE **fracture strength**

fracture strength

DEF The normal stress at the beginning of fracture. Fracture strength is calculated from the load at the beginning of fracture during a tension test and the original cross-sectional area of the specimen. Used for fracture resistance and fracture toughness.

UF *fracture resistance*
fracture toughness

GS mechanical properties
. **fracture strength**
. . flexural strength

RT bend tests
brittle materials
brittleness
burst tests
carbon-carbon composites
crack closure
crack initiation
crack opening displacement
crack propagation
creep rupture strength
ductile-brittle transition
ductility
earthquake resistance
eutectic composites
hardness
J integral
load carrying capacity
residual strength
∞ resistance
retirement for cause
∞ strength
toughness
yield strength

fracture toughness

USE **fracture strength**

fractures (materials)

GS **fractures (materials)**

. cracks
. . crack tips
. . edge cracks
. . microcracks
. . short cracks
. . surface cracks

RT crack opening displacement
damage
deformation
failure
fractography
∞ materials

fracturing

GS **fracturing**

. cracking (fracturing)
. . stress corrosion cracking
. crustal fractures

RT brittleness
chipping
crack closure
crack opening displacement
crack propagation
cutting
flaking
formations
fracture mechanics
fragmentation
fragments
metal fatigue
perforating
∞ separation
spalling
splitting
stress functions
structural failure

fragmentation

UF *shattering*

RT acoustic streaming
breaking
bursts
chipping
comminution

fracturing
fragments
penetration
Sabot projectiles
shrapnel
spalling
terminal ballistics

fragments

RT chips
debris
ejecta
fracturing
fragmentation
shrapnel

frame photography

GS imagery
. photography
. . **frame photography**
RT black and white photography
framing cameras
high speed cameras

frames

GS **frames**
. airframes
. chassis
. undercarriages
RT carriages
springs (elastic)
∞ structures
struts
supports
trusses

frames (data processing)

RT data management
data processing
format
image processing

framing cameras

GS optical equipment
. cameras
. . high speed cameras
. . . **framing cameras**
photographic equipment
. cameras
. . high speed cameras
. . . **framing cameras**
RT frame photography
rotating mirrors

France

GS nations
. **France**
. . French Guiana
. . Guadeloupe
. . Martinique
RT Andorra
English Channel
Europe
French space program
Pyrenees Mountains (Europe)
Rhône Delta (France)

francium

GS chemical elements
. alkali metals
. . **francium**
metals
. alkali metals
. . **francium**

Franck-Condon principle

RT Born-Oppenheimer approximation
color centers
conduction bands
electron transitions
forbidden transitions
optical transition

Fraunhofer line discriminators

GS circuits
. discriminators
. . **Fraunhofer line discriminators**
RT absorption spectra
luminescence
measuring instruments

spectroscopic analysis
spectroscopy

Fraunhofer lines

DEF Dark lines in the absorption spectrum of solar radiation due to absorption by gases in the outer portions of the sun and in the Earth's atmosphere.

GS spectra
. radiation spectra
. . absorption spectra
. . . **Fraunhofer lines**
. . electromagnetic spectra
. . . line spectra
. . . . **Fraunhofer lines**
. spectral bands
. . absorption spectra
. . . **Fraunhofer lines**
RT absorption spectroscopy
optogalvanic spectroscopy
solar spectra

Fraunhofer region

USE **far fields**

Fredholm equations

UF *Fredholm operators*
GS analysis (mathematics)
. functional analysis
. . integral equations
. . . **Fredholm equations**
RT ∞ equations
ill-posed problems (mathematics)
Pomeranchuk theorem

Fredholm operators

USE **Fredholm equations operators (mathematics)**

free atmosphere

DEF That portion of the Earth's atmosphere, above the planetary boundary layer, in which the effect of the Earth's surface friction on the air is negligible, and in which the air is usually treated (dynamically) as an ideal fluid. The base of the free atmosphere is usually taken as the geostrophic wind level.

GS Earth atmosphere
. **free atmosphere**
RT biosphere
middle atmosphere
primitive Earth atmosphere

free boundaries

GS boundaries
. **free boundaries**
RT fluid boundaries
interfaces
jet flow
jet mixing flow
jet streams (meteorology)
liquid surfaces
liquid-liquid interfaces
liquid-vapor interfaces

free convection

UF *natural convection*
thermal convection
GS convection
. **free convection**
. . Rayleigh-Benard convection
. . . Benard cells
RT convection currents
convective flow
convective heat transfer
forced convection
laminar flow
Marangoni convection
porous boundary layer control
solar convection (astronomy)
stellar convection
temperature
thermosiphons
turbulent flow

free electron lasers

DEF Multifrequency lasers utilizing optical radiation amplification by a beam of free electrons passing through a vacuum in a transverse periodic magnetic field, as opposed to conven-

free electrons

tional lasers in which the oscillating electrons are bound to atoms and molecules and have a specific wavelength.

- GS stimulated emission devices
 - . lasers
 - . . **free electron lasers**
- RT diffraction radiation
 - wiggler magnets

free electrons

- DEF Electrons which are not bound to an atom.
- GS charge carriers
 - . **free electrons**
 - . particles
 - . charged particles
 - . . energetic particles
 - . . . electrons
 - **free electrons**
 - . corpuscular radiation
 - . . energetic particles
 - . . . electrons
 - **free electrons**
 - . elementary particles
 - . . fermions
 - . . . leptons
 - electrons
 - **free electrons**
- RT Brillouin zones
 - conduction electrons
 - electron avalanche
 - electron density (concentration)
 - electron gas
 - forbidden bands
 - plasma frequencies
 - recombination coefficient

free energy

- GS thermodynamic properties
 - . **free energy**
 - . . Gibbs free energy
- RT chemical energy
 - ∞ energy
 - energy of formation
 - enthalpy
 - Gibbs-Helmholtz equations
 - internal energy
 - ∞ level
 - molecular energy levels
 - thermal energy
 - thermodynamics

free fall

- DEF The fall or drop of a body, such as a rocket, not guided, not under thrust, and not retarded by a parachute or a braking device. The free and unhampered motion of a body along a Keplerian trajectory, in the force of gravity is counterbalanced by the force of inertia.
- RT air drop operations
 - ballistic trajectories
 - falling spheres
 - parachute descent
 - parafoils
 - weightlessness

free flight

- DEF Unconstrained or unassisted flight, as in the flight of a rocket after consumption of its propellant or after motor shutoff, in the flight of an unguided projectile, and in the flight in certain kinds of wind tunnels of unmounted models.
- RT ∞ flight
 - gliders
 - gliding
 - hang gliders

free flight test apparatus

- RT flight tests
 - ∞ test equipment

free flow

- UF *free stream effects*
 - free streams*
- GS fluid flow
 - . **free flow**
- RT void ratio

free jets

- DEF Fluid jets without solid boundaries,

such as a jet discharging into the open.

- GS fluid jets
 - . **free jets**
- RT jet boundaries
 - jet flow
 - ∞ jets

free molecular flow

- GS fluid flow
 - . gas flow
 - . . **free molecular flow**
- RT continuum flow
 - kinetic theory
 - Knudsen flow
 - molecular beams
 - rarefied gas dynamics
 - rarefied gases
 - slip flow
 - transition flow

free oscillations

- USE **free vibration**

free radicals

- DEF Atoms or groups of atoms broken away from stable compounds by application of external energy, and, although containing unpaired electrons, remaining free for transitory or longer periods.
- GS radicals
 - . **free radicals**
 - . . hydroxyl radicals
- RT amino radical
 - atoms
 - carbenes
 - ions
 - negative ions
 - oxygen ions
 - trivalent ions
 - vinyl radical

free stream effects

- USE **free flow**

free streams

- USE **free flow**

free vibration

- DEF Oscillation of a system in the absence of external forces. Used for free oscillations.
- UF *free oscillations*
- GS vibration
 - . **free vibration**
- RT forced vibration
 - linear vibration
 - Mindlin plates
 - proton precession
 - self excitation
 - self induced vibration
 - vibration mode

free wing aircraft

- RT aerodynamics
 - ∞ aircraft
 - aircraft design
 - control surfaces

Freedom Fighter aircraft

- USE **F-5 aircraft**

Freedom Space Station

- USE **Space Station Freedom**

free-piston engines

- DEF Engines in which the pistons are not connected to the crank.
- GS engines
 - . piston engines
 - . . **free-piston engines**
- RT AC generators
 - linear alternators
 - pistons
 - spacecraft power supplies
 - Stirling engines

free-space optical communication

- (added June 1998)
- GS telecommunication
 - . communication
 - . . optical communication
 - . . . **free-space optical**

communication

- RT high power lasers
 - laser beams
 - satellite communication
 - space communication

free-space optical interconnects

- (added June 1998)
- UF *FSOI (integrated optics)*
- GS optical interconnects
 - . **free-space optical interconnects**
- RT integrated optics
 - interprocessor communication
 - optical computers
 - optical switching
 - optoelectronic devices
 - photonics

freeze drying

- GS drying
 - . **freeze drying**
- RT dehydrated food
 - dehydration
 - freezing
 - frozen foods
 - preserving

freezing

- GS phase transformations
 - . **freezing**
 - . . vibrational freezing
 - . . . zone melting
- RT antifreezes
 - bay ice
 - cloud glaciation
 - cold traps
 - cooling
 - cryogenic cooling
 - crystallization
 - freeze drying
 - frost
 - ice formation
 - ice nuclei
 - low temperature
 - melting
 - preserving
 - pressure ice
 - refrigerating
 - sea ice
 - solidification
 - solidified gases

freezing points

- USE **melting points**

freight

- USE **cargo**

freight costs

- GS costs
 - . **freight costs**
- RT cargo
 - freighters
 - transportation

freighters

- RT freight costs
 - harbors
 - transportation
 - wharves

French Equatorial Congo

- USE **Congo (Brazzaville)**

French Guiana

- GS nations
 - . France
 - . . **French Guiana**
- RT Caribbean region
 - South America

French satellites

- GS artificial satellites
 - . **French satellites**
 - . . D-1 satellite
 - . . D-2 satellites
 - . . EOLE satellites
 - . . FR-1 satellite
 - . . GEOLE satellites
 - . . PEOLE satellites

- . . Poseidon satellite
- . . SPOT (French satellite)
- . . SRET satellites
- . . . SRET 1 satellite
- . . . SRET 2 satellite
- RT European space programs
- METEOSAT satellite
- Symphonie satellites

French space program

(added December 1990)

- GS programs
- . space programs
- . . European space programs
- . . . **French space program**

- RT EOLE satellites
- France
- GEOLE satellites
- Granat satellite
- Hermes manned spaceplane
- international cooperation
- METEOSAT satellite
- ∞ research projects
- space exploration
- space missions
- ∞ spacecraft
- SRET 1 satellite
- SRET satellites

Frenkel defects

- GS defects
- . crystal defects
- . . point defects
- . . . vacancies (crystal defects)
- **Frenkel defects**

freon

- RT air conditioning
- coolants
- cooling
- cooling systems
- fluorohydrocarbons
- gas cooling
- refrigerants
- refrigerating

frequencies

DEF Of a function periodic in time, the reciprocals of primitive periods. The unit is the cycle per unit time and must be specified. Used for frequency bands.

- UF *frequency bands*

- GS **frequencies**

- . acoustic frequencies
- . . audio frequencies
- . . . quefrequencies
- . . screech tones
- . beat frequencies
- . broadband
- . Brunt-Vaisala frequency
- . carrier frequencies
- . critical frequencies
- . cyclotron frequency
- . infrasonic frequencies
- . ionization frequencies
- . maximum usable frequency
- . Nyquist frequencies
- . plasma frequencies
- . radio frequencies
- . . extremely low frequencies
- . . high frequencies
- . . intermediate frequencies
- . . low frequencies
- . . . very low frequencies
- . . microwave frequencies
- . . . C band
- . . . extremely high frequencies
- . . . P band
- . . . superhigh frequencies
- . . ultrahigh frequencies
- . . . P band
- . . very high frequencies
- . . . P band
- . resonant frequencies
- . subaudible frequencies
- . sweep frequency

- RT aeolian tones
- amplitudes
- ∞ bands
- bandwidth

- broadband amplifiers
- channel capacity
- ∞ channels
- frequency distribution
- frequency ranges
- frequency reuse
- harmonics
- line spectra
- longitudinal waves
- microchannels
- millimeter waves
- narrowband
- ∞ pitch
- radio waves
- spectral bands
- standing waves
- submillimeter waves
- superharmonics

frequency analyzers

- RT harmonic analysis
- intermodulation
- oscilloscopes
- selective fading
- signal analysis
- spectrum analysis
- sweep frequency
- ∞ test equipment
- vibration measurement

frequency assignment

DEF The specific frequency or frequencies authorized by competent authority; expressed for each channel by: (a) the authorized carrier frequency, the frequency tolerance, and the authorized emission bandwidth, (b) the authorized emission bandwidth in reference to a specific assigned frequency (when a carrier does exist), or (c) the authorized frequency band (when a carrier does not exist).

- RT communicating
- frequency reuse
- maximum usable frequency
- orbit spectrum utilization

frequency bands

- USE **frequencies**

frequency compression demodulators

- GS demodulators
- . **frequency compression demodulators**

frequency control

- UF *frequency regulation*
- GS **frequency control**
- . automatic frequency control
- RT autodynes
- ∞ control
- crystal oscillators
- frequency pulling
- quartz crystals
- signal stabilization

frequency conversion

- USE **frequency converters**

frequency converters

- UF *frequency conversion*
- frequency translation*
- GS **frequency converters**
- . down-converters
- . frequency dividers
- . frequency multipliers
- . frequency synthesizers
- . parametric frequency converters
- . up-converters
- RT ∞ conversion
- ∞ converters
- harmonic generators
- mixing circuits
- parametric amplifiers
- pulse width amplitude converters

frequency discriminators

DEF Electronic circuits which deliver output voltages proportional to the deviations of signals from predetermined frequency values.

- GS circuits
- . discriminators

- . . **frequency discriminators**

frequency distribution

- SN (OF CYCLIC VARIATIONS)
- GS distribution (property)
- . **frequency distribution**
- . . kurtosis
- RT cycles
- Fourier analysis
- frequencies
- subaudible frequencies

frequency dividers

- GS frequency converters
- . **frequency dividers**
- RT down-converters

frequency division multiple access

DEF A method of providing multiple access to communication satellites in which the transmissions from a particular Earth station occupy a particular assigned frequency band. In the satellite, the signals are simultaneously amplified and transposed to a different frequency band and retransmitted. The Earth station identifies its receiving channel according to its assigned frequency band in the satellite signal. Used for FDMA.

- UF *FDMA*

- GS telecommunication

- . multiple access
- . . **frequency division multiple access**

- transmission
- . signal transmission
- . . data transmission
- . . . multiple access
- **frequency division multiple access**

- RT Aloha system
- code division multiple access
- code division multiplexing
- multiplexing
- radio communication
- time division multiple access

frequency division multiplexing

DEF The combining of a number of signals to share a medium by dividing it into different frequency bands for each signal.

- GS transmission
- . multiplexing

- . . **frequency division multiplexing**

- RT carrier frequencies
- communication networks
- data transmission
- demultiplexing
- multiple access
- pulse communication
- radio communication
- satellite transmission
- telecommunication
- time division multiplexing
- wavelength division multiplexing

frequency domain analysis

(added April 1999)

- GS analysis (mathematics)

- . **frequency domain analysis**

- RT control systems design
- dynamic response
- frequency response
- parameter identification
- signal processing

frequency hopping

DEF Random changing of frequencies in transmission to mislead or prevent interception by unauthorized equipment.

- RT frequency reuse
- frequency shift keying
- jamming
- spread spectrum transmission
- transmission efficiency

frequency measurement

- RT acoustic measurement
- ∞ measurement
- time measurement

frequency modulation

vibration measurement

frequency modulation

DEF Angle modulation of a sine wave carrier in which the instantaneous frequency of the modulated wave differs from the carrier frequency by an amount proportional to the instantaneous value of the modulating wave.

UF *FM (modulation)*

GS coding

. signal encoding

. . . **frequency modulation**

. . . feedback frequency modulation

. . . FM/PM (modulation)

. . . frequency shift keying

. . . pulse frequency modulation

modulation

. **frequency modulation**

. . feedback frequency modulation

. . FM/PM (modulation)

. . frequency shift keying

. . pulse frequency modulation

RT amplitude modulation

automatic frequency control

capture effect

carrier to noise ratios

companding

demodulation

demodulators

intermodulation

light modulation

line of sight communication

modulators

phase modulation

pulse frequency modulation telemetry

pulse modulation

vocoders

voltage controlled oscillators

frequency modulation photomultipliers

GS amplifiers

. current amplifiers

. . photomultiplier tubes

. . . **frequency modulation**

photomultipliers

electron tubes

. cold cathode tubes

. . phototubes

. . . photomultiplier tubes

. . . . **frequency modulation**

photomultipliers

RT cathodes

vacuum tube oscillators

frequency multipliers

GS frequency converters

. **frequency multipliers**

RT phase matching

frequency pulling

(added July 1991)

UF *pulling (frequency stability)*

RT distortion

frequency control

frequency shift

frequency stability

laser outputs

laser stability

oscillators

stable oscillations

tuning

frequency ranges

DEF Specifically designated parts of the frequency spectrum.

GS range (extremes)

. **frequency ranges**

. . octaves

. . radio range

. . subaudible frequencies

RT acoustic frequencies

bandwidth

dynamic range

frequencies

frequency response

frequency reuse

frequency regulation

USE **frequency control**

frequency response

UF *phase response*

GS responses

. **frequency response**

RT acuity

broadband

distributed amplifiers

dynamic characteristics

dynamic range

dynamic response

equalizers (circuits)

excitation

frequency domain analysis

frequency ranges

linear filters

linear receivers

log periodic antennas

logarithmic receivers

perception

pulse repetition rate

ramp functions

sensitivity

smear

spectral sensitivity

step functions

stroking tests

thresholds (perception)

frequency reuse

DEF A digital satellite communication technique which features the reuse of frequency bands in a downlink transmission to provide high power utilization and flexible accommodation of dynamic source destination traffic patterns.

RT data links

downlinking

frequencies

frequency assignment

frequency hopping

frequency ranges

maximum usable frequency

microwave transmission

radio transmission

satellite transmission

uplinking

frequency scanning

GS scanning

. **frequency scanning**

RT panoramic scanning

radar scanning

spectrum analysis

sweep circuits

sweep frequency

frequency shift

RT Brillouin effect

Doppler effect

Doppler-Fizeau effect

frequency pulling

gyrotropism

∞ shift

frequency shift keying

DEF That form of frequency modulation in which the modulating wave shifts the output frequency between predetermined values, and the output wave is coherent with no phase discontinuity.

GS coding

. signal encoding

. . frequency modulation

. . . **frequency shift keying**

keying

. **frequency shift keying**

modulation

. frequency modulation

. . **frequency shift keying**

RT frequency hopping

radio transmission

frequency stability

UF *acoustic stability*

GS dynamic characteristics

. dynamic stability

. . **frequency stability**

stability

. dynamic stability

. . **frequency stability**

RT crystal oscillators

frequency pulling

laser stability

oscillators

quartz crystals

stable oscillations

voltage controlled oscillators

frequency standards

GS standards

. **frequency standards**

RT atomic clocks

gas masers

ion storage

masers

resonators

time signals

time synchronization

frequency synchronization

GS synchronism

. **frequency synchronization**

RT bit synchronization

capture effect

homodyne reception

sweep frequency

synchronized oscillators

syntony

time synchronization

frequency synthesizers

GS frequency converters

. **frequency synthesizers**

signal generators

. **frequency synthesizers**

RT mixing circuits

oscillators

synthesizers

frequency translation

USE **frequency converters**

fresh water

DEF Water in rivers, lakes, springs, etc. containing no significant amounts of dissolved salts.

GS water

. **fresh water**

RT AgRISTARS project

aquifers

ground water

limnology

potable water

reservoirs

springs (water)

Fresnel diffraction

GS diffraction

. **Fresnel diffraction**

RT gratings (spectra)

interferometry

speckle interferometry

Fresnel integrals

UF *Fresnel-Kirchhoff integrals*

GS functions (mathematics)

. **Fresnel integrals**

RT diffraction patterns

trigonometric functions

wave diffraction

Fresnel lenses

DEF Thin lenses constructed with stepped setbacks so as to have the optical properties of much thicker lenses.

GS lenses

. **Fresnel lenses**

RT focusing

∞ optics

Fresnel reflectors

DEF Devices characterized by a set of mirrors with varying orientation arranged so as to have the optical properties of a smooth reflector, e.g., parabolic reflector.

GS mirrors

. **Fresnel reflectors**
reflectors
 . **Fresnel reflectors**
 RT interferometry
slits
speckle interferometry

Fresnel region
 DEF The region between the antenna and the Fraunhofer region.
 GS regions
 . **Fresnel region**
 RT antenna radiation patterns
diffraction patterns
far fields

Fresnel-Kirchhoff integrals
 USE **Fresnel integrals**

fretting
 RT erosion
fatigue (materials)
tribology
wear tests

fretting corrosion
 GS corrosion
 . **fretting corrosion**
 RT fatigue (materials)
stress corrosion
wear

friction
 DEF The resistance to the relative motion of one body sliding, rolling, or flowing over another body with which it is in contact.
 GS **friction**
 . dry friction
 . flow resistance
 . . friction drag
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 . internal friction
 . kinetic friction
 . . sliding friction
 . skin friction
 . . friction drag
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 . static friction
 RT abrasion
coefficient of friction
drag
drag reduction
energy dissipation
fluid flow
mechanical impedance
 ∞ pressure drop
scoring
stiction
surface properties
surface roughness
traction
tribology
triboluminescence
tribometers
wear
wear tests
wheel brakes

friction coefficient
 USE **coefficient of friction**

friction drag
 UF *nonequilibrium drag*
 GS dynamic characteristics
 . drag
 . . **friction drag**
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 friction
 . flow resistance
 . . **friction drag**
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 . skin friction

. . **friction drag**
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 RT minimum drag
pressure drag
riblets
satellite drag
surface roughness effects
wave drag

friction factor
 UF *friction loss coefficient*
 RT coefficient of friction
pressure gradients
skin friction

friction loss coefficient
 USE **friction factor**

friction measurement
 UF *tribometry*
 GS mechanical measurement
 . **friction measurement**
 RT elasto-hydrodynamics
kinetic friction
 ∞ measurement
static friction
tribometers

friction pressure drop
 USE **skin friction**

friction reduction
 RT antifriction bearings
coefficient of friction
lubrication
 ∞ reduction
streamlining

friction stir welding
 (*added August 2002*)
 DEF Solid state welding technique where a frictionally heated metal seam is stirred by a rotating pin tool to create a bond. The process involves no melting and the weld occurs via extreme plastic deformation associated with frictional straining.
 UF *FSW (welding)*
 GS welding
 . pressure welding
 . . friction welding
 . . . **friction stir welding**
 RT aluminum alloys
plastic deformation
stirring
welded joints

friction welding
 GS welding
 . pressure welding
 . . **friction welding**
 . . . friction stir welding

frictionless environments
 GS environments
 . **frictionless environments**
 RT deep space
levitation

Friedel-Craft reaction
 GS chemical reactions
 . **Friedel-Craft reaction**
 RT acylation
alkylation

Friendship 7
 GS manned spacecraft
 . Mercury spacecraft
 . . **Friendship 7**
 . . reentry vehicles
 . . recoverable spacecraft
 . . Mercury spacecraft
 . . . **Friendship 7**
 . . soft landing spacecraft
 . . Mercury spacecraft
 . . **Friendship 7**
 . . space capsules
 . . Mercury spacecraft
 . . **Friendship 7**

RT Mercury MA-6 flight

fringe multiplication
 DEF The duplicating effect of a family of curves superimposed on another family of curves so that the curves intersect at angles less than 45 degrees. A new family of curves appears which pass through intersections of the original curves.
 RT diffraction patterns
interference grating
Moire effects
Moire fringes
multiplication
photoelastic analysis
stress analysis
stress concentration

fringe patterns
 USE **diffraction patterns**

frit
 DEF A powdered ceramic prepared by fusing a physical mixture of oxides into a uniform melt, which is then quenched and milled into a fine, homogeneous powder.
 RT ceramics
fusion (melting)
glazes
vitreous materials

frogs
 GS animals
 . vertebrates
 . . amphibia
 . . . frogs

frontal areas (meteorology)
 USE **fronts (meteorology)**

frontal waves
 RT ocean currents
oceanography
tsunami waves
water waves
 ∞ waves

∞ **fronts**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT cold fronts
fronts (meteorology)
shock fronts
warm fronts
wave fronts

fronts (meteorology)
 DEF The contacts at the Earth's surface between two different air masses commonly cold and warm, that generally move in an easterly direction. Used for frontal areas (meteorology) and weather fronts.
 UF *frontal areas (meteorology)*
weather fronts
 GS **fronts (meteorology)**
 . cold fronts
 . warm fronts
 RT air masses
arc clouds
 ∞ fronts
intertropical convergent zones
marine meteorology
meteorological parameters
meteorology
storms
synoptic meteorology
thunderstorms
tornadoes

frost
 RT bay ice
dew
freezing
ice
low temperature

frost damage
 GS damage
 . **frost damage**
 RT cold weather

frostbite

- ∞ crops
- farm crops
- fruits
- low temperature orchards
- plants (botany)

frostbite

- GS injuries
- . **frostbite**
- RT cold tolerance

Froude number

DEF The nondimensional ratio of the inertial force to the force of gravity for a given fluid flow; the reciprocal of the Reech number.

- GS dimensionless numbers
- . **Froude number**
- ratios
- . **Froude number**
- RT fluid flow
- inertia
- kinetic energy
- potential energy
- Reynolds number
- Strouhal number

frozen equilibrium flow

- GS fluid flow
- . gas flow
- . . equilibrium flow
- . . . **frozen equilibrium flow**
- RT shifting equilibrium flow

frozen foods

- RT ∞ food
- food processing
- freeze drying
- preserving
- refrigerating

frozen soils

- USE **permafrost**

fruits

- GS farm crops
- . **fruits**
- RT agriculture
- bollworms
- botany
- ∞ food
- frost damage
- orchards

frustration

- RT disabilities
- emotional factors
- emotions
- ∞ inhibition
- lethargy
- psychological effects
- psychology

frustums

- RT cones
- geometry
- pyramids
- volume

FSOI (integrated optics)

(added June 1998)

- USE **free-space optical interconnects**

FSW (welding)

(added August 2002)

- USE **friction stir welding**

fuel capsules

- RT ∞ capsules
- nuclear fuels
- pellets
- spent fuels

fuel cell catalysts

- USE **electrocatalysts**

fuel cell power plants

DEF Power generating devices that directly produce electrical energy from chemical energy and consist of fuel processors, stacked fuel cells, and dc to ac converters. The main types,

distinguished by electrolytes which are heated to different temperatures, are base, phosphoric acid, molten carbonate, and solid oxide.

- GS electric power plants
- . **fuel cell power plants**
- RT coal gasification
- energy technology
- fuel cells

fuel cells

SN (EXCLUDES BATTERIES)

DEF Devices which convert chemical energy directly into electrical energy but differing from a storage battery in that the reacting chemicals are supplied continuously as needed to meet output requirements.

- GS electric generators
- . direct power generators
- . . **fuel cells**
- . . . biochemical fuel cells
- . . . hydrogen oxygen fuel cells
- . . . molten carbonate fuel cells
- . . . phosphoric acid fuel cells
- . . . regenerative fuel cells
- . . . solid oxide fuel cells
- electrochemical cells
- . **fuel cells**
- . . biochemical fuel cells
- . . hydrogen oxygen fuel cells
- . . molten carbonate fuel cells
- . . phosphoric acid fuel cells
- . . regenerative fuel cells
- . . solid oxide fuel cells

RT ∞ cells

- chemical auxiliary power units
- ∞ electric cells
- electrocatalysts
- electrochemistry
- electrolytes
- energy conversion efficiency
- energy storage
- fuel cell power plants
- hydrogen fuels
- hydrogen-based energy
- ion exchange membrane electrolytes
- magnetohydrodynamic generators
- solar cells
- solar generators
- thermionic converters
- thermoelectric generators
- wet cells

fuel combustion

- GS combustion
- . **fuel combustion**
- . . nuclear fuel burnup
- RT combustion efficiency
- combustion stability
- erosive burning
- hydrocarbon combustion
- hypersonic combustion
- ignition
- metal combustion
- oxidation
- propellant combustion
- solid propellant combustion
- spontaneous combustion
- supersonic combustion
- turbulent combustion

fuel conservation

- USE **fuel consumption**

fuel consumption

DEF The using of fuel by an engine or power plant; the rate of this consumption, measured, e.g., in gallons or pounds per minute.

- UF *fuel conservation*
- GS consumption
- . **fuel consumption**
- RT burning rate
- combustion efficiency
- energy consumption
- energy requirements
- engines
- internal combustion engines
- propellant consumption

refueling

fuel contamination

- GS contamination
- . **fuel contamination**
- RT antiicing additives
- contaminants
- refueling

fuel control

- RT combustion control
- ∞ control
- engine control
- fluid management
- liquid sloshing
- propellant transfer
- refueling
- rocket engine control
- turbojet engine control

fuel corrosion

- GS corrosion
- . **fuel corrosion**
- RT propellant decomposition
- propellant storability

fuel elements (nuclear reactors)

- USE **nuclear fuel elements**

fuel flow

- GS fluid flow
- . **fuel flow**
- . . propellant transfer
- RT combustible flow
- ducted flow
- particle laden jets
- reacting flow

fuel flow regulators

- GS control equipment
- . regulators
- . . flow regulators
- . . . **fuel flow regulators**

fuel gages

- GS measuring instruments
- . **fuel gages**
- . . capacitive fuel gages
- RT flowmeters

fuel injection

- UF *injection carburetors*
- GS injection
- . **fuel injection**
- RT burners
- carburetors
- fluid injection
- gas injection
- injectors
- internal combustion engines
- jet engines
- jet mixing flow
- ∞ jet nozzles
- liquid injection
- piston engines
- propellant sprays
- spray nozzles

fuel oils

- GS fuels
- . chemical fuels
- . . liquid fuels
- . . . **fuel oils**
- oils
- . **fuel oils**
- RT energy policy
- kerogen
- kerosene
- shale oil
- solvent refined coal

fuel production

- DEF Producing of conventional and/or alternative fuels by various technologies.
- GS **fuel production**
- . hydrocarbon fuel production
- chemical fuels
- RT composite propellants
- crude oil
- fission

- ∞ fusion
 - hydrocarbon fuels
 - hydrogen fuels
 - in situ resource utilization
 - liquid fuels
 - nuclear fuels
- ∞ production
 - synthesis gas
- fuel pumps**
 - GS pumps
 - . **fuel pumps**
 - RT aircraft fuel systems
 - axial flow pumps
 - centrifugal pumps
 - electromagnetic pumps
 - internal combustion engines
 - jet engines
 - jet pumps
 - materials handling
 - turbine pumps
- fuel sprays**
 - RT liquid injection
 - propellant sprays
 - sprayers
- fuel systems**
 - GS **fuel systems**
 - . aircraft fuel systems
 - RT accumulators
 - automobiles
 - bunkers (fuel)
 - carburetors
 - chokes (fuel systems)
 - engines
 - feeders
 - fuels
 - injectors
 - inlet temperature
 - intake systems
 - internal combustion engines
 - manifolds
 - plenum chambers
 - propellant transfer
 - refueling
 - self sealing
 - spray nozzles
 - ∞ systems
- fuel tank pressurization**
 - GS pressurizing
 - . **fuel tank pressurization**
 - RT aircraft fuel systems
 - exhaust systems
 - expulsion bladders
 - liquid rocket propellants
 - pressure
 - pressure regulators
 - pressure vessels
 - propellant storage
 - propellant tanks
 - propulsion
 - relief valves
 - ullage
 - vapor pressure
- fuel tanks**
 - GS tanks (containers)
 - . **fuel tanks**
 - . . wing tanks
 - RT aircraft fuel systems
 - ∞ containers
 - corrosion prevention
 - cryogenic fluid storage
 - cylindrical tanks
 - expulsion bladders
 - external tanks
 - feed systems
 - fuels
 - heating equipment
 - liquid sloshing
 - Pods (external stores)
 - pressure vessels
 - propellant storage
 - propellant tanks
 - propellants
 - propulsion
 - protuberances
 - spacecraft structures
- spherical tanks
- storage tanks
- tanker aircraft
- ullage
- fuel tests**
 - GS **fuel tests**
 - . reactor startup tests
 - RT chemical analysis
 - corrosion tests
 - engine tests
 - ∞ materials tests
 - missile tests
 - propellant tests
 - stability tests
 - test firing
 - ∞ tests
- fuel valves**
 - GS valves
 - . **fuel valves**
 - RT aircraft fuel systems
 - gas valves
 - relief valves
- fuel-air ratio**
 - GS ratios
 - . **fuel-air ratio**
 - RT burning rate
 - combustion efficiency
 - compression ratio
 - gas mixtures
 - ignition limits
 - premixing
 - pressure ratio
 - volumetric efficiency
- fueling*
- USE **refueling**
- fuels**
 - GS **fuels**
 - . chemical fuels
 - . . endothermic fuels
 - . . high energy fuels
 - . . hydrocarbon fuels
 - . . . diesel fuels
 - . . . fossil fuels
 - coal
 - anthracite
 - lignite
 - solvent refined coal
 - crude oil
 - natural gas
 - liquefied natural gas
 - peat
 - shale oil
 - . . . gasoline
 - . . . jet engine fuels
 - JP-4 jet fuel
 - JP-5 jet fuel
 - JP-6 jet fuel
 - JP-7 jet fuel
 - JP-8 jet fuel
 - . . . synthane
 - . . liquid fuels
 - . . antimisting fuels
 - . . diesel fuels
 - . . gasoline
 - . . hydrogen fuels
 - . . jet engine fuels
 - JP-4 jet fuel
 - JP-5 jet fuel
 - JP-6 jet fuel
 - JP-7 jet fuel
 - JP-8 jet fuel
 - . . . fuel oils
 - . . . kerosene
 - . . metal fuels
 - . . synthetic fuels
 - . . . gasohol (fuel)
 - . . . synthane
 - . . clean fuels
 - . . coke
 - . . gaseous fuels
 - . . natural gas
 - . . . liquefied natural gas
 - . . nuclear fuels
 - . . ceramic nuclear fuels
 - . . fissile fuels
 - . . fissium
 - . . spent fuels
 - . aircraft fuels
 - . automobile fuels
- RT bioconversion
 - burning rate
 - charcoal
 - energy policy
 - energy storage
 - flames
 - fuel systems
 - fuel tanks
 - hydrogen
 - hydrogen production
 - kerogen
 - liquid ammonia
 - liquid hydrogen
 - nuclear fuel elements
 - oils
 - oxidizers
 - premixing
 - propellants
 - rocket propellants
 - shale oil
 - transportation energy
- Fujita method**
 - RT coordinates
 - ∞ methodology
 - tornadoes
 - ∞ transformations
 - transformations (mathematics)
 - wind velocity
- full scale tests**
 - RT altitude tests
 - engine tests
 - flight tests
 - ground tests
 - high altitude tests
 - ∞ tests
- fullerenes**
 - (added August 1991)
 - DEF Molecules whose structure is similar to the shape of a soccer ball (polyhedron). The geodesic-dome-like molecular structure causes these molecules to be named after Buckminster Fuller, hence, 'fullerene.'
 - GS **fullerenes**
 - . buckminsterfullerene
 - RT atomic clusters
 - carbon
 - carbon nanotubes
 - fullerides
 - graphite
 - molecular clusters
 - nanoparticles
 - nanostucture growth
 - nanotubes
 - polyatomic molecules
 - polyhedrons
- fullerides**
 - (added February 1998)
 - GS carbon compounds
 - . **fullerides**
 - RT ∞ alkali metal compounds
 - ∞ chemical compounds
 - doped crystals
 - fullerenes
 - superconductors (materials)
- fulminates**
 - GS esters
 - . isocyanates
 - . . **fulminates**
 - nitrogen compounds
 - . cyano compounds
 - . . isocyanates
 - . . . **fulminates**
 - RT detonators
 - explosives
 - propellants
- fumes**
 - RT aerosols
 - dispersions
 - dust
 - exhaust gases

fumigation

fire damage
gas mixtures
gases
haze detection
reaction products
smoke
smoke detectors
vapors
wastes

fumigation

RT antiseptics
bactericides
spraying
sterilization

function generators

GS signal generators
. **function generators**
RT ∞ generators
pulse generators
voltage generators
wave generation

function space

GS analysis (mathematics)
. **function space**
. . Banach space
. . . Hilbert space
. . . . Sobolev space
RT fibers (mathematics)
field theory (physics)
functions (mathematics)
orthogonal functions
quantum mechanics
series (mathematics)
∞ space
statistical mechanics
vectors (mathematics)

functional analysis

GS analysis (mathematics)
. **functional analysis**
. . Banach space
. . . Hilbert space
. . . . Sobolev space
. . convolution integrals
. . harmonic analysis
. . . tesseral harmonics
. . . zonal harmonics
. . integral equations
. . . Fredholm equations
. . . J integral
. . . singular integral equations
. . . Volterra equations
. . . Wiener Hopf equations
. . integral transformations
. . . Fourier transformation
. . . . fast Fourier transformations
. . . Fourier-Bessel transformations
. . . Hilbert transformation
. . . Laplace transformation
RT complex variables
form factors
functions (mathematics)
series (mathematics)
Walsh function

functional design specifications

DEF Those levels of design in which all subtasks are specified and their relationships defined so that the total collection of subsystems will perform the intended task of the entire system.

GS specifications
. **functional design specifications**
RT aeronautical engineering
∞ design
equipment specifications
missile design
product development
systems engineering

functional integration

GS analysis (mathematics)
. real variables
. . measure and integration
. . . **functional integration**
RT analog computers
differential equations

digital integrators
partial differential equations

functionally gradient materials

(added September 1992)

DEF Composite materials that consist of a gradual compositional variation from ceramic to metal from one surface to the other. These continuous changes result in property gradients which can be adjusted by controlling the composition. Used for FGM (materials).

UF *FGM (materials)*
GS composite materials
. **functionally gradient materials**
RT aircraft construction materials
airframe materials
anisotropic media
bimetals
ceramic matrix composites
combustion synthesis
composite structures
fiber composites
matrix materials
metal matrix composites
prepregs
spacecraft construction materials

functionals

RT ∞ functions
functions (mathematics)
integrals

∞ functions

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT contralateral functions
functionals
functions (mathematics)
muscular function
parenteral functions
penalty function
pulmonary functions
renal function
scattering functions
work functions

functions (mathematics)

GS **functions (mathematics)**
. Abel function
. Airy function
. analytic functions
. . entire functions
. . aperiodic functions
. asymptotes
. Boolean functions
. composite functions
. conformal mapping
. coordinate transformations
. delta function
. discrete functions
. discriminant analysis (statistics)
. distribution functions
. . probability distribution functions
. disturbing functions
. error functions
. Fourier transformation
. . fast Fourier transformations
. Fourier-Bessel transformations
. Fresnel integrals
. gamma function
. Green's functions
. Hamiltonian functions
. Hankel functions
. harmonic functions
. hyperbolic functions
. hypergeometric functions
. kernel functions
. Lagrangian function
. Laguerre functions
. Lame functions
. Laplace transformation
. Legendre functions
. Liapunov functions
. linear transformations
. Lorentz transformations
. Mathieu function
. Maxwell-Boltzmann density function
. Mellin transforms
. meromorphic functions

. . elliptic functions
. . rational functions
. monotone functions
. orthogonal functions
. . Walsh function
. orthonormal functions
. penalty function
. point spread functions
. Poisson density functions
. probability density functions
. . normal density functions
. . Pearson distributions
. . Rayleigh distribution
. . Weibull density functions
. ramp functions
. recursive functions
. Schwarz-Christoffel transformation
. shape functions
. space-time functions
. spherical harmonics
. spline functions
. step functions
. stress functions
. time functions
. transcendental functions
. . exponential functions
. . . logarithms
. . . periodic functions
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
. transfer functions
. . loop transfer functions
. . modulation transfer function
. . optical transfer function
. membership functions
. weighting functions
. Whittaker functions

RT algebra

∞ applications of mathematics
branching (mathematics)
calculus
continuity (mathematics)
divergence
extremum values
function space
functional analysis
functionals
∞ functions
infinity
inflection points
linearity
mapping
mathematical logic
mathematical models
∞ mathematics
nonlinearity
number theory
numerical differentiation
operations research
operators (mathematics)
random variables
range (extremes)
∞ transformations
transformations (mathematics)
wavelet analysis

fungus diseases

SN (EXCLUDES PLANT DISEASES)
GS diseases
. infectious diseases
. . **fungus diseases**
RT dermatitis
fungi
respiratory diseases

fungi

GS plants (botany)
. **fungi**
. . Aspergillus
. . Coccomyces
. . gibberellins
. . neurospora
. . rhizopus
. . rust fungi
. . saccharomyces
. . yeast
RT blight
fungus diseases

- lichens
- microspores
- mitra
- ∞ mold
- panspermia
- plant diseases
- spores
- thermophiles
- fungicides**
- GS **fungicides**
 - . xanthines
 - . . caffeine
 - . . guanines
 - . . uric acid
- RT antiinfectives and antibacterials
- toxicology
- funnels**
- RT conical inlets
- ∞ nozzles
- furan resins**
- GS plastics
 - . synthetic resins
 - . . thermosetting resins
 - . . . **furan resins**
 - polyamide resins
 - Kevlar (trademark)
 - Nylon (trademark)
- resins
 - . synthetic resins
 - . . thermosetting resins
 - . . . **furan resins**
 - polyamide resins
 - Kevlar (trademark)
 - Nylon (trademark)
- RT adhesives
- coatings
- furans**
- DEF Organic heterocyclic compounds containing diunsaturated rings of four carbon atoms and one oxygen atom; also known as furfuran or tetrol.
- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **furans**
 - tetrahydrofuran
- RT ∞ chemical compounds
 - plastics
 - solvents
 - thiophenes
- furfuryl alcohol**
- RT aldehydes
- ∞ aromatic compounds
- furtable antennas**
- GS antennas
 - . **furtable antennas**
- RT communication equipment
- folding structures
- satellite antennas
- space communication
- spacecraft antennas
- furnaces**
- SN (EXCLUDES DOMESTIC HEATING EQUIPMENT)
- GS heating equipment
 - . **furnaces**
 - . . electric furnaces
 - . . image furnaces
 - . . solar furnaces
 - . . vacuum furnaces
- RT boilers
- burners
- chemical engineering
- chemical reactors
- chimneys
- combustion chambers
- controlled atmospheres
- ∞ cupolas
- drying apparatus
- extraction
- fluidized bed processors
- foundries
- hearths
- heat treatment
- incinerators
- induction heating
- mechanical engineering
- melting
- ∞ metallurgy
- mufflers
- ovens
- refractories
- separators
- sintering
- waste energy utilization
- FUSE (satellite)*
- (added November 2000)
- USE **Far UV Spectroscopic Explorer**
- fuselage mounting*
- USE **aircraft production**
- fuselages**
- GS aircraft structures
 - . **fuselages**
- RT aircraft construction materials
- aircraft parts
- airframes
- bays (structural units)
- body-wing and tail configurations
- camber
- centerbodies
- cockpits
- cylindrical bodies
- hulls (structures)
- wing-fuselage stores
- fuselage-wing stores*
- (added August 1998)
- USE **wing-fuselage stores**
- ∞ **fuses**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT circuit breakers
- circuit protection
- electric fuses
- fuses (ordnance)
- warheads
- fuses (ordnance)**
- RT ammunition
- caps (explosives)
- detonators
- ∞ fuses
- initiators (explosives)
- warheads
- wicks
- fusibility**
- GS thermodynamic properties
 - . thermophysical properties
 - . . **fusibility**
- RT ∞ physical properties
- ∞ resistance
- welding
- fusiform shapes*
- USE **cones**
- ∞ **fusion**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The combining of atoms and consequent release of energy.
- RT fuel production
- inertial fusion (reactor)
- laser fusion
- liquid-solid interfaces
- nuclear fusion
- fusion (melting)**
- GS phase transformations
 - . melting
 - . . **fusion (melting)**
- RT adhesion
- frit
- fusion welding
- heat of fusion
- ∞ joining
- phase change materials
- fusion heat*
- USE **heat of fusion**
- fusion propulsion**
- (added September 1999)
- GS propulsion
 - . nuclear propulsion
 - . . **fusion propulsion**
- RT inertial confinement fusion
- nuclear electric propulsion
- nuclear fusion
- nuclear rocket engines
- plasma propulsion
- spacecraft propulsion
- fusion reactors**
- GS nuclear reactors
 - . **fusion reactors**
 - . . heliotrons
 - . . spheromaks
 - . . stellarators
- RT beta factor
- blankets (fusion reactors)
- bumpy toruses
- fusion-fission hybrid reactors
- impact fusion
- inertial fusion (reactor)
- limiters (fusion reactors)
- mirror fusion
- nuclear fission
- nuclear fusion
- Q values (nuclear physics)
- ∞ reactors
- tandem mirrors
- thermal barriers (plasma control)
- fusion weapons**
- UF *hydrogen bombs*
- GS weapons
 - . nuclear weapons
 - . . **fusion weapons**
- RT laser weapons
- nuclear fusion
- fusion welding**
- GS welding
 - . **fusion welding**
 - . . electric welding
 - . . . arc welding
 - gas tungsten arc welding
 - plasma arc welding
 - electroslag welding
 - . . . flash welding
 - . . electron beam welding
 - . . gas welding
 - . . . brazing
 - low temperature brazing
 - . . laser welding
- RT fusion (melting)
- pressure welding
- spot welds
- fusion-fission hybrid reactors**
- GS nuclear reactors
 - . **fusion-fission hybrid reactors**
- RT fusion reactors
- nuclear fission
- nuclear fusion
- ∞ reactors
- fuzzy sets**
- DEF Mathematical models coupled with a provision for the effect of human factors and construction process and experience.
- RT algorithms
- fuzzy systems
- membership functions
- set theory
- fuzzy systems**
- DEF Systems that involve fuzzy sets.
- RT algorithms
- fuzzy sets
- membership functions
- multisensor fusion
- probability theory
- set theory
- system identification

FV-12A aircraft

- ∞ systems
- systems analysis
- uncertain systems

FV-12A aircraft

- GS attack aircraft
- . fighter aircraft
- . . FV-12A aircraft

V/STOL aircraft

. FV-12A aircraft

RT ∞ aircraft

∞ military aircraft

FW-H equation

(added January 2007)

USE Fowcs Williams-Hawkings
equation

G

G force
USE **acceleration (physics)**

G stars

GS celestial bodies
. stars
. . . **G stars**
. . . sun
RT dwarf stars
F stars
giant stars
main sequence stars
stellar spectra

G-1 aircraft

UF *Navion G-1 aircraft*
Navion Rangemaster aircraft
Rangemaster aircraft
GS general aviation aircraft
. **G-1 aircraft**
light aircraft
. **G-1 aircraft**
monoplanes
. **G-1 aircraft**
Navion aircraft
. **G-1 aircraft**
passenger aircraft
. **G-1 aircraft**
transport aircraft
. **G-1 aircraft**
RT ∞ aircraft

G-91 aircraft

UF *Fiat G-91 aircraft*
GS attack aircraft
. fighter aircraft
. . . **G-91 aircraft**
Fiat aircraft
. **G-91 aircraft**
jet aircraft
. **G-91 aircraft**
monoplanes
. **G-91 aircraft**
RT ∞ aircraft

G-95/4 aircraft

UF *Fiat G-95/4 aircraft*
GS attack aircraft
. fighter aircraft
. . . **G-95/4 aircraft**
Fiat aircraft
. **G-95/4 aircraft**
jet aircraft
. **G-95/4 aircraft**
monoplanes
. **G-95/4 aircraft**
supersonic aircraft
. **G-95/4 aircraft**
V/STOL aircraft
. **G-95/4 aircraft**
RT ∞ aircraft

G-222 aircraft

UF *Fiat G-222 aircraft*
GS *Fiat aircraft*
. **G-222 aircraft**
jet aircraft
. turboprop aircraft
. . . **G-222 aircraft**
monoplanes
. **G-222 aircraft**
passenger aircraft
. **G-222 aircraft**
transport aircraft
. **G-222 aircraft**
V/STOL aircraft
. **G-222 aircraft**
RT ∞ aircraft

GA-5 aircraft

UF *Gloster GA-5 aircraft*
Javelin aircraft
GS attack aircraft
. fighter aircraft
. . . **GA-5 aircraft**
Hawker Siddeley aircraft
. **GA-5 aircraft**
jet aircraft
. **GA-5 aircraft**

monoplanes
. **GA-5 aircraft**
RT ∞ aircraft
delta wings

gabbro

GS rocks
. igneous rocks
. . . **gabbro**
RT anorthosite
lunar rocks

Gabon

GS nations
. **Gabon**
RT Africa

Gabor filters

(added February 1998)
GS image filters
. **Gabor filters**
RT computer vision
 ∞ filters
Gabor transformation
image analysis
image processing
low pass filters
neural nets
spatial filtering
textures

Gabor transformation

(added February 1998)
GS transformations (mathematics)
. **Gabor transformation**
RT Fourier transformation
Gabor filters
holography
image processing
signal analysis
wavelet analysis

gadolinium

GS chemical elements
. rare earth elements
. . . **gadolinium**
. . . gadolinium isotopes
metals
. rare earth elements
. . . **gadolinium**
. . . gadolinium isotopes
RT gadolinium-gallium garnet

gadolinium alloys

DEF Mixtures of gadolinium, a rare earth metal, with other metals.
GS alloys
. rare earth alloys
. . . **gadolinium alloys**
RT metals

gadolinium isotopes

GS chemical elements
. nuclides
. isotopes
. . . **gadolinium isotopes**
. rare earth elements
. gadolinium
. . . **gadolinium isotopes**
metals
. rare earth elements
. . . gadolinium
. . . **gadolinium isotopes**

gadolinium-gallium garnet

(added August 1990)
DEF A semiconducting crystalline compound used primarily as a solid-state laser material.

UF *GGG (garnet)*
GS gallium compounds
. **gadolinium-gallium garnet**
minerals
. garnets
. . . **gadolinium-gallium garnet**
silicon compounds
. silicates
. . . garnets
. . . **gadolinium-gallium garnet**

RT doped crystals
ecolite
ferrites
gadolinium
laser materials
lasers
magnetostatic amplifiers
semiconductor lasers
semiconductors (materials)

gages

USE **measuring instruments**

Gaia hypothesis

(added June 1990)
DEF The hypothesis that the Earth's atmosphere, biosphere, and its living organisms behave as a single system striving to maintain a stability conducive to the existence of life.
RT atmospheric composition
atmospheric temperature
biochemistry
biological evolution
biosphere
ecology
ecosystems
greenhouse effect

gain (amplification)

USE **amplification**

gait

(added September 2001)
DEF The pace or manner in which a legged animal or robot moves from one place to another.
GS locomotion
. **gait**
RT leg (anatomy)
robot dynamics
running
walking
walking machines

galactic bulge

(added August 1988)
UF *central bulge (galaxies)*
nuclear bulge (galaxies)
RT galactic nuclei
galactic structure
galaxies
Milky Way Galaxy
spiral galaxies
x ray sources

galactic clusters

SN (RESTRICTED TO CLUSTERS OF GALAXIES; EXCLUDES OPEN CLUSTERS)
UF *galaxy groups*
GS celestial bodies
. **galactic clusters**
. . . local group (astronomy)
. . . Virgo galactic cluster
RT agglomeration
 ∞ clusters
cooling flows (astrophysics)
disk galaxies
elliptical galaxies
large-scale structure of the universe
metallicity
missing mass (astrophysics)
protogalaxies
star clusters
star distribution
stellar systems
Sunyaev-Zeldovich effect

galactic cosmic rays

DEF Energetic particles that come from outside the solar systems. They generally come from within our galaxy.
GS extraterrestrial radiation
. galactic radiation
. . . **galactic cosmic rays**
ionizing radiation
. cosmic rays
. . . **galactic cosmic rays**
RT Advanced Composition Explorer

galactic evolution

energetic particles
galactic winds
solar activity effects
solar wind

galactic evolution

UF *galaxy formation*
GS evolution (development)
. **galactic evolution**
RT astrophysics
big bang cosmology
cooling flows (astrophysics)
cosmology
dark matter
disk galaxies
galactic mass
gravitational instability
large-scale structure of the universe
protogalaxies
ring galaxies
star distribution
star formation rate
stellar evolution
stellar mass accretion

galactic halos

(added December 1992)

DEF The tenuous, spherical cloud surrounding spiral galaxies. It is the locus of old stars and globular clusters. Halos appear to be required, at least to some extent, for the stability of disk galaxies.

RT dark matter
disk galaxies
galactic structure
globular clusters
halos
intergalactic media
interstellar gas
massive compact halo objects
missing mass (astrophysics)
molecular clouds
Population II stars
spiral galaxies
star distribution

galactic magnetic fields

USE **interstellar magnetic fields**

galactic mass

DEF The total amount of matter contained in a galaxy.

GS mass
. **galactic mass**
RT galactic evolution
galactic structure
mass distribution
stellar mass

galactic nuclei

GS **galactic nuclei**
. active galactic nuclei
RT absorption spectra
accretion disks
active galaxies
disk galaxies
galactic bulge
radio jets (astronomy)
radio sources (astronomy)
Seyfert galaxies
starburst galaxies

galactic radiation

GS extraterrestrial radiation
. **galactic radiation**
. . galactic cosmic rays
. . galactic radio waves
. . . North Polar Spur (astronomy)
. . galactic winds
RT active galactic nuclei
active galaxies
brightness distribution
corpuscular radiation
cosmic noise
cosmic rays
cosmic x rays
electromagnetic radiation
gamma ray astronomy
gamma ray bursts
gamma ray sources (astronomy)

Hubble diagram
infrared cirrus (astronomy)
interstellar radiation
irregular galaxies
mass to light ratios
nonthermal radiation
 ∞ radiation
radiative transfer
Solar Radiation 1 satellite
Solar Radiation 3 satellite
stellar radiation
Uhuru satellite

Galactic Radiation Exp Background sats

USE **GREB satellites**

galactic radio waves

DEF Radio waves emanating from our galaxy.
GS electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . **galactic radio waves**
. . . . North Polar Spur (astronomy)
extraterrestrial radiation
. extraterrestrial radio waves
. . **galactic radio waves**
. . . North Polar Spur (astronomy)
. galactic radiation
. . **galactic radio waves**
. . . North Polar Spur (astronomy)
RT cosmic noise
radio jets (astronomy)

galactic rotation

GS gyration
. rotation
. . **galactic rotation**
RT corotation
disk galaxies
hydrogen clouds
irregular galaxies
stellar motions
stellar systems
Tully-Fisher relation
velocity distribution

galactic structure

RT barred galaxies
compact galaxies
corotation
density wave model
disk galaxies
galactic bulge
galactic halos
galactic mass
galaxies
interacting galaxies
irregular galaxies
missing mass (astrophysics)
peculiar galaxies
ring galaxies
shell galaxies
stellar systems
 ∞ structures

galactic winds

(added May 1994)
GS extraterrestrial radiation
. galactic radiation
. . **galactic winds**
RT galactic cosmic rays
space plasmas
stellar winds

galactose

GS organic compounds
. carbohydrates
. . sugars
. . . monosaccharides
. . . . hexoses
. **galactose**

Galatea

(added July 1995)

DEF A natural satellite of Saturn, orbiting at a mean distance of 62,000 kilometers.

GS celestial bodies
. natural satellites
. . Neptune satellites

. . . **Galatea**
RT Neptune (planet)

galaxies

DEF Vast assemblages of stars or nebulae, composing island universes separated from other such assemblages by great distances.

GS celestial bodies
. **galaxies**
. . active galaxies
. . . Markarian galaxies
. . . radio galaxies
. . . Seyfert galaxies
. . compact galaxies
. . disk galaxies
. . dwarf galaxies
. . elliptical galaxies
. . interacting galaxies
. . irregular galaxies
. . Maffei galaxies
. . Magellanic clouds
. . peculiar galaxies
. . ring galaxies
. . shell galaxies
. . spiral galaxies
. . . Andromeda Galaxy
. . . barred galaxies
. . . Milky Way Galaxy
. . protogalaxies
. . starburst galaxies
. . Virgo galactic cluster
RT BL Lacertae objects
faint objects
galactic bulge
galactic structure
Gum nebula
Hubble constant
Hubble diagram
metallicity
nebulae
Orion nebula
quasars
radio sources (astronomy)
red shift
star clusters
star formation rate
stars
stellar systems

Galaxy aircraft

USE **C-5 aircraft**

galaxy formation

(added May 1997)

USE **galactic evolution**

galaxy groups

USE **galactic clusters**

galaxy interaction

USE **interacting galaxies**

Galerkin method

RT linearization
meshfree methods
 ∞ methodology

Galilean satellites

DEF The four largest and brightest satellites of Jupiter (Io, Europa, Ganymede, and Callisto).

GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Galilean satellites**
. . . . Callisto
. . . . Europa
. . . . Ganymede
. . . . Io
RT Charon
Galileo project
Galileo spacecraft
icy satellites
Jupiter (planet)
Triton

Galileo mission

USE **Galileo project**

Galileo probe

DEF The NASA Jupiter atmospheric entry

probe to be deployed from the Galileo spacecraft. The probe will make in situ measurements while descending from a parachute.

- GS interplanetary spacecraft
 - . Jupiter probes
 - . . **Galileo probe**
 - unmanned spacecraft
 - . space probes
 - . . Jupiter probes
 - . . . **Galileo probe**
- RT Jupiter (planet)
 - ∞ probes
 - ∞ spacecraft

Galileo project

DEF A NASA program to probe Jupiter, its environment and natural satellites. The spacecraft was placed in Earth orbit by the Space Transportation System (STS) on October 18, 1989. Used for Galileo mission.

- UF *Galileo mission*
- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Galileo project**
 - . projects
 - . . **Galileo project**
 - . space programs
 - . . NASA space programs
 - . . . **Galileo project**
- RT Amphitrite asteroid
 - atmospheric entry
 - flyby missions
 - Galilean satellites
 - Jupiter atmosphere
 - Jupiter probes

Galileo spacecraft

DEF A NASA orbiter spacecraft which will carry the Galileo probe and, following deployment at Jupiter, will become an orbiting platform for remote sensing of Jupiter and its satellites.

- GS interplanetary spacecraft
 - . Jupiter probes
 - . . **Galileo spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . Jupiter probes
 - . . . **Galileo spacecraft**
- RT flyby missions
 - Galilean satellites
 - Gaspra asteroid
 - Ida asteroid
 - Jupiter (planet)
 - ∞ missions
 - ∞ spacecraft

gall

- RT digestive system
 - gastrointestinal system
 - secretions

gallamine triethiodide

- GS ethers
 - . **gallamine triethiodide**
 - halogen compounds
 - . iodine compounds
 - . . iodides
 - . . . **gallamine triethiodide**
 - organic compounds
 - . amines
 - . . **gallamine triethiodide**

gallates

- GS gallium compounds
 - . **gallates**
 - . . sodium gallates

gallium

- GS chemical elements
 - . **gallium**
 - . . gallium isotopes
 - metals
 - . **gallium**
 - . . gallium isotopes

gallium alloys

- GS alloys
 - . **gallium alloys**
- RT aluminum alloys

indium alloys
superconductivity

gallium antimonides

- GS antimony compounds
 - . antimonides
 - . . **gallium antimonides**
 - gallium compounds
 - . **gallium antimonides**

gallium arsenide lasers

- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **gallium arsenide lasers**
 - . . solid state lasers
 - . . . **gallium arsenide lasers**
 - stimulated emission devices
 - . lasers
 - . . semiconductor lasers
 - . . . **gallium arsenide lasers**
 - . . solid state lasers
 - . . . **gallium arsenide lasers**
- RT aluminum gallium arsenide lasers
 - injection lasers
 - stimulated emission
 - waveguide lasers

gallium arsenides

- GS arsenic compounds
 - . arsenides
 - . . **gallium arsenides**
 - . . . aluminum gallium arsenides
 - . . . indium gallium arsenides
 - gallium compounds
 - . **gallium arsenides**
 - . . aluminum gallium arsenides
 - . . . indium gallium arsenides
- RT antisite defects
 - Bragg reflectors
 - Gunn diodes
 - heterojunction devices
 - injection lasers
 - MODFETS
 - negative conductance
 - negative electron affinity
 - negative resistance devices
 - quantum well infrared photodetectors
 - Schottky diodes
 - semiconductor lasers
 - superlattices
 - transferred electron devices

gallium compounds

- GS **gallium compounds**
 - . gadolinium-gallium garnet
 - . gallates
 - . . sodium gallates
 - . gallium antimonides
 - . gallium arsenides
 - . . aluminum gallium arsenides
 - . . indium gallium arsenides
 - . gallium nitrides
 - . gallium oxides
 - . gallium phosphides
 - . gallium selenides
- RT ∞ chemical compounds
 - ∞ Group 3A compounds
 - ∞ metal compounds

gallium isotopes

- GS chemical elements
 - . gallium
 - . . **gallium isotopes**
 - . nuclides
 - . . isotopes
 - . . . **gallium isotopes**
 - metals
 - . gallium
 - . . **gallium isotopes**

gallium nitrides

- GS gallium compounds
 - . **gallium nitrides**
 - nitrogen compounds
 - . nitrides
 - . . metal nitrides
 - . . . **gallium nitrides**

RT semiconductors (materials)

gallium oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **gallium oxides**
 - gallium compounds
 - . **gallium oxides**

gallium phosphides

- GS gallium compounds
 - . **gallium phosphides**
 - phosphorus compounds
 - . phosphides
 - . . **gallium phosphides**

gallium selenides

- GS chalcogenides
 - . selenides
 - . . **gallium selenides**
 - gallium compounds
 - . **gallium selenides**
 - selenium compounds
 - . selenides
 - . . **gallium selenides**

galvanic cells

USE **electrolytic cells**

galvanic skin response

- UF *electrodermal response*
- GS responses
 - . **galvanic skin response**
- RT electrical resistance
 - lies

galvanizing

USE **zinc coatings**

galvanomagnetic effects

- UF *galvanomagnetism*
- GS **galvanomagnetic effects**
 - . Hall effect
 - . Nernst-Ettingshausen effect
 - . . quantum Hall effect
- RT ∞ effects

galvanomagnetism

USE **galvanomagnetic effects**

galvanometers

- GS measuring instruments
 - . **galvanometers**
- RT ammeters
 - electrometers
 - micromilliammeters
 - millivoltmeters
 - thermocouple pyrometers

Gambia

- GS nations
 - . **Gambia**
- RT Africa

game theory

DEF Application of mathematics to a game, business situation, or other problem to maximize gain or minimize loss.

- GS **game theory**
 - . saddle points (game theory)
- RT decision theory
 - deployment
 - games
 - information theory
 - linear programming
 - martingales
 - mathematical models
 - mathematical programming
 - minimax technique
 - Monte Carlo method
 - operations research
 - probability theory
 - risk
 - saddle points
 - simulation
 - statistical analysis
 - statistical decision theory
 - stochastic processes
 - strategy
 - ∞ theories

games

- war games
- games**
(added October 1998)
- GS **games**
. differential games
. pursuit-evasion games
. war games
. zero sum games
- RT control theory
game theory
optimization
- gametocytes**
UF *oocytes*
spermatocytes
GS cells (biology)
. **gametocytes**
. . . eggs
. . . zygotes
. . . spermatozoa
RT spermatogenesis
- gamma function**
GS analysis (mathematics)
. complex variables
. . . **gamma function**
functions (mathematics)
. **gamma function**
RT factorials
statistical distributions
- gamma globulin**
GS antibodies
. **gamma globulin**
biopolymers
. proteins
. . . globulins
. . . **gamma globulin**
organic compounds
. proteins
. . . globulins
. . . **gamma globulin**
- gamma radiation*
USE **gamma rays**
- gamma ray absorptiometry**
GS density measurement
. **gamma ray absorptiometry**
RT absorption spectra
densitometers
electromagnetic absorption
energy absorption
∞ measurement
photon absorptiometry
radiation absorption
- gamma ray absorption**
GS energy absorption
. radiation absorption
. . . electromagnetic absorption
. . . **gamma ray absorption**
RT ∞ absorption
electromagnetic properties
electromagnetic radiation
ionizing radiation
nuclear radiation
photon absorptiometry
- gamma ray astronomy**
DEF Astronomy based on the detection of gamma ray emission and interactions from supernova remnants, neutron stars, flare stars, galactic core and disc, black holes, etc.
GS astronomy
. **gamma ray astronomy**
RT astrophysics
cosmic x rays
energy spectra
Fermi Gamma-ray Space Telescope
galactic radiation
gamma ray bursts
gamma ray sources (astronomy)
gamma ray telescopes
Granat satellite
HEAO 4
radio astronomy
soft gamma repeaters
Swift observatory
- x ray astronomy
- Gamma Ray Astronomy Explorer*
USE **Explorer 11 satellite**
- gamma ray beams**
GS beams (radiation)
. **gamma ray beams**
electromagnetic radiation
. **gamma ray beams**
ionizing radiation
. **gamma ray beams**
nuclear radiation
. **gamma ray beams**
RT photon beams
radioactive decay
- gamma ray bursts**
DEF Short (about 0. 1 - 4 sec.) intense low-energy (about 0. 1 - 1. 2 MeV) bursts recorded by the Vela satellite system in 1967. Their isotropic distribution suggests an extragalactic origin, but a galactic disk origin cannot be ruled out. Used for cosmic gamma ray bursts.
UF *cosmic gamma ray bursts*
GS bursts
. **gamma ray bursts**
electromagnetic radiation
. gamma rays
. . . **gamma ray bursts**
extraterrestrial radiation
. **gamma ray bursts**
ionizing radiation
. cosmic rays
. . . **gamma ray bursts**
. gamma rays
. . . **gamma ray bursts**
nuclear radiation
. gamma rays
. . . **gamma ray bursts**
RT big bang cosmology
bremsstrahlung
Cerenkov radiation
cosmic x rays
galactic radiation
gamma ray astronomy
interstellar radiation
nuclear particles
radiant flux density
soft gamma repeaters
starquakes
stellar radiation
Swift observatory
x ray astronomy
- gamma ray lasers**
DEF Stimulated emission devices producing coherent gamma radiation.
GS stimulated emission devices
. lasers
. . . **gamma ray lasers**
RT coherent light
light transmission
optical pumping
pulsed radiation
- Gamma Ray Observatory**
DEF A late 1980s NASA mission to explore the gamma ray window to the universe from 0. 06 MeV to 30 GeV.
UF *Compton Gamma Ray Observatory*
GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . **Gamma Ray Observatory**
observatories
. astronomical observatories
. . . astronomical satellites
. . . **Gamma Ray Observatory**
RT gamma ray telescopes
OGO
spaceborne astronomy
spaceborne telescopes
- gamma ray sources (astronomy)**
(added October 1997)
SN (LIMITED TO ASTRONOMICAL SOURCES; EXCLUDES RADIATION DEVICES)
GS **gamma ray sources (astronomy)**
. soft gamma repeaters
- RT COS-B satellite
galactic radiation
gamma ray astronomy
pulsars
radio sources (astronomy)
spectral counterparts (astronomy)
Swift observatory
x ray sources
- gamma ray spectra**
DEF The energy distribution of gamma rays emitted by nuclei.
GS spectra
. radiation spectra
. . . electromagnetic spectra
. . . **gamma ray spectra**
RT emission spectra
ionizing radiation
- gamma ray spectrometers**
DEF Instruments for deriving the physical constants of materials by using induced gamma radiation as the emission source.
GS measuring instruments
. spectrometers
. . . **gamma ray spectrometers**
RT 2001 Mars Odyssey
anticoincidence detectors
optical measurement
scintillating fibers
Solar Maximum Mission
spectra
spectrum analysis
- gamma ray telescopes**
DEF Special telescopes for the observation (and recording) of astronomical phenomena in the gamma ray spectrum.
GS telescopes
. **gamma ray telescopes**
. . . Fermi Gamma-ray Space Telescope
RT cosmic rays
gamma ray astronomy
Gamma Ray Observatory
scintillating fibers
Swift observatory
- gamma rays**
SN (EMITTED BY NUCLEI)
DEF Quanta of electromagnetic radiation emitted by nuclei, each such photon being emitted as the result of a quantum transition between two energy levels of the nucleus. Gamma rays have energies usually between 10 thousand electron volts and 10 million electron volts with correspondingly short wavelengths and high frequencies. Used for gamma radiation.
UF *gamma radiation*
GS electromagnetic radiation
. **gamma rays**
. . . gamma ray bursts
ionizing radiation
. **gamma rays**
. . . gamma ray bursts
nuclear radiation
. **gamma rays**
. . . gamma ray bursts
bremsstrahlung
RT Cerenkov radiation
cosmic rays
cosmic x rays
decay
emission spectra
flux (rate)
flux density
monochromatic radiation
Mossbauer effect
photomagnetic effects
photons
∞ radiation
radiation effects
radiation shielding
radioactive decay
radioactivity
∞ rays
scintillating fibers
transverse oscillation
transverse waves
Wind/GGS spacecraft

- x rays
- Gamma-ray Large Area Space Telescope*
(added August 2008)
USE **Fermi Gamma-ray Space Telescope**
- ganglia**
GS anatomy
. nervous system
. . . nerves
. . . **ganglia**
RT cells (biology)
neuroglia
neurophysiology
- gantries*
USE **gantry cranes**
- gantry cranes**
DEF Large cranes mounted on platforms that usually run back and forth on parallel tracks astride the work area. Used for gantries.
UF *gantries*
GS handling equipment
. cranes
. . . **gantry cranes**
RT ground support equipment
launching pads
launching sites
umbilical towers
- Ganymede**
DEF A satellite of Jupiter orbiting at a mean distance of 1,071,000 kilometers. Also called Jupiter III.
GS celestial bodies
. natural satellites
. . . icy satellites
. . . **Ganymede**
. . . Jupiter satellites
. . . Galilean satellites
. . . . **Ganymede**
RT Callisto
Charon
Io
Jupiter (planet)
- GAP (propellants)*
USE **glycidyl azide polymer**
- gaps**
GS **gaps**
. energy gaps (solid state)
. spark gaps
RT ∞ arresters
∞ breakdown
crack opening displacement
∞ holes
openings
orifices
passageways
quantum wells
∞ tunnels
- gaps (geology)**
DEF Ravines or gorges cut deeply through a mountain ridge, or between hills or mountains. Used for cols and passes.
UF *cols*
passes
GS geology
. **gaps (geology)**
landforms
. **gaps (geology)**
RT mountains
∞ ridges
- garbage**
GS wastes
. **garbage**
RT composting
organic wastes (fuel conversion)
sewers
solid wastes
utilities
waste disposal
waste treatment
- garments**
GS clothing
- . **garments**
RT flight clothing
suits
vests
- garnets**
DEF Groups of minerals that are silicates of cubic crystalline form.
GS minerals
. **garnets**
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet
silicon compounds
. silicates
. . **garnets**
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet
RT eclogite
lasers
- GARP*
USE **Global Atmospheric Research Program**
- GARP Atlantic Tropical Experiment**
UF *GATE (experiment)*
GS programs
. Global Atmospheric Research Program
. . **GARP Atlantic Tropical Experiment**
RT Atlantic Ocean
intertropical convergent zones
meteorology
NASA programs
oceanography
tropical meteorology
tropical regions
weather forecasting
- gas analysis**
GS chemical tests
. chemical analysis
. . **gas analysis**
. . . ozonometry
. . . Van Slyke method
RT air sampling
flame probes
Hopcalite (trademark)
mass spectrometers
∞ materials tests
oxygen analyzers
qualitative analysis
quantitative analysis
volumetric analysis
- gas atomization**
DEF Atomization of fluids by high velocity
gas jets.
GS atomizing
. **gas atomization**
RT aerosols
collisions
comminution
liquid atomization
particles
- gas bags**
GS bags
. **gas bags**
expandable structures
. inflatable structures
. . **gas bags**
RT balloons
high altitude balloons
- gas bearings**
UF *air bearings*
gas lubricated bearings
GS bearings
. **gas bearings**
RT antifriction bearings
fluid films
foil bearings
high temperature lubricants
squeeze films
thrust bearings
- turbine engines
- gas chromatography**
DEF A method of chemical analysis involving the separation of volatile constituents of a mixture by means of gas flow entrainment, vapor pressure differences, and affinity of specific compounds for various liquids or solid materials.
GS chemical tests
. chemical analysis
. . chromatography
. . . **gas chromatography**
RT adsorption
paper chromatography
sorption
thin layer chromatography
- gas composition**
GS composition (property)
. **gas composition**
. . carbon dioxide concentration
RT atmospheric composition
atom concentration
chemical composition
Dalton law
expired air
ionospheric composition
plasma composition
polar gases
- gas cooled fast reactors**
GS nuclear reactors
. fast nuclear reactors
. . **gas cooled fast reactors**
. gas cooled reactors
. . **gas cooled fast reactors**
- gas cooled reactors**
UF *GCR (reactors)*
GS nuclear reactors
. **gas cooled reactors**
. . experimental gas cooled reactors
. . gas cooled fast reactors
. . high temperature nuclear reactors
. . . high temperature gas cooled reactors
. . . KIWI reactors
. . . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. . . Tory 2 reactor
. . Tory 2-A reactor
. . Tory 2-C reactor
RT ∞ gas reactors
- gas cooling**
SN (COOLING WITH GAS)
GS cooling
. **gas cooling**
RT coolants
freon
heat exchangers
- gas density**
GS density (mass/volume)
. **gas density**
RT atom concentration
buoyancy
convective flow
gaseous diffusion
ideal gas
probability density functions
rarefied gases
real gases
- gas detectors**
RT detection
∞ detectors
haze detection
identifying
indicating instruments
monitors
∞ probes
∞ sensors
smoke detectors

gas discharge tubes

warning systems

gas diffusion

USE **gaseous diffusion**

gas discharge counters

USE **counters**
gas discharge tubes

gas discharge tubes

DEF Evacuated enclosures containing a gas at low pressure that permits the passage of electricity through the gas upon application of sufficient voltage. Note: The tubes are usually provided with metal electrodes, but one form permits an electrodeless discharge with induced voltage. Used for discharge tubes and gas discharge counters.

UF *discharge tubes*

gas discharge counters

GS electron tubes

. **gas discharge tubes**

. . ignitrons

. . thyratrons

RT Faraday dark space

∞ gas tubes

microwave equipment

microwave oscillators

microwave tubes

phototubes

radiation counters

gas discharges

GS electric current

. electric discharges

. . Townsend discharge

. . . **gas discharges**

. . . . toroidal discharge

. . . . ring discharge

RT afterglows

cold cathode tubes

cold cathodes

electric arcs

electric sparks

electrodeless discharges

electron avalanche

glow discharges

lightning

polar gases

gas dissociation

GS dissociation

. **gas dissociation**

RT thermal dissociation

gas dynamics

GS mechanics (physics)

. fluid mechanics

. . fluid dynamics

. . . **gas dynamics**

. . . . aerodynamics

. aerothermodynamics

. hypersonics

. rotor aerodynamics

. supersonics

. unsteady aerodynamics

. interactional aerodynamics

. rarefied gas dynamics

RT Dalton law

∞ dynamics

gas path analysis

gaseous diffusion

gaseous self-diffusion

gases

hydrodynamic equations

hydrodynamics

jet membrane process

kinetics

Lorentz gas

magnetohydrodynamics

molecular gases

polar gases

thermodynamics

wave rotors

gas evacuating

USE **evacuating (vacuum)**

gas evolution

GS evolution (liberation)

. **gas evolution**

RT degassing

outgassing

transpiration

gas exchange

GS exchanging

. **gas exchange**

RT oxygen production

gas expansion

GS expansion

. **gas expansion**

RT Joule-Thomson effect
pressure reduction

gas explosions

GS explosions

. chemical explosions

. . **gas explosions**

RT detonable gas mixtures

detonation waves

flame propagation

flammable gases

underground explosions

gas flow

UF *gaseous cavitation*

GS fluid flow

. **gas flow**

. . air flow

. . . air currents

. . . . jet streams (meteorology)

. . . . meridional flow

. . . . vertical air currents

. . continuum flow

. . cooling flows (astrophysics)

. . equilibrium flow

. . . frozen equilibrium flow

. . . shifting equilibrium flow

. . free molecular flow

. . Knudsen flow

. . molecular flow

. . . slip flow

. . . transition flow

. . nonequilibrium flow

. . pipe flow

RT air ducts

air jets

compressible flow

critical flow

Crocco-Lee theory

gas path analysis

gasdynamic lasers

gaseous diffusion

gases

geophysical fluid flow cells

hydraulic analogies

hypersonic flow

incompressible flow

inviscid flow

Joule-Thomson effect

laminar flow

liquid flow

magnetohydrodynamic flow

mass flow

molecular relaxation

molecular trajectories

multiphase flow

nonuniform flow

orifice flow

∞ pressure drop

radial flow

single-phase flow

steady flow

steam flow

streams

subcritical flow

subsonic flow

supercritical flow

supersonic flow

supersonic jet flow

transonic flow

turbulent flow

two phase flow

uniform flow

unsteady flow

vapor jets

viscous flow

gas generator engines

USE **engines**
gas generators

gas generators

DEF A device used to generate gases in the laboratory; a chemical plant for producing gas from coal, for example, water gas. Used for gas generator engines.

UF *gas generator engines*

RT chemical reactors

∞ generators

pneumatic equipment

pressurizing

vaporizers

wave rotors

gas giant planets

DEF The giant planets, Jupiter, Saturn, Uranus, and Neptune, of our solar system.

GS celestial bodies

. planets

. . **gas giant planets**

. . . Jupiter (planet)

. . . Neptune (planet)

. . . Saturn (planet)

. . . Uranus (planet)

RT extrasolar planets

Jupiter red spot

Neptune atmosphere

planetary composition

Saturn rings

solar system

Uranus atmosphere

gas guns

GS **gas guns**

. light gas guns

RT atmospheric entry

ballistics

∞ guns

hypervelocity guns

wind tunnels

gas heating

GS heating

. **gas heating**

RT arc heating

kinetic heating

plasma heating

radiant heating

resistance heating

thermal diffusion

gas injection

GS injection

. fluid injection

. . **gas injection**

RT formations

fuel injection

inflating

perforating

plasma pumping

porosity

pressurizing

stimulation

water injection

gas ionization

GS ionization

. **gas ionization**

. . atmospheric ionization

. . . auroral ionization

. . flame ionization

RT afterglows

electron attachment

helium afterglow

ionized gases

ionizers

Penning discharge

Penning effect

photoionization

plasma display devices

ring discharge

gas jets

GS fluid jets

. **gas jets**

- RT air jets
cold gas
∞ jets
- gas lasers**
- GS stimulated emission devices
. lasers
. **gas lasers**
. . . carbon dioxide lasers
. . . carbon monoxide lasers
. . . DF lasers
. . . excimer lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . . HCN lasers
. . . helium-neon lasers
. . . HF lasers
. . . nitrogen lasers
. . . rare gas-halide lasers
. . . . krypton fluoride lasers
. . . . xenon chloride lasers
. . . . xenon fluoride lasers
. . . TEA lasers
. . . ultraviolet lasers
- RT carbon lasers
chemical lasers
electron pumping
gasdynamic lasers
infrared lasers
Mach-Zehnder interferometers
molecular oscillations
nuclear pumping
organic lasers
polar gases
pulsed lasers
Q switched lasers
stimulated emission
water masers
- gas liquefaction*
USE **condensing**
- gas lubricants**
- GS lubricants
. **gas lubricants**
- RT gaseous diffusion
high temperature lubricants
metal-gas systems
solid lubricants
squeeze films
- gas lubricated bearings*
USE **gas bearings**
- gas masers**
- GS stimulated emission devices
. masers
. . **gas masers**
. . . hydrogen masers
- RT argon lasers
atomic clocks
carbon dioxide lasers
frequency standards
interstellar masers
polar gases
stimulated emission
TEA lasers
water masers
- gas meters**
- GS measuring instruments
. flowmeters
. . **gas meters**
- RT flow measurement
Venturi tubes
- gas mixtures**
- GS gases
. **gas mixtures**
. . air
. . . alveolar air
. . . compressed air
. . . expired air
. . . high temperature air
. . . liquid air
. . . detonable gas mixtures
mixtures
. solutions
. . **gas mixtures**
. . . air
- alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air
. . . . liquid air
. . . . detonable gas mixtures
- RT argon-oxygen atmospheres
∞ atmospheres
binary fluids
binary mixtures
controlled atmospheres
eudiometers
exhaust gases
fuel-air ratio
fumes
gaseous rocket propellants
helium-oxygen atmospheres
hydrogen-based energy
ignition limits
laminar mixing
Lighthill gas model
liquefied gases
liquid-gas mixtures
mixing ratios
premixed flames
premixing
- gas path analysis**
DEF Mathematical process of determining overall engine performance, individual module performances and sensor performances from any specific set of engine related measurements.
RT gas dynamics
gas flow
- gas phases*
USE **vapor phases**
- gas pipes**
- GS pipes (tubes)
. **gas pipes**
RT ∞ gas tubes
- gas pockets**
- RT cavities
evacuating (vacuum)
- gas pressure**
- GS pressure
. **gas pressure**
- RT atmospheric pressure
compressed gas
internal pressure
partial pressure
- ∞ **gas reactors**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT chemical reactors
gas cooled reactors
gaseous fission reactors
- gas recovery**
- GS reclamation
. materials recovery
. . **gas recovery**
- RT energy technology
exhaust gases
gaseous diffusion
gases
∞ recovery
wastes
- gas spectroscopy**
- GS spectroscopy
. **gas spectroscopy**
- RT chemical analysis
chemical tests
flame spectroscopy
magnetic spectroscopy
mass spectroscopy
optogalvanic spectroscopy
spectroscopic analysis
vacuum spectroscopy
visible spectrum
- gas streams**
- GS gases
. **gas streams**
- streams
. **gas streams**
- RT jet flow
laminar flow
turbulence
wind tunnels
- gas temperature**
- GS temperature
. **gas temperature**
- RT atmospheric temperature
inlet temperature
ionized gases
rarefied gases
shock tubes
shock waves
temperature measurement
- gas transport**
- SN (ENCOMPASSES GAS DYNAMICS--EXCLUDES MATERIALS HANDLING)
- RT energy transfer
gaseous diffusion
heat transfer
kinetic theory
Lighthill gas model
magnetohydrodynamics
mass transfer
pollution transport
transport theory
- ∞ **gas tubes**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cold cathode tubes
gas discharge tubes
gas pipes
trigatrons
- gas tungsten arc welding**
- UF *TIG welding*
tungsten inert gas welding
- GS welding
. fusion welding
. . electric welding
. . . arc welding
. . . . **gas tungsten arc welding**
- RT heat affected zone
- gas turbine engines**
- GS engines
. air breathing engines
. . **gas turbine engines**
. . . hydrogen engines
. . . jet engines
. . . T-58 engine
. . . . ramjet engines
. integral rocket ramjets
. low volume ramjet engines
. pulsejet engines
. supersonic combustion ramjet engines
. turbooramjet engines
. turbojet engines
. Bristol-Siddeley Olympus 593 engine
. Bristol-Siddeley Viper engine
. ducted fan engines
. J-33 engine
. J-34 engine
. J-47 engine
. J-52 engine
. J-57 engine
. J-58 engine
. J-65 engine
. J-69-T-25 engine
. J-71 engine
. J-73 engine
. J-75 engine
. J-79 engine
. J-85 engine
. J-93 engine
. RA-28 engine
. turbofan engines
. Bristol-Siddeley BS 53 engine
. CF-700 engine
. convertible fan-shaft engines
. J-97 engine
. TF-30 engine

- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- . internal combustion engines
- . **gas turbine engines**
- . hydrogen engines
- . jet engines
- . T-58 engine
- . ramjet engines
- . integral rocket ramjets
- . low volume ramjet engines
- . pulsejet engines
- . supersonic combustion ramjet engines
- . turboramjet engines
- . turbojet engines
- . Bristol-Siddeley Olympus 593 engine
- . Bristol-Siddeley Viper engine
- . ducted fan engines
- . J-33 engine
- . J-34 engine
- . J-47 engine
- . J-52 engine
- . J-57 engine
- . J-58 engine
- . J-65 engine
- . J-69-T-25 engine
- . J-71 engine
- . J-73 engine
- . J-75 engine
- . J-79 engine
- . J-85 engine
- . J-93 engine
- . RA-28 engine
- . turbofan engines
- . Bristol-Siddeley BS 53 engine
- . CF-700 engine
- . convertible fan-shaft engines
- . J-97 engine
- . TF-30 engine
- . TF-34 engine
- . TF-41 engine
- . turboprop engines
- . T-34 engine
- . T-38 engine
- . T-53 engine
- . T-55 engine
- . T-56 engine
- . T-63 engine
- . T-64 engine
- . T-74 engine
- . T-76 engine
- . T-78 engine
- . turboramjet engines
- . turbine engines
- . **gas turbine engines**
- . hydrogen engines
- . jet engines
- . T-58 engine
- . ramjet engines
- . integral rocket ramjets
- . low volume ramjet engines
- . pulsejet engines
- . supersonic combustion ramjet engines
- . turboramjet engines
- . turbojet engines
- . Bristol-Siddeley Olympus 593 engine
- . Bristol-Siddeley Viper engine
- . ducted fan engines
- . J-33 engine
- . J-34 engine
- . J-47 engine
- . J-52 engine
- . J-57 engine
- . J-58 engine
- . J-65 engine

- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- RT aircraft engines
- axial flow turbines
- Brayton cycle
- external combustion engines
- flameout
- steam turbines
- supersonic turbines
- turbogenerators
- two stage turbines
- wave rotors

gas turbines

DEF Turbines rotated by expanding gases, as in a turbojet engine or in a turbosupercharger.

GS turbomachinery

. turbines

. . **gas turbines**

RT axial flow turbines

Brayton cycle

closed cycles

combined cycle power generation

internal combustion engines

spray ingestion

steam turbines

supersonic turbines

turbogenerators

two stage turbines

gas valves

GS pneumatic equipment

. **gas valves**

valves

. **gas valves**

RT automatic control valves

cocks

dampers (valves)

fuel valves

relief valves

gas viscosity

GS transport properties

. viscosity

. . **gas viscosity**

RT

gaseous diffusion

Lennard-Jones gas

gas welding

SN (EXCLUDES ELECTRIC WELDING IN THE PRESENCE OF A CONTROLLED GASEOUS ATMOSPHERE)

GS welding

. fusion welding

. . **gas welding**

. . . brazing

. . . low temperature brazing

RT

gas-metal interactions

pressure welding

gasdynamic lasers

GS stimulated emission devices

. lasers

. . **gasdynamic lasers**

RT

gas flow

gas lasers

laser outputs

plasmadynamic lasers

tube lasers

gaseous cavitation

USE **cavitation flow**

gas flow

gaseous diffusion

DEF A method of isotopic separation based on the fact that gas atoms or molecules with different masses will diffuse through a porous barrier (orm membrane) at different rates. The method is used to separate uranium 235 from uranium 238. It requires large gaseous diffusion plants and enormous amounts of electric power.

UF *gas diffusion*

GS diffusion

. **gaseous diffusion**

. . gaseous self-diffusion

transport properties

. **gaseous diffusion**

. . gaseous self-diffusion

RT

diffusion coefficient

gas density

gas dynamics

gas flow

gas lubricants

gas recovery

gas transport

gas viscosity

gas-gas interactions

gas-ion interactions

gas-liquid interactions

gas-metal interactions

mixing ratios

molecular diffusion

pollution transport

thermal diffusion

gaseous fission reactors

GS nuclear reactors

. **gaseous fission reactors**

RT

fissile fuels

fissionable materials

∞ gas reactors

nuclear lightbulb engines

nuclear propulsion

plasma propulsion

gaseous fuels

GS fuels

. **gaseous fuels**

. . natural gas

. . . liquefied natural gas

gases

. flammable gases

. . **gaseous fuels**

. . . natural gas

. . . liquefied natural gas

RT

lignite

liquid fuels

gaseous rocket propellants

GS propellants

. rocket propellants

. . **gaseous rocket propellants**

RT

cryogenic rocket propellants

endothermic fuels

gas mixtures

high energy propellants

hybrid propellants

hydrogen fuels

liquid rocket propellants

man operated propulsion systems

monopropellants

storable propellants

gaseous self-diffusion

GS diffusion

. gaseous diffusion

. . **gaseous self-diffusion**

transport properties

. gaseous diffusion

. . **gaseous self-diffusion**

RT

electron diffusion

gas dynamics

- kinetic theory
 - molecular diffusion
 - particle diffusion
 - plasma diffusion
- gases**
- GS **gases**
 - . ammonia
 - . . liquid ammonia
 - . carbon dioxide
 - . carbon monoxide
 - . carbon suboxides
 - . cold gas
 - . compressed gas
 - . . high pressure oxygen
 - . dissolved gases
 - . exhaust gases
 - . . flue gases
 - . flammable gases
 - . . gaseous fuels
 - . . . natural gas
 - liquefied natural gas
 - . . liquefied natural gas
 - . . pyrogen
 - . gas mixtures
 - . . air
 - . . . alveolar air
 - . . . compressed air
 - . . . expired air
 - . . . high temperature air
 - . . . liquid air
 - . . . detonable gas mixtures
 - . gas streams
 - . gray gas
 - . high temperature gases
 - . . high temperature air
 - . hydrogen
 - . . hydrogen isotopes
 - . . . deuterium
 - . . . hydrogen 4
 - . . . metallic hydrogen
 - . . . tritium
 - . . liquid hydrogen
 - . ideal gas
 - . ionized gases
 - . . Lorentz gas
 - . liquefied gases
 - . . liquefied natural gas
 - . . liquid air
 - . . liquid ammonia
 - . . liquid fluorine
 - . . liquid helium
 - . . . liquid helium 2
 - . . liquid hydrogen
 - . . liquid neon
 - . . liquid nitrogen
 - . . liquid oxygen
 - . molecular gases
 - . . polar gases
 - . . polyatomic gases
 - . . . diatomic gases
 - . . monatomic gases
 - . neutral gases
 - . nitrogen
 - . . liquid nitrogen
 - . . nitrogen isotopes
 - . . . nitrogen 15
 - . . . nitrogen 16
 - . . solid nitrogen
 - . noncondensable gases
 - . nongray gas
 - . nonpolar gases
 - . ortho hydrogen
 - . oxygen
 - . . liquid oxygen
 - . . oxygen isotopes
 - . . . oxygen 17
 - . . . oxygen 18
 - . ozone
 - . para hydrogen
 - . phosgene
 - . rare gases
 - . . argon
 - . . . argon isotopes
 - . . helium
 - . . . helium isotopes
 - . . . liquid helium
 - liquid helium 2
 - . . krypton
 - . . . krypton isotopes
 - krypton 85
 - . . neon
 - . . . liquid neon
 - . . . neon isotopes
 - . . radon
 - . . . radon isotopes
 - . . xenon
 - . . . xenon isotopes
 - xenon 129
 - xenon 133
 - xenon 135
 - . . rarefied gases
 - . . cosmic gases
 - . . . interplanetary gas
 - . . . interstellar gas
 - . rarefied plasmas
 - . real gases
 - . residual gas
 - . solidified gases
 - . . solid cryogenics
 - . . . solid nitrogen
 - . sulfur hexafluoride
 - . synthesis gas
 - RT ∞ atmospheres
 - coal gasification
 - ∞ fluids
 - fumes
 - gas dynamics
 - gas flow
 - gas recovery
 - hydrogen clouds
 - metal-gas systems
 - nonpoint sources
 - odors
 - plasmas (physics)
 - pneumatics
 - prevaporization
 - reaction products
 - vapor phases
 - vapors
- gas-gas interactions**
- GS **gas-gas interactions**
 - . association reactions
 - RT Dalton law
 - detonable gas mixtures
 - exhaust emission
 - gaseous diffusion
 - ∞ interactions
- gasification**
- GS **gasification**
 - . coal gasification
 - . . hydrolysis
 - RT synthane
 - vaporizing
- gas-ion interactions**
- UF *ion-gas interactions*
 - RT gaseous diffusion
 - ∞ interactions
- gaskets**
- DEF Preformed deformable devices designed to be placed between two adjoining parts to prevent the passage of liquid or gas between the parts.
 - GS seals (stoppers)
 - . **gaskets**
 - RT labyrinth seals
 - O ring seals
 - pump seals
- gas-liquid interactions**
- GS **gas-liquid interactions**
 - . air water interactions
 - . . air sea ice interactions
 - RT condensing
 - energy transfer
 - evaporation
 - gaseous diffusion
 - heat transfer
 - ∞ interactions
 - interfacial tension
 - mass transfer
 - momentum transfer
 - noncondensable gases
- gas-metal interactions**
- GS fluid-solid interactions
 - . gas-solid interactions
 - . . **gas-metal interactions**
 - RT ablation
 - adsorption
 - chemical reactions
 - chemisorption
 - ∞ condensation
 - condensing
 - corrosion
 - diffusion
 - evaporation
 - exhaust emission
 - flame propagation
 - gas welding
 - gaseous diffusion
 - hot corrosion
 - hydrogen embrittlement
 - ∞ interactions
 - metal combustion
 - metal vapors
 - metal-gas systems
 - occlusion
 - solid phases
 - sublimation
 - sulfidation
 - vapor phases
- gasohol (fuel)**
- DEF Synthetic fuel consisting of a mixture of gasoline and grain alcohol (ethanol).
 - GS fuels
 - . chemical fuels
 - . . synthetic fuels
 - . . . **gasohol (fuel)**
 - RT alcohols
 - gasoline
- gasoline**
- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . **gasoline**
 - . . liquid fuels
 - . . . **gasoline**
 - products
 - . petroleum products
 - . . **gasoline**
 - RT antiknock additives
 - automobile fuels
 - diesel fuels
 - gasohol (fuel)
 - jet engine fuels
 - kerogen
 - kerosene
 - octane number
 - shale oil
 - solvent refined coal
- GASP**
- USE Global Air Sampling Program**
- Gaspra asteroid**
(added July 1995)
- GS celestial bodies
 - . asteroids
 - . . **Gaspra asteroid**
 - RT asteroid belts
 - Galileo spacecraft
 - meteoroids
- gas-solid interactions**
- DEF Effects of the impingement of gases (particles) on solid surfaces in various environments.
 - GS fluid-solid interactions
 - . **gas-solid interactions**
 - . . gas-metal interactions
 - RT air land interactions
 - dynamic loads
 - fluid dynamics
 - impingement
 - ∞ interactions
 - panel method (fluid dynamics)
- gas-solid interfaces**
- GS boundaries
- surface reactions

gastrointestinal system

- . fluid boundaries
- . . **gas-solid interfaces**
- interfaces
- . fluid boundaries
- . . **gas-solid interfaces**
- RT boundary layers
- fluid-solid interactions
- heat transfer
- interface stability
- metal surfaces
- occlusion
- solid phases
- solid-solid interfaces
- solubility
- sublimation
- vapor phases

gastrointestinal system

- GS anatomy
- . digestive system
- . . **gastrointestinal system**
- . . . appendix (anatomy)
- . . . intestines
- rectum
- . . . stomach
- RT abdomen
- colic
- gall
- glands (anatomy)
- liver
- organs
- pancreas
- ∞ systems

GATE (experiment)

USE **GARP Atlantic Tropical Experiment**

∞ **gates**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT closures
- gates (circuits)
- gates (openings)

gates (circuits)

- UF *OR-gates*
- GS circuits
- . **gates (circuits)**
- . . field-programmable gate arrays
- . . threshold gates
- RT coincidence circuits
- ∞ gates
- logic circuits
- logical elements
- switching circuits
- threshold logic
- trigger circuits

gates (openings)

- RT apertures
- ∞ barriers
- canals
- doors
- fences (barriers)
- ∞ gates
- hatches
- hydraulic equipment
- openings
- outlets
- safety devices
- vents
- walls

gauge invariance

- GS invariance
- . **gauge invariance**
- RT electromagnetic radiation
- supergravity
- transformations (mathematics)

gauge theory

DEF A field theory in which symmetries of the theory are implemented locally in space and time. This leads to theories where forces are generally carried by vector bosons. Some gauge theories are electrodynamics, quantum chromodynamics, and Yang Mills theory.

- GS field theory (physics)
- . **gauge theory**
- . . quantum chromodynamics

- . . unified field theory
- . . . electroweak model
- . . . standard model (particle physics)
- RT gravitation theory
- string theory
- supergravity
- supersymmetry
- ∞ theories
- Yang-Mills fields
- Yang-Mills theory

Gauss equation

- UF *Gauss function*
- GS analysis (mathematics)
- . real variables
- . . differential equations
- . . . partial differential equations
- **Gauss equation**
- RT ∞ equations
- Maxwell equation

Gauss function

USE **Gauss equation**

Gaussian distributions

USE **normal density functions**

Gaussian elimination

DEF A technique for solving linear equations by progressive differencing.

- RT elimination
- linear equations
- matrices (mathematics)
- subtraction

Gaussian noise

USE **random noise**

Gauss-Markov theorem

- GS theorems
- . **Gauss-Markov theorem**
- RT least squares method
- statistical analysis
- variance (statistics)

Gaussmeters

USE **magnetometers**

gauze

- GS fabrics
- . **gauze**
- RT casts

GAW-1 airfoil

- UF *General Aviation Whitcomb airfoil*
- GS airfoils
- . wings
- . . **GAW-1 airfoil**
- RT ATLIT project
- PA-34 Seneca aircraft
- wing profiles

GAW-2 airfoil

- UF *General Aviation Whitcomb airfoil*
- GS airfoils
- . wings
- . . **GAW-2 airfoil**
- RT body-wing configurations
- flaps (control surfaces)
- general aviation aircraft
- wing profiles

GC-130 aircraft

USE **C-130 aircraft**

GCR (reactors)

USE **gas cooled reactors**

GDOP

USE **geometric dilution of precision**

GE 625 computer

- GS data processing equipment
- . computers
- . . digital computers
- . . . GE computers
- **GE 625 computer**

GE 635 computer

- GS data processing equipment
- . computers

- . . digital computers
- . . . GE computers
- **GE 635 computer**

GE computers

- UF *General Electric computers*
- GS data processing equipment
- . computers
- . . digital computers
- . . . **GE computers**
- GE 625 computer
- GE 635 computer

∞ **gear**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT arresting gear
- gears
- landing gear
- mechanical drives

gear teeth

- RT bevel gears
- gears
- mechanical drives

gearboxes

(added October 1997)

USE **transmissions (machine elements)**

gears

- GS **gears**
- . bevel gears
- . racks (gears)
- . . spiral bevel gears
- RT counter-rotating wheels
- ∞ gear
- gear teeth
- idlers
- lubrication
- mechanical drives
- transmissions (machine elements)
- wheels
- windmills (windpowered machines)

gegenschein

DEF A round or elongated spot of light in the sky at a point 180 degrees from the sun. Also called counter glow.

- GS electromagnetic radiation
- . light (visible radiation)
- . . **gegenschein**
- extraterrestrial radiation
- . **gegenschein**
- RT night sky
- polarized light
- sky brightness
- solar radiation
- terrestrial dust belt
- zodiacal light

gehlenite

DEF A mineral of the mellite group. It is isomorphous with akermanite. Used for ver-lardenite.

- UF *velardenite*
- GS aluminum compounds
- . aluminum silicates
- . . **gehlenite**
- calcium compounds
- . calcium silicates
- . . **gehlenite**
- minerals
- . **gehlenite**
- silicon compounds
- . silicates
- . . aluminum silicates
- . . . **gehlenite**
- . . calcium silicates
- . . . **gehlenite**
- RT aluminum oxides

Geiger counters

DEF Instruments for detecting and measuring radioactivity. In full, Geiger-Mueller counter. Used for Geiger-Mueller tubes.

- UF *Geiger-Mueller tubes*
- GS ionization chambers
- . **Geiger counters**
- measuring instruments

. counters
 . . radiation counters
 . . . **Geiger counters**
 . radiation measuring instruments
 . . radiation counters
 . . . **Geiger counters**

RT dosimeters
 neutron counters
 overvoltage
 particle telescopes
 proportional counters
 radiation detectors

Geiger-Mueller tubes
 USE **Geiger counters**

gel chromatography
(added August 2004)
 DEF Chromatography on non-ionic gels without regard to the mechanism of solute discrimination.
 UF *gel filtration chromatography*
gel permeation chromatography
 GS chemical tests
 . chemical analysis
 . . chromatography
 . . . **gel chromatography**
 RT chemical analysis
 liquid chromatography

gel filtration chromatography
(added November 2001)
 USE **gel chromatography**

gel permeation chromatography
 USE **gel chromatography**

gelatins
 RT collagens
 ∞ food
 gels
 nonNewtonian fluids

gelation
 RT coagulation
 colloid
 gels
 solidification
 thixotropy

gelbstoff
(added October 1997)
 USE **dissolved organic matter**

gelled propellants
 GS propellants
 . **gelled propellants**
 . . gelled rocket propellants
 RT chemical fuels
 colloidal propellants
 high temperature propellants
 hydrogen fuels
 metal fuels
 metal propellants
 plastic propellants
 propellant additives
 solid propellants

gelled rocket propellants
 UF *thixotropic propellants*
 GS propellants
 . gelled propellants
 . . **gelled rocket propellants**
 . rocket propellants
 . . liquid rocket propellants
 . . . **gelled rocket propellants**
 RT chemical fuels
 cryogenic rocket propellants
 gels
 high temperature propellants
 hybrid propellants
 hypergolic rocket propellants
 metal propellants
 monopropellants
 slurry propellants
 solid rocket propellants
 storable propellants

gels
 DEF Liquids containing colloidal structural

networks that form continuous matrices and completely pervade the liquid phase. Gels deform elastically upon application of shear forces less than the yield stress. At shear forces above the yield stress, the flow properties are principally determined by the gel matrices.

GS **gels**
 . double base rocket propellants
 . silica gel
 . xerogels
 RT aerogels
 colloids
 dopes
 gelatins
 gelation
 gelled rocket propellants
 nonNewtonian fluids
 slurries
 thickeners (materials)
 thixotropy

Gemini 2 spacecraft
 GS manned spacecraft
 . Gemini spacecraft
 . . **Gemini 2 spacecraft**
 reentry vehicles
 . recoverable spacecraft
 . . Gemini spacecraft
 . . . **Gemini 2 spacecraft**
 soft landing spacecraft
 . Gemini spacecraft
 . . **Gemini 2 spacecraft**
 RT manned space flight

Gemini 3 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 3 flight**
 RT Titan launch vehicles

Gemini 4 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 4 flight**

Gemini 5 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 5 flight**

Gemini 6 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 6 flight**

Gemini 7 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 7 flight**
 RT Titan launch vehicles

Gemini 8 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 8 flight**
 RT Titan launch vehicles

Gemini 9 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 9 flight**
 RT Titan launch vehicles

Gemini 10 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 10 flight**
 RT Titan launch vehicles

Gemini 11 flight
 GS space flight
 . manned space flight

. . Gemini flights
 . . . **Gemini 11 flight**
 RT Titan launch vehicles

Gemini 12 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 12 flight**
 RT Titan launch vehicles

Gemini (GT-1) spacecraft
 GS manned spacecraft
 . Gemini spacecraft
 . . **Gemini (GT-1) spacecraft**
 reentry vehicles
 . recoverable spacecraft
 . . Gemini spacecraft
 . . . **Gemini (GT-1) spacecraft**
 soft landing spacecraft
 . Gemini spacecraft
 . . **Gemini (GT-1) spacecraft**
 RT manned space flight

Gemini B spacecraft
 GS manned spacecraft
 . **Gemini B spacecraft**
 reentry vehicles
 . recoverable spacecraft
 . . **Gemini B spacecraft**
 soft landing spacecraft
 . **Gemini B spacecraft**
 RT manned space flight

Gemini flights
 GS space flight
 . manned space flight
 . . **Gemini flights**
 . . . Gemini 3 flight
 . . . Gemini 4 flight
 . . . Gemini 5 flight
 . . . Gemini 6 flight
 . . . Gemini 7 flight
 . . . Gemini 8 flight
 . . . Gemini 9 flight
 . . . Gemini 10 flight
 . . . Gemini 11 flight
 . . . Gemini 12 flight

Gemini project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Gemini project**
 . projects
 . . **Gemini project**
 . space programs
 . . NASA space programs
 . . . **Gemini project**
 RT Agena B rocket vehicle
 Agena rocket vehicles
 Atlas launch vehicles
 integrated mission control center
 Mercury project
 Titan project

Gemini spacecraft
 GS manned spacecraft
 . **Gemini spacecraft**
 . . Gemini 2 spacecraft
 . . Gemini (GT-1) spacecraft
 reentry vehicles
 . recoverable spacecraft
 . . **Gemini spacecraft**
 . . . Gemini 2 spacecraft
 . . . Gemini (GT-1) spacecraft
 soft landing spacecraft
 . **Gemini spacecraft**
 . . Gemini 2 spacecraft
 . . Gemini (GT-1) spacecraft
 RT manned space flight
 space capsules
 Titan project

Geminid meteoroids
 GS celestial bodies
 . meteoroid showers
 . . **Geminid meteoroids**
 . meteoroids

. . **Geminid meteoroids**

gene expression

DEF The process by which a gene's coded information is converted into the structures present and operating in the cell.

- UF *gene regulation*
- RT biological diversity
biological evolution
chromosomes
cloning (biology)
deoxyribonucleic acid
evolution (development)
gene expression regulation
gene therapy
genes
genetically modified plants
genetics
molecular biology
mutagenesis
oncogenes
phenotype
ribonucleic acids
transcription (genetics)

gene expression regulation

(added August 2004)

DEF Any of the processes by which nuclear, cytoplasmic, or intercellular factors influence the differential control of gene action at the level of transcription or translation. These processes include gene activation and genetic induction.

- RT gene expression
gene therapy
genes
transcription (genetics)

gene regulation

USE **gene expression**

gene therapy

(added February 2002)

DEF The introduction of new genes into cells for the purpose of treating disease by restoring or adding gene expression.

- GS therapy
 - . **gene therapy**
- RT chromosomes
deoxyribonucleic acid
gene expression
gene expression regulation
genetic engineering
plasmids

general aviation aircraft

- UF *executive aircraft*
private aircraft

GS **general aviation aircraft**

- . agricultural aircraft
- . Beechcraft 18 aircraft
- . C-33 aircraft
- . C-35 aircraft
- . Cessna 172 aircraft
- . Cessna 205 aircraft
- . Cessna 210 aircraft
- . Cessna 402B aircraft
- . CL-600 challenger aircraft
- . DH 125 aircraft
- . DHC 2 aircraft
- . DO-27 aircraft
- . DO-28 aircraft
- . G-1 aircraft
- . HC-3 helicopter
- . Yak 40 aircraft

- RT ∞ aeronautics
air transportation
∞ aircraft
civil aviation
commercial aircraft
commuter aircraft
GAW-2 airfoil
helicopters
jet aircraft
light aircraft
∞ low wing aircraft
passenger aircraft
Piper aircraft
single engine aircraft
∞ subsonic aircraft
training aircraft

- transport aircraft
- turboprop aircraft
- utility aircraft

General Aviation Whitcomb airfoil

USE **GAW-1 airfoil**
GAW-2 airfoil

General Dynamics aircraft

GS **General Dynamics aircraft**

- . B-58 aircraft
- . C-131 aircraft
- . CL-41 aircraft
- . CL-44 aircraft
- . CL-84 aircraft
- . CV-340 aircraft
- . CV-440 aircraft
- . CV-880 aircraft
- . CV-990 aircraft
- . F-102 aircraft
- . F-106 aircraft
- . F-111 aircraft

- RT ∞ aircraft
Canadair aircraft
PA-34 Seneca aircraft

General Electric computers

USE **GE computers**

general overviews

(added February 1993)

- RT bibliographies
recommendations
surveys
technology utilization

General Purpose Heat Sources

(added December 2002)

USE **radioisotope heat sources**

generalization (psychology)

- RT transfer of training

∞ **generation**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
cogeneration
heat generation
initiation
regeneration (engineering)
- RT

∞ **generators**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT AC generators
arc generators
boilers
cavity vapor generators
colloidal generators
DC generators
decommutators
direct power generators
duochromators
electric generators
electrostatic generators
energy conversion efficiency
function generators
gas generators
Hall generators
harmonic generators
homopolar generators
impulse generators
linear alternators
magnetohydrodynamic generators
motors
noise generators
photoelectric generators
plasma generators
pulse generators
radiation sources
report generators
rotating generators
shock wave generators
signal generators
solar sea power plants
sound generators
stators
stimulated emission devices
subharmonic generators

- test pattern generators
- thermoelectric generators
- tide powered generators
- turbogenerators
- vaporizers
- voltage generators
- vortex generators
- wave generation
- windpowered generators

genes

- GS **genes**
 - . oncogenes
 - . tumor suppressor genes
- RT chromosome aberrations
chromosomes
cloning (biology)
deoxyribonucleic acid
gene expression
gene expression regulation
genetic code
genetic engineering
genetics
genome
molecular biology
mutagenesis
mutations
phenotype
ribonucleic acids
telomeres

Genesis mission

(added February 1999)

DEF A space mission to collect solar wind samples from a halo orbit about the sun-Earth L1 point for two years, returning those samples to Earth in 2003 for analysis and examination. Analysis of the samples collected by the mission will contribute to an understanding of the origins of the solar system.

- GS space missions
 - . **Genesis mission**
- RT solar system evolution
solar wind

genetic algorithms

(added December 1992)

DEF Parameter search procedures loosely based on the mechanics of natural population genetics and the survival-of-the-fittest.

- GS mathematical logic
 - . algorithms
 - . . **genetic algorithms**
optimization
 - . **genetic algorithms**
- RT artificial intelligence
control systems design
design optimization
evolvable hardware
machine learning
multidisciplinary design optimization
neural nets
optimal control
parameter identification
trajectory optimization

genetic code

DEF The sequence of nucleotides, coded in triplets along the messenger RNA that determines the sequence of amino acids in protein synthesis.

- RT chromosomes
cloning (biology)
genes
genetics
genome

genetic diversity

USE **biological diversity**

genetic engineering

DEF The intentional production of new genes and alteration of genomes by the substitution or addition of new genetic material. Used for hybrids (biology).

- UF *hybrids (biology)*
- RT biochemistry
bioengineering
∞ biology
biosynthesis

- clone cells
cloning (biology)
gene therapy
genes
genetically modified plants
genetics
genome
phenotype
plasmids
polymerase chain reaction
- genetically modified plants**
(added August 2004)
DEF Plants, or their progeny, whose genome has been altered by genetic engineering.
GS plants (botany)
 . **genetically modified plants**
RT agriculture
 botany
 crop vigor
 gene expression
 genetic engineering
 genome
 phenotype
- genetics**
RT biological diversity
 biological evolution
∞ biology
 breeding (reproduction)
 chromosomes
 cloning (biology)
 congenital anomalies
 cytogenesis
 dominance
 evolution (development)
 gene expression
 genes
 genetic code
 genetic engineering
 mutagens
 mutations
 neurospora
 nuclei (cytology)
 nucleogenesis
 species diffusion
 transcription (genetics)
- Genie rocket vehicle**
UF *MB-1 rocket vehicle*
GS rocket vehicles
 . single stage rocket vehicles
 . . **Genie rocket vehicle**
RT Astrobee rocket vehicles
 solid propellant rocket engines
- genitourinary system**
GS anatomy
 . **genitourinary system**
 . . bladder
 . . kidneys
 . . . glomerulus
 . . . reproductive systems
 . . . sex glands
 gonads
 ovaries
 testes
 prostate gland
 . . . uterus
RT gynecology
 kidney stones
 organs
∞ systems
 urology
- genome**
(added September 2001)
DEF An organism's genetic complement as represented in its DNA or, in some cases, its RNA.
RT deoxyribonucleic acid
 genes
 genetic code
 genetic engineering
 genetically modified plants
 proteome
- ribonucleic acids
- GEO environments*
USE **Earth orbital environments**
- geostrophysics*
USE **astrophysics**
- geobotany**
GS botany
 . **geobotany**
RT biogeochemistry
 geographic distribution
 plants (botany)
 rain forests
 trees (plants)
- geocentric coordinates**
GS coordinates
 . planetocentric coordinates
 . . **geocentric coordinates**
RT astronomical coordinates
 celestial reference systems
 inertial coordinates
 planet ephemerides
 spherical coordinates
- geochemistry**
DEF The study of the distribution of the amounts of the chemical elements in minerals, ores, rocks, soils, water, and the atmosphere. Also, the study of the circulation of the elements in nature, on the basis of the properties of the atom and ions. A major concern of geochemistry is the synoptic evaluation of the abundance of the elements of the Earth's crust and in major classes of rocks and minerals.
GS environmental chemistry
 . **geochemistry**
 . . biogeochemistry
RT abundance
∞ chemistry
 cosmochemistry
 Earth sciences
 geochronology
 geology
 geophysics
 hydrology
 isotope ratios
 limnology
 marine chemistry
 mineralogy
 paleobiology
 paleontology
 petrology
 radioactivity
 siderophile elements
 submarine hydrothermal vents
- geochronology**
DEF The study of time in relationship to the history of the Earth, especially by the absolute age determination and relative dating systems developed for this purpose.
GS chronology
 . **geochronology**
 geology
 . **geochronology**
RT Cambrian Period
 Cenozoic Era
 Cretaceous Period
 Cretaceous-Tertiary boundary
 dendrochronology
 geochemistry
 geophysics
 Holocene epoch
 isotope ratios
 magnetostratigraphy
 Mesozoic Era
 paleobiology
 paleontology
 Paleozoic Era
 particle tracks
 petrogenesis
 Pleistocene epoch
 Quaternary period
 radioactive age determination
 stratigraphy
- Tertiary Period
- geocoronal emissions**
GS atmospheric radiation
 . sky radiation
 . . airglow
 . . . **geocoronal emissions**
 electromagnetic radiation
 . light (visible radiation)
 . . sky radiation
 . . . airglow
 **geocoronal emissions**
- geocyclotrons**
GS particle accelerators
 . cyclotrons
 . . **geocyclotrons**
RT ∞ accelerators
 elementary particles
- geodesic lines**
GS geometry
 . Euclidean geometry
 . . lines (geometry)
 . . . **geodesic lines**
RT chords (geometry)
 curves (geometry)
- geodesy**
DEF The science which deals mathematically with the size and shape of the Earth, and the Earth's external gravity field, and with surveys of such precision that overall size and shape of the Earth must be taken into consideration. Used for Earth figure, Earth shape, and Lszak ellipsoid.
UF *Earth figure*
 Earth shape
 Lszak ellipsoid
GS **geodesy**
 . celestial geodesy
RT altimetry
 Earth (planet)
 Earth axis
 geodetic accuracy
 geodetic surveys
 geoids
 geology
 geophysics
 gravimeters
 lunar retroreflectors
 oblate spheroids
 OGO-4
 OGO-5
 perturbation
 photomapping
 polar wandering (geology)
 satellite altimetry
 satellite doppler positioning
 topography
 vinti theory
- geodetic accuracy**
DEF The degree to which point positions or boundaries indicated on maps or imagery correspond with true geodetic positions.
GS accuracy
 . **geodetic accuracy**
RT Earth surface
 geodesy
 geoids
 geopotential height
 satellite doppler positioning
- geodetic coordinates**
DEF Quantities that define the position of a point on the spheroid of reference with respect to the planes of the geodetic equator and of a reference meridian.
GS coordinates
 . **geodetic coordinates**
RT International Satellite Geodesy
 Experiment
 latitude
 longitude
∞ nets
 satellite doppler positioning
- geodetic satellites**
GS artificial satellites

geodetic surveys

. geodetic satellites

- . . ANNA satellites
- . . Explorer 29 satellite
- . . Explorer 36 satellite
- . . GEOLE satellites
- . . GEOS 1 satellite
- . . GEOS 2 satellite
- . . GEOS 3 satellite
- . . Geosat satellites
- . . LARGOS satellite
- . . PAGEOS satellite
- . . Vanguard 1 satellite

RT

- active satellites
- celestial geodesy
- navigation satellites
- NAVSTAR satellites
- passive satellites
- satellite altimetry
- satellite doppler positioning
- satellite laser ranging
- Vanguard satellites

geodetic surveys

DEF Surveys which takes into account the size and shape of the Earth.

GS surveys

. geodetic surveys

RT

- geodesy
- geological surveys
- Phoenix quadrangle (AZ)
- satellite doppler positioning
- topography

geodimeters

DEF Trade name of electronic-optical devices that measure ground distances precisely by electronic timing and phase comparison of modulated light waves that travel from a master unit to a reflector and return to a light-sensitive tube where an electric current is set up. They are normally used at night and are effective with first-order accuracy up to distances of 5-40 km (3-25 miles). The term is derived from GEoDetic DIstance METER.

GS measuring instruments

- . distance measuring equipment

. . geodimeters

- . optical measuring instruments

. . geodimeters

- optical equipment

- . optical measuring instruments

. . geodimeters

RT optical measurement

- range finders
- tellurometers

Geodynamic Experimental Ocean Satellite

USE **GEOS-D satellite**

geodynamics

DEF Study of the dynamic forces or processes within the Earth. Used for crustal dynamics.

UF *crustal dynamics*

RT Chandler wobble

- crustal fractures

∞ dynamics

- Earth movements
- Earth sciences
- geomorphology
- geophysics
- planetary quakes
- shock waves
- terradyamics

geoelectricity

DEF The Earth's natural electric fields and phenomena. It is closely related to geomagnetism.

GS electricity

. geoelectricity

- . . telluric currents

RT Earth (planet)

- field aligned currents
- geophysics

geopotential

geofabrics

USE **geotechnical fabrics**

geofractures

USE **geological faults**

geographic applications program

GS programs

- . space programs

. . geographic applications program

RT

- Earth resources
- Earth Resources Program
- geography
- mapping
- NASA programs
- remote sensors
- satellite-borne photography
- soil mapping
- terrain analysis

geographic distribution

(added June 1995)

GS distribution (property)

- . spatial distribution

. . geographic distribution

RT ∞ distribution

- economic development
- geobotany
- geomorphology
- populations
- remote sensing
- species diffusion
- vegetative index

geographic information systems

DEF Computer assisted systems that acquire, store, manipulate, and display geographic data. Some systems are not automated.

GS information systems

. geographic information systems

RT

- aerial photography
- data systems
- geography
- imagery
- infrared photography
- remote sensing

geography

DEF The study of all aspects of the Earth's surface including its natural and political divisions, the distribution and differentiation of areas and, often, man in relationship to his environment.

GS geography

- . hypsography
- . orography

RT

- Arctic regions
- cadastral mapping
- climatology
- continents
- Earth (planet)
- Eastern Hemisphere
- economic development
- estuaries
- geographic applications program
- geographic information systems
- geomorphology
- Heat Capacity Mapping Mission
- mapping
- maps
- oceanography
- oceans
- plains
- polar regions
- selenography
- temperate regions
- tropical regions
- tundra
- Western hemisphere

geoids

DEF The figure of the Earth as defined by the geopotential surface which most nearly coincides with mean sea level over the entire surface of the Earth.

RT

- altimetry
- geodesy

geodetic accuracy

geometry

geophysics

GRACE mission

oblate spheroids

satellite altimetry

shapes

spheroids

symmetrical bodies

GEOLE satellites

GS

- artificial satellites
 - . French satellites
 - . . **GEOLE satellites**
 - . geodetic satellites
 - . . **GEOLE satellites**
 - . meteorological satellites
 - . . **GEOLE satellites**
- RT
- EOLE satellites
 - French space program

geological faults

DEF A surface or zone of rock fracture along which there has been displacement, from a few centimeters to a few kilometers in scale. Used for closed faults, cross faults, echelon faults, geofractures, grabens, rifts, splits (geology), step faults, and thrust faults.

UF

closed faults

cross faults

echelon faults

geofractures

grabens

rifts

splits (geology)

step faults

thrust faults

GS

geological faults

- . African rift system

RT

. San Andreas Fault

crevasses

crustal fractures

earthquake damage

earthquakes

∞ faults

fissures (geology)

fold (geology)

formations

inliers (landforms)

landforms

massifs

mid-ocean ridges

plates (tectonics)

Rouse belts

San Andreas Fault experiment

synclines

geological surveys

GS

surveys

. geological surveys

RT

- exploration
- geodetic surveys
- geology
- geophysics
- paleontology
- petrology
- photogeology
- radar geology

geology

DEF The study of the planet Earth--the materials of which it is made, the processes that act on these materials, the products formed, and the history of the planet and its life forms since its origin. Geology considers the physical forces that act on the Earth, the chemistry of its constituent materials, and the biology of its past inhabitants as revealed by fossils. Clues on the origin of the planet are sought in a study of the Moon and other extraterrestrial bodies. The knowledge thus obtained is placed in the service of man--to aid in the discovery of minerals and fuels of value in the Earth's crust, to identify geologically stable sites for major structures, and to provide foreknowledge of some of the dangers associated with the mobile forces in a dynamic Earth.

GS

geology

- . beds (geology)
- . . salt beds

- . cones (volcanoes)
- . contacts (geology)
- . crossbedding (geology)
- . domes (geology)
- . gaps (geology)
- . geochronology
- . geomorphology
- . glaciology
- . hydrogeology
- . kettles (geology)
- . lunar geology
- . orography
- . petrology
- . . lithology
- . . petrogenesis
- . . petrography
- . photogeology
- . planetary geology
- . . Mars volcanoes
- . radar geology
- . structural properties (geology)
- . subduction (geology)
- . tectonics
- . . neotectonics
- . volcanoes
- . . Mars volcanoes
- . volcanology
- RT bedrock
- boreholes
- bridges (landforms)
- Canadian Shield
- continental shelves
- Earth (planet)
- Earth planetary structure
- Earth sciences
- exploitation
- exploration
- fiords
- formations
- geochemistry
- geodesy
- geological surveys
- geophysical observatories
- geophysics
- geopressure
- geotemperature
- gravimetry
- Great Basin (US)
- inliers (landforms)
- isthmuses
- kreep
- massifs
- meteorology
- mineral deposits
- mineralogy
- minerals
- morphology
- ocean bottom
- oceanography
- oil exploration
- outcrops
- paleomagnetism
- paleontology
- photomapping
- ∞ physical sciences
- Precambrian period
- regolith
- rock mechanics
- rocks
- ∞ science
- seismology
- shatter cones
- soils
- stratigraphy
- structural basins
- geomagnetic anomalies*
- USE **magnetic anomalies**
- geomagnetic crotchets*
- USE **sudden ionospheric disturbances**
- geomagnetic effects*
- USE **magnetic effects**
- geomagnetic equator*
- USE **magnetic equator**
- geomagnetic field*
- USE **geomagnetism**
- geomagnetic hollow**
- GS anomalies
- . magnetic anomalies
- . . **geomagnetic hollow**
- RT Earth magnetosphere
- magneto-hydrodynamic flow
- plasma clouds
- geomagnetic latitude**
- DEF Angular distances from the geomagnetic equator, measured northward or southward through 90 degrees and labeled N or S to indicate the direction of measurement.
- GS latitude
- . **geomagnetic latitude**
- RT coordinates
- geomagnetism
- polar cusps
- geomagnetic micropulsations**
- GS pulses
- . geomagnetic pulsations
- . . **geomagnetic micropulsations**
- . micropulsations
- . . **geomagnetic micropulsations**
- variations
- . magnetic variations
- . . geomagnetic pulsations
- . . . **geomagnetic micropulsations**
- RT nocturnal variations
- telluric currents
- geomagnetic pulsations**
- GS pulses
- . **geomagnetic pulsations**
- . . geomagnetic micropulsations
- variations
- . magnetic variations
- . . **geomagnetic pulsations**
- . . . geomagnetic micropulsations
- RT geomagnetism
- KP index
- magnetospheric instability
- nocturnal variations
- geomagnetic storms*
- USE **magnetic storms**
- geomagnetic tail**
- SN (RESTRICTED TO THE EARTH MAGNETOTAL)
- UF *Earth magnetotail*
- GS environments
- . Earth magnetosphere
- . . **geomagnetic tail**
- RT field aligned currents
- geomagnetism
- magnetic fields
- magnetic islands
- ∞ magnetotails
- planetary magnetic fields
- planetary magnetotails
- polar cusps
- geomagnetically trapped particles*
- USE **radiation belts**
- geomagnetism**
- DEF The magnetic phenomena, collectively considered, exhibited by the Earth and its atmosphere and by extension the magnetic phenomena in interplanetary space. The study of the magnetic field of the Earth. Used for geomagnetic field and terrestrial magnetism.
- UF *geomagnetic field*
- terrestrial magnetism*
- GS magnetic fields
- . **geomagnetism**
- magnetic properties
- . **geomagnetism**
- RT aeromagnetism
- barium ion clouds
- Birkeland currents
- continental drift
- dynamo theory
- Earth (planet)
- Earth gravitation
- Earth magnetosphere
- Earth sciences
- electrojets
- field aligned currents
- field theory (physics)
- flux transfer events
- geomagnetic latitude
- geomagnetic pulsations
- geomagnetic tail
- geophysics
- ∞ inclination
- International Magnetospheric Study
- KP index
- M region
- magnetic anomalies
- magnetic disturbances
- magnetic effects
- magnetic equator
- magnetic poles
- magnetic surveys
- magnetoionics
- magnetometers
- magnetosheath
- MagSat 1 satellite
- Magsat A satellite
- MagSat B satellite
- MagSat satellites
- paleomagnetism
- planetary magnetic fields
- polar cusps
- Polar/GGS spacecraft
- space plasmas
- space weather
- variometers
- geometric accuracy**
- DEF The internal geometric fidelity of an imaging system.
- GS accuracy
- . **geometric accuracy**
- RT distortion
- geometric rectification (imagery)
- image processing
- image resolution
- geometric dilution of precision**
- DEF A navigation and positioning system performance index expressing the dilution of range measurement precision due to the geometric relationship between user and satellites. It is formulated as the square root of the sum of the variances of position estimates in the three orthogonal directions and can be employed to determine the optimal locations for network satellites and in the selection of optimal satellite signals sources. Used for GDOP.
- UF *GDOP*
- GS dilution
- . **geometric dilution of precision**
- RT precision
- geometric rectification (imagery)**
- DEF The correction of image distortions due to sensor view angle, platform attitude, or target surface features.
- GS image processing
- . **geometric rectification (imagery)**
- rectification
- . **geometric rectification (imagery)**
- RT atmospheric correction
- geometric accuracy
- image enhancement
- imagery
- geometrical acoustics**
- DEF The study of the behavior of sound under the assumption that sound transversing a homogeneous medium travels along straight lines or rays. Used for ray acoustics.
- UF *ray acoustics*
- GS acoustics
- . **geometrical acoustics**
- RT geometrical theory of diffraction
- geometry
- wave propagation
- geometrical hydromagnetics*
- USE **magneto-hydrodynamics**
- geometrical optics**
- DEF The geometry of paths of light rays and their imagery through optical systems. Used for ray optics.
- UF *ray optics*
- RT acousto-optics

asphericity
 astigmatism
 Cassegrain optics
 crystal optics
 diffraction propagation
 eikonal equation
 fiber optics
 focusing
 geometrical theory of diffraction
 gradient index optics
 holographic optical elements
 light (visible radiation)
 light transmission
 nonlinear optics
 numerical aperture
 optical equipment
 optical measurement
 optical paths
 optical properties
 optical reflection
 ∞ optics
 physical optics
 ray tracing
 Snells law
 underwater optics
 x ray optics

geometrical theory of diffraction

DEF A ray theory of diffraction process.
 RT diffraction
 diffraction patterns
 geometrical acoustics
 geometrical optics
 ray tracing
 reflectance
 ∞ theories
 wave diffraction

geometroynamics

USE **relativity**

geometry

GS **geometry**
 . Bose geometry
 . computational geometry
 . crack geometry
 . curvature
 . curves (geometry)
 . . catenaries
 . . cycloids
 . . epicycloids
 . . S curves
 . . . Gompertz curves
 . . cusps (mathematics)
 . . double cusps
 . differential geometry
 . . lie groups
 . . . spinor groups
 . . Riemann manifold
 . . tensor analysis
 . duct geometry
 . Euclidean geometry
 . . analytic geometry
 . . . catenaries
 . . . circumferences
 . . . conics
 ellipses
 hyperbolas
 parabolas
 . . . cycloids
 . . . epicycloids
 . . . loci
 . . . Mercator projection
 . . . quadrants
 . . . S curves
 Gompertz curves
 . . . spheroids
 oblate spheroids
 prolate spheroids
 . . . tangents
 . . . toruses
 . . . trigonometry
 . . angles (geometry)
 . . . angle of attack
 zero angle of attack
 . . . Bragg angle
 . . . Brewster angle
 . . . dihedral angle
 . . . elevation angle
 . . . look angles (electronics)

. . . look angles (tracking)
 . . . sweep angle
 sweepback
 leading edge sweep
 . . Cartesian coordinates
 . . circles (geometry)
 . . . great circles
 . . descriptive geometry
 . . lines (geometry)
 . . . chords (geometry)
 . . . geodesic lines
 . . points (mathematics)
 . . . fixed points (mathematics)
 . . . inflection points
 . . polygons
 . . . hexagons
 . . . tetragons
 parallelograms
 rhomboids
 rectangles
 squares (mathematics)
 trapezoids
 . . . triangles
 . . polyhedrons
 . . . cubes (mathematics)
 . . . icosahedrons
 . . . octahedrons
 . . . parallelepipeds
 . . . pyramids
 . . . rhombohedrons
 . . . tetrahedrons
 . . projective geometry
 . . . Mercator projection
 . . radii
 . . . Larmor radius
 . flow geometry
 . fractals
 . nozzle geometry
 . specimen geometry
 . tank geometry
 . topology
 . . fixed points (mathematics)
 . . homotopy theory
 . . imbeddings (mathematics)
 . . . invariant imbeddings
 . . links (mathematics)
 . . metric space
 . . . Hilbert space
 Sobolev space
 . . vector analysis
 . . collinearity
 . . coplanarity
 . . curl (vectors)
 . . . vorticity
 RT analysis (mathematics)
 area
 bodies of revolution
 complex numbers
 congruences
 coordinates
 ∞ cross sections
 crystal lattices
 diagrams
 diameters
 dimensions
 distance
 foci
 frustums
 geoids
 geometrical acoustics
 hypergeometric functions
 hyperspheres
 infinity
 ∞ mathematics
 ∞ measurement
 planforms
 Poincare spheres
 position (location)
 ∞ profiles
 reciprocal theorems
 ∞ science
 shapes
 sides
 spheres
 ∞ surface geometry
 surveys
 symmetry
 toroids
 uniqueness theorem

Venn diagrams
 volume
 Voronoi diagrams

geomorphology

DEF A science that deals with the land and submarine relief features of the Earth's surface and genetic interpretation of them through using the principles of physiography in its descriptive aspects and of dynamic and structural geology in its explanatory phases. Used for physiography.

UF *physiography*
 GS geology
 . **geomorphology**
 morphology
 . **geomorphology**
 RT cones (volcanoes)
 contours
 geodynamics
 geographic distribution
 geography
 glaciology
 isostasy
 lunar geology
 mountains
 orography
 photogeology
 shatter cones
 slumping
 terrain
 topography
 volcanoes
 volcanology

Geon (trademark)

USE **polyvinyl chloride**

geophysical fluid flow cells

DEF Apparatus used in model experiments for deep solar convection and Jovian atmospheric circulation for Spacelab 1 and Spacelab 3.

GS payloads
 . Spacelab payloads
 . . **geophysical fluid flow cells**
 RT aerospace environments
 ∞ cells
 convective flow
 fluid flow
 gas flow
 investigation
 Jupiter atmosphere
 Space Transportation System flights
 spaceborne experiments
 Spacelab
 ∞ test equipment

geophysical fluids

DEF General term for the liquids and gases on or in the Earth (from water in all forms, to petroleum and hydrocarbons in liquid and gaseous form, and molten rock material within the Earth).

GS **geophysical fluids**
 . crude oil
 . ground water
 . lava
 . magma
 . natural gas
 . . liquefied natural gas
 RT Earth core
 fluid dynamics
 geothermal resources
 geothermal technology

geophysical observatories

GS observatories
 . **geophysical observatories**
 . . OGO
 . . . EGO
 . . . OGO-3
 . . . OGO-5
 . . . OGO-A
 . . . POGO
 OGO-4
 OGO-6
 OGO-C
 OSO
 AOSO

... OSO-1
 ... OSO-2
 ... OSO-3
 ... OSO-4
 ... OSO-5
 ... OSO-6
 ... OSO-7
 ... OSO-8
 ... OSO-C
 RT astronomical observatories
 geology
 geophysics

geophysical satellites
 GS artificial satellites
 . **geophysical satellites**
 . . Cosmos satellites
 . . . Cosmos 2 satellite
 . . . Cosmos 3 satellite
 . . . Cosmos 5 satellite
 . . . Cosmos 6 satellite
 . . . Cosmos 14 satellite
 . . . Cosmos 44 satellite
 . . . Cosmos 54 satellite
 . . . Cosmos 71 satellite
 . . . Cosmos 110 satellite
 . . . Cosmos 137 satellite
 . . . Cosmos 144 satellite
 . . . Cosmos 149 satellite
 . . . Cosmos 166 satellite
 . . . Cosmos 186 satellite
 . . . Cosmos 188 satellite
 . . . Cosmos 206 satellite
 . . . Cosmos 213 satellite
 . . . Cosmos 224 satellite
 . . . Cosmos 225 satellite
 . . . Cosmos 381 satellite
 . . . Cosmos 954 satellite
 . . . Cosmos 1129 satellite
 . . . Intercosmos satellites
 . . Explorer 6 satellite
 . . Explorer 10 satellite
 . . Explorer 12 satellite
 . . Explorer 45 satellite
 . . OGO
 . . . EGO
 . . . OGO-3
 . . . OGO-5
 . . . OGO-A
 . . . POGO
 OGO-4
 OGO-6
 OGO-C
 . . OSO
 . . . AOSO
 . . . OSO-1
 . . . OSO-2
 . . . OSO-3
 . . . OSO-4
 . . . OSO-5
 . . . OSO-6
 . . . OSO-7
 . . . OSO-8
 . . . OSO-C
 . . Polar/GGS spacecraft
 . . Radiation and Meteoroid satellite
 . . Sputnik 3 satellite
 . . Vanguard 3 satellite
 . . Wind/GGS spacecraft
 RT Ariel satellites
 communication satellites
 EOLE satellites
 meteorological satellites
 PEOPLE satellites
 space laboratories
 unmanned spacecraft
 Vanguard satellites

geophysics
 DEF The physics of the Earth and its environment, i.e., its solid earth, air, waters, and (by extension) space. Classically, geophysics is concerned with the nature of and physical occurrences at and below the surface of the Earth including, therefore, geology, oceanography, geodesy, seismology, and hydrology. The trend is to extend the scope of geophysics to include meteorology, geomagnetism, astrophysics, and

other sciences concerned with the physical nature of the universe.
 RT aeronomy
 astrophysics
 Chandler wobble
 continental drift
 Earth (planet)
 Earth planetary structure
 Earth sciences
 field aligned currents
 formations
 geochemistry
 geochronology
 geodesy
 geodynamics
 geoelectricity
 geoids
 geological surveys
 geology
 geomagnetism
 geophysical observatories
 gravimeters
 gravimetry
 heat transmission
 hydrography
 hydrology
 International Geophysical Year
 International Geosphere-Biosphere program
 isostasy
 limnology
 meteorology
 Mission to Planet Earth
 oceanography
 paleomagnetism
 petrology
 ∞ physics
 plates (tectonics)
 polar cusps
 ∞ radiation
 radioactivity
 ∞ science
 seismology
 stratigraphy
 structural properties (geology)
 tectonics
 theoretical physics
 tiltmeters
 topography

geopotential
 DEF The potential energy of a unit mass relative to sea level, numerically equal to the work that would be done in lifting the unit mass from sea level to the height at which the mass is located; commonly expressed in terms of dynamic height or geopotential potential.
 GS **geopotential**
 . geopotential height
 RT Earth gravitation
 geoelectricity
 gravitational fields
 height
 ∞ potential
 potential energy

geopotential height
 DEF The height of a given point in the atmosphere in units proportional to the potential energy of unit mass (geopotential) at this height, relative to sea level.
 GS geopotential
 . **geopotential height**
 potential energy
 . **geopotential height**
 RT atmospheric pressure
 Earth atmosphere
 Earth gravitation
 geodetic accuracy
 gravitational fields
 head (fluid mechanics)
 scale height

Geopotential Research Mission
 DEF A NASA gravity field mapping mission utilizing the low-low satellite tracking concept to measure the Doppler shift between two coorbiting polar satellites. Used for Gravsat satellites.
 UF *Gravsat satellites*
 GS artificial satellites

. scientific satellites
 . . **Geopotential Research Mission**
 gravitation
 gravitational fields

geopressure
 DEF Pressures that exceed the normal hydrostatic pressure of about 0. 465 psi per foot of depth.
 GS pressure
 . **geopressure**
 RT geology
 geothermal resources
 geothermal technology
 pressure gradients

Georgia
 GS nations
 . United States
 . . **Georgia**
 RT Atlanta (GA)
 Sand Hills Region (GA-NC-SC)

Georgia (Eurasia)
(added August 1993)
 GS nations
 . **Georgia (Eurasia)**
 RT Asia
 Europe

GEOS 1 satellite
 GS artificial satellites
 . geodetic satellites
 . . **GEOS 1 satellite**
 RT active satellites
 ANNA satellites
 celestial geodesy
 Explorer 29 satellite
 LARGOS satellite
 PAGEOS satellite

GEOS 2 satellite
 UF *GEOS-B satellite*
 GS artificial satellites
 . geodetic satellites
 . . **GEOS 2 satellite**
 RT active satellites
 ANNA satellites
 celestial geodesy
 Explorer 36 satellite
 LARGOS satellite
 PAGEOS satellite

GEOS 3 satellite
 UF *GEOS-C satellite*
 GS artificial satellites
 . geodetic satellites
 . . **GEOS 3 satellite**
 RT active satellites
 ANNA satellites
 celestial geodesy
 LARGOS satellite
 PAGEOS satellite
 satellite altimetry

GEOS satellites (ESA)
 UF *GEOS satellites (ESRO)*
 GS artificial satellites
 . ESA satellites
 . . **GEOS satellites (ESA)**
 ESA spacecraft
 . ESA satellites
 . . **GEOS satellites (ESA)**
 RT Earth magnetosphere
 European space programs
 Geosari project

GEOS satellites (ESRO)
 USE **GEOS satellites (ESA)**

Geosari project
 DEF Launch of GEOS on second development flight of Ariane launcher into a geostationary elliptical orbit in 1979. The name is derived from a combination of GEOS and Ariane.
 GS programs
 . projects
 . . **Geosari project**
 RT Ariane launch vehicle
 European Space Agency

Geosat satellites

GEOS satellites (ESA)

Geosat satellites

- GS artificial satellites
 - . geodetic satellites
 - . . **Geosat satellites**
- RT satellite altimetry

GEOS-B satellite

USE **GEOS 2 satellite**

GEOS-C satellite

USE **GEOS 3 satellite**

GEOS-D satellite

DEF Another in a series of the European Space Agency's geostationary scientific satellites launched by NASA for long-term cosmic radiation studies. Used for Geodynamic Experimental Ocean Satellite.

- UF *Geodynamic Experimental Ocean Satellite*
- GS artificial satellites
 - . **GEOS-D satellite**

geosphere

USE **lithosphere**

Geostationary Operational Environ Sats

USE **GOES satellites**

Geostationary Operatl Environ Satellite B

USE **GOES 2**

geostationary platforms

USE **synchronous platforms**

geostationary satellites

USE **synchronous satellites**

geostrophic wind

DEF The horizontal wind velocity for which the coriolis acceleration exactly balances the horizontal pressure force.

- GS wind (meteorology)
 - . winds aloft
 - . . **geostrophic wind**
- RT baroclinic instability
 - baroclinic waves
 - divergence
 - isobars (pressure)
 - sea breeze
 - wind shear

Geosynchronous Earth Orbital Environments

USE **Earth orbital environments**

geosynchronous orbits

- GS orbits
 - . Earth orbits
 - . . **geosynchronous orbits**
 - . . spacecraft orbits
 - . . satellite orbits
 - . . . **geosynchronous orbits**
- RT circular orbits
 - equatorial orbits
 - Infrared Astronomy Satellite
 - stationary orbits
 - synchronous platforms
 - twenty-four hour orbits

geosynclines

DEF Mobile downwarplings of the crust of the Earth, either elongate or basinlike, measured in scores of kilometers, in which sedimentary and igneous rocks accumulate to thicknesses of thousands of meters.

- RT anticlines
 - domes (geology)
- ∞ layers
 - strata
 - stratification
 - stratigraphy
 - synclines

geotechnical engineering

DEF The science and practice of that part of civil engineering involving the inter-relationship between a geologic environment and the works of man.

- RT foundations

soil mechanics
structural design criteria
structural engineering

geotechnical fabrics

DEF Generic term for a variety of artificial fiber products used in engineering construction of civil works such as embankments. Also called geofabrics, filter cloth, geotextiles and civil engineering fabrics. Used for geofabrics and geotextiles.

- UF *geofabrics*
 - geotextiles*
- RT fabrics
 - soil mechanics

geotemperature

DEF Internal temperature of the planet Earth. Used for geothermometry.

- UF *geothermometry*
- RT geology
 - geothermal anomalies
 - temperature

geotextiles

USE **geotechnical fabrics**

geothermal anomalies

- GS anomalies
 - . **geothermal anomalies**
- RT geotemperature
 - geothermal resources
 - surface temperature
 - thermal mapping

geothermal energy conversion

- GS energy conversion
 - . **geothermal energy conversion**
- RT clean energy
 - ∞ conversion
 - Earth resources
 - engines
 - geothermal technology
 - heat transfer
 - heat transmission
 - ocean thermal energy conversion
 - renewable energy
 - thermal energy
 - turbines
 - turbogenerators

geothermal energy extraction

DEF The removal for storage and/or utilization of heat from natural sources within the Earth (hot springs, geysers, hot rocks, etc.)

- GS extraction
 - . **geothermal energy extraction**
- RT energy conversion
 - energy technology
 - geothermal technology
 - heat exchangers
 - heat pumps
 - heat transmission
 - heating
 - turbines
 - turbogenerators
 - water heating

geothermal energy utilization

DEF Any application of energy derived from sources within the Earth.

- GS renewable energy
 - . **geothermal energy utilization**
 - utilization
 - . **geothermal energy utilization**
- RT cooling
 - ∞ electric power
 - energy storage
 - geothermal technology
 - heat pipes
 - heat storage
 - heating
 - ∞ power plants
 - turbogenerators

geothermal resources

- GS heat sources
 - . thermal resources
 - . . **geothermal resources**
 - . . . geysers

resources

- . Earth resources
- . . thermal resources
- . . . **geothermal resources**
- geysers

RT dry heat

- ∞ energy sources
- geophysical fluids
- geopressure
- geothermal anomalies
- heat transmission
- hydrothermal systems
- thermal energy
- thermal mapping
- underwater resources
- volcanoes

geothermal technology

DEF The gamut of operations involved in the exploration, exploitation, and conversion of energy derived from geothermal sources.

- GS technologies
 - . energy technology
 - . . **geothermal technology**
- RT dry heat
 - exploration
 - geophysical fluids
 - geopressure
 - geothermal energy conversion
 - geothermal energy extraction
 - geothermal energy utilization
 - geysers
 - heat sources
 - heat transfer
 - ocean thermal energy conversion
 - resources
 - thermal resources

geothermometry

USE **geotemperature**

geotropism

- GS tropism
 - . **geotropism**
- RT gravitational effects
 - physiological effects
 - plants (botany)

GEP telescopes

USE **particle telescopes**

Gerdien arc heaters

USE **arc heating**
heating equipment

Gerdien condensers

- GS measuring instruments
 - . **Gerdien condensers**
- RT capacitors
 - ion density (concentration)

geriatrics

- GS medical science
 - . **geriatrics**
- RT aging (biology)
 - gerontology

German Democratic Republic

USE **East Germany**

German Infrared Laboratory

DEF A proposed infrared telescope for Spacelab that was discontinued in 1985. It superseded the LIRTS (telescope).

- GS telescopes
 - . spaceborne telescopes
 - . . **German Infrared Laboratory**
- RT payloads
 - space shuttles
 - Spacelab
 - West Germany

German space program

(added December 1990)

- GS programs
 - . space programs
 - . . European space programs
 - . . . **German space program**
- RT East Germany
 - Germany

- Saenger space transportation system
West Germany
- germanates**
GS germanium compounds
. **germanates**
. . magnesium germanates
- germanides**
GS germanium compounds
. **germanides**
. . magnesium germanides
RT germanium alloys
- germanium**
GS chemical elements
. metalloids
. . **germanium**
. . . germanium isotopes
- germanium alloys**
GS alloys
. **germanium alloys**
RT germanides
silicon alloys
- germanium antimonides**
GS antimony compounds
. antimonides
. . **germanium antimonides**
germanium compounds
. **germanium antimonides**
- germanium chlorides**
GS germanium compounds
. **germanium chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **germanium chlorides**
. halides
. . chlorides
. . . **germanium chlorides**
- germanium compounds**
GS **germanium compounds**
. germanates
. . magnesium germanates
. germanides
. . magnesium germanides
. germanium antimonides
. germanium chlorides
. germanium oxides
. organic germanium compounds
RT ∞ chemical compounds
 ∞ Group 4A compounds
 ∞ metal compounds
- germanium diodes**
UF *germanium rectifiers*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **germanium diodes**
. solid state devices
. . semiconductor devices
. . . **germanium diodes**
rectifiers
. **germanium diodes**
RT junction diodes
transistors
- germanium isotopes**
GS chemical elements
. metalloids
. . germanium
. . . **germanium isotopes**
. nuclides
. . isotopes
. . . **germanium isotopes**
- germanium oxides**
GS chalcogenides
. oxides
. . **germanium oxides**
germanium compounds
. **germanium oxides**
- RT ∞ oxygen compounds
- germanium rectifiers*
USE **germanium diodes**
- Germany**
(added December 1990)
GS nations
. **Germany**
RT Central Europe
East Germany
Europe
German space program
West Germany
- germicides*
USE **bactericides**
- germination**
RT crop growth
growth
phytotrons
plant physiology
viability
- germinators*
USE **phytotrons**
- gerontology**
RT age factor
aging (biology)
geriatrics
life span
- GERT**
UF *graphic evaluation and review techniques*
RT critical path method
management
management analysis
management methods
management planning
 ∞ methodology
PERT
project management
- Gestalt theory**
RT psychotherapy
 ∞ theories
- Get Away Specials (STS)**
DEF Low-cost, man-independent Space Shuttle experimental payloads.
GS payloads
. Space Shuttle payloads
. . **Get Away Specials (STS)**
RT OSS-1 payload
Space Shuttle missions
spaceborne experiments
Spacelab
Spacelab payloads
- GETOL aircraft**
GS ground effect machines
. **GETOL aircraft**
RT ∞ aircraft
 ∞ subsonic aircraft
vertical takeoff aircraft
- getters**
DEF Materials which are included in a vacuum system or device for removing gas by sorption.
RT ion pumps
propargyl groups
purification
residual gas
vacuum
vapor traps
- geysers**
GS heat sources
. thermal resources
. . geothermal resources
. . . **geysers**
resources
. Earth resources
. . thermal resources
. . . geothermal resources
. . . . **geysers**
RT anomalous temperature zones
- geothermal technology
hydrogeology
hydrothermal systems
- GGG (*garnet*)
USE **gadolinium-gallium garnet**
- Ghana**
GS nations
. **Ghana**
RT Africa
- ghosts**
RT distortion
radar echoes
radio echoes
- Giacobini-Zinner comet**
GS celestial bodies
. comets
. . **Giacobini-Zinner comet**
RT Draconid meteoroids
solar system
- giant stars**
GS celestial bodies
. stars
. . **giant stars**
. . . asymptotic giant branch stars
. . . Omicron Ceti star
. . . red giant stars
. . . carbon stars
RT cool stars
F stars
G stars
horizontal branch stars
K stars
late stars
M stars
main sequence stars
S stars
subgiant stars
supergiant stars
- gibberellins**
GS plants (botany)
. fungi
. . **gibberellins**
RT hemostatics
regulators
- Gibbs adsorption equation**
RT adsorption
 ∞ equations
 ∞ Gibbs equations
interfacial tension
- ∞ **Gibbs equations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ equations
Gibbs adsorption equation
Gibbs free energy
Gibbs-Helmholtz equations
phase rule
- Gibbs free energy**
GS heat
. enthalpy
. . **Gibbs free energy**
thermodynamic properties
. enthalpy
. . **Gibbs free energy**
. free energy
. . **Gibbs free energy**
RT ∞ Gibbs equations
Gibbs-Helmholtz equations
Mayer problem
- Gibbs phenomenon**
RT discontinuity
Fourier series
series (mathematics)
- Gibbs-Helmholtz equations**
RT electric potential
enthalpy
 ∞ equations
free energy
 ∞ Gibbs equations

Gibraltar

Gibbs free energy
internal energy
pressure
temperature

Gibraltar

(added February 1992)

GS nations
. United Kingdom
. . Gibraltar

RT Europe
Mediterranean Sea
Spain
straits

gimballess inertial navigation

GS navigation
. inertial navigation
. . gimballess inertial navigation

RT gyroscopes
inertial platforms
navigation instruments

gimbals

DEF Devices with two mutually perpendicular and intersecting axes of rotation, thus giving free angular movement in two directions, on which engines or other objects may be mounted. In gyros, supports which provide the spin axes with degrees of freedom.

RT bearings
control moment gyroscopes
fluid rotor gyroscopes
gyrodampers
gyroscopes
pivots
stabilized platforms
supports
swivels

Ginga satellite

(added June 1992)

GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . Ginga satellite
Japanese spacecraft
. Ginga satellite
observatories
. astronomical observatories
. . astronomical satellites
. . . Ginga satellite

RT Japanese space program
x ray astronomy
x ray spectra
x ray stars

Giotto mission

DEF The European Space Agency's mission to fly through the head of Halley's Comet in order to make in situ measurements of the composition and physical state as well as the structures of the head. Included in the onboard equipment are cameras to determine the structures, spectrometers to determine the composition, and a plasma detector and a magnetometer to measure the interactions with the solar wind. The time of encounter with the comet was during the second week of March 1986.

GS ESA spacecraft
. Giotto mission
space missions
. flyby missions
. . Giotto mission
unmanned spacecraft
. space probes
. . Giotto mission

RT Halley's comet

girder webs

GS structural members
. plates (structural members)
. . girder webs
webs (supports)
. girder webs

RT elastic sheets
girders

metal plates

girders

GS structural members
. girders

RT beams (supports)
box beams
girder webs
plates (structural members)
trusses

girdles

RT ∞ belts
pelvis

glacial drift

DEF A general term for drift transported by glaciers or icebergs and deposited directly on land or in seas. Used for drumlins, end moraines, eskers, glaciofluvial deposits, moraines, and Stoss-and-Lee topography.

UF *drumlins*
end moraines
eskers
glaciofluvial deposits
moraines
Stoss-and-Lee topography

RT debris
glaciers
kettles (geology)
land ice
landforms
sea ice
sediments

glaciers

DEF Large masses of ice formed, at least in part, on land by the compaction and recrystallization of snow, moving slowly by creeping downslope or outward in all directions due to the stress of their own weight, and surviving from year to year. Included are small mountain glaciers as well as ice sheets continental in size, and ice shelves which float on oceans but are fed in part by ice formed on land. Used for active glaciers and advancing glaciers.

UF *active glaciers*
advancing glaciers

GS crevasses
. glaciers
ice
. glaciers
resources
. Earth resources
. . glaciers

RT cirques (landforms)
glacial drift
glaciology
land ice
sea ice

glaciofluvial deposits

USE **glacial drift**

glaciology

DEF The study of all aspects of snow and ice; the science that treats quantitatively the whole range of processes associated with all forms of solid existing water.

GS geology
. glaciology

RT geomorphology
glaciers
hydrogeology
isostasy

∞ glands

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT glands (anatomy)
glands (seals)
pump seals

glands (anatomy)

GS anatomy
. glands (anatomy)
. . endocrine glands
. . . adrenal gland
. . . gonads
. . . ovaries

. . . testes
. . . hypothalamus
. . . pancreas
. . . parathyroid gland
. . . pineal gland
. . . pituitary gland
. . . thymus gland
. . . thyroid gland
. . . mammary glands
. . . salivary glands
. . . sebaceous glands
. . . sex glands
. . . gonads
. . . ovaries
. . . testes
. . . prostate gland

RT endocrine systems
gastrointestinal system

∞ glands
liver
organs
secretions

glands (seals)

GS seals (stoppers)
. glands (seals)

RT ∞ glands
labyrinth seals
O ring seals
packings (seals)
pump seals
sealing

glare

DEF A condition of vision in which there is discomfort or a reduction in ability to see details, objects, or both, caused by an unsuitable distribution or range of luminance, or by extreme conditions in space.

RT brightness
comfort
dayglow
electromagnetic radiation
human factors engineering
illuminating
light (visible radiation)
luminance
luster
optical properties
radiance
sky brightness
specular reflection
spread reflection
visibility
vision

glass

GS **glass**
. borosilicate glass
. E glass
. . S glass
. glass fibers
. metallic glasses
. obsidian glass
. Pyroceram (trademark)
. silica glass
. spin glass
. Vycor

RT amorphous materials
ceramics
electrostatic bonding
glass transition temperature
glassware
glassy carbon
Griffith crack

∞ materials
moldavite
obsidian
optical coatings
optical materials
optical properties
photographic plates
porcelain
silicon dioxide
vitreous materials
vitrification

glass coatings

SN (COATINGS CONSISTING OF GLASS)
GS coatings

- RT . **glass coatings**
- GS glazes
- metallic glasses
- protective coatings
- silica glass
- glass electrodes**
- GS electrodes
- RT . **glass electrodes**
- electrochemistry
- ion exchanging
- silica glass
- glass fiber reinforced plastics**
- GS composite materials
- . fiber composites
- . . **glass fiber reinforced plastics**
- . polymer matrix composites
- . . reinforced plastics
- . . . **glass fiber reinforced plastics**
- plastics
- . reinforced plastics
- . . **glass fiber reinforced plastics**
- RT airframe materials
- composite structures
- E glass
- fiber orientation
- fibers
- laminates
- plastic aircraft structures
- pultrusion
- reinforcing fibers
- S glass
- thermoplastic resins
- thermosetting resins
- woven composites
- glass fibers**
- UF *fiberglass*
- GS fibers
- . synthetic fibers
- . . **glass fibers**
- glass
- . **glass fibers**
- optical materials
- . **glass fibers**
- RT boron fibers
- E glass
- gradient index optics
- metallic glasses
- optical fibers
- plastic fibers
- reinforcing fibers
- S glass
- silica glass
- Vycor
- glass lasers**
- DEF High power lasers used in laser fusion technology research.
- GS stimulated emission devices
- . lasers
- . . **glass lasers**
- RT high power lasers
- laser fusion
- laser outputs
- laser plasma interactions
- laser targets
- neodymium lasers
- optical pumping
- pulsed lasers
- ultrashort pulsed lasers
- glass transition temperature**
- GS temperature
- . **glass transition temperature**
- RT curing
- epoxy resins
- glass
- polymer chemistry
- polymer physics
- temperature effects
- transition temperature
- glassware**
- RT borosilicate glass
- bottles
- burettes
- ∞ containers
- flasks
- glass
- laboratory equipment
- pipettes
- silica glass
- glassy carbon**
- DEF Form of carbon with unique properties and characteristics. Formed by carbonizing phenolic resins made by reacting phenols with celulosics, aldehydes, and ketones.
- GS composite materials
- . **glassy carbon**
- RT carbon
- glass
- ∞ materials
- GLAST*
- (added August 2008)
- USE **Fermi Gamma-ray Space Telescope**
- Glauber theory**
- RT approximation
- elastic scattering
- Pomeranchuk theorem
- ∞ theories
- glaucoma**
- GS diseases
- . eye diseases
- . . **glaucoma**
- RT intraocular pressure
- Glauert coefficient*
- USE **aerodynamic forces**
- Mach number**
- glazes**
- GS coatings
- . **glazes**
- finishes
- . **glazes**
- RT ceramics
- frit
- glass coatings
- porcelain
- protective coatings
- glide angles*
- USE **glide paths**
- glide landings**
- GS landing
- . **glide landings**
- . . horizontal spacecraft landing
- RT aircraft landing
- crash landing
- ditching (landing)
- planetary landing
- soft landing
- spacecraft landing
- water landing
- glide paths**
- DEF Flight paths of aeronautical vehicles in a glide, seen from the side. The paths used by aircraft or spacecraft in approach procedure and which are generated by instrument landing facilities. Used for glide angles and glide slopes.
- UF *glide angles*
- glide slopes*
- GS flight paths
- . **glide paths**
- slopes
- . **glide paths**
- RT aircraft approach spacing
- approach control
- approach indicators
- gliding
- instrument approach
- instrument landing systems
- terminal guidance
- glide slopes*
- USE **glide paths**
- gliders**
- DEF A heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its lifting surface and whose free flight does not depend principally on an engine.
- UF *sailplanes*
- GS **gliders**
- . ASSET gliders
- . boostglide vehicles
- . . X-20 aircraft
- . hang gliders
- . HL-10 reentry vehicle
- . hypersonic gliders
- . . X-20 aircraft
- . Janus spacecraft
- . paragliders
- . . inflatable gliders
- RT aerospace planes
- ∞ aircraft
- flexible wings
- free flight
- gliding
- lifting reentry vehicles
- ∞ military aircraft
- monoplanes
- observation aircraft
- sails
- sailwings
- Schleicher aircraft
- soaring
- ∞ subsonic aircraft
- towed bodies
- ∞ winged vehicles
- gliding**
- RT boostglide vehicles
- descent
- ∞ flight
- flight paths
- free flight
- glide paths
- gliders
- lift
- ∞ motion
- soaring
- Glimm method**
- DEF Numerical technique for solving gas dynamics problems involving hyperbolic systems of conservation laws.
- GS analysis (mathematics)
- . numerical analysis
- . . **Glimm method**
- procedures
- . **Glimm method**
- RT ∞ equations
- fluid dynamics
- ∞ methodology
- glint**
- RT angels (radar)
- radar echoes
- scintillation
- global air pollution**
- GS pollution
- . environment pollution
- . . air pollution
- . . . **global air pollution**
- RT Earth atmosphere
- environments
- global warming
- pollution monitoring
- pollution transport
- Global Air Sampling Program**
- UF *GASP*
- RT air pollution
- air sampling
- environmental quality
- sampling
- Global Atmospheric Research Program**
- UF *GARP*
- GS programs
- . **Global Atmospheric Research Program**
- . . GARP Atlantic Tropical Experiment
- RT aerology
- integrated global ocean station
- systems
- meteorology
- NASA programs
- weather

Global Positioning System

weather reconnaissance aircraft

Global Communications Antenna Grid (navy)
USE **Seafarer project**

Global Orbiting Navigation Satellite Sys.
USE **GLONASS**

Global Positioning System

DEF A satellite navigation system which will display many (up to 24) satellites in three sets of orbits by means of a precise time standard and three-dimensional information on position and velocity.

GS satellite navigation systems
 . **Global Positioning System**
RT autonomous spacecraft clocks
 flight paths
 GLONASS
 navigation
 orbit determination
 position indicators
 positioning
 satellite constellations
 space navigation
∞ systems
 time synchronization

Global Tracking Network

UF *GLOTRAC (tracking network)*
GS networks
 . tracking networks
 . **Global Tracking Network**
 stations
 . tracking stations
 . **Global Tracking Network**
RT data acquisition
 ground stations
 minitrack system
 NASCOM network
 optical tracking
 radio relay systems
 range and range rate tracking
 satellite tracking
 Space Flight Tracking and Data Network
 STDN (network)

global warming

(added December 1989)
GS heating
 . atmospheric heating
 . **global warming**
RT atmospheric temperature
 climate change
 global air pollution
 Glory Mission satellite
 greenhouse effect
 Mission to Planet Earth
 stratospheric warming

∞ globes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Earth (planet)
 luminaires
 maps
 spheres

globular clusters

GS celestial bodies
 . star clusters
 . **globular clusters**
RT ∞ clusters
 color-magnitude diagram
 galactic halos
 horizontal branch stars
 metallicity
 Population II stars
 star distribution

globules

RT falling spheres
 interfacial tension
 liquids
 microballoons
 spheres

globulins

GS biopolymers

. proteins
. . **globulins**
. . . fibrinogen
. . . gamma globulin
organic compounds
. proteins
. . **globulins**
. . . fibrinogen
. . . gamma globulin

glomerulus

GS anatomy
 . circulatory system
 . cardiovascular system
 . . blood vessels
 . . . capillaries (anatomy)
 **glomerulus**
 . genitourinary system
 . . kidneys
 . . . **glomerulus**
RT renal function

GLONASS

(added September 1994)
UF *Global Orbiting Navigation Satellite Sys.*
GS satellite navigation systems
 . **GLONASS**
RT Global Positioning System
 international cooperation
 positioning
 Russian Space Program
 U.S.S.R. space program

Glory Mission satellite

(added July 2006)
DEF A low Earth orbit (LEO) scientific research satellite designed to collect data on the properties of aerosols and black carbon in the Earth's atmosphere and climate system; and collect data on solar irradiance for the long-term effects on the Earth climate record.

GS artificial satellites
 . scientific satellites
 . **Glory Mission satellite**
 observatories
 . **Glory Mission satellite**
RT aerosols
 climate change
 climatology
 global warming
 satellite observation
 soot

glossaries

USE **dictionaries**

Gloster GA-5 aircraft

USE **GA-5 aircraft**

GLOTRAC (tracking network)

USE **Global Tracking Network**

glottis

GS anatomy
 . respiratory system
 . . larynx
 . . . **glottis**
RT vocal cords

gloves

GS clothing
 . **gloves**
RT protective clothing

glow

USE **luminescence**

glow discharges

DEF Electrical discharges that produce luminosity.

GS electric current
 . electric discharges
 . . **glow discharges**
RT cathode glow
 electric arcs
 electric corona
 electrodeless discharges
 Faraday dark space
 gas discharges

light sources
plasma display devices
plasma radiation

glucocorticoids

(added December 1999)
DEF Adrenocortical steroid hormones that are involved in the metabolism of fats, proteins, and carbohydrates, and have anti-inflammatory properties.

GS organic compounds
 . lipids
 . . steroids
 . . . corticosteroids
 **glucocorticoids**
 secretions
 . endocrine secretions
 . . hormones
 . . . corticosteroids
 **glucocorticoids**
RT adrenal gland
 atrophy
 carbohydrate metabolism
 hormone metabolisms
 hypokinesia
 lipid metabolism
 muscles
 protein metabolism

glucose

GS organic compounds
 . carbohydrates
 . . sugars
 . . . monosaccharides
 hexoses
 **glucose**

glucosides

UF *glycosides*
GS organic compounds
 . carbohydrates
 . . **glucosides**
 . . . nucleosides
 adenines
 guanosines

glues

GS adhesives
 . **glues**
RT pastes
 sizing materials
 tetraethyl orthosilicate

gluons

DEF The carriers of the strong force which holds atomic nuclei together (holding together groups of quarks making up stable particles, which in turn are bound together in the atomic nuclei).

GS particles
 . elementary particles
 . . hypothetical particles
 . . . **gluons**
RT leptons
 mesons
 quantum chromodynamics
 quarks

glutamates

GS esters
 . **glutamates**
RT glutamic acid

glutamic acid

GS acids
 . amino acids
 . . **glutamic acid**
 organic compounds
 . amino acids
 . . **glutamic acid**
RT glutamates

glutamine

GS acids
 . amino acids
 . . **glutamine**
 organic compounds
 . amino acids

- . . **glutamine**
glutathione
 GS organic compounds
 . coenzymes
 . . **glutathione**
 . peptides
 . . polypeptides
 . . . **glutathione**
- glycerides**
 GS esters
 . **glycerides**
 RT glycerols
 nitroglycerin
- glycerins*
 USE **glycerols**
- glycerols**
 UF *glycerins*
 RT alcohols
 carbohydrates
 glycerides
 lipids
 liquids
 nitroglycerin
 triacetin
- glycidyl azide polymer**
(added August 1990)
 UF *GAP (propellants)*
 RT ∞ polymers
 propellant binders
 solid rocket binders
- glycine**
 GS acids
 . amino acids
 . . **glycine**
 organic compounds
 . amino acids
 . . **glycine**
- glycogens**
 GS biopolymers
 . polysaccharides
 . . **glycogens**
 organic compounds
 . carbohydrates
 . . polysaccharides
 . . . **glycogens**
- glycols**
 GS hydroxyl compounds
 . alcohols
 . . **glycols**
 RT hydroxyl radicals
- glycolysis**
 GS chemical reactions
 . **glycolysis**
 decomposition
 . **glycolysis**
- glycosides*
 USE **glucosides**
- gneiss**
 DEF A foliated rock formed by regional metamorphism, in which bands or lenticles of granular materials alternate with bands or lenticles in which minerals having flaky or elongate prismatic habits predominate. Generally less than 50 percent of the minerals show preferred parallel orientation. Although a gneiss is commonly feldspar- and quartz-rich, the mineral composition is not an essential factor in its definition.
 GS rocks
 . **gneiss**
 RT soils
- gnomonic projection**
 DEF A projection on a plane tangent to the surface of a sphere having the point of projection at the center of the sphere. Used in cartography and in crystallography.
 RT photomapping
 ∞ projection
- projective geometry
- gnotobiotics**
 DEF The study of germ free animals.
 RT bacteria
 bacteriology
 closed ecological systems
 controlled atmospheres
 isolation
 microbiology
 microorganisms
 sterilization
- GNP*
 USE **gross national product**
- goal theory**
 RT goals
 ∞ theories
- goals**
 RT achievement
 engineering management
 goal theory
 project planning
 purposes
 research management
- goats**
 GS animals
 . vertebrates
 . . mammals
 . . . **goats**
 RT grazing
 livestock
- Gobi desert**
 GS land
 . deserts
 . . **Gobi desert**
 RT arid lands
 desertification
- Goddard experiment package telescope*
 USE **particle telescopes**
- Goddard Trajectory Determination System**
 UF *GTDS*
 RT computer programs
 interplanetary trajectories
 moon-Earth trajectories
 orbit calculation
 orbital mechanics
 orbital position estimation
 spacecraft trajectories
 ∞ systems
 trajectory analysis
 trajectory optimization
- Godunov method**
(added February 1998)
 DEF Non-oscillatory finite-volume scheme that incorporates the exact or approximate solution to the Riemann initial-value problem, or a generalization of it.
 GS analysis (mathematics)
 . numerical analysis
 . . finite volume method
 . . . **Godunov method**
 procedures
 . finite volume method
 . . **Godunov method**
 RT approximation
 Cauchy problem
 Cauchy-Riemann equations
 computational fluid dynamics
 Euler equations of motion
 finite difference theory
 shock wave interaction
 supersonic flow
- Goertler instability**
 DEF Counter-rotating ring vortices formed in the annulus between two cylinders rotating with respect to each other.
 UF *Taylor-Goertler instability*
 GS dynamic characteristics
 . dynamic stability
 . . motion stability
 . . . flow stability
- **Goertler instability**
 . flow characteristics
 . . flow stability
 . . . **Goertler instability**
 stability
 . dynamic stability
 . . motion stability
 . . . flow stability
 **Goertler instability**
 RT boundary layer stability
 boundary layer transition
 centrifugal force
 laminar boundary layer
 rotating fluids
 rotating liquids
 Taylor instability
 vortices
 wall flow
- GOES 1**
 DEF The first in a series of geostationary operational environmental satellites launched in October 1975. It ceased operation in June of 1977.
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 1**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 1**
 RT meteorological satellites
- GOES 2**
 DEF The second in a series of geostationary operational environmental satellites launched in June 1977. Used for Geostationary Operatl Environ Satellite B.
 UF *Geostationary Operatl Environ Satellite B*
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 2**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 2**
 RT meteorological satellites
 SMS 1
 SMS 2
- GOES 3**
 DEF The third in a series of geostationary operational environmental satellites launched in June 1978.
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 3**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 3**
 RT meteorological satellites
- GOES 4**
 DEF The fourth in a series of geostationary operational environmental satellites launched in September 1980.
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 4**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 4**
 RT meteorological satellites
- GOES 5**
 DEF The fifth in a series of geostationary operational environmental satellites launched in May 1981.
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 5**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 5**

RT meteorological satellites

GOES 6
 DEF The sixth in a series of geostationary operational environmental satellites launched in April 1983.
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 6**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 6**

GOES 7
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 7**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 7**

GOES 8
(added July 1995)
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 8**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 8**

GOES 9
(added July 1995)
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 9**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 9**

GOES 10
(added March 2000)
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 10**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 10**

GOES 13
(added August 2005)
 DEF A joint NASA/NOAA satellite launched on August 15, 2005 for radiometric imagery, atmospheric sounding, and space weather monitoring.
 UF *GOES N*
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 13**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 13**

RT marine meteorology
 space weather
 storms (meteorology)

GOES N
(added August 2005)
 USE **GOES 13**

GOES satellites
 DEF Geostationary operational environmental satellites. Used for Geostationary Operational Environ Sats.
 UF *Geostationary Operational Environ Sats*
 GS artificial satellites
 . meteorological satellites
 . . **GOES satellites**
 . . . GOES 1
 . . . GOES 2
 . . . GOES 3
 . . . GOES 4
 . . . GOES 5
 . . . GOES 6

. . . GOES 7
 . . . GOES 8
 . . . GOES 9
 . . . GOES 10
 . . . GOES 13
 . synchronous satellites
 . . **GOES satellites**
 . . . GOES 1
 . . . GOES 2
 . . . GOES 3
 . . . GOES 4
 . . . GOES 5
 . . . GOES 6
 . . . GOES 7
 . . . GOES 8
 . . . GOES 9
 . . . GOES 10
 . . . GOES 13

RT ISCCP Project

goggles
 GS clothing
 . **goggles**

RT eye protection
 flight clothing
 helmets
 protective clothing
 sunglasses

Golay detector cells
 GS measuring instruments
 . radiation measuring instruments
 . . radiation detectors
 . . . **Golay detector cells**

RT energy absorption films
 pneumatic equipment
 radiation absorption

gold
 GS chemical elements
 . **gold**
 . . gold isotopes
 . . . gold 198
 metals
 . noble metals
 . . **gold**
 . . . gold isotopes
 gold 198
 . transition metals
 . . **gold**
 . . . gold isotopes
 gold 198

gold 198
 GS chemical elements
 . gold
 . . gold isotopes
 . . . **gold 198**
 . nuclides
 . . isotopes
 . . . gold isotopes
 **gold 198**
 metals
 . noble metals
 . . gold
 . . . gold isotopes
 **gold 198**
 . transition metals
 . . gold
 . . . gold isotopes
 **gold 198**

gold alloys
 GS alloys
 . **gold alloys**

RT copper alloys
 nickel alloys
 silver alloys

gold coatings
 UF *gold plate*
 GS coatings
 . metal coatings
 . . **gold coatings**

RT nickel plate

protective coatings

gold isotopes
 GS chemical elements
 . gold
 . . **gold isotopes**
 . . . gold 198
 . nuclides
 . . isotopes
 . . . **gold isotopes**
 gold 198
 metals
 . noble metals
 . . gold
 . . . **gold isotopes**
 gold 198
 . transition metals
 . . gold
 . . . **gold isotopes**
 gold 198

RT radioactive isotopes

gold plate
 USE **gold coatings**

Gompertz curves
 GS charts
 . graphs (charts)
 . . **Gompertz curves**
 geometry
 . curves (geometry)
 . . S curves
 . . . **Gompertz curves**
 . Euclidean geometry
 . . analytic geometry
 . . . S curves
 **Gompertz curves**

gonads
 GS anatomy
 . genitourinary system
 . . reproductive systems
 . . . sex glands
 **gonads**
 ovaries
 testes
 . glands (anatomy)
 . . endocrine glands
 . . . **gonads**
 ovaries
 testes
 . sex glands
 . . **gonads**
 . . . ovaries
 testes

RT physiological effects

gondolas
 RT aircraft compartments
 airships
 balloons
 baskets

goniometers
 DEF Instruments for measuring angles.
 GS measuring instruments
 . **goniometers**
 . . photogoniometers
 . . radiogoniometers

RT angles (geometry)
 diffractometers
 etalons
 interferometers
 Mach-Zehnder interferometers
 monochromators
 optical measuring instruments
 refractometers
 spectrometers

goodness of fit
 DEF The degree to which the observed frequencies of occurrence of events in an experiment correspond to the probabilities in a model of the experiment.
 GS statistical analysis
 . **goodness of fit**

RT fitting
 mathematical models
 maximum likelihood estimates
 probability distribution functions

probability theory
 statistical distributions
 statistical tests
 variance (statistics)

gorges
 RT fabrics
 parachute fabrics

gorges
 USE **canyons**

GOSS (support system)
 USE **ground operational support system**

government procurement
 GS procurement
 . **government procurement**
 RT commercial off-the-shelf products
 commodities
 contracts
 federal budgets
 services

government/industry relations
 RT commerce lab
 commercialization
 contract negotiation
 contractors
 contracts
 procurement

governments
 RT constitution
 culture (social sciences)
 policies
 politics
 regimes
 voting

governors
 USE **speed regulators**

GPHS (nucleonics)
 (added December 2002)
 USE **radioisotope heat sources**

grabens
 USE **geological faults**

GRACE mission
 (added August 2008)
 DEF The second mission under the NASA Earth System Science Pathfinder (ESSP) Program which maps variations in the Earth's gravity field. The mission includes two identical spacecrafts flying about 200 kilometers apart in a polar orbit 500 kilometers above the Earth.

UF *Gravity Recovery and Climate Experiment mission*

GS space missions
 . **GRACE mission**
 RT climate change
 Earth atmosphere
 Earth gravitation
 geoids
 gravitational fields
 remote sensing
 satellite observation

∞ grade
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT angles (geometry)
 gradients
 level (horizontal)
 position (title)
 quality
 slopes

graded index optics
 USE **gradient index optics**

gradient index devices
 USE **gradient index optics**

gradient index optics
 DEF Optical systems with components whose refractive indexes vary continuously within the material used for the optical elements.
 UF *graded index optics*

gradient index devices
GRIN (optics)
 RT fiber optics
 geometrical optics
 glass fibers
 lens design
 lenses
 nonlinear optics
 optical properties
 ∞ optics
 physical optics
 ray tracing
 refractivity

gradients
 GS **gradients**
 . electron density profiles
 . potential gradients
 . pressure gradients
 . temperature gradients
 . . thermoclines
 RT angles (geometry)
 composition (property)
 conjugate gradient method
 ∞ cross sections
 differences
 distribution (property)
 ∞ drop
 ∞ grade
 gravity gradiometers
 isobars (pressure)
 isotherms
 level (horizontal)
 optimization
 ∞ profiles
 slopes
 variations
 vector analysis

∞ gradiometers
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT gravity gradiometers
 magnetometers

graduation
 USE **calibrating**

Graeff calculus
 GS analysis (mathematics)
 . calculus
 . . **Graeff calculus**
 . numerical analysis
 . . **Graeff calculus**

grafting
 RT implantation
 insertion

grain boundaries
 GS boundaries
 . **grain boundaries**
 RT antiphase boundaries
 crystal dislocations
 embedded atom method
 grain size
 intergranular corrosion
 interstices
 interstitials
 precipitates
 transgranular corrosion
 twinning

grain bridging
 USE **crack bridging**

grain formation
 (added June 2005)
 SN (EXCLUDES FOOD--LIMITED TO MATERIALS AND PARTICULATES)
 RT ∞ grains
 granular materials
 nucleation
 particulates

grain size
 GS size (dimensions)
 . **grain size**
 RT grain boundaries
 metal fatigue

microstructure
 nanocomposites
 nanocrystals
 nanostructure (characteristics)
 Ostwald ripening
 particle size distribution

∞ grains
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT crystals
 grain formation
 grains (food)
 granular materials
 particles
 propellant grains

grains (food)
 GS farm crops
 . **grains (food)**
 . . barley
 . . corn
 . . millet
 . . oats
 . . rice
 . . sorghum
 . . wheat
 RT angiosperms
 Earth resources
 ∞ grains
 grasses
 seeds

grammars
 RT languages
 parsing algorithms
 semantics
 syntax
 vowels
 words (language)

Granat satellite
 (added April 1995)
 GS artificial satellites
 . Soviet satellites
 . . **Granat satellite**
 RT French space program
 gamma ray astronomy
 international cooperation
 Mir space station
 Russian Space Program
 spaceborne astronomy
 x ray astronomy

Grand Canyon (AZ)
 GS landforms
 . canyons
 . . **Grand Canyon (AZ)**
 RT Arizona

Grand Tours
 UF *outer planet missions*
 GS space missions
 . flyby missions
 . . **Grand Tours**
 . . . Mariner Jupiter-Saturn flyby
 . . . Mariner Jupiter-Uranus flyby
 . . . Voyager 1977 mission
 RT ∞ missions
 outer planets explorers
 space flight
 Voyager 1 spacecraft
 Voyager 2 spacecraft

grand unified theory
 DEF A theory describing the unification of gravity with the other elementary forces in physics, i.e., the weak force, the strong force and the electromagnetic force. Used for GUT.
 UF *GUT*
 GS field theory (physics)
 . **grand unified theory**
 RT astrophysics
 big bang cosmology
 broken symmetry
 cosmology
 Einstein equations
 electromagnetic fields
 electromagnetic interactions
 electromagnetism

granite

gravitation theory
gravitational fields
particle theory
plasma physics
relativity
string theory
strong interactions (field theory)
supersymmetry
symmetry
theoretical physics
weak energy interactions
weak interactions (field theory)

granite

GS rocks
. igneous rocks
. . **granite**
RT batholiths
Earth resources
soils

grants

DEF Assets bestowed or transferred, such as money or land, for a particular purpose.
RT appropriations
budgeting
contracts
insurance (contracts)
NASA programs
patents
subcontracts

granular materials

RT brittle materials
grain formation
∞ grains
low density materials
∞ materials
particles
pellets
powder (particles)

graph theory

DEF The mathematical study of the structure of graphs and networks.
RT combinatorial analysis
graphs (charts)
greedy algorithms
mathematical models
∞ nets
set theory
∞ theories
topology
trees (mathematics)

graphic arts

GS arts
. **graphic arts**
. . animation
. . . computer animation
RT charts
diagrams
drafting (drawing)
drawings
engineering drawings
imagery
inks
motion pictures
multimedia
photography
∞ projection

graphic evaluation and review techniques

USE **GERT**

graphical user interface

(added July 1993)
DEF A man-computer interface which relies on graphical and/or pictorial means for presenting the user with command options and their results. Input to a graphical user interface relies heavily on the use of point-and-click devices (such as a 'mouse'). Most graphical user interfaces are designed to facilitate multitasking through separate application windows (computer programs).
UF *GUI (computers)*
GS interfaces
. **graphical user interface**
. . windows (computer programs)

RT computer graphics
disk operating system (DOS)
display devices
human-computer interface

graphite

GS carbonaceous materials
. **graphite**
. . pyrolytic graphite
minerals
. **graphite**
. . pyrolytic graphite
RT aluminum graphite composites
buckminsterfullerene
carbon
carbon nanotubes
electrodes
fiber composites
fullerenes
graphite-epoxy composites
intercalation
lubricants
moderators
nanotubes
single crystals
solid lubricants
synthetic metals

graphite-epoxy composites

DEF Structural materials composed of epoxy resins reinforced with graphite.
GS composite materials
. polymer matrix composites
. . epoxy matrix composites
. . . **graphite-epoxy composites**
. . resin matrix composites
. . . **graphite-epoxy composites**
. . superhybrid materials
. . . **graphite-epoxy composites**
RT braided composites
carbon fiber reinforced plastics
∞ construction materials
epoxy resins
fiber composites
graphite
graphite-polyimide composites
∞ materials
reinforced plastics
reinforcing fibers
sheet molding compounds
woven composites

graphite-polyimide composites

DEF Composite materials utilizing graphite reinforcing fibers in a resin matrix.
GS composite materials
. polymer matrix composites
. . **graphite-polyimide composites**
RT graphite-epoxy composites

graphitization

RT annealing
heat treatment

graphoepitaxy

DEF The use of artificial surface relief structures to induce crystallographic orientation in thin films.
RT amorphous materials
crystal lattices
crystal structure

graphology

GS handwriting
. **graphology**
recognition
. pattern recognition
. . **graphology**
RT character recognition

graphs (charts)

UF *polarization charts*
GS charts
. **graphs (charts)**
. . bond graphs
. . Gompertz curves
. . Mollier diagram
. . Patterson map
RT conformal mapping
∞ curves

fault trees
graph theory
histograms
nomographs
∞ origins
Petri nets
recording instruments
representations
statistical analysis
trees (mathematics)

Grashof number

DEF A nondimensional parameter used in the theory of heat transfer. The Grashof number is associated with the Reynolds number and the Prandtl number in the study of convection.
GS dimensionless numbers
. **Grashof number**
ratios
. **Grashof number**
RT convection
Prandtl number
Reynolds number

grasses

GS plants (botany)
. **grasses**
. . hay
. . reeds (plants)
. . sea grasses
. . sorghum
RT alfalfa
canopies (vegetation)
defoliation
farm crops
farmlands
grains (food)
grasslands
millet
oats
sod

grasshoppers

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **grasshoppers**

grasslands

UF *grazing lands*
meadowlands
prairies
savannahs
GS land
. **grasslands**
. . Llanos Orientales (Colombia)
RT agriculture
crop growth
Earth resources
farm crops
farmlands
grasses
hay
land use
plains
plowing
rangelands
rural areas
rural land use
sod
steppes

Grassmann algebra

USE **vector spaces**

∞ gratings

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT gratings (spectra)
interference grating
optical filters

gratings (spectra)

UF *diffraction gratings*
GS **gratings (spectra)**
. Bragg gratings
. echelette gratings
. echelle gratings
RT apodization

- corrugated waveguides
diffraction radiation
Fresnel diffraction
∞ gratings
optical filters
photorefractivity
Ronchi test
Rowland circles
- graupel**
(added March 1989)
GS precipitation (meteorology)
. **graupel**
RT cloud glaciation
cloud physics
hail
hailstorms
ice formation
ice nuclei
snow
- gravel deposits*
USE **gravels**
- gravels**
DEF Coarse, granular aggregates, with pieces larger than sand grains, resulting from the natural erosion of rocks. Used for gravel deposits.
UF *gravel deposits*
GS sediments
. **gravels**
soils
. **gravels**
RT aggregates
alluvium
aquifers
boreholes
fans (landforms)
grit
sands
- gravimeters**
(added January 1991)
DEF Instruments for measuring variations in the gravitational field, generally by registering differences in the weight of a constant mass as the gravimeter is moved from place to place. Used for gravity meters.
UF *gravity meters*
GS measuring instruments
. **gravimeters**
RT accelerometers
densitometers
geodesy
geophysics
gravimetry
gravitation
microdensitometers
- gravimetry**
DEF The measurement of gravity or gravitational acceleration, especially in geophysics and geodesy.
RT ∞ acceleration
accelerometers
geology
geophysics
gravimeters
gravitational fields
∞ measurement
networks
quantitative analysis
- gravireceptors**
DEF Highly specialized nerve endings and receptor organs located in skeletal muscles, tendons, joints, and in the inner ear which furnish information to the brain with respect to body position, equilibrium and the direction of gravitational forces.
GS anatomy
. sense organs
. . **gravireceptors**
. . . otolith organs
receptors (physiology)
. **gravireceptors**
. . . otolith organs
RT oculogravic illusions
sensitometry
- vertical perception
- gravitation**
DEF The acceleration produced by the mutual attraction of two masses, and of magnitude inversely proportional to the square of the distance between the two centers of mass. Used for gravity.
UF *gravity*
GS **gravitation**
. artificial gravity
. Earth gravitation
. gravity anomalies
. lunar gravitation
. microgravity
. planetary gravitation
. stellar gravitation
. . solar gravitation
RT antigavity
drag
environments
Geopotential Research Mission
gravimeters
gravitational constant
gravitational effects
gravitational fields
gravitational waves
gravity gradiometers
high gravity environments
isostasy
low weight
Lunar Gravity Simulator
pendulums
Roche limit
similitude law
terminal velocity
weight (mass)
weightlessness
- gravitation theory**
GS **gravitation theory**
. supergravity
RT bimetric theories
dark energy
event horizon
gauge theory
grand unified theory
gravitational fields
gravitational wave antennas
gravitinos
gravitons
string theory
supersymmetry
∞ theories
unified field theory
- gravitational binding energy**
(added May 1995)
GS binding energy
. **gravitational binding energy**
RT accretion disks
astrophysics
binary stars
∞ energy
gravitational collapse
neutron stars
nuclear binding energy
stellar gravitation
- gravitational collapse**
GS collapse
. **gravitational collapse**
RT astrophysics
black holes (astronomy)
gravitational binding energy
gravitational instability
naked singularities
neutral currents
protogalaxies
quasars
relativistic plasmas
stellar cores
stellar interiors
stellar systems
supernovae
white holes (astronomy)
- gravitational constant**
DEF The coefficient of proportionality in Newton's law of gravitation.
- GS constants
. **gravitational constant**
RT big bang cosmology
gravitation
- gravitational effects**
GS **gravitational effects**
. gravitational lenses
. Lagrangian equilibrium points
. lunar gravitational effects
RT acceleration stresses (physiology)
acceleration tolerance
Bond number
clinorotation
clinostats
drop towers
∞ effects
geotropism
gravitation
gravitational instability
gravitational physiology
gravitropism
gravity perception
Gravity Probe B
Langley complex coordinator
lower body negative pressure
orbital resonances (celestial mechanics)
Reissner-Nordstrom solution
stellar mass accretion
stellar systems
swingby technique
weightlessness
- gravitational fields**
DEF Regions that give rise to forces of gravitational attraction.
UF *gravitational potential*
RT attraction
center of gravity
Earth gravitation
Earth-Moon system
field strength
field theory (physics)
∞ fields
geopotential
geopotential height
Geopotential Research Mission
GRACE mission
grand unified theory
gravimetry
gravitation
gravitation theory
gravitational instability
gravitational lenses
gravity anomalies
Lagrangian equilibrium points
multipolar fields
satellite perturbation
Schwarzschild metric
stellar gravitation
unified field theory
Yang-Mills fields
- gravitational instability**
(added August 1997)
GS dynamic characteristics
. dynamic stability
. . **gravitational instability**
stability
. dynamic stability
. . **gravitational instability**
RT astrophysics
galactic evolution
gravitational collapse
gravitational effects
gravitational fields
interstellar matter
Jeans theory
perturbation
stellar evolution
stellar gravitation
- gravitational lenses**
GS gravitational effects
. **gravitational lenses**
lenses
. **gravitational lenses**
RT black holes (astronomy)
focusing

gravitational physiology

- gravitational fields
- light scattering
- massive compact halo objects
- neutron stars
- relativistic effects
- relativity
- stellar gravitation
- white holes (astronomy)

gravitational physiology

- GS physiology
 - . **gravitational physiology**
- RT acceleration stresses (physiology)
 - aerospace medicine
 - centrifuging stress
 - clinorotation
 - clinostats
 - fluid shifts (biology)
 - gravitational effects
 - head up tilt
 - hindlimb suspension
 - physiological acceleration
 - physiological effects
 - physiological responses
 - space flight stress
 - stress (physiology)
 - tilt-table test

gravitational potential

- USE **gravitational fields**

gravitational radiation

- USE **gravitational waves**

gravitational wave antennas

DEF Devices for receiving propagating gravitational fields produced by some change in the distribution of matter.

- GS antennas
 - . **gravitational wave antennas**
 - . . . LIGO (observatory)
 - . . . LISA (observatory)
- RT antenna design
 - cryogenic equipment
 - gravitation theory

gravitational waves

DEF Hypothetical waves that travel at the speed of light, by which gravitational attraction is propagated.

- UF *gravitational radiation*
- RT celestial bodies
 - celestial mechanics
 - Earth-Moon system
 - gravitation
 - gravity waves
 - LIGO (observatory)
 - LISA (observatory)
- ∞ radiation
- ∞ waves

gravitinos

- GS particles
 - . elementary particles
 - . . . hypothetical particles
 - . . . **gravitinos**
 - . neutral particles
 - . . . **gravitinos**
- RT baryons
 - cosmology
 - decoupling
 - gravitation theory
 - gravitons
 - neutrinos
 - particle mass
 - supergravity
 - weak energy interactions

gravitons

DEF The hypothetical elementary units of gravitation which are equivalent in the electrons in electromagnetic theory.

- GS particles
 - . elementary particles
 - . . . hypothetical particles
 - . . . **gravitons**
- RT atomic structure
 - gravitation theory
 - gravitinos

- supergravity

gravitropism

- GS tropism
 - . **gravitropism**
- RT auxins
 - calmodulin
 - gravitational effects
 - gravity perception
 - plant physiology
 - plants (botany)
 - vegetation growth

gravity

- USE **gravitation**

gravity anomalies

DEF The differences between the observed values of gravity at different points and the theoretical calculated value. They are based on a simple gravity model, usually modified in accordance with some generalized hypothesis of variation in subsurface density as related to surface topography.

- GS anomalies
 - . **gravity anomalies**
 - gravitation
 - . **gravity anomalies**
- RT Earth gravitation
 - gravitational fields
 - mascons

gravity assist trajectories

- USE **swingby technique**

gravity gradient satellites

- GS artificial satellites
 - . **gravity gradient satellites**
 - . . . ATS
 - ATS 1
 - ATS 2
 - ATS 3
 - ATS 4
 - ATS 5
 - ATS 6
 - ATS 7
 - ATS 8
 - . . . ORBIS CAL satellite
- RT artificial gravity
 - expulsion
 - manned spacecraft
 - OV-1 satellites
 - OV-2 satellites
 - OV-3 satellites
 - OV-4 satellites
 - OV-5 satellites
 - satellite attitude control
 - satellite control
 - spin reduction
 - unmanned spacecraft

gravity gradiometers

- GS measuring instruments
 - . **gravity gradiometers**
- RT gradients
 - ∞ gradiometers
 - gravitation

gravity meters

- USE **gravimeters**

gravity perception

(added August 2004)

DEF Process whereby a bodily structure or organism (animal or plant) receives or detects a gravity stimulus. The sensing may be direct or indirect and may or may not initiate a reaction to the stimulus.

- GS perception
 - . **gravity perception**
- RT acceleration stresses (physiology)
 - acceleration tolerance
 - aerospace medicine
 - centrifuging stress
 - gravitational effects
 - gravitropism
 - head up tilt
 - proprioception

- space flight stress

Gravity Probe B

DEF An experiment designed to measure general relativistic induced torques on a gyroscope in orbit about the Earth.

- RT gravitational effects
 - gyroscopes
 - NASA programs
 - relativity

Gravity Recovery and Climate Experiment mission

(added August 2008)

- USE **GRACE mission**

gravity waves

DEF Waves in an interface between fluids of different density in which the restoring force is gravity.

- GS elastic waves
 - . capillary waves
 - . . . **gravity waves**
 - baroclinic waves
 - surface waves
 - . capillary waves
 - . . . **gravity waves**
 - baroclinic waves
- RT cnoidal waves
 - gravitational waves
 - Kelvin waves
 - planetary waves
 - ripples
 - traveling ionospheric disturbances
 - water waves
 - wind (meteorology)

Gravsat satellites

- USE **Geopotential Research Mission**

gray gas

- GS gases
 - . **gray gas**
- RT nongray atmospheres
 - radiation absorption
 - Rayleigh scattering
 - thermal absorption

gray scale

DEF Images that are not colored or multi-spectral.

- RT aerial photography
 - image contrast
 - image enhancement
 - image processing
 - imaging techniques
 - optical data processing
 - pattern recognition

grazing

- GS ingestion (biology)
 - . **grazing**
- RT animals
 - cattle
 - deer
 - goats
 - horses
 - rangelands
 - rural land use
 - swine

grazing flow

- RT acoustic attenuation
 - acoustic ducts
 - acoustic impedance
 - acoustic measurement
 - acoustic properties
 - aeroacoustics
- ∞ flow
 - noise reduction
 - orifice flow
 - resonators
 - shear flow

grazing incidence

- DEF Incidence at a small glancing angle.
- GS incidence
 - . **grazing incidence**
- RT aberration
 - angles (geometry)

grazing incidence telescopes
 optical measurement
 ray tracing
 x ray optics

Grazing Incidence Solar Telescope
 USE **GRIST (telescope)**

grazing incidence telescopes
 GS telescopes
 . **grazing incidence telescopes**
 . . GRIST (telescope)
 RT grazing incidence
 x ray astronomy
 x ray telescopes

grazing lands
 USE **grasslands**

greases
 RT fats
 kerogen
 lubricants
 oils
 petroleum products
 thickeners (materials)

Great Basin (US)
 GS landforms
 . structural basins
 . . **Great Basin (US)**
 . terraces (landforms)
 . . plateaus
 . . . **Great Basin (US)**
 regions
 . **Great Basin (US)**
 RT California
 Earth resources
 folds (geology)
 formations
 geology
 Nevada
 structural properties (geology)
 Utah

Great Britain
 USE **United Kingdom**

great circles
 DEF Circles which intersect a sphere and a plane through its center.
 GS geometry
 . Euclidean geometry
 . . circles (geometry)
 . . . **great circles**
 RT flight optimization
 flight paths
 ground tracks
 trajectories

Great Lakes (North America)
 GS lakes
 . **Great Lakes (North America)**
 . . Lake Erie
 . . Lake Huron
 . . Lake Michigan
 . . Lake Ontario
 . . Lake Superior
 RT Canada
 canals
 Earth resources
 inland waters
 International Field Year for Great Lakes
 resources
 United States
 water flow
 water resources

Great Plains Corridor (North America)
 GS corridors
 . **Great Plains Corridor (North America)**
 regions
 . **Great Plains Corridor (North America)**
 RT agriculture
 Canada
 plains
 rural land use

United States

Great Salt Lake (UT)
 GS lakes
 . **Great Salt Lake (UT)**
 RT Earth resources
 hydrology
 inland waters
 ponds
 Utah

Great Smoky Mountains (NC-TN)
 GS landforms
 . mountains
 . . **Great Smoky Mountains (NC-TN)**
 RT North Carolina
 Tennessee

GREB satellites
 SN (GALACTIC RADIATION EXPERIMENTAL BACKGROUND SATELLITES)
 UF *Galactic Radiation Exp Background sats*
 GS artificial satellites
 . **GREB satellites**

Greece
 GS nations
 . **Greece**
 RT Cyprus
 Europe
 Greek space program

greedy algorithms
(added March 2000)
 DEF Any algorithm characterized by a procedure that selects the most extreme element from a set to satisfy a given goal. A recursive procedure for constructing a set of objects from the smallest possible elements.
 GS mathematical logic
 . algorithms
 . . **greedy algorithms**
 RT graph theory
 heuristic methods
 minimax technique
 optimization

Greek space program
(added August 1990)
 GS programs
 . space programs
 . . European space programs
 . . . **Greek space program**
 RT Greece

green wave effect
 RT annual variations
 botany
 chlorophylls
 ∞ effects
 foliage
 leaves

greenhouse effect
 DEF The heating of the Earth's surface because outgoing long-wavelength terrestrial radiation is absorbed and re-emitted by the carbon dioxide and water vapor in the lower atmosphere and eventually returns to the surface.
 RT atmospheric heat budget
 atmospheric radiation
 chlorofluorocarbons
 climate change
 Earth atmosphere
 ∞ effects
 environment effects
 Gaia hypothesis
 global warming
 insolation
 terrestrial radiation
 thermal radiation
 Venus clouds

greenhouses
 DEF Structures enclosed by glass or plastic devoted to the cultivation or protection of tender plants or to the production of plants out of season.
 RT buildings
 phytotrons

plants (botany)

Greenland
 GS landforms
 . islands
 . . **Greenland**
 RT Arctic Ocean
 Denmark

Green's functions
 UF *Green's theorem*
 GS analysis (mathematics)
 . real variables
 . . **Green's functions**
 functions (mathematics)
 . **Green's functions**
 RT differential equations
 field theory (algebra)
 field theory (physics)
 half planes
 half spaces
 Jacobi integral
 many body problem

Green's theorem
 USE **Green's functions**

Gregorian antennas
 GS antennas
 . **Gregorian antennas**
 RT antenna design
 antenna feeds
 antenna radiation patterns
 Cassegrain antennas
 microwave antennas

Grenada
(added February 1989)
 GS landforms
 . islands
 . . West Indies
 . . . **Grenada**
 nations
 . **Grenada**
 RT Caribbean region

grenades
 RT ammunition
 incendiary ammunition
 pyrotechnics

grid computing (computer networks)
(added December 2003)
 SN (LIMITED TO DISTRIBUTED COMPUTING RESOURCES; DOES NOT INCLUDE COMPUTATIONAL MESHES USED FOR MATHEMATICAL ANALYSIS)
 DEF The use and development of large-scale distributed systems that enable location-independent access to geographically dispersed computational resources such as supercomputers, data archives, and computational software; may also incorporate remote access to instrumentation and test-facility interfaces, and supporting information resources.
 UF *computational grids (computer networks)*
Information Power Grid
IPG (NASA Information Power Grid)
metacomputing
 GS data processing
 . distributed processing
 . . **grid computing (computer networks)**
 RT computer networks
 information systems
 supercomputers

grid generation (mathematics)
(added August 1988)
 DEF Numerical generation of curvilinear-coordinate systems for the numerical solution of partial differential equations.
 UF *mesh generation (mathematics)*
 RT computational fluid dynamics
 computational grids
 coordinates
 finite difference theory
 finite element method
 grid refinement (mathematics)
 multigrid methods

grid refinement (mathematics)

structured grids (mathematics)
unstructured grids (mathematics)
Voronoi diagrams

grid refinement (mathematics)

(added August 2003)

DEF The dynamic modification of computational grids using either derived or user-supplied criteria to produce a more highly resolved grid.

UF *mesh refinement (mathematics)*

RT computational grids
grid generation (mathematics)

gridfree methods

(added May 2008)

USE **meshfree methods**

∞ grids

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT computational grids

coordinates

ionizers

∞ matrices

mesh

reticles

tube grids

turnstile antennas

wire grid lenses

grids (mathematics)

USE **computational grids**

Griffith crack

RT crack closure

crack propagation

fracture mechanics

glass

∞ theories

Griffon aircraft

USE **Nord 1500 aircraft**

Grigg-Skjellerup comet

GS celestial bodies

. comets

. . **Grigg-Skjellerup comet**

RT ∞ coma

comet tails

solar system

solar wind

Grignard reactions

GS chemical reactions

. **Grignard reactions**

RT catalysts

GRIN (optics)

USE **gradient index optics**

∞ grinding

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT grinding (material removal)

grinding (comminution)

UF *pulverizing*

GS comminution

. **grinding (comminution)**

RT atomizing

compounding

crushing

disintegration

grinding (material removal)

mixing

grinding (material removal)

GS **grinding (material removal)**

. metal grinding

RT abrasion

countersinking

cutting

∞ grinding

grinding (comminution)

grooving

machining

metal cutting

micromachining

planing

polishing

scarfing

wear

grinding machines

GS tools

. machine tools

. . **grinding machines**

RT lathes

∞ machinery

metal grinding

milling machines

shapers

ultrasonic cleaning

grinding mills

RT atomizers

atomizing

comminution

crushers

impactors

mixers

Gripen aircraft

USE **JAS-39 aircraft**

GRIST (telescope)

DEF An ESA Spacelab payload designed for grazing incidence solar phenomena. Used for grazing incidence solar telescope.

UF *Grazing Incidence Solar Telescope*

GS telescopes

. grazing incidence telescopes

. . **GRIST (telescope)**

RT energy spectra

solar cosmic rays

Spacelab

sun

grit

RT abrasives

gravels

particles

sands

sediments

grooves

GS **grooves**

. V grooves

. . riblets

RT corrugating

grooving

grooving

UF *fluting*

RT cutting

grinding (material removal)

grooves

knurling

machining

micromachining

milling (machining)

striation

gross national product

DEF The total value of the goods and services produced in a nation during a specific period and also comprising the total expenditures by consumers and government plus gross private investment. Used for GNP.

UF *GNP*

GS products

. **gross national product**

RT commerce

costs

econometrics

finance

industries

ground based control

GS **ground based control**

. air traffic control

. . automated en route ATC

. . radar approach control

RT air traffic controllers (personnel)

aircraft approach spacing

aircraft control

airport surface detection equipment

airport towers

approach

approach control

automatic control
automatic traffic advisory and resolution

∞ control

flight control

flight management systems

fly by wire control

guidance (motion)

instrument landing systems

integrated mission control center

landing aids

missile control

radar navigation

radio control

remote control

spacecraft control

spacecraft guidance

traffic control

ground clouds

USE **exhaust clouds**

ground crews

GS personnel

. **ground crews**

RT maintenance

ground effect (aerodynamics)

DEF Increase in the lift of an aircraft operating close to the ground caused by reaction between high-velocity downwash from its wing or rotor and the ground.

RT aerodynamic drag

aerodynamics

air cushion landing systems

cushions

downwash

drag

∞ effects

ground resonance

jet blast effects

lift

peripheral jet flow

wakes

wing-in-ground effect vehicles

ground effect (communications)

DEF The effect of ground conditions on radio communications.

RT echoes

∞ effects

electromagnetic interference

electromagnetic noise

radio attenuation

signal fading

wave reflection

ground effect machines

UF *air cushion vehicles*

DTMB-111 ground effect machine

DTMB-430 ground effect machine

hovercraft

GS **ground effect machines**

. Cushioncraft ground effect machine

. GETOL aircraft

. hovercraft ground effect machines

. Westland ground effect machines

. wing-in-ground effect vehicles

RT ∞ aircraft

commercial aircraft

∞ effects

flight vehicles

flying platforms

hovering

lifting rotors

∞ machinery

∞ military aircraft

passenger aircraft

peripheral jet flow

rapid transit systems

research aircraft

∞ subsonic aircraft

surface vehicles

∞ transport vehicles

V/STOL aircraft

∞ vehicles

water takeoff and landing aircraft

ground handling

GS materials handling

. **ground handling**

RT air cargo
baggage
crew procedures (preflight)

∞ facilities
flight operations
hangars
mobile lounges
tractors
trucks

ground operational support system

UF *GOSS (support system)*

GS ground support equipment
. **ground operational support system**
support systems
. **ground operational support system**
weapon systems
. **ground operational support system**

RT ∞ systems

ground penetrating radar
(added August 1995)

DEF A radar imaging technique in which coherent background propagation of the received reflected wavefield forms a spatial image of the scattering interface within the region of interest.

GS radar
. **ground penetrating radar**

RT archaeology
Mars Reconnaissance Orbiter
nondestructive tests
planetary mapping
radar geology
soil mapping
synthetic aperture radar
tomography

ground resonance

DEF Mechanical phenomenon occurring when a rotor, operating within a certain speed range, experiences coupling between a rotor in-plane mode and a model support system mode, causing vibration in the system.

RT aerodynamic stability
ground effect (aerodynamics)
helicopters
rotary wings
rotor aerodynamics

ground speed

GS rates (per time)
. **ground speed**
velocity
. **ground speed**

RT airspeed
high speed
low speed

ground squirrels

GS animals
. vertebrates
. . mammals
. . . rodents
. . . . squirrels
. . . . **ground squirrels**

ground state

GS level (quantity)
. energy levels
. . **ground state**

RT atomic energy levels
atomic theory
density functional theory
electron states
quantum theory
yrast state

ground stations

GS stations
. **ground stations**
. . Deep Space Instrumentation Facility
. . Earth terminals
. . Integrated mission control center
. . polystation doppler tracking system

RT data acquisition
data collection platforms
downlinking
Global Tracking Network
hangars
integrated global ocean station systems
Jodrell Bank Observatory
land mobile satellite service
MSAT
networks
ocean data acquisitions systems
pollution monitoring
Space Flight Tracking and Data Network
tracking stations
weather stations

ground support equipment

DEF That equipment on the ground, including all implements, tools, and devices (mobile or fixed), required to inspect, test, adjust, calibrate, appraise, gage, measure, repair, overhaul, assemble, transport, safeguard, record, store, or otherwise function in support of a rocket, space vehicle, or the like, either in the research and development phase or in operational phase, or in support of the guidance system used with the missile, vehicle, or the like.

GS **ground support equipment**

. ground operational support system

RT air traffic control
aircraft maintenance
airport planning
auxiliary power sources
ballistic cameras
Cape Kennedy launch complex
command and control
command guidance
crawler tractors
Earth terminal measurement system
∞ equipment
flight control
gantry cranes
handling equipment
landing aids
launching bases
launching pads
launching sites
maintenance
missile launchers
missile storage
missiles
ordnance
propellant storage
radio telemetry
refueling
rocket launchers
satellite ground support
∞ spacecraft
storable propellants
∞ test equipment
tracking networks
tracking stations

ground support systems

GS support systems
. **ground support systems**

RT commonality
∞ systems

ground tests

GS **ground tests**
. cold flow tests
. prelaunch tests
. . static firing

RT aircraft runup
captive tests
crew procedures (preflight)
electric equipment tests
engine tests
flight tests
full scale tests
missile tests
prefiring tests
preflight operations
space electric rocket tests
stability tests
static tests
test firing

∞ tests
wing flow method tests

ground tracks

DEF The inclination of a satellite, together with its orbital altitude and period of its orbit, create a track defined by an imaginary line connecting the satellite and the Earth's center; the satellite's apparent path over the ground.

GS **ground tracks**

. satellite ground tracks

RT area navigation
flight paths
great circles
orbits

∞ paths
∞ tracks

ground truth

DEF Data obtained on the ground concerning the significance of anomalies observed in remote sensing to help interpretation.

RT aerial photography
aerial reconnaissance
Airborne Integrated Reconnaissance System
crop identification
imagery
in situ measurement
photointerpretation
photoreconnaissance
spectrophotography

ground water

(added February 1991)

DEF That part of the subsurface water that is in the zone of saturation, including underground streams.

UF *groundwater*

GS geophysical fluids
. **ground water**
water
. inland waters
. . **ground water**

RT aquifers
Earth resources
fresh water
limnology
lysimeters
potable water
soil pollution
springs (water)
surface water
water flow
water resources
water runoff
water sampling
water tables
wells

ground wave propagation

GS transmission
. wave propagation
. . **ground wave propagation**

RT radio waves
selective fading
sky waves

ground wind

GS wind (meteorology)
. **ground wind**

RT air currents
atmospheric circulation
cyclones
gust loads
gusts
monsoons
squalls
storms (meteorology)
tornadoes
wind direction
wind effects
wind erosion
wind pressure
wind profiles
wind shear
wind velocity
windmills (windpowered machines)
windpower utilization

ground-air-ground communication

windpowered generators

ground-air-ground communication

- GS communicating
 . **ground-air-ground communication**
 telecommunication
 . **ground-air-ground communication**
- RT aeronautical satellites
 air traffic control
 aircraft communication
 automated en route ATC
 communication satellites
 discrete address beacon system
 optical communication
 radio communication
 satellite communication
 spacecraft communication
 voice communication

ground-to-air missiles

USE **surface to air missiles**

groundwater

USE **ground water**

Group 1A compounds

USE **alkali metal compounds**

∞ Group 1B compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 copper compounds
 noble metals
 silver compounds

Group 2A compounds

USE **alkaline earth compounds**

∞ Group 2B compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cadmium compounds
 ∞ chemical compounds
 mercury compounds
 zinc compounds

∞ Group 3A compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aluminum compounds
 boron compounds
 ∞ chemical compounds
 gallium compounds
 indium compounds

∞ Group 3B compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT actinide series compounds
 ∞ chemical compounds
 curium compounds
 rare earth compounds
 scandium compounds
 yttrium compounds

∞ Group 4A compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT carbon compounds
 ∞ chemical compounds
 germanium compounds
 lead compounds
 silicon compounds
 tin compounds

∞ Group 4B compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 hafnium compounds
 titanium compounds
 zirconium compounds

∞ Group 5A compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *pnictides*

- RT antimony compounds
 arsenic compounds
 bismuth compounds
 ∞ chemical compounds
 nitrogen compounds
 oxynitrides
 phosphorus compounds

∞ Group 5B compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 niobium compounds
 tantalum compounds
 vanadium compounds

∞ Group 6A compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT chalcogenides
 ∞ chemical compounds
 polonium compounds
 selenium compounds
 sulfur compounds
 tellurium compounds

∞ Group 6B compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 chromium compounds
 molybdenum compounds
 tungsten compounds

Group 7A compounds

USE **halogen compounds**

∞ Group 7B compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 manganese compounds
 rhenium compounds
 technetium compounds

∞ Group 8 compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 cobalt compounds
 iridium compounds
 iron compounds
 nickel compounds
 osmium compounds
 platinum compounds
 rhodium compounds

group behavior

USE **group dynamics**

group dynamics

- UF *group behavior*
 RT dependence
 ∞ dynamics
 ethnic factors
 problem solving
 sociology

group technology (manufacturing)

(added April 2000)

DEF A manufacturing methodology where production processes are organized into groups or cells based on similarities in the manufacturing requirements of product parts or production equipment capabilities.

UF *cellular manufacturing*

GS manufacturing

. **group technology (manufacturing)**

production engineering

. **group technology (manufacturing)**

RT computer aided manufacturing

industrial management

operations research

process control (industry)

production management

group theory

GS algebra

. **group theory**

. . homomorphisms

. . . automorphisms

. . . monoids

. . . subgroups

RT chiral dynamics

chirality

fibers (mathematics)

lie groups

supergravity

supersymmetry

∞ theories

group velocity

DEF The velocity of a wave disturbance as a whole, i.e., of an entire group of component simple harmonic waves.

GS rates (per time)

. **group velocity**

velocity

RT . **group velocity**

beat frequencies

harmonic motion

phase velocity

propagation velocity

quantum mechanics

wave propagation

∞ groups

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT categories

classes

subdivisions

grout

RT amorphous materials

cements

clays

concretes

∞ construction materials

mortars (material)

mud

plasters

tiles

growth

UF *hypertrophy*

maturing

GS **growth**

. crystal growth

. . Czochralski method

. . directional solidification (crystals)

. . epitaxy

. . . atomic layer epitaxy

. . . electroepitaxy

. . . liquid phase epitaxy

. . . molecular beam epitaxy

. . . vapor phase epitaxy

. . hydrothermal crystal growth

. . protein crystal growth

. . traveling solvent method

. . Verweil process

. . vegetation growth

. . crop growth

. . nanostructure growth

RT accumulations

angiogenesis

crop calendars

∞ development

evolution (development)

∞ formation

germination

increasing

inflating

ontogeny

phytotrons

shrinkage

sintering

swelling

timber vigor

timberline

tissue engineering

trends

viability

warpage

youth

growth chambers
USE **phytotrons**

growth hormone
(added August 2004)
USE **pituitary hormones**

Grumman aircraft
GS **Grumman aircraft**
. A-6 aircraft
. C-1A aircraft
. C-2 aircraft
. E-2 aircraft
. F-9 aircraft
. F-14 aircraft
. F-111 aircraft
. Jetstream aircraft
. OV-1 aircraft
RT ∞ aircraft
AWACS aircraft

Grumman OV-1C aircraft
USE **OV-1 aircraft**

Gruneisen constant
GS constants
. **Gruneisen constant**
RT compressibility
specific heat
thermal expansion

GTDS
USE **Goddard Trajectory Determination System**

Guadeloupe
GS landforms
. islands
. . West Indies
. . **Guadeloupe**
nations
. France
. **Guadeloupe**

Guam
GS landforms
. islands
. . Pacific islands
. . **Guam**
nations
. United States
. **Guam**

guanethidine
GS organic compounds
. amines
. . diamines
. . . guanidines
. . . **guanethidine**
. cyclic compounds
. . heterocyclic compounds
. . **guanethidine**

guanidines
GS organic compounds
. amines
. . diamines
. . . **guanidines**
. . . guanethidine
. . . triaminoguanidinium azide
RT perfluoroguanidine

guanines
GS bases (chemical)
. **guanines**
fungicides
. xanthes
. **guanines**
nitrogen compounds
. xanthes
. **guanines**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . purines
. . . . xanthes
. . . . **guanines**

RT cyclic AMP

guanosines
DEF Guanine riboside; a nucleoside composed of guanine and ribose. Used for vernine.
UF *vernine*
GS organic compounds
. carbohydrates
. . glucosides
. . . nucleosides
. . . . **guanosines**
RT nucleic acids
ribonucleic acids

guards (shields)
RT ∞ barriers
coverings
housings
safety devices
safety management
shielding

Guatemala
GS nations
. **Guatemala**
RT Central America

guayule
DEF A desert shrub native to southwestern United States and north Mexico that produces polymeric isoprene essentially identical to that made by Hevea rubber trees in southeast Asia.
GS plants (botany)
. **guayule**
RT brush (botany)
rubber

GUI (computers)
USE **graphical user interface**

guidance (motion)
DEF The process of directing the movements of an aeronautical vehicle or space vehicle, with particular reference to the selection of a flight path.
GS **guidance (motion)**
. aircraft guidance
. beam rider guidance
. command guidance
. entry guidance (STS)
. inertial guidance
. . strapdown inertial guidance
. injection guidance
. map matching guidance
. midcourse guidance
. reentry guidance
. rendezvous guidance
. spacecraft guidance
. . satellite guidance
. standardized space guidance
. terminal guidance
. . laser guidance
RT air navigation
approach
ascent trajectories
astrionics
automatic control
avionics
control surfaces
flight control
flight paths
ground based control
homing
homing devices
impact prediction
landing
manual control
missiles
navigation
∞ platforms
pointing control systems
radio navigation
remote control
stationkeeping
∞ systems
trajectory control
visual control

guidance sensors
RT attitude control

image dissector tubes
optical measuring instruments
∞ sensors
solar sensors
spacecraft instruments
star trackers

guide vanes
DEF Control surfaces that may be moved into or against a rocket's jetstream, used to change the direction of the jet flow for thrust vector control. Used for jetavators.
UF *jetavators*
GS control surfaces
. **guide vanes**
. . jet vanes
vanes
. **guide vanes**
. . jet vanes
RT airfoils
hydrofoils
thrust vector control

guided missile submarines
UF *Polaris submarines*
GS water vehicles
. ships
. . submarines
. . . **guided missile submarines**
. underwater vehicles
. . submarines
. . . **guided missile submarines**
RT fleet ballistic missiles
Poseidon missiles

Guinea
GS nations
. **Guinea**
RT Africa

guinea pigs
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . **guinea pigs**

Gulf of Alaska
GS gulfs
. **Gulf of Alaska**
RT Alaska
Pacific Ocean

Gulf of California (Mexico)
GS gulfs
. **Gulf of California (Mexico)**
RT Mexico
Pacific Ocean

Gulf of Mexico
GS gulfs
. **Gulf of Mexico**
RT Alabama
Caribbean Sea
Florida
Louisiana
Mexico
Mississippi
Rio Grande (North America)
texas

Gulf Stream
GS circulation
. water circulation
. . water currents
. . . ocean currents
. . . . **Gulf Stream**
RT Atlantic Ocean
Caribbean Sea
Lomonosov current
Sargasso Sea
TOPEX

gulfs
DEF Relatively large parts of oceans or seas extending far into the land, partly enclosed by an extensive sweep of the coasts, and opened to the sea through straits. Gulfs are the largest of various forms of inlets of seas. They are usually larger, more enclosed, and more

Gum nebula

deeply indented than bays (topographic features).

- GS **gulfs**
. Gulf of Alaska
. Gulf of California (Mexico)
. Gulf of Mexico
. Persian Gulf
- RT bays (topographic features)
Delaware Bay (US)
inlets (topography)
topography

Gum nebula

- GS celestial bodies
. nebulae
. . . **Gum nebula**
- RT galaxies
irregular galaxies
Orion nebula

gum vulcanizates

USE **vulcanized elastomers**

Gumbel theory

USE **range (extremes)**

gums (substances)

- GS **gums (substances)**
. rosin
chitin
polysaccharides
rubber
tars
- RT

gun launchers

- SN (LIMITED TO ORDNANCE DEVICES FOR FIRING MISSILES AND ROCKETS WITH INITIAL ATTITUDE CONTROL)
- DEF Ordnance devices for firing missiles and rockets with initial attitude control.
- GS launchers
. **gun launchers**
- RT artillery
∞ barrels
gunfire
howitzers
hypervelocity launchers
missile launchers
rocket catapults
rocket launchers
Sabot projectiles

gun propellants

- UF *gunpowder*
- GS propellants
. **gun propellants**
- RT explosives
guns (ordnance)

gun turrets

- RT ∞ cupolas
guns (ordnance)
∞ turret

gunfire

- RT artillery fire
fire control
firing (igniting)
gun launchers
guns (ordnance)
projectiles

Gunn diodes

- GS electronic equipment
. diodes
. . . semiconductor diodes
. . . . **Gunn diodes**
. . . . transferred electron devices
- RT gallium arsenides
negative resistance devices
semiconductor devices

Gunn effect

- RT ∞ effects
negative conductance
negative resistance devices
semiconductor devices
semiconductor lasers

gunnery training

- GS education

. gunnery training

- RT artillery
fire control
guns (ordnance)
howitzers
weapons

gunpowder

USE **gun propellants**

∞ guns

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT crossed field guns
electron guns
gas guns
guns (ordnance)
hypervelocity guns
plasma guns

guns (ordnance)

- UF *cannons*
- GS weapons
. **guns (ordnance)**
. . . artillery
. . . howitzers
. . . precision guided projectiles
. . . rifles
- RT ammunition
explosives
gun propellants
gun turrets
gunfire
gunnery training
- ∞ guns
heat of combustion
hypervelocity guns
incendiary ammunition
projectiles
propellants
Sabot projectiles

gust alleviators

- RT deflectors
gusts
mission adaptive wings
spoilers
turbulent flow
vortex alleviation

gust loads

- GS aerodynamic forces
. aerodynamic loads
. . **gust loads**
loads (forces)
. dynamic loads
. . aerodynamic loads
. . . **gust loads**
. . . transient loads
. . . **gust loads**
. . . random loads
. . **gust loads**
- RT atmospheric turbulence
blast loads
ground wind
gusts
structural design criteria
wind pressure
wing loading

gustatory perception

USE **taste**

gusts

- GS turbulence
. atmospheric turbulence
. . **gusts**
wind (meteorology)
. **gusts**
- RT clear air turbulence
ground wind
gust alleviators
gust loads
sea breeze
storm damage
storms
storms (meteorology)

vortex avoidance

GUT

USE **grand unified theory**

Gutenberg zone

- GS models
. **Gutenberg zone**
regions
. **Gutenberg zone**
- RT acoustic velocity
seismic waves

guy wires

- UF *stays*
- GS wire
. **guy wires**
- RT anchors (fasteners)
structural members

Guyana

- UF *British Guinea*
- GS nations
. **Guyana**
- RT Caribbean region
South America

gymnastics

USE **physical exercise**

gynecology

- GS medical science
. **gynecology**
- RT females
genitourinary system

gypsum

- DEF The mineral consisting primarily of fully hydrated calcium sulfate (calcium sulfate dihydrate).
- GS minerals
. **gypsum**
plasters
. **gypsum**
- RT calcium
chalk
rocks
sedimentary rocks
sulfates

gyrals

USE **gyres**

gyration

- GS **gyration**
. precession
. . Larmor precession
. . proton precession
. . quenching (atomic physics)
. revolving
. rotation
. . autorotation
. . corotation
. . counter rotation
. . Earth rotation
. . galactic rotation
. . image rotation
. . lunar rotation
. . molecular rotation
. . muon spin rotation
. . planetary rotation
. . satellite rotation
. . stellar rotation
. . . solar rotation
. . clinorotation
. . superrotation
- RT angular velocity
coning motion
- ∞ motion
spin dynamics

gyrators

- UF *Tellegen theory*
- GS microwave equipment
. **gyrators**
. . microwave filters
- RT ferrites
microwave switching
network analysis
phase shift circuits

waveguides

gyres

DEF Closed circulatory systems in a body of water, larger than an eddy or a whirlpool. There is a circular motion of water in each of the major ocean basins, centered on a subtropical high-pressure region. These movements are generated by connective flow of warm surface water poleward, by the deflective effect of the Earth's rotation and by the effects of prevailing winds. The water within each gyre turns clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere. Acceleration causes sea level to fall along mainland coasts; deceleration leads to rise.

UF *gyrals*

RT air water interactions
coastal currents
Coriolis effect
ocean currents
oceanography

gyro horizons

DEF Artificial horizons or attitude gyroscopes.

GS display devices
. **gyro horizons**
flight instruments
. attitude indicators
. . . **gyro horizons**
gyroscopes
. attitude gyros
. . . **gyro horizons**
horizon
. **gyro horizons**
measuring instruments
. indicating instruments
. . . attitude indicators
. . . **gyro horizons**
navigation aids
. navigation instruments
. . . attitude indicators
. . . **gyro horizons**

gyrocompasses

DEF Compasses consisting of a continuously driven Foucault gyroscope whose supporting ring normally confines the spinning axis to a horizontal plane, so that the Earth's rotation causes the spinning axis to assume a position in a plane passing through the Earth's axis, and thus to point to true north.

GS gyroscopes
. **gyrocompasses**
measuring instruments
. indicating instruments
. . . compasses
. . . **gyrocompasses**
navigation aids
. navigation instruments
. . . compasses
. . . **gyrocompasses**
RT magnetic compasses
radio direction finders
solar compasses

gyrodampers

DEF Single-gimbal control moment gyros actively controlled to extract the structural vibratory energy through the local rotational deformations of a structure; used in large space structures.

RT control moment gyroscopes
gimbals
gyroscopic stability

structural vibration
vibration damping

Gyrodyne aircraft

DEF A rotorcraft whose rotors are not engine-driven except for initial starting, but are made to rotate by action of the air when the rotorcraft is moving; and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.

GS **Gyrodyne aircraft**

. QH-50 helicopter
RT ∞ aircraft

Gyrodyne DSN-3 helicopter

USE **QH-50 helicopter**

Gyrodyne military aircraft

USE **QH-50 helicopter**

gyrofrequency

DEF The natural period of revolution of a free electron in the Earth's magnetic field.

GS magnetic properties
. gyromagnetism
. . . **gyrofrequency**
RT charged particles
magnetoionics

gyrointeraction

USE **magnetic rigidity**

gyromagnetism

GS magnetic properties
. **gyromagnetism**
. . . gyrofrequency
RT Larmor radius

gyroplanes

USE **helicopters**

gyros

USE **gyroscopes**

gyroscope fluids

RT damping
 ∞ fluids
rotary gyroscopes
suspending (hanging)

gyroscopes

DEF Devices which utilize the angular momentum of a spinning mass (rotor) to sense angular motion of its base about one or two axes orthogonal to the spin axis. Used for gyros, gyroscopic drift, and gyrostats.

UF *gyros*
gyroscopic drift
gyrostats

GS **gyroscopes**
. attitude gyros
. . . gyro horizons
. control moment gyroscopes
. cryogenic gyroscopes
. electrostatic gyroscopes
. gyrocompasses
. gyroscopic pendulums
. gyrostabilizers
. laser gyroscopes
. nuclear gyroscopes
. optical gyroscopes
. rotary gyroscopes
. . . fluid rotor gyroscopes
. . . tuning fork gyroscopes

RT automatic pilots
gimballess inertial navigation
gimbals

Gravity Probe B
gyroscopic stability
precession
 ∞ stabilizers
torquers

gyroscopic coupling

GS coupling
. **gyroscopic coupling**
RT navigation

gyroscopic drift

USE **gyroscopes**
gyroscopic stability

gyroscopic pendulums

UF *pendulous gyroscopes*
GS gyroscopes
. **gyroscopic pendulums**
oscillators
. mechanical oscillators
. . . pendulums
. . . **gyroscopic pendulums**
RT accelerometers
damping
Schuler tuning

gyroscopic stability

UF *gyroscopic drift*
GS dynamic characteristics
. dynamic stability
. . . motion stability
. . . . attitude stability
. directional stability
. **gyroscopic stability**
. rotary stability
. **gyroscopic stability**
stability
. dynamic stability
. . . motion stability
. . . . attitude stability
. directional stability
. **gyroscopic stability**
. rotary stability
. **gyroscopic stability**
RT damping
gyrodampers
gyroscopes
hovering stability
inertial platforms
precession
rotary gyroscopes
Schuler tuning
sea keeping
stabilized platforms
stable oscillations
yo-yo devices

gyrostabilizers

GS gyroscopes
. **gyrostabilizers**
RT navigation aids
sea keeping
stabilized platforms
thrust vector control

gyrostats

USE **gyroscopes**

gyrotrons

USE **cyclotron resonance devices**

gyrotropism

GS tropism
. **gyrotropism**
RT electromagnetic properties
frequency shift

H

H alpha line

- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . line spectra
 - H lines
 - **H alpha line**
- RT absorption spectra
 - emission spectra
 - H II regions
 - solar spectra

H beta line

- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . line spectra
 - H lines
 - **H beta line**
- RT absorption spectra
 - Balmer series
 - emission spectra
 - solar spectra

H gamma line

- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . line spectra
 - H lines
 - **H gamma line**
- RT absorption spectra
 - Balmer series
 - emission spectra
 - solar spectra

H I regions

- GS celestial bodies
 - . nebulae
 - . . **H I regions**
 - . . . hydrogen clouds
 - **H I regions**
- RT ∞ clouds
 - hydrogen atoms
 - interstellar gas
 - interstellar matter
 - neutral atoms
 - neutral gases
 - radio spectra

H II regions

- GS celestial bodies
 - . nebulae
 - . . **H II regions**
 - . . . hydrogen clouds
 - **H II regions**
- RT ∞ clouds
 - emission spectra
 - H alpha line
 - hydrogen ions
 - interstellar gas
 - interstellar matter
 - ionized gases

H lines

- SN (EXCLUDES SURFACES OF CONSTANT MAGNETIC FIELD STRENGTH)
- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . line spectra
 - **H lines**
 - H alpha line
 - H beta line
 - H gamma line
- RT absorption spectra
 - Balmer series
 - D lines
 - emission spectra
 - K lines
 - Lyman spectra
 - Paschen series
 - Rydberg series
 - solar spectra
 - telluric lines

H waves

- GS electromagnetic radiation
 - . **H waves**

- oscillations
 - . transverse oscillation
 - . . **H waves**
 - transverse waves
 - . **H waves**
- RT electric field strength

H-1 engine

- GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **H-1 engine**
 - . . . liquid propellant rocket engines
 - **H-1 engine**
- RT Saturn 1 launch vehicles
 - Saturn 1B launch vehicles

H-2 control

- (added February 1998)
- GS automatic control
 - . optimal control
 - . . **H-2 control**
 - optimization
 - . optimal control
 - . . **H-2 control**
- RT control systems design
 - control theory
 - controllers
 - feedback control
 - H-infinity control
 - linear quadratic Gaussian control

H-2 orbiting plane

- USE **HOPE aerospace plane**

H-13 helicopter

- USE **OH-13 helicopter**

H-17 helicopter

- UF *Flying Crane helicopter*
- GS Hughes aircraft
 - . **H-17 helicopter**
 - jet aircraft
 - . **H-17 helicopter**
 - research vehicles
 - . research aircraft
 - . . **H-17 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . **H-17 helicopter**
- RT ∞ aircraft

H-19 helicopter

- GS passenger aircraft
 - . **H-19 helicopter**
 - Sikorsky aircraft
 - . **H-19 helicopter**
 - transport aircraft
 - . **H-19 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **H-19 helicopter**
- RT ∞ aircraft

H-21 helicopter

- USE **CH-21 helicopter**

H-23 helicopter

- USE **OH-23 helicopter**

H-25 helicopter

- GS Boeing aircraft
 - . **H-25 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . tandem rotor helicopters
 - **H-25 helicopter**
- RT antisubmarine warfare aircraft

H-34 helicopter

- USE **CH-34 helicopter**

H-43 helicopter

- GS Kaman aircraft
 - . **H-43 helicopter**

- V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **H-43 helicopter**
- RT ∞ aircraft

H-51 helicopter

- USE **XH-51 helicopter**

H-53 helicopter

- UF *CH-53 helicopter*
 - HXX helicopter*
 - Sikorsky S-65 helicopter*
- GS passenger aircraft
 - . **H-53 helicopter**
 - Sikorsky aircraft
 - . **H-53 helicopter**
 - transport aircraft
 - . **H-53 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **H-53 helicopter**
- RT ∞ aircraft

H-54 helicopter

- GS V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **H-54 helicopter**
- RT ∞ aircraft

H-56 helicopter

- GS passenger aircraft
 - . **H-56 helicopter**
 - Sikorsky aircraft
 - . **H-56 helicopter**
 - transport aircraft
 - . **H-56 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **H-56 helicopter**
- RT ∞ aircraft

H-60 Helicopter

- DEF The Black Hawk (Sikorsky) assault helicopter. Used for Black Hawk assault helicopter.
- UF *Black Hawk assault helicopter*
 - Jayhawk helicopter*
- GS Sikorsky aircraft
 - . **H-60 Helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **H-60 Helicopter**
- RT ∞ aircraft
 - ∞ military aircraft

H-126 aircraft

- UF *Hunting H-126 aircraft*
- GS BAC aircraft
 - . **H-126 aircraft**
 - jet aircraft
 - . **H-126 aircraft**
 - monoplanes
 - . **H-126 aircraft**
 - research vehicles
 - . research aircraft
 - . . **H-126 aircraft**
- RT ∞ aircraft
 - jet flaps

habitability

- RT ecology
 - environmental control
 - environments
 - shelters

habitats

- SN (LIMITED TO PLANTS AND ANIMALS)
- DEF The areas or types of environment in which plants or animals normally occur or live.
- GS regions

. **habitats**
 RT animals
 ∞ biology
 botany
 conservation
 Earth resources
 ecology
 endangered species
 environment effects
 environments
 wildlife

habits
 RT learning
 psychological factors

habituation (learning)
 GS learning
 . **habituation (learning)**
 RT conditioning (learning)

hadrons
 GS particles
 . elementary particles
 . . **hadrons**
 . . . baryons
 hyperons
 xi hyperons
 omega-mesons
 rho-mesons
 sigma-mesons
 . . . mesons
 eta-mesons
 hyperons
 xi hyperons
 kaons
 meson resonance
 X mesons
 muons
 omega-mesons
 pions
 vector mesons
 rho-mesons
 sigma-mesons
 RT charm (particle physics)
 flavor (particle physics)
 particle decay
 partons
 quark parton model
 vector dominance model

hafnium
 GS chemical elements
 . **hafnium**
 . . hafnium isotopes
 metals
 . transition metals
 . . **hafnium**
 . . . hafnium isotopes

hafnium alloys
 GS alloys
 . **hafnium alloys**
 RT heat resistant alloys
 niobium alloys
 tantalum alloys
 tungsten alloys
 zirconium alloys

hafnium carbides
 GS carbon compounds
 . carbides
 . . **hafnium carbides**
 hafnium compounds
 . **hafnium carbides**

hafnium compounds
 GS **hafnium compounds**
 . hafnium carbides
 . hafnium iodides
 . hafnium oxides
 RT ∞ chemical compounds
 ∞ Group 4B compounds
 ∞ metal compounds

hafnium iodides
 GS hafnium compounds
 . **hafnium iodides**
 halogen compounds
 . halides

. . metal halides
 . . . **hafnium iodides**
 . iodine compounds
 . . iodides
 . . . **hafnium iodides**

hafnium isotopes
 GS chemical elements
 . hafnium
 . . **hafnium isotopes**
 . nuclides
 . . isotopes
 . . . **hafnium isotopes**
 metals
 . transition metals
 . . hafnium
 . . . **hafnium isotopes**

hafnium oxides
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **hafnium oxides**
 hafnium compounds
 . **hafnium oxides**

hahnium
 (added November 1994)
 GS chemical elements
 . **hahnium**
 RT ∞ elements

hail
 DEF Precipitation in the form of spheroidal layered ice pellets that usually fall from cumulonimbus clouds during thunderstorms. The layered structure of hail is produced by successive accretions of clear and frothy ice.
 UF *hailstones*
 GS precipitation (meteorology)
 . **hail**
 RT cloud glaciation
 graupel
 hailstorms
 hailstorms
 ice formation
 storms (meteorology)
 thunderstorms

hailstones
 USE **hail**

hailstorms
 GS storms
 . storms (meteorology)
 . . **hailstorms**
 RT climatology
 graupel
 hail
 meteorology
 precipitation (meteorology)
 rainstorms
 storm damage
 storm enhancement
 storm suppression
 thunderstorms

hair
 GS fibers
 . **hair**
 RT keratins
 skin (anatomy)
 wool

hairpin vortices
 USE **horseshoe vortices**

Haiti
 GS landforms
 . islands
 . . West Indies
 . . . **Haiti**
 nations
 . **Haiti**
 RT Caribbean region
 Caribbean Sea

HAL/S (language)
 DEF Programming language developed for the flight software of the NASA Space Shuttle program.

GS languages
 . programming languages
 . . **HAL/S (language)**
 RT computer programming
 computers

Halden Boiling Water Reactor
 UF *Halden reactor*
HBWR reactor
 GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . boiling water reactors
 **Halden Boiling Water Reactor**

Halden reactor
 USE **Halden Boiling Water Reactor**

Hale-Bopp comet
 (added July 1998)
 DEF Long-period comet discovered July 23, 1995; designated C/1995 O1.
 GS celestial bodies
 . comets
 . . **Hale-Bopp comet**
 RT Oort cloud

half cones
 GS cones
 . **half cones**
 RT aerodynamic configurations
 circular cones
 conics
 nose cones

half life
 DEF The average time required for one half the atoms in a sample of radioactive element to decay.
 GS life (durability)
 . **half life**
 RT decay
 nuclear reactions
 post-blast nuclear radiation
 radiative lifetime
 radioactive age determination
 radioactive decay
 radioactivity
 reaction kinetics

half planes
 GS analysis (mathematics)
 . **half planes**
 RT boundary value problems
 coordinates
 differential equations
 Green's functions

half spaces
 GS analysis (mathematics)
 . **half spaces**
 RT boundary value problems
 coordinates
 elliptic differential equations
 fractals
 Green's functions

halides
 GS halogen compounds
 . **halides**
 . . bromides
 . . . ammonium bromides
 . . . cesium bromides
 . . . chromium bromides
 . . . dibromides
 . . . hydrobromic acid
 . . . hydrobromides
 . . . magnesium bromides
 . . . potassium bromides
 . . . silver bromides
 . . . sodium bromides
 . . . strontium bromides
 . . chlorides
 . . . aluminum chlorides
 . . . ammonium chlorides
 . . . beryllium chlorides
 . . . boron chlorides
 . . . cadmium chlorides
 . . . calcium chlorides
 . . . carbon tetrachloride

. . . copper chlorides
 . . . dichlorides
 . . . germanium chlorides
 . . . hydrochlorides
 . . . hydrogen chlorides
 . . . hydrochloric acid
 . . . iron chlorides
 . . . lanthanum chlorides
 . . . lead chlorides
 . . . lithium chlorides
 . . . magnesium chlorides
 . . . nitrosyl chlorides
 . . . nitroxychlorides
 . . . nitril chlorides
 . . . phosgene
 . . . potassium chlorides
 . . . silicon tetrachloride
 . . . silver chlorides
 . . . sodium chlorides
 . . . sulfur chlorides
 . . . tetrachlorides
 . . . titanium chlorides
 . . . tungsten chlorides
 . . . zinc chlorides
 . . . fluorides
 . . . antimony fluorides
 . . . barium fluorides
 . . . boron fluorides
 . . . chlorine fluorides
 . . . compound A
 . . . cryolite
 . . . deuterium fluorides
 . . . difluorides
 . . . calcium fluorides
 . . . fluorspar
 . . . hydrofluoric acid
 . . . metal fluorides
 . . . aluminum fluorides
 . . . beryllium fluorides
 . . . cadmium fluorides
 . . . calcium fluorides
 . . . fluorspar
 . . . cesium fluorides
 . . . chromium fluorides
 . . . cobalt fluorides
 . . . copper fluorides
 . . . lanthanum fluorides
 . . . lithium fluorides
 . . . magnesium fluorides
 . . . nickel fluorides
 . . . plutonium fluorides
 . . . protactinium fluorides
 . . . sodium fluorides
 . . . strontium fluorides
 . . . thorium fluorides
 . . . tungsten fluorides
 . . . uranium fluorides
 . . . zinc fluorides
 . . . zirconium fluorides
 . . . nitrogen fluorides
 . . . nitril fluorides
 . . . oxyfluorides
 . . . oxygen fluorides
 . . . ozone fluoride
 . . . perchloryl fluorides
 . . . polyvinyl fluoride
 . . . sulfur fluorides
 . . . sulfur hexafluoride
 . . . technetium fluorides
 . . . metal halides
 . . . alkali halides
 . . . cesium halides
 . . . cesium bromides
 . . . cesium fluorides
 . . . cesium iodides
 . . . potassium iodides
 . . . sodium bromides
 . . . sodium chlorides
 . . . sodium fluorides
 . . . sodium iodides
 . . . aluminum chlorides
 . . . barium fluorides
 . . . beryllium chlorides
 . . . cadmium chlorides
 . . . calcium chlorides
 . . . chromium bromides
 . . . copper chlorides
 . . . hafnium iodides
 . . . iron chlorides

. . . lanthanum chlorides
 . . . lead chlorides
 . . . lithium chlorides
 . . . magnesium bromides
 . . . metal fluorides
 . . . aluminum fluorides
 . . . beryllium fluorides
 . . . cadmium fluorides
 . . . calcium fluorides
 . . . fluorspar
 . . . cesium fluorides
 . . . chromium fluorides
 . . . cobalt fluorides
 . . . copper fluorides
 . . . lanthanum fluorides
 . . . lithium fluorides
 . . . magnesium fluorides
 . . . nickel fluorides
 . . . plutonium fluorides
 . . . protactinium fluorides
 . . . sodium fluorides
 . . . strontium fluorides
 . . . thorium fluorides
 . . . tungsten fluorides
 . . . uranium fluorides
 . . . zinc fluorides
 . . . zirconium fluorides
 . . . niobium iodides
 . . . potassium bromides
 . . . potassium chlorides
 . . . silver halides
 . . . silver bromides
 . . . silver chlorides
 . . . silver iodides
 . . . strontium bromides
 . . . technetium fluorides
 . . . titanium chlorides
 . . . tungsten halides
 . . . tungsten chlorides
 . . . tungsten fluorides
 . . . zinc chlorides
 . . . zirconium iodides
 . . . oxyhalides
 RT halogens
 molten salts
 nitrosyls

halites

UF *rock salt*
 RT molten salts
 ∞ salts

Hall accelerators

RT ∞ accelerators
 alpha plasma devices
 Hall thrusters
 magnetohydrodynamics
 plasma physics

Hall coefficient

USE **Hall effect**

Hall currents

USE **electric current**
Hall effect

Hall effect

DEF The electrical polarization of a horizontal conducting sheet of limited extent, when that sheet moves laterally through a magnetic field having a component vertical to the sheet. The Hall effect is important in determining the behavior of the electrical currents generated by winds in the lower atmosphere. Used for Hall coefficient and Hall currents.

UF *Hall coefficient*
Hall currents
 GS galvanomagnetic effects
 . **Hall effect**
 . quantum Hall effect
 RT carrier mobility
 ∞ effects
 Hall resistance
 magnetohydrodynamics
 mobility
 Pedersen currents
 polarization (charge separation)
 semiconductor devices

transport properties

Hall generators

DEF Hall plates, together with leads, and where used, encapsulation and ferrous or non-ferrous backing plates.

RT circulators (phase shift circuits)
 Faraday effect
 ∞ generators
 plasma generators
 signal generators

Hall resistance

(added July 2000)

DEF For a current-carrying conductor within a magnetic field, the ratio of the transverse voltage induced by the Hall effect, to the conductor current.

GS electrical properties
 . electrical impedance
 . . electrical resistance
 . . . **Hall resistance**
 impedance
 . electrical impedance
 . . electrical resistance
 . . . **Hall resistance**
 RT electrical resistivity
 Hall effect
 magnetoresistivity
 quantum Hall effect
 ∞ resistance
 transport properties

Hall thrusters

(added June 2000)

DEF Gridless ion engines that produce thrust by electrostatically accelerating plasma ions out of an annular discharge chamber.

GS engines
 . rocket engines
 . . electric rocket engines
 . . . electrostatic engines
 ion engines
 **Hall thrusters**
 RT electric propulsion
 Hall accelerators
 plasma engines
 spacecraft propulsion

Hallam Nuclear Power Facility

UF *HINPF (Hallam Nuclear Power Facility)*
 GS electric power plants
 . nuclear power plants
 . . **Hallam Nuclear Power Facility**
 nuclear electric power generation
 . nuclear power plants
 . . **Hallam Nuclear Power Facility**
 RT ∞ power plants
 sodium graphite reactors

Halley's comet

DEF A member of the solar system with an orbit and a period of about 76 years. It appeared in 1985-1986.

GS celestial bodies
 . comets
 . . **Halley's comet**
 RT Giotto mission
 solar system
 Vega project

hallucinations

GS psychological effects
 . illusions
 . . **hallucinations**
 RT signs and symptoms

Halo Orbit space station

GS artificial satellites
 . space stations
 . . **Halo Orbit space station**
 stations
 . space stations
 . . **Halo Orbit space station**
 RT lunar spacecraft

halocarbons

DEF Compounds consisting of halogen atoms and carbon atoms.

- GS carbon compounds
 . halocarbons
 . chlorocarbons
 . chlorofluorocarbons
 . fluorocarbons
 . halon
halogen compounds
 . halocarbons
 . chlorocarbons
 . chlorofluorocarbons
 . fluorocarbons
 . halon
- RT bromine compounds
∞ chemical compounds
chlorine compounds
fluorine compounds
fluoro compounds
iodine compounds
- HALOE
USE **Halogen Occultation Experiment**
- halogen compounds**
UF *Group 7A compounds*
GS **halogen compounds**
 . bromine compounds
 . bromates
 . bromides
 . ammonium bromides
 . cesium bromides
 . chromium bromides
 . dibromides
 . hydrobromic acid
 . hydrobromides
 . magnesium bromides
 . potassium bromides
 . silver bromides
 . sodium bromides
 . strontium bromides
 . halon
 . chlorine compounds
 . chlorates
 . chlorides
 . aluminum chlorides
 . ammonium chlorides
 . beryllium chlorides
 . boron chlorides
 . cadmium chlorides
 . calcium chlorides
 . carbon tetrachloride
 . copper chlorides
 . dichlorides
 . germanium chlorides
 . hydrochlorides
 . hydrogen chlorides
 . hydrochloric acid
 . iron chlorides
 . lanthanum chlorides
 . lead chlorides
 . lithium chlorides
 . magnesium chlorides
 . nitrosyl chlorides
 . nitroxychlorides
 . nitril chlorides
 . phosgene
 . potassium chlorides
 . silicon tetrachloride
 . silver chlorides
 . sodium chlorides
 . sulfur chlorides
 . tetrachlorides
 . titanium chlorides
 . tungsten chlorides
 . zinc chlorides
 . chlorine fluorides
 . chlorine oxides
 . chlorocarbons
 . chlorosilanes
 . DDT
 . meclizine
 . perchlorates
 . aluminum perchlorates
 . ammonium perchlorates
 . hydrazine perchlorates
 . hydrogen perchlorate
 . hydroxylammonium perchlorates
 . lithium perchlorates
 . magnesium perchlorates
 . nitronium perchlorate
 . potassium perchlorates
 . trichloroethylene
 . fluorine compounds
 . fluorides
 . antimony fluorides
 . barium fluorides
 . boron fluorides
 . chlorine fluorides
 . compound A
 . cryolite
 . deuterium fluorides
 . difluorides
 . calcium fluorides
 . fluorspar
 . hydrofluoric acid
 . metal fluorides
 . aluminum fluorides
 . beryllium fluorides
 . cadmium fluorides
 . calcium fluorides
 . fluorspar
 . cesium fluorides
 . chromium fluorides
 . cobalt fluorides
 . copper fluorides
 . lanthanum fluorides
 . lithium fluorides
 . magnesium fluorides
 . nickel fluorides
 . plutonium fluorides
 . protactinium fluorides
 . sodium fluorides
 . strontium fluorides
 . thorium fluorides
 . tungsten fluorides
 . uranium fluorides
 . zinc fluorides
 . zirconium fluorides
 . nitrogen fluorides
 . nitril fluorides
 . oxyfluorides
 . oxygen fluorides
 . ozone fluoride
 . perchloryl fluorides
 . polyvinyl fluoride
 . sulfur fluorides
 . sulfur hexafluoride
 . technetium fluorides
 . fluorite
 . fluoro compounds
 . cryolite
 . difluoro compounds
 . perfluoroalkane
 . polytetrafluoroethylene
 . teflon (trademark)
 . fluorine organic compounds
 . fluoroamines
 . nitrofluoroamines
 . trifluoroamine oxide
 . fluorocarbons
 . fluorohydrocarbons
 . carbon tetrafluoride
 . chlorofluoromethane
 . polytetrafluoroethylene
 . teflon (trademark)
 . fluoropolymers
 . polytetrafluoroethylene
 . teflon (trademark)
 . KEL-F
 . polyvinyl fluoride
 . perfluoroalkane
 . perfluoroguanidine
 . fluorosilicates
 . tetrafluorohydrazine
 . halides
 . bromides
 . ammonium bromides
 . cesium bromides
 . chromium bromides
 . dibromides
 . hydrobromic acid
 . hydrobromides
 . magnesium bromides
 . potassium bromides
 . silver bromides
 . sodium bromides
 . strontium bromides
 . chlorides
 . aluminum chlorides
 . ammonium chlorides
 . beryllium chlorides
 . boron chlorides
 . cadmium chlorides
 . calcium chlorides
 . lanthanum chlorides
 . lead chlorides
 . lithium chlorides
 . magnesium chlorides
 . nitrosyl chlorides
 . nitroxychlorides
 . nitril chlorides
 . phosgene
 . potassium chlorides
 . silicon tetrachloride
 . silver chlorides
 . sodium chlorides
 . sulfur chlorides
 . tetrachlorides
 . titanium chlorides
 . tungsten chlorides
 . zinc chlorides
 . fluorides
 . antimony fluorides
 . barium fluorides
 . boron fluorides
 . chlorine fluorides
 . compound A
 . cryolite
 . deuterium fluorides
 . difluorides
 . calcium fluorides
 . fluorspar
 . hydrofluoric acid
 . metal fluorides
 . aluminum fluorides
 . beryllium fluorides
 . cadmium fluorides
 . calcium fluorides
 . fluorspar
 . cesium fluorides
 . chromium fluorides
 . cobalt fluorides
 . copper fluorides
 . lanthanum fluorides
 . lithium fluorides
 . magnesium fluorides
 . nickel fluorides
 . plutonium fluorides
 . protactinium fluorides
 . sodium fluorides
 . strontium fluorides
 . thorium fluorides
 . tungsten fluorides
 . uranium fluorides
 . zinc fluorides
 . zirconium fluorides
 . nitrogen fluorides
 . nitril fluorides
 . oxyfluorides
 . oxygen fluorides
 . ozone fluoride
 . perchloryl fluorides
 . polyvinyl fluoride
 . sulfur fluorides
 . sulfur hexafluoride
 . technetium fluorides
 . metal halides
 . alkali halides
 . cesium halides
 . cesium bromides
 . cesium fluorides
 . cesium iodides
 . potassium iodides
 . sodium bromides
 . sodium chlorides
 . sodium fluorides
 . sodium iodides
 . aluminum chlorides
 . barium fluorides
 . beryllium chlorides
 . beryllium chlorides
 . boron chlorides
 . cadmium chlorides
 . calcium chlorides
 . carbon tetrachloride
 . copper chlorides
 . dichlorides
 . germanium chlorides
 . hydrochlorides
 . hydrogen chlorides
 . hydrochloric acid
 . iron chlorides
 . lanthanum chlorides
 . lead chlorides
 . lithium chlorides
 . magnesium chlorides
 . nitrosyl chlorides
 . nitroxychlorides
 . nitril chlorides
 . phosgene
 . potassium chlorides
 . silicon tetrachloride
 . silver chlorides
 . sodium chlorides
 . tetrachlorides
 . titanium chlorides
 . tungsten chlorides
 . zinc chlorides
 . fluorides
 . antimony fluorides
 . barium fluorides
 . boron fluorides
 . chlorine fluorides
 . compound A
 . cryolite
 . deuterium fluorides
 . difluorides
 . calcium fluorides
 . fluorspar
 . hydrofluoric acid
 . metal fluorides
 . aluminum fluorides
 . beryllium fluorides
 . cadmium fluorides
 . calcium fluorides
 . fluorspar
 . cesium fluorides
 . chromium fluorides
 . cobalt fluorides
 . copper fluorides
 . lanthanum fluorides
 . lithium fluorides
 . magnesium fluorides
 . nickel fluorides
 . plutonium fluorides
 . protactinium fluorides
 . sodium fluorides
 . strontium fluorides
 . thorium fluorides
 . tungsten fluorides
 . uranium fluorides
 . zinc fluorides
 . zirconium fluorides
 . nitrogen fluorides
 . nitril fluorides
 . oxyfluorides
 . oxygen fluorides
 . ozone fluoride
 . perchloryl fluorides
 . polyvinyl fluoride
 . sulfur fluorides
 . sulfur hexafluoride
 . technetium fluorides
 . metal halides
 . alkali halides
 . cesium halides
 . cesium bromides
 . cesium fluorides
 . cesium iodides
 . potassium iodides
 . sodium bromides
 . sodium chlorides
 . sodium fluorides
 . sodium iodides
 . aluminum chlorides
 . barium fluorides
 . beryllium chlorides

Halogen Occultation Experiment

- . . . cadmium chlorides
- . . . calcium chlorides
- . . . chromium bromides
- . . . copper chlorides
- . . . hafnium iodides
- . . . iron chlorides
- . . . lanthanum chlorides
- . . . lead chlorides
- . . . lithium chlorides
- . . . magnesium bromides
- . . . metal fluorides
 - aluminum fluorides
 - beryllium fluorides
 - cadmium fluorides
 - calcium fluorides
 - fluorspar
 - cesium fluorides
 - chromium fluorides
 - cobalt fluorides
 - copper fluorides
 - lanthanum fluorides
 - lithium fluorides
 - magnesium fluorides
 - nickel fluorides
 - plutonium fluorides
 - protactinium fluorides
 - sodium fluorides
 - strontium fluorides
 - thorium fluorides
 - tungsten fluorides
 - uranium fluorides
 - zinc fluorides
- . . . zirconium fluorides
- . . . niobium iodides
- . . . potassium bromides
- . . . potassium chlorides
- . . . silver halides
- . . . silver bromides
- . . . silver chlorides
- . . . silver iodides
- . . . strontium bromides
- . . . technetium fluorides
- . . . titanium chlorides
- . . . tungsten halides
- . . . tungsten chlorides
- . . . tungsten fluorides
- . . . zinc chlorides
- . . . zirconium iodides
- . . oxyhalides
- . halocarbons
- . chlorocarbons
- . chlorofluorocarbons
- . fluorocarbons
- . halon
- . iodine compounds
- . iodates
- . lithium iodates
- . iodides
- . cesium iodides
- . gallamine triethiodide
- . hafnium iodides
- . niobium iodides
- . potassium iodides
- . silver iodides
- . sodium iodides
- . zirconium iodides
- . iodoacetic acid
- . nitrosyls
- . nitrosyl chlorides

RT ∞ chemical compounds

Halogen Occultation Experiment

DEF Shuttle experiment to provide global stratospheric vertical concentration profiles of key chemical species involved in the catalytic destruction of ozone due to chlorine compounds. Used for HALOE.

UF *HALOE*

GS payloads

- . Space Shuttle payloads
- . **Halogen Occultation Experiment**

RT ozone

halogenation

GS chemical reactions

- . **halogenation**
- . . bromination
- . . chlorination
- . . fluorination

RT defluorination
halogens

halogens

GS chemical elements

- . **halogens**
- . . astatine
- . . bromine
- . . bromine isotopes
- . . chlorine
- . . fluorine
- . . fluorine isotopes
- . . liquid fluorine
- . . iodine
- . . iodine isotopes
- iodine 125
- iodine 131
- iodine 132

RT excimer lasers
halides
halogenation

halon

(added January 2000)

DEF A bromofluorocarbon compound that was widely used as an agent for fire suppression and explosion protection. After being recognized as an ozone-depleting substance, the U.S. production and import of halons was banned in 1994.

GS carbon compounds

- . halocarbons
- . . **halon**

halogen compounds

. bromine compounds

. . **halon**

. halocarbons

. . **halon**

RT fire extinguishers
flame retardants
fluorocarbons

halophiles

RT agriculture
plants (botany)

halos

GS scattering

- . wave scattering
- . . electromagnetic scattering
- . . . light scattering
- **halos**

transmission

. electromagnetic wave transmission

. . light transmission

. . . light scattering

- **halos**
- wave propagation
- light scattering
- **halos**

RT astronomy
atmospheric scattering
coronas
galactic halos
haze
images
rainbows

Halphen method

RT ∞ methodology

Hamburger aircraft

GS **Hamburger aircraft**

- . C-160 aircraft
- . HFB-320 aircraft

RT ∞ aircraft

Hamburger HFB-320 aircraft

USE **HFB-320 aircraft**

Hamiltonian functions

GS functions (mathematics)

- . **Hamiltonian functions**

RT classical mechanics
cluster variation method

∞ dynamics

Hamilton-Jacobi equation
quantum theory

von Zeipel method

Hamilton-Jacobi equation

RT ∞ equations
equations of motion
Hamiltonian functions
relativistic particles

hammerhead configuration

RT forebodies
missile configurations

hammers

GS tools

- . **hammers**
- . . electromagnetic hammers

RT impactors
presses
rams (presses)

hamsters

GS animals

- . vertebrates
- . . mammals
- . . . rodents
- **hamsters**

hand (anatomy)

GS anatomy

- . limbs (anatomy)
- . . **hand (anatomy)**
- . . . fingers
- . . . appendages
- . . . **hand (anatomy)**
- . . . fingers

RT wrist

handbooks

GS documents

- . **handbooks**
- . . user manuals (computer programs)

RT bibliographies
directories
indexes (documentation)
manuals
subjects
textbooks
training analysis

handedness

RT chirality
lateral stability

handicaps

USE **disabilities**

handles

RT knobs
levers
manual control

Handley Page aircraft

GS **Handley Page aircraft**

- . HP-115 aircraft
- . Victor MK-1 aircraft

RT ∞ aircraft

Handley Page HP-115 aircraft

USE **HP-115 aircraft**

handling equipment

GS **handling equipment**

- . cranes
- . . gantry cranes

RT crawler tractors

∞ equipment

ground support equipment
harbors
locomotives
propellant storage

∞ storage
tractors

transportation

handling qualities
USE **controllability**

hands (robotics)
USE **end effectors**

handwriting
GS **handwriting**
. graphology
RT character recognition
orthography

Hanford reactors
GS nuclear reactors
. **Hanford reactors**
RT reactor design
reactor physics
reactor technology

hang gliders
DEF Ultralight, unpowered aircraft in which the pilot controls the flight attitude and glide path by shifting his position on a suspended seat (swing seat).
GS gliders
. **hang gliders**
RT ∞ aircraft
flexible wings
free flight
man powered aircraft
parawings
sailwings
soaring
ultralight aircraft
∞ winged vehicles

hangars
(added December 1990)
UF *aircraft hangars*
RT airfield surface movements
airports
buildings
ground handling
ground stations
heliports
military air facilities

Hankel functions
GS analysis (mathematics)
. complex variables
. . Bessel functions
. . . **Hankel functions**
. real variables
. . Bessel functions
. . . **Hankel functions**
functions (mathematics)
. **Hankel functions**
RT boundary value problems
differential equations
orthogonal functions

Hansen lunar theory
RT Earth orbits
orbital mechanics
perturbation theory
∞ theories

haploscopes
GS measuring instruments
. optical measuring instruments
. . **haploscopes**
optical equipment
. optical measuring instruments
. . **haploscopes**
RT astigmatism
binocular vision
eye examinations
∞ instruments
optometry

harbors
DEF Small bays or sheltered parts of seas, lakes, or other large bodies of water, usually well protected either naturally or artificially against high waves and strong currents. Harbors are furnished deep enough to provide safe anchorage for ships; especially such places in which port facilities are furnished.

GS waterways
. **harbors**
. . artificial harbors

RT boats
breakwaters
cargo
dredging
estuaries
freighters
handling equipment
marine transportation
oceanography
∞ ports
regional planning
ship terminals
ships
tanker ships
terminal facilities
traffic
∞ travel
water vehicles
wharves

hard coal
USE **anthracite**

hard landing
DEF An impact landing of a spacecraft on the surface of a planet or natural satellite destroying all equipment except possibly a very rugged package.
GS landing
. **hard landing**
RT aircraft landing
crash landing
emergency landing
lunar landing
planetary landing
soft landing
spacecraft landing
water landing

hardeners
RT alloys
hardening (materials)
heat treatment

∞ **hardening**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT hardening (materials)
hardening (systems)

hardening (materials)
UF *metal hardening*
GS **hardening (materials)**
. carburizing
. cold hardening
. hot pressing
. . hot isostatic pressing
. nitriding
. precipitation hardening
. . maraging
. pulse heating
. shot peening
. silicizing
. work hardening
. . strain hardening
RT aging (materials)
aging (metallurgy)
annealing
coagulation
dispersion strengthening
hardeners
∞ hardening
heat treatment
martensite
metal working
∞ metallurgy
microstructure
normalizing (heat treatment)
oxide dispersion strengthening
peening
quenching (cooling)
∞ setting
softening
tempering

hardening (systems)
DEF Techniques for decreasing the suscep-

tibility or vulnerability of weapon systems and components.
GS **hardening (systems)**
. radiation hardening
RT ∞ hardening
missile defense
nuclear warfare
∞ systems

hardness
DEF Resistance of metal to plastic deformation usually by indentation. However, the term may also refer to stiffness or temper, or to resistance to scratching, abrasion, or cutting.
GS mechanical properties
. **hardness**
. . microhardness
. . . Knoop hardness
. . Rockwell hardness
. . Vickers hardness
RT abrasion resistance
brittle materials
brittleness
Charpy impact test
cold hardening
ductility
fatigue (materials)
fracture strength
impact strength
indentation
notch tests
plastic properties
softness
surface properties
temper (metallurgy)
toughness
wear
wear resistance

hardness tests
RT compression tests
high temperature tests
impact tests
Knoop hardness
low temperature tests
∞ materials tests
nanoindentation
nondestructive tests
static tests
∞ tests
Vickers hardness
wear tests

∞ **hardware**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Physical equipment as contrasted to ideas or design that may exist only on paper.
RT computers
electronic modules
∞ equipment
evolvable hardware
firmware
fixtures
reconfigurable hardware
tools

hardware description languages
(added January 1994)
DEF Formal languages and notations used in the specification, design, simulation, and documentation of computer hardware systems and their component circuits.
UF *HDL (computers)*
VHDL (computers)
GS languages
. **hardware description languages**
RT computer design
computer systems simulation
formalism
integrated circuits
logic design
very large scale integration

hardware utilization lists
UF *HUL*
GS lists
. **hardware utilization lists**
RT ∞ catalogs

hardware-in-the-loop simulation

documents

hardware-in-the-loop simulation

(added February 1999)

UF *hardware-in-the-loop tests*

GS simulation

. **hardware-in-the-loop simulation**

RT computerized simulation

control simulation

performance tests

systems simulation

hardware-in-the-loop tests

(added February 1999)

USE **hardware-in-the-loop simulation**

Harleton meteorite

GS celestial bodies

. meteorites

. . stony meteorites

. . . chondrites

. . . **Harleton meteorite**

RT iron meteorites

harmonic analysis

DEF A statistical method for determining the amplitude and period of certain harmonic or wave components in a set of data with the aid of Fourier series.

GS analysis (mathematics)

. functional analysis

. . **harmonic analysis**

. . . tesseral harmonics

. . . zonal harmonics

RT Banach space

form factors

Fourier analysis

frequency analyzers

microwave resonance

harmonic control

RT ∞ control

harmonic oscillation

harmonics

helicopter control

rotary wings

vibration damping

harmonic excitation

GS excitation

. wave excitation

. . **harmonic excitation**

harmonics

. **harmonic excitation**

RT acoustics

Fourier analysis

simple harmonic motion

harmonic functions

DEF Any solution of the Laplace equations.

GS analysis (mathematics)

. complex variables

. . **harmonic functions**

functions (mathematics)

. **harmonic functions**

RT Airy function

Fourier analysis

Laplace equation

maximum principle

harmonic generations

GS harmonics

. **harmonic generations**

RT acoustics

carrier frequencies

Fourier analysis

phase matching

wave generation

harmonic generators

RT comparators

frequency converters

∞ generators

harmonics

oscillators

subharmonic generators

harmonic motion

DEF The projection on a diameter of the circle of such motion.

GS **harmonic motion**

. simple harmonic motion

RT group velocity

∞ motion

harmonic oscillation

GS harmonics

. **harmonic oscillation**

oscillations

. **harmonic oscillation**

RT acoustics

Fourier analysis

harmonic control

transverse oscillation

harmonic oscillators

GS oscillators

. **harmonic oscillators**

RT harmonics

mechanical oscillators

subharmonic generators

harmonic radiation

RT electromagnetic radiation

∞ radiation

harmonics

DEF Eigenfrequency oscillations excited in a vibrating system. Used for overtones.

UF *overtones*

GS **harmonics**

. harmonic excitation

. harmonic generations

. harmonic oscillation

. simple harmonic motion

. spherical harmonics

. superharmonics

. tesseral harmonics

. zonal harmonics

RT acoustics

cycles

Fourier analysis

frequencies

harmonic control

harmonic generators

harmonic oscillators

nodes (standing waves)

resonant frequencies

sound-sound interactions

standing waves

subaudible frequencies

subharmonic generators

vibration

wavelengths

harnesses

RT couches

safety devices

seat belts

seats

transmission lines

Harpoon missile

GS missiles

. air to surface missiles

. . **Harpoon missile**

RT surface to surface missiles

weapon systems

Harrier aircraft

(added February 1993)

UF *AV-8A aircraft*

AV-8B aircraft

YAV-8B aircraft

GS attack aircraft

. fighter aircraft

. . **Harrier aircraft**

Hawker Siddeley aircraft

. **Harrier aircraft**

RT ∞ aircraft

Buccaneer aircraft

∞ military aircraft

P-1127 aircraft

Saab 37 aircraft

Vampire MK 35 aircraft

Vulcan aircraft

Hartmann flow

GS fluid flow

. laminar flow

. . **Hartmann flow**

. steady flow

. . **Hartmann flow**

RT Couette flow

magneto hydrodynamic flow

magneto hydrodynamics

two dimensional flow

Hartmann number

GS dimensionless numbers

. **Hartmann number**

ratios

. **Hartmann number**

RT magneto hydrodynamics

viscous drag

Hartmann-Sprenger tubes

(added August 2003)

DEF A passive, pulsed-flow device in which under-expanded, sonic or supersonic jet flows impinge on a tube closed on one end, thus producing gas dynamic oscillations and converting a steady flow into a continuous source of pulsed flow.

RT pulse generators

∞ test equipment

Hartree approximation

UF *Hartree-Appleton approximation*

Hartree-Fock approximation

GS analysis (mathematics)

. numerical analysis

. . approximation

. . . **Hartree approximation**

RT atomic structure

density functional theory

many body problem

perturbation theory

self consistent fields

wave functions

Hartree-Appleton approximation

USE **Hartree approximation**

Hartree-Fock approximation

USE **Hartree approximation**

Hartree-Fock-Slater method

DEF A refined approximation method for the calculation from wave function of electron total energies, kinetic energies, etc., for chemical elements.

RT atomic physics

electron energy

∞ methodology

Slater orbitals

Harvard Radio Meteor Project

GS programs

. projects

. . **Harvard Radio Meteor Project**

RT radio echoes

hassium

(added May 1998)

GS chemical elements

. **hassium**

RT bohrium

meitnerium

Hastelloy (trademark)

GS alloys

. nickel alloys

. . **Hastelloy (trademark)**

RT iron alloys

molybdenum alloys

hatches

RT air locks

doors

egress

gates (openings)

ingress (spacecraft passageway)

hauling

RT cargo

delivery
materials handling
packaging
transportation
transportation energy
trucks

Hawaii
GS landforms
. islands
. . **Hawaii**
nations
. United States
. . **Hawaii**

Hawk missile
GS missiles
. surface to air missiles
. . **Hawk missile**
RT solid propellant rocket engines

Hawker Hunter aircraft
USE **F-2 aircraft**

Hawker P-1127 aircraft
USE **P-1127 aircraft**

Hawker P-1154 aircraft
USE **P-1154 aircraft**

Hawker Siddeley aircraft
GS **Hawker Siddeley aircraft**
. Argosy MK-1 aircraft
. AVRO 707 aircraft
. Buccaneer aircraft
. Comet 4 aircraft
. DH 112 aircraft
. DH 115 aircraft
. DH 121 aircraft
. DH 125 aircraft
. F-2 aircraft
. GA-5 aircraft
. Harrier aircraft
. HS-748 aircraft
. HS-801 aircraft
. P-1127 aircraft
. P-1154 aircraft
. Shackleton bomber
. Vampire MK 35 aircraft
. Vulcan aircraft
RT ∞ aircraft

Hawkeye 1 satellite
USE **Explorer 52 satellite**

Hawkeye aircraft
USE **E-2 aircraft**

Hawkeye satellites
GS artificial satellites
. scientific satellites
. . **Hawkeye satellites**

hay
GS farm crops
. **hay**
plants (botany)
. grasses
. . **hay**
RT agriculture
botany
Earth resources
farmlands
∞ food
grasslands
leguminous plants

Haynes Stellite
USE **Stellite (trademark)**

HAZ (metallurgy)
USE **heat affected zone**

hazardous material disposal (in space)
DEF The disposal in space of hazardous material. When radioactive materials are involved, the expected lifetime of orbit exceeds the lifetime of the radioactivity.
GS disposal
. waste disposal

. . **hazardous material disposal (in space)**
management
. waste management
. . waste disposal
. . . **hazardous material disposal (in space)**
RT aerospace environments
public health
radioactive wastes
toxicity and safety hazard

hazardous materials
(added March 1997)
GS **hazardous materials**
. hazardous wastes
RT biological hazards
carcinogens
contaminants
explosives
hazards
∞ materials
poisons
radiation hazards
toxic hazards
toxins and antitoxins
waste disposal

hazardous wastes
(added March 1997)
GS hazardous materials
. **hazardous wastes**
wastes
. **hazardous wastes**
RT biological hazards
contaminants
environmental cleanup
hazards
radiation hazards
toxic hazards
waste disposal

hazards
UF *danger*
noise hazards
GS **hazards**
. aircraft hazards
. . runway incursions
. flight hazards
. . meteoroid hazards
. biological hazards
. operational hazards
. radiation hazards
. toxic hazards
RT accident prevention
accidents
aircraft spin
avoidance
crash injuries
∞ detectors
explosions
fires
flammable gases
hazardous materials
hazardous wastes
incompatibility
injuries
low visibility
noise tolerance
occupational diseases
protection
risk
risk assessment
sabotage
safety
safety devices
safety factors
safety management
spacecraft breakup
spontaneous combustion
toxicology
warning systems

haze
DEF Fine particles of dust, salt, or water dispersed through a part of the atmosphere, diminishing transparency of the air, causing colors to assume a characteristic subdued opalescent appearance, and reducing the horizontal visibility to more than one, but less than two

kilometers. The obscuration, or lack of transparency, of the atmosphere near the Earth's surface, is often caused by haze or by heat refraction (shimmering).
RT air pollution
atmospheric optics
clarity
fog
halos
light transmission
low visibility
mist
opacity
optical properties
transparence
turbidity
visibility

haze detection
GS detection
. **haze detection**
RT fog
forest fire detection
fumes
gas detectors
mist
remote sensors
smoke
vapors

HBNQ
USE **nitroguanidine**

HBWR reactor
USE **Halden Boiling Water Reactor**

HC-1 helicopter
USE **CH-47 helicopter**

HC-3 helicopter
UF *Omnipol HC-3 helicopter*
GS general aviation aircraft
. **HC-3 helicopter**
transport aircraft
. **HC-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **HC-3 helicopter**
RT passenger aircraft

HCL argon lasers
DEF Gas lasers in which the active material is gaseous hydrogen chloride and argon.
GS stimulated emission devices
. lasers
. . chemical lasers
. . . HCL lasers
. . . . **HCL argon lasers**
. . gas lasers
. . . HCL lasers
. . . . **HCL argon lasers**

HCL lasers
DEF Gas lasers in which the active material is gaseous hydrogen chloride. Used for hydrogen chloride lasers.
UF *hydrogen chloride lasers*
GS stimulated emission devices
. lasers
. . chemical lasers
. . . **HCL lasers**
. . . . HCL argon lasers
. . gas lasers
. . . **HCL lasers**
. . . . HCL argon lasers

HCMM
USE **Heat Capacity Mapping Mission**

HCN lasers
UF *hydrogen cyanide lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . **HCN lasers**
RT chemical lasers
coherent light
hydrocyanic acid

head (anatomy)

light amplifiers
light sources
optical pumping
stimulated emission

HD-1 ground effect machines

USE **hovercraft ground effect machines**

HDL (computers)

USE **hardware description languages**

HDTV

USE **high definition television**

head (anatomy)

GS anatomy
. **head (anatomy)**
. . . skull
. . . . cranium
. intracranial cavity
. mastoids
RT brain
chin
eye (anatomy)
face (anatomy)
forehead
lips (anatomy)
nose (anatomy)
sense organs

head (fluid mechanics)

GS fluid flow
. **head (fluid mechanics)**
. . . head flow
. . . pressure heads
RT elevation
geopotential height
hydrostatic pressure
hydrostatics
liquid flow
pressure
scale height

head (pressure)

USE **pressure heads**

head down tilt

GS posture
. **head down tilt**
RT aerospace medicine
bed rest
bioastronautics
body sway test
head up tilt
hemodynamic responses
hindlimb suspension
hypokinesia
orthostatic tolerance
physiological effects
tilt-table test
vestibular tests
weightlessness simulation

head flow

GS fluid flow
. **head (fluid mechanics)**
. . . **head flow**
RT base flow
Blasius flow
inlet flow
liquid flow
∞ pressure drop

head movement

RT acceleration stresses (physiology)
aerospace medicine
eye movements
∞ motion
motion sickness
vestibular tests

head up tilt

(added March 1998)
DEF Body posture while lying on a tilt table with the head higher than the rest of the body.
UF *HUT (physiology)*
GS posture
. **head up tilt**
RT aerospace medicine
bed rest

bioastronautics
cardiovascular system
gravitational physiology
gravity perception
head down tilt
hemodynamic responses
hindlimb suspension
lower body negative pressure
orthostatic tolerance
physiological responses
supine position
tilt-table test
weightlessness simulation

headache

UF *cephalalgia*
GS diseases
. **headache**
signs and symptoms
. **headache**

∞ headers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT beams (supports)
chassis
hermetic seals
pipes (tubes)
supports
∞ terminals

headsets

USE **earphones**

head-up displays

GS display devices
. **head-up displays**
RT avionics
consoles
flight instruments
image tubes
indicating instruments
landing aids
navigation aids
position indicators
spacecraft position indicators
warning systems

healing

GS **healing**
. wound healing
RT clinical medicine
cures
therapy

health

GS **health**
. health physics
. . public health
. . mental health
RT chronic conditions
clinical medicine
hygiene
oral hygiene
psychotherapy
sanitation

health and usage monitoring systems (added April 2001)

USE **systems health monitoring**

health physics

GS biophysics
. **health physics**
. . public health
health
. **health physics**
. . public health
RT fluence
industrial safety
nuclear medicine
nuclear physics
nuclear radiation
occupational diseases
∞ physics
radiation detectors
radiation dosage
radiation effects
radiation hazards
radiation injuries

radiation measuring instruments
radiation protection
radiation sickness
radiobiology
safety factors
∞ science

Health Physics Research Reactor

UF *HPRR*
GS nuclear reactors
. nuclear research and test reactors
. . **Health Physics Research Reactor**
RT ∞ physics

Health-Education Telecommunications exp

USE **HET experiment**

HEAO

UF *High Energy Astronomy Observatories*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **HEAO**
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
observatories
. astronomical observatories
. . astronomical satellites
. . . **HEAO**
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
RT OAO

HEAO 1

DEF The first of three NASA High Energy Astronomy Observatories launched during 1977 for the study of cosmic rays and Earth's magnetic field to study the x ray and gamma ray sky. Used for HEAO A, High Energy Astronomy Observatory A, and High Energy Astronomy Observatory 1.

UF *HEAO A*
High Energy Astronomy Observatory 1
High Energy Astronomy Observatory A

GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **HEAO**
. . . . **HEAO 1**
observatories
. astronomical observatories
. . astronomical satellites
. . . **HEAO**
. . . . **HEAO 1**
unmanned spacecraft
. **HEAO 1**
RT OAO

HEAO 2

DEF The second of three NASA High Energy Astronomy Observatories. It was launched during 1978 for the study of specific x ray objects, quasars, x ray pulsars, and candidate black holes. Used for Einstein Observatory, HEAO B, High Energy Astronomy Observatory B, and High Energy Astronomy Observatory 2.

UF *Einstein Observatory*
HEAO B
High Energy Astronomy Observatory 2
High Energy Astronomy Observatory B

GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **HEAO**
. . . . **HEAO 2**
observatories
. astronomical observatories
. . astronomical satellites
. . . **HEAO**
. . . . **HEAO 2**

- unmanned spacecraft
HEAO 2
 RT OAO
- HEAO 3**
 DEF The third of four NASA High Energy Astronomy Observatories. It was launched during 1979 for the study of cosmic rays and elemental and isotropic composition as a corollary to a search of narrow gamma ray lines. Used for HEAO C, High Energy Astronomy Observatory C, and High Energy Astronomy Observatory 3.
 UF *HEAO C*
High Energy Astronomy Observatory 3
High Energy Astronomy Observatory C
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . HEAO
 **HEAO 3**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . HEAO
 **HEAO 3**
 unmanned spacecraft
 . **HEAO 3**
 RT OAO
- HEAO 4**
(added May 1997)
 UF *HEAO D*
High Energy Astronomy Observatory 4
High Energy Astronomy Observatory D
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . HEAO
 **HEAO 4**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . HEAO
 **HEAO 4**
 RT gamma ray astronomy
 x ray astronomy
- HEAO A*
 USE **HEAO 1**
- HEAO B*
 USE **HEAO 2**
- HEAO C*
 USE **HEAO 3**
- HEAO D*
(added May 1997)
 USE **HEAO 4**
- hearing**
 GS **hearing**
 . binaural hearing
 RT audiology
 audiometry
 auditory fatigue
 auditory tasks
 ear
 loudness
 stereophonics
 thresholds (perception)
- hearing loss*
 USE **auditory defects**
- heart**
 GS anatomy
 . circulatory system
 . . cardiovascular system
 . . . **heart**
 cardiac auricles
 cardiac ventricles
 epicardium
 heart conduction system
 myocardium
- RT aorta
 artificial cardiac pacemaker
 artificial heart valves
 blood
 blood pumps
 cardiograms
 cardiography
 cardiology
 cardiostachometers
 coronary circulation
 diastole
 muscles
 phonocardiography
- heart conduction system**
(added August 2004)
 DEF An impulse-conducting system composed of modified cardiac muscle and having the power of spontaneous rhythmicity and conduction more highly developed than the rest of the heart.
 GS anatomy
 . circulatory system
 . . cardiovascular system
 . . . heart
 **heart conduction system**
 RT artificial cardiac pacemaker
 blood circulation
 heart function
 myocardium
- heart diseases**
 GS diseases
 . **heart diseases**
 . . angina pectoris
 . . coronary artery disease
 . . infarction
 . . . myocardial infarction
 RT bradycardia
 cardiography
 cardiology
 cardiovascular system
 echocardiography
 electrocardiography
 fat embolisms
 fibrillation
 His bundle
 phonocardiography
- heart function**
 GS **heart function**
 . diastole
 . fibrillation
 . systole
 RT angina pectoris
 blood circulation
 blood pressure
 cardiac output
 cardiography
 carotid sinus reflex
 cyanosis
 echocardiography
 heart conduction system
 heart minute volume
 heart rate
 hemodynamics
 His bundle
 physiology
 stroke volume
- heart implantation**
 GS implantation
 . **heart implantation**
 RT artificial heart valves
 biotechnology
 blood circulation
 pulmonary circulation
 surgery
 transplantation
- heart minute volume**
 GS output
 . cardiac output
 . . **heart minute volume**
 RT heart function
 spirometers
- heart rate**
 UF *pulse (cardiovascular)*
 GS rates (per time)
- . **heart rate**
 . . arrhythmia
 . . bradycardia
 . . tachycardia
 RT angina pectoris
 baroreflexes
 biofeedback
 biomedical data
 cardiac output
 cardiology
 diastole
 epinephrine
 heart function
 Hering-Breuer reflex
 sphygmography
 stroke volume
 systole
- heart valves**
 GS valves
 . **heart valves**
 . . artificial heart valves
 RT coronary circulation
- hearths**
 RT furnaces
 refractories
- heat**
 DEF Energy transferred by a thermal process.
 GS **heat**
 . dry heat
 . enthalpy
 . . Gibbs free energy
 . . heat of dissociation
 . . heat of formation
 . . heat of solution
 . . latent heat
 . . . heat of fusion
 . . . heat of vaporization
 . heat of combustion
 . nuclear heat
 . process heat
 . specific heat
 RT activation energy
 ∞ energy
 entropy
 heating
 heating equipment
 infrared radiation
 temperature
 thermal energy
 thermal insulation
 thermal radiation
 thermochemistry
 thermodynamic properties
 thermodynamics
 work
- heat acclimatization**
 GS adaptation
 . acclimatization
 . . **heat acclimatization**
 RT body temperature
 cold acclimatization
 high temperature environments
 human tolerances
 perspiration
 physiological effects
- heat affected zone**
 DEF That portion of the base metal, the structure or properties of which have been altered by the heat of welding or gas-cutting operation. Used for HAZ (metallurgy).
 UF *HAZ (metallurgy)*
 RT arc welding
 gas tungsten arc welding
 heat treatment
 metal bonding
 ∞ metallurgy
 metal-metal bonding
 soldering
 temperature dependence
 temperature effects
 thermomechanical treatment
 weldability

heat balance

welding

heat balance

DEF The equilibrium which exists on the average between the radiation received by a planet and its atmosphere from the sun and that emitted by the planet and the atmosphere. The equilibrium which is known to exist when all sources of heat gain and loss for a given region of body are accounted for. In general, this balance includes advective or evaporative terms as well as a radiation term.

GS balance

. **heat balance**

RT atmospheric heat budget
boilers
combustion
material balance
pyrometallurgy
thermochemical properties
thermochemistry
thermodynamic properties

heat budget

DEF The accounting for the total amount of heat received and lost by a particular system.

GS energy budgets

. **heat budget**

. . atmospheric heat budget

RT ∞ budgets

Earth radiation budget
specific heat

heat capacity

USE **specific heat**

Heat Capacity Mapping Mission

UF *HCMM*

RT Applications Explorer Satellites
geography
mapping
∞ missions
planetary mapping
thermal mapping

heat conduction

USE **conductive heat transfer**

heat content

USE **enthalpy**

heat dissipation

USE **cooling**

heat dissipation chilling

USE **cooling**

heat effects

USE **temperature effects**

heat engines

(added September 1992)

RT ceramics
energy technology
engines
thermodynamic cycles

heat equations

USE **thermodynamics**

heat exchangers

DEF Devices for transferring heat from one fluid to another without intermixing the fluids, as a regenerator and, an apparatus for cooling or heating the air in a wind tunnel.

GS **heat exchangers**

. tube heat exchangers

RT condensers (liquefiers)
coolants
cooling
cooling fins
cooling systems
counterflow
evaporators
∞ exchangers
finned bodies
gas cooling
geothermal energy extraction
heating
heating equipment
regenerative cooling

regenerators

SNAP

SNAP 1

SNAP 2

SNAP 8

SNAP 10A

space cooling (buildings)

space power reactors

space power unit reactors

waste heat

water heating

heat flow

USE **heat transmission**

heat flux

SN (LIMITED TO HEAT ENERGY TRANSMISSION RATE)

DEF The thermal intensity indicated by the amount of energy transmitted per unit area.

GS rates (per time)

. flux (rate)

. . **heat flux**

RT flux density

solar flux

heat gain

USE **heating**

heat generation

SN (EXCLUDES BIOLOGICAL PRODUCTION OF HEAT)

RT cogeneration
combustion
direct power generators
∞ generation
heating
heating equipment
process heat
solid propellant combustion

heat islands

RT cities
climatology
urban planning
weather modification

heat measurement

UF *calorimetry*
RT bolometers
bomb calorimeters
calorimeters
drop calorimeters
enthalpy
flame calorimeters
∞ measurement
shell anodes

heat of combustion

UF *combustion heat*
GS chemical properties
. thermochemical properties
. . **heat of combustion**
heat
. **heat of combustion**
thermodynamic properties
. thermochemical properties
. . **heat of combustion**
RT combustion physics
guns (ordnance)

heat of dissociation

GS chemical properties
. thermochemical properties
. . **heat of dissociation**
heat
. enthalpy
. . **heat of dissociation**
thermodynamic properties
. enthalpy
. . **heat of dissociation**
thermochemical properties
. . **heat of dissociation**
RT chemical equilibrium
dissociation
∞ equilibrium
reaction kinetics
thermal dissociation
thermochemistry

thermodynamic equilibrium

heat of formation

UF *formation heat*
GS chemical properties
. thermochemical properties
. . **heat of formation**
heat
. enthalpy
. . **heat of formation**
thermodynamic properties
. enthalpy
. . **heat of formation**
thermochemical properties
. . **heat of formation**

heat of fusion

DEF The increase in enthalpy accompanying the conversion of one mole, or a unit mass, of a solid to a liquid at its melting point at constant pressure and temperature. Used for latent heat of fusion.

UF *fusion heat*

latent heat of fusion

GS chemical properties
. thermochemical properties
. . latent heat
. . . **heat of fusion**

heat

. enthalpy
. . latent heat
. . . **heat of fusion**
thermodynamic properties
. enthalpy
. . latent heat
. . . **heat of fusion**
thermochemical properties
. . latent heat
. . . **heat of fusion**
thermophysical properties
. . latent heat
. . . **heat of fusion**

RT fusion (melting)
melting
phase change materials
phase diagrams
phase transformations
specific heat
thermal energy
thermochemistry
thermodynamics
transition temperature

heat of solution

GS chemical properties
. thermochemical properties
. . **heat of solution**
heat
. enthalpy
. . **heat of solution**
thermodynamic properties
. enthalpy
. . **heat of solution**
thermochemical properties
. . **heat of solution**
thermophysical properties
. . **heat of solution**
RT molecular energy levels
thermal energy
thermochemistry
thermodynamics

heat of vaporization

UF *vaporization heat*
GS chemical properties
. thermochemical properties
. . latent heat
. . . **heat of vaporization**
heat
. enthalpy
. . latent heat
. . . **heat of vaporization**
thermodynamic properties
. enthalpy
. . latent heat
. . . **heat of vaporization**
thermochemical properties
. . latent heat
. . . **heat of vaporization**
thermophysical properties

. . latent heat
 . . . **heat of vaporization**
 RT vaporizing

heat pipes
 SN (EXCLUDES PIPES AND TUBES USED FOR THE TRANSMISSION OF HEATED LIQUIDS OR GASES)
 RT geothermal energy utilization
 spacecraft temperature

heat pumps
 RT air conditioning
 air conditioning equipment
 condensers (liquefiers)
 cooling systems
 geothermal energy extraction
 heating equipment
 pumps
 refrigerating machinery
 residential energy
 space cooling (buildings)
 thermoelectric cooling
 waste heat

heat radiators
 UF *condenser radiators*
heat rejection devices
 GS **heat radiators**
 . spacecraft radiators
 RT black body radiation
 cooling
 cooling fins
 cooling systems
 heating equipment
 ∞ insulated structures
 radiative heat transfer
 ∞ radiators
 Stefan-Boltzmann law

heat regulation
 USE **temperature control**

heat rejection devices
 USE **heat radiators**

heat resistance
 USE **thermal resistance**

heat resistant alloys
 DEF Alloys developed for very high temperature service where relatively high stresses (tensile, thermal, vibratory, and shock) are encountered and where oxidation resistance is frequently required. Used for high temperature alloys and superalloys.
 UF *high temperature alloys*
superalloys
 GS alloys
 . **heat resistant alloys**
 . . nimonic alloys
 . . refractory metal alloys
 . . . molybdenum alloys
 Rene 41
 Rene 63
 Rene 77
 Rene 95
 . . . niobium alloys
 . . . osmium alloys
 . . . rhenium alloys
 . . . tantalum alloys
 . . . tungsten alloys
 . . Udimet alloys
 . . Waspaloy
 RT aluminides
 cermets
 chromium alloys
 cobalt alloys
 dispersion strengthening
 hafnium alloys
 nickel alloys
 oxide dispersion strengthening
 refractory metals
 sulfidation
 superplasticity

heat shielding
 DEF The use of devices that protect something from heat. Specifically, the protective structure necessary to protect a reentry body from

aerodynamic heating. Used for thermal shielding.
 UF *thermal shielding*
 GS shielding
 . **heat shielding**
 . . reentry shielding
 . . reusable heat shielding
 RT ablation
 ablative materials
 ablative nose cones
 cooling
 infrared suppression
 ∞ insulated structures
 Ludox (trademark)
 pyrolytic graphite
 solar reflectors
 spacecraft shielding
 temperature
 temperature control
 thermal control coatings
 thermal insulation
 thermal protection

heat sinks
 UF *thermal sinks*
 GS sinks
 . **heat sinks**
 RT ablative materials
 absorbers (materials)
 cooling systems
 endothermic reactions
 energy absorption
 reentry shielding
 regenerators
 thermal absorption
 thermal insulation

heat sources
 UF *hydraulic heating sources*
 GS **heat sources**
 . thermal resources
 . . geothermal resources
 . . . geysers
 . radioisotope heat sources
 RT ∞ energy sources
 energy storage
 engines
 geothermal technology
 laser heating
 light sources
 ∞ power supplies
 radiation sources
 thermodynamic efficiency

heat storage
 UF *thermal energy storage*
 GS energy storage
 . **heat storage**
 RT geothermal energy utilization
 heat tapes
 phase change materials
 solar dynamic power systems
 solar houses
 temperature
 Trombe walls

heat stroke
 RT body temperature
 heat tolerance
 hot weather
 hyperthermia
 physiological effects
 thermal comfort
 thermal environments

heat tapes
 RT heat storage
 ice prevention
 ∞ tapes

heat tests
 USE **high temperature tests**

heat tolerance
 GS tolerances (physiology)
 . **heat tolerance**
 RT body temperature
 cold tolerance
 heat stroke

human tolerances

heat transfer
 SN (TRANSMISSION ACROSS AN INTERFACE)
 DEF The transfer or exchange of heat by radiation, conduction, or convection with a substance and between the substance and its surroundings. Used for nonadiabatic processes.
 UF *nonadiabatic processes*
 GS transmission
 . heat transmission
 . . **heat transfer**
 . . . aerodynamic heat transfer
 hypersonic heat transfer
 supersonic heat transfer
 . . . conductive heat transfer
 . . . convective heat transfer
 . . . laminar heat transfer
 . . . radiative heat transfer
 . . . turbulent heat transfer
 RT advection
 atmospheric heat budget
 baths
 Biot number
 boiling
 Boussinesq approximation
 capillary pumped loops
 chemical engineering
 compressibility effects
 ∞ conduction
 cooling
 counterflow
 cryogenic cooling
 diffuse radiation
 dimensionless numbers
 energy transfer
 film boiling
 film condensation
 flat plates
 fluid boundaries
 forced convection
 gas transport
 gas-liquid interactions
 gas-solid interfaces
 geothermal energy conversion
 geothermal technology
 heating
 hot surfaces
 Leidenfrost phenomenon
 Lewis numbers
 liquid-liquid interfaces
 liquid-solid interfaces
 liquid-vapor interfaces
 mass transfer
 mechanical engineering
 metal vapors
 nonadiabatic conditions
 nongray gas
 nonisothermal processes
 nucleate boiling
 Nusselt number
 Peclet number
 phase change materials
 Prandtl number
 radiative transfer
 Rayleigh equations
 reusable heat shielding
 stagnation point
 Stanton number
 temperature profiles
 temperature ratio
 temperature sensitive paints
 thermal diffusion
 thermal expansion
 thermal insulation
 thermal pollution
 thermoacoustic effects
 thermodynamics
 thermomigration
 transferring
 transport properties
 waste energy utilization

heat transfer coefficients
 SN (HEAT FLUX PER UNIT AREA PER UNIT TEMPERATURE DIFFERENCE)
 DEF The rate of heat transfer per unit area per unit temperature difference, a quantity having the dimensions of reciprocal length.

heat transmission

- GS coefficients
 - . **heat transfer coefficients**
- RT accommodation coefficient
- evaporation rate
- heating
- mass flow factors
- nucleate boiling

heat transmission

DEF Heat transmitted from one substance to another. Used for heat flow.

- UF *heat flow*
- GS transmission
 - . **heat transmission**
 - . . heat transfer
 - . . . aerodynamic heat transfer
 - hypersonic heat transfer
 - supersonic heat transfer
 - . . . conductive heat transfer
 - . . . convective heat transfer
 - . . . laminar heat transfer
 - . . . radiative heat transfer
 - . . . turbulent heat transfer
- RT adiabatic equations
- annular flow
- convection
- convective flow
- ducted flow
- equilibrium flow
- ∞ flow
- fluid flow
- geophysics
- geothermal energy conversion
- geothermal energy extraction
- geothermal resources
- mass flow factors
- nonequilibrium flow
- potential flow
- radial flow
- radiative transfer
- steady flow
- thermal analysis
- thermal insulation
- thermohydraulics
- uniform flow
- unsteady flow
- wall flow

heat treatment

DEF Heating and cooling a solid metal or alloy in such a way as to obtain desired conditions or properties.

- GS **heat treatment**
 - . annealing
 - . . laser annealing
 - . . pulse heating
 - . maraging
 - . nitriding
 - . normalizing (heat treatment)
 - . stress relieving
 - . tempering
- RT aging (metallurgy)
- alloys
- baking
- critical temperature
- ferritic stainless steels
- forging
- furnaces
- graphitization
- hardeners
- hardening (materials)
- heat affected zone
- heating
- martensite
- ∞ metallurgy
- microstructure
- nucleation
- phase diagrams
- precipitation hardening
- quenching (cooling)
- recrystallization
- salt baths
- ∞ soaking
- stabilization
- supercooling
- supersaturation
- temper (metallurgy)
- temperature distribution
- thermochemistry

thermomechanical treatment
∞ treatment

∞ heaters

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED CONSULT THE TERMS LISTED BELOW)
- RT deicers
- deicing
- electron tubes
- heating equipment
- vaporizers
- water heating

heating

- UF *heat gain*
- preheating*
- reheating*
- warming*
- GS **heating**
 - . arc heating
 - . atmospheric heating
 - . . global warming
 - . . stratospheric warming
 - . baking
 - . base heating
 - . gas heating
 - . induction heating
 - . ionospheric heating
 - . kinetic heating
 - . . aerodynamic heating
 - . . . shock heating
 - . laser heating
 - . magnetohydrodynamic shear heating
 - . pasteurizing
 - . plasma heating
 - . . electron cyclotron heating
 - . radiant heating
 - . radio frequency heating
 - . resistance heating
 - . solar heating
 - . space heating (buildings)
 - . superheating
 - . transient heating
 - . . pulse heating
 - . . shock heating
 - . water heating

- RT air conditioning
- annealing
- autoclaving
- boiling
- cementation
- ∞ conduction
- convection
- cooling
- decarburization
- defrosting
- environmental engineering
- geothermal energy extraction
- geothermal energy utilization
- heat
- heat exchangers
- heat generation
- heat transfer
- heat transfer coefficients
- heat treatment
- heating equipment
- Hilsch tubes
- hydrothermal systems
- ice prevention
- integrated energy systems
- jackets
- laser annealing
- laser welding
- melting
- Modular Integrated Utility System
- ∞ radiation
- roasting
- sintering
- ∞ soaking
- temperature
- temperature control
- temperature distribution
- thermal cycling tests
- thermal shock
- thermal stresses
- vaporizing

waste energy utilization

heating equipment

- UF *Gerdien arc heaters*
- preheaters*
- GS **heating equipment**
 - . boilers
 - . furnaces
 - . . electric furnaces
 - . . image furnaces
 - . . solar furnaces
 - . . vacuum furnaces
 - . ovens
 - . vaporizers
 - . . evaporators
- RT air conditioning
- air conditioning equipment
- crucibles
- deicers
- deicing
- ∞ electric equipment
- ∞ equipment
- fuel tanks
- heat
- heat exchangers
- heat generation
- heat pumps
- heat radiators
- ∞ heaters
- heating
- onboard equipment
- space heating (buildings)
- temperature control
- thermal insulation
- water heating

heaving

- RT bending
- ∞ bows
- buckling
- displacement
- distortion
- flexing
- kinking
- ∞ motion
- pitch (inclination)
- warpage

heavy cosmic ray primaries

USE **heavy nuclei**
primary cosmic rays

heavy elements

- GS chemical elements
- . **heavy elements**
- RT ∞ elements
- heavy ions

heavy fermion superconductors

(added April 1999)

- GS conductors
- . superconductors (materials)
- . . **heavy fermion superconductors**
- intermetallics
- . heavy fermion systems
- . . **heavy fermion superconductors**

heavy fermion systems

(added April 1999)

- GS intermetallics
- . **heavy fermion systems**
- . . heavy fermion superconductors
- RT fermions
- superconductors (materials)

heavy ion collisions

USE **ionic collisions**

heavy ions

- GS ions
- . **heavy ions**
- RT heavy elements
- ion stripping
- isotope separation
- isotopes
- light ions

heavy lift airships

DEF Airships designed to lift heavy materials.

- GS airships
 . **heavy lift airships**
- RT materials handling
 rotors
- heavy lift helicopters**
- GS V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **heavy lift helicopters**
 CH-62 helicopter
- RT air cargo
 ∞ aircraft
 cargo aircraft
 helicopter design
- heavy lift launch vehicles**
- UF *HLLV*
- GS launch vehicles
 . **heavy lift launch vehicles**
 . . Ares 5 cargo launch vehicle
 . . Delta 4 Heavy launch vehicle
 . . Energiya launch vehicle
 . . Proton launch vehicle
- RT Advanced Launch System (STS)
 Long March launch vehicles
 rocket engines
 ∞ rockets
 spacecraft launching
 ∞ vehicles
- heavy metals**
 (*added July 1999*)
- DEF Metals or alloys having a high specific gravity; usually ones with a density greater than 5 grams per cubic centimeter.
- GS metals
 . **heavy metals**
 RT cadmium
 chromium
 contaminants
 copper
 industrial wastes
 lead (metal)
 mercury (metal)
 soil pollution
 toxic hazards
 zinc
- heavy nuclei**
- UF *heavy cosmic ray primaries*
- GS particles
 . charged particles
 . . energetic particles
 . . . nuclei (nuclear physics)
 **heavy nuclei**
 corpuscular radiation
 energetic particles
 nuclei (nuclear physics)
 **heavy nuclei**
- RT primary cosmic rays
- heavy water**
- DEF Water in which the hydrogen of the water molecule consists entirely of the heavy hydrogen isotope of mass 2 (deuterium). Used for deuterium oxides and hydrogen deuterium oxide.
- UF *deuterium oxides*
hydrogen deuterium oxide
- GS chalcogenides
 . oxides
 . . **heavy water**
 hydrogen compounds
 . deuterium compounds
 . . **heavy water**
 water
 . **heavy water**
- RT deuterium
 moderators
 tritium
- heavy water components test reactors**
- GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . heavy water reactors
 **heavy water components test reactors**
 . nuclear research and test reactors
- . . **heavy water components test reactors**
 . water moderated reactors
 . . **heavy water components test reactors**
- heavy water reactors**
- GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . **heavy water reactors**
 heavy water components test reactors
 plutonium recycle test reactor
 zero power reactor 2
- RT light water breeder reactors
- HEF (high energy fuels)*
 USE **high energy fuels**
- height**
- DEF Vertical distance; the distance above some reference point or plane, as, height above sea level. The vertical dimension of anything; the distance which something extends above its foot or root, as blade height.
- GS dimensions
 . **height**
 . . scale height
- RT altitude
 depth
 distance
 geopotential
 ∞ level
 slopes
- Heinkel aircraft**
- RT ∞ aircraft
- Heisenberg theory**
- GS atomic theory
 . **Heisenberg theory**
- RT atomic excitations
 Dyson theory
 energy transfer
 ∞ theories
- Helene**
 (*added January 1996*)
- DEF A natural satellite of Saturn orbiting at a mean distance of 377,400 kilometers.
- GS celestial bodies
 . natural satellites
 . . Saturn satellites
 . . . **Helene**
- RT Saturn (planet)
- helical antennas**
- DEF Antennas used where circular polarization is required. The driven element consists of a helix supported above a ground plane.
- GS antennas
 . directional antennas
 . . **helical antennas**
- RT antenna design
 ∞ helices
 microwave antennas
- helical flow**
- GS fluid flow
 . **helical flow**
- RT axisymmetric flow
 flow geometry
 ∞ helices
 magnetohydrodynamic stability
 three dimensional flow
- helical inducers**
- GS intake systems
 . **helical inducers**
- RT field coils
 ∞ helices
 plasma control
- helical windings**
- GS winding
 . **helical windings**
- RT ∞ helices
 magnetic field configurations
 plasma control
- stellarators
- ∞ **helices**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT curves (geometry)
 helical antennas
 helical flow
 helical inducers
 helical windings
 ∞ spirals
- helicopter attitude indicators*
 USE **attitude indicators**
- helicopter control**
- GS aircraft control
 . **helicopter control**
- RT airborne radar approach
 attitude control
 automatic control
 ∞ control
 controllability
 directional control
 flight control
 harmonic control
 helicopters
 lateral control
 longitudinal control
 manual control
 speed control
 tail rotors
- helicopter design**
- GS aircraft design
 . **helicopter design**
- RT compound helicopters
 computer aided design
 ∞ design
 engine design
 heavy lift helicopters
 helicopters
 product development
 rotor body interactions
 streamlining
 structural design
 UH-60A helicopter
 UH-61A helicopter
 whirl towers
- helicopter engines**
- GS engines
 . aircraft engines
 . . **helicopter engines**
 . . internal combustion engines
 . . **helicopter engines**
- RT convertible fan-shaft engines
 helicopters
 jet engines
 T-53 engine
 T-55 engine
 T-58 engine
 T-63 engine
 T-64 engine
 T-74 engine
 T-76 engine
- helicopter impulsive noise*
 USE **blade slap noise**
- helicopter performance**
- GS aircraft performance
 . **helicopter performance**
- RT aerodynamic stability
 aircraft reliability
 controllability
 Cooper-Harper ratings
 flight characteristics
 flight envelopes
 helicopters
 maneuverability
 pilot ratings
- helicopter propeller drive**
- GS mechanical drives
 . propeller drive
 . . **helicopter propeller drive**
- RT helicopters
 jet propulsion
 rotary wings

helicopter tail rotors

tilted propellers
variable pitch propellers

helicopter rotors

USE **rotary wings**

helicopter tail rotors

GS rotating bodies
. rotors
. tail rotors
. . . **helicopter tail rotors**
RT helicopters
rotary wings
∞ rotor blades

helicopter wakes

GS wakes
. aircraft wakes
. . . **helicopter wakes**
RT downwash
helicopters

helicopters

DEF Rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors.

UF *drone helicopters*
gyroplanes
GS V/STOL aircraft
. rotary wing aircraft
. . . **helicopters**
. . . Alouette helicopters
. . . SA-330 helicopter
. . . SE-3160 helicopter
. . . Bell 214A helicopter
. . . compound helicopters
. . . S-67 helicopter
. . . H-17 helicopter
. . . heavy lift helicopters
. . . CH-62 helicopter
. . . light helicopters
. . . OH-4 helicopter
. . . OH-5 helicopter
. . . OH-6 helicopter
. . . OH-58 helicopter
. . . military helicopters
. . . AH-1G helicopter
. . . AH-1S helicopter
. . . AH-1W helicopter
. . . AH-63 helicopter
. . . AH-64 helicopter
. . . BO-105 helicopter
. . . CH-3 helicopter
. . . CH-21 helicopter
. . . CH-34 helicopter
. . . CH-46 helicopter
. . . CH-47 helicopter
. . . CH-54 helicopter
. . . CH-62 helicopter
. . . H-19 helicopter
. . . H-43 helicopter
. . . H-53 helicopter
. . . H-54 helicopter
. . . H-56 helicopter
. . . H-60 Helicopter
. . . HC-3 helicopter
. . . HH-43 helicopter
. . . HH-65 helicopter
. . . OH-4 helicopter
. . . OH-5 helicopter
. . . OH-6 helicopter
. . . OH-13 helicopter
. . . OH-23 helicopter
. . . OH-58 helicopter
. . . P-531 helicopter
. . . QH-50 helicopter
. . . S-67 helicopter
. . . SA-321 helicopter
. . . SA-330 helicopter
. . . SH-3 helicopter
. . . SH-4 helicopter
. . . Sikorsky Whirlwind helicopter
. . . UH-1 helicopter
. . . UH-2 helicopter
. . . UH-34 helicopter
. . . UH-60A helicopter
. . . UH-61A helicopter
. . . Westland Whirlwind helicopter
. . . XV-9A aircraft
. . . rigid rotor helicopters

. . . . CH-3 helicopter
. . . . F-28 helicopter
. . . . XH-51 helicopter
. . . S-58 helicopter
. . . S-61 helicopter
. . . tandem rotor helicopters
. . . CH-46 helicopter
. . . CH-47 helicopter
. . . H-25 helicopter
. . . EH-101 helicopter
. . . TH-55 helicopter

RT airborne radar approach
∞ aircraft
aircraft survivability
blade slap noise
blade-vortex interaction
general aviation aircraft
ground resonance
helicopter control
helicopter design
helicopter engines
helicopter performance
helicopter propeller drive
helicopter tail rotors
helicopter wakes
heliports
∞ military aircraft
nap-of-the-earth navigation
recovery vehicles
rotor systems research aircraft
short takeoff aircraft
∞ subsonic aircraft
tilt rotor aircraft
Tilt Rotor Research Aircraft Program
utility aircraft
V-22 aircraft
vertical takeoff aircraft
Weser aircraft
Westland aircraft
XV-15 aircraft

Heliliner (helicopter)
(added April 1997)

USE **EH-101 helicopter**

Helio aircraft

UF *Helio military aircraft*
GS **Helio aircraft**
. U-10 aircraft
RT ∞ aircraft

Helio military aircraft

USE **Helio aircraft**

heliocentric orbits

USE **solar orbits**

heliographs

USE **spectroheliographs**

heliography

USE **spectroheliographs**

heliomagnetism

USE **solar magnetic field**

heliometers

UF *heliometry*
GS measuring instruments
. **heliometers**
. . pyroheliometers
optical equipment
. **heliometers**
. . pyroheliometers
telescopes
. **heliometers**
. . pyroheliometers

heliometry

USE **heliometers**
pyroheliometers

Helios 1

GS artificial satellites
. Helios satellites
. . **Helios 1**
unmanned spacecraft
. space probes
. . solar probes

. . . **Helios 1**

Helios 2

GS artificial satellites
. Helios satellites
. . **Helios 2**
unmanned spacecraft
. space probes
. . solar probes
. . . **Helios 2**

Helios A

GS artificial satellites
. Helios satellites
. . **Helios A**
unmanned spacecraft
. space probes
. . solar probes
. . . **Helios A**

Helios B

GS artificial satellites
. Helios satellites
. . **Helios B**
unmanned spacecraft
. space probes
. . solar probes
. . . **Helios B**

Helios Project

GS programs
. NASA programs
. . NASA space programs
. . . **Helios Project**
projects
. . **Helios Project**
. space programs
. . NASA space programs
. . . **Helios Project**
RT charged particles
high temperature plasmas
solar probes
zodiacal light

Helios satellites

GS artificial satellites
. **Helios satellites**
. . Helios 1
. . Helios 2
. . Helios A
. . Helios B
RT magnetic fields
particle flux density
solar flux density

heliology

UF *solar dynamics*
solar seismology
GS seismology
. asteroseismology
. . **heliology**
RT astrophysics
∞ science
solar interior
solar physics

heliosphere

DEF The region around the sun whose plasma processes are dominated by solar wind.
RT cosmic rays
interplanetary space
interstellar gas
SOHO Mission
solar activity effects
solar wind

heliostats

DEF Instruments consisting of mirrors moved by clockwork for reflecting the sun's rays in a fixed direction.
RT ∞ instruments
mirrors
reflectors
servomotors
solar reflectors
synchronizers

heliotrons

(added September 1988)
GS nuclear reactors

. fusion reactors
 . . . **heliotrons**
 RT plasma control
 stellarators

heliports
 DEF An area of land, water, or structure used, or intended to be used, for the landing and takoff of helicopters.
 GS airports
 . **heliports**
 RT air traffic control
 airport planning
 airport towers
 hangars
 helicopters
 landing aids
 landing sites
 military air facilities
 navigation aids
 solar compasses
 V/STOL aircraft

helitrons
 GS electron tubes
 . vacuum tubes
 . . microwave tubes
 . . . traveling wave tubes
 . . . backward wave tubes
 **helitrons**
 microwave equipment
 . microwave tubes
 . . traveling wave tubes
 . . . backward wave tubes
 **helitrons**
 RT carcinotrons

helium
 GS chemical elements
 . rare gases
 . . **helium**
 . . . helium isotopes
 . . . liquid helium
 liquid helium 2
 gases
 . rare gases
 . . **helium**
 . . . helium isotopes
 . . . liquid helium
 liquid helium 2
 RT alpha particles
 helium afterglow
 helium atoms
 helium film
 helium ions
 Wolf-Rayet stars

helium 2
 USE **helium isotopes**
liquid helium

helium 3
 USE **helium isotopes**

helium 4
 USE **helium isotopes**

helium afterglow
 GS afterglows
 . **helium afterglow**
 RT gas ionization
 helium
 plasma decay

helium atoms
 GS atoms
 . **helium atoms**
 RT helium

helium compounds
 RT ∞ rare gas compounds

helium film
 RT ∞ films
 helium

helium hydrogen atmospheres
 GS environments
 . extraterrestrial environments
 . . planetary environments
 . . . planetary atmospheres

. . . . **helium hydrogen atmospheres**

helium ions
 GS ions
 . **helium ions**
 RT alpha particles
 helium

helium isotopes
 UF *helium 2*
helium 3
helium 4
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **helium isotopes**
 . rare gases
 . . helium
 . . . **helium isotopes**
 gases
 . rare gases
 . . helium
 . . . **helium isotopes**

helium plasma
 GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **helium plasma**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **helium plasma**
 RT argon plasma
 electron plasma
 hydrogen plasma
 oxygen plasma

helium stars
 USE **B stars**

helium-neon lasers
 GS stimulated emission devices
 . lasers
 . . gas lasers
 . . . **helium-neon lasers**
 RT laser modes
 laser outputs

helium-oxygen atmospheres
 GS controlled atmospheres
 . **helium-oxygen atmospheres**
 RT aerospace environments
 ∞ atmospheres
 ∞ breathing
 gas mixtures
 portable life support systems
 underwater breathing apparatus

helix tubes
 USE **traveling wave tubes**

Hellmann-Feynman theorem
 GS theorems
 . **Hellmann-Feynman theorem**

helmet mounted displays
 UF *HMD (displays)*
 GS display devices
 . **helmet mounted displays**
 RT crew workstations
 ∞ detectors
 images
 indicating instruments
 ∞ instruments
 monitors
 personnel

helmets
 GS clothing
 . protective clothing
 . . **helmets**
 safety devices
 . **helmets**
 RT armor
 flight clothing
 goggles

pressure suits

∞ **Helmholtz equations**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ∞ equations
 Helmholtz vorticity equation
 Kelvin-Helmholtz instability
 time dependence
 wave equations

Helmholtz resonators
 DEF An enclosure having a small opening consisting of a straight tube of such dimensions that the enclosure resonates at a single frequency determined by the geometry of the resonator.
 GS resonators
 . **Helmholtz resonators**
 RT cavity resonators
 noise reduction

Helmholtz vorticity equation
 GS analysis (mathematics)
 . real variables
 . . differential equations
 . . . partial differential equations
 **Helmholtz vorticity equation**
 . . . vorticity equations
 **Helmholtz vorticity equation**
 equations of motion
 . kinetic equations
 . . hydrodynamic equations
 . . . **Helmholtz vorticity equation**
 flow equations
 . vorticity equations
 . . **Helmholtz vorticity equation**
 RT ∞ equations
 ∞ Helmholtz equations
 vorticity

HELOS (satellite)
 USE **Exosat satellite**

hematite
 DEF A common iron mineral; ferric oxide.
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . iron oxides
 **hematite**
 iron compounds
 . iron oxides
 . . **hematite**
 minerals
 . iron ores
 . . **hematite**

hematocrit
 RT blood
 blood cell count
 blood circulation
 blood flow
 blood plasma
 blood volume
 erythrocytes
 hematology
 hemoglobin

hematocrit ratio
 GS ratios
 . **hematocrit ratio**
 RT anemias
 blood cell count
 erythrocytes
 hematology

hematology
 RT blood cell count
 carboxyhemoglobin test
 hematocrit
 hematocrit ratio
 reticulocytes

hematopoiesis
 GS cyto genesis
 . **hematopoiesis**
 RT blood
 blood cell count
 blood cells

hematopoietic system

bone marrow
cardiovascular system
cells (biology)
physiological effects
radiation effects

hematopoietic system

RT angiogenesis
blood cells
blood volume
bone marrow
cardiovascular system
physiological effects
∞ systems

hematuria

GS signs and symptoms
. **hematuria**
RT urine

hemisphere cylinder bodies

RT ∞ cylinders
cylindrical bodies
hemispherical shells
pressure vessels

∞ hemispheres

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aerodynamic configurations
bodies of revolution
Eastern Hemisphere
hemispherical shells
Northern Hemisphere
Southern Hemisphere
spheres

hemispherical shells

GS shells (structural forms)
. **hemispherical shells**
RT bodies of revolution
circular shells
domes (structural forms)
hemisphere cylinder bodies
∞ hemispheres
metal shells
reinforced shells
spheres
spherical shells

hemocytes

GS cells (biology)
. blood cells
. . **hemocytes**
RT invertebrates

hemodynamic responses

GS physiological effects
. physiological responses
. . **hemodynamic responses**
responses
. physiological responses
. . **hemodynamic responses**
RT baroreflexes
blood circulation
blood pressure
head down tilt
head up tilt
tilt-table test

hemodynamics

GS **hemodynamics**
. lower body negative pressure
RT blood circulation
blood volume
cardiovascular system
∞ dynamics
heart function
hemoperfusion
physiology

hemoglobin

GS biopolymers
. proteins
. . **hemoglobin**
. . . carboxyhemoglobin
. . . oxyhemoglobin
organic compounds
. proteins
. . **hemoglobin**

. . . carboxyhemoglobin
. . . oxyhemoglobin
organometallic compounds

. **hemoglobin**
. . carboxyhemoglobin
. . oxyhemoglobin

RT

anemias
blood
blood cell count
blood cells
cells (biology)
erythrocytes
hematocrit
hemolysis
polycythemia
porphines
porphyrins
reticulocytes

hemolysis

RT complement (biology)
erythrocytes
hemoglobin
polycythemia
reticulocytes

hemoperfusion

DEF Type of poison treatment in which the patient's blood is passed over a bed of absorbent material (activated carbon, resin, etc.) to remove the toxin from the bloodstream.
RT activated carbon
adsorbents
blood flow
blood pressure
hemodynamics
toxicology

hemorrhages

GS **hemorrhages**
. petechia
RT ∞ bleeding
blood
cardiovascular system
coagulation
hemostatics
hypotension
injuries
pathology
polycythemia
reticulocytes

hemostasis

USE **hemostatics**

hemostatics

UF *hemostasis*
GS drugs
. **hemostatics**
RT blood coagulation
fibrinogen
gibberellins
hemorrhages
thrombin
thromboplastin
vasopressins

HEMT (electronics)

USE **high electron mobility transistors**

Henry law

RT composition (property)
partial pressure
Raoult law
solubility
solutions
vapor pressure

HEOS A satellite

GS artificial satellites
. ESA satellites
. . HEOS satellites
. . . **HEOS A satellite**
ESA spacecraft
. ESA satellites
. . HEOS satellites
. . . **HEOS A satellite**

HEOS B satellite

GS artificial satellites

. ESA satellites
. . HEOS satellites
. . . **HEOS B satellite**
ESA spacecraft
. ESA satellites
. . HEOS satellites
. . . **HEOS B satellite**

HEOS satellites

UF *Highly Eccentric Orbit satellites*
GS artificial satellites
. ESA satellites
. . **HEOS satellites**
. . . HEOS A satellite
. . . HEOS B satellite
ESA spacecraft
. ESA satellites
. . **HEOS satellites**
. . . HEOS A satellite
. . . HEOS B satellite
RT European space programs
solar orbits

heparins

RT anticoagulants

hepatitis

DEF An inflammation of the liver, commonly of viral origin, but also associated with other diseases.
GS diseases
. infectious diseases
. . **hepatitis**
RT acquired immunodeficiency syndrome
anatomy
liver
viral diseases

heptadiene

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . dienes
. . . . **heptadiene**

heptanes

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **heptanes**
RT hydrocarbon fuels

herbicides

DEF Chemical agents used for the eradication of undesirable plants or for the inhibition of their growth.
RT brush (botany)
defoliants
foliage
forests
leaves
plants (botany)
toxicity
trees (plants)

Herbig-Haro objects

DEF Celestial objects having many of the characteristics of a T Tauri star (e.g., their spectra show a weak continuum with strong emission lines), believed to be stars in the very early stages of development. All known Herbig-Haro objects have been found within the boundaries of dark clouds. These strong infrared sources are characterized by mass loss.
GS celestial bodies
. nebulae
. . **Herbig-Haro objects**

RT B stars

∞ bodies
infrared sources (astronomy)
infrared stars
stellar radiation
stellar spectra

- T Tauri stars
- Hercules aircraft*
USE **C-130 aircraft**
- Hercules engine**
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **Hercules engine**
RT Honest John rocket vehicle
Little John rocket vehicle
- Hercules nova**
GS celestial bodies
. stars
. . variable stars
. . . novae
. . . . **Hercules nova**
RT dwarf novae
- heredity**
RT breeding (reproduction)
congenital anomalies
cytogenesis
evolution (development)
- Hering-Breuer reflex**
GS reflexes
. respiratory reflexes
. . **Hering-Breuer reflex**
RT heart rate
- Hermes manned spaceplane**
GS manned spacecraft
. space shuttles
. . **Hermes manned spaceplane**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . **Hermes manned spaceplane**
RT French space program
space transportation system
spacecraft design
- Hermes satellite*
USE **Communications Technology Satellite**
- hermetic seals**
GS seals (stoppers)
. **hermetic seals**
RT ∞ headers
labyrinth seals
O ring seals
pump seals
- Hermitian polynomial**
GS algebra
. polynomials
. . **Hermitian polynomial**
RT Jacobi matrix method
matrices (mathematics)
real variables
vector spaces
- HERO Reactor**
GS nuclear reactors
. nuclear research and test reactors
. . **HERO Reactor**
- Hertzsprung-Russell diagram**
UF *HR diagram*
GS diagrams
. **Hertzsprung-Russell diagram**
RT asymptotic giant branch stars
color-color diagram
color-magnitude diagram
horizontal branch stars
stellar evolution
stellar luminosity
stellar spectra
- Herzberg bands**
GS spectra
. radiation spectra
. . absorption spectra
. . . **Herzberg bands**
. . spectral bands
. . . absorption spectra
. . . . **Herzberg bands**
RT ∞ bands
oxygen spectra
Schumann-Runge bands
ultraviolet spectra
- Herzegovina*
(added June 1996)
USE **Bosnia and Herzegovina**
- Hessian matrices**
DEF Given a real value function of N variables, an N by N symmetric of all second order partial derivatives.
GS algebra
. vector spaces
. . matrices (mathematics)
. . . **Hessian matrices**
RT algorithms
optimization
- HET experiment**
UF *Health-Education Telecommunications exp*
GS telecommunication
. teleconferencing
. . **HET experiment**
RT ATS 6
communication satellites
satellite networks
- heterocyclic compounds**
GS organic compounds
. cyclic compounds
. . **heterocyclic compounds**
. . . acriflavine
. . . adenosines
. . . . adenosine diphosphate
. . . . adenosine monophosphate
. . . . adenosine triphosphate
. . . . cyclic AMP
. . . alkaloids
. . . atropine
. . . . betaines
. . . . caffeine
. . . . colchicine
. . . . ergotamine
. . . . hyoscine
. . . . lysergine
. . . . morphine
. . . . nicotinamide
. . . . nicotine
. . . . pilocarpine
. . . . reserpine
. . . . strychnine
. . . . tropyli compounds
. . . anisole
. . . ascorbic acid
. . . azines
. . . . cyanurates
. . . . cyanuric acid
. . . . meclizine
. . . . methylene blue
. . . . phenothiazines
. . . azoles
. . . . acetazolamide
. . . . oxazole
. . . . pyrroles
. . . . carbazoles
. . . azulene
. . . bioflavonoids
. . . biotin
. . . carnitine
. . . cyanocobalamin
. . . cytidylic acid
. . . dimenhydrinate
. . . endrin
. . . ethylene oxide
. . . folic acid
. . . furans
. . . . tetrahydrofuran
. . . guanethidine
. . . HMX
. . . . nicotinic acid
. . . . phthalocyanin
. . . . phyloquinone
. . . . piperidine
. . . . promethazine
. . . . purines
. . . . adenines
. . . . xanthines
. caffeine
. guanines
. uric acid
. . . . pyridines
. . . . pyridoxine
. . . . pyrimidines
. alloxan
. thymidine
. thymine
. uracil
. . . . indoles
. . . . RDX
. . . . retinene
. . . . riboflavin
. . . . tetracyclines
. . . . tetrazoles
. . . . thiamine
. . . . thiazine (trademark)
. . . . thiophenes
. . . . tocopherol
. . . . trimethadione
. tryptamines
. tryptophan
. melatonin
. serotonin
. imidazoles
RT ∞ chemical compounds
- heterodyning**
DEF Mixing two radio signals of different frequencies to produce a third signal which is of lower frequency; i.e., to produce beating.
GS **heterodyning**
. optical heterodyning
RT autodynes
demodulation
intermediate frequency amplifiers
mixing circuits
superheterodyne receivers
- heterogeneity**
DEF Having different properties at different points.
RT deviation
impurities
inclusions
inhomogeneity
range (extremes)
sampling
standard deviation
statistical tests
variability
variance (statistics)
- heterojunction devices**
DEF Electronic devices utilizing junctions between different semiconducting materials. The characteristics and performance of the devices are dependent on the relative lineup of the energy bands at the junctions.
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **heterojunction devices**
. . . . high electron mobility transistors
. MODFETS
RT band structure of solids
distributed feedback lasers
gallium arsenides
homojunctions
ITO (semiconductors)
junction diodes
modulation doping
quantum efficiency
quantum well lasers
quantum wells
semiconductor junctions
solar energy conversion
waveguide lasers
- heterojunctions**
DEF Junctions between semiconductors that differ in their doping level conductivities, and also in their atomic or alloy compositions.
GS semiconductor junctions
. **heterojunctions**
RT homojunctions
junction diodes
modulation doping

heterophoria

- quantum cascade lasers
- quantum wells
- resonant tunneling diodes
- silicon junctions
- solar cells
- thin films
- tunnel junctions

heterophoria

- UF *exophoria*
- RT vision

heterosphere

DEF The upper portion of a two part division of the atmosphere according to the general homogeneity of atmospheric composition; the layer above the homosphere. The heterosphere is characterized by variation in composition and mean molecular weight of constituent gases. This region starts at 80 to 100 kilometers above the Earth, and therefore closely coincides with the ionosphere and the thermosphere.

- GS Earth atmosphere
 - . **heterosphere**
- environments
 - . **heterosphere**
- RT chemosphere
- Earth ionosphere
- Earth magnetosphere
- exosphere
- lower atmosphere
- middle atmosphere
- thermosphere
- upper atmosphere

heterotrophs

- RT animals
- autotrophs
- metabolism
- plants (botany)

heuristic methods

- RT automata theory
- computer programming
- greedy algorithms
- ∞ methodology
- simulation
- sorting algorithms

HEUS rocket engines

- GS engines
 - . rocket engines
 - . . . **HEUS rocket engines**
- RT rocket engine control
- rocket vehicles

Hewlett-Packard computers

- GS data processing equipment
 - . computers
 - . . . digital computers
 - **Hewlett-Packard computers**

hexadiene

- GS organic compounds
 - . hydrocarbons
 - . . . aliphatic hydrocarbons
 - dienes
 - **hexadiene**

hexagonal cells

- RT ∞ cells
- crystal lattices
- honeycomb structures

hexagons

- GS geometry
 - . Euclidean geometry
 - . . . polygons
 - **hexagons**

hexahedrite

- GS magnesium compounds
 - . magnesium sulfates
 - . . . **hexahedrite**
- minerals
 - . **hexahedrite**
- sulfur compounds
 - . sulfates
 - . . . magnesium sulfates

- . . . **hexahedrite**

hexamethonium

- RT ammonium compounds
- anticonvulsants

hexamethylenetetramine

- GS organic compounds
 - . amines
 - . . . **hexamethylenetetramine**

hexanitrostilbene

- UF *HNST*
- RT stilbene

hexenes

- GS organic compounds
 - . hydrocarbons
 - . . . aliphatic hydrocarbons
 - alkenes
 - **hexenes**
- RT cyclohexane
- hydrocarbon fuels

Hexogenes (trademark)

- GS acids
 - . carboxylic acids
 - . . **Hexogenes (trademark)**
- organic compounds
 - . carboxylic acids
 - . . **Hexogenes (trademark)**

hexokinase

- GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **hexokinase**
- organic compounds
 - . proteins
 - . . enzymes
 - . . . **hexokinase**

hexoses

- GS organic compounds
 - . carbohydrates
 - . . sugars
 - . . . monosaccharides
 - **hexoses**
 - galactose
 - glucose

hexyl compounds

- GS alkyl compounds
 - . **hexyl compounds**
- RT ∞ chemical compounds

HF lasers

- UF *hydrogen fluoride lasers*
- GS stimulated emission devices
 - . lasers
 - . . gas lasers
 - . . . **HF lasers**
- RT chemical lasers
- infrared lasers
- TEA lasers

HFB-320 aircraft

- UF *Hamburger HFB-320 aircraft*
- GS Hamburger aircraft
 - . **HFB-320 aircraft**
- jet aircraft
 - . **HFB-320 aircraft**
- monoplanes
 - . **HFB-320 aircraft**
- passenger aircraft
 - . **HFB-320 aircraft**
- transport aircraft
 - . **HFB-320 aircraft**
- RT ∞ aircraft

HFIR

- USE **high flux isotope reactors**

HFIR (reactor)

- USE **high flux isotope reactors**

HH-43 helicopter

- UF *HH-43B helicopter*
- Huskie helicopter*
- GS Kaman aircraft
 - . **HH-43 helicopter**

- utility aircraft
- . **HH-43 helicopter**
- V/STOL aircraft
- . rotary wing aircraft
- . . . helicopters
- military helicopters
- **HH-43 helicopter**

HH-43B helicopter

- USE **HH-43 helicopter**

HH-65 helicopter

- (added August 1995)
- GS V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **HH-65 helicopter**
- RT ∞ aircraft
- rescue operations

HHX helicopter

- USE **H-53 helicopter**

hibernation

- RT adaptation
- thermoregulation

HICAT (radar technique)

- USE **high resolution coverage antennas**

HICAT project

- USE **high resolution coverage antennas**

hierarchies

- GS classifications
 - . **hierarchies**
- . . BBGKY hierarchy
- . . dichotomies

Higgs bosons

- (added April 1994)

- GS particles
 - . elementary particles
 - . . bosons
 - . . . **Higgs bosons**
- nuclear particles
 - . . bosons
 - . . . **Higgs bosons**
- RT broken symmetry
- electroweak model
- particle theory

high acceleration

- GS rates (per time)
 - . acceleration (physics)
 - . . **high acceleration**
- RT ∞ acceleration
- acceleration stresses (physiology)
- acceleration tolerance
- electron runaway (plasma physics)
- mechanical shock
- ∞ motion
- shock resistance

high alt target and background measurement

- UF *HITAB program*
- RT ∞ measurement
- target acquisition

high altitude

- UF *high altitude flight*
- GS altitude
 - . **high altitude**
- RT midaltitude
- skyhook balloons
- upper atmosphere

high altitude balloons

- GS expandable structures
 - . inflatable structures
 - . . balloons
 - . . . **high altitude balloons**
- . . . jimsphere balloons
- skyhook balloons
- superpressure balloons
- RT balloon-borne instruments
- gas bags
- meteorological balloons
- ROBIN balloons

- rockoons
- high altitude breathing**
 GS respiration
 . **high altitude breathing**
 RT altitude tolerance
 ∞ breathing
 emergency life sustaining systems
 hypobaric atmospheres
 oxygen masks
- high altitude environments**
 GS environments
 . **high altitude environments**
 RT altitude simulation
 altitude tests
 altitude tolerance
 escape capsules
 hypobaric atmospheres
 low pressure
 low temperature environments
 mountain inhabitants
 thermal vacuum tests
 timberline
 vacuum chambers
- high altitude flight*
 USE **flight**
high altitude
- high altitude nuclear detection**
 GS detection
 . **high altitude nuclear detection**
 RT space surveillance (spaceborne)
 Vela satellites
- high altitude pressure**
 GS pressure
 . low pressure
 . . **high altitude pressure**
 RT altitude tolerance
 atmospheric pressure
 hypobaric atmospheres
 vacuum chambers
- high altitude sounding projectile*
 USE **WASP sounding rocket**
- high altitude tests**
 GS altitude tests
 . **high altitude tests**
 RT background radiation
 environmental tests
 Fishbowl Operation
 flight tests
 full scale tests
 test vehicles
 ∞ tests
 Vela satellites
- high aspect ratio**
 GS ratios
 . aspect ratio
 . . **high aspect ratio**
- high aspect ratio wings*
 USE **slender wings**
- high current**
 GS electric current
 . **high current**
 RT high voltages
 plasma currents
- high definition television**
(added August 1990)
 UF **HDTV**
 GS television systems
 . **high definition television**
 RT communication equipment
 digital television
 high resolution
 image resolution
 imaging techniques
 television transmission
 video communication
 video data
- high dispersion spectrographs**
 GS measuring instruments
 . optical measuring instruments
- . . photometers
 . . . ultraviolet spectrometers
 **high dispersion spectrographs**
 . radiation measuring instruments
 . . actinometers
 . ∞ ultraviolet detectors
 ultraviolet spectrometers
 **high dispersion spectrographs**
 . . photometers
 . . . ultraviolet spectrometers
 **high dispersion spectrographs**
 . spectrometers
 . . ultraviolet spectrometers
 . . . **high dispersion spectrographs**
 optical equipment
 . optical measuring instruments
 . . photometers
 . . . ultraviolet spectrometers
 **high dispersion spectrographs**
 spectrographs
 . **high dispersion spectrographs**
 RT ultraviolet spectra
- High Eccentric Lunar Occultation Satellite*
 USE **Exosat satellite**
- high electron mobility transistors**
(added November 1992)
 DEF A recently developed field effect transistor based on the technique of modulation doping of GaAs/Al(x)Ga(1-x) as heterojunctions. This technique achieves high mobility in part by introducing carriers into high purity GaAs from donor ions in an adjacent AlGaAs layer, the electrons and ions being separated by the built-in heterojunction potential. Used for HEMT (electronics)
 UF **HEMT (electronics)**
 GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . heterojunction devices
 **high electron mobility transistors**
 MODFETS
 . . . transistors
 **high electron mobility transistors**
 MODFETS
 RT cascode devices
 electron mobility
 field effect transistors
 indium aluminum arsenides
 modulation doping
- High Energy Astronomy Observatories*
 USE **HEAO**
- High Energy Astronomy Observatory 1*
 USE **HEAO 1**
- High Energy Astronomy Observatory 2*
 USE **HEAO 2**
- High Energy Astronomy Observatory 3*
 USE **HEAO 3**
- High Energy Astronomy Observatory 4*
(added May 1997)
 USE **HEAO 4**
- High Energy Astronomy Observatory A*
 USE **HEAO 1**
- High Energy Astronomy Observatory B*
 USE **HEAO 2**
- High Energy Astronomy Observatory C*
 USE **HEAO 3**
- High Energy Astronomy Observatory D*
(added May 1997)
 USE **HEAO 4**
- high energy electrons**
 GS particles
 . charged particles
- . . energetic particles
 . . . electrons
 **high energy electrons**
 relativistic electron beams
 . corpuscular radiation
 . energetic particles
 . . electrons
 **high energy electrons**
 relativistic electron beams
 . elementary particles
 . . fermions
 . . . leptons
 electrons
 **high energy electrons**
 relativistic electron beams
 RT **SCATHA satellite**
- high energy fuels**
 SN (HEAT CONTENT GREATER THAN OR EQUAL TO APPROXIMATELY 25,000 BTU/LB)
 UF **HEF (high energy fuels)**
 GS fuels
 . chemical fuels
 . . **high energy fuels**
 RT additives
 boron compounds
 catalysts
 cryogenic rocket propellants
 hybrid propellants
 hydrocarbon fuels
- high energy interactions**
 GS particle interactions
 . elementary particle interactions
 . . **high energy interactions**
 . . . strong interactions (field theory)
 RT annihilation reactions
 beam interactions
 fission products
 ∞ interactions
 nuclear explosions
 nuclear fission
 nuclear fusion
 nuclear interactions
 nuclear radiation
 nuclear reactions
 nuclear research
 pair production
 particle production
 Pomeranchuk theorem
 proton-antiproton interactions
 thermonuclear reactions
 vector dominance model
- high energy oxidizers**
 GS oxidizers
 . **high energy oxidizers**
 RT rocket oxidizers
- high energy propellants**
 GS propellants
 . **high energy propellants**
 . . Domino propellants
 RT cryogenic rocket propellants
 gaseous rocket propellants
 hybrid propellants
 liquid rocket propellants
- high field magnets**
 UF **supermagnets**
 GS magnets
 . electromagnets
 . . **high field magnets**
 RT superconducting magnets
- high flux beam reactors**
 RT nuclear reactors
- high flux isotope reactors**
 UF **HFIR**
 HFIR (reactor)
 GS nuclear reactors
 . **high flux isotope reactors**
 RT neutron flux density
- high frequencies**
 SN (3 - 30 MHz)
 GS frequencies
 . radio frequencies
 . . **high frequencies**

high gain

RT decametric waves
intermediate frequencies
low frequencies
maximum usable frequency
ring discharge
short wave radiation
short wave radio transmission
toroidal discharge

high gain

GS amplification
. **high gain**
RT antenna gain
pilot induced oscillation
power gain
transfer functions

high gravity (acceleration)

USE **high gravity environments**

high gravity environments

UF *high gravity (acceleration)*
hypergravity
GS environments
. **high gravity environments**
rates (per time)
. acceleration (physics)
. . . **high gravity environments**
RT ∞ acceleration
centrifuges
extraterrestrial environments
gravitation
human centrifuges
microgravity
rotating environments

high impulse

GS impulses
. **high impulse**
RT ∞ force
propulsion

high intensity lasers

USE **high power lasers**

high latitudes

USE **polar regions**

high level languages

DEF Computer languages whose instructions or statements each correspond to several machine language instructions.

UF *higher order languages*

GS languages
. programming languages
. . . **high level languages**
. . . Ada (programming language)
. . . C (programming language)
. . . C++ (programming language)
. . . Java (programming language)

RT communication theory
language programming
symbols

high melting compounds

USE **refractory materials**

high pass filters

DEF Wave filters having a single transmission band extending from some critical or cutoff frequency, not zero, up to infinite frequency.

RT bandstop filters
electric filters
electromagnetic wave filters

∞ filters
microwave filters
optical filters

high polymers

RT ∞ polymers

high power lasers

DEF Stimulated emission devices having high energy flux density outputs. Used for high intensity lasers.

UF *high intensity lasers*

GS stimulated emission devices
. lasers
. . . **high power lasers**
. . . Nova Laser System
. . . Shiva laser system

RT free-space optical communication
glass lasers
laser fusion
laser outputs
optical communication

high pressure

GS pressure
. **high pressure**
RT anticyclones
critical pressure
degenerate matter
hyperbaric chambers
low pressure
supercritical pressures
transition pressure
vacuum

high pressure oxygen

GS gases
. compressed gas
. . . **high pressure oxygen**
RT fire prevention
oxygen
pressure
spacecraft cabin atmospheres

high Q

USE **Q factors**

∞ high resistance

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chemical properties
electrical resistance
flow resistance
mechanical properties
∞ physical properties
∞ resistance
ruggedness
thermal resistance

high resolution

GS resolution
. **high resolution**
RT accuracy
angular resolution
high definition television
precision
spatial resolution

high resolution coverage antennas

UF *HICAT (radar technique)*
HICAT project
GS antennas
. **high resolution coverage antennas**
RT radar antennas
radar resolution
resolution

high Reynolds number

SN (RN ABOVE 3,000)
DEF A Reynolds number above the critical Reynolds number of a sphere.

GS dimensionless numbers
. Reynolds number
. . . **high Reynolds number ratios**
. Reynolds number
. . . **high Reynolds number**
RT low Reynolds number

high speed

UF *high speed flight*
GS rates (per time)
. **high speed**
velocity
. **high speed**
RT airspeed
escape velocity
ground speed
hypersonic speed
landing speed
light speed
relativistic velocity
rotor speed

supersonic speed

high speed cameras

GS optical equipment
. cameras
. . . **high speed cameras**
. . . framing cameras
photographic equipment
. cameras
. . . **high speed cameras**
. . . framing cameras
RT ballistic cameras
frame photography
high speed photography
rotating mirrors
streak photography
stroboscopes

high speed flight

USE **flight**
high speed

high speed photography

GS imagery
. photography
. . . **high speed photography**
RT high speed cameras
photographic recording

high speed transportation

USE **rapid transit systems**

high strength

GS mechanical properties
. **high strength**
RT compressive strength
shear strength
∞ strength
tensile strength
tensile stress
yield strength

high strength alloys

GS alloys
. **high strength alloys**
. . . Astroloy (trademark)
. . . high strength steels
. . . maraging steels
RT aluminum-lithium alloys
tensile properties

high strength steels

UF *low alloy steels*
GS alloys
. high strength alloys
. . . **high strength steels**
. . . maraging steels
. iron alloys
. steels
. . . **high strength steels**
. . . maraging steels
RT carbon steels

high temperature

GS temperature
. **high temperature**
RT sialon
temperature measurement

high temperature air

UF *hot air*
GS gases
. gas mixtures
. air
. . . **high temperature air**
. high temperature gases
. . . **high temperature air**
high temperature fluids
. high temperature gases
. . . **high temperature air**
mixtures
. solutions
. gas mixtures
. air
. . . **high temperature air**

high temperature alloys

USE **heat resistant alloys**

high temperature environments

GS environments

. **high temperature environments**
 RT dry heat
 heat acclimatization
 lunar temperature
 thermal environments
 thermal fatigue

high temperature fatigue
 USE **thermal fatigue**

high temperature fluids
 GS **high temperature fluids**

. high temperature gases
 . . high temperature air
 RT ∞ fluids
 hydraulic fluids
 plasmas (physics)
 working fluids

high temperature gas cooled reactors

UF *HTGR*
 GS nuclear reactors
 . gas cooled reactors
 . . high temperature nuclear reactors
 . . . **high temperature gas cooled reactors**
 . nuclear research and test reactors
 . . high temperature nuclear reactors
 . . . **high temperature gas cooled reactors**
 RT nuclear power reactors

high temperature gases

UF *hot gas systems*
hot gases
hot jet exhaust
 GS gases
 . **high temperature gases**
 . . high temperature air
 high temperature fluids
 . **high temperature gases**
 . . high temperature air
 RT combustion products
 exhaust emission
 ionized gases
 pneumatic probes
 rarefied gases
 shock wave propagation

high temperature lubricants

GS lubricants
 . **high temperature lubricants**
 RT gas bearings
 gas lubricants
 thermal resistance

high temperature materials
 USE **refractory materials**

high temperature nuclear reactors

UF *Los Alamos Turret Reactor*
UHTREX (nuclear reactors)
 GS nuclear reactors
 . gas cooled reactors
 . . **high temperature nuclear reactors**
 . . . high temperature gas cooled reactors
 . nuclear research and test reactors
 . . **high temperature nuclear reactors**
 . . . high temperature gas cooled reactors
 RT nuclear propulsion
 reactor design
 reactor technology
 ∞ reactors

high temperature plasmas

UF *hot plasmas*
 GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **high temperature plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **high temperature plasmas**
 RT Boltzmann-Vlasov equation

collisional plasmas
 dense plasmas
 electron plasma
 Helios Project
 relativistic plasmas
 strongly coupled plasmas
 thermal plasmas

high temperature propellants

GS propellants
 . **high temperature propellants**
 RT electrothermal engines
 gelled propellants
 gelled rocket propellants
 ion propulsion
 nuclear propulsion
 plasma engines
 solid propellants
 storable propellants

high temperature research

GS research
 . **high temperature research**
 RT plasma generators
 refractory materials

high temperature superconductors

(added December 1992)
 DEF New superconducting materials consisting of mixed metal oxide ceramics that maintain their superconductivity at higher temperature ranges (above 24 K) than the more traditional superconductors.

UF *HTSC (superconductors)*
 GS conductors
 . superconductors (materials)
 . . **high temperature superconductors**
 . . . BSCCO superconductors
 . . . YBCO superconductors
 RT barium oxides
 ceramics
 critical temperature
 cryogenic gyroscopes
 cryogenic magnets
 cryogenics
 electrical resistivity
 Josephson junctions
 liquid nitrogen
 low temperature physics
 metal oxides
 mixed oxides
 operating temperature
 SIS (superconductors)
 strontium oxides
 superconducting magnets
 superconducting power transmission
 superconductivity
 yttrium oxides

high temperature tests

UF *heat tests*
 GS environmental tests
 . **high temperature tests**
 RT bomb calorimeters
 calorimeters
 chemical tests
 cold strength
 cold weather tests
 cryostats
 drop calorimeters
 flame calorimeters
 hardness tests
 lubricant tests
 ∞ materials tests
 melting points
 nondestructive tests
 temperature control
 ∞ tests
 thermal expansion
 thermal resistance
 thermal shock
 thermal stability
 thermodynamic properties
 transport properties

high thrust

GS thrust
 . **high thrust**
 RT jet thrust

low thrust
 rocket thrust
 thrust augmentation
 variable thrust

high vacuum

GS pressure
 . vacuum
 . . **high vacuum**
 RT cold welding
 low vacuum
 molecular shields
 residual gas
 space manufacturing
 ultrahigh vacuum
 vacuum apparatus
 vacuum tests

High Vacuum Orbital Simulator

UF *HIVOS (simulator)*
 GS simulators
 . environment simulators
 . . space simulators
 . . . **High Vacuum Orbital Simulator**
 RT space environment simulation

high velocity oxy-fuel spraying
 (added July 2001)

USE **HVOF thermal spraying**

high velocity oxygen fuel thermal spraying
 (added July 2001)

USE **HVOF thermal spraying**

high voltages

GS potential energy
 . electric potential
 . . **high voltages**
 RT electric current
 high current

higher order languages

USE **high level languages**

highlands

DEF A general term for large areas of elevated or mountainous land standing prominently above adjacent low areas; mountainous regions.

RT Colorado Plateau (US)
 mesas
 mountains
 plateaus
 topography

Highly Eccentric Orbit satellites

USE **HEOS satellites**

highly maneuverable aircraft

UF *HIMAT*
 RT airborne/spaceborne computers
 ∞ aircraft
 aircraft maneuvers
 automatic flight control
 automatic pilots
 computerized simulation
 fighter aircraft
 flight characteristics
 flight tests
 remotely piloted vehicles

highways

GS roads
 . **highways**
 RT air bag restraint devices
 bridges (structures)
 construction
 crashes
 intersections
 pavements
 ramps (structures)
 rapid transit systems
 regional planning
 streets
 transportation
 transportation networks

Hilbert space

urban planning

H-II orbiting plane

USE **HOPE aerospace plane**

hijacking

USE **air piracy**

Hilbert space

GS algebra
. vector spaces
.. Banach space
... **Hilbert space**
... Sobolev space
analysis (mathematics)
. function space
.. Banach space
... **Hilbert space**
... Sobolev space
. functional analysis
.. Banach space
... **Hilbert space**
... Sobolev space
geometry
. topology
.. metric space
... **Hilbert space**
... Sobolev space

Hilbert transformation

GS analysis (mathematics)
. functional analysis
.. integral transformations
... **Hilbert transformation**
transformations (mathematics)
. integral transformations
.. **Hilbert transformation**

Hill curves

USE **Hill method**

Hill determinant

GS analysis (mathematics)
. **Hill determinant**
RT differential equations
eigenvalues
Mathieu function

Hill lunar theory

RT Earth orbits
orbital mechanics
perturbation theory
∞ theories

Hill method

UF *Hill curves*
RT Earth orbits
∞ methodology
orbital mechanics
perturbation theory

Hiller aircraft

GS **Hiller aircraft**
. OH-5 helicopter
RT ∞ aircraft

Hilsch tubes

UF *vortex tubes*
RT coaxial flow
cooling
heating
∞ tubes
vortex generators
vortices

Himalayas

GS landforms
. mountains
.. **Himalayas**
RT Asia
Bhutan
India
Pakistan
Sikkim
Tibet

Himalia

(added July 1995)

DEF A natural satellite of Jupiter, orbiting at a mean distance of 11,480,000 kilometers.

GS celestial bodies

. natural satellites

.. Jupiter satellites

... **Himalia**

RT Jupiter (planet)

HIMAT

USE **highly maneuverable aircraft**

hindcasting

(added July 1999)

DEF The process of reconstructing the time and space evolution of an atmospheric or oceanic phenomenon that has occurred in the past, through an analysis of historical data, a mathematical-model simulation of the processes involved, or a combination of data analysis and modeling.

GS predictions

. **hindcasting**

RT forecasting
meteorological parameters
nowcasting
oceanographic parameters
weather forecasting

hindlimb suspension

(added June 2001)

DEF Technique for limiting use, activity, or movement by immobilizing or restraining animal by suspending from hindlimbs or tails. This immobilization is used to simulate some effects of reduced gravity and study weightlessness physiology.

UF *hindlimb unloading*

GS immobilization

. **hindlimb suspension**

suspending (hanging)

. **hindlimb suspension**

RT aerospace medicine
atrophy
bioastronautics
bone demineralization
gravitational physiology
head down tilt
head up tilt
hypodynamia
hypokinesia
limbs (anatomy)
tilt-table test
weightlessness simulation

hindlimb unloading

(added June 2001)

USE **hindlimb suspension**

hindrance

USE **constraints**

H-infinity control

(added November 1992)

GS automatic control

. optimal control

.. **H-infinity control**

optimization

. optimal control

.. **H-infinity control**

RT control systems design
control theory
controllers
feedback control
H-2 control
linear parameter-varying control
linear quadratic Gaussian control

hinge moments

USE **torque**

hinged rotor blades

USE **hinges**

rotary wings

hingeless rotors

USE **rigid rotors**

hinges

UF *hinged rotor blades*

GS **hinges**

. flapping hinges

RT bearingless rotors
pivots

swivels

HIP (process)

USE **hot isostatic pressing**

Hipparcos satellite

DEF An ESA astrometric satellite to determine trigonometric parallaxes, proper motions, and positions of 100,000 stars, mainly for stars brighter than magnitude 10. The satellite was launched in August 1989.

GS artificial satellites

. ESA satellites

.. **Hipparcos satellite**

ESA spacecraft

. ESA satellites

.. **Hipparcos satellite**

RT astrometry
European space programs
spaceborne astronomy
stellar motions
stellar parallax

hippocampus

GS anatomy

. nervous system

.. central nervous system

... brain

... **hippocampus**

hippuric acid

GS acids

. amino acids

.. **hippuric acid**

organic compounds

. amino acids

.. **hippuric acid**

His bundle

RT cardiac auricles
cardiac ventricles
electrophysiology
heart diseases
heart function
nerves

hiss

DEF Random noise in the audiofrequency range, having subjective characteristics analogous to prolonged sibilant sounds.

GS electromagnetic interference

. radio frequency interference

.. electromagnetic noise

... atmospherics

... ionospherics

... **hiss**

histamines

GS drugs

. **histamines**

RT amines

antihistaminics

itching

histidine

GS acids

. amino acids

.. **histidine**

organic compounds

. amines

.. **histidine**

. amino acids

.. **histidine**

histochemical analysis

DEF In biochemistry, the analysis of chemical components in tissues.

RT bioassay

biochemistry

cells (biology)

organic chemistry

tissues (biology)

histograms

RT discrete functions
graphs (charts)
normal density functions

histology

GS medical science
. **histology**

- RT epithelium
- in vitro methods and tests
- in vivo methods and tests
- morphology
- platelets
- tissue engineering
- tissues (biology)
- histories**
- GS **histories**
- . case histories
- RT documentation
- museums
- paleontology
- peacetime
- records
- HITAB program*
- USE **high alt target and background measurement**
- HIV (virus)*
- USE **human immunodeficiency virus**
- HIVOS (simulator)*
- USE **High Vacuum Orbital Simulator**
- HL-10 reentry vehicle**
- GS gliders
- . **HL-10 reentry vehicle**
- lifting bodies
- . lifting reentry vehicles
- . . **HL-10 reentry vehicle**
- reentry vehicles
- . maneuverable reentry bodies
- . . lifting reentry vehicles
- . . . **HL-10 reentry vehicle**
- RT hypersonic gliders
- HLD-35 reentry vehicle**
- GS lifting bodies
- . lifting reentry vehicles
- . . **HLD-35 reentry vehicle**
- reentry vehicles
- . maneuverable reentry bodies
- . . lifting reentry vehicles
- . . . **HLD-35 reentry vehicle**
- RT hypersonic gliders
- HLLV*
- USE **heavy lift launch vehicles**
- HMD (displays)*
- USE **helmet mounted displays**
- HMX**
- UF *cyclotetramethylene tetranitramine*
- tetranitrotetraazacyclooctane*
- GS explosives
- . **HMX**
- nitrogen compounds
- . azo compounds
- . . **HMX**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . **HMX**
- propellants
- . rocket propellants
- . . solid rocket propellants
- . . . **HMX**
- . solid propellants
- . . solid rocket propellants
- . . . **HMX**
- pyrotechnics
- . **HMX**
- HNPF (Hallam Nuclear Power Facility)*
- USE **Hallam Nuclear Power Facility**
- HNST*
- USE **hexanitrostilbene**
- HO-4 helicopter*
- USE **OH-4 helicopter**
- HO-5 helicopter*
- USE **OH-5 helicopter**
- HO-6 helicopter*
- USE **OH-6 helicopter**
- hodographs**
- RT Chaplygin equation
- kinematics
- vector spaces
- hodoscopes**
- GS measuring instruments
- . radiation measuring instruments
- . . **hodoscopes**
- RT anticoincidence detectors
- radiation counters
- scintillating fibers
- hogbacks*
- USE **ridges**
- hohlraums**
- DEF In radiation thermodynamics, cavities whose walls are in radiative equilibrium with the radiant energy with the cavity.
- RT black body radiation
- emissivity
- Hohmann trajectories*
- USE **elliptical orbits**
- transfer orbits**
- Hohmann transfer orbits*
- USE **elliptical orbits**
- transfer orbits**
- holders**
- GS **holders**
- . flame holders
- RT anchors (fasteners)
- ∞ bands
- bolts
- brackets
- clamps
- clips
- fasteners
- jigs
- latches
- lugs
- mechanical devices
- nuts (fasteners)
- pins
- positioning devices (machinery)
- rivets
- screws
- ∞ spikes
- splines
- straps
- studs (structural members)
- zippers
- ∞ **holding**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT constraints
- delay
- retaining
- stopping
- hole burning**
- DEF A laser process that depletes, spatially or spectrally, the electron/hole pair density in a region of space or frequency of high coherent light, being spatial hole burning and spectral hole burning respectively.
- RT computer storage devices
- holography
- laser applications
- lasers
- lasing
- memory (computers)
- ∞ **hole distribution**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT current distribution
- hole distribution (electronics)
- hole distribution (mechanics)
- hole distribution (electronics)**
- GS distribution (property)
- . **hole distribution (electronics)**
- RT charge distribution
- current distribution
- ∞ hole distribution
- holes (electron deficiencies)
- semiconductors (materials)
- hole distribution (mechanics)**
- GS distribution (property)
- . **hole distribution (mechanics)**
- RT cavities
- ∞ hole distribution
- holes (mechanics)
- perforated shells
- porosity
- stress concentration
- void ratio
- hole geometry (mechanics)**
- DEF The sizes, locations, and shapes of perforations created in materials.
- RT fracture mechanics
- holes (mechanics)
- perforated plates
- perforated shells
- stress concentration
- stress intensity factors
- structural analysis
- hole mobility**
- GS electrical properties
- . carrier mobility
- . . **hole mobility**
- mobility
- . carrier mobility
- . . **hole mobility**
- transport properties
- . carrier mobility
- . . **hole mobility**
- RT atomic mobilities
- charge carriers
- electromigration
- electron mobility
- holes (electron deficiencies)
- ∞ solid state physics
- ∞ **holes**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boreholes
- cavities
- coronal holes
- gaps
- holes (electron deficiencies)
- holes (mechanics)
- holes (electron deficiencies)**
- (added November 1991)
- UF *electron holes*
- GS charge carriers
- . **holes (electron deficiencies)**
- RT acceptor materials
- crystal defects
- donor materials
- electrons
- excitons
- hole distribution (electronics)
- hole mobility
- ∞ holes
- majority carriers
- ∞ materials
- minority carriers
- order-disorder transformations
- p-type semiconductors
- resonant tunneling diodes
- semiconductor plasmas
- semiconductors (materials)
- Suhl effect
- vacancies (crystal defects)
- holes (mechanics)**
- (added September 1988)
- RT cavities
- hole distribution (mechanics)
- hole geometry (mechanics)
- ∞ holes
- perforated plates
- perforated shells
- ∞ perforation

hollow

porous boundary layer control

Holland

USE **Netherlands**

∞ **hollow**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Low tract of land surrounded by hills or mountains; small sheltered valley or basin, especially in a rugged area.

RT cavities

∞ depression
recesses

hollow cathodes

GS electrodes
. cathodes

. . **hollow cathodes**

RT tube cathodes
tunnel cathodes

holmium

GS chemical elements
. rare earth elements
. . **holmium**
. . . holmium isotopes
metals
. rare earth elements
. . **holmium**
. . . holmium isotopes

holmium isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **holmium isotopes**
. rare earth elements
. . holmium
. . . **holmium isotopes**
metals
. rare earth elements
. . holmium
. . . **holmium isotopes**

Holocene epoch

(added May 2001)

DEF Most recent geologic epoch of the Quaternary period extending from about 10,000 years ago to, and including, the present.

GS Cenozoic Era
. Quaternary period
. . **Holocene epoch**

RT geochronology
Pleistocene epoch

hologrammetry

RT holography
imaging techniques
photographic recording
photomapping
speckle holography
terrain analysis

holographic interferometry

GS interferometry
. **holographic interferometry**

RT coherent light
diffraction patterns
holographic optical elements
holography
laser outputs
Moire interferometry
scatter plates (optics)
speckle holography
wave front reconstruction

holographic optical elements

(added April 1995)

DEF Holograms used to control transmitted light beams, rather than to display images, based on the principles of diffraction.

RT diffraction paths
geometrical optics
holographic interferometry
imagery
laser beams
light transmission
optical paths
pulse diffraction

wave diffraction
white light holography

holographic spectroscopy

GS spectroscopy
. **holographic spectroscopy**

RT Fourier transformation
holography
spectrum analysis
wave front reconstruction

holographic subtraction

DEF A holographic technique by which two dissimilar optical fields can be subtracted to yield only their difference. Used for self subtraction holography.

UF *self subtraction holography*

RT holography

holography

DEF The interferometry technique used to make three-dimensional pictures of surfaces. One light beam illuminates a surface, and sets up interference patterns with a reference beam.

GS imagery
. photography
. . **holography**
. . . acoustical holography
. . . microwave holography
. . . speckle holography
. . . white light holography

RT coherent electromagnetic radiation
coherent light
data storage
differential interferometry
diffractive optics
Gabor transformation
hole burning
hologrammetry
holographic interferometry
holographic spectroscopy
holographic subtraction
image correlators
image reconstruction
kinoform
lasers
optical memory (data storage)
photopolymers
scatter plates (optics)
spatial filtering
speckle patterns
wave front reconstruction

holomorphism

USE **analytic functions**

homeostasis

RT acclimatization
acid base equilibrium
adaptation
body temperature
cold tolerance
colloids
∞ equilibrium
fibrinogen
hormones
metabolism
nervous system
osmosis
physiology
respiratory system
skin (anatomy)
stress (physiology)
thermoregulation
thromboplastin
water balance

homeotherms

UF *warm blooded animals*

GS animals
. **homeotherms**

RT birds
body temperature
mammals
vertebrates

homing

DEF The following of a path of energy waves to or toward their source or point of reflection.

RT automatic pilots
beacons
guidance (motion)
missile control
proportional navigation
radio direction finders
terminal guidance

homing devices

UF *seekers*

RT beacons
guidance (motion)
infrared tracking
laser guidance
missiles
navigation
navigation aids
radio beacons
radio direction finders
radio navigation
rendezvous guidance
solar compasses
trajectory control

homodyne reception

GS signal reception
. **homodyne reception**

RT frequency synchronization
radio reception

homogeneity

DEF Having the same properties at all points.

RT anisotropic media
homogenizing
sampling
statistical tests
unity
variance (statistics)

homogeneous turbulence

GS turbulence
. **homogeneous turbulence**

RT atmospheric turbulence
fluctuation theory
isotropic turbulence
low level turbulence
magneto-hydrodynamic turbulence

homogenization

USE **homogenizing**

homogenizing

UF *homogenization*

GS mixing
. **homogenizing**

RT agitation
colloiding
compounding
dispersing
dissolving
homogeneity
premixing
∞ separation
suspending (mixing)

homojunctions

DEF Junctions between semiconductors that differ in their doping level conductivities but not in their atomic or alloy composition.

GS semiconductor junctions
. **homojunctions**

RT heterojunction devices
heterojunctions
silicon junctions
solar cells

homology

UF *cohomology*

RT analogies
duality theorem
matching
∞ relationships
topology

homomorphisms

GS algebra
. group theory
. . **homomorphisms**
. . . automorphisms

- ... monoids
- ... subgroups
- RT field theory (algebra)
- isomorphism
- homopolar generators**
 - DEF Rotating electric machines for converting mechanical power into pure direct current by utilizing poles having the same polarity at the armature.
 - GS electric generators
 - . direct power generators
 - . DC generators
 - . . . **homopolar generators**
 - . rotating generators
 - . . **homopolar generators**
 - RT direct current
 - ∞ electric equipment
 - electromechanical devices
 - ∞ generators
- homosphere**
 - DEF The lower portion of a two part division of the atmosphere according to the general homogeneity of atmospheric composition; opposed to the heterosphere. The region in which there is no gross change in atmospheric composition, that is, all the atmosphere from the Earth's surface to about 90 kilometers. The homosphere is about equivalent to the neutrosphere, and includes the troposphere, stratosphere, and mesosphere; it also includes the ozonosphere and at least part of the chemosphere.
 - GS Earth atmosphere
 - . **homosphere**
 - RT biosphere
 - chemosphere
 - Earth ionosphere
 - lower atmosphere
 - mesosphere
 - middle atmosphere
 - ozonosphere
 - stratosphere
 - thermosphere
 - troposphere
 - upper atmosphere
- homotopy theory**
 - GS geometry
 - . topology
 - . . **homotopy theory**
 - RT curves (geometry)
 - fibers (mathematics)
 - ∞ theories
- homotropy**
 - RT algebra
 - problem solving
 - set theory
 - topology
- Honduras**
 - GS nations
 - . **Honduras**
 - RT Central America
- Honest John rocket vehicle**
 - GS rocket vehicles
 - . single stage rocket vehicles
 - . . **Honest John rocket vehicle**
 - . surface to surface rockets
 - . . **Honest John rocket vehicle**
 - RT Argo rocket vehicles
 - EXOS sounding rocket
 - Hercules engine
 - solid propellant rocket engines
 - Trailblazer 1 reentry vehicle
- honeycomb cores**
 - DEF Lightweight strengthening materials of structures resembling honeycomb meshes.
 - GS cores
 - . **honeycomb cores**
 - honeycomb structures
 - . **honeycomb cores**
 - RT ceramic honeycombs
 - composite structures
 - low density materials
- sandwich structures
- honeycomb mirrors**
 - (added August 1995)
 - DEF High strength to weight telescope mirrors constructed of spun-cast borosilicate glass in a honeycomb structure that optically represents a single large mirror.
 - GS honeycomb structures
 - . **honeycomb mirrors**
 - mirrors
 - . **honeycomb mirrors**
 - RT adaptive optics
 - astronomical observatories
 - borosilicate glass
 - optical correction procedure
 - reflecting telescopes
 - segmented mirrors
- honeycomb structures**
 - GS **honeycomb structures**
 - . honeycomb cores
 - . honeycomb mirrors
 - RT ∞ cells
 - ceramic honeycombs
 - composite structures
 - hexagonal cells
 - insulation
 - laminates
 - low density materials
 - metal foils
 - porous materials
 - sandwich structures
 - ∞ structures
- Honeywell 600/6000 computer**
 - GS data processing equipment
 - . computers
 - . . analog computers
 - . . . **Honeywell 600/6000 computer**
 - . . digital computers
 - . . . Honeywell computers
 - **Honeywell 600/6000 computer**
- Honeywell ADEPT computer**
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . Honeywell computers
 - **Honeywell ADEPT computer**
- Honeywell computers**
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **Honeywell computers**
 - DDP 516 computer
 - Honeywell 600/6000 computer
 - Honeywell ADEPT computer
 - Honeywell DDP 116 computer
- Honeywell DDP 116 computer**
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . Honeywell computers
 - **Honeywell DDP 116 computer**
- Hong Kong**
 - RT Asia
 - China
 - nations
 - Taiwan
- honoring**
 - RT scrapers
 - smoothing
- Hookes law**
 - GS laws
 - . **Hookes law**
 - RT elastic properties
 - fiber strength
 - Maxwell bodies
 - modulus of elasticity
 - shear properties
 - stress-strain diagrams
- hooks**
 - RT fasteners
- forks
- swivels
- hoop column antennas**
 - GS antennas
 - . **hoop column antennas**
 - RT large space structures
 - satellite communication
 - spacecraft communication
- hoops**
 - RT ring structures
 - tensile stress
- Hopcalite (trademark)**
 - GS catalysts
 - . **Hopcalite (trademark)**
 - chalcogenides
 - . oxides
 - . . metal oxides
 - . . . manganese oxides
 - **Hopcalite (trademark)**
 - manganese compounds
 - . manganese oxides
 - . . **Hopcalite (trademark)**
 - RT air purification
 - carbon monoxide
 - gas analysis
- HOPE aerospace plane**
 - (added September 1995)
 - UF *H-2 orbiting plane*
 - H-II orbiting plane*
 - GS aerospace vehicles
 - . aerospace planes
 - . . **HOPE aerospace plane**
 - maneuverable spacecraft
 - . aerospace planes
 - . . **HOPE aerospace plane**
 - manned spacecraft
 - . **HOPE aerospace plane**
 - reentry vehicles
 - . recoverable spacecraft
 - . reusable spacecraft
 - . . aerospace planes
 - . . . **HOPE aerospace plane**
 - soft landing spacecraft
 - . aerospace planes
 - . . **HOPE aerospace plane**
 - hypersonic vehicles
 - Japanese space program
 - lifting reentry vehicles
 - space transportation
 - hoppers**
 - RT ∞ containers
 - materials handling
 - packaging
 - horizon**
 - DEF That great circle or the celestial sphere midway between the zenith and nadir, or a line resembling or approximating such a circle.
 - GS **horizon**
 - . event horizon
 - . gyro horizons
 - . radio horizons
 - RT celestial sphere
 - range (extremes)
 - horizon scanners**
 - UF *horizon sensing*
 - infrared horizon scanners*
 - GS flight instruments
 - . **horizon scanners**
 - scanners
 - . **horizon scanners**
 - RT attitude control
 - infrared scanners
 - navigation instruments
 - optical equipment
 - photometers
 - radio horizons
 - radiometers

horizontal branch stars

Scanner project

horizon sensing

USE **horizon scanners**

horizontal branch stars

DEF Horizontal strips of stars on the Hertzsprung-Russell diagram of globular clusters to the left of the red giant branch.

- GS celestial bodies
 - . stars
 - . . **horizontal branch stars**
- RT color-magnitude diagram
 - giant stars
 - globular clusters
 - Hertzsprung-Russell diagram
 - Population II stars
 - stellar evolution
 - stellar luminosity
 - stellar spectra
 - stellar spectrophotometry

horizontal distribution

- (added September 1992)
- GS distribution (property)
 - . spatial distribution
 - . . **horizontal distribution**
- RT atmospheric circulation
 - atmospheric composition
 - atmospheric models
 - horizontal orientation
 - vertical distribution

horizontal flight

- RT aerodynamic balance
 - aircraft stability
 - climbing flight
 - cruising flight
- ∞ flight
 - flight paths
 - rocket flight
 - soaring
 - transition flight
 - turning flight

horizontal orientation

- DEF The attitude of an object in reference to the plane which is perpendicular to the direction of gravity.
- RT alignment
 - attitude (inclination)
 - directional stability
 - dynamic stability
 - horizontal distribution
- ∞ orientation
 - stabilization
 - vertical orientation

horizontal spacecraft landing

- GS landing
 - . glide landings
 - . . **horizontal spacecraft landing**
 - . spacecraft landing
 - . . **horizontal spacecraft landing**
- RT approach and landing tests (STS)
 - crash landing
 - planetary landing
 - soft landing
 - water landing

horizontal stabilizers

USE **stabilizers (fluid dynamics)**

horizontal tail surfaces

- UF *tail planes*
- GS airfoils
 - . **horizontal tail surfaces**
 - assemblies
 - . tail assemblies
 - . . **horizontal tail surfaces**
 - control surfaces
 - . **horizontal tail surfaces**
 - stabilizers (fluid dynamics)
 - . **horizontal tail surfaces**
 - tail surfaces
 - . **horizontal tail surfaces**
- RT aerial rudders
 - elevators (control surfaces)
- ∞ surfaces

trapezoidal tail surfaces

horizontally polarized shear waves

USE **SH waves**

hormone metabolisms

- GS metabolism
 - . **hormone metabolisms**
- RT glucocorticoids
 - hormones

hormones

- GS secretions
 - . endocrine secretions
 - . . **hormones**
 - . . . corticosteroids
 - aldosterone
 - hydroxycorticosteroid
 - cortisone
 - glucocorticoids
 - . . . estrogens
 - . . . hypertensin
 - . . . pituitary hormones
 - adrenocorticotropin (ACTH)
 - vasopressins
 - . . . prostaglandins
 - . . . thyroxine
- RT catecholamine
 - endocrine systems
 - epinephrine
 - homeostasis
 - hormone metabolisms
 - melatonin
 - regulatory mechanisms (biology)
 - steroids

horn antennas

- DEF Antennas shaped like a horn.
- GS antennas
 - . directional antennas
 - . . **horn antennas**
 - . . radio antennas
 - . . . microwave antennas
 - **horn antennas**
 - waveguide antennas
 - **horn antennas**
 - microwave equipment
 - . microwave antennas
 - . . **horn antennas**
 - radio equipment
 - . radio antennas
 - . . microwave antennas
 - . . . **horn antennas**
- RT antenna design
 - lens antennas
 - parabolic antennas
 - radar antennas
 - Schelkunoff principle
 - sidelobe reduction
 - slot antennas

horns

- RT auditory signals
 - Schwarzschild antennas
- ∞ signals
 - sirens
 - sound generators
 - warning
 - warning systems

horsepower

- RT physical work
- ∞ power
 - power efficiency
 - work

horses

- GS animals
 - . vertebrates
 - . . mammals
 - . . . **horses**
- RT grazing
 - livestock

horseshoe vortices

- (added July 1989)
- UF *hairpin vortices*
- GS vortices
 - . **horseshoe vortices**
- RT Abrikosov theory

flow distortion
flow geometry
vortex filaments
vortex generators
vortex rings
vorticity
wakes
wing tip vortices

hoses

- RT pipes (tubes)
 - ∞ tubes

hospitals

- RT evacuating (transportation)
 - medical equipment

hot air

USE **high temperature air**

hot atoms

- DEF Atoms with high internal or kinetic energy as a result of a nuclear process such as beta decay or neutron capture.
- GS atoms
 - . **hot atoms**
- RT beta particles
 - decay
 - neutron decay

hot cathodes

- DEF Cathodes that function primarily by the process of thermionic emission.
- GS electrodes
 - . cathodes
 - . . tube cathodes
 - . . . **hot cathodes**
- RT Bayard-Alpert ionization gages
 - ionization gages
 - thermionic cathodes

hot corrosion

- DEF The corrosion at high temperatures as a result of the reduction of protective oxide coatings and scales and the subsequent accelerated oxidation.
- GS corrosion
 - . **hot corrosion**
- RT coatings
 - damage
 - degradation
 - deterioration
 - erosion
 - gas-metal interactions
 - metal coatings
 - oxidation
 - pitting
 - rusting
 - scale (corrosion)
 - surface properties
 - temperature dependence

hot cycle propulsion system

USE **tip driven rotors**

hot electrons

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . electrons
 - **hot electrons**
 - corpuscular radiation
 - energetic particles
 - electrons
 - **hot electrons**
 - elementary particles
 - fermions
 - leptons
 - electrons

. **hot electrons**
hot extruding
 USE **extruding**
hot forming
 USE **hot working**
hot gas systems
 USE **high temperature gases**
hot gases
 USE **high temperature gases**
hot isostatic pressing
 DEF A thermomechanical process for forming metal-powder compacts or ceramic shapes by use of isostatically applied gas pressure in order to achieve high density in the treated material. Used for HIP (process).
 UF *HIP (process)*
 GS forming techniques
 . pressing (forming)
 . . hot pressing
 . . . **hot isostatic pressing**
 hardening (materials)
 . hot pressing
 . . **hot isostatic pressing**
 thermomechanical treatment
 . hot pressing
 . . **hot isostatic pressing**
 RT coining
 cold pressing
 compacting
 forging
 isostatic pressure
 metal working
 ∞ pressing
 sintering
 stamping
 upsetting
hot jet exhaust
 USE **high temperature gases**
jet exhaust
hot jets
 USE **jet flow**
hot machining
 GS machining
 . **hot machining**
 RT forming techniques
hot plasmas
 USE **high temperature plasmas**
hot pressing
 DEF The simultaneous heating and molding of a compact.
 GS forming techniques
 . pressing (forming)
 . . **hot pressing**
 . . . hot isostatic pressing
 hardening (materials)
 . **hot pressing**
 . . hot isostatic pressing
 thermomechanical treatment
 . **hot pressing**
 . . hot isostatic pressing
 RT coining
 cold pressing
 compacting
 forging
 metal working
 ∞ pressing
 sintering
 stamping
 upsetting
hot stars
 GS celestial bodies
 . stars
 . . early stars
 . . . **hot stars**
 A stars
 B stars
 shell stars
 Sigma Orionis
 blue stars
 O stars

. . . . white dwarf stars
 Wolf-Rayet stars
 RT cataclysmic variables
 peculiar stars
 red dwarf stars
hot surfaces
 RT heat transfer
 Rayleigh-Benard convection
 ∞ surfaces
hot water rocket engines
 GS engines
 . rocket engines
 . . **hot water rocket engines**
hot weather
 GS weather
 . **hot weather**
 RT heat stroke
 summer
 tropical regions
hot working
 DEF Controlled mechanical operations for shaping a product at temperatures above the recrystallization temperature. Used for hot forming.
 UF *hot forming*
 GS forming techniques
 . **hot working**
 . . ausforming
 RT bulging
 forging
 metal drawing
 metal spinning
 metal working
 pultrusion
 shearing
 upsetting
hot-film anemometers
 GS measuring instruments
 . anemometers
 . . **hot-film anemometers**
 RT flow measurement
 meteorological instruments
 sonic anemometers
 velocity measurement
 wind (meteorology)
 wind measurement
 wind vanes
 wind velocity
 wind velocity measurement
HOTOL launch vehicle
 DEF A British unmanned horizontal takeoff and landing single-stage-to-orbit launch vehicle. Later launches will be manned.
 GS aerospace vehicles
 . aerospace planes
 . . **HOTOL launch vehicle**
 launch vehicles
 . reusable launch vehicles
 . . single stage to orbit vehicles
 . . . **HOTOL launch vehicle**
 maneuverable spacecraft
 . aerospace planes
 . . **HOTOL launch vehicle**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . aerospace planes
 **HOTOL launch vehicle**
 single stage to orbit vehicles
 **HOTOL launch vehicle**
 soft landing spacecraft
 . aerospace planes
 . . **HOTOL launch vehicle**
 unmanned spacecraft
 . **HOTOL launch vehicle**
 RT launch vehicle configurations
 space shuttles
 space transportation
 spacecraft launching
 UK space program
 ∞ vehicles
hotshot wind tunnels
 GS test facilities

. wind tunnels
 . . hypersonic wind tunnels
 . . . **hotshot wind tunnels**
 . . hypervelocity wind tunnels
 . . . **hotshot wind tunnels**
 RT blowdown wind tunnels
 shock tubes
 shock tunnels
hot-wire anemometers
 GS measuring instruments
 . anemometers
 . . **hot-wire anemometers**
 RT flow measurement
 flowmeters
 meteorological instruments
 velocity measurement
hot-wire flowmeters
 UF *hot-wire turbulence meters*
 GS measuring instruments
 . flowmeters
 . . **hot-wire flowmeters**
 RT Pirani gages
 plasma electrodes
 thermal conductivity
 turbulence meters
hot-wire turbulence meters
 USE **hot-wire flowmeters**
turbulence meters
Hound Dog missile
 GS missiles
 . air to surface missiles
 . . **Hound Dog missile**
 RT turbojet engines
Householder transformations
 GS transformations (mathematics)
 . **Householder transformations**
 RT problem solving
housekeeping (spacecraft)
 GS cleaning
 . **housekeeping (spacecraft)**
 cleanliness
 . **housekeeping (spacecraft)**
 RT hygiene
 sanitation
 sterilization
 washing
hosings
 GS **hosings**
 . cowlings
 . doghouses (electronics)
 . radomes
 RT ∞ containers
 coverings
 domes (structural forms)
 enclosure
 enclosures
 fairings
 guards (shields)
 nacelles
 perforated shells
 protection
 protectors
 protuberances
 shells (structural forms)
 shielding
 walls
Houston (TX)
 GS cities
 . **Houston (TX)**
 RT texas
hovercraft
 USE **ground effect machines**
hovercraft ground effect machines
 UF *HD-1 ground effect machines*
 GS ground effect machines
 . **hovercraft ground effect machines**
 RT ∞ aircraft
 research aircraft

hovering

water takeoff and landing aircraft

hovering

GS maneuvers
. **hovering**
RT aerodynamic stability
Cushioncraft ground effect machine
flutter
ground effect machines
hovering rocket vehicles
terrain following
transition flight
V/STOL aircraft
vertical flight
whirl towers

hovering rocket vehicles

GS rocket vehicles
. **hovering rocket vehicles**
RT hovering
soft landing spacecraft
 ∞ vehicles

hovering stability

GS dynamic characteristics
. dynamic stability
. . . motion stability
. . . . aircraft stability
. **hovering stability**
stability
. dynamic stability
. . . motion stability
. . . . aircraft stability
. **hovering stability**
RT attitude stability
directional stability
gyroscopic stability
lateral stability
longitudinal stability
low speed stability
whirl towers

howitzers

GS weapons
. guns (ordnance)
. . . artillery
. . . . **howitzers**
RT ballistics
gun launchers
gunnery training

HP-115 aircraft

UF *Handley Page HP-115 aircraft*
GS Handley Page aircraft
. **HP-115 aircraft**
jet aircraft
. **HP-115 aircraft**
monoplanes
. **HP-115 aircraft**
research vehicles
. research aircraft
. . **HP-115 aircraft**
tailless aircraft
. **HP-115 aircraft**
RT ∞ aircraft
wing planforms

HPRR

USE **Health Physics Research Reactor**

HR diagram

USE **Hertzsprung-Russell diagram**

HRB-1 helicopter

USE **CH-46 helicopter**

HS-125 aircraft

USE **DH 125 aircraft**

HS-748 aircraft

UF *AVRO Whitworth HS-748 aircraft*
GS Hawker Siddeley aircraft
. **HS-748 aircraft**
jet aircraft
. turboprop aircraft
. . **HS-748 aircraft**
monoplanes
. **HS-748 aircraft**
passenger aircraft
. **HS-748 aircraft**

RT ∞ aircraft

HS-801 aircraft

GS Hawker Siddeley aircraft
. **HS-801 aircraft**
jet aircraft
. **HS-801 aircraft**
reconnaissance aircraft
. **HS-801 aircraft**
RT aerial reconnaissance
 ∞ aircraft
observation aircraft
photography
photoreconnaissance

HSS-2 helicopter

USE **SH-3 helicopter**

HTGR

USE **high temperature gas cooled reactors**

HTML

USE **document markup languages**

HTPB propellants

DEF Solid rocket propellants containing hydroxyl terminated polybutadiene as bonding material.
GS propellants
. rocket propellants
. . solid rocket propellants
. . . **HTPB propellants**
. solid propellants
. . solid rocket propellants
. . . **HTPB propellants**
RT plastic propellants
polybutadiene

HTSC (superconductors)

USE **high temperature superconductors**

HU-1 helicopter

USE **UH-1 helicopter**

HU2K-1 helicopter

USE **UH-2 helicopter**

Hubble constant

DEF The rate at which the velocity of recession of the galaxies increases with distance.
GS constants
. **Hubble constant**
RT cosmology
galaxies
irregular galaxies
red shift
velocity measurement

Hubble diagram

GS cosmology
. **Hubble diagram**
RT barred galaxies
galactic radiation
galaxies
irregular galaxies
red shift
velocity measurement

Hubble Space Telescope

UF *Large Space Telescope*
LST
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Hubble Space Telescope**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Hubble Space Telescope**
telescopes
. spaceborne telescopes
. . **Hubble Space Telescope**
RT faint object camera
James Webb Space Telescope
Space Shuttle payloads
spaceborne astronomy
ultraviolet astronomy

hubs

UF *rotor hubs*

RT spokes
wheels

Hudson Bay (Canada)

GS bays (topographic features)
. **Hudson Bay (Canada)**
RT Canada

Hudson River (NY-NJ)

GS rivers
. **Hudson River (NY-NJ)**
RT New Jersey
New York

Hueckel theory

RT ∞ theories

Hughes aircraft

GS **Hughes aircraft**
. AH-64 helicopter
. H-17 helicopter
. OH-6 helicopter
. TH-55 helicopter
. XV-9A aircraft
RT ∞ aircraft

Hugoniot adiabat

USE **Hugoniot equation of state**

Hugoniot equation of state

UF *Hugoniot adiabat*
GS equations of state
. **Hugoniot equation of state**
RT compressible flow
 ∞ equations
loads (forces)
one dimensional flow
shock waves

HUL

USE **hardware utilization lists**

hulls (structures)

GS **hulls (structures)**
. ship hulls
RT aircraft structures
bays (structural units)
bulkheads
fuselages
hydrofoils
keels
metal shells
perforated shells
seaplanes
shells (structural forms)
skin (structural member)
strakes
 ∞ structures
SWATH (ship)

hum

DEF Electrical disturbance at the power supply frequency or harmonics thereof.
RT acoustics
 ∞ interference
 ∞ noise

human behavior

GS behavior
. **human behavior**
RT boredom
detachment
disorders
dithers
emotions
extroversion
introversion
lethargy
neuropsychiatry
panic

human beings

UF *man*
GS animals
. vertebrates
. . mammals
. . . primates
. . . . **human beings**
RT aborigines
anthropology
census

children
 chimpanzees
 clinical medicine
 cultural resources
 demography
 females
 males
 man environment interactions
 parents
 patients
 race factors
 races (anthropology)
 youth

human body

GS anatomy
 . **human body**
 RT appendages
 ∞ bodies
 body measurement (biology)
 exercise physiology
 limbs (anatomy)
 lumbar region
 posture
 sciatic region

human centrifuges

UF *piloted centrifuges*
 GS centrifuges
 . **human centrifuges**
 RT acceleration tolerance
 artificial gravity
 high gravity environments

human engineering

USE **human factors engineering**

human factors engineering

DEF Application of information on physical and psychological characteristics of man to the design of devices and systems for human use. Used for ergonomics and human engineering.

UF *ergonomics*
human engineering
 RT ∞ aeronautics
 aircraft accidents
 aircraft hazards
 anthropometry
 architecture
 astronaut maneuvering equipment
 astronaut performance
 ∞ aeronautics
 bioengineering
 biofeedback
 bionics
 body measurement (biology)
 brightness
 color
 comfort
 cybernetics
 education
 efficiency
 ∞ engineering
 environmental engineering
 environments
 fatigue (biology)
 flat panel displays
 ∞ flight stress
 glare
 human resources
 human-computer interface
 illuminating
 life support systems
 man machine systems
 manned space flight
 manual control
 monocular vision
 noise (sound)
 ∞ performance
 pilot error
 production engineering
 psychological effects
 safety devices
 safety management
 situational awareness
 systems engineering
 teleoperators
 visibility
 vision
 wheelchairs

workstations

human factors laboratories

GS laboratories
 . **human factors laboratories**
 RT environmental laboratories

human immunodeficiency virus

(added August 1991)
 DEF A virus which attacks the human immune system and causes acquired immunodeficiency syndrome (AIDS).
 UF *HIV (virus)*
 GS microorganisms
 . viruses
 . . **human immunodeficiency virus**
 RT acquired immunodeficiency syndrome
 antibodies
 immune systems
 immunology
 interferon
 vaccines
 viral diseases
 virulence

human pathology

GS medical science
 . pathology
 . . **human pathology**
 RT cholera
 convulsions
 epilepsy
 patients

human performance

GS **human performance**
 . astronaut performance
 . . blackout prevention
 . . operator performance
 . . pilot performance
 . . blackout prevention
 RT abilities
 competition
 ∞ endurance
 human resources
 information processing (biology)
 intelligence tests
 intravehicular activity
 mental health
 mental performance
 ∞ performance
 pilot error
 psychomotor performance
 race factors
 sensorimotor performance
 visual tasks
 workloads (psychophysiology)

human reactions

RT biological effects
 boredom
 competition
 emotional factors
 laughing
 noise pollution
 physiological effects
 psychological effects
 psychomotor performance
 ∞ reaction
 reaction time
 reward (psychology)
 sensorimotor performance
 shock (physiology)
 vacillation

human relations

UF *interpersonal relations*
 RT employee relations
 personnel management
 sociology

human resources

DEF Those elements of support and capability that are provided by persons using their mental and physical capabilities.
 RT education
 human factors engineering
 human performance
 management planning
 manpower

personnel
 personnel development
 personnel management

human tolerances

GS tolerances (physiology)
 . **human tolerances**
 RT ∞ acceleration
 acceleration tolerance
 diving (underwater)
 ∞ endurance
 heat acclimatization
 heat tolerance
 noise pollution
 noise tolerance
 orthostatic tolerance
 radiation tolerance
 shock (physiology)

human wastes

GS wastes
 . metabolic wastes
 . . **human wastes**
 . . . feces
 . . . urine
 RT activated sludge
 air pollution
 environment pollution
 environmental surveys
 excretion
 liquid wastes
 organic wastes (fuel conversion)
 pollution
 sewage
 sewers
 solid wastes
 toilets
 waste disposal

human-computer interface

UF *man-computer interface*
user-computer interface
 GS interfaces
 . **human-computer interface**
 man machine systems
 . **human-computer interface**
 RT command languages
 computer aided design
 data processing terminals
 display devices
 document markup languages
 graphical user interface
 human factors engineering
 hypertext
 natural language processing
 pilot support systems
 query languages
 user requirements
 virtual reality

Humason comet

GS celestial bodies
 . comets
 . . **Humason comet**
 RT solar system

humerus

RT arm (anatomy)
 elbow (anatomy)

humidity

DEF The amount of water vapor in the air. Specifically, relative humidity.

RT air conditioning
 atmospheric density
 atmospheric moisture
 body temperature
 climatology
 comfort
 corrosion
 dehumidification
 drop size
 dry heat
 environments
 hygral properties
 hygrometers
 lapse rate
 meteorological parameters
 meteorology
 mixing ratios

humidity measurement

moisture
moisture content
moisture meters
perspiration
precipitation (meteorology)
psychological effects
psychrometers
refrigerating
temperature
vapor pressure
water
water vapor
weather forecasting

humidity measurement

RT hygrometers
∞ measurement
meteorological instruments
moisture meters
psychrometers

Hummingbird aircraft

USE **XV-4 aircraft**

Hungarian space program

(added June 1989)

GS programs
. space programs
. . European space programs
. . . **Hungarian space program**
RT Hungary

Hungary

GS nations
. **Hungary**
RT Central Europe
Europe
Hungarian space program

Hunter F-2 aircraft

USE **F-2 aircraft**

Hunting H-126 aircraft

USE **H-126 aircraft**

Hunting P-84 aircraft

USE **jet provost aircraft**

hurricanes

DEF Tropical cyclones, especially in the West Indies, in which the wind velocity equals or exceeds 64 knots (73 mph).

GS storms
. storms (meteorology)
. . cyclones
. . . **hurricanes**
. . . . Anna hurricane
. . . tropical storms
. . . **hurricanes**
. . . . Anna hurricane
RT climatology
cyclogenesis
meteorology
storm damage
storm surges
tornadoes
typhoons

HUS-1 helicopter

USE **UH-34 helicopter**

Huskie helicopter

USE **HH-43 helicopter**

Hustler aircraft

USE **B-58 aircraft**

HUT (physiology)

(added March 1998)

USE **head up tilt**

Huygens principle

DEF A very general principle applying to all forms of wave motion which states that every point on the instantaneous position of an advancing phase front (wave front) may be regarded as a source of secondary spherical wavelets. The position of the phase front a moment later is then determined as the envelope of all the secondary wavelets (ad infinitum).
RT diffraction

∞ optics
point sources
refraction
scattering
Schellkunoff principle
spherical waves
wave fronts
wave propagation

Huygens probe

(added May 1997)

GS ESA spacecraft
. **Huygens probe**
unmanned spacecraft
. space probes
. . **Huygens probe**
RT Cassini mission
satellite atmospheres
Titan
Titan atmosphere

Hvittis chondrite

GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . **Hvittis chondrite**

HVOF thermal spraying

(added July 2001)

DEF Thermal spray process where the spray powder particles are injected into a high-velocity jet formed by the combustion of oxygen and fuel. Used to deposit strong, high-density coatings with low residual stress.

UF *high velocity oxy-fuel spraying*
high velocity oxygen fuel thermal spraying

GS spraying
. flame spraying
. . **HVOF thermal spraying**

RT coating
metal spraying
plasma spraying
protective coatings
sprayed coatings

hybrid circuits

GS circuits
. **hybrid circuits**
RT electronic packaging
printed circuits
semiconductor devices
transistor circuits

hybrid combustion

USE **hybrid propellant rocket engines**

hybrid composites

(added April 1992)

GS composite materials
. **hybrid composites**
RT fiber composites
hybrid structures
laminates
metal matrix composites
polymer matrix composites
reinforced plastics
reinforcing fibers
resin matrix composites
superhybrid materials

hybrid computers

GS data processing equipment
. computers
. . **hybrid computers**
RT analog computers
digital computers

hybrid navigation systems

GS navigation
. **hybrid navigation systems**
RT navigation aids
navigation instruments
∞ systems

hybrid propellant rocket engines

UF *hybrid combustion*
GS engines
. rocket engines

. . . hybrid propellant rocket engines

. . . lithergol rocket engines
RT booster rocket engines
∞ hybrid rocket engines
internal combustion engines
jet engines
liquid propellant rocket engines
restartable rocket engines
solid propellant rocket engines
sustainer rocket engines
Vernier engines

hybrid propellants

UF *lithergolic propellants*
GS propellants
. **hybrid propellants**
RT case bonded propellants
chemical fuels
cryogenic rocket propellants
gaseous rocket propellants
gelled rocket propellants
high energy fuels
high energy propellants
hypergolic rocket propellants
liquid rocket propellants
metal fuels
metal propellants
solid propellant ignition
solid propellants
solid rocket propellants

hybrid propulsion

UF *dual mode propulsion*
GS propulsion
. chemical propulsion
. . **hybrid propulsion**
RT jet engines
laser propulsion
rocket engines
rocket-based combined-cycle engines

∞ hybrid rocket engines

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ducted rocket engines
hybrid propellant rocket engines
liquid propellant rocket engines
lithergol rocket engines
solid propellant rocket engines
turboramjet engines

hybrid structures

DEF An assembly constructed of interconnected rigid and flexible structural shapes; designed to sustain dynamic, static, and other loads.

RT composite structures
elastic properties
flexible bodies
hybrid composites
rigid structures
structural stability
∞ structures

hybrids (biology)

USE **genetic engineering**

hybrid-Trefftz finite element method

(added July 1998)

USE **finite element method**
Trefftz method

Hydra

(added September 2006)

DEF Natural satellite of Pluto discovered May 2005.

GS celestial bodies
. natural satellites
. . Pluto satellites
. . . **Hydra**
RT Nix
Pluto (planet)

hydrates

RT aqueous solutions
water

hydration

DEF The formation of a compound by the combining of water with some other substance.

- RT chemical reactions
dehydration
hydrolysis
hydrophobicity
- hydraulic actuators*
USE **actuators**
hydraulic equipment
- hydraulic analogies**
GS analogies
. **hydraulic analogies**
- RT computerized simulation
flow visualization
fluierics
fluidics
gas flow
numerical flow visualization
wave propagation
- hydraulic control**
UF *electrohydraulic control*
RT automatic control
∞ control
electronic control
engine control
fluid power
fluidics
∞ hydraulics
pneumatic control
remote control
solenoid valves
- hydraulic equipment**
UF *hydraulic actuators*
hydraulic heating sources
hydraulic pumps
hydraulic systems
hydraulic valves
GS **hydraulic equipment**
. aircraft hydraulic systems
- RT airborne equipment
automatic control valves
cocks
cushions
∞ equipment
fluid amplifiers
fluid power
fluid switching elements
fly by tube control
gates (openings)
∞ hydraulics
motors
network analysis
network synthesis
pumps
relief valves
servocontrol
servomechanisms
shock absorbers
∞ systems
turbine wheels
valves
water hammer
wheel brakes
- hydraulic fluids**
DEF Liquids used in hydraulic systems for transmitting power.
GS liquids
. **hydraulic fluids**
. . . Skydrol (trademark)
- RT fluid pressure
fluid transmission lines
∞ fluids
high temperature fluids
∞ hydraulics
oils
patch tests
transmission fluids
working fluids
- hydraulic heating sources*
USE **heat sources**
hydraulic equipment
- hydraulic jets**
UF *water jets*
GS fluid jets
. **hydraulic jets**
- RT jet flow
- hydraulic pumps*
USE **hydraulic equipment**
pumps
- hydraulic shock**
GS mechanical shock
. **hydraulic shock**
- hydraulic systems*
USE **hydraulic equipment**
- hydraulic test tunnels**
UF *water tunnels*
GS test facilities
. **hydraulic test tunnels**
- RT ∞ tunnels
- hydraulic valves*
USE **hydraulic equipment**
valves
- ∞ **hydraulics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT fluid dynamics
fluid flow
fluid mechanics
fluid power
hydraulic control
hydraulic equipment
hydraulic fluids
hydrodynamic ram effect
hydrodynamics
hydrology
hydromechanics
hydrostatics
impedance
influence coefficient
limnology
mechanics (physics)
pipes (tubes)
pneumatics
pressure heads
thermo hydraulics
water
water flow
water pressure
- hydrazides**
RT hydrazines
- hydrazine borane**
GS boron compounds
. boron hydrides
. . boranes
. . . **hydrazine borane**
hydrazines
. **hydrazine borane**
hydrogen compounds
. hydrides
. . boron hydrides
. . . boranes
. . . . **hydrazine borane**
- hydrazine engines**
UF *NIMPHE (engine)*
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **hydrazine engines**
- RT monomethylhydrazines
turbo rocket engines
- hydrazine nitrate**
GS nitrogen compounds
. nitrates
. . inorganic nitrates
. . . **hydrazine nitrate**
- hydrazine nitroform**
GS esters
. organic nitrates
. . nitroforms
. . . **hydrazine nitroform**
explosives
. **hydrazine nitroform**
nitrogen compounds
. nitrates
- . . organic nitrates
. . . nitroforms
. . . . **hydrazine nitroform**
propellants
. **hydrazine nitroform**
- hydrazine perchlorates**
GS halogen compounds
. chlorine compounds
. perchlorates
. . . **hydrazine perchlorates**
hydrazines
. **hydrazine perchlorates**
- hydrazines**
GS **hydrazines**
. chlorpromazine
. dihydrazine
. dimethylhydrazines
. ethylene dihydrazine
. hydrazine borane
. hydrazine perchlorates
. methylhydrazine
. . monomethylhydrazines
. tetrafluorohydrazine
- RT aerzine
amines
hydrazides
hydrazones
liquid rocket propellants
rocket propellants
- hydrazinium compounds**
GS nitrogen compounds
. **hydrazinium compounds**
- RT ∞ chemical compounds
- hydrazoic acid**
GS acids
. **hydrazoic acid**
nitrogen compounds
. **hydrazoic acid**
- RT nitrogen hydrides
- hydrazones**
GS nitrogen compounds
. **hydrazones**
- RT hydrazines
- hydrazonium compounds**
RT ∞ chemical compounds
- hydrides**
GS hydrogen compounds
. **hydrides**
. . borohydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. boron hydrides
. . aluminum borohydrides
. . . beryllium borohydrides
. . boranes
. . . carborane
. . . . hydrazine borane
. . . . pentaboranes
. diborane
. dihydrides
. metal hydrides
. . aluminum hydrides
. . . aluminum borohydrides
. . . beryllium hydrides
. . . cesium hydrides
. . lithium hydrides
. . . lithium aluminum hydrides
. . potassium hydrides
. . sodium hydrides
. nitrogen hydrides
. . amino radical
. phosphines
. silanes
. . chlorosilanes
. . . methyl chlorosilanes
. zirconium hydrides
- RT deuterides

hydroballistics

hydrogen production

hydroacoustics

USE **underwater acoustics**

hydroaeromechanics

USE **aerodynamics**

hydroballistics

GS ballistics

. **hydroballistics**

RT

ballistic ranges
hydrodynamics
torpedoes
underwater explosions
underwater trajectories

hydrobarophones

USE **hydrophones**

hydroboration

GS chemical reactions
. **hydroboration**

hydrobromic acid

GS acids

. **hydrobromic acid**
halogen compounds
. bromine compounds
. bromides
. . . **hydrobromic acid**
. halides
. bromides
. . . **hydrobromic acid**

hydrobromides

GS

halogen compounds
. bromine compounds
. bromides
. . . **hydrobromides**
. halides
. bromides
. . . **hydrobromides**
hydrogen compounds
. **hydrobromides**

hydrocarbon combustion

GS combustion

. **hydrocarbon combustion**

RT

explosions
fuel combustion
oxidation
propellant combustion
smog

hydrocarbon fuel production

GS fuel production

. **hydrocarbon fuel production**

RT

agriculture
bioconversion
biomass energy production
energy technology
hydrogen fuels
lignite
solvent refined coal
waste utilization

hydrocarbon fuels

GS fuels

. chemical fuels
. . . **hydrocarbon fuels**
. . . diesel fuels
. . . fossil fuels
. . . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
. . . crude oil
. . . natural gas
. . . . liquefied natural gas
. . . peat
. . . shale oil
. . . gasoline
. . . jet engine fuels
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. . . synthane

RT

acetylene
aircraft fuels
alkanes
amines
automobile fuels
butadiene
clean fuels
coal gasification
coal liquefaction
coal utilization
endothermic fuels
energy policy
environmental chemistry
ethane
ethylene
fuel production
heptanes
hexenes
high energy fuels
hydrogen fuels
hydrogen-based energy
hypergolic rocket propellants
kerogen
kerosene
methanation
methane
paraffins
propane
retort processing
rocket propellants
shale oil
storable propellants
synthetic fuels

hydrocarbon poisoning

GS

diseases
. toxic diseases
. . . **hydrocarbon poisoning**
toxicity
. **hydrocarbon poisoning**
RT benzene poisoning
industrial safety
 ∞ poisoning
smog
toxicity and safety hazard
toxicology

hydrocarbons

GS

organic compounds
. **hydrocarbons**
. . . aliphatic hydrocarbons
. . . . alkanes
. . . . butanes
. . . . cetane
. . . . ethane
. . . . heptanes
. . . . methane
. . . . nitropropane
. . . . nonanes
. . . . octanes
. . . . paraffins
. ceresin
. . . . pentanes
. neopentane
. . . . propane
. . . alkenes
. . . . butenes
. . . . ethylene
. vinylidene
. . . . hexenes
. . . . propylene
. . . . trienes
. . . alkynes
. . . . acetylene
. . . . oxyacetylene
. . . dienes
. . . . butadiene
. . . . heptadiene
. . . . hexadiene
. . . . polybutadiene
. . . carotenoids
. . . carotene
. . . cubane
. . . cyanoacetylene
. . . cyclic hydrocarbons
. . . anthracene
. . . benzene
. . . chlorobenzenes
. . . colchicine

. . . cyclobutane
. . . cyclohexane
. . . cyclopropane
. . . durene
. . . indene
. . . menthol
. . . naphthalene
. . . naphthenes
. . . polycyclic aromatic hydrocarbons
. . . diphenyl compounds
. . . diphenyl hydantoin
. . . fluorohydrocarbons
. . . carbon tetrafluoride
. . . chlorofluoromethane
. . . polytetrafluoroethylene
. . . . teflon (trademark)
. . . mesitylene
. . . methylene
. . . methylidyne
. . . natural gas
. . . liquefied natural gas
. . . phenanthrene
. . . pyrenes
. . . quinoxalines
. . . stilbene
. . . toluene
. . . triphenyls
. . . xylene
RT ∞ aromatic compounds
carbon compounds
cracking (chemical engineering)
organic peroxides

hydrochloric acid

GS

acids
. **hydrochloric acid**
halogen compounds
. chlorine compounds
. . . chlorides
. . . . hydrogen chlorides
. . . . **hydrochloric acid**
. halides
. . . chlorides
. . . . hydrogen chlorides
. . . . **hydrochloric acid**

hydrochlorides

GS

halogen compounds
. chlorine compounds
. . . chlorides
. . . . **hydrochlorides**
. halides
. . . chlorides
. . . . **hydrochlorides**
RT hydrogen chlorides

hydroclimatology

DEF The study of the physical and often the chemical factors that characterize a particular environment.

GS climatology

. **hydroclimatology**

RT

agroclimatology
hydrography
hydrology
meteorology
oceanography

hydrocracking

DEF Technique for the catalytic conversion of coal into liquid fuels.

GS

chemical reactions
. cracking (chemical engineering)
. . . **hydrocracking**
. . . hydrogenolysis
. . . **hydrocracking**
decomposition
. cracking (chemical engineering)
. . . **hydrocracking**
. . . hydrogenolysis
. . . **hydrocracking**
fractionation
. **hydrocracking**
RT coal gasification
coal liquefaction

hydrocyanic acid

UF

hydrogen cyanides
prussic acid

GS

acids

- . **hydrocyanic acid**
- hydrogen compounds
- . **hydrocyanic acid**
- nitrogen compounds
- . **hydrocyanic acid**
- RT CN emission
- HCN lasers

- hydrodynamic coefficients**
- DEF The factors producing motions in floating objects in liquids.
- GS coefficients
- . **hydrodynamic coefficients**
- RT computational fluid dynamics
- ∞ drag coefficients
- flow distribution
- flow velocity
- liquid flow
- sea roughness
- ship hulls
- steady flow
- unsteady flow
- water waves

- hydrodynamic equations**
- GS equations of motion
- . kinetic equations
- . . **hydrodynamic equations**
- . . . Burnett equations
- . . . Helmholtz vorticity equation
- RT Boltzmann transport equation
- ∞ equations
- flow stability
- flow theory
- fluid mechanics
- gas dynamics
- hydrodynamics
- meteorology
- plasma dynamics

- hydrodynamic ram effect**
- DEF The physical effect (force) transmitted to the walls of a liquid filled container by the action of a projectile penetrating the container and transferring its energy to the liquid as kinetic energy. The fluid, in turn, transfers this kinetic energy to the walls of the container, causing excessive structural damage.
- UF *ram effect (hydrodynamics)*
- RT ∞ effects
- fluid filled shells
- ∞ hydraulics
- hypervelocity impact
- impact
- kinetic energy
- liquid filled shells
- momentum transfer
- penetration

- hydrodynamic stability*
- USE **flow stability**

- hydrodynamic tunnels*
- USE **plasma jet wind tunnels**

- hydrodynamics**
- GS mechanics (physics)
- . fluid mechanics
- . . fluid dynamics
- . . . **hydrodynamics**
- elastohydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- . . hydromechanics
- . . . **hydrodynamics**
- elastohydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- RT ballast (mass)
- ∞ dynamics
- Earth sciences
- Euler equations of motion
- flow theory
- fluid flow
- fluid power
- gas dynamics
- ∞ hydraulics
- hydroballistics
- hydrodynamic equations
- hydrostatics

- internal flow
- Krook equation
- Lagrange coordinates
- ocean dynamics
- pressure gradients
- pressure heads
- seepage
- ship hulls
- thermohydraulics
- water
- water flow
- water hammer
- water pressure

- hydroelasticity**
- GS mechanical properties
- . elastic properties
- . . **hydroelasticity**
- RT compressibility
- compressible fluids
- modulus of elasticity
- thermoelasticity
- viscoelasticity

- hydroelectric power stations**
- UF *hydropower stations*
- GS stations
- . **hydroelectric power stations**
- RT electric power plants
- electric power transmission
- hydroelectricity
- ∞ power plants
- ∞ power transmission
- turbogenerators
- water wheels

- hydroelectricity**
- DEF Electric power produced by water power using water wheels, turbogenerators, or other conversion equipment.
- GS electricity
- . **hydroelectricity**
- renewable energy
- . **hydroelectricity**
- RT dams
- electric current
- ∞ electric power
- hydroelectric power stations
- ∞ power plants
- turbogenerators

- hydrofluoric acid**
- UF *hydrogen fluorides*
- GS acids
- . **hydrofluoric acid**
- halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **hydrofluoric acid**
- . . . halides
- . . . fluorides
- . . . **hydrofluoric acid**

- hydrofoil boats*
- USE **hydrofoil craft**

- hydrofoil craft**
- UF *hydrofoil boats*
- RT captured air bubble vehicles
- hydrofoils
- hydroplanes (vehicles)
- ships

- hydrofoil oscillations**
- GS oscillations
- . **hydrofoil oscillations**
- RT flow stability
- flutter
- hydrofoils
- supercavitating flow

- hydrofoils**
- GS **hydrofoils**
- . keels
- RT airfoils
- ∞ blades
- elevators (control surfaces)
- fins
- ∞ foils
- foils (materials)

- guide vanes
- hulls (structures)
- hydrofoil craft
- hydrofoil oscillations
- hydroplanes (surfaces)
- hydroplaning
- landing gear
- marine rudders
- ships
- skis
- streamlining
- tail assemblies

- hydroforming**
- GS metal working
- . **hydroforming**
- RT dehydrogenation

- hydrogen**
- GS chemical elements
- . **hydrogen**
- . . hydrogen isotopes
- . . . deuterium
- . . . hydrogen 4
- . . . metallic hydrogen
- . . . tritium
- . liquid hydrogen
- gases
- . **hydrogen**
- . . hydrogen isotopes
- . . . deuterium
- . . . hydrogen 4
- . . . metallic hydrogen
- . . . tritium
- . liquid hydrogen
- RT Balmer series
- deuterium plasma
- fuels
- hydrogen atoms
- hydrogen ions
- hydrogen plasma
- hydrogenation
- hydrogenolysis
- hydronium ions
- metallicity
- Neptune atmosphere
- ortho hydrogen
- para hydrogen
- Paschen series
- Rydberg series
- synthane
- Uranus atmosphere

- hydrogen 2*
- USE **deuterium**

- hydrogen 3*
- USE **tritium**

- hydrogen 4**
- GS chemical elements
- . hydrogen
- . . hydrogen isotopes
- . . . **hydrogen 4**
- . nuclides
- . isotopes
- . . . hydrogen isotopes
- **hydrogen 4**
- gases
- . hydrogen
- . . hydrogen isotopes
- . . . **hydrogen 4**

- hydrogen air fuel cells*
- USE **hydrogen oxygen fuel cells**

- hydrogen atoms**
- GS atoms
- . **hydrogen atoms**
- RT H I regions
- hydrogen

- hydrogen azides**
- GS explosives
- . **hydrogen azides**
- nitrogen compounds
- . azides (inorganic)
- . . **hydrogen azides**
- propellants

hydrogen bonds

. hydrogen azides

hydrogen bombs

USE **fusion weapons**

hydrogen bonds

GS chemical bonds
. **hydrogen bonds**
RT molecular structure
water

hydrogen chloride lasers

USE **HCL lasers**

hydrogen chlorides

GS halogen compounds
. chlorine compounds
. chlorides
. . . **hydrogen chlorides**
. . . . hydrochloric acid
. halides
. chlorides
. . . **hydrogen chlorides**
. . . . hydrochloric acid
RT hydrochlorides

hydrogen clouds

GS **hydrogen clouds**
. H I regions
. H II regions
. Orion nebula
RT ∞ clouds
drop size
galactic rotation
gases
molecular clouds
neutral gases
plasma clouds
spin temperature
star formation
vapor phases
vapors

hydrogen compounds

GS **hydrogen compounds**
. deuterium compounds
. deuterides
. deuterium fluorides
. heavy water
. hydrides
. borohydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. boron hydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. . . boranes
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
. diborane
. dihydrides
. metal hydrides
. . . aluminum hydrides
. . . . aluminum borohydrides
. . . beryllium hydrides
. . . cesium hydrides
. . . lithium hydrides
. . . . lithium aluminum hydrides
. . . potassium hydrides
. . . sodium hydrides
. nitrogen hydrides
. . . amino radical
. phosphines
. silanes
. . . chlorosilanes
. . . methyl chlorosilanes
. zirconium hydrides
. hydrobromides
. hydrocyanic acid
. hydrogen peroxide
. hydrogen sulfide
. hydrosulfites
. light water
RT acids
∞ chemical compounds

water

hydrogen cyanide lasers

USE **HCN lasers**

hydrogen cyanides

USE **hydrocyanic acid**

hydrogen deuterium oxide

USE **heavy water**

hydrogen embrittlement

DEF A decrease in fracture strength of metals due to the incorporation of hydrogen in the metal lattice.

GS embrittlement
. **hydrogen embrittlement**
RT chemisorption
gas-metal interactions
iron
steels

hydrogen engines

DEF Internal combustion engines utilizing gaseous hydrogen as the fuel.

GS engines
. air breathing engines
. gas turbine engines
. . . **hydrogen engines**
. internal combustion engines
. gas turbine engines
. . . **hydrogen engines**
. turbine engines
. gas turbine engines
. . . **hydrogen engines**
RT aircraft engines
automobiles

hydrogen fluoride lasers

USE **HF lasers**

hydrogen fluorides

USE **hydrofluoric acid**

hydrogen fuels

GS fuels
. chemical fuels
. liquid fuels
. . . **hydrogen fuels**
RT cryogenic rocket propellants
deuterium
fuel cells
fuel production
gaseous rocket propellants
gelled propellants
hydrocarbon fuel production
hydrocarbon fuels
hydrogen-based energy
liquid hydrogen
liquid rocket propellants
ramjet engines
slush hydrogen
water splitting

hydrogen ions

GS ions
. **hydrogen ions**
RT acidity
H II regions
hydrogen
hydronium ions
pH
pH factor
positive ions
protons

hydrogen isotopes

GS chemical elements
. hydrogen
. . . **hydrogen isotopes**
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium
. nuclides
. isotopes
. . . **hydrogen isotopes**
. . . . deuterium
. . . . hydrogen 4
. . . . metallic hydrogen

. . . . tritium
gases
. hydrogen
. . . **hydrogen isotopes**
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium

hydrogen masers

DEF A stimulated emission device in which hydrogen gas provides an output signal with a high degree of stability and spectral purity.

GS stimulated emission devices
. masers
. . gas masers
. . . **hydrogen masers**

hydrogen metabolism

DEF The physical and chemical processes by which an organism transforms the complex hydrogen components of foodstuffs into simple hydrogen compounds by disassimilation and catabolism in the production of energy.

GS metabolism
. **hydrogen metabolism**
RT carbohydrate metabolism
nitrogen metabolism
oxygen metabolism
respiration
secretions

hydrogen oxygen engines

DEF Engines using liquid hydrogen as fuel and liquid oxygen as oxidizer. Used for hydrox engines and lox-hydrogen engines.

UF *hydrox engines*
LOX-hydrogen engines
GS engines
. rocket engines
. liquid propellant rocket engines
. . . **hydrogen oxygen engines**
. . . . J-2 engine
. . . . M-1 engine
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
RT auxiliary propulsion
liquid air cycle engines
space station propulsion
turborocket engines

hydrogen oxygen fuel cells

UF *hydrogen air fuel cells*
GS electric generators
. direct power generators
. fuel cells
. . . **hydrogen oxygen fuel cells**
electrochemical cells
. fuel cells
. . . **hydrogen oxygen fuel cells**
RT phosphoric acid fuel cells

hydrogen perchlorate

GS halogen compounds
. chlorine compounds
. perchlorates
. . . **hydrogen perchlorate**

hydrogen peroxide

GS chalcogenides
. oxides
. anhydrides
. . . peroxides
. . . . inorganic peroxides
. . . . **hydrogen peroxide**
. . . dioxides
. . . **hydrogen peroxide**
hydrogen compounds
. **hydrogen peroxide**
RT rocket oxidizers

hydrogen plasma

GS particles
. charged particles
. energetic particles
. . . plasmas (physics)
. . . . **hydrogen plasma**
. deuterium plasma
. corpuscular radiation
. energetic particles

... plasmas (physics)
 ... **hydrogen plasma**
 ... deuterium plasma
 RT argon plasma
 deuterium
 helium plasma
 hydrogen
 oxygen plasma
 solar wind
 Stark effect

hydrogen production
 DEF Production of hydrogen for fuel purposes by photosynthetic, chemical, electrical, thermal, electrochemical, or other means.
 RT electrolysis
 energy conversion
 fuels
 hydrides
 hydrogen-based energy
 hydrolysis
 lignite
 solar energy conversion
 thermal dissociation
 water splitting

hydrogen recombinations
 GS recombination reactions
 . **hydrogen recombinations**

hydrogen sulfide
 GS chalcogenides
 . sulfides
 . . inorganic sulfides
 . . . **hydrogen sulfide**
 hydrogen compounds
 . **hydrogen sulfide**
 sulfur compounds
 . sulfides
 . . inorganic sulfides
 . . . **hydrogen sulfide**

hydrogenation
 GS chemical reactions
 . reduction (chemistry)
 . . **hydrogenation**
 RT asphaltenes
 cyclohexane
 dehydrogenation
 hydrogen
 refining

hydrogen-based energy
 RT ∞ energy
 energy technology
 fuel cells
 gas mixtures
 hydrocarbon fuels
 hydrogen fuels
 hydrogen production
 liquid hydrogen
 nickel hydrogen batteries
 renewable energy

hydrogenolysis
 GS chemical reactions
 . **hydrogenolysis**
 . . hydrocracking
 decomposition
 . **hydrogenolysis**
 . . hydrocracking
 RT cracking (chemical engineering)
 dehydrogenation
 hydrogen
 ∞ reduction

hydrogenomonas
 GS autotrophs
 . **hydrogenomonas**
 microorganisms
 . bacteria
 . . **hydrogenomonas**

hydrogeology
 DEF The science that deals with subsurface waters and with related geologic aspects of surface waters. The term is also used in the more restrictive sense of ground water geology.
 GS geology
 . **hydrogeology**

hydrology
 . **hydrogeology**
 RT aquifers
 core sampling
 erosion
 flood plains
 flood predictions
 geysers
 glaciology
 hydrology models
 hydrostatics
 ∞ science
 soil erosion
 stratigraphy
 watersheds

hydrography
 DEF The science that deals with the physical aspects of all waters on the Earth's surface, especially the compilation of navigational charts.
 RT geophysics
 hydroclimatology
 hydrology
 hydrometeorology
 ice mapping
 limnology
 meteorology
 ocean currents
 ocean surface
 oceanography

hydrokinetics
 USE **hydromechanics**

hydrological cycle
 UF *water cycle (hydrology)*
 GS cycles
 . **hydrological cycle**
 RT air water interactions
 Earth hydrosphere
 evaporation
 hydrology
 hydrology models
 hydrometeorology
 precipitation (meteorology)

hydrology
 (added February 1991)
 DEF The science that deals with global water (both liquid and solid), its properties, circulation, and distribution, on and under the Earth's surface and in the atmosphere through evapotranspiration or is discharged into oceans. In recent years, the scope of hydrology has been expanded to include environmental and economic aspects.

UF *hydroscience*
 GS **hydrology**
 . hydrogeology
 RT alluvium
 aquifers
 climatology
 drainage
 drainage patterns
 drought
 Earth hydrosphere
 Earth planetary structure
 Earth sciences
 flood control
 flood damage
 flood plains
 flood predictions
 floods
 geochemistry
 geophysics
 Great Salt Lake (UT)
 ∞ hydraulics
 hydroclimatology
 hydrography
 hydrological cycle
 hydrometeorology
 hydrometeors
 ice mapping
 International Hydrological Decade
 Lake Erie
 Lake Huron
 Lake Michigan
 Lake Ontario
 Lake Superior
 limnology

marine chemistry
 meteorology
 oceanography
 polar meteorology
 precipitation (meteorology)
 rain
 streams
 structural properties (geology)
 water
 water management
 water resources
 watersheds

hydrology models
 DEF Mathematical or physical representations by which the circulation, distribution, and properties of the waters of the Earth can be studied.

GS models
 . **hydrology models**
 RT climate models
 drainage
 floods
 hydrogeology
 hydrological cycle
 precipitation (meteorology)
 rain
 streams
 water flow

hydrolysis
 GS chemical reactions
 . **hydrolysis**
 RT ammonolysis
 cracking (chemical engineering)
 extraction
 hydration
 hydrogen production
 phosphatases

hydromagnetic flow
 USE **magnetohydrodynamic flow**

hydromagnetic stability
 USE **magnetohydrodynamic stability**

hydromagnetic waves
 USE **magnetohydrodynamic waves**

hydromagnetics
 USE **magnetohydrodynamics**

hydromagnetism
 USE **magnetohydrodynamics**

hydromechanics
 UF *hydrokinetics*
 GS mechanics (physics)
 . fluid mechanics
 . . **hydromechanics**
 . . . hydrodynamics
 elasto-hydrodynamics
 electrohydrodynamics
 magnetohydrodynamics
 . . . hydrostatics
 magnetohydrostatics
 RT fluid dynamics
 fluid flow
 ∞ hydraulics
 kinetics
 ∞ science
 water

hydrometallurgy
 RT chlorination
 electro-dialysis
 filtration
 ion exchanging
 leaching
 ∞ metallurgy
 ∞ precipitation
 precipitation (chemistry)
 refining
 sulfation

hydrometeorology
 GS meteorology
 . **hydrometeorology**
 . . marine meteorology
 RT agrometeorology

hydrometeors

hydrography
hydrological cycle
hydrology
precipitation (meteorology)
water balance

hydrometeors

(added March 1995)

DEF A minute droplet of water or crystal of ice falling through or suspended in the atmosphere.

GS condensates
. **hydrometeors**
RT atmospheric moisture
dew
drops (liquids)
fog
hydrology
ice nuclei
precipitation (meteorology)

hydrometers

DEF Instruments used for measuring the specific gravity of a liquid.

GS measuring instruments
. **hydrometers**
RT chemical analysis
density (mass/volume)
density measurement
weight measurement

hydronium ions

GS ions
. molecular ions
. . **hydronium ions**
. positive ions
. . **hydronium ions**
RT hydrogen
hydrogen ions

hydrophobicity

(added June 2000)

DEF The degree to which a substance is insoluble in water, or resists wetting or hydration.

GS hygral properties
. **hydrophobicity**
RT adsorption
chemical properties
hydration
hygroscopicity
moisture resistance
∞ properties
solubility
sorption
surface properties
surfactants
waterproofing
wettability
wetting

hydrophones

DEF Microphones suitable for use in water or other liquid. Used for hydrobarophones.

UF *hydrobarophones*
GS transducers
. sound transducers
. . electroacoustic transducers
. . . **hydrophones**
RT microphones
sonar
sonobuoys

hydroplanes (surfaces)

UF *hydroskis*
RT hydrofoils
hydroplaning
skis
∞ systems

hydroplanes (vehicles)

RT hydrofoil craft
hydroplaning
∞ vehicles

hydroplaning

RT hydrofoils
hydroplanes (surfaces)
hydroplanes (vehicles)
skid landings
skidding

water landing

hydroponics

DEF Growing of plants in a nutrient with the mechanical support of an inert medium such as sand.

RT agriculture
aquatic plants
aquaculture
plants (botany)
vegetation growth

hydropower stations

USE **hydroelectric power stations**

hydropyrolysis

DEF A coal-to-liquid process in which bituminous coal, lignite, tars, sand and related materials are rapidly heated to 1000-1100 degrees K in pressurized hydrogen gasification reactors to generate pure methane.

GS gasification
. coal gasification
. . **hydropyrolysis**
RT coal
coal liquefaction
lignite
methanation
methane

hydrosience

USE **hydrology**

hydroskis

USE **hydroplanes (surfaces)**

hydrosphere (Earth)

USE **Earth hydrosphere**

hydrospinning

GS forming techniques
. metal spinning
. . **hydrospinning**
metal working
. metal spinning
. . **hydrospinning**
spin
. metal spinning
. . **hydrospinning**

hydrostatic pressure

DEF A state of stress in which all the principal stresses are equal (and there is no shear stress).

GS pressure
. static pressure
. . **hydrostatic pressure**
RT center of pressure
elevation
head (fluid mechanics)
hydrostatics
isostatic pressure
pressure dependence
pressure heads
transition pressure
water pressure

hydrostatics

GS mechanics (physics)
. fluid mechanics
. . hydromechanics
. . . **hydrostatics**
. . . . magnetohydrostatics
statics
. **hydrostatics**
. . magnetohydrostatics

RT aerostatics
elevation
head (fluid mechanics)
∞ hydraulics
hydrodynamics
hydrogeology
hydrostatic pressure
isostasy
pressure gradients
pressure heads
water

water pressure

hydrosulfites

GS hydrogen compounds
. **hydrosulfites**
sulfur compounds
. sulfites
. . **hydrosulfites**

hydrothermal crystal growth

GS growth
. crystal growth
. . **hydrothermal crystal growth**
RT electroepitaxy

hydrothermal stress analysis

DEF The evaluation of the combined effects of temperature-humidity cycling.

RT hydrothermal systems
hygral properties
hygroscopicity
moisture content
moisture resistance

hydrothermal systems

DEF Energy systems utilizing hot water from geysers, hot springs, solar heating, and other sources.

RT aquifers
energy conversion
geothermal resources
geysers
heating
hydrothermal stress analysis
solar heating
submarine hydrothermal vents
∞ systems

hydrox engines

USE **hydrogen oxygen engines**

hydroxides

GS **hydroxides**
. lithium hydroxides
. potassium hydroxides
. sodium hydroxides
RT alkalis

hydroxycorticosteroid

GS organic compounds
. lipids
. . steroids
. . . corticosteroids
. . . . **hydroxycorticosteroid**
. cortisone
secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . **hydroxycorticosteroid**
. cortisone
RT adrenal metabolism

hydroxyl compounds

GS **hydroxyl compounds**
. alcohols
. . ethyl alcohol
. . glycols
. . isopropyl alcohol
. . methyl alcohol
. . phenols
. . . bisphenols
. . . cresols
. . . phloroglucinol
. . . thymol
. . polyvinyl alcohol
. . triols
. . . cyanuric acid
RT ∞ chemical compounds
organic compounds

hydroxyl emission

GS electromagnetic radiation
. radio waves
. . radio emission
. . . **hydroxyl emission**
emission
. radio emission
. . **hydroxyl emission**
RT emission spectra

radio sources (astronomy)

hydroxyl radicals

- GS radicals
 - . free radicals
 - . . **hydroxyl radicals**
- RT alcohols
- ∞ chemistry
 - formyl ions
 - glycols
 - ions

hydroxylamine sulfate

- GS organic compounds
 - . amines
 - . . **hydroxylamine sulfate**
- sulfur compounds
 - . sulfates
 - . . **hydroxylamine sulfate**

hydroxylammonium perchlorates

- GS ammonium compounds
 - . **hydroxylammonium perchlorates**
- halogen compounds
 - . chlorine compounds
 - . . perchlorates
 - . . . **hydroxylammonium perchlorates**

hygiene

- GS **hygiene**
 - . oral hygiene
- RT bathing
 - cleanliness
 - consumables (spacecrew supplies)
 - health
 - housekeeping (spacecraft)
 - public health
 - sanitation

hygral properties

- DEF The affinity of something for moisture.
- GS **hygral properties**
 - . hydrophobicity
- RT humidity
 - hydrothermal stress analysis
 - moisture
 - porosity
- ∞ properties

hygrometers

- DEF Instruments for measuring the humidity of the atmosphere.
- GS measuring instruments
 - . moisture meters
 - . . **hygrometers**
 - . . . psychrometers
- RT chemical analysis
 - dew point
 - humidity
 - humidity measurement
 - meteorological instruments

hygroscopicity

- RT chemical properties
 - hydrophobicity
 - hydrothermal stress analysis
 - material absorption
 - moisture content
 - moisture resistance
- ∞ physical properties
 - solubility
 - wettability

Hyla-Star rocket vehicle

- GS launch vehicles
 - . **Hyla-Star rocket vehicle**
- rocket vehicles
 - . single stage rocket vehicles
 - . . **Hyla-Star rocket vehicle**
- RT liquid propellant rocket engines
 - Titan 2 ICBM

Hylleraas coordinates

- GS coordinates
 - . **Hylleraas coordinates**
- RT quantum mechanics

two body problem

hyoscine

- UF *scopolamine*
- GS bases (chemical)
 - . alkaloids
 - . . **hyoscine**
- epoxy compounds
 - . **hyoscine**
- nitrogen compounds
 - . alkaloids
 - . . **hyoscine**
- organic compounds
 - . amines
 - . . **hyoscine**
- cyclic compounds
 - . . heterocyclic compounds
 - . . . alkaloids
 - **hyoscine**

hyperbaric chambers

- DEF Chambers used to induce a decrease in ambient pressure as would occur in ascending to altitude. This type of chamber is primarily used for training and experimental purposes. It is also called an altitude chamber or a decompression chamber.
- GS compartments
 - . test chambers
 - . . pressure chambers
 - . . . **hyperbaric chambers**
- RT ∞ chambers
 - high pressure
 - vacuum chambers

hyperbolas

- DEF Open curves with two branches, all points of which have a constant difference in distance from two fixed points called foci.
- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . conics
 - **hyperbolas**
- RT hyperbolic trajectories

hyperbolic coordinates

- UF *hyperbolic space*
- GS coordinates
 - . **hyperbolic coordinates**

hyperbolic differential equations

- GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . **hyperbolic differential equations**
- RT Dirichlet problem
 - ∞ equations
 - essentially non-oscillatory schemes
 - wave equations

hyperbolic functions

- GS analysis (mathematics)
 - . complex variables
 - . . **hyperbolic functions**
 - . . real variables
 - . . . **hyperbolic functions**
- functions (mathematics)
 - . **hyperbolic functions**
- RT exponential functions
 - ∞ hyperbolic systems
 - method of characteristics
 - orthogonal functions
 - Riemann waves
 - Riesz theorem

hyperbolic navigation

- DEF Radio navigation in which a hyperbolic line of position is established by signals received from two stations at a constant time difference.
- GS navigation
 - . radio navigation
 - . . **hyperbolic navigation**
 - . . . Decca navigation
 - . . . LORAC navigation system
 - loran
 - loran C
 - loran D
 - . . . Shoran

- RT air navigation
 - ∞ hyperbolic systems
 - inertial navigation
 - surface navigation

hyperbolic reentry

- GS atmospheric entry
 - . reentry
 - . . **hyperbolic reentry**
- RT reentry trajectories

hyperbolic space

USE **hyperbolic coordinates**

∞ **hyperbolic systems**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT hyperbolic functions
 - hyperbolic navigation
- ∞ systems

hyperbolic trajectories

- GS trajectories
 - . **hyperbolic trajectories**
- RT celestial mechanics
 - escape velocity
 - hyperbolas
 - spacecraft trajectories

hyperbranched polymers

(added October 2000)

USE **dendrimers**

hypercapnia

- GS carbon dioxide tension
 - . **hypercapnia**
- RT blood
 - ∞ breathing
 - respiratory rate
 - respiratory system

hypercube multiprocessors

- DEF Distributed-memory, message-passing multiprocessors designed to reduce the number of interconnections compared to the number of processors. Other simple geometries such as rings, meshes, or trees of processors can be embedded in hypercubes.
- GS data processing equipment
 - . computers
 - . . **hypercube multiprocessors**
- RT architecture (computers)
 - interprocessor communication
 - multiprocessing (computers)
 - parallel computers
 - parallel processing (computers)
 - sorting algorithms
 - supercomputers

hyperfine structure

- RT atomic structure
 - fine structure
 - line spectra
 - muon spin rotation
 - spectrum analysis
- ∞ structures

hypergeometric functions

- UF *Jacobi polynomials*
- GS analysis (mathematics)
 - . complex variables
 - . . **hypergeometric functions**
 - . . functions (mathematics)
 - . . **hypergeometric functions**
- RT Bessel functions
 - geometry
 - hyperspaces

hypergeometry

USE **hyperspaces**

hyperglycemia

- GS metabolism
 - . carbohydrate metabolism
 - . . **hyperglycemia**

hypergolic rocket propellants

- GS propellants
 - . rocket propellants
 - . . liquid rocket propellants

Hyperion

- ... **hypergolic rocket propellants**
- RT cryogenic rocket propellants
- gelled rocket propellants
- hybrid propellants
- hydrocarbon fuels
- monomethylhydrazines
- pyrophoric materials
- solid propellant ignition
- spontaneous combustion
- storable propellants

hypergravity

- (added June 2001)
- USE **high gravity environments**

Hyperion

- DEF One of the natural satellites of Saturn orbiting at a mean distance of 1,481,000 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . icy satellites
 - . . . **Hyperion**
 - . . Saturn satellites
 - . . . **Hyperion**
- RT Saturn (planet)

hyperkinesia

- DEF Excessive exercise, that is often accompanied by uncontrollable muscular movement.
- GS physical exercise
 - . **hyperkinesia**
- RT exhaustion
- fatigue (biology)
- hypokinesia
- stress (physiology)
- work capacity

hypermedia

- USE **multimedia**

hypernea

- RT mental performance

hypernuclei

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . nuclei (nuclear physics)
 - **hypernuclei**
 - . corpuscular radiation
 - . . energetic particles
 - . . . nuclei (nuclear physics)
 - **hypernuclei**
- RT elementary particles
- radioactive decay

hyperons

- DEF In the classification of subatomic particles according to mass, the heaviest of such particles. Some large and highly unstable components of cosmic rays are hyperons.
- GS particles
 - . elementary particles
 - . . bosons
 - . . . mesons
 - **hyperons**
 - xi hyperons
 - . . fermions
 - . . . baryons
 - **hyperons**
 - xi hyperons
 - . . hadrons
 - . . . baryons
 - **hyperons**
 - xi hyperons
 - . . mesons
 - **hyperons**
 - xi hyperons
 - . . nuclear particles
 - . . bosons
 - . . . mesons
 - **hyperons**
 - xi hyperons
- RT antiparticles
- baryon resonance
- charged particles
- meson resonance
- nucleons

strangeness

hyperopia

- GS acuity
 - . visual acuity
 - . . **hyperopia**
 - . defects
 - . . **hyperopia**
- RT eye diseases
- vision

hyperoxia

- DEF A condition in which the total oxygen content of the body is increased above that normally existing at sea level. Used for oxygen toxicity.
 - UF *oxygen toxicity*
 - RT hyperventilation
 - oximetry
 - oxygen consumption
 - toxic diseases
 - toxicity
- ## hyperplanes
- GS analysis (mathematics)
 - . real variables
 - . . **hyperplanes**
- RT hyperspaces
 - polytopes
 - set theory

hyperpnea

- RT ∞ breathing
- respiratory rate

hypersomnia

- GS sleep
- . **hypersomnia**

hypersonic aircraft

- GS hypersonic vehicles
 - . **hypersonic aircraft**
 - . . hypersonic gliders
 - . . . X-20 aircraft
- RT aerospace planes
- ∞ aircraft
- boostglide vehicles
- hypersonics
- jet aircraft
- ∞ low wing aircraft
- research aircraft
- supersonic aircraft
- sweptback tail surfaces
- sweptback wings
- trapezoidal tail surfaces

hypersonic boundary layer

- GS boundary layers
 - . **hypersonic boundary layer**
- RT laminar boundary layer
- thermal boundary layer
- turbulent boundary layer

hypersonic combustion

- GS combustion
 - . **hypersonic combustion**
- RT erosive burning
- fuel combustion

hypersonic flight

- RT aerodynamics
- ∞ flight
- hypersonics
- missiles
- rocket flight
- supersonic flight
- waveriders
- X-43 vehicle

hypersonic flow

- DEF In aerodynamics, flow of a fluid over a body at speeds much greater than the speed of sound and in which the shock waves start at a finite distance from the surface of the body.
- GS fluid flow
 - . **hypersonic flow**
- RT aerodynamics
- Burnett equations
- cascade wind tunnels
- compressible flow

- flow velocity
- gas flow
- hypersonics
- hypervelocity wind tunnels
- Lighthill gas model
- shock tubes
- shock tunnels
- shock waves
- supersonic flow
- wind tunnels

hypersonic forces

- GS aerodynamic forces
 - . **hypersonic forces**
- RT aerodynamic drag
- hypersonics
- lift

hypersonic gliders

- DEF Unpowered vehicles, specifically reentry vehicles, designed to flow at hypersonic speeds.
- GS gliders
 - . **hypersonic gliders**
 - . . X-20 aircraft
 - hypersonic vehicles
 - . hypersonic aircraft
 - . . **hypersonic gliders**
 - . . . X-20 aircraft
- RT aerospace planes
- ∞ aircraft
- ASSET gliders
- boostglide vehicles
- HL-10 reentry vehicle
- HLD-35 reentry vehicle
- lifting reentry vehicles
- paragliders

hypersonic heat transfer

- GS transmission
 - . heat transmission
 - . . heat transfer
 - . . . aerodynamic heat transfer
 - **hypersonic heat transfer**
- RT aerothermodynamics
- hypersonics
- supersonic heat transfer

hypersonic inlets

- GS intake systems
 - . air intakes
 - . . **hypersonic inlets**
- RT bypass ratio
- ∞ diffusers
- engine inlets
- inlet airframe configurations
- nose inlets
- side inlets
- supersonic inlets

hypersonic nozzles

- RT conical nozzles
- ∞ nozzles
- rocket nozzles
- supersonic nozzles
- transonic nozzles
- wind tunnel nozzles

hypersonic reentry

- GS atmospheric entry
 - . reentry
 - . . **hypersonic reentry**
 - . . . uncontrolled reentry (spacecraft)
- RT aerodynamic heating
- aerothermodynamics
- Berenice rocket vehicle
- boundary layer plasmas
- entry guidance (STS)
- reentry effects
- reentry physics
- spacecraft reentry

hypersonic shock

- RT hypersonics
- Mach cones
- noise (sound)
- shock waves

hypersonic speed

- SN (MACH 5 OR GREATER)

- GS rates (per time)
 . **hypersonic speed**
 velocity
 . **hypersonic speed**
- RT high speed
 hypersonics
 ∞ hypervelocity
 supersonic speed
- hypersonic test apparatus**
- RT hypersonics
 hypervelocity wind tunnels
 missile ranges
 supersonic test apparatus
 ∞ test equipment
- hypersonic vehicles**
- GS **hypersonic vehicles**
 . hypersonic aircraft
 . . hypersonic gliders
 . . . X-20 aircraft
 . X-30 vehicle
 . X-37 vehicle
 . X-43 vehicle
- RT ∞ flight vehicles
 HOPE aerospace plane
 hypersonics
 ∞ insulated structures
 National Aerospace Plane Program
 recoverable spacecraft
 reentry vehicles
 ∞ spacecraft
 test vehicles
 ∞ vehicles
 waveriders
 ∞ winged vehicles
- hypersonic wakes**
- GS wakes
 . **hypersonic wakes**
- RT aircraft wakes
 bow waves
 hypersonics
 shock waves
 supersonic wakes
- hypersonic wind tunnels**
- GS test facilities
 . wind tunnels
 . . **hypersonic wind tunnels**
 . . . cascade wind tunnels
 . . . hotshot wind tunnels
 . . . plasma jet wind tunnels
 . . . shock tunnels
- RT blowdown wind tunnels
 combustion wind tunnels
 hypervelocity wind tunnels
 low density wind tunnels
 magnetic pistons
 shock tubes
 subsonic wind tunnels
 supersonic wind tunnels
 transonic wind tunnels
- hypersonics**
- DEF That branch of aerodynamics that deals with hypersonic flow.
- GS mechanics (physics)
 . fluid mechanics
 . . fluid dynamics
 . . . gas dynamics
 aerodynamics
 **hypersonics**
- RT aerothermodynamics
 hypersonic aircraft
 hypersonic flight
 hypersonic flow
 hypersonic forces
 hypersonic heat transfer
 hypersonic shock
 hypersonic speed
 hypersonic test apparatus
 hypersonic vehicles
 hypersonic wakes
 supersonic speed
 supersonics
- hyperspaces**
- UF *hypergeometry*
 RT hypergeometric functions
- hyperplanes
 hyperspheres
 phase-space integral
 ∞ space
- hyperspheres**
- RT geometry
 hyperspaces
 real variables
- hypertension**
- GS drugs
 . vasoconstrictor drugs
 . . **hypertension**
 organic compounds
 . peptides
 . . polypeptides
 . . . **hypertension**
 secretions
 . endocrine secretions
 . . hormones
 . . . **hypertension**
- hypertension**
- GS pressure
 . blood pressure
 . . **hypertension**
- RT myocardial infarction
 tranquilizers
- hypertext**
- (added July 1995)
- RT artificial intelligence
 document markup languages
 electronic publishing
 human-computer interface
 information retrieval
 knowledge representation
- hyperthermia**
- RT body temperature
 fever
 heat stroke
 skin temperature (biology)
 thermoregulation
- hypertonia*
 USE **osmosis**
- hypertrophy*
 USE **growth**
- ∞ **hypervelocity**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Extremely high velocity. Applied by physicists to speeds approaching the speed of light, but generally implies speeds of the order of satellite speed and greater.
- RT escape velocity
 hypersonic speed
 orbital velocity
 relativistic velocity
- hypervelocity accelerators*
 USE **hypervelocity guns**
- hypervelocity cratering*
 USE **hypervelocity projectiles**
projectile cratering
- hypervelocity flow**
- GS fluid flow
 . **hypervelocity flow**
- RT flow velocity
 supersonic flow
- hypervelocity guns**
- UF *hypervelocity accelerators*
 RT ∞ accelerators
 ballistics
 gas guns
 ∞ guns
 guns (ordnance)
 railgun accelerators
 ram accelerators
- hypervelocity impact**
- GS impact
 . **hypervelocity impact**
- RT asteroid collisions
 cometary collisions
 Deep Impact Mission
 hydrodynamic ram effect
 impact melts
 impact velocity
 mechanical shock
 meteorite collisions
 meteoritic damage
 point impact
 projectile cratering
 Tempel 1 comet
- hypervelocity launchers**
- GS launchers
 . **hypervelocity launchers**
- RT gun launchers
 railgun accelerators
 ram accelerators
- hypervelocity projectiles**
- UF *hypervelocity cratering*
 GS projectiles
 . **hypervelocity projectiles**
- RT ∞ bombardment
 Deep Impact Mission
 light gas guns
 meteoroids
 micrometeorites
 projectile cratering
 simulation
 Tempel 1 comet
- hypervelocity wind tunnels**
- SN (ABOVE MACH 10)
 GS test facilities
 . wind tunnels
 . . **hypervelocity wind tunnels**
 . . . cascade wind tunnels
 . . . hotshot wind tunnels
 . . . plasma jet wind tunnels
 . . . shock tunnels
- RT blowdown wind tunnels
 combustion wind tunnels
 hypersonic flow
 hypersonic test apparatus
 hypersonic wind tunnels
 low density wind tunnels
 magnetic pistons
 shock tubes
 supersonic wind tunnels
- hyperventilation**
- DEF Overbreathing. A respiratory minute volume, or pulmonary ventilation that is greater than normal.
- RT acidosis
 alkalosis
 hyperoxia
- hypervolemia**
- RT blood circulation
 blood volume
 circulatory system
- hypnosis**
- GS sleep
 . **hypnosis**
- RT anesthesia
 suggestion
- hypobaric atmospheres**
- RT altitude simulation
 altitude tolerance
 ∞ atmospheres
 high altitude breathing
 high altitude environments
 high altitude pressure
 low pressure
 vacuum tests
- hypocapnia**
- DEF Deficiency of carbon dioxide in the blood and body tissues, which may result in dizziness, confusion, and muscular cramps.
- GS carbon dioxide tension
 . **hypocapnia**

hypodermis

RT blood

hypodermis

GS tissues (biology)
. **hypodermis**

hypodynamia

RT hindlimb suspension
muscles
muscular function

hypoelasticity

GS mechanical properties
. elastic properties
. . **hypoelasticity**

hypoglycemia

GS metabolism
. carbohydrate metabolism
. . **hypoglycemia**

hypogravity

(added June 2001)
USE **microgravity**

hypokinesia

RT glucocorticoids
head down tilt
hindlimb suspension
hyperkinesia
muscular function
musculoskeletal system
physical exercise

hypometabolism

GS metabolism
. **hypometabolism**
RT thyroid gland

hypophysis

USE **pituitary gland**

hypotension

GS pressure
. blood pressure
. . **hypotension**
RT hemorrhages

hypothalamus

GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **hypothalamus**
. nervous system
. . central nervous system
. . . brain
. . . . diencephalon
. **hypothalamus**
RT pituitary gland

hypothermia

RT body temperature
skin temperature (biology)
thermoregulation

hypotheses

GS **hypotheses**

. expectancy hypothesis
. intermittency hypothesis
. Lagrange similarity hypothesis
. null hypothesis
. vorticity transport hypothesis

RT assumptions
inference
mathematical logic
quality control
theorems
∞ theories
theses

hypothetical particles

(added November 1999)

GS particles
. elementary particles
. . **hypothetical particles**
. . . gluons
. . . gravitinos
. . . gravitons
. . . partons
. . . quarks
. . . tachyons
. . . weakly interacting massive particles

hypothetical planets

(added June 1998)

UF *Phaethon* (hypothetical planet)
planet X
rogue planets
transplutonic planets
GS celestial bodies
. planets
. . **hypothetical planets**
RT comets
extrasolar planets
planetary orbits

hypotonia

GS muscular tonus
. **hypotonia**
RT muscular function

hypoventilation

DEF A respiratory minute volume, or pulmonary ventilation that is less than normal. Also called underbreathing.

GS rates (per time)
. respiratory rate
. . **hypoventilation**

hypovolemia

RT blood circulation
blood volume

hypoxemia

DEF The condition of reduction of the normal oxygen tension in the blood.

GS pressure
. partial pressure
. . oxygen tension
. . . **hypoxemia**

RT hypoxia

hypoxia

DEF Oxygen want or deficiency; any state wherein a physiologically inadequate amount of oxygen is available to, or utilized by, tissue without respect to cause or degree. Used for oxygen deficiency.

UF *oxygen deficiency*
RT anoxia
fasting
hypoxemia
necrosis
oximetry
oxygen consumption
stress (physiology)

hypsography

GS geography
. **hypsography**
RT contours
datum (elevation)
elevation
mapping
maps
relief maps
topography

hypsoimeters

GS measuring instruments
. **hypsoimeters**
RT altimeters
barometers
meteorological instruments
pressure gages

hysteresis

DEF Any of several effects resembling a kind of internal friction, accompanied by the generation of heat within the substance affected. The delay of an indicator in registering a change in a parameter being measured.

RT accuracy
antiferroelectricity
antiferromagnetism
damping
dynamic characteristics
eddy currents
electrical properties
errors
internal friction
magnetic permeability
magnetic properties
mechanical properties
optical bistability
∞ physical properties
precision
retarding
shear properties
tensile strength
time lag
tolerances (mechanics)
viscoelasticity
viscoplasticity

HYTIME

USE **document markup languages**

I beams

- GS structural members
 - . beams (supports)
 - . . **I beams**
- RT cantilever beams
 - curved beams
 - trusses

I2S cameras

- GS optical equipment
 - . cameras
 - . . **I2S cameras**
 - photographic equipment
 - . cameras
 - . . **I2S cameras**
- RT aircraft instruments
 - multispectral photography
 - spacecraft instruments

Iapetus

- DEF A satellite of Saturn orbiting at a mean distance of 3,562,000 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . icy satellites
 - . . . **Iapetus**
 - . . Saturn satellites
 - . . . **Iapetus**
- RT Charon
 - Saturn (planet)

IBM 360 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 360 computer**
 - . . IBM computers
 - . . . **IBM 360 computer**

IBM 370 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 370 computer**
 - . . IBM computers
 - . . . **IBM 370 computer**

IBM 650 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 650 computer**
 - . . IBM computers
 - . . . **IBM 650 computer**

IBM 704 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 704 computer**
 - . . IBM computers
 - . . . **IBM 704 computer**

IBM 709 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 709 computer**
 - . . IBM computers
 - . . . **IBM 709 computer**

IBM 1130 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 1130 computer**
 - . . IBM computers
 - . . . **IBM 1130 computer**

IBM 1401 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 1401 computer**
 - . . IBM computers
 - . . . **IBM 1401 computer**

IBM 1410 computer

- GS data processing equipment

- . computers
 - . . digital computers
 - . . . **IBM 1410 computer**
 - . . IBM computers
 - . . . **IBM 1410 computer**

IBM 1620 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 1620 computer**
 - . . IBM computers
 - . . . **IBM 1620 computer**

IBM 2250 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 2250 computer**
 - . . IBM computers
 - . . . **IBM 2250 computer**

IBM 7030 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7030 computer**
 - . . IBM computers
 - . . . **IBM 7030 computer**

IBM 7040 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7040 computer**
 - . . IBM computers
 - . . . **IBM 7040 computer**

IBM 7044 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7044 computer**
 - . . IBM computers
 - . . . **IBM 7044 computer**

IBM 7070 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7070 computer**
 - . . IBM computers
 - . . . **IBM 7070 computer**

IBM 7074 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7074 computer**
 - . . IBM computers
 - . . . **IBM 7074 computer**

IBM 7090 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7090 computer**
 - . . IBM computers
 - . . . **IBM 7090 computer**

IBM 7094 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7094 computer**
 - . . IBM computers
 - . . . **IBM 7094 computer**

IBM computers

- GS data processing equipment
 - . computers
 - . . **IBM computers**
 - . . . IBM 360 computer
 - . . . IBM 370 computer
 - . . . IBM 650 computer
 - . . . IBM 704 computer
 - . . . IBM 709 computer
 - . . . IBM 1130 computer
 - . . . IBM 1401 computer

- . . . IBM 1410 computer
 - . . . IBM 1620 computer
 - . . . IBM 2250 computer
 - . . . IBM 7030 computer
 - . . . IBM 7040 computer
 - . . . IBM 7044 computer
 - . . . IBM 7070 computer
 - . . . IBM 7074 computer
 - . . . IBM 7090 computer
 - . . . IBM 7094 computer
 - . . . IBM personal computers
- RT digital computers

IBM PC

- USE **IBM personal computers**

IBM personal computers

- (added September 1992)
- SN (INCLUDES IBM COMPATIBLE PERSONAL COMPUTERS)
- UF **IBM PC**
- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . microcomputers
 - . . . personal computers
 - **IBM personal computers**
 - . . IBM computers
 - . . . **IBM personal computers**
 - RT computer graphics
 - computer programs

Icarus asteroid

- GS celestial bodies
 - . asteroids
 - . . **Icarus asteroid**
- RT asteroid belts

ICBM (missiles)

- USE **intercontinental ballistic missiles**

ice

DEF Water in the solid state; specifically, the dense substance formed in nature by the freezing of liquid water, by the condensation of water vapor directly into ice crystals, or by the recrystallization or compaction of fallen snow. It is colorless to pale blue or greenish blue, usually white from included gas bubbles. At standard atmospheric pressure, it is formed at and has a melting point of 0 deg. C; in freezing it expands about one eleventh in volume. Ice commonly occurs as hexagonal crystals, and in large masses is classed as a rock. The term is often substituted for glacier; as in "continental ice."

- GS **ice**
 - . bay ice
 - . glaciers
 - . lake ice
 - . . ice floes
 - . land ice
 - . sea ice
 - . . ice floes
 - . . icebergs
 - . . pressure ice
- RT auferis (ice)
 - cirques (landforms)
 - frost
 - ice clouds
 - polar caps
 - refrigerants
 - runway conditions
 - slush
 - storms (meteorology)
 - water

ice clearings

(added July 2001)

- USE **polynyas**

ice clouds

- (added March 1989)
- GS clouds (meteorology)
 - . **ice clouds**
- RT cloud glaciation
 - ∞ clouds
 - ice

ice environments

stratosphere

ice environments

- UF *Antarctic environment*
Arctic environments
- GS environments
- . **ice environments**
- RT Earth cryosphere
environment effects
marine environments
planetary cryospheres
sea ice

ice floes

- DEF Large fragments or extensive sheets of ice, detached and floating freely in open water.
- GS ice
 - . lake ice
 - . . **ice floes**
 - . sea ice
 - . . **ice floes**
- RT oceanography

ice formation

- UF *icing*
- GS **ice formation**
 - . aircraft icing
 - . cloud glaciation
- RT bay ice
fouling
freezing
graupel
hail
lake ice
low temperature
pressure ice
sea ice
snow

ice mapping

- GS mapping
 - . **ice mapping**
- RT aerial photography
bay ice
Earth resources
hydrography
hydrology
infrared photography
oceanography
photogeology
photography
photomapping
sea ice
space surveillance (spaceborne)
surveillance

ice nuclei

- RT Aitken nuclei
cloud glaciation
condensation nuclei
freezing
graupel
hydrometeors
nucleation
- ∞ nuclei

ice observation

- USE **ice reporting**

ice packs

- USE **sea ice**

ice prevention

- GS prevention
 - . **ice prevention**
- RT aircraft icing
antiicing additives
defrosting
deicers
deicing
heat tapes
heating
melting
storm suppression

ice reporting

- UF *ice observation*
- RT bay ice
icebergs
meteorological flight

polar meteorology
space surveillance (spaceborne)
surveillance

ice shelves

- USE **land ice**

Ice, Cloud and Land Elevation Satellite

(added December 2002)
DEF Earth Observing System satellite and mission designed to measure Earth's ice sheet mass balance, cloud and aerosol heights, as well as land topography and vegetation characteristics.

- UF *ICESat*
- GS artificial satellites
 - . scientific satellites
 - . . **Ice, Cloud and Land Elevation Satellite**
- RT Earth Observing System (EOS)
laser altimeters
satellite altimetry

icebergs

DEF Large, massive pieces of floating or stranded glacier ice of any shape, detached (calved) from the front of glaciers into a body of water. Icebergs extend more than 5 m above sea level and have the greater part of their masses (4/5 to 8/9) below sea level. They may reach a length of more than 80 km.

- GS ice
 - . sea ice
 - . . **icebergs**
resources
 - . Earth resources
 - . . **icebergs**
- RT ice reporting
land ice

Iceland

- GS landforms
 - . islands
 - . . **Iceland**
nations
 - . **Iceland**
- RT Europe
Icelandic space program

Icelandic space program

- (added August 1990)
- GS programs
 - . space programs
 - . . European space programs
 - . . . **Icelandic space program**
- RT Iceland

ICESat

- (added December 2002)
- USE **Ice, Cloud and Land Elevation Satellite**

ichthyology

- RT fishes
schools (fish)

icing

- USE **ice formation**

ICL computers

- DEF Family of British digital computers produced by International Computers, Ltd. Used for International Computers Limited.
- UF *International Computers Limited*
- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **ICL computers**
- RT European Space Agency

icosahedrons

- GS geometry
 - . Euclidean geometry
 - . . polyhedrons

. . . **icosahedrons**

ICP-MS (spectrometry)

(added March 2001)

- USE **inductively coupled plasma mass spectrometry**

icy satellites

- GS celestial bodies
 - . natural satellites
 - . . **icy satellites**
. . . Ariel
. . . Callisto
. . . Dione
. . . Enceladus
. . . Europa
. . . Ganymede
. . . Hyperion
. . . Iapetus
. . . Mimas
. . . Rhea (astronomy)
. . . Tethys
. . . Titania
- RT extraterrestrial water
Galilean satellites
Jupiter satellites
satellite surfaces
Saturn satellites

Ida asteroid

(added December 1995)

- GS celestial bodies
 - . asteroids
 - . . **Ida asteroid**
- RT asteroid belts
Galileo spacecraft
meteoroids

Idaho

- GS nations
 - . United States
 - . . **Idaho**
- RT Columbia River Basin (ID-OR-WA)
Yellowstone National Park (ID-MT-WY)

ideal fluids

- RT compressible fluids
equations of state
- ∞ fluids
incompressible fluids
Mollier diagram

ideal gas

DEF A gas which conforms to Boyle's law and has zero heat of free expansion (or also obeys Charles' law). Used for perfect gas.

- UF *perfect gas*
- GS gases
 - . **ideal gas**
- RT Bose-Einstein condensates
Dalton law
equations of state
gas density
kinetic theory
kinetics
real gases

identify friend or foe

- USE **IFF systems (identification)**

identifying

- GS **identifying**
 - . crop identification
 - . IFF systems (identification)
 - . parameter identification
 - . rapid ballistics identification
 - . system identification
 - . timber identification
- RT chemical analysis
coding
cognition
detection
gas detectors
inspection
marking
- ∞ measurement
missile detection
particulate sampling
perception

- recognition
spectral signatures
tracking (position)
ultrasonic flaw detection
Wiswesser notations
- identities**
RT congruences
∞ equations
- IDEF (data exchange)*
USE **interservice data exchange program**
- idlers**
RT bearings
gears
pulleys
rollers
vehicular tracks
- IFF systems (identification)**
UF *identify friend or foe*
GS identifying
. **IFF systems (identification)**
RT aircraft detection
cognition
interrogation
recognition
∞ systems
- IFR (rules)*
USE **instrument flight rules**
- IGFET*
USE **field effect transistors**
- igneous rocks**
DEF Rocks or minerals that solidify from molten or partly molten material, i.e., from magma. The term is also applied to processes leading to, related to, or resulting from the formation of such rocks. Igneous rocks constitute one of the three main classes into which rocks are divided, the others being metamorphic rocks and sedimentary rocks.
UF *ignimbrite*
GS rocks
. **igneous rocks**
. . anorthosite
. . basalt
. . diorite
. . dunite
. . eclogite
. . felsite
. . gabbro
. . granite
. . obsidian
. . . moldavite
. . peridotite
. . pumice
. . rhyolite
. . syenite
. . trachyte
RT andesite
batholiths
breccia
effusives
enstatite
feldspars
ilmenite
lava
magma
mica
minerals
olivine
petrogenesis
pyroxenes
quartz
regolith
rock intrusions
sedimentary rocks
soils
spinel
- tourmaline
- ignimbrite*
USE **igneous rocks**
- igniters**
DEF Devices used to begin combustion, such as a spark plug in a combustion chamber of a jet engine, or a squib used to ignite the fuel in a rocket.
GS **igniters**
. initiators (explosives)
. . boosters (explosives)
. . caps (explosives)
. . detonators
. . exploding wires
. . primers (explosives)
. squibs
RT ammunition
electric ignition
explosive devices
ignition
ignition systems
incendiary ammunition
pyrophoric materials
solid propellant ignition
spark plugs
- ignition**
DEF The initiation of combustion. Used for reignition.
UF *reignition*
GS **ignition**
. electric ignition
. solid propellant ignition
. spark ignition
RT combustion
combustion physics
firing (igniting)
flame propagation
flammability
flash point
fuel combustion
igniters
premixing
propellant combustion
roasting
sparks
spontaneous combustion
starting
- ignition limits**
RT combustion
flame retardants
flammability
fuel-air ratio
gas mixtures
∞ limits
- ignition systems**
RT automobiles
distributors
dwell
electric coils
electric ignition
engines
igniters
internal combustion engines
rocket engines
spark plugs
squibs
starters
∞ systems
- ignition temperature**
GS temperature
. **ignition temperature**
. . flash point
RT combustion temperature
flammability
propellant sensitivity
pyrophoric materials
solid propellant ignition
spontaneous combustion
thermites
- ignitrons**
GS electron tubes
. gas discharge tubes
. **ignitrons**
- rectifiers
. **ignitrons**
- IGOSS*
USE **integrated global ocean station systems**
- IGY (geophysical year)*
USE **International Geophysical Year**
- IHD (hydrological decade)*
USE **International Hydrological Decade**
- IIR filters**
(added December 2002)
DEF Digital filters that use previous output values in the calculation of current output values, providing an impulse response that is theoretically infinite.
UF *infinite impulse response filters*
recursive filters
GS electromagnetic wave filters
. electric filters
. . digital filters
. . . **IIR filters**
RT adaptive filters
autoregressive moving average
FIR filters
recursive functions
- IL-14 aircraft**
UF *Ilyushin IL-14 aircraft*
GS Ilyushin aircraft
. **IL-14 aircraft**
monoplanes
. **IL-14 aircraft**
transport aircraft
. **IL-14 aircraft**
RT ∞ aircraft
- IL-62 aircraft**
UF *Classic aircraft*
Ilyushin IL-62 aircraft
GS commercial aircraft
. **IL-62 aircraft**
Ilyushin aircraft
. **IL-62 aircraft**
jet aircraft
. turbofan aircraft
. . **IL-62 aircraft**
monoplanes
. **IL-62 aircraft**
passenger aircraft
. **IL-62 aircraft**
RT ∞ aircraft
- IL-76 aircraft**
(added September 1994)
GS Ilyushin aircraft
. **IL-76 aircraft**
jet aircraft
. **IL-76 aircraft**
passenger aircraft
. **IL-76 aircraft**
transport aircraft
. **IL-76 aircraft**
RT ∞ aircraft
- IL-86 aircraft**
(added September 1994)
GS Ilyushin aircraft
. **IL-86 aircraft**
jet aircraft
. **IL-86 aircraft**
passenger aircraft
. **IL-86 aircraft**
transport aircraft
. **IL-86 aircraft**
RT ∞ aircraft
- IL-96 aircraft**
(added September 1994)
GS Ilyushin aircraft
. **IL-96 aircraft**
jet aircraft
. **IL-96 aircraft**
passenger aircraft
. **IL-96 aircraft**
transport aircraft
. **IL-96 aircraft**

ill-conditioned problems (mathematics)

RT ∞ aircraft

ill-conditioned problems (mathematics)

(added March 1994)

DEF In numerical analysis, problems (algorithms) in which a small error in the data or small errors introduced by rounding, truncation, or other computational procedures result in much larger errors in the solution. (See also ILL-POSED PROBLEMS)

RT computation
differential equations
error analysis
ill-posed problems (mathematics)
integral equations
numerical analysis
numerical stability
problem solving
truncation errors
uniqueness

Illiac 3 computer

GS data processing equipment
. computers
. . . digital computers
. . . . Iliac computers
. . . . **Iliac 3 computer**
RT analog to digital converters
parallel processing (computers)

Illiac 4 computer

GS data processing equipment
. computers
. . . digital computers
. . . . Iliac computers
. . . . **Iliac 4 computer**
RT analog to digital converters
parallel processing (computers)

Iliac computers

GS data processing equipment
. computers
. . . digital computers
. . . . **Iliac computers**
. . . . Iliac 3 computer
. . . . Iliac 4 computer

Illinois

GS nations
. United States
. . **Illinois**
RT Ohio River (US)
Wabash River Basin (IL-IN-OH)

illite

GS clays
. **illite**
minerals
. **illite**
RT soils

ill-posed problems (mathematics)

(added March 1994)

DEF Problems corresponding to physical system models whose solutions do not satisfy Hadamard's criteria for 'well posedness,' i.e., existence, uniqueness, and continuous dependence on initial data. Most commonly, such problems stem from fundamental physical limitations on the accessibility of information about the object or process being studied. (See also ILL-CONDITIONED PROBLEMS)

UF *improperly-posed problems (mathematics)*

RT boundary value problems
differential equations
Fredholm equations
ill-conditioned problems (mathematics)
integral equations
iterative solution
numerical analysis
numerical stability
problem solving
uniqueness

illumination

SN (LIMITED TO DETECTION RATE PER UNIT AREA OF VISIBLE RADIATION--EQUALS LIGHT PRESSURE TIMES SPEED OF LIGHT)

DEF The total luminous flux received on a unit area of a given real or imaginary surface, expressed in such units as the footcandle, lux, or phot. Illuminance is analogous to irradiance, but is to be distinguished from the latter in that illuminance refers only to light and contains the luminous efficiency weighting factor necessitated by the nonlinear wavelength response of the human eye. Used for light pressure.

UF *light pressure*

GS pressure
. radiation pressure
. . luminous intensity
. . . **illumination**
rates (per time)
. flux density
. . radiant flux density
. . . irradiance
. . . . **illumination**
. . . luminous intensity
. . . . **illumination**

RT brightness
illuminating
∞ illumination
light (visible radiation)
luminance
luminosity
radiancy
solar constant
solar flux density
visibility

illuminating

UF *lighting*
RT architecture
brightness
comfort
darkness
environmental engineering
∞ flares
glare
human factors engineering
illumination
∞ illumination
light sources
light transmission
lighting equipment
luminaires
luminance
photometry
∞ projection
projectors
pyrotechnics
shadows

∞ illumination

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT brightness discrimination
darkening
darkness
∞ diffusers
illumination
illuminating
illuminators
isophotes
light transmission
luminescence
photometry

illuminators

GS light sources
. **illuminators**
lighting equipment
. **illuminators**
RT ∞ illumination
incandescence
luminescence

illusions

GS psychological effects
. **illusions**
. . hallucinations
. . moon illusion
. . oculogravic illusions
. . optical illusion
. . . elevator illusion
RT afterimages
images

perception
vision

ilmenite

DEF A mineral having the theoretical composition FeO.TiO₂ used principally in the production of titanium oxide.

GS chalcogenides
. oxides
. . metal oxides
. . . iron oxides
. . . . **ilmenite**
. . . titanium oxides
. . . . **ilmenite**
iron compounds
. iron oxides
. **ilmenite**
minerals
. **ilmenite**
titanium compounds
. titanates
. . **ilmenite**
. titanium oxides
. . **ilmenite**
RT igneous rocks
sands

ILS (*landing systems*)

USE **instrument landing systems**

Ilyushin aircraft

GS **Ilyushin aircraft**
. IL-14 aircraft
. IL-62 aircraft
. IL-76 aircraft
. IL-86 aircraft
. IL-96 aircraft
RT ∞ aircraft

Ilyushin IL-14 aircraft

USE **IL-14 aircraft**

Ilyushin IL-62 aircraft

USE **IL-62 aircraft**

image analysis

DEF Technique for understanding or quantification of digital data as presented in a two dimensional format.

GS **image analysis**
. image classification
. spectral mixture analysis
RT cluster analysis
edge detection
Gabor filters
image enhancement
image processing
image resolution
optical flow (image analysis)
pattern recognition
radar imagery
remote sensing
satellite imagery
scene analysis
Voronoi diagrams

image classification

(added July 1993)

DEF The sorting of remotely sensed image data by any one or more of a variety of means.

GS image analysis
. **image classification**
RT atmospheric correction
change detection
classifications
∞ classifying
image correlators
image enhancement
image processing
imaging techniques
normalized difference vegetation index
optical data processing
pattern recognition
remote sensing
remote sensors

image contrast

GS contrast
. **image contrast**

RT focusing
 gray scale
 pattern registration
 resolution
 self focusing
 signal to noise ratios
 smear
 visibility

image converters

DEF Optoelectronic devices capable of changing the spectral characteristics of a radiant image. Examples of such changes are infrared to visible and x ray to visible.

GS optical equipment
 . **image converters**
 . . . telescopes
 . . . image tubes
 . . . thermions

RT camera tubes
 ∞ converters

Lallemand cameras
 light amplifiers
 microchannels
 photocathodes

image correlators

UF *SIMICOR (image correlator)*
simultaneous image correlator

GS correlators
 . **image correlators**

RT holography
 image classification
 imaging techniques
 map matching guidance
 optical correlators
 pattern registration
 speckle holography
 video landmark acquisition and tracking

image dissector tubes

GS electron tubes
 . camera tubes
 . . **image dissector tubes**
 television equipment
 . **image dissector tubes**

RT guidance sensors
 satellite orientation

image enhancement

RT band ratioing
 focusing
 geometric rectification (imagery)
 gray scale
 image analysis
 image classification
 images
 imaging techniques
 light amplifiers
 radiometric correction
 resolution
 signal to noise ratios
 tomography
 vegetative index

image filters

GS **image filters**
 . Gabor filters
 RT ∞ filters
 imaging techniques

image furnaces

GS heating equipment
 . furnaces
 . . **image furnaces**
 laboratory equipment
 . **image furnaces**
 RT arc heating
 carbon arcs

image intensifiers

UF *intensifier tubes*
 GS intensifiers
 . **image intensifiers**
 . . image orthicons
 RT amplifiers
 imaging techniques
 Lallemand cameras
 light amplifiers

night vision
 orthicons
 phosphors
 photocathodes

image motion compensation

RT aerial photography
 ∞ compensation
 imaging techniques
 pattern registration
 video compression

image orthicons

GS electron tubes
 . camera tubes
 . . orthicons
 . . . **image orthicons**
 intensifiers
 . image intensifiers
 . . **image orthicons**
 RT photocathodes

image processing

DEF Conversion of optical images into digital data form for storage and reconstruction by computer techniques.

GS **image processing**
 . band ratioing
 . geometric rectification (imagery)
 RT atmospheric correction
 change detection
 cluster analysis
 computer aided tomography
 data processing
 data products
 discrete cosine transform
 edge detection
 Feature Identification and Location
 Exper
 frames (data processing)
 Gabor filters
 Gabor transformation
 geometric accuracy
 gray scale
 image analysis
 image classification
 imagery
 imaging techniques
 laser guide stars
 multisensor applications
 nap-of-the-earth navigation
 onboard data processing
 optical data processing
 optical flow (image analysis)
 point spread functions
 preprocessing
 principal components analysis
 ∞ processing
 pushbroom sensor modes
 raster scanning
 scientific visualization
 spatial resolution
 spectral mixture analysis
 vector quantization
 video compression
 wavelet analysis

image reconstruction

DEF The reproduction of the original scene from data stored or transmitted after scanning by an electron beam. In reprography, the re-creation of graphic images from digital data stored in a computer.

GS reconstruction
 . **image reconstruction**
 RT display devices
 holography
 imaging techniques
 pattern registration
 scene generation

image resolution

DEF In optics, a measure of the ability of an optical instrument to produce separable images of different points on an object.

GS resolution
 . **image resolution**
 RT anisoplanatism
 electro-optical photography
 geometric accuracy

high definition television
 image analysis
 imagery
 matching
 multispectral photography
 pattern registration
 spatial resolution

image rotation

DEF Mechanized or digital rotation of an image.
 GS gyration
 . rotation
 . . **image rotation**
 RT imaging techniques

IMAGE satellite

(added November 2000)

DEF A medium class Explorer (MIDEX) mission to study the global response of the Earth's magnetosphere to changes in the solar wind. IMAGE (Imager for Magnetopause-to-Aurora Global Exploration) will use neutral atom, ultraviolet, and radio imaging techniques to: (a) identify the dominant mechanisms for injecting plasma into the magnetosphere on substorm and magnetic storm time scales; (b) determine the directly driven response of the magnetosphere to solar wind changes; and, (c) discover how and where magnetospheric plasmas are energized, transported, and subsequently lost during substorms and magnetic storms.

UF *Explorer 78 satellite*
Imager for Magnetopause-to-Aurora Global Explorer

GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **IMAGE satellite**

RT auroral zones
 Earth magnetosphere
 magnetic storms
 magnetopause
 plasmasphere
 space plasmas

image transducers

GS transducers
 . **image transducers**
 RT camera tubes
 imaging techniques
 Lallemand cameras

image tubes

DEF Electron tubes that reproduce on their fluorescent screens images of irradiation patterns incident on their photosensitive surfaces.

GS electron tubes
 . **image tubes**
 . . thermions
 optical equipment
 . image converters
 . . **image tubes**
 . . . thermions

RT cathode ray tubes
 display devices
 flying spot scanners
 head-up displays
 monoscopes

image velocity sensors

RT images
 imaging techniques
 ∞ sensors

Imager for Magnetopause-to-Aurora Global Explorer

(added December 2000)

USE **IMAGE satellite**

imagery

GS **imagery**
 . kinoform
 . microwave imagery
 . photography
 . . aerial photography
 . . all sky photography
 . . astronomical photography
 . . autoradiography
 . . black and white photography

images

- . . chronophotography
- . . cinematography
- . . cloud photography
- . . color photography
- . . electron photography
- . . electro-optical photography
- . . fractography
- . . frame photography
- . . high speed photography
- . . holography
 - . . . acoustical holography
 - . . . microwave holography
 - . . . speckle holography
 - . . . white light holography
- . . infrared imagery
- . . lunar photography
- . . metric photography
- . . microwave photography
- . . multispectral photography
 - . . . infrared photography
 - . . . color infrared photography
 - . . . radar photography
- . . orthophotography
- . . photomicrography
- . . rocket-borne photography
- . . shadowgraph photography
- . . Schlieren photography
- . . spaceborne photography
 - . . . satellite-borne photography
- . . spectrophotography
- . . stereoscopy
 - . . . stereophotography
- . . streak photography
- . . ultraviolet photography
- . . ultraviolet photometry
- . . underwater photography
- . . urography
 - . . radar imagery
 - . . radiography
 - . . angiography
 - . . autoradiography
 - . . neutron radiography
 - . . tomography
 - . . . computer aided tomography
- . . urography
- . . reproduction (copying)
- . . xerography
- . . satellite imagery
- . . spectroheliographs
- . . ultraviolet imagery
- . . x ray imagery
 - . . ultraviolet photography

RT acousto-optics
 appearance
 Atmospheric & Oceanographic Inform Sys
 change detection
 contour sensors
 display devices
 Earth resources
 geographic information systems
 geometric rectification (imagery)
 graphic arts
 ground truth
 holographic optical elements
 image processing
 image resolution
 microwave sounding
 multispectral radar
 radar signatures
 scene analysis
 sea truth
 signature analysis

images

UF *optical images*
 GS **images**
 . afterimages
 . retinal images
 RT contour sensors
 display devices
 evaporography
 halos
 helmet mounted displays
 illusions
 image enhancement
 image velocity sensors
 ∞ optics
 perception

photographs
 raster scanning
 representations
 spatial filtering
 vision

imaging radar

GS radar
 . **imaging radar**
 . . Shuttle Imaging Radar
 RT radar imagery
 remote sensors
 side-looking radar
 synthetic aperture radar

imaging spectrometers

GS measuring instruments
 . spectrometers
 . . **imaging spectrometers**
 RT Envisat-1 satellite
 imaging techniques
 remote sensing
 spectral reflectance
 spectrophotometry

imaging techniques

GS **imaging techniques**
 . acoustic imaging
 . . acoustical holography
 . raster scanning
 . scene generation
 . speckle holography
 RT acoustic microscopes
 acoustical holography
 adaptive optics
 apodization
 charge injection devices
 crop identification
 flat panel displays
 gray scale
 high definition television
 hologrammetry
 image classification
 image correlators
 image enhancement
 image filters
 image intensifiers
 image motion compensation
 image processing
 image reconstruction
 image rotation
 image transducers
 image velocity sensors
 imaging spectrometers
 magnetic force microscopy
 ∞ methodology
 microwave holography
 modulation transfer function
 multimedia
 multisensor applications
 multisensor fusion
 multispectral band scanners
 multispectral photography
 multispectral radar
 optical relay systems
 optical transfer function
 ∞ optics
 particle image velocimetry
 pattern registration
 photography
 pixels
 principal components analysis
 radar imagery
 rapid ballistics identification
 resolution cell
 satellite imagery
 scene analysis
 spatial resolution
 streak photography
 synthetic apertures
 television systems
 ultrasonic scanners
 vegetative index
 x ray imagery

∞ imbeddings

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT encapsulating

imbeddings (mathematics)
 invariant imbeddings
 ∞ matrices

imbeddings (mathematics)

GS geometry
 . topology
 . . **imbeddings (mathematics)**
 . . . invariant imbeddings
 RT ∞ imbeddings
 strange attractors

IMBLMS

SN (INTEGRATED MEDICAL AND BEHAVIORAL LABORATORY MEASUREMENT SYSTEM)
 UF *Integ Med and Behavioral Lab Measur System*
 RT bioinstrumentation
 biomedical data
 measuring instruments
 medical equipment

IMCC (control center)

USE **integrated mission control center**

IME satellite

USE **International Magnetospheric Explorer**

imidazoles

(added August 2004)
 DEF Part of a group of heterocyclic compounds with a 5-membered diunsaturated ring, containing 2 nitrogen atoms.
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **imidazoles**

imides

GS nitrogen compounds
 . **imides**
 . . bismaleimide
 . . phthalimides
 . . succinimides
 RT amides

imines

UF *Schiff bases*
 GS nitrogen compounds
 . **imines**
 RT amines

IMLSS

SN (INTEGRATED MANEUVERING AND LIFE SUPPORT SYSTEM)
 UF *Integrated Maneuvering Life Support Sys*
 GS self maneuvering units
 . **IMLSS**
 . support systems
 . life support systems
 . . portable life support systems
 . . . **IMLSS**
 RT astronaut maneuvering equipment
 extravehicular activity
 extravehicular mobility units
 ∞ systems

immersion

USE **submerging**

immiscibility

USE **solubility**

immittance

USE **electrical impedance**

immobilization

GS **immobilization**
 . hindlimb suspension
 RT damage
 impairment
 ∞ motion

immune systems

GS anatomy
 . **immune systems**
 . . lymphatic system
 . . . spleen
 . . . thymus gland

RT acquired immunodeficiency syndrome
antibodies
antigens
human immunodeficiency virus
immunity
immunoassay
immunology
interleukins
leukocytes
lymphocytes
monocytes
neutrophils
physiological defenses

immunity

GS physiological defenses
. **immunity**
RT immune systems
infectious diseases
inoculation
∞ resistance
toxins and antitoxins

immunoassay

DEF An assay that utilizes antigen-antibody reactions for the determination of biochemical substances. Used for plasma renin activity.
UF *plasma renin activity*
GS **immunoassay**
. radioimmunoassay
RT antigens
assaying
biochemistry
immune systems
immunology
radiobiology

immunology

GS medical science
. **immunology**
RT acquired immunodeficiency syndrome
allergic diseases
anaphylaxis
antibodies
antigens
antiserums
biocompatibility
∞ biology
human immunodeficiency virus
immune systems
immunoassay
interleukins
lymphatic system
prophylaxis
radioimmunoassay
veterinary medicine

IMP

UF *Interplanetary Monitoring Platform*
GS artificial satellites
. lunar satellites
. . **IMP**
. scientific satellites
. . Explorer satellites
. . . **IMP**
lunar spacecraft
. lunar satellites
. . **IMP**

IMP-1
USE **Explorer 18 satellite**

IMP-2
USE **Explorer 21 satellite**

IMP-3
USE **Explorer 28 satellite**

IMP-4
USE **Explorer 34 satellite**

IMP-5
USE **Explorer 41 satellite**

IMP-6
USE **Explorer 43 satellite**

IMP-7
USE **Explorer 47 satellite**

IMP-8
USE **Explorer 50 satellite**

IMP-A
USE **Explorer 18 satellite**

impact

GS **impact**
. economic impact
. electron impact
. hypervelocity impact
. ion impact
. point impact
. proton impact
RT deceleration
hydrodynamic ram effect
impingement
mechanical shock
penetration
percussion
pressure
shock absorbers
shock resistance
shock waves
stresses

impact acceleration

DEF The acceleration generated by very sudden starts or stops of a vehicle. The term is usually applied in the context of physiological acceleration. Used for impact deceleration.
UF *impact deceleration*
GS rates (per time)
. acceleration (physics)
. . **impact acceleration**
RT ∞ acceleration
deceleration
impact velocity
mechanical shock
physiological acceleration
railroad humping tests
shock absorbers

impact damage

GS damage
. **impact damage**
. . meteoritic damage
. . rain impact damage
RT cratering
craters
ejecta
impact tolerances
Mars craters
meteoroid protection
planetary craters
Tempel 1 comet

impact deceleration

USE **impact acceleration**

impact fusion

DEF The conversion of the kinetic energy of a fast moving, initially stationary, macroparticle projectile into the internal energy of fusile material using a particle accelerator. Impact fusion is generally an inertial confinement fusion concept.
GS inertial confinement fusion
. **impact fusion**
RT fusion reactors

impact loads

UF *impact pressures*
GS loads (forces)
. compression loads
. . **impact loads**
. contact loads
. . **impact loads**
. dynamic loads
. . transient loads
. . . **impact loads**
RT blast loads
dynamic pressure
fiber orientation
impact velocity
landing loads
loading rate
random loads
shock loads

structural design criteria

impact melts

DEF Molten material resulting from hypervelocity impact.
GS melts (crystal growth)
. **impact melts**
RT celestial bodies
hypervelocity impact
lunar rocks
melting
meteorites
minerals
petrology

impact prediction

UF *ARIP (impact prediction)*
automatic rocket impact predictors
predictions
GS . **impact prediction**
RT ballistic trajectories
downrange
guidance (motion)
laser guidance
missile trajectories
range safety
reentry
trajectory analysis

impact pressures

USE **impact loads**

impact resistance

UF *impact sensitivity*
GS sensitivity
. **impact resistance**
shock resistance
. **impact resistance**
RT crashworthiness
propellant sensitivity
∞ resistance
tolerances (physiology)

impact sensitivity

USE **impact resistance**

impact strength

DEF The amount of energy required to fracture a material. The type of specimen and the testing conditions affect the values and therefore should be specified.
GS mechanical properties
. **impact strength**
RT brittle materials
brittleness
ductility
earthquake resistance
hardness
notch sensitivity
∞ resistance
shear properties
∞ strength
stress concentration
wave resistance

impact testing machines

RT drop tests
fatigue tests
∞ machinery
∞ test equipment

impact tests

GS **impact tests**
. Charpy impact test
RT brittleness
compression tests
destructive tests
drop tests
fatigue tests
hardness tests
impactors
load tests
∞ materials tests
notch sensitivity
notch strength
notch tests
shock tests
strain rate
stress concentration
∞ tests

impact tolerances

toughness

impact tolerances

GS tolerances (mechanics)
. **impact tolerances**
RT impact damage

impact velocity

(added April 1997)

GS velocity
. **impact velocity**
RT collisions
hypervelocity impact
impact acceleration
impact loads
terminal ballistics
terminal velocity

impactors

RT crushers
grinding mills
hammers
impact tests

impairment

RT damage
immobilization
injuries
losses

IMPATT diodes

USE **avalanche diodes**

IMP-B

USE **Explorer 21 satellite**

IMP-C

USE **Explorer 28 satellite**

IMP-D

USE **Explorer 33 satellite**

IMP-E

USE **Explorer 35 satellite**

impedance

DEF The total opposition that a circuit presents to the flow of an alternating current, specifically the complex quotient of voltage divided by current. Used for dummy loads.

UF *dummy loads*

GS **impedance**
. acoustic impedance
. electrical impedance
. . . electrical resistance
. . . contact resistance
. . . Hall resistance
. . . skin resistance
. . . transconductance
. . reactance
. mechanical impedance
. respiratory impedance
RT attenuation coefficients
bandwidth
chokes (restrictions)
∞ conductivity
constrictions
damping
diffusivity
dynamic characteristics
dynamic response
electric coils
electrical properties
∞ hydraulics
mechanical properties
∞ physical properties
∞ resistance
resonant frequencies
Smith chart
time constant
transient response

impedance matching

RT antenna couplers
couplers
coupling circuits
directional couplers
electric networks
electrical impedance
iterative networks
matching

mode transformers
transfer functions
transmission lines
waveguide tuners
waveguide windows

impedance measurement

RT electrical impedance
electrical measurement
mechanical impedance
mismatch (electrical)
radio frequency impedance probes

impedance probes

GS measuring instruments
. **impedance probes**
. . radio frequency impedance probes
RT resonance probes

impeller blades

USE **rotor blades (turbomachinery)**

impellers

DEF Devices that impart motion to a fluid; specifically in centrifugal compressors, rotary disks which, faced on one or both sides with radial vanes, accelerate the incoming fluid outward into diffusers.

GS rotating bodies
. rotors
. . **impellers**
. . . pump impellers
RT blowers
centrifugal compressors
centrifugal pumps
compressor rotors
pumps
rotor blades (turbomachinery)
stators
turbine wheels
turbines
turbomachine blades
vanes

imperfections

USE **defects**

Imperial Valley (CA)

GS valleys
. **Imperial Valley (CA)**
RT California
deserts
Mexico

IMP-F

USE **Explorer 34 satellite**

IMP-G

USE **Explorer 41 satellite**

IMP-H

USE **Explorer 47 satellite**

IMP-I

USE **Explorer 43 satellite**

impingement

DEF A process resulting in a continuing succession of impacts between (liquid or solid) particles and a solid phase.

GS **impingement**
. jet impingement
RT ablation
attenuation
cavitation flow
corrosion
erosion
gas-solid interactions
impact
incidence
reflection
scattering

IMP-J

USE **Explorer 50 satellite**

implantation

GS **implantation**
. heart implantation
. ion implantation
RT grafting

injection
insertion

implanted electrodes (biology)

GS bioengineering
. bioinstrumentation
. . **implanted electrodes (biology)**
electrodes
. **implanted electrodes (biology)**
RT ∞ biology

implication

RT inference

implosions

DEF The rapid inward collapsing of the walls of vacuum systems or devices as the result of failure of the walls to sustain the ambient pressure.

RT bursts
explosions
explosive decompression
propellant explosions
shock waves

impregnating

RT chemical attack
coatings
finishes
insertion
lubrication
permeating
porosity
preserving
self lubricating materials
self lubrication

improperly-posed problems (mathematics)

USE **ill-posed problems (mathematics)**

Improved TIROS Operational Satellites

USE **ITOS satellites**

improvement

RT correction
public relations
upgrading

impulse generators

DEF Standard reference sources of broad-band impulse energy.

RT ∞ generators
impulses
pulse generators
turbines

impulses

DEF The products of the forces and the times during which the forces are applied.

GS **impulses**
. high impulse
. specific impulse
. total impulse
RT impulse generators

impurities

RT contaminants
crystal defects
dirt
heterogeneity
inclusions
point defects
pseudopotentials
quality
trace contaminants
ultrapure metals
wastes

IMS

USE **International Magnetospheric Study**

in situ measurement

(added September 1992)

DEF In situ is Latin for "in original place". It refers to measurements made at the actual location of the object or material measured.

RT atmospheric composition
atmospheric sounding
balloon sounding
ground truth

- ∞ measurement
- optical measurement
- pollution monitoring
- remote sensing
- rocket sounding
- temperature measurement

in situ resource utilization

(added August 2001)

DEF The use of indigenous materials at a planetary or other extraterrestrial landing site for the production of propellants, life support consumables, or other needed materials.

- UF *indigenous space materials utilization*
- ISMU (resource utilization)*
- ISRU (resource utilization)*

- GS utilization

- . **in situ resource utilization**

- RT consumables (spacecraft)
- extraterrestrial resources
- fuel production
- lunar resources
- manned Mars missions
- materials recovery
- oxygen production
- planetary bases

in vitro methods and tests

(added May 1999)

DEF Tests of, or methods related to, biological or biochemical processes occurring in an artificial environment or outside of a living cell or organism.

- GS **in vitro methods and tests**

- . polymerase chain reaction

- RT bioassay
- biotechnology
- conditions
- culture techniques
- cultured cells
- cytology
- fertilization
- histology
- ∞ methodology
- ∞ tests
- tissue engineering

in vivo methods and tests

(added May 1999)

DEF Tests of, or methods related to, biological or biochemical processes occurring within a living cell or organism.

- RT animal models
- bioassay
- biotechnology
- conditions
- culture techniques
- cytology
- histology
- intravenous procedures
- ∞ methodology
- ∞ tests

*inactivation*USE **deactivation****incandescence**

DEF Emission of light due to high temperature of the emitting material. Any other emission of light is called luminescence.

- GS emission
- . light emission
- . . **incandescence**

- RT brightness
- color
- emissivity
- illuminators
- light (visible radiation)
- luminescence
- luminosity
- luminous intensity
- radiance
- spectral emission
- thermal emission

incendiary ammunition

- GS ammunition
- . **incendiary ammunition**
- RT bombs (ordnance)
- combustion

- exothermic reactions
- grenades
- guns (ordnance)
- igniters
- missiles
- projectiles
- propellants
- pyrotechnics
- ∞ rockets

incentive techniques

- RT cost incentives
- cost reduction
- efficiency
- management
- value engineering

incentives

- GS **incentives**
- . contract incentives
- RT income
- management
- management methods
- motivation
- personnel

incidence

DEF Partial coincidence, as a circle and a tangent line. The impingement of a ray on a surface.

- GS **incidence**
- . grazing incidence
- RT angles (geometry)
- impingement

incident radiation

- RT bistatic reflectivity
- corpuscular radiation
- electromagnetic radiation
- obliqueness
- optical reflection
- photon beams
- ∞ radiation
- reflected waves
- refracted waves
- retroreflection
- scattering
- Stokes law of radiation
- wave incidence control

*incineration*USE **incinerators****incinerators**

- UF *incineration*
- RT burners
- furnaces
- waste disposal
- waste energy utilization

∞ **inclination**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The angle between the plane of an orbit and the reference plane. The equator is the reference plane for geocentric orbits and the ecliptic is the reference plane for heliocentric orbits. Also the magnetic dip.

- RT geomagnetism
- magnetic equator
- orbits
- slopes
- tendencies

inclusions

- GS defects
- . **inclusions**
- RT casting
- castings
- clathrates
- heterogeneity
- impurities
- metallography
- veins (petrology)
- voids

incoherence

- RT discontinuity

nonsynchronization

incoherent scatter radar

DEF Radar used in the study of the ionosphere, thermosphere, etc.

- GS radar
- . **incoherent scatter radar**
- . . EISCAT radar system (Europe)
- RT incoherent scattering
- radar scattering

incoherent scattering

DEF The phenomena of generating waves with random variations in phase, amplitude, polarization, and direction of propagation when an incident wave encounters matter.

- GS scattering
- . **incoherent scattering**
- RT coherent scattering
- EISCAT radar system (Europe)
- electromagnetic radiation
- electromagnetic wave transmission
- incoherent scatter radar
- nuclear scattering
- radar scattering

income

- RT budgeting
- economics
- incentives

incompatibility

- RT corrosion
- hazards
- ∞ interference
- solubility

incompressibility

- RT compressibility
- fluid mechanics

incompressible boundary layer

- GS boundary layers
- . **incompressible boundary layer**
- RT laminar boundary layer
- turbulent boundary layer

incompressible flow

- GS fluid flow
- . **incompressible flow**
- . . Stokes flow
- RT aerodynamics
- Beltrami flow
- compressible flow
- gas flow
- Milne-Thomson method
- Navier-Stokes equation
- Reynolds stress
- stream functions (fluids)
- subsonic flow

incompressible fluids

- GS **incompressible fluids**
- . micropolar fluids
- RT Boussinesq approximation
- channel flow
- compressible fluids
- fluid power
- ∞ fluids
- ideal fluids
- Navier-Stokes equation
- Oseen approximation
- superfluidity

Inconel (trademark)

- GS alloys
- . nickel alloys
- . . **Inconel (trademark)**
- RT chromium alloys
- iron alloys

increasing

- RT accumulations
- augmentation
- growth
- magnification
- promotion
- swelling

indene

- GS organic compounds

indentation

- . cyclic compounds
- .. cyclic hydrocarbons
- ... **indene**
- . hydrocarbons
- .. cyclic hydrocarbons
- ... **indene**

indentation

- GS **indentation**
 - . nanoindentation
- RT deformation
- hardness

independent variables

DEF Any of those variables of a problem, chosen according to convenience, which may arbitrarily be specified, and which then determine the other or dependent variables of the problem. The independent variables are often called the coordinates, particularly in problems involving motion in space. Dependent and independent variables can be interchanged, e.g., height and pressure. Used for arguments (mathematics) and parameters.

- UF *arguments (mathematics)*
- parameters*

GS independent variables

- . lattice parameters
- RT dependent variables
- distributed parameter systems
- observability (systems)
- parameter identification
- ∞ variable

∞ indexes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT indexes (documentation)
- indexes (ratios)
- KP index
- KWIC indexes

indexes (documentation)

DEF Ordered reference lists of contents of a file or document, together with keys or reference notations for identification or location of those contents.

- GS classifications
 - . **indexes (documentation)**
 - .. KWIC indexes
 - .. Wiswesser notations

- RT abstracts
- bibliographies
- ∞ catalogs
- documentation
- documents
- handbooks

∞ indexes

- indexing (information science)
- information dissemination
- information retrieval
- lists
- literature
- ∞ reference systems
- selective dissemination of information
- sky surveys (astronomy)
- space glossaries
- summaries
- supplements
- thesauri

indexes (ratios)

- GS ratios
 - . **indexes (ratios)**
 - .. KP index
 - .. morphological indexes
 - .. vegetative index
 - ... leaf area index
 - ... normalized difference vegetation index

RT efficiency

- ∞ indexes
- mass to light ratios

indexing (information science)

(added April 2000)

DEF The representation of document content in a systematic, organized form to support information location, retrieval, or analysis.

- UF *automatic indexing*

- document indexing*
- machine aided indexing*
- GS information analysis
 - . **indexing (information science)**
- RT indexes (documentation)
- information management
- information retrieval
- metadata
- terminology
- terms
- thesauri

India

- GS nations
 - . **India**
- RT Asia
- Bangladesh
- Bhutan
- Himalayas
- Indian spacecraft
- ISRO
- Sikkim

Indian Ocean

- GS oceans
 - . **Indian Ocean**
- RT Arabia Sea
- Indonesia
- Madagascar
- Mauritius
- mid-ocean ridges
- Seychelles

Indian space program

- GS programs
 - . space programs
 - .. **Indian space program**
- RT communication satellites
- manned space flight
- ∞ research projects
- satellite design
- space missions
- ∞ spacecraft
- spacecraft design
- technology utilization

Indian Space Research Organization

- USE **ISRO**

Indian spacecraft

- UF *Aryabhata*
- INSAT satellites*
- IRS (Indian spacecraft)*
- SEO (Indian spacecraft)*
- RT India
- ∞ spacecraft

Indiana

- GS nations
 - . United States
 - .. **Indiana**
- RT Ohio River (US)
- Wabash River Basin (IL-IN-OH)

indicating instruments

- UF *temperature indicators*
- GS measuring instruments
 - . **indicating instruments**
 - .. approach indicators
 - .. astrolabes
 - .. attitude indicators
 - .. gyro horizons
 - .. cloud height indicators
 - .. compasses
 - .. gyrocompasses
 - .. magnetic compasses
 - .. solar compasses
 - .. flow direction indicators
 - .. wind vanes
 - .. position indicators
 - .. plan position indicators
 - .. radio direction finders
 - .. spacecraft position indicators
 - .. smoke detectors
 - .. speed indicators
 - .. tachometers
 - .. weight indicators
 - .. microbalances
 - .. strain gage balances
 - .. thermobalances

- RT aircraft instruments
- control moment gyroscopes
- ∞ detectors
- dials
- display devices
- flat panel displays
- gas detectors
- head-up displays
- helmet mounted displays
- ∞ indication
- ∞ indicators
- instrument receivers
- ∞ instruments
- radarscopes
- recording instruments
- thermocouples
- thermopiles

∞ indication

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT evaluation
- indicating instruments
- probability theory
- signs and symptoms

∞ indicators

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aircraft guidance
- chemical indicators
- indicating instruments
- methylene blue
- rate of climb indicators

indigenous space materials utilization
(added August 2001)

- USE **in situ resource utilization**

indium

- GS chemical elements
 - . **indium**
 - metals
 - . **indium**

indium alloys

- GS alloys
 - . **indium alloys**
- RT aluminum alloys
- gallium alloys
- lead alloys
- tin alloys

indium aluminum arsenides

(added November 1994)

- GS aluminum compounds
 - . aluminum arsenides
 - .. **indium aluminum arsenides**
 - arsenic compounds
 - . arsenides
 - .. aluminum arsenides
 - ... **indium aluminum arsenides**
 - .. indium arsenides
 - ... **indium aluminum arsenides**
 - indium compounds
 - . indium arsenides
 - .. **indium aluminum arsenides**
- RT ∞ chemical compounds
- field effect transistors
- high electron mobility transistors
- molecular beam epitaxy
- p-type semiconductors

indium antimonides

- GS antimony compounds
 - . antimonides
 - .. **indium antimonides**
 - indium compounds
 - . **indium antimonides**
- RT semiconductors (materials)

indium arsenides

- GS arsenic compounds
 - . arsenides
 - .. **indium arsenides**
 - .. indium aluminum arsenides
 - .. indium gallium arsenides
 - indium compounds
 - . **indium arsenides**

- . . indium aluminum arsenides
- . . indium gallium arsenides
- RT **MODFETS**
- indium compounds**
- GS **indium compounds**
 - . indium antimonides
 - . indium arsenides
 - . . indium aluminum arsenides
 - . . indium gallium arsenides
 - . indium oxides
 - . indium phosphates
 - . indium phosphides
 - . indium selenides
 - . . copper indium selenides
 - . indium sulfides
 - . indium tellurides
- RT ∞ chemical compounds
- ∞ Group 3A compounds
- ∞ metal compounds
- indium gallium arsenides**
(added May 1991)
- GS arsenic compounds
 - . arsenides
 - . . gallium arsenides
 - . . . **indium gallium arsenides**
 - . . indium arsenides
 - . . . **indium gallium arsenides**
 - . . . gallium compounds
 - . . . gallium arsenides
 - . . . **indium gallium arsenides**
 - . . . indium compounds
 - . . . indium arsenides
 - . . . **indium gallium arsenides**
- RT intermetallics
- quantum well lasers
- semiconductors (materials)
- indium isotopes**
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - **indium isotopes**
- metals
- . **indium isotopes**
- indium oxides**
(added July 1995)
- GS chalcogenides
 - . oxides
 - . . **indium oxides**
- indium compounds
- . **indium oxides**
- RT ∞ chemical compounds
- indium phosphates**
- GS indium compounds
 - . **indium phosphates**
- phosphorus compounds
- . phosphates
- . . **indium phosphates**
- indium phosphides**
- GS indium compounds
 - . **indium phosphides**
- phosphorus compounds
- . phosphides
- . . **indium phosphides**
- RT quantum well lasers
- transferred electron devices
- indium selenides**
(added June 1995)
- GS chalcogenides
 - . selenides
 - . . **indium selenides**
 - . . . copper indium selenides
- indium compounds
- . **indium selenides**
- . . copper indium selenides
- selenium compounds
- . selenides
- . . **indium selenides**
- . . . copper indium selenides
- RT semiconductors (materials)
- solar cells
- thin films
- indium sulfides**
- GS chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . **indium sulfides**
- indium compounds
- . **indium sulfides**
- sulfur compounds
- . sulfides
- . . inorganic sulfides
- . . . **indium sulfides**
- indium tellurides**
- GS chalcogenides
 - . tellurides
 - . . **indium tellurides**
- indium compounds
- . **indium tellurides**
- tellurium compounds
- . tellurides
- . . **indium tellurides**
- RT semiconductors (materials)
- indium-tin-oxide semiconductors*
- USE **ITO (semiconductors)**
- indoleacetic acids**
(added August 2004)
- DEF Acetic acid derivatives of the heterocyclic compound indole.
- GS acids
 - . **indoleacetic acids**
- RT biochemistry
- indoles
- plant growth regulators
- indoles**
- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **indoles**
 - tryptamines
 - tryptophan
 - melatonin
 - serotonin
- RT indoleacetic acids
- methoxy systems
- pyrroles
- Indonesia**
- GS landforms
 - . islands
 - . . **Indonesia**
- nations
- . **Indonesia**
- RT Indian Ocean
- Indonesian space program
- Pacific Ocean
- Indonesian space program**
- GS programs
 - . space programs
 - . . **Indonesian space program**
- RT Indonesia
- Palapa 2 satellite
- Palapa satellites
- indoor air pollution**
- DEF Pollution found in enclosed spaces often compounded by insufficient air mixing which intensifies the concentration of pollutants caused by outdoor and/or indoor sources.
- GS pollution
 - . environment pollution
 - . . air pollution
 - . . . **indoor air pollution**
- RT air quality
- air sampling
- buildings
- volatile organic compounds
- induced drag**
(added July 1992)
- GS dynamic characteristics
 - . drag
 - . . **induced drag**
- RT aerodynamic characteristics
- aerodynamic drag
- aircraft design
- drag reduction
- induced fluid flow*
- USE **fluid flow**
- inductance**
- GS electrical properties
 - . **inductance**
 - . . proximity effect (electricity)
- electromagnetic properties
- . **inductance**
- . . proximity effect (electricity)
- RT capacitance
- electrical impedance
- LC circuits
- magnetic induction
- magnetic properties
- reactance
- RL circuits
- transformers
- ∞ **induction**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT arc generators
- derivation
- induction (mathematics)
- inference
- initiation
- magnetic induction
- number theory
- induction (mathematics)**
- GS number theory
 - . **induction (mathematics)**
- RT ∞ induction
- mathematical logic
- induction heating**
- DEF The generation of heat in any conducting material by means of magnetic flux-induced currents.
- GS heating
 - . **induction heating**
- RT furnaces
- magnetic induction
- magnetic pumping
- melting
- plasma heating
- radio frequency heating
- vacuum melting
- induction motors**
- DEF Ac motors in which the primary winding on one member (usually the stator) is connected to the power source and a polyphase secondary winding or a squirrel-cage secondary winding on the other member (usually the rotor) carries induced current.
- GS electromechanical devices
 - . electric motors
 - . . **induction motors**
- motors
- . electric motors
- . . **induction motors**
- RT alternating current
- armatures
- asynchronous motors
- ∞ electric power
- electric power supplies
- power factor controllers
- ∞ rotating electrical machines
- synchronous motors
- induction systems*
- USE **intake systems**
- inductively coupled plasma mass spectrometry**
(added March 2001)
- DEF Multi-element analytical technique that uses high temperature plasma, commonly argon, to dissociate molecules and ionize atoms, which are passed into a vacuum, and sorted based on their atomic mass-to-charge ratios.
- UF *ICP-MS (spectrometry)*
- LA-ICP-MS (spectrometry)*
- GS spectroscopy
 - . mass spectroscopy

inductors

. . inductively coupled plasma mass spectrometry

RT chemical analysis
microanalysis
qualitative analysis
spectroscopic analysis
vacuum spectroscopy

inductors

RT arc generators
ballasts (impedances)
circuits
∞ coils
electric energy storage
energy storage
magnet coils
toroids

industrial areas

RT cities
commerce
construction industry
∞ facilities
industries
land use
marketing
megalopolises
regional planning
shipyards
site selection
urban development
urban transportation

industrial energy

RT allocations
commercial energy
distributing
domestic energy
economic factors
∞ energy
energy consumption
energy conversion
transportation energy

industrial management

UF *business management*
GS management
. **industrial management**
. . engineering management
. . inventory management
. . . inventory controls
. . . personnel management
RT concurrent engineering
group technology (manufacturing)
production management
research management
systems management
total quality management

industrial plants

UF *factories*
plants (industries)
GS **industrial plants**
. foundries
RT construction industry
∞ facilities
pilot plants

industrial safety

GS safety
. **industrial safety**
RT accidents
benzene poisoning
beryllium poisoning
carbon tetrachloride poisoning
health physics
hydrocarbon poisoning
industries
occupation
reactor safety

industrial wastes

GS wastes
. **industrial wastes**
RT heavy metals
industries
landfills
liquid wastes
soil pollution
solid wastes

waste disposal
waste utilization
waste water

industries

GS **industries**
. aerospace industry
. . aircraft industry
. construction industry
. defense industry
. . weapons industry
RT aircraft production costs
commerce
commercial spacecraft
contract negotiation
contractors
economic development
economic impact
fishing
gross national product
industrial areas
industrial safety
industrial wastes
manufacturing
personnel subsystems
retirement
shipyards
space industrialization
space manufacturing
technologies
technology assessment
technology utilization
tourism
utilities

inelastic bodies

USE **rigid structures**

inelastic collisions

DEF Collisions between two particles in which changes occur both in the internal energy of one or both of the particles and in the sums, before and after collisions, of their kinetic energies.

GS collisions
. **inelastic collisions**
RT scattering

inelastic scattering

GS scattering
. **inelastic scattering**
RT coherent scattering
Compton effect
elastic scattering
electron scattering
Mandelstam representation
nuclear scattering
quark parton model

inelastic stress

DEF A force acting on a solid and producing a deformation such that the original shape and size of the solid are not restored after the force is removed.

RT cyclic loads
mathematical models
metal fatigue
stress analysis
stress-strain diagrams

inequalities

GS **inequalities**
. Schwartz inequality
RT ∞ mathematics

inert atmosphere

DEF A gaseous medium that because of its lack of chemical reaction is used to enclose tests or equipment.

GS controlled atmospheres
. **inert atmosphere**

inert gases

USE **rare gases**

inertia

DEF Resistance to acceleration. Used for inertial forces.

UF *inertial forces*
GS **inertia**

. inertia principle
. . Mach inertia principle
RT ∞ force
Froude number
mass
moments of inertia
∞ motion
similitude law

inertia bonding

DEF The joining of materials with friction and pressure.

GS bonding
. **inertia bonding**
RT ∞ joining
metal-metal bonding

inertia moments

USE **moments of inertia**

inertia principle

GS inertia
. **inertia principle**
. . Mach inertia principle
RT equations of motion
moments of inertia

inertia wheels

USE **counter-rotating wheels**
reaction wheels

inertial confinement fusion

DEF The process of using intense beams of heavy ions to convey the energy needed to compress and heat small pellets containing deuterium-tritium fuels to achieve ignition of the pellets.

GS **inertial confinement fusion**
. impact fusion
RT fusion propulsion
strongly coupled plasmas

inertial coordinates

GS coordinates
. **inertial coordinates**
RT Astroguide Navigation System
geocentric coordinates
inertialess steerable antennas

inertial forces

USE **inertia**

inertial fusion (reactor)

DEF Reactors in which pellet fusion is initiated by high energy sources including lasers.

RT ∞ fusion
fusion reactors
ion beams
laser fusion
laser plasmas
nuclear fuels
plasma compression
pulsed lasers
relativistic electron beams

inertial guidance

DEF Guidance by means of the measurement and integration of acceleration from within the craft.

GS guidance (motion)
. **inertial guidance**
. . strapdown inertial guidance
RT injection guidance
midcourse guidance
reentry guidance
satellite guidance
spacecraft guidance
stabilized platforms
terminal guidance

inertial measuring units

USE **inertial platforms**

inertial navigation

DEF Dead reckoning performed automatically by a device which gives a continuous indication of position by integration of accelerations since leaving a starting point.

GS navigation
. **inertial navigation**
. . Astroguide Navigation System

- . . gimballess inertial navigation
- RT acceleration measurement
- air navigation
- all-weather air navigation
- celestial navigation
- dead reckoning
- digital navigation
- hyperbolic navigation
- navigation aids
- polar navigation
- radar navigation
- radio navigation
- Schuler tuning
- space navigation
- star trackers
- strapdown inertial guidance
- surface navigation

inertial platforms

- UF *inertial measuring units*
- RT gimballess inertial navigation
- gyroscopic stability
- Kalman-Schmidt filtering
- navigation instruments
- ∞ platforms
- three axis stabilization

inertial reference systems

- RT celestial reference systems
- ∞ reference systems
- relativity
- ∞ systems

Inertial Upper Stage

DEF A solid propulsive upper stage designed to place spacecraft on high Earth orbits or on escape trajectories for planetary missions.

- UF *interim upper stage (STS)*
- IUS*

- GS interim stages (spacecraft)
- . **Inertial Upper Stage**

- RT orbit transfer vehicles
- recoverable spacecraft
- reusable spacecraft
- Space Shuttle orbiters
- space shuttles
- space transportation
- space transportation system
- space tugs
- Ulysses mission
- upper stage rocket engines

inertialess steerable antennas

- GS antennas
- . directional antennas
- . . steerable antennas
- . . . **inertialess steerable antennas**
- arrays
- . antenna arrays
- . . steerable antennas
- . . . **inertialess steerable antennas**
- RT communication equipment
- inertial coordinates

infarction

- GS diseases
- . heart diseases
- . . **infarction**
- . . . myocardial infarction
- RT embolisms
- thrombosis
- tissues (biology)

infections

USE **infectious diseases**

infectious diseases

- UF *infections*
- GS diseases
- . **infectious diseases**
- . . airborne infection
- . . bacterial diseases
- . . . cholera
- . . . diphtheria
- . . . keratitis
- . . . syphilis
- . . . tuberculosis
- . . . typhoid
- . . . typhus
- . . conjunctivitis

- . . dermatitis
- . . . contact dermatitis
- . . fungal diseases
- . . hepatitis
- . . meningitis
- . . parasitic diseases
- . . viral diseases
- . . . acquired immunodeficiency syndrome

RT

- antiseptics
- Aspergillus
- biological weapons
- ∞ blisters
- epidemiology
- immunity
- leukopenia

inference

- RT assumptions
- deduction
- hypotheses
- implication
- ∞ induction

infestation

- UF *insect damage*
- RT beetles
- boll weevils
- bollworms
- chironomus flies
- flatworms
- insects
- larvae
- locusts
- moths
- parasites
- plants (botany)
- silkworms
- worms

infiltration

- GS **infiltration**
- . chemical vapor infiltration
- RT air conditioning
- permeability
- porosity
- resin film infusion
- voids
- warfare

infinite impulse response filters
(added December 2002)

USE **IIR filters**

infinite span wings

- GS airfoils
- . thin airfoils
- . . thin wings
- . . . **infinite span wings**
- . wings
- . . slender wings
- . . . **infinite span wings**
- . . thin wings
- . . . **infinite span wings**
- . . unswept wings
- . . . **infinite span wings**
- planforms
- . wing planforms
- . . **infinite span wings**
- RT flexible wings

infinity

DEF A point, line, or region, beyond measurable limits.

- RT functions (mathematics)
- geometry
- number theory
- probability theory
- real variables
- series (mathematics)

inflatable devices

USE **inflatable structures**

inflatable gliders

- GS expandable structures
- . inflatable structures

. . **inflatable gliders**

- gliders
- . paragliders
- . . **inflatable gliders**

RT ∞ aircraft

inflatable space structures

(added August 1996)

GS **inflatable space structures**

- . inflatable spacecraft
- . . Beacon satellites
- . . . Beacon Explorer A
- . . . Explorer 22 satellite

RT

- antennas
- folding structures
- space erectable structures

inflatable spacecraft

- GS expandable structures
- . inflatable structures
- . . **inflatable spacecraft**
- . . . Beacon satellites
- Beacon Explorer A
- Explorer 22 satellite
- inflatable space structures
- . **inflatable spacecraft**
- . . Beacon satellites
- . . . Beacon Explorer A
- . . . Explorer 22 satellite
- space erectable structures
- . **inflatable spacecraft**
- . . Beacon satellites
- . . . Beacon Explorer A
- . . . Explorer 22 satellite
- RT artificial satellites
- orbital assembly
- self erecting devices
- ∞ spacecraft
- unmanned spacecraft

inflatable structures

- UF *deflating*
- inflatable devices*
- GS expandable structures
- . **inflatable structures**
- . . air bag restraint devices
- . . balloons
- . . . high altitude balloons
- jimsphere balloons
- skyhook balloons
- superpressure balloons
- . . . meteorological balloons
- jimsphere balloons
- ROBIN balloons
- . . . microballoons
- . . . tethered balloons
- . . ballutes
- . . gas bags
- . . inflatable gliders
- . . inflatable spacecraft
- . . . Beacon satellites
- Beacon Explorer A
- Explorer 22 satellite
- RT airships
- boats
- buildings
- flexible bodies
- flexible wings
- floats
- folding structures
- inflating
- life rafts
- lunar shelters
- pneumatic equipment
- pressure suits
- radomes
- self erecting devices
- space erectable structures
- space stations
- ∞ structures
- tires
- variable geometry structures

inflating

SN (EXCLUDES ECONOMIC INFLATION)

- RT expansion
- gas injection
- growth
- inflatable structures
- pressure reduction

inflection points

pressurizing
swelling

inflection points

GS geometry
. Euclidean geometry
. . points (mathematics)
. . . **inflection points**
RT curves (geometry)
functions (mathematics)
line shape
real variables

in-flight monitoring

RT crew procedures (inflight)
crew procedures (preflight)
flight control
flight tests
monitors
telemetry

inflight simulation

(added November 1998)
USE **in-flight simulation**

in-flight simulation

(added October 1998)
DEF The use of a specialized test aircraft to simulate the flight characteristics of another vehicle. The test aircraft is typically capable of duplicating the computed responses of the simulated vehicle through special aerodynamic and control system features.
UF *inflight simulation*
GS simulation
. flight simulation
. . **in-flight simulation**
RT aircraft control
flight characteristics
flight control
flight simulators
flight tests
training simulators

in-flight starting

USE **air start**

influence coefficient

GS coefficients
. **influence coefficient**
. . structural influence coefficients
RT aeroelasticity
discharge coefficient
elastic properties
flutter
force distribution
∞ hydraulics
moment distribution
nozzle thrust coefficients
plastic properties
pressure distribution
stress analysis
structural analysis

influenza

GS diseases
. infectious diseases
. . viral diseases
. . . **influenza**
. respiratory diseases
. . **influenza**

information

DEF Any facts or data which can be used, transferred, or communicated.
GS **information**
. metadata
RT annotations
audio tapes
communicating
communication
∞ data
documentation
mathematical tables
news media
presentation
privacy
reports

video tapes

information adaptive system

DEF The spaceborne portion of the NASA End-to-End Data System.
GS information systems
. **information adaptive system**
RT communication equipment
∞ systems

information analysis

(added April 2000)
GS **information analysis**
. data mining
. indexing (information science)
. scientific visualization
. . numerical flow visualization
. trend analysis
RT information resources management
information retrieval
natural language processing

information dissemination

GS communicating
. **information dissemination**
. . messages
. . selective dissemination of information
RT bibliographies
catalogs (publications)
documentation
electronic publishing
extraterrestrial communication
indexes (documentation)
information transfer
integrated library systems
Internet resources
libraries
privacy
reports
summaries
websites

information flow

RT aerospace technology transfer
communicating
communication
∞ flow
information transfer
management
message processing
selective dissemination of information
technology transfer

information management

GS management
. **information management**
. . information resources management
. . records management
RT communicating
communication
data base management systems
data retrieval
data storage
indexing (information science)
information transfer
integrated library systems
technology transfer

Information Power Grid

(added December 2003)
USE **grid computing (computer networks)**

information processing (biology)

DEF An approach to the study of perception, memory, language and/or thought that considers organisms to be complex systems that receive, transform, store and transmit information.
RT artificial intelligence
bioelectricity
brain
cognition
cognitive psychology
electrophysiology
human performance
neurophysiology
perception

psychophysiology

information resources management

(added September 1995)
DEF A comprehensive strategy for managing an organization's information resources throughout the information life cycle, including creation, collection, use, processing, and dissemination.
UF *IRM*
GS management
. information management
. . **information resources management**
. resources management
. . **information resources management**
RT computer information security
data management
data processing
documentation
information analysis
information transfer
Internet resources
libraries
records management
websites

information retrieval

GS retrieval
. **information retrieval**
RT abstracts
bibliographies
CD-ROM
command languages
computers
data processing
data retrieval
documentation
documents
hypertext
indexes (documentation)
indexing (information science)
information analysis
information transfer
integrated library systems
interservice data exchange program
libraries
management information systems
metadata
numerical data bases
on-line systems
query languages
search profiles
selective dissemination of information
space glossaries
Starsite program
subjects
thesauri

information systems

GS **information systems**
. Atmospheric & Oceanographic Inform Sys
. Earth Resources Information System
. EOS data and information system
. geographic information systems
. information adaptive system
. integrated library systems
. knowledge based systems
. . expert systems
. cockpit weather information systems
. decision support systems
. management information systems
. pilot support systems
RT CD-ROM
Earth Observing System (EOS)
grid computing (computer networks)
information transfer
Internet resources
libraries
management systems
multimedia
networks
on-line systems
records management
selective dissemination of information
∞ systems
systems management

websites

information theory

- UF *Shannon information theory*
- RT ∞ applications of mathematics
- automata theory
- ∞ automation
- BCH codes
- coding
- combinatorial analysis
- communication theory
- computers
- correction
- correlation
- cryptography
- cybernetics
- data processing
- data transmission
- decision theory
- ergodic process
- error detection codes
- Fisher information
- Fourier analysis
- game theory
- ∞ logic
- machine translation
- management information systems
- ∞ mathematics
- maximum entropy method
- messages
- ∞ noise
- operations research
- parity
- Petri nets
- phase shift keying
- probability theory
- random processes
- redundancy
- Shannon-Wiener measure
- statistical analysis
- ∞ statistics
- stochastic processes
- systems engineering
- telecommunication
- terms
- ∞ theories

information transfer

- RT document markup languages
- information dissemination
- information flow
- information management
- information resources management
- information retrieval
- information systems
- international cooperation
- interoperability
- technology transfer
- technology utilization
- World Wide Web

information transmission

USE **data transmission**

infrared absorption

DEF The taking up of energy from infrared radiation by a medium through which the radiation is passing.

- GS energy absorption
- . radiation absorption
- . . electromagnetic absorption
- . . . **infrared absorption**
- RT ∞ absorption
- atmospheric attenuation
- atmospheric optics
- infrared radiation
- light scattering
- optical properties
- thermal emission
- transmittance
- wave attenuation

infrared astronomy

- GS astronomy
- . **infrared astronomy**
- RT astronomical photography
- blazars
- Infrared Astronomy Satellite
- infrared cirrus (astronomy)
- infrared photometry

infrared sources (astronomy)

Infrared Space Observatory (ISO)

James Webb Space Telescope

Kuiper Airborne Observatory

Large Deployable Reflector

SOFIA (airborne observatory)

Space Infrared Telescope Facility

Infrared Astronomy Satellite

DEF A joint NASA-Netherlands-Great Britain spacecraft designed to perform astronomical observations in the infrared spectral region. It was launched on January 25, 1983. Used for IRAS.

- UF *IRAS*
- GS artificial satellites
- . scientific satellites
- . . astronomical satellites
- . . . **Infrared Astronomy Satellite**
- observatories
- . astronomical observatories
- . . astronomical satellites
- . . . **Infrared Astronomy Satellite**
- RT geosynchronous orbits
- infrared astronomy
- infrared sources (astronomy)
- IRAS-Araki-Alcock comet
- Netherlands space program
- UK satellites

infrared cirrus (astronomy)

(added September 1989)

- RT ∞ clouds
- cosmic dust
- galactic radiation
- infrared astronomy
- infrared radiation
- infrared sources (astronomy)
- interstellar matter
- molecular clouds

infrared detectors

- UF *signal-processing-in-the-element detectors*
- SPRITE detectors*
- GS measuring instruments
- . radiation measuring instruments
- . . actinometers
- . . . radiometers
- **infrared detectors**
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- quantum well infrared photodetectors
- . . infrared instruments
- . . . **infrared detectors**
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- quantum well infrared photodetectors
- RT bolometers
- ∞ detectors
- electromagnetic measurement
- focal plane devices
- forest fire detection
- infrared signatures
- mercury cadmium tellurides
- x ray detectors

infrared filters

- GS electromagnetic wave filters
- . optical filters
- . . **infrared filters**
- RT electric filters
- ultraviolet filters

infrared horizon scanners

USE **horizon scanners**

infrared scanners

infrared imagery

- GS imagery

- . photography
- . . **infrared imagery**
- RT color infrared photography
- lunar equator
- thermography
- x ray imagery

infrared inspection

- GS inspection
- . **infrared inspection**
- RT nondestructive tests
- quality control

infrared instruments

- GS measuring instruments
- . radiation measuring instruments
- . . **infrared instruments**
- . . . infrared detectors
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- quantum well infrared photodetectors
- infrared interferometers
- infrared spectrometers
- filter wheel infrared spectrometers
- infrared spectrophotometers
- RT Advanced Very High Resolution Radiometer
- forest fire detection

infrared interferometers

- GS measuring instruments
- . interferometers
- . . **infrared interferometers**
- . . radiation measuring instruments
- . . . infrared instruments
- **infrared interferometers**
- RT astronomical interferometry
- interferometry
- optical equipment
- optical measurement
- optical measuring instruments
- speckle interferometry

infrared lasers

- UF *infrared masers*
- IR lasers*
- irasers*
- GS stimulated emission devices
- . lasers
- . . **infrared lasers**
- RT argon lasers
- carbon dioxide lasers
- carbon lasers
- carbon monoxide lasers
- chemical lasers
- dye lasers
- gas lasers
- HF lasers
- liquid lasers
- organic lasers
- quantum cascade lasers
- solid state lasers
- waveguide lasers
- YLF lasers

infrared masers

USE **infrared lasers**

infrared photography

- GS imagery
- . photography
- . . multispectral photography
- . . . **infrared photography**
- color infrared photography
- RT aerial photography
- astronomical photography
- black and white photography
- cinematography
- faint object camera
- forest fire detection
- geographic information systems
- ice mapping
- lunar photography

infrared photometry

meteorological satellites
METEOSAT satellite
multispectral band cameras
Nimbus satellites
radiometers
satellite-borne photography
timber inventory
ultraviolet photography

infrared photometry

DEF Photometry in the infrared region.
GS optical measurement
. photometry
. . . **infrared photometry**
RT astronomical photometry
infrared astronomy
infrared spectra
near infrared radiation
stellar spectrophotometry

infrared radar

DEF Radar covering a range from the limit of the visible spectrum to the shortest microwaves.
GS radar
. **infrared radar**
RT CALIPSO (Pathfinder satellite)
FLIR detectors
optical radar
radar imagery

infrared radiation

DEF Electromagnetic radiation lying in the wavelength interval from 75 microns to an indefinite upper boundary sometimes arbitrarily set at 1000 microns (0. 01 centimeter).
GS electromagnetic radiation
. **infrared radiation**
. . . far infrared radiation
. . . near infrared radiation
RT beams (radiation)
black body radiation
coherent electromagnetic radiation
energy absorption
evaporography
exhaust emission
heat
infrared absorption
infrared cirrus (astronomy)
infrared signatures
infrared sources (astronomy)
light (visible radiation)
microwaves
monochromatic radiation
planetary radiation
polarized electromagnetic radiation
 ∞ radiation
 ∞ Seyfert galaxies
solar radiation
sunlight
terrestrial radiation
thermal radiation
wavelengths
xenon lamps

infrared radiometers

GS measuring instruments
. radiation measuring instruments
. . . actinometers
. . . . radiometers
. infrared detectors
. **infrared radiometers**
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
. . . infrared instruments
. . . . infrared detectors
. **infrared radiometers**
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
RT aerial reconnaissance
atmospheric correction
data acquisition
Earth Resources Program
environmental monitoring

forest fire detection
pressure modulator radiometers
radiometric correction
satellite-borne instruments
thermal mapping

infrared reflection

GS reflection
. **infrared reflection**
RT optical reflection
radiative heat transfer
radio echoes
spread reflection
ultraviolet reflection

infrared scanners

UF *infrared horizon scanners*
GS measuring instruments
. radiation measuring instruments
. . . actinometers
. . . . radiometers
. infrared detectors
. infrared radiometers
. **infrared scanners**
. infrared instruments
. infrared detectors
. infrared radiometers
. **infrared scanners**
scanners
. **infrared scanners**
RT forest fire detection
horizon scanners
multispectral band scanners
optical equipment
Scanner project
thermal mapping

infrared signatures

DEF The infrared spectral characteristics of an object or uniform land surface which uniquely defines it.
GS signatures
. **infrared signatures**
RT infrared detectors
infrared radiation
infrared spectra
signature analysis

infrared sources (astronomy)

DEF Celestial bodies or astronomical regions emitting a large amount of radiation in the infrared portion of the electromagnetic spectrum.
GS celestial bodies
. **infrared sources (astronomy)**
. . . infrared stars
RT astronomy
Herbig-Haro objects
infrared astronomy
Infrared Astronomy Satellite
infrared cirrus (astronomy)
infrared radiation

Infrared Space Observatory (ISO)

DEF An astronomical satellite observatory funded by ESA operating at wavelengths from 3 to 200 microns. The observatory is comprised of a 60 cm Cassegrain telescope, a CCD infrared camera, two Michelson interferometers, and a photopolarimeter.
GS artificial satellites
. ESA satellites
. . . **Infrared Space Observatory (ISO)**
. . . scientific satellites
. . . . astronomical satellites
. **Infrared Space Observatory (ISO)**
ESA spacecraft
. ESA satellites
. . . **Infrared Space Observatory (ISO)**
observatories
. astronomical observatories
. . . astronomical satellites
. . . . **Infrared Space Observatory (ISO)**
telescopes
. spaceborne telescopes

. . Infrared Space Observatory (ISO)

RT European space programs
infrared astronomy
spaceborne astronomy

infrared spectra

GS spectra
. radiation spectra
. . . electromagnetic spectra
. . . . **infrared spectra**
RT ∞ absorption
emission spectra
infrared photometry
infrared signatures
line spectra
microwave spectra
molecular spectra
solar spectra
stellar spectra

infrared spectrometers

GS measuring instruments
. optical measuring instruments
. . . **infrared spectrometers**
. . . . filter wheel infrared spectrometers
. . . . radiation measuring instruments
. . . . actinometers
. **infrared spectrometers**
. filter wheel infrared spectrometers
. infrared instruments
. **infrared spectrometers**
. filter wheel infrared spectrometers
. spectrometers
. **infrared spectrometers**
. filter wheel infrared spectrometers
. optical equipment
. optical measuring instruments
. **infrared spectrometers**
. filter wheel infrared spectrometers
RT Ebert spectrometers
solar spectrometers

infrared spectrophotometers

GS measuring instruments
. optical measuring instruments
. . . spectrophotometers
. . . . **infrared spectrophotometers**
. . . . radiation measuring instruments
. . . . actinometers
. spectrophotometers
. **infrared spectrophotometers**
. infrared instruments
. **infrared spectrophotometers**
optical equipment
. optical measuring instruments
. . . spectrophotometers
. . . . **infrared spectrophotometers**
RT chemical analysis
filter wheel infrared spectrometers
photometers

infrared spectroscopy

GS spectroscopy
. **infrared spectroscopy**
RT absorption spectroscopy
astronomical spectroscopy
chemical analysis
electron spectroscopy
laser spectrometers
molecular spectroscopy
molecular structure
optogalvanic spectroscopy
Raman spectroscopy
spectrometers
spectroscopic analysis
sulfur hexafluoride
vacuum spectroscopy

infrared stars

GS celestial bodies
. infrared sources (astronomy)
. . . **infrared stars**
. . . stars
. . . . **infrared stars**

RT Herbig-Haro objects

infrared suppression

DEF The shielding and/or protection of aircraft engines and exhausts from heat-seeking missiles and/or detecting devices.

RT afterburning
aircraft detection
aircraft engines
cooling systems
exhaust gases
exhaust nozzles
heat shielding
jet engines
jet exhaust
reaction products
suppressors
temperature control

infrared telescopes

DEF Special optical instruments for astronomical observations in the range from one micron to one millimeter.

GS telescopes
. **infrared telescopes**
. . Large Deployable Reflector
. . Space Infrared Telescope Facility
RT astronomy
Astroplane
James Webb Space Telescope
Next Generation Space Telescope
project

infrared tracking

GS tracking (position)
. **infrared tracking**
RT antimissile missiles
compensatory tracking
homing devices
missile tracking
optical tracking
pursuit tracking
radiometers

infrared windows

DEF A frequency region in the infrared where there is good transmission of electromagnetic radiation through the atmosphere.

RT apertures
lasers
optical materials
∞ windows

infrasonic frequencies

DEF Frequencies below the audiofrequency range.

GS frequencies
. **infrasonic frequencies**
RT acoustics

∞ ingestion

SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW.)
RT ingestion (biology)
ingestion (engines)

ingestion (biology)

GS **ingestion (biology)**
. drinking
. eating
. grazing
RT ∞ ingestion
swallowing

ingestion (engines)

RT bird-aircraft collisions
engine failure
∞ ingestion

ingots

DEF Cast metals in forms intended for subsequent fabrication.

GS castings
. **ingots**
RT billets
casting
molds

solidification

ingredients

RT admixtures
∞ components
∞ composition
content
formulations
mixtures

ingress (spacecraft passageway)

RT air locks
doors
egress
hatches
openings

inhabitants

GS communities
. **inhabitants**
. . mountain inhabitants
RT aborigines
cities
demography
personnel
residential areas

inhalation

USE **respiration**

∞ inhibition

SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW.)
RT attenuation
corrosion prevention
detachment
disabilities
dithers
frustration
inhibition (psychology)
inhibitors
introversion
lethargy
passivity
prevention
∞ reduction
stopping

inhibition (psychology)

RT conditioning (learning)
∞ inhibition

inhibitors

DEF Things that inhibit; specifically, substances bonded, taped, or dip dried onto a solid propellant to restrict the burning surface and to give direction to the burning process.

GS **inhibitors**
. enzyme inhibitors
. wear inhibitors
RT additives
antidotes
antifouling
antiicing additives
antioxidants
case bonded propellants
catalysts
coatings
corrosion prevention
∞ inhibition
neutralizers
packaging
passivity
propellant additives
propellant decomposition
propellant storability
retardants
silencers
solid propellant ignition
solid propellants
suppressors

inhomogeneity

UF *nonhomogeneity*
RT defects
heterogeneity
nonuniformity

inhour equation

RT ∞ equations

nuclear reactions
nuclear reactors
reactivity
reactor physics

initial value problems

USE **boundary value problems**

initialisms

USE **abbreviations**

initiation

RT activation
actuation
detonation
∞ generation
∞ induction
inoculation
nucleation
∞ priming
reactor startup tests
starting
stimulation

∞ initiators

SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW.)
RT catalysts
initiators (explosives)
styphnates

initiators (explosives)

UF *electroexplosive devices*
GS explosive devices
. **initiators (explosives)**
. . boosters (explosives)
. . caps (explosives)
. . detonators
. . exploding wires
. . primers (explosives)
igniters
. **initiators (explosives)**
. . boosters (explosives)
. . caps (explosives)
. . detonators
. . exploding wires
. . primers (explosives)
RT fuses (ordnance)
∞ initiators
pyrotechnics
styphnates

injection

GS **injection**
. carrier injection
. fluid injection
. . gas injection
. . liquid injection
. . . deep well injection (wastes)
. . . water injection
. fuel injection
. ion injection
. secondary injection
. transearth injection
. trans lunar injection
RT Barritt diodes
blowing
boundary layer separation
∞ charging
feeding (supplying)
filling
fluid flow
implantation
injectors
input
perforating
supplying

injection carburetors

USE **carburetors**
fuel injection

injection guidance

GS guidance (motion)
. **injection guidance**
RT ascent trajectories
celestial navigation
command guidance
inertial guidance
midcourse guidance

injection lasers

rendezvous guidance
satellite guidance
spacecraft guidance
transearth injection
translunar injection

injection lasers

DEF Lasers that use a forward biased semiconductor junction as the active lasing medium.
GS stimulated emission devices
. lasers
. . . **injection lasers**
. . . quantum cascade lasers
RT aluminum gallium arsenide lasers
gallium arsenide lasers
gallium arsenides
injection locking
semiconductor lasers

injection locking

RT carrier injection
injection lasers
laser mode locking

injection molding

DEF A forming process in which a heat softened or plasticized material is forced from a cylinder into a relatively cool cavity which gives the product a desired shape. A similar process is used for forming solid propellants from quick cure ingredients.

GS forming techniques
. **injection molding**
RT ceramics
dies
extruding
melting
molding materials
molds
plastics
resin transfer molding

injectors

DEF Devices that propel fuel or propellant into a combustion chamber under pressure other than atmospheric.

GS **injectors**
. vortex injectors
RT blowers
carburetors
ejectors
feeders
fuel injection
fuel systems
injection
jet flow
jet mixing flow
∞ jet nozzles
∞ jets
nozzle flow
∞ nozzles
orifices
pumps
spray nozzles

Injun 1 satellite

GS artificial satellites
. Injun satellites
. . . **Injun 1 satellite**

Injun 3 satellite

GS artificial satellites
. Injun satellites
. . . **Injun 3 satellite**

Injun 4 satellite

GS artificial satellites
. Injun satellites
. . . **Injun 4 satellite**

Injun 5 satellite

USE **Explorer 40 satellite**

Injun Explorer

USE **Explorer 25 satellite**

Injun satellites

GS artificial satellites
. **Injun satellites**
. . . Explorer 25 satellite

. . Injun 1 satellite
. . Injun 3 satellite
. . Injun 4 satellite

injuries

GS

injuries

. back injuries
. barotrauma
. brain damage
. burns (injuries)
. crash injuries
. ejection injuries
. frostbite
. lesions
. . pulmonary lesions
. noise injuries
. parachuting injury
. paralysis
. radiation injuries
. spinal cord injuries
. whiplash injuries

RT

accidents
∞ blisters
chemical defense
damage
death
diagnosis
foreign bodies
hazards
hemorrhages
impairment
necrosis
sabotage
veterinary medicine
wound healing

inks

RT

drawings
graphic arts
pigments
printing

inland waters

GS

water

. inland waters

. . ground water
RT Great Lakes (North America)
Great Salt Lake (UT)
lakes
rivers
springs (water)
water pollution
water resources
water runoff

inlet airframe configurations

DEF Optimum locations of engine inlets for various purposes.

GS

intake systems
. air intakes
. . **inlet airframe configurations**

RT

bypass ratio
engine inlets
flow geometry
hypersonic inlets
inlet flow
inlet nozzles
nose inlets
side inlets
supersonic inlets

inlet flow

GS

fluid flow
. internal flow
. . **inlet flow**

RT

bypass ratio
choked flow
∞ diffusers
dump combustors
flow geometry
fluid injection
head flow
inlet airframe configurations
intake systems
∞ pressure drop
supersonic inlets
vortex generators

inlet nozzles

RT air intakes

annular nozzles
bypass ratio
conical nozzles
∞ diffusers
engine inlets
exhaust nozzles
inlet airframe configurations
intake systems
internal compression inlets
∞ nozzles
openings
pipe nozzles

inlet pressure

DEF In connection with performance data on pumps, when not otherwise specified, the total static pressure measured in a standard testing chamber by a vacuum gage located near the inlet port.

GS

pressure

. inlet pressure

RT pressure gradients
pressure recovery
stagnation pressure
water pressure

inlet temperature

DEF A location for measuring the temperature of fluids, particles, etc., entering a heat system, an engine, or other machine.

GS

temperature

. inlet temperature

RT air intakes
engine inlets
fuel systems
gas temperature
intake systems

inlets (devices)

USE **intake systems**

inlets (topography)

DEF Small narrow openings, recesses, indentations, or other entrances into coastlines or shores of lakes or rivers, through which water penetrates into land.

GS

landforms

. inlets (topography)

. . bayous

. . Cook Inlet (AK)

RT bays (topographic features)

Delaware Bay (US)

fiords

gulfs

lagoons

Persian Gulf

Saginaw Bay (MI)

sounds (topographic features)

inliers (landforms)

DEF Areas or groups of rocks surrounded by rocks of younger age.

GS

landforms

. inliers (landforms)

RT erosion

geological faults

geology

petrography

petrology

rock intrusions

rocks

structural properties (geology)

INMARSAT satellites

(added September 1994)

GS

artificial satellites

. INMARSAT satellites

RT communication satellites

international cooperation

Marisat satellites

NAVSTAR satellites

telecommunication

inner radiation belt

GS environments

. inner radiation belt

particles

. charged particles

. . magnetically trapped particles

. . . radiation belts

- **inner radiation belt**
- . corpuscular radiation
- . . radiation belts
- . . . **inner radiation belt**
- . trapped particles
- . . magnetically trapped particles
- . . . radiation belts
- **inner radiation belt**
- RT artificial radiation belts
- outer radiation belt
- proton belts
- ∞ radiation
- single event upsets

- inoculation**
- UF *seeding (inoculation)*
- RT crystal growth
- crystallization
- immunity
- initiation
- nucleation
- vaccines

- inoculum**
- GS serums
- . **inoculum**
- vaccines
- . **inoculum**
- RT antibodies
- antigens
- physiological defenses

- inorganic chemistry**
- DEF The study of the composition, properties, structure, and reactions of the chemical elements and all their compounds with the exception of hydrocarbons and their derivatives.
- RT analytical chemistry
- ∞ chemistry

- inorganic coatings**
- GS coatings
- . **inorganic coatings**
- . . anodic coatings
- . . ceramic coatings
- RT antiradar coatings
- protective coatings

- inorganic compounds**
- GS **inorganic compounds**
- . ammonia
- . . liquid ammonia
- RT acids
- ∞ bases
- ∞ chemical compounds
- flame retardants
- intermetallics
- molten salts
- ∞ salts

- ∞ **inorganic materials**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED CONSULT THE TERMS LISTED BELOW)
- RT ∞ materials
- nonflammable materials
- refractory materials
- thermochromatic materials
- vitreous materials

- inorganic nitrates**
- GS nitrogen compounds
- . nitrates
- . . **inorganic nitrates**
- . . . ammonium nitrates
- . . . hydrazine nitrate
- . . . potassium nitrates
- . . . silver nitrates
- . . . sodium nitrates

- inorganic peroxides**
- UF *superoxides*
- GS chalcogenides
- . oxides
- . . anhydrides
- . . . peroxides
- **inorganic peroxides**
- hydrogen peroxide

- RT organic peroxides

- inorganic sulfides**
- GS chalcogenides
- . sulfides
- . . **inorganic sulfides**
- . . . barium sulfides
- . . . bismuth sulfides
- . . . cadmium sulfides
- . . . calcium sulfides
- . . . copper sulfides
- . . . hydrogen sulfide
- . . . indium sulfides
- . . . lead sulfides
- . . . molybdenum sulfides
- molybdenum disulfides
- . . . polysulfides
- . . . strontium sulfides
- . . . zinc sulfides
- wurtzite
- zincblende
- sulfur compounds
- . sulfides
- . . **inorganic sulfides**
- . . . barium sulfides
- . . . bismuth sulfides
- . . . cadmium sulfides
- . . . calcium sulfides
- . . . copper sulfides
- . . . hydrogen sulfide
- . . . indium sulfides
- . . . lead sulfides
- . . . molybdenum sulfides
- molybdenum disulfides
- . . . polysulfides
- . . . strontium sulfides
- . . . zinc sulfides
- wurtzite
- zincblende

- inositols**
- GS organic compounds
- . carbohydrates
- . . sugars
- . . . **inositols**

- input**
- RT accumulations
- collection
- feeding (supplying)
- filling
- injection
- ∞ loading
- output
- reading
- replenishment
- supplying

- input/output routines**
- GS computer programs
- . computer systems programs
- . . **input/output routines**
- RT data transfer (computers)
- disk operating system (DOS)
- operating systems (computers)
- random access
- ∞ routines

- INSAT satellites*
- USE **Indian spacecraft**

- insect damage*
- USE **infestation**

- insecticides**
- GS poisons
- . pesticides
- . . **insecticides**
- . . . Carbamates (tradename)
- urethanes
- . . . DDT
- . . . dieldrin
- . . . phenothiazines
- RT endrin
- entomology
- toxicology

- insects**
- GS animals
- . invertebrates
- . . arthropods
- . . . **insects**
- bees
- bollworms
- chironomus flies
- cockroaches
- Coleoptera
- beetles
- tribolia
- boll weevils
- crickets
- Drosophila
- fireflies
- grasshoppers
- locusts
- moths
- silkworms
- RT entomology
- infestation
- larvae
- pupa

- insensitivity*
- USE **sensitivity**

- insertion**
- GS **insertion**
- . orbit insertion
- RT collating
- embedding
- grafting
- implantation
- impregnating
- inserts
- network analysis
- transmission loss

- insertion loss**
- RT energy dissipation
- losses
- transmission loss

- inserts**
- GS **inserts**
- . nozzle inserts
- RT accessories
- bushings
- fasteners
- fittings
- insertion
- linings
- spacers
- spools
- washers (spacers)

- inshore zones*
- USE **beaches**

- insolation**
- DEF In general, solar radiation received at the Earth's surface. The rate at which direct solar radiation is incident upon a unit horizontal surface at any point on or above the surface of Earth. (Contracted from INcoming SOLar radiATION).
- GS solar energy
- . **insolation**
- RT greenhouse effect
- meteorology
- photosynthetically active radiation
- solar heating
- solar radiation
- sunlight
- Surface Meteorology and Solar Energy project

- insomnia**
- GS sleep
- . **insomnia**
- RT sleep deprivation

- inspection**
- DEF The process of measuring, examining, testing, gaging, or making other determinations with respect to materials, products, services, systems, or environments.
- GS **inspection**
- . infrared inspection
- . x ray inspection
- RT acceptability

Inspector satellite

checkout
chemical tests
construction
detection
endoscopes
evaluation
examination
identifying
nondestructive tests
performance tests
preventive maintenance
quality control
sampling
specifications
standards
static tests
statistical analysis
surveillance
tolerances (mechanics)
ultrasonic flaw detection

Inspector satellite

GS artificial satellites
. **Inspector satellite**
military spacecraft
. reconnaissance spacecraft
. . **Inspector satellite**

inspiration

RT intellect
mental performance
psychology

instability

USE **stability**

installation

USE **installing**

installation manuals

GS documents
. manuals
. . **installation manuals**

installing

UF *installation*
RT assembling
construction
look angles (electronics)
maintenance
relocation
replacing
retrofitting

instantons

DEF Field configurations of Yang-Mills theory which are localized in space and time. These configurations are solutions of the Yang-Mills field equations in Euclidean space time which allow the transitions (tunneling) from one vacuum state to another.

RT elementary particles
plasma physics
quantum chromodynamics
quarks

institutions

GS **institutions**
. bureaus (organizations)
RT federations
teams

instruction sets (computers)

RT alphanumeric characters
Boolean algebra
computer programs
mathematical logic

instructions

USE **education**

instructors

UF *teachers*
GS personnel
. **instructors**
RT education
learning
schools
students
training evaluation

universities

instrument approach

DEF A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

GS approach
. **instrument approach**
RT aircraft approach spacing
aircraft instruments
approach control
approach indicators
blind landing
flight control
flight instruments
glide paths
landing aids
landing radar
night flights (aircraft)

instrument compensation

GS **instrument compensation**
. temperature compensation
RT adaptive optics
calibrating
∞ compensation
error correcting devices
laser guide stars
systematic errors

instrument drift

USE **drift (instrumentation)**

instrument errors

GS errors
. **instrument errors**
RT bias
boresight error
calibrating
drift (instrumentation)
linearity
optical correction procedure
spectral sensitivity
systematic errors

instrument flight rules

UF *IFR (rules)*
GS rules
. flight rules
. . **instrument flight rules**
RT air navigation
air traffic control
approach control
beacons
blind landing
flight conditions
flight instruments
flight plans
landing
low visibility

instrument landing systems

DEF A system which provides, in the aircraft, a display of the lateral, longitudinal, and vertical references necessary for a landing. Used for ILS (landing systems).

UF *ILS (landing systems)*
GS landing aids
. **instrument landing systems**
. . all-weather landing systems
RT air traffic control
aircraft guidance
aircraft instruments
aircraft landing
airports
approach control
approach indicators
automatic landing control
blind landing
display devices
flight control
flight instruments
glide paths
ground based control
∞ instruments
landing
landing instruments
night flights (aircraft)

radar
radar approach control
radio altimeters
radio beacons
∞ systems
tracking (position)

instrument orientation

RT alignment
attitude (inclination)
bearing (direction)
directivity
look angles (electronics)
∞ orientation
positioning

instrument packages

GS packages
. **instrument packages**
. . Apollo Lunar Surface Experiments Package
. . EASEP
. . EREP
RT AMPS (satellite payload)
automatic weather stations
data collection platforms
local scientific survey module
modules
molecular shields
ocean data acquisitions systems
Orbiting Frog Otolith
payload assist module
payloads
satellite-borne instruments
SIM
spacecraft instruments
weather stations

instrument receivers

RT controllers
∞ detectors
display devices
indicating instruments
∞ instruments
isotropic turbulence
measuring instruments
receivers
recording instruments
transducers

instrument transformers

GS transformers
. **instrument transformers**
RT ∞ converters
resolvers

instrument transmitters

GS transmitters
. **instrument transmitters**
RT controllers
∞ instruments
measuring instruments
recording instruments
transducers

instrumental analysis

USE **analyzing automation**

instrumentation

USE **instruments**

∞ instruments

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *instrumentation*
RT actuators
Advanced Range Instrumentation Ship
aircraft instruments
Apollo Lunar Surface Experiments Package
automatic control
bioinstrumentation
bubble technique
controllers
densimeters
display devices
drag force anemometers
EASEP

EREP
 flight instruments
 force vector recorders
 haploscopes
 heliostats
 helmet mounted displays
 indicating instruments
 instrument landing systems
 instrument receivers
 instrument transmitters
 laser altimeters
 measuring instruments
 meteorological instruments
 microwave sensors
 monitors
 navigation instruments
 oculometers
 packages
 propellant actuated instruments
 recording instruments
 remote control
 rocket-borne instruments
 satellite instruments
 satellite-borne instruments
 scatterometers
 SIM
 sound detecting and ranging
 spacecraft instruments
 surgical instruments
 transducers
 transmitters
 tribometers
 turbine instruments
 ultrasonic densimeters

∞ **insulated structures**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT dielectrics
 electrical insulation
 heat radiators
 heat shielding
 hypersonic vehicles
 insulation
 radiation shielding
 reentry shielding
 reentry vehicles
 spacecraft shielding

insulating materials

USE **insulation**

insulation

SN (MATERIAL)
 UF *insulating materials*
 GS **insulation**
 . electrical insulation
 . multilayer insulation
 . thermal insulation
 RT absorbers (materials)
 asbestos
 ceilings (architecture)
 composite materials
 concretes
 ∞ construction materials
 damping
 honeycomb structures
 ∞ insulated structures
 insulators
 interlayers
 isolation
 isolators
 jackets
 lining processes
 linings
 ∞ materials
 micarta
 oxides
 potting compounds
 protection
 suppressors
 vermiculite
 waterproofing

insulators

SN (EXCLUDES THERMAL INSULATION--LIMITED TO DEVICES COMPOSED OF ELECTRICALLY INSULATIVE MATERIALS)
 RT attenuators

dielectrics
 electric conductors
 electrical insulation
 insulation
 transmission lines

insulin

GS drugs
 . **insulin**
 secretions
 . endocrine secretions
 . . **insulin**
 RT diabetes mellitus

insurance (contracts)

DEF Coverage by contract whereby one party undertakes to indemnify or guarantee another against loss by a specified contingency or peril.

GS contracts
 . **insurance (contracts)**
 RT agreements
 air law
 aircraft accident investigation
 aircraft accidents
 assurance
 economic factors
 extensions
 grants
 legal liability
 public law
 space commercialization
 space law

intake systems

UF *induction systems*
inlets (devices)
 GS **intake systems**
 . air intakes
 . . engine inlets
 . . hypersonic inlets
 . . inlet airframe configurations
 . . supersonic inlets
 . conical inlets
 . helical inducers
 . internal compression inlets
 . nose inlets
 . side inlets
 RT aerodynamic configurations
 annular ducts
 bypass ratio
 cooling systems
 duct geometry
 ducted bodies
 ducts
 entrances
 exhaust systems
 feed systems
 feeders
 fuel systems
 inlet flow
 inlet nozzles
 inlet temperature
 manifolds
 openings
 pipe nozzles
 plenum chambers
 ramps (structures)
 scoops
 ∞ systems
 ∞ water intakes

Intasat satellite

GS artificial satellites
 . scientific satellites
 . . Environmental Research Satellites
 . . . **Intasat satellite**
 RT Earth ionosphere
 lower atmosphere
 magnetic fields
 troposphere

Integ Med and Behavioral Lab Measur System

USE **IMBLMS**

Integ Program for Aerospace Veh Design

USE **IPAD**

integers

DEF Whole numbers; numbers that are not a fraction.

GS number theory
 . **integers**
 real numbers
 . **integers**
 RT arithmetic
 complex numbers
 congruences
 digits
 ∞ numbers

integral calculus

GS analysis (mathematics)
 . calculus
 . . **integral calculus**
 . real variables
 . . measure and integration
 . . . **integral calculus**
 RT area
 differential calculus
 integrals
 J integral
 numerical integration
 operational calculus

integral equations

UF *integrodifferential equations*
 GS analysis (mathematics)
 . functional analysis
 . . **integral equations**
 . . . Fredholm equations
 . . . J integral
 . . . singular integral equations
 . . . Volterra equations
 . . . Wiener Hopf equations
 RT asymptotic properties
 calculus of variations
 differential equations
 distributed parameter systems
 ∞ equations
 ill-conditioned problems
 (mathematics)
 ill-posed problems (mathematics)
 Mellin transforms
 meshfree methods
 method of moments
 nonlinear equations
 Percus method
 range (extremes)
 Schmidt method
 transport theory

integral functions

USE **entire functions**

integral rocket ramjets

DEF A combination of a solid propellant rocket and a ramjet which uses the empty booster case as a ramjet combustor.

GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **integral rocket ramjets**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **integral rocket ramjets**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **integral rocket ramjets**

RT rocket-based combined-cycle engines
 solid propellant rocket engines
 turbine engines

integral transformations

UF *transform integrals*
 GS analysis (mathematics)
 . functional analysis
 . . **integral transformations**
 . . . Fourier transformation
 fast Fourier transformations
 Fourier-Bessel transformations
 . . . Hilbert transformation
 . . . Laplace transformation
 transformations (mathematics)
 . **integral transformations**

integrals

- . . Fourier transformation
- . . fast Fourier transformations
- . . Fourier-Bessel transformations
- . . Hilbert transformation
- . . Laplace transformation
- RT convolution integrals
- Lighthill method
- operators (mathematics)

integrals

- DEF Of or pertaining to an integer.
- GS **integrals**
 - . convolution integrals
- RT differential equations
- functionals
- integral calculus
- ∞ mathematics

integrated circuits

DEF Combinations of interconnected circuit elements inseparably associated on or within continuous substrates. To further define the nature of integrated circuits, additional modifiers may be prefixed.

- UF *monolithic circuits*
- GS **integrated circuits**
 - . application specific integrated circuits
 - . . DTL integrated circuits
 - . . encapsulated microcircuits
 - . . field-programmable gate arrays
 - . . large scale integration
 - . . linear integrated circuits
 - . . medium scale integration
 - . . TTL integrated circuits
 - . . very large scale integration
 - . . VHSIC (circuits)
- RT burn-in
- charge flow devices
- chips (electronics)
- chips (memory devices)
- electronic packaging
- evolvable hardware
- hardware description languages
- integrated optics
- ion implantation
- latch-up
- microchannel plates
- microminiaturization
- microprocessors
- microstrip devices
- molecular electronics
- optoelectronic devices
- photomasks
- photoresists
- printed circuits
- reconfigurable hardware
- resonant tunneling diodes
- thick films
- thin films
- transistor circuits

integrated energy systems

- DEF Community systems for energy generation and distribution.
- RT communities
- electric power plants
- energy conversion
- energy distribution
- heating
- ∞ systems
- total energy systems
- utilities

integrated global ocean station systems

- UF *IGOSS*
- RT data collection platforms
- Global Atmospheric Research Program
- ground stations
- international cooperation
- oceanographic parameters
- ∞ systems
- weather stations

integrated library systems

- GS information systems
- . **integrated library systems**
- RT information dissemination

- information management
- information retrieval
- libraries
- on-line systems

Integrated Maneuvering Life Support Sys
USE **IMLSS**

integrated mission control center

- UF *IMCC (control center)*
- GS stations
 - . ground stations
 - . . **integrated mission control center**
- RT ∞ control
- Gemini project
- ground based control
- real time operation

integrated optics

DEF Thin film devices containing tiny lenses, prisms, and switches to transmit very thin laser beams, which serve the same purposes as the manipulation of electrons in thin film devices of integrated electronics.

- RT electro-optics
- free-space optical interconnects
- integrated circuits
- Langmuir-Blodgett films
- lenses
- light transmission
- monomolecular films
- optical bistability
- optical interconnects
- optical switching
- optical waveguides
- ∞ optics
- optoelectronic devices
- thin films

Integrated Truss Structure P1

(added November 2002)

DEF A structural component of the International Space Station incorporating elements of the External Active Thermal Control Subsystem, the UHF-band communications subsystem, and portions of the rail system for the Mobile Servicing System.

- GS space station structures
 - . **Integrated Truss Structure P1**
- RT International Space Station
- large space structures
- trusses

Integrated Truss Structure S1

(added October 2002)

DEF A structural component of the International Space Station incorporating elements of the External Active Thermal Control Subsystem, the S-band communications subsystem, and portions of the rail system for the Mobile Servicing System.

- GS space station structures
 - . **Integrated Truss Structure S1**
- RT International Space Station
- large space structures
- trusses

Integrated Truss Structure Z1

(added June 2000)

DEF An early exterior framework for the International Space Station to allow the first U.S. solar arrays to be temporarily installed on the Unity module for early power.

- UF *Z1 truss structure*
- GS space station structures
 - . **Integrated Truss Structure Z1**
- RT International Space Station
- trusses
- Unity connecting module

integration (real variables)

USE **measure and integration**

integrators

DEF In digital computers, devices for accomplishing a numeric approximation of the mathematical process of integration. Devices

whose output is proportional to the integral of an input signal.

- GS **integrators**
 - . digital integrators
- RT circuits
- differentiators
- solions

integrity

- GS **integrity**
 - . computer program integrity
- RT completeness
- privacy
- security
- vulnerability

integrodifferential equations

USE **differential equations**
integral equations

Intel 8080 microprocessor

- GS computer components
 - . microprocessors
 - . . **Intel 8080 microprocessor**
- data processing equipment
- microprocessors
- . . **Intel 8080 microprocessor**
- RT computers

intellect

- GS intelligence
 - . **intellect**
- RT artificial intelligence
- inspiration
- mental performance
- psychology

intellectual property

(added October 1995)

- GS **intellectual property**
 - . copyrights
 - . patents
- RT computer programs
- inventions
- law (jurisprudence)
- legal liability
- licensing
- open source licensing (computers)
- patent policy
- procurement policy

intelligence

- GS **intelligence**
 - . artificial intelligence
 - . extraterrestrial intelligence
 - . intellect
- RT abilities
- cognitive psychology
- intelligence tests
- mental health
- mental performance

intelligence tests

(added September 1992)

- RT abilities
- human performance
- intelligence
- mental performance
- personality tests
- personnel selection
- psychological tests
- ∞ tests

intelligent materials

(added March 1998)

USE **smart materials**

intelligent structures

USE **smart structures**

intelligibility

- GS **intelligibility**
 - . speech recognition
- RT ambiguity
- ∞ coherence
- communication theory
- ∞ interpretation
- messages
- orthography
- phonemics

- phonetics
psycholinguistics
scrambling (communication)
- Intelsat satellites**
GS artificial satellites
. communication satellites
. . **Intelsat satellites**
- intensification*
USE **amplification**
- intensifier tubes*
USE **image intensifiers**
- intensifiers**
GS **intensifiers**
. image intensifiers
. . image orthicons
RT amplifiers
- ∞ **intensity**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF In general, the degree or amount, usually expressed by the elemental time rate or spatial distribution of some condition or physical quantity, such as electric field, sound, magnetism, etc. With respect to electromagnetic radiation, a measure of the radiant flux per unit solid angle emanating from some source. Frequently, it is desirable to specify this as radiant intensity in order to distinguish it clearly from luminous intensity.
RT amplitudes
brightness
flux (rate)
flux density
level (quantity)
loudness
luminance
luminous intensity
magnitude
noise intensity
radiance
stellar magnitude
- interacting galaxies**
(added November 1988)
UF *galaxy interaction*
GS celestial bodies
. galaxies
. . **interacting galaxies**
RT galactic structure
∞ interactions
retrograde orbits
ring galaxies
shell galaxies
stellar systems
- interactional aerodynamics**
GS mechanics (physics)
. fluid mechanics
. . fluid dynamics
. . . gas dynamics
. . . . **interactional aerodynamics**
RT airfoils
blade-vortex interaction
computational fluid dynamics
∞ flow
laminar boundary layer
rotor stator interactions
shock wave interaction
- ∞ **interactions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air land interactions
air sea ice interactions
air water interactions
atomic collisions
atomic interactions
beam interactions
blade-vortex interaction
configuration interaction
electromagnetic interactions
electron phonon interactions
electroweak interactions (field theory)
elementary particle interactions
- fluid-solid interactions
gas-gas interactions
gas-ion interactions
gas-liquid interactions
gas-metal interactions
gas-solid interactions
high energy interactions
interacting galaxies
ion atom interactions
laser plasma interactions
laser target interactions
man environment interactions
meson-meson interactions
meson-nucleon interactions
molecular collisions
molecular interactions
nuclear capture
nuclear interactions
nuclear reactions
nucleon-nucleon interactions
particle interactions
particle theory
photon-electron interaction
plasma interaction experiment
plasma interactions
plasma-electromagnetic interaction
plasma-particle interactions
proton-proton reactions
shock wave interaction
solar terrestrial interactions
sound-sound interactions
spin-orbit interactions
strong interactions (field theory)
wave interaction
weak energy interactions
weak interactions (field theory)
- interactive control**
DEF The sending of multiple commands that are selected on the basis of data received from an experiment in real time.
RT active control
∞ control
control theory
numerical control
- interactive graphics*
USE **computer graphics**
- interactive multimedia*
USE **multimedia**
- interannual variations*
(added September 2000)
USE **annual variations**
- interatomic forces**
RT atomic force microscopy
atomic structure
embedded atom method
lattice energy
Van der Waals forces
- intercalation**
DEF Production of layer type semiconducting as well as other conducting materials (also called synthetic metals).
GS stratification
. **intercalation**
RT ∞ chemical compounds
graphite
interlayers
∞ layers
- intercalibration**
(added January 1999)
DEF Calibration between two or more data sources, including (1) the comparison of data sets acquired by different types of measurement systems for the purpose of deducing the calibration values for one of the measurement systems; (2) the mutual calibration of data from different measurement systems through the comparison of the data with model calculations; and (3) the calibration of multiple detectors on a single instrument through the comparison of data from each detector.
GS calibrating
. **intercalibration**
RT comparison
- correction
multisensor applications
standardization
- interception**
RT autonomous docking
docking
proportional navigation
pursuit-evasion games
rendezvous
spacecraft docking
- Interceptor aircraft*
USE **fighter aircraft**
- ∞ **interceptors**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT fighter aircraft
satellite interceptors
YF-12 aircraft
- interconnection*
USE **joining**
- intercontinental ballistic missiles**
UF *ICBM (missiles)*
GS missiles
. ballistic missiles
. . **intercontinental ballistic missiles**
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
. surface to surface missiles
. . **intercontinental ballistic missiles**
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
RT fleet ballistic missiles
intermediate range ballistic missiles
Mark 1 reentry body
Mark 2 reentry body
Mark 3 reentry body
Mark 4 reentry body
Mark 5 reentry body
Mark 6 reentry body
Mark 11 reentry body
Mark 12 reentry body
Mark 17 reentry body
transoceanic systems
- Intercosmos satellites**
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Intercosmos satellites**
. Soviet satellites
. . Cosmos satellites
. . . **Intercosmos satellites**
- intercranial circulation**
GS circulation
. blood circulation
. . **intercranial circulation**
RT cranium
skull
- interdigital transducers**
GS transducers
. **interdigital transducers**
RT digital transducers
electroacoustic transducers
piezoelectric transducers
surface acoustic wave devices
- interface stability**
GS stability
. **interface stability**

interfaces

RT fluid boundaries
gas-solid interfaces
interfaces
liquid sloshing
liquid-liquid interfaces
liquid-solid interfaces
liquid-vapor interfaces
Taylor instability
ullage

interfaces

DEF A common boundary between two parts of a system, whether material or non material. Specifically, in a rocket vehicle or other mechanical assembly, a common boundary between two components. Specifically, in fluid dynamics, a surface separating two fluids across which there is a discontinuity of some fluid property such as density or velocity or of some derivative of these properties in a direction normal to the interface. The equations of motion do not apply at the interface but are replaced by the boundary conditions.

GS **interfaces**
. fiber-matrix interfaces
. fluid boundaries
. . gas-solid interfaces
. . jet boundaries
. . liquid-liquid interfaces
. . liquid-solid interfaces
. . liquid-vapor interfaces
. graphical user interface
. . windows (computer programs)
. human-computer interface
. solid-solid interfaces

RT boundaries
coordination
data processing equipment
free boundaries
interface stability
management planning
project management
surface properties
surface reactions
∞ surfaces
telecommunication

interfacial energy

RT adhesion
antiphase boundaries
electron energy
∞ energy
fiber pullout
fiber pushout
fiber-matrix interfaces
liquid-liquid interfaces
shear strength
stiction
surface energy

interfacial strain

USE **interfacial tension**

interfacial tension

DEF That property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent the liquid from spreading. Used for interfacial strain and surface tension.

UF *interfacial strain*
surface tension
GS surface properties
. **interfacial tension**
RT Bond number
capillary waves
gas-liquid interactions
Gibbs adsorption equation
globules
liquid bridges
liquid surfaces
liquid-liquid interfaces
Marangoni convection
mechanical properties
ripples
sliding
spreading
surface energy
surface stability
surface tension driven convection
∞ surfaces
tensile stress

∞ tension
thermocapillary migration
tribology
vapor pressure
wetting

∞ interference

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aerodynamic interference
coherence coefficient
crosstalk
disrupting
electromagnetic compatibility
electromagnetic interference
hum
incompatibility
interference factor table
interference grating
intersymbolic interference
jamming
nonsynchronization
radio frequency interference
Ramsauer effect
support interference
wave diffraction
wave front deformation

interference drag

GS aerodynamic characteristics
. **interference drag**
dynamic characteristics
. drag
. . pressure drag
. . . wave drag
. . . . **interference drag**
RT propeller slipstreams
supersonic drag
upwash

interference factor table

GS tables (data)
. **interference factor table**
RT ∞ interference
modulation
multichannel communication

interference fit

DEF The condition where the diameter of the fastener is larger than the hole that it is to fit in.

GS joints (junctions)
. **interference fit**
RT aircraft structures
fasteners
fatigue life
fitting
mechanical properties
stress analysis

interference grating

RT fringe multiplication
∞ gratings
∞ interference
Moire effects
Moire fringes
radio filters
radio frequency interference

interference immunity

RT electromagnetic interference
noise reduction
radio frequency interference
signal processing
signal to noise ratios
space-time adaptive processing

interference lift

GS aerodynamic characteristics
. lift
. . **interference lift**
aerodynamic forces
. lift
. . **interference lift**
distribution (property)
. **interference lift**
dynamic characteristics
. lift
. . **interference lift**

RT upwash

interference monochromatization

USE **diffraction**
monochromatization

interferograms

USE **interferometry**

interferometers

DEF Apparatus used to produce and measure interference from two or more coherent wave trains from the same source. Interferometers are used to measure wavelengths, to measure angular width of sources, to determine the angular position of sources (as in satellite tracking), and for many other purposes.

GS measuring instruments
. **interferometers**
. . etalons
. . Fabry-Perot interferometers
. . infrared interferometers
. . Mach-Zehnder interferometers
. . Michelson interferometers
. . microwave interferometers
. . phase switching interferometers
. . radio interferometers

RT astronomical interferometry
Bragg gratings
diffractometers
flatness
goniometers
optical equipment
optical measurement
optical measuring instruments
photogoniometers
Ronchi test
Sagnac effect
very long base interferometry

interferometry

UF *interferograms*
GS **interferometry**
. astronomical interferometry
. differential interferometry
. holographic interferometry
. laser interferometry
. Moire interferometry
. Ronchi test
. shearography
. speckle interferometry
. very long base interferometry
RT diffraction patterns
Fresnel diffraction
Fresnel reflectors
infrared interferometers
isochromatics
null zones
plasma flux measurement
Sagnac effect
scatter plates (optics)

interferon

DEF A protein (lymphokine) released by cells in response to virus infection. When taken up by other cells, interferon inhibits the replication of viruses within them.

RT acquired immunodeficiency syndrome
bacteriophages
biochemistry
∞ biology
human immunodeficiency virus
physiological defenses
viruses

intergalactic media

UF *extragalactic media*
GS media
. **intergalactic media**
RT cooling flows (astrophysics)
cosmic dust
cosmic gases
cosmic plasma
dark matter
galactic halos
mass distribution
stellar winds

Sunyaev-Zeldovich effect

intergranular corrosion

DEF Corrosion that occurs preferentially at grain boundaries.

- GS chemical attack
 - . **intergranular corrosion**
 - corrosion
 - . **intergranular corrosion**
- RT grain boundaries
 - stress corrosion
 - transgranular corrosion

interim stages (spacecraft)

- GS **interim stages (spacecraft)**
 - . Inertial Upper Stage
- RT multistage rocket vehicles
 - recoverable spacecraft
 - reusable spacecraft
 - space shuttles
 - stage separation

interim upper stage (STS)

USE **Inertial Upper Stage**

interior ballistics

DEF That branch of ballistics that deals with the propulsion of projectiles, i.e., the motion and behavior of projectiles in a gun barrel, the temperatures and pressures developed inside a gun barrel or rocket.

- GS ballistics
 - . **interior ballistics**
- RT propellant tests

interlacing drainage

USE **drainage patterns**

interlaminar stress

(added July 1992)

- GS stresses
 - . **interlaminar stress**
- RT composite materials
 - delaminating
 - interlayers
 - laminates
 - shear stress
 - stress distribution
 - stress-strain relationships

interlayers

- GS **interlayers**
 - . multilayer insulation
- RT barrier layers
 - fabrics
 - insulation
 - intercalation
 - interlaminar stress
 - laminates
 - ∞ layers
 - ply orientation
 - sandwich structures
 - ∞ transition layers

interleukins

(added August 2004)

DEF Soluble factors which stimulate growth-related activities of leukocytes as well as other cell types. They enhance cell proliferation and differentiation, DNA synthesis, secretion of other biologically active molecules and responses to immune and inflammatory stimuli.

- RT cells (biology)
 - differentiation (biology)
 - immune systems
 - immunology
 - leukocytes

interlocking

USE **locking**

intermedia

USE **multimedia**

intermediate frequencies

DEF The beat frequencies used in heterodyne receivers, usually the difference between the received radiofrequency signal and a locally generated signal.

- GS frequencies
 - . radio frequencies

. . **intermediate frequencies**

- RT high frequencies
- low frequencies

intermediate frequency amplifiers

- GS amplifiers
 - . **intermediate frequency amplifiers**
- RT beat frequencies
 - crystal filters
 - heterodyning
 - logarithmic receivers
 - preamplifiers
 - radio receivers
 - transistor amplifiers

intermediate range ballistic missiles

- UF *IRBM (missiles)*
- GS missiles
 - . ballistic missiles
 - . . **intermediate range ballistic missiles**
 - . . . Blue Streak missile
 - . . . Jupiter missile
 - . . . polaris missiles
 - Polaris A1 missile
 - Polaris A2 missile
 - Polaris A3 missile
 - . surface to surface missiles
 - . . **intermediate range ballistic missiles**
 - . . . Blue Streak missile
 - . . . Jupiter missile
 - . . . polaris missiles
 - Polaris A1 missile
 - Polaris A2 missile
 - Polaris A3 missile
- RT field army ballistic missiles
 - fleet ballistic missiles
 - intercontinental ballistic missiles
 - Mark 1 reentry body
 - Mark 2 reentry body
 - Mark 3 reentry body
 - short range ballistic missiles

intermetallics

- SN (COMPOUNDS CONSISTING OF ONLY METALLIC ELEMENTS)
- UF *electron compounds*
- GS **intermetallics**
 - . heavy fermion systems
 - . . heavy fermion superconductors
- RT alloying
 - alloys
 - aluminides
 - ammines
 - antiphase boundaries
 - arsenides
 - borides
 - cluster variation method
 - indium gallium arsenides
 - inorganic compounds
 - iron aluminides
 - metalloids
 - metals
 - mischmetal
 - nickel aluminides
 - phase diagrams
 - photoelectromagnetic effects
 - semiconductors (materials)
 - silicides
 - tellurides
 - titanium aluminides

intermittency

- RT cycles
 - pulses
 - random processes

intermittency hypothesis

- GS hypotheses
 - . **intermittency hypothesis**
- RT photographic recording

intermodulation

DEF The modulation of the components of a complex wave by each other in a nonlinear system.

- GS modulation
 - . **intermodulation**
- RT demodulation

- discriminators
- frequency analyzers
- frequency modulation
- remodulation
- sound-sound interactions
- wave interaction

intermolecular forces

- GS level (quantity)
 - . energy levels
 - . . molecular energy levels
 - . . . **intermolecular forces**
 - molecular properties
 - . molecular energy levels
 - . . **intermolecular forces**
- RT configuration interaction
 - excimers
 - Lennard-Jones potential
 - molecular interactions
 - molecular structure
 - Van der Waals forces
 - virial coefficients

intermontane floors

USE **valleys**

internal combustion engines

SN (EXCLUDES ROCKET ENGINES)

- GS engines
 - . **internal combustion engines**
 - . . diesel engines
 - . . gas turbine engines
 - . . . hydrogen engines
 - . . . jet engines
 - T-58 engine
 - ramjet engines
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turbooramjet engines
 - turbojet engines
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine
 - J-93 engine
 - RA-28 engine
 - turbofan engines
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - turboprop engines
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - turboramjet engines
 - helicopter engines
 - rotary engines
 - Wankel engines
 - . . gas turbine engines
 - . . . automobile engines
 - . . . automobile fuels
 - . . . bearing

internal compression inlets

bearings
booster rocket engines
cams
carburetors
combustion
combustion chambers
diesel fuels
distributors
ducted rocket engines
electric hybrid vehicles
engine parts
engine primers
engine starters
exhaust systems
external combustion engines
fuel consumption
fuel injection
fuel pumps
fuel systems
gas turbines
hybrid propellant rocket engines
ignition systems
liquid propellant rocket engines
lubrication systems
piston engines
pistons
retrorocket engines
rocket engines
solid propellant rocket engines
spark plugs
superchargers
sustainer rocket engines
thermodynamic cycles
thermodynamic efficiency
torpedo engines
Vernier engines

internal compression inlets

GS intake systems
. **internal compression inlets**
RT air intakes
compressing
engine inlets
inlet nozzles
supersonic inlets

internal conversion

RT ∞ conversion
nuclear reactions

internal energy

DEF A mathematically defined thermodynamic function of state, interpretable through statistical mechanics as a measure of the molecular activity of the system.

RT chemical energy
∞ energy
free energy
Gibbs-Helmholtz equations
kinetic energy
∞ level
molecular energy levels
particle energy
potential energy
thermal energy
thermodynamics

internal flow

(added January 1995)
GS fluid flow
. **internal flow**
. . . cavity flow
. . . channel flow
. . . open channel flow
. . . ducted flow
. . . Knudsen flow
. . . inlet flow
. . . nozzle flow
. . . pipe flow
RT Couette flow
fluidics
hydrodynamics
pipes (tubes)

internal friction

GS friction
. **internal friction**
RT anelasticity
attenuation
cohesion

damping
density (mass/volume)
eddy viscosity
hysteresis
mechanical properties
∞ physical properties
plastic flow
viscosity

internal pressure

SN (LIMITED TO PRESSURE INSIDE A PORTION OF MATTER DUE TO ATTRACTION BETWEEN MOLECULES)
DEF The pressure inside a portion of matter due to the attraction between molecules.
GS pressure
. **internal pressure**
RT adhesion
cohesion
gas pressure
partial pressure
pressure distribution
spreading
temperature inversions

internal stress

USE **residual stress**

internal waves

DEF In fluid mechanics, wave motions of stably stratified fluids in which the maximal vertical motions occur below the surface of the fluids.
GS **internal waves**
. planetary waves
RT evanescent waves
surface waves
∞ waves

International Cometary Explorer

USE **International Sun Earth Explorer 3**

International Computers Limited

USE **ICL computers**

international cooperation

GS policies
. foreign policy
. . international relations
. . . **international cooperation**
. . . . outer space treaty
RT A-300 aircraft
A-310 aircraft
A-320 aircraft
A-330 aircraft
A-340 aircraft
A-380 aircraft
Anik 1
Anik 2
Anik 3
Anik satellites
Apollo Soyuz test project
Arabsat
Arcomsat
Azur satellite
Cassini mission
Cluster Mission
Committee on Space Research
Communications Technology Satellite
conventions
∞ cooperation
Cosmos 782 satellite
Cosmos 936 satellite
Cosmos 1129 satellite
disarmament
EISCAT radar system (Europe)
Energia launch vehicle
ESA satellites
European Airbus
European Southern Observatory
European Union
federations
French space program
GLONASS
Granat satellite
information transfer
INMARSAT satellites
integrated global ocean station
systems
International Hydrological Decade

International Satellite Geodesy
Experiment
International Space Station
North Atlantic Treaty Organization
(NATO)
Orbiting Frog Otolith
Palapa 2 satellite
Palapa satellites
peacetime
politics
Proton launch vehicle
ROSAT mission
Russian Space Program
sea law
SOHO Mission
sovereignty
Symphonie satellites
U.S.S.R. space program
United Nations
user requirements
Vega project
World Meteorological Organization

International Field Year for Great Lakes

RT Canada
Great Lakes (North America)
United States

International Geophysical Year

DEF By international agreement, a period during which greatly increased observation of worldwide geophysical phenomena is undertaken through the cooperative effort of participating nations. July 1957 to December 1958 was the first such year; however, precedent was set by the International Polar Years of 1882 and 1932. Used for IGY (geophysical year).
UF *IGY (geophysical year)*
RT geophysics
Vanguard satellites
world data centers

International Geosphere-Biosphere program

GS programs
. **International Geosphere-Biosphere program**
RT biogeochemistry
biosphere
Earth observations (from space)
geophysics
man environment interactions
solar terrestrial interactions

International Hydrological Decade

DEF A ten-year program, 1965-74, patterned after the International Geophysical Year, aimed at training hydrologists and technicians, and at the establishment of networks for measuring hydrologic data. The idea originated in the United States, but the program was sponsored by UNESCO, and a large proportion of membership of the United Nations participated. Used for IHD (hydrological decade).
UF *IHD (hydrological decade)*
RT Canada

foreign policy
hydrology
international cooperation
international relations
precipitation (meteorology)
river basins
streams
United States
water resources
watersheds

international law

GS law (jurisprudence)
. **international law**
. . air law
. . sea law
. . space law
RT conventions
European Union
legal liability
nations
outer space treaty
peacetime

politics
sovereignty
United Nations
warfare

International Magnetospheric Explorer

UF *IME satellite*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **International Magnetospheric Explorer**
RT Delta launch vehicle
Earth magnetosphere

International Magnetospheric Study

DEF Joint US, ESA, Japanese, and Canadian effort (1976-1979) for observation and measurement of magnetospheric and ionospheric phenomena and involving spacecraft, aircraft, balloons, and rockets, as well as ground based equipment. Used for IMS.

UF *IMS*
GS investigation
. **International Magnetospheric Study**
RT atmospheric physics
Earth magnetosphere
European space programs
geomagnetism
interplanetary magnetic fields

international practical temperature

USE **temperature scales**

International Quiet Sun Year

DEF An international cooperative program during 1964-65 of studying solar-terrestrial phenomena during a quiet sun, i.e., sunspot minimum, period. It is related to the International Geophysical Year and to the International Active Sun Years. Used for IQSY (international year)

UF *IQSY (international year)*
RT solar activity
solar cycles
solar physics

international relations

GS policies
. foreign policy
. . **international relations**
. . . international cooperation
. . . . outer space treaty
RT Apollo Soyuz test project
International Hydrological Decade
International Space Year
U.S.S.R. space program

International Satellite Cloud Climatology

USE **ISCCP Project**

International Satellite Geodesy Experiment

UF *ISAGEX*
RT celestial geodesy
European space programs
geodetic coordinates
international cooperation
satellite tracking
U.S.S.R. space program

International Sats for Ionospheric Study

USE **ISIS satellites**

International Solar Polar Mission

USE **Olysses mission**

International Space Station

(added December 1994)
UF *ISS (space station)*
GS artificial satellites
. space stations
. . **International Space Station**
stations
. space stations
. . **International Space Station**
RT Alpha Magnetic Spectrometer
Assured Crew Return Vehicle
Columbus module
Columbus space station
Crew Equipment Translation Aid (ISS)

Cupola Module
Destiny Laboratory Module
Integrated Truss Structure P1
Integrated Truss Structure S1
Integrated Truss Structure Z1
international cooperation
Kibo Japanese Experiment Module
large space structures
manned orbital laboratories
Mir space station
Multi-Purpose Logistics Modules
Service Module (ISS)
space shuttles
Space Station Freedom
Space Station Mobile Servicing System
space station modules
spaceborne experiments
Unity connecting module
Zarya control module

International Space Year

(added April 1993)

UF *ISY*
RT ∞ aerospace sciences
international relations
NASA space programs
space exploration
space programs

International Sun Earth Explorer 1

DEF First joint NASA-ESA satellite launched to investigate sun-Earth relationships and solar phenomena.

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . International Sun Earth Explorers
. . . . **International Sun Earth Explorer 1**

International Sun Earth Explorer 2

DEF Second joint NASA-ESA satellite launched to investigate sun-Earth relationships and solar phenomena.

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . International Sun Earth Explorers
. . . . **International Sun Earth Explorer 2**

International Sun Earth Explorer 3

DEF The last in a series of three spacecraft developed by NASA and ESA for the study of the magnetosphere. ISEE C was launched into a heliocentric orbit and will make observations in the solar wind up stream of the Earth. Used for International Cometary Explorer.

UF *International Cometary Explorer*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . International Sun Earth Explorers
. . . . **International Sun Earth Explorer 3**

International Sun Earth Explorers

UF *ISEE*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **International Sun Earth Explorers**
. . . . International Sun Earth Explorer
1
. . . . International Sun Earth Explorer
2
. . . . International Sun Earth Explorer
3

International System of Units

DEF The metric system of units based on the meter, kilogram, second, ampere, kelvin degree, and candela. Other SI units are hertz, radian, newton, joule, watt, coulomb, volt, ohm, farad, weber and tesla. Used for metric system and SI.

UF *metric system*
SI

GS units of measurement
. **International System of Units**
RT conversion tables
∞ measurement
measuring instruments
metrication
metrology
∞ systems

international trade

UF *exports*
foreign trade
RT economics
revenue

International Ultraviolet Explorer

USE **IUE**

Internet resources

(added January 1997)

SN (USE FOR SOURCES OF INFORMATION, DATA, OR COMPUTER SOFTWARE ACCESSIBLE VIA THE INTERNET; FOR DESIGN OR FUNCTIONAL ASPECTS OF COMPUTER INTERNETWORKS USE "INTERNETS")
DEF Sources of information, data, or computer software accessible via the Internet.
GS resources
. **Internet resources**
. . . websites

RT electronic bulletin boards
electronic commerce
electronic mail
information dissemination
information resources management
information systems
internets
news media
services

internets

(added January 1994)

SN (REFERS TO ANY INTERLINKED SYSTEM OF SEPARATE COMPUTER NETWORKS)

GS networks
. communication networks
. . **internets**
. . . ARPA computer network
. . . World Wide Web
. . . computer networks
. . **internets**
. . . ARPA computer network
. . . World Wide Web
RT client server systems
computer security
electronic bulletin boards
electronic mail
Internet resources
Java (programming language)
web services
websites

internuclear properties

RT molecular interactions
∞ molecular physics

interoperability

(added July 2001)

DEF The ability of different systems, devices, or software to exchange information or otherwise operate effectively together.

RT commonality
data transfer (computers)
information transfer
protocol (computers)
standards
systems compatibility
systems integration

interorbital trajectories

GS trajectories
. **interorbital trajectories**
RT interplanetary trajectories
round trip trajectories
spacecraft trajectories

interpersonal relations

USE **human relations**

interphones

GS communication equipment

interplanetary communication

. **interphones**
RT earphones
microphones
telecommunication

interplanetary communication
GS telecommunication
. space communication
. . **interplanetary communication**
RT circumlunar communication
extraterrestrial communication
facsimile communication
lasers
lunar communication
Mars Reconnaissance Orbiter
optical communication
radio communication
satellite communication
spacecraft communication

interplanetary dust
GS extraterrestrial matter
. interstellar matter
. . cosmic dust
. . . **interplanetary dust**
. . . . meteoroid dust clouds
. . . . zodiacal dust
media
. interplanetary medium
. . **interplanetary dust**
. . . meteoroid dust clouds
. . . . zodiacal dust
particles
. dust
. . cosmic dust
. . . **interplanetary dust**
. . . . meteoroid dust clouds
. . . . zodiacal dust
RT meteoroids
micrometeoroids

Interplanetary Explorer
USE **Explorer 18 satellite**

interplanetary flight
UF *planetary space flight*
GS space flight
. **interplanetary flight**
RT asteroid missions
astrodynamics
Earth-Venus trajectories
flyby missions
interstellar spacecraft
long duration space flight
magnetic sails
manned Mars missions
manned space flight
Mariner Jupiter-Saturn flyby
Mariner Jupiter-Uranus flyby
Mariner Mark 2 Spacecraft
Mars exploration
matter-antimatter propulsion
negative matter propulsion
orbits
outer planets explorers
planetary landing
return to Earth space flight
round trip trajectories
space exploration
space navigation
spacecraft guidance
TOPS (spacecraft)

interplanetary gas
GS extraterrestrial matter
. cosmic gases
. . **interplanetary gas**
gases
. rarefied gases
. . cosmic gases
. . . **interplanetary gas**
media
. interplanetary medium
. . **interplanetary gas**
RT cosmic plasma
interstellar gas
neutral gases

solar wind

interplanetary magnetic fields
GS magnetic fields
. **interplanetary magnetic fields**
RT Chapman-Ferraro problem
flux transfer events
International Magnetospheric Study
magnetic clouds
magnetic field reconnection
solar magnetic field
Wind/GGS spacecraft

interplanetary medium
GS media
. **interplanetary medium**
. . interplanetary dust
. . . meteoroid dust clouds
. . . . zodiacal dust
. . interplanetary gas
RT Advanced Composition Explorer
interplanetary shock waves
magnetic clouds
mass distribution
meteoroids
plasma clouds
solar wind

Interplanetary Monitoring Platform
USE **IMP**

interplanetary navigation
GS navigation
. space navigation
. . **interplanetary navigation**
RT astronavigation
celestial navigation
celestial reference systems
radar navigation
radio navigation

interplanetary propulsion
USE **interplanetary spacecraft rocket engines**

interplanetary shock waves
(added April 2007)
DEF Shock waves in the solar corona and interplanetary space caused by the interaction of fast coronal mass ejections, the solar wind, and the interplanetary magnetic field. Interplanetary shock waves occur when the speed of the coronal mass ejection is faster than the local fast magnetosonic speed.
UF *interplanetary shocks*
GS elastic waves
. shock waves
. . **interplanetary shock waves**
RT coronal mass ejection
interplanetary medium
shock wave interaction
shock wave propagation
solar activity
solar activity effects
solar corona
solar flares
solar radio bursts
solar wind
space weather

interplanetary shocks
(added April 2007)
USE **interplanetary shock waves**

interplanetary space
UF *translunar space*
GS environments
. aerospace environments
. . deep space
. . . **interplanetary space**
. . extraterrestrial environments
. . deep space
. . . **interplanetary space**
RT cislunar space
heliosphere
interstellar space
polar cusps

interplanetary spacecraft
UF *interplanetary propulsion*

planetary spacecraft
GS **interplanetary spacecraft**
. Explorer 18 satellite
. Jupiter probes
. . Galileo probe
. . Galileo spacecraft
. . Mariner space probes
. . Mariner 1 space probe
. . Mariner 2 space probe
. . Mariner 3 space probe
. . Mariner 4 space probe
. . Mariner 5 space probe
. . Mariner 6 space probe
. . Mariner 7 space probe
. . Mariner 8 space probe
. . Mariner 9 space probe
. . Mariner 10 space probe
. . Mariner 11 space probe
. . Mariner R 2 space probe
. Mariner spacecraft
. . Mariner C spacecraft
. . Mariner Venus 67 spacecraft
. Mars probes
. . Advanced Recon Electric
Spacecraft
. . Mariner 3 space probe
. . Mariner 4 space probe
. . Mariner 6 space probe
. . Mariner 7 space probe
. . Mariner 8 space probe
. . Mariner 9 space probe
. . Mars 1 spacecraft
. . Mars 2 spacecraft
. . Mars 3 spacecraft
. . Mars 4 Spacecraft
. . Mars 5 spacecraft
. . Mars 6 spacecraft
. . Mars 7 spacecraft
. . Mars Observer
. . Mars Pathfinder
. . Viking 1975 entry vehicle
. . Viking spacecraft
. . . Viking 1 spacecraft
. . . . Viking lander 1
. . . . Viking orbiter 1
. . . . Viking 2 spacecraft
. . . . Viking lander 2
. . . . Viking orbiter 2
. . . . Viking lander spacecraft
. . . . Viking lander 1
. . . . Viking lander 2
. . . . Viking orbiter spacecraft
. . . . Viking orbiter 1
. . . . Viking orbiter 2
. . . . Viking orbiter 1975
. . Mars Climate Orbiter
. . Mars Express
. . Mars Global Surveyor
. . Mars Polar Lander
. . Mars Reconnaissance Orbiter
. . Nozomi Mars Orbiter
. . Phobos spacecraft
. . Phoenix Mars Lander
. . Zond 2 space probe
. Pioneer space probes
. . Pioneer 1 space probe
. . Pioneer 2 space probe
. . Pioneer 3 space probe
. . Pioneer 4 space probe
. . Pioneer 5 space probe
. . Pioneer 6 space probe
. . Pioneer 7 space probe
. . Pioneer 8 space probe
. . Pioneer 9 space probe
. . Pioneer 10 space probe
. . Pioneer 11 space probe
. . Pioneer Venus 2 entry probes
. . . Pioneer Venus 2 night probe
. . . Pioneer Venus 2 sounder probe
. . Pioneer Venus spacecraft
. . Pioneer Venus 1 spacecraft
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
. . TOPS (spacecraft)
. Venus probes
. . Magellan spacecraft (NASA)

- . . Mariner 1 space probe
 - . . Mariner 2 space probe
 - . . Mariner 5 space probe
 - . . Mariner 10 space probe
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . . Pioneer Venus 2 transporter bus
 - . . Venera satellites
 - . . . Venera 2 satellite
 - . . . Venera 3 satellite
 - . . . Venera 4 satellite
 - . . . Venera 5 satellite
 - . . . Venera 6 satellite
 - . . . Venera 7 satellite
 - . . . Venera 8 satellite
 - . . . Venera 9 satellite
 - . . . Venera 10 satellite
 - . . . Venera 11 satellite
 - . . . Venera 12 satellite
 - . . Zond 1 space probe
 - . . Zond 3 space probe
 - . . Zond 4 space probe
 - . . Zond 5 space probe
 - . . Zond 6 space probe
 - . . Zond 7 space probe
 - . . Zond 8 space probe
 - . . Voyager 1 spacecraft
 - . . Voyager 2 spacecraft
 - . Zond space probes
 - . . Zond 1 space probe
 - . . Zond 2 space probe
 - . . Zond 3 space probe
 - . . Zond 4 space probe
 - . . Zond 5 space probe
 - . . Zond 6 space probe
 - . . Zond 7 space probe
 - . . Zond 8 space probe
 - . MESSENGER (spacecraft)
 - RT artificial satellites
 - Deep Space 1 Mission
 - interstellar spacecraft
 - landing modules
 - maneuverable spacecraft
 - manned Mars missions
 - manned spacecraft
 - matter-antimatter propulsion
 - rendezvous spacecraft
 - reusable spacecraft
 - space capsules
 - space exploration
 - space probes
 - ∞ spacecraft
 - unmanned spacecraft
 - Voyager 1977 mission
- interplanetary trajectories**
- GS trajectories
 - . spacecraft trajectories
 - . . **interplanetary trajectories**
 - . . . Earth-Mars trajectories
 - . . . Earth-Mercury trajectories
 - . . . Earth-Venus trajectories
 - RT Earth-Moon trajectories
 - Goddard Trajectory Determination System
 - interorbital trajectories
 - orbital launching
 - orbital mechanics
 - parking orbits
 - planetary orbits
 - rendezvous trajectories
 - round trip trajectories
 - solar orbits
 - space navigation
 - spacecraft guidance
 - transfer orbits
 - Viking 1 spacecraft
 - Viking 2 spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking lander spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter spacecraft
- interplanetary transfer orbits**
- GS orbits
- . elliptical orbits
 - . . transfer orbits
 - . . . **interplanetary transfer orbits**
 - . . spacecraft orbits
 - . . transfer orbits
 - . . . **interplanetary transfer orbits**
 - RT aeroassist
 - aerobraking
 - aerocapture
 - aeromaneuvering
 - low Earth orbits
 - orbital mechanics
 - swingby technique
- interpolation**
- GS analysis (mathematics)
 - . numerical analysis
 - . . **interpolation**
 - RT commutation
 - computation
 - extrapolation
 - finite difference theory
 - statistical analysis
- interpolators*
- USE **repeaters**
- ∞ **interpretation**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT decoding
 - intelligibility
 - perception
 - photointerpretation
 - recognition
 - syntax
 - translating
- interprocessor communication**
- DEF Communication between two or more processors in a computer system.
 - RT computer networks
 - computer systems design
 - Connection Machine
 - Dining Philosophers Problem
 - distributed memory
 - free-space optical interconnects
 - hypercube multiprocessors
 - local area networks
 - MIMD (computers)
 - multiprocessing (computers)
 - parallel processing (computers)
 - SIMD (computers)
 - transmission rate (communications)
 - transputers
 - VSAT (network)
- interrelationships*
- USE **relationships**
- interrogation**
- RT data processing
 - IFF systems (identification)
 - secondary radar
 - transmitter receivers
 - transponders
- interruption**
- RT electric relays
 - packet switching
 - sequencing
 - switches
 - switching
- intersections**
- SN (EXCLUDES BOOLEAN LOGICAL PRODUCTS)
 - DEF In Boolean algebra, the operation in which concepts are described by stating that they have all the characteristics of the classes involved. Intersection is expressed as AND.
 - RT crossings
 - crossovers
 - highways
 - ∞ junctions
 - ramps (structures)
 - roads
 - streets
- transportation networks
- interservice data exchange program**
- UF *IDEP (data exchange)*
 - RT ∞ data
 - data retrieval
 - data storage
 - information retrieval
 - libraries
 - military technology
 - research
- interstellar chemistry**
- DEF Molecular formation/dissociation in interstellar space due to radiation, collision, and other forces.
 - RT association reactions
 - chemical reactions
 - ∞ chemistry
 - cosmochemistry
 - diffuse interstellar bands
 - formyl ions
 - interstellar matter
 - isotope ratios
 - laboratory astrophysics
 - molecular clouds
 - molecular interactions
 - reaction kinetics
 - Submillimeter Wave Astronomy Satellite
- interstellar communication**
- GS communicating
 - . **interstellar communication**
 - RT extraterrestrial intelligence
 - reading
 - radio communication
 - space communication
- interstellar extinction**
- UF *interstellar reddening*
 - GS extinction
 - . **interstellar extinction**
 - RT astrophysics
 - diffuse interstellar bands
 - evolution (development)
 - interstellar gas
 - radiation absorption
 - stellar evolution
 - stellar radiation
- interstellar gas**
- GS extraterrestrial matter
 - . cosmic gases
 - . . **interstellar gas**
 - . interstellar matter
 - . . **interstellar gas**
 - gases
 - . rarefied gases
 - . . cosmic gases
 - . . . **interstellar gas**
 - RT cooling flows (astrophysics)
 - galactic halos
 - H I regions
 - H II regions
 - heliosphere
 - interplanetary gas
 - interstellar extinction
 - magnetic clouds
 - methylidyne
 - molecular clouds
 - neutral gases
 - Ophiuchi clouds
 - Orion nebula
 - spin temperature
 - star formation
 - stellar mass accretion
 - stellar winds
- interstellar magnetic fields**
- UF *galactic magnetic fields*
 - GS magnetic fields
 - . **interstellar magnetic fields**
 - RT magnetic clouds
 - stellar magnetic fields
- interstellar masers**
- GS stimulated emission devices
 - . masers
 - . . **interstellar masers**
 - RT coherent electromagnetic radiation

interstellar matter

gas masers
lasers
microwave amplifiers
molecular clouds
radiation sources
stimulated emission
water masers

interstellar matter

GS extraterrestrial matter
. **interstellar matter**
. . . cosmic dust
. . . . interplanetary dust
. meteoroid dust clouds
. zodiacal dust
. . . dark matter
. . . interstellar gas
RT Alpha Magnetic Spectrometer
celestial bodies
diffuse interstellar bands
formyl ions
gravitational instability
H I regions
H II regions
infrared cirrus (astronomy)
interstellar chemistry
laboratory astrophysics
mass distribution
metallicity
methylidyne
molecular clouds
nebulae
Ophiuchi clouds
Orion nebula
polycyclic aromatic hydrocarbons
Population I stars
reflection nebulae
spin temperature
star formation
Stardust Mission
stellar envelopes
stellar mass accretion
Submillimeter Wave Astronomy
Satellite

interstellar microwave spectra

USE **interstellar radiation
microwave spectra**

interstellar radiation

UF *interstellar microwave spectra*
GS extraterrestrial radiation
. **interstellar radiation**
RT corpuscular radiation
cosmic noise
cosmic rays
electromagnetic radiation
galactic radiation
gamma ray bursts
∞ radiation
radiative transfer
stellar radiation

interstellar reddening

USE **interstellar extinction**

interstellar space

GS environments
. aerospace environments
. . deep space
. . . **interstellar space**
. . . . extraterrestrial environments
. . . . deep space
. . . . **interstellar space**
RT interplanetary space

interstellar spacecraft

RT interplanetary flight
interplanetary spacecraft
interstellar travel
space exploration

interstellar travel

GS space flight
. **interstellar travel**
RT astronavigation
celestial reference systems
extraterrestrial intelligence
interstellar spacecraft
long duration space flight

magnetic sails
manned space flight
matter-antimatter propulsion
negative matter propulsion

interstices

RT cavities
cracks
grain boundaries
percolation
permeability
pinholes
porosity
porous materials
voids

interstitials

RT additives
antisite defects
crystal defects
crystal structure
grain boundaries
Laves phases

intersymbolic interference

RT cochannel interference
data transmission
∞ interference
signal distortion
transmission efficiency

intertropical convergent zones

GS regions
. tropical regions
. . **intertropical convergent zones**
RT atmospheric circulation
fronts (meteorology)
GARP Atlantic Tropical Experiment
tropical meteorology
zonal flow (meteorology)

intervals

RT alternations
consecutive events
spacing
step functions
time
topology

intervehicle spacecrew transfer

USE **spacecrew transfer**

intervertebral disks

GS disks (shapes)
. **intervertebral disks**
RT ∞ disks
musculoskeletal system
vertebrae

intestines

GS anatomy
. digestive system
. . gastrointestinal system
. . . **intestines**
. . . . rectum
RT abdomen
appendix (anatomy)
colic

intoxication

RT ∞ poisoning
toxicity and safety hazard
toxicology

intracloud discharges

(added August 1999)
GS electric current
. electric discharges
. . lightning
. . . **intracloud discharges**

intracranial cavity

GS anatomy
. head (anatomy)
. . skull
. . . cranium
. . . . **Intracranial cavity**
. . . . musculoskeletal system
. . . . bones
. . . . skull
. . . . cranium

. **intracranial cavity**

intracranial pressure

GS pressure
. **intracranial pressure**
RT brain

intramolecular structures

RT molecular structure
∞ structures

intraocular pressure

UF *tonometry*
GS pressure
. **intraocular pressure**
RT glaucoma

intraorbit transfer vehicles

DEF Small scooter type tugs that would move men and materials within an orbit.
RT Columbus space station
large space structures
space platforms
space shuttles
∞ vehicles

intraseasonal oscillations

(added September 2000)

USE **intraseasonal variations**

intraseasonal variations

(added September 2000)
UF *intraseasonal oscillations*
GS variations
. periodic variations
. . **intraseasonal variations**
. . . Madden-Julian Oscillation
RT annual variations
atmospheric circulation
atmospheric models
climatology
tropical meteorology

intravascular system

RT blood circulation
∞ systems

intravehicular activity

RT ∞ activity
astronaut locomotion
astronaut maneuvering equipment
astronaut performance
extravehicular activity
human performance
manned space flight
pilot performance
spacecraft environments
weightlessness

intravenous procedures

RT bioavailability
catheterization
in vivo methods and tests
medical services

introversion

RT ∞ depression
detachment
human behavior
∞ inhibition
psychology

Intruder aircraft

USE **A-6 aircraft**

intrusion

RT contamination
extruding
leakage
seepage

intrusion detection (computers)

(added January 2003)

DEF Manual or software-based detection of unauthorized entries or attempted break-ins into a computer system or network. The detection analysis is typically conducted using logs or other internal system information.

GS security
. computer security
. . **intrusion detection (computers)**

RT access control
 computer networks
 computer viruses
 firewalls (computers)

Invader aircraft
 USE **B-26 aircraft**

invalidity
 USE **errors**

invariance
 GS **invariance**
 . gauge invariance
 RT ∞ constant
 Lorentz transformations

invariant imbeddings
 GS geometry
 . topology
 . . imbeddings (mathematics)
 . . . **invariant imbeddings**
 RT anisotropic fluids
 calculus of variations
 conformal mapping
 coordinate transformations
 differential geometry
 ∞ imbeddings
 isotropic turbulence

inventions
 RT intellectual property
 patent applications
 patent policy
 patents
 product development

inventories
 GS **inventories**
 . crop inventories
 . timber inventory
 RT Large Area Crop Inventory
 Experiment
 reserves
 ∞ storage

inventory controls
 GS management
 . industrial management
 . . inventory management
 . . . **inventory controls**
 . logistics management
 . . inventory management
 . . . **inventory controls**
 RT ∞ control
 distributing
 mathematical models
 optimal control
 reserves
 risk
 ∞ storage
 time lag

inventory management
 GS management
 . industrial management
 . . **inventory management**
 . . . inventory controls
 . logistics management
 . . **inventory management**
 . . . inventory controls
 RT downtime
 logistics
 procurement management
 resources
 retirement for cause
 services
 spare parts
 stockpiling
 ∞ storage

inverse kinematics
(added December 1990)
 GS kinematics
 . **inverse kinematics**
 RT dynamic control
 feedback control
 manipulators
 robot control
 robot dynamics

robotics

inverse scattering
 DEF Method for analyzing some classic
 wave scattering.
 GS scattering
 . **inverse scattering**
 RT forward scattering
 resonance scattering

inversions
 GS **inversions**
 . magnetic field inversions
 . population inversion
 . temperature inversions

invertebrates
 GS animals
 . **invertebrates**
 . . arthropods
 . . . artemia
 . . . crabs
 . . . insects
 bees
 bollworms
 chironomus flies
 cockroaches
 Coleoptera
 beetles
 tribolia
 boll weevils
 crickets
 Drosophila
 fireflies
 grasshoppers
 locusts
 moths
 silkworms
 . . . spiders
 . . mollusks
 . . cephalopods
 . . . octopuses
 . . snails
 . . Rotifera
 . . sea urchins
 . . worms
 . . flatworms
 RT bacteria
 hemocytes
 larvae
 microorganisms
 poikilothermia

inverted converters (DC to AC)
 RT alternating current
 ∞ converters
 current converters (AC to DC)
 direct current
 electric current

inverters
 SN (EXCLUDES AC TO DC INVERTERS)
 GS **inverters**
 . static inverters
 RT attenuators
 oscillators

investigation
 UF *studies*
 GS **investigation**
 . accident investigation
 . . aircraft accident investigation
 . International Magnetospheric Study
 RT examination
 experimentation
 exploration
 geophysical fluid flow cells
 OSS-1 payload
 programs
 research
 research and development
 sampling
 university program

∞ **investment**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT commerce
 investment casting

investments

investment casting
 UF *lost wax process*
 GS forming techniques
 . casting
 . . **investment casting**
 RT centrifugal casting
 ∞ investment

investments
 RT depreciation
 economic impact
 economics
 finance
 ∞ investment

inviscid flow
 UF *nonviscous flow*
 GS fluid flow
 . **inviscid flow**
 . . stagnation flow
 RT aerodynamics
 Crocco method
 Crocco-Lee theory
 ∞ flow
 flow characteristics
 gas flow
 laminar flow
 potential flow
 Prandtl number
 Reynolds number
 stagnation temperature
 turbulent flow
 viscous flow

invisibility
 USE **visibility**

involuntariness
 USE **involuntary actions**

involuntary actions
 UF *involuntariness*
 RT autonomic nervous system
 sneezing
 spasms
 twitching

involuntary muscle
(added December 2004)
 USE **smooth muscle**

Io
 DEF A satellite of Jupiter orbiting at a mean
 distance of 421,800 kilometers. Also called Ju-
 piter I.
 GS celestial bodies
 . natural satellites
 . . Jupiter satellites
 . . . Galilean satellites
 **Io**
 RT Callisto
 Charon
 Ganymede
 Jupiter (planet)

iodates
 GS halogen compounds
 . iodine compounds
 . . **iodates**
 . . . lithium iodates

iodides
 GS halogen compounds
 . iodine compounds
 . . **iodides**
 . . . cesium iodides
 . . . gallamine triethiodide
 . . . hafnium iodides
 . . . niobium iodides
 . . . potassium iodides
 . . . silver iodides
 . . . sodium iodides
 . . . zirconium iodides

iodimetry
 GS chemical tests
 . chemical analysis
 . . **iodimetry**
 RT quantitative analysis

iodine

∞ reduction
titration

iodine

GS chemical elements
. halogens
. . . **iodine**
. . . . iodine isotopes
. iodine 125
. iodine 131
. iodine 132

iodine 125

GS chemical elements
. halogens
. . iodine
. . . iodine isotopes
. . . . **iodine 125**
. nuclides
. isotopes
. iodine isotopes
. **iodine 125**
. radioactive isotopes
. **iodine 125**

iodine 131

GS chemical elements
. halogens
. . iodine
. . . iodine isotopes
. . . . **iodine 131**
. nuclides
. isotopes
. iodine isotopes
. **iodine 131**
. radioactive isotopes
. **iodine 131**

iodine 132

GS chemical elements
. halogens
. . iodine
. . . iodine isotopes
. . . . **iodine 132**
. nuclides
. isotopes
. iodine isotopes
. **iodine 132**
. radioactive isotopes
. **iodine 132**

iodine compounds

GS halogen compounds
. **iodine compounds**
. . iodates
. . . lithium iodates
. . . iodides
. . . . cesium iodides
. . . . gallamine triethiodide
. . . . hafnium iodides
. . . . niobium iodides
. . . . potassium iodides
. . . . silver iodides
. . . . sodium iodides
. . . . zirconium iodides
. . . . iodoacetic acid
RT ∞ chemical compounds
halocarbons

iodine isotopes

GS chemical elements
. halogens
. . iodine
. . . **iodine isotopes**
. . . . iodine 125
. . . . iodine 131
. . . . iodine 132
. nuclides
. isotopes
. **iodine isotopes**
. iodine 125
. iodine 131
. iodine 132

iodine lasers

GS stimulated emission devices
. lasers
. . **iodine lasers**

. . . chemical oxygen-iodine lasers

RT solions

iodoacetic acid

GS acids
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . **iodoacetic acid**
halogen compounds
. iodine compounds
. . **iodoacetic acid**
organic compounds
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . **iodoacetic acid**

ion accelerators

GS particle accelerators
. **ion accelerators**
RT ∞ accelerators
synchrotrons

ion acoustic waves

GS elastic waves
. sound waves
. . **ion acoustic waves**
RT plasma oscillations
plasma waves
wave propagation

ion atom interactions

GS particle interactions
. **ion atom interactions**
RT atomic interactions
charge exchange
elementary particle interactions
∞ interactions

ion beams

DEF Directed fluxes of charged atoms or molecules.
GS beams (radiation)
. particle beams
. . **ion beams**
ion currents
. **ion beams**
RT atomic beams
beam injection
beam neutralization
inertial fusion (reactor)
ion optics
molecular beams

ion chambers

USE **ionization chambers**

ion channels (biology)

(added August 2002)
DEF Glycoprotein components of biomembranes that control the passage of hydrophilic solutes such as inorganic ions.
UF *potassium channels (biology)*
sodium channels (biology)
RT bioelectric potential
bioelectricity
cell membranes (biology)
electrophysiology
neurophysiology

ion charge

GS electric charge
. **ion charge**
RT charge exchange
charged particles
ionization
valence

ion concentration

RT acidity
∞ bases
Earth ionosphere
pH factor
titration

ion currents

UF *ionic conductivity*
GS **ion currents**
. ion beams
. Pedersen currents

ion cyclotron radiation

GS electromagnetic radiation
. nonthermal radiation
. . cyclotron radiation
. . . **ion cyclotron radiation**
RT cyclotron resonance
ionic waves
magnetic pumping
plasma radiation
plasma waves
∞ radiation

ion density (concentration)

DEF In atmospheric electricity, the number of ions per unit volume of a given sample of air; more particularly, the number of ions of a given type (positive small ion, negative small ion, positive large ion, or negative large ion) per unit volume of air.
GS density (number/volume)
. particle density (concentration)
. . **ion density (concentration)**
. . . ionospheric ion density
. . . magnetospheric ion density
. . . . magnetospheric proton density
. . . . proton density (concentration)
. . . . magnetospheric proton density
RT atmospheric density
atom concentration
cosmic rays
Earth ionosphere
electron density (concentration)
Gerdien condensers
ionization
ionograms
plasma density
positive ions
Saha equations
space density

ion distribution

GS distribution (property)
. **ion distribution**
RT charge distribution
current distribution
electrohydrodynamics
ionic mobility
spatial distribution
vertical distribution

ion emission

GS emission
. particle emission
. . **ion emission**
RT ionization
thermionic emission
thermionics

ion engines

DEF Reaction engines in which ions, accelerated in an electrostatic field, are used as propellants. Used for ionic propellants and thermionic reactors. Also called electrostatic engines. Used for ionic propellants and thermionic reactors.

UF *ionic propellants*
thermionic reactors

GS engines

. rocket engines
. . electric rocket engines
. . . electrostatic engines
. . . . **ion engines**
. cesium engines
. Hall thrusters
. mercury ion engines
. RIT engines

RT beam switching
electrothermal engines
ion optics
ionizers
nuclear rocket engines
plasma engines
restartable rocket engines
space station propulsion
sustainer rocket engines

- ∞ thrusters
- ion exchange membrane electrolytes**
 - GS conductors
 - . electrolytes
 - . . **ion exchange membrane electrolytes**
 - membranes
 - . **ion exchange membrane electrolytes**
 - RT fuel cells
 - separators
- ion exchange resins**
 - GS resins
 - . **ion exchange resins**
 - RT plastics
 - zeolites
- ion exchanging**
 - GS exchanging
 - . **ion exchanging**
 - RT beds (process engineering)
 - charge transfer
 - demineralizing
 - glass electrodes
 - hydrometallurgy
 - isotope separation
 - kaolinite
 - metathesis
 - ∞ separation
 - softening
 - water treatment
- ion extraction**
 - GS extraction
 - . **ion extraction**
 - RT isotope separation
 - ∞ separation
 - solvent extraction
- ion gages*
 - USE **ionization gages**
- ion impact**
 - GS impact
 - . **ion impact**
 - RT electron impact
 - point impact
 - recoil ions
 - toroids
 - Townsend avalanche
 - Townsend discharge
- ion implantation**
 - GS implantation
 - . **ion implantation**
 - RT avalanche diodes
 - carrier mobility
 - diodes
 - doping (materials)
 - field effect transistors
 - integrated circuits
 - ions
 - ITO (semiconductors)
 - junction transistors
 - metal ions
 - metal oxide semiconductors
 - microelectronics
 - MODFETS
 - modulation doping
 - MOM (semiconductors)
 - photodiodes
 - semiconductor devices
 - transistors
- ion injection**
 - GS injection
 - . **ion injection**
 - RT carrier injection
 - ionic mobility
 - plasma accelerators
 - plasma generators
 - plasma jets
- ion irradiation**
 - GS irradiation
 - . **ion irradiation**
 - . . deuteron irradiation
 - . . proton irradiation
 - RT auroral irradiation
 - electron irradiation
 - ionic collisions
 - neutron irradiation
- ion microscopes**
 - GS microscopes
 - . **ion microscopes**
 - RT electron microscopes
 - electron microscopy
 - scanning electron microscopy
 - transmission electron microscopy
- ion mobility spectroscopy**
 - (added September 1995)
 - UF *plasma chromatography*
 - GS spectroscopy
 - . **ion mobility spectroscopy**
 - RT airport security
 - explosives detection
 - mass spectrometers
- ion motion**
 - RT ionic waves
 - ∞ motion
 - Penning discharge
 - plasma composition
 - plasma diffusion
- ion optics**
 - (added June 1998)
 - RT atom optics
 - beam waveguides
 - beamforming
 - electron optics
 - ion beams
 - ion engines
 - ion propulsion
 - mass spectrometers
 - ∞ optics
- ion oscillation*
 - USE **plasma oscillations**
- ion plating**
 - GS plating
 - . **ion plating**
 - RT ions
 - metal coatings
 - metal ions
 - sputtering
 - thin films
 - vacuum deposition
- ion probes**
 - GS measuring instruments
 - . **ion probes**
 - RT ionosondes
 - radio frequency impedance probes
- ion production rates**
 - GS ionization
 - . **ion production rates**
 - rates (per time)
 - . **ion production rates**
 - RT avalanches
 - charge exchange
 - recoil ions
 - thermionic converters
- ion propulsion**
 - GS propulsion
 - . electric propulsion
 - . . electrostatic propulsion
 - . . . **ion propulsion**
 - . . low thrust propulsion
 - . . electrostatic propulsion
 - . . . **ion propulsion**
 - . . spacecraft propulsion
 - . . electrostatic propulsion
 - . . . **ion propulsion**
 - RT Deep Space 1 Mission
 - duoplasmatrons
 - electromagnetic propulsion
 - high temperature propellants
 - ion optics
 - magnetic sails
 - nuclear electric propulsion
- plasma propulsion
- ion pumps**
 - GS pumps
 - . vacuum pumps
 - . . **ion pumps**
 - vacuum apparatus
 - . vacuum pumps
 - . . **ion pumps**
 - RT getters
- ion recombination**
 - GS chemical reactions
 - . **ion recombination**
 - recombination reactions
 - . **ion recombination**
 - RT atomic recombination
 - deionization
 - electron recombination
 - electron-ion recombination
 - recombination coefficient
- ion scattering**
 - GS scattering
 - . **ion scattering**
 - RT electron scattering
 - ionic collisions
 - ionic diffusion
 - proton scattering
 - recoil ions
- ion selective electrodes**
 - GS electrodes
 - . **ion selective electrodes**
 - RT chemical analysis
- ion sheaths**
 - GS sheaths
 - . **ion sheaths**
 - RT plasma clouds
 - plasma probes
 - plasma sheaths
- ion sources**
 - GS **ion sources**
 - . plasmatoms
 - . . duoplasmatrons
 - RT electron sources
 - ionization
 - ionizing radiation
 - linear accelerators
 - particle accelerators
 - plasma generators
 - radiation sources
 - ∞ sources
 - sputtering
- ion spectrometers*
 - USE **mass spectrometers**
- ion storage**
 - DEF Ions within an electromagnetic trap and cooled to sub-Kelvin temperatures with lasers. Potential uses are for frequency standards.
 - RT frequency standards
 - ∞ storage
 - trapping
- ion stripping**
 - DEF A procedure following the focusing of ion beams in the target chamber of a reactor to be used for particle beam pellet fusion.
 - RT heavy ions
 - particle beams
 - particle density (concentration)
 - particles
 - ∞ separation
 - ∞ stripping
- ion temperature**
 - GS temperature
 - . **ion temperature**
 - RT auroral temperature
 - ionospheric temperature
 - plasma temperature
 - space temperature
 - specific heat
- ion traps (instrumentation)**
 - GS measuring instruments

ionic collisions

. **ion traps (instrumentation)**
traps

RT **ion traps (instrumentation)**
radiation counters
vapor traps

ion-gas interactions
USE **gas-ion interactions**

ionic collisions
UF *heavy ion collisions*
GS collisions
. **ionic collisions**

RT atomic collisions
ion irradiation
ion scattering
particle collisions
recoil ions

ionic conductivity
USE **ion currents**

ionic crystals
GS crystals
. **ionic crystals**

RT chemical bonds
crystal lattices
excitons
lattice energy
polarons

ionic diffusion
GS diffusion
. particle diffusion
. . **ionic diffusion**

RT ambipolar diffusion
diffusion waves
electron diffusion
ion scattering
plasma diffusion
self diffusion (solid state)

ionic mobility
DEF In gaseous electric conduction, the average velocity with which a given ion drifts through a specified gas under the influence of an electric field of unit strength. Mobilities are commonly expressed in units of centimeters per second per volt per centimeter.

GS mobility
. **ionic mobility**
transport properties
. **ionic mobility**

RT ambipolar diffusion
anions
atomic mobilities
cations
electrohydrodynamics
electrolysis
electrolytic cells
electromigration
ion distribution
ion injection
ions
 ∞ motion
NDM semiconductor devices
negative ions
positive ions

ionic propellants
USE **ion engines**

ionic reactions
RT charge transfer
molecular interactions

ionic waves
GS elastic waves
. **ionic waves**

RT collisionless plasmas
electrostatic waves
ion cyclotron radiation
ion motion
ionospheric conductivity
ionospheric propagation
plasma waves
 ∞ waves

ionization
DEF The process by which electrons are

lost from or transferred to neutral molecules or atoms to form positively or negatively charged particles. Used for electron ionization.

UF *electron ionization*
GS **ionization**
. autoionization
. gas ionization
. . atmospheric ionization
. . . auroral ionization
. . . flame ionization
. ion production rates
. nonequilibrium ionization
. photoionization
. surface ionization

RT atomic collisions
atomic excitations
coronas
disintegration
dissociation
electric arcs
electric corona
electric discharges
electric sparks
electron attachment
excitation
ion charge
ion density (concentration)
ion emission
ion sources
ionospheric composition
magnetohydrodynamics
molecular excitation
oxygen recombination
Schwarzschild metric
single event upsets
stellar coronas
thermal dissociation

ionization chambers

DEF Apparatus used to study the production of small ions in the atmosphere by cosmic rays and radioactive bombardment of air molecules.

UF *ion chambers*
GS **ionization chambers**
. bubble chambers
. cloud chambers
. Geiger counters
. proportional counters
. spark chambers

RT ∞ chambers
counters
dosimeters
electron counters
ionizers
neutron counters
radiation counters
radiation measuring instruments
threshold detectors (dosimeters)

ionization coefficients

GS coefficients
. **ionization coefficients**

ionization counters

USE **radiation counters**

ionization cross sections

RT absorption cross sections
 ∞ cross sections
nonadiabatic theory
scattering cross sections

ionization frequencies

GS frequencies
. **ionization frequencies**

ionization gages

DEF Vacuum gages with a means of ionizing the gas molecules and a means of correlating the number and type of ions produced with the pressure of the gas. Various types of ionization gages are distinguished according to the method of producing the ionization. Used for ion gages.

UF *ion gages*
GS measuring instruments
. pressure gages
. . vacuum gages
. . . **ionization gages**

. . . . alphatrons
. . . . Bayard-Alpert ionization gages
. . . . Penning gages
. . . . Philips ionization gages
vacuum apparatus
. vacuum gages
. . **ionization gages**
. . . alphatrons
. . . Bayard-Alpert ionization gages
. . . Penning gages
. . . Philips ionization gages

RT hot cathodes
Knudsen gages
McLeod gages
orbitrons
Pirani gages
pressure measurement

ionization potentials

DEF The energy required to ionize an atom or molecule. The energy is usually given in terms of electron volts.

GS potential energy
. **ionization potentials**

RT activation
electric potential
nuclear binding energy
 ∞ potential
Saha equations
work functions

ionized gases

SN (LIMITED TO PARTIALLY IONIZED GASES; SEE PLASMAS (PHYSICS) FOR COMPLETELY IONIZED MATTER)
gases

GS **ionized gases**
. Lorentz gas
particles
. charged particles
. . **ionized gases**
. . . Lorentz gas

RT cosmic gases
electron gas
Fokker-Planck equation
gas ionization
gas temperature
H II regions
high temperature gases
neutral gases
plasmas (physics)
recombination coefficient

ionized plasmas

USE **plasmas (physics)**

ionizers

DEF Filaments, grids, or porous bodies in ion engines or other devices which strip electrons from the outer shells of neutral atoms to form positively charged ions.

RT ∞ filaments
gas ionization
 ∞ grids
ion engines
ionization chambers
surface ionization
tube grids

ionizing radiation

DEF Any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter.

GS **ionizing radiation**
. alpha particles
. beta particles
. cosmic rays
. . cosmic ray showers
. . galactic cosmic rays
. . gamma ray bursts
. . primary cosmic rays
. . . solar cosmic rays
. . secondary cosmic rays
. gamma ray beams
. gamma rays
. . gamma ray bursts
. x rays
. . cosmic x rays
. . solar x-rays

RT absorption spectra

avalanches
 beams (radiation)
 coherent electromagnetic radiation
 corpuscular radiation
 electromagnetic radiation
 electron beams
 elementary particles
 emission
 extreme ultraviolet radiation
 fluence
 gamma ray absorption
 gamma ray spectra
 ion sources
 irradiation
 linear energy transfer (LET)
 monochromatic radiation
 nuclear radiation
 particle trajectories
 ∞ radiation
 radiation belts
 radiation counters
 radiation damage
 radiation hazards
 radioactive materials
 radioactivity
 radiochemistry
 relativistic electron beams
 solar radiation
 sterilization
 system generated electromagnetic pulses

ionograms

RT ion density (concentration)
 ionosondes
 riometers

ionopause

SN (EXCLUDES PLASMAPAUSE)
 DEF The upper boundary of the ionosphere of certain planets (excluding the Earth) and comets where electrons decline sharply. The Earth's ionopause is referred to as the plasma-pause. (Excludes plasmopause.)
 RT cometary atmospheres
 planetary atmospheres
 plasmopause
 space plasmas
 Venus atmosphere

ionosondes

DEF An HF radar that sweeps or steps through all or part of the frequency range from 0.3 to 30 MHz (medium and high frequency band). Transmitting pulse modulated or continuous frequency variation signals with a vertical looking antenna, it measures the delay time of echos from the ionosphere as a function of frequency. Modern digital pulse ionosondes measure not only the amplitude, but also phase or Doppler frequency, polarization, and arrival angle of the echoes.

GS measuring instruments
 . meteorological instruments
 . . radiosondes
 . . . **ionosondes**
 . sondes
 . . radiosondes
 . . . **ionosondes**
 radio equipment
 . radio transmitters
 . . radiosondes
 . . . **ionosondes**
 transmitters
 . radio transmitters
 . . radiosondes
 . . . **ionosondes**

RT ion probes
 ionograms
 ionospheric sounding
 riometers
 satellite sounding
 sounding rockets

Ionosphere Explorer A

USE **Explorer 20 satellite**

ionosphere-magnetosphere coupling

USE **magnetosphere-ionosphere coupling**

∞ **ionospheres**

SN (USE OF A MORE SPECIFIC TERM IS

RECOMMENDED-CONSULT THE TERMS LISTED BELOW)

RT Earth ionosphere
 magnetosphere-ionosphere coupling
 planetary ionospheres

ionospheric absorption

USE **electromagnetic absorption ionospheric propagation**

ionospheric blackout

USE **blackout (propagation)**

ionospheric composition

GS composition (property)
 . atmospheric composition
 . . **ionospheric composition**
 RT atom concentration
 chemical composition
 gas composition
 ionization
 particle density (concentration)
 plasma composition
 satellite atmospheres

ionospheric conductivity

GS electrical properties
 . electrical resistivity
 . . **ionospheric conductivity**
 transport properties
 . atmospheric conductivity
 . . **ionospheric conductivity**
 . electrical resistivity
 . . **ionospheric conductivity**

RT ∞ conductivity
 electrojets
 ionic waves
 plasma conductivity

ionospheric cross modulation

GS electromagnetic interference
 . crosstalk
 . . **ionospheric cross modulation**
 . radio frequency interference
 . . **ionospheric cross modulation**
 modulation
 . **ionospheric cross modulation**
 RT Luxembourg effect

ionospheric currents

GS electric current
 . **ionospheric currents**
 . . Birkeland currents
 . . electrojets
 . . . auroral electrojets
 . . . equatorial electrojet
 . . Pedersen currents
 electricity
 . atmospheric electricity
 . . **ionospheric currents**
 . . . Birkeland currents
 . . . electrojets
 auroral electrojets
 equatorial electrojet
 Pedersen currents
 RT field aligned currents
 plasma currents
 traveling ionospheric disturbances

ionospheric disturbances

GS **ionospheric disturbances**
 . ionospheric storms
 . . sudden ionospheric disturbances
 . traveling ionospheric disturbances
 RT Birkeland currents
 blackout (propagation)
 ∞ disturbances
 ionospheric noise
 magnetic variations
 space weather

ionospheric drift

RT ∞ drift
 drift rate
 electrojets
 magnetic rigidity
 polarization (charge separation)
 radiation belts

ionospheric electron density

GS density (number/volume)

. particle density (concentration)
 . . electron density (concentration)
 . . . **ionospheric electron density**
 RT Ariel 4 satellite
 magnetospheric electron density

ionospheric F-scatter propagation

GS scattering
 . wave scattering
 . . electromagnetic scattering
 . . . **ionospheric F-scatter propagation**
 transmission
 . electromagnetic wave transmission
 . . radio transmission
 . . . ionospheric propagation
 **ionospheric F-scatter propagation**
 . scatter propagation
 . . **ionospheric F-scatter propagation**
 . signal transmission
 . . radio transmission
 . . . ionospheric propagation
 **ionospheric F-scatter propagation**
 . wave propagation
 . . ionospheric propagation
 . . . **ionospheric F-scatter propagation**
 . scatter propagation
 . . . **ionospheric F-scatter propagation**

ionospheric heating

GS heating
 . **ionospheric heating**
 RT atmospheric radiation
 plasma heating

ionospheric ion density

GS density (number/volume)
 . particle density (concentration)
 . ion density (concentration)
 . . . **ionospheric ion density**
 RT magnetospheric ion density
 positive ions

ionospheric noise

GS atmospheric radiation
 . **ionospheric noise**
 . . whistlers
 electromagnetic interference
 . radio frequency interference
 . . electromagnetic noise
 . . . **ionospheric noise**
 whistlers
 RT background noise
 background radiation
 ionospheric disturbances
 riometers
 sky waves

ionospheric propagation

UF *ionospheric absorption*
ionospheric reflection
 GS transmission
 . electromagnetic wave transmission
 . . radio transmission
 . . . **ionospheric propagation**
 ionospheric F-scatter propagation
 . signal transmission
 . . radio transmission
 . . . **ionospheric propagation**
 ionospheric F-scatter propagation
 . wave propagation
 . . **ionospheric propagation**
 . . . ionospheric F-scatter propagation
 RT antipodes
 Earth ionosphere
 Earth-ionosphere waveguide
 EISCAT radar system (Europe)
 ionic waves
 lossy media
 Luxembourg effect
 magnetoionics
 ORBIS
 ORBIS CAL satellite

ionospheric sounding

polar radio blackout
riometers
scatter propagation
signal measurement
traveling ionospheric disturbances

ionospheric reflection

USE **ionospheric propagation**

ionospheric sounding

GS sounding
. **ionospheric sounding**

RT Alouette 1 satellite
Alouette 2 satellite
Alouette project
Ariel 4 satellite
atmospheric sounding
ionosondes
ORBIS
ORBIS CAL satellite
rocket sounding
satellite sounding

ionospheric storms

DEF Disturbances of the ionosphere, resulting in anomalous variations in its characteristics and effects on radio communication.

GS ionospheric disturbances
. **ionospheric storms**
. . . sudden ionospheric disturbances storms
. **ionospheric storms**
. . . sudden ionospheric disturbances

RT ∞ disturbances
Earth ionosphere
ionospheric
noise storms
solar storms
spread F
traveling ionospheric disturbances

ionospheric temperature

GS temperature
. atmospheric temperature
. . **ionospheric temperature**

RT auroral temperature
electron energy
ion temperature

ionospheric tilts

DEF Ionospheric conditions where the variability of the number of the electrons as a function of altitude is present. Ionospheric tilts are sometimes created by traveling ionospheric disturbances (TID's) and ionospheric tilts deflect radio waves in unexpected directions adversely affecting radio reception.

RT traveling ionospheric disturbances

ionospheric

GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospheric
. . . . **ionospheric**
. . . . dawn chorus
. . . . hiss

RT ionospheric storms
radio auroras

ions

DEF Charged atoms or molecularly bound groups of atoms; sometimes also free electrons or other charged subatomic particles. In atmospheric electricity, any of several types of electrically charged submicroscopic particles normally found in the atmosphere. Atmospheric ions are of two principal types, small ions and large ions, although a class of intermediate ions has occasionally been reported. In chemistry, atoms or specific groupings of atoms which have gained or lost one or more electrons, as the chloride ion or ammonium ion. Such ions exist in aqueous solutions and in certain crystal structures.

UF *multicharged ions*

GS **ions**
. cesium ions
. deuterons
. heavy ions

. helium ions
. hydrogen ions
. light ions
. metal ions
. . ferric ions
. . manganese ions
. . molecular ions
. . formyl ions
. . hydronium ions
. . vanadyl radical
. negative ions
. . anions
. nitrogen ions
. oxygen ions
. positive ions
. . cations
. . . formyl ions
. . . vanadyl radical
. . hydronium ions
. recoil ions
. tritons
. trivalent ions

RT alpha particles
atoms
chemical elements
corpuscular radiation
electrolytes
free radicals
hydroxyl radicals
ion implantation
ion plating
ionic mobility
molecules
monatomic molecules
nuclei (nuclear physics)
particles
plasmas (physics)
polyatomic molecules
protons
valence

Iowa

GS nations
. United States
. . **Iowa**
RT Cedar Rapids (IA)
Missouri River (US)

IP (impact prediction)

USE **computerized simulation**

IPAD

SN (INTEGRATED PROGRAM FOR AEROSPACE VEHICLE DESIGN)
UF *Integ Program for Aerospace Veh Design*
GS computer techniques
. computer aided design
. . **IPAD**
spacecraft design
. **IPAD**
RT ∞ design

IPG (NASA Information Power Grid)

(added December 2003)

USE **grid computing (computer networks)**

IQSY (international year)

USE **International Quiet Sun Year**

IR lasers

USE **infrared lasers**

Iran

GS nations
. **Iran**
RT Asia

Iraq

GS nations
. **Iraq**
RT Asia

IRAS

USE **Infrared Astronomy Satellite**

IRAS-Araki-Alcock comet

DEF The closest known approaching comet to the Earth since 1770, it was the fourth comet discovered in 1983 and is named after its first

three discoverers: The infrared astronomy satellite, Genichi Araki (a Japanese school teacher) and George Alcock (a veteran English amateur observer).

GS celestial bodies
. comets
. . **IRAS-Araki-Alcock comet**
RT Infrared Astronomy Satellite
solar system

irasers

USE **infrared lasers**

IRBM (missiles)

USE **intermediate range ballistic missiles**

Ireland

GS landforms
. islands
. . **Ireland**
nations
. **Ireland**

iridescence

GS electromagnetic properties
. optical properties
. . color
. . . **iridescence**
RT opalescence

iridium

GS chemical elements
. **iridium**
. . iridium isotopes
metals
. refractory metals
. . **iridium**
. . . iridium isotopes
. transition metals
. . **iridium**
. . . iridium isotopes
refractory materials
. refractory metals
. **iridium**
. . . iridium isotopes

iridium alloys

(added July 1991)

GS alloys
. **iridium alloys**
RT platinum alloys

iridium compounds

(added July 1991)

RT ∞ chemical compounds
∞ Group 8 compounds
∞ metal compounds

iridium isotopes

GS chemical elements
. iridium
. . **iridium isotopes**
. nuclides
. . isotopes
. . . **iridium isotopes**
metals
. refractory metals
. . iridium
. . . **iridium isotopes**
. transition metals
. . iridium
. . . **iridium isotopes**
refractory materials
. refractory metals
. . iridium
. . . **iridium isotopes**

Iridium network

(added December 1998)

DEF A 66-satellite wireless personal telecommunications network designed to provide worldwide telephone, paging, facsimile and data services to handheld or mobile equipment.

UF *Iridium satellites*

GS networks
. communication networks
. . **Iridium network**
. satellite networks
. . satellite constellations

... **Iridium network**
 RT communication satellites
 facsimile communication
 mobile communication systems
 satellite communication
 telephony
 wireless communication

Iridium satellites

(added December 1998)

USE **communication satellites**
Iridium network

IRIS satellites

GS artificial satellites
 . **IRIS satellites**
 RT European space programs
 satellite observation
 solar activity
 solar cycles
 solar energy
 solar flares
 solar radiation
 solar sensors

irises (mechanical apertures)

GS openings
 . apertures
 . . **irises (mechanical apertures)**
 RT camera shutters
 waveguide windows
 waveguides

IRM

USE **information resources**
management

iron

GS chemical elements
 . **iron**
 . . iron isotopes
 . . . iron 57
 . . . iron 58
 . . . iron 59
 metals
 . transition metals
 . . **iron**
 . . . iron isotopes
 iron 57
 iron 58
 iron 59
 RT ferric ions
 ferrous metals
 hydrogen embrittlement
 low carbon steels
 siderophile elements

iron 57

GS chemical elements
 . iron
 . . iron isotopes
 . . . **iron 57**
 . nuclides
 . . isotopes
 . . . iron isotopes
 **iron 57**
 metals
 . transition metals
 . . iron
 . . . iron isotopes
 **iron 57**

iron 58

DEF A radioactive isotope of iron.
 GS chemical elements
 . iron
 . . iron isotopes
 . . . **iron 58**
 . nuclides
 . . isotopes
 . . . iron isotopes
 **iron 58**
 metals
 . transition metals
 . . iron
 . . . iron isotopes
 **iron 58**

iron 59

GS chemical elements

. iron
 . . iron isotopes
 . . . **iron 59**
 . nuclides
 . . isotopes
 . . . iron isotopes
 **iron 59**
 . . . radioactive isotopes
 **iron 59**
 metals
 . transition metals
 . . iron
 . . . iron isotopes
 **iron 59**

iron alloys

UF *ferroalloys*
 GS alloys
 . **iron alloys**
 . . steels
 . . . bainitic steel
 . . . carbon steels
 low carbon steels
 . . . chromium steels
 . . . Croloy
 . . . high strength steels
 maraging steels
 . . . nickel steels
 . . . stainless steels
 austenitic stainless steels
 ferritic stainless steels
 martensitic stainless steels
 RT austenite
 bainite
 bearing alloys
 cementite
 ferrites
 Hastelloy (trademark)
 Inconel (trademark)
 iron aluminides
 kamacite
 martensite
 nimonic alloys
 pearlite
 Permalloys (trademark)
 silicon alloys
 Zircalloys (trademark)

iron aluminides

(added December 2000)
 GS aluminum compounds
 . aluminides
 . . **iron aluminides**
 iron compounds
 . **iron aluminides**
 RT aluminum alloys
 intermetallics
 iron alloys

iron chlorides

GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **iron chlorides**
 . halides
 . . chlorides
 . . . **iron chlorides**
 . . metal halides
 . . . **iron chlorides**
 iron compounds
 . **iron chlorides**

iron compounds

GS **iron compounds**
 . cohenite
 . cordierite
 . fayalite
 . ferrates
 . . barium ferrates
 . ferrites
 . ferrocenes
 . . alkylferrocene
 . iron chlorides
 . iron cyanides
 . iron oxides
 . . hematite
 . . ilmenite
 . . magnetite
 . limonite
 . pyrites

. pyrrhotite
 . . troilite
 . iron aluminides
 . schreibersite
 . siderites
 RT ∞ chemical compounds
 ∞ Group 8 compounds
 ∞ metal compounds

iron cyanides

GS cyanides
 . **iron cyanides**
 iron compounds
 . **iron cyanides**

iron isotopes

GS chemical elements
 . iron
 . . **iron isotopes**
 . . . iron 57
 . . . iron 58
 . . . iron 59
 . nuclides
 . . isotopes
 . . . **iron isotopes**
 iron 57
 iron 58
 iron 59
 metals
 . transition metals
 . . iron
 . . . **iron isotopes**
 iron 57
 iron 58
 iron 59
 RT ferrous metals

iron meteorites

UF *siderite meteorites*
 GS celestial bodies
 . meteorites
 . . **iron meteorites**
 . . . Aroos meteorite
 . . . Lazarev meteorite
 . . . Odessa meteorite
 . . . Sikhote-Alin meteorite
 RT achondrites
 Harleton meteorite
 kamacite
 meteoritic composition
 meteoritic microstructures
 Okhansk meteorite
 schreibersite
 stony meteorites
 stony-iron meteorites
 troilite
 Widmanstätten structure

iron ores

GS minerals
 . **iron ores**
 . . hematite

iron oxides

GS chalcogenides
 . oxides
 . . metal oxides
 . . . **iron oxides**
 hematite
 ilmenite
 magnetite
 iron compounds
 . **iron oxides**
 . . hematite
 . . ilmenite
 . . magnetite

Iroquois helicopter

USE **UH-1 helicopter**

irradiance

SN (LIMITED TO DETECTION RATE PER
 UNIT AREA OF RADIATION)
 DEF The detection rate per unit area of
 radiation.
 GS rates (per time)
 . flux density
 . . radiant flux density
 . . . **irradiance**
 illuminance

irradiation

RT . . . solar constant
electron flux density
luminance
luminous intensity
neutron flux density
photosynthetically active radiation
proton flux density
radiance
Solar Backscatter UV Spectrometer
solar flux density

irradiation

GS **irradiation**
. auroral irradiation
. electron irradiation
. ion irradiation
. . deuteron irradiation
. . proton irradiation
. neutron irradiation
. x ray irradiation
RT activation
beams (radiation)
∞ bombardment
dosimeters
electromagnetic absorption
electron probes
emission
excitation
exposure
flux density
ionizing radiation
laser induced fluorescence
nuclear capture
nuclear fusion
nuclear radiation
preserving
∞ radiation
radiation dosage
radiation effects
radiation measurement
radiation tolerance
radiobiology
radiography
targets

irrationality

RT disorientation
dithers
mental performance
prejudices
psychoses
schizophrenia

irregular galaxies

DEF Galaxies with amorphous structure and with relatively low mass (10 to the 8th to 10 to the 10th solar masses). Fewer than 10 per cent of all galaxies are classified as irregular.

GS celestial bodies
. galaxies
. . **irregular galaxies**

RT BL Lacertae objects
galactic radiation
galactic rotation
galactic structure
Gum nebula
Hubble constant
Hubble diagram
nebulae
Orion nebula
Population I stars
quasars
radio sources (astronomy)
red shift
star clusters
stars

irregular variable stars

GS celestial bodies
. stars
. . variable stars
. . . **irregular variable stars**
. . . R Coronae Borealis stars
RT carbon stars
semiregular variable stars

irregularities

RT abnormalities
defects
deviation

nonuniformity
regularity

irreversible processes

RT nonequilibrium thermodynamics
Onsager relationship
reaction kinetics
thermodynamics
thermoviscoelasticity
variational principles

irrigation

RT agriculture
alfalfa
barley
canals
citrus trees
corn
crop vigor
ditches
drainage
drainage patterns
farm crops
farmlands
oats
orchards
ponds
seepage
sugar beets
sugar cane
troughs
vegetation growth
vineyards
water consumption

irritation

GS **irritation**
. toxicity and safety hazard
RT ∞ reaction

irrotational flow

USE **potential flow**

IRS (Indian spacecraft)

USE **Indian spacecraft**

ISAGEX

USE **International Satellite Geodesy Experiment**

ISCCP Project

(added August 1991)
UF *International Satellite Cloud Climatology*

GS programs
. projects
. . **ISCCP Project**
RT climatology
cloud cover
clouds (meteorology)
GOES satellites
METEOSAT satellite
remote sensing
satellite observation

ischemia

RT anemias
blood circulation
congestion
vasoconstriction

ISEE

USE **International Sun Earth Explorers**

isentrope

DEF A line of equal or constant pressure, with respect to either space or time.

RT adiabatic conditions
isentropic processes
Mollier diagram
Poisson equation

isentropic processes

GS **isentropic processes**
. nonisentropicity
RT Bernoulli theorem
isentrope
isoenergetic processes
isopycnic processes
∞ processes

thermodynamic equilibrium

Ising model

RT antiferromagnetism
cluster variation method
crystal lattices
ferromagnetism
particle spin
phase transformations
statistical mechanics

ISIS satellites

SN (INTERNATIONAL SATELLITES FOR IONOSPHERIC STUDY)
UF *International Sats for Ionospheric Study*
GS artificial satellites
. **ISIS satellites**
. . Alouette 2 satellite
. . ISIS-A
. . ISIS-B
. . ISIS-X
RT Alouette satellites

ISIS-A

GS artificial satellites
. ISIS satellites
. . **ISIS-A**
RT Alouette project

ISIS-B

GS artificial satellites
. ISIS satellites
. . **ISIS-B**

ISIS-X

GS artificial satellites
. ISIS satellites
. . **ISIS-X**
RT Alouette B satellite

Iskra aircraft

USE **TS-11 aircraft**

island arcs

GS landforms
. **island arcs**
RT Aleutian Islands (US)
∞ arcs
barriers (landforms)
islands
keys (islands)
lagoons
reefs

islands

DEF Tracts of land smaller than a continent, surrounded by the water of oceans, seas, lakes, or streams. The term has been loosely applied to land-tied and submerged areas, and to land cut off on two or more sides by water, such as peninsulas.

GS landforms
. **islands**
. . Aleutian Islands (US)
. . Assateague Island (MD-VA)
. . atolls
. . Azores
. . Bahrain
. . Bermuda
. . Canary Islands
. . Cyprus
. . Greenland
. . Hawaii
. . Iceland
. . Indonesia
. . Ireland
. . keys (islands)
. . Long Island (NY)
. . Madagascar
. . Maldive Islands
. . Malta
. . Mauritius
. . Merritt Island (FL)
. . Newfoundland
. . nunataks
. . Pacific islands
. . . Guam
. . . Japan
. . . Johnston Island
. . . Kurile Islands

- . . . New Guinea (island)
 - . . . New Zealand
 - . . . Philippines
 - . . . Samoa
 - . . Prince Edward Island
 - . . Seychelles
 - . . Sicily
 - . . Tasmania
 - . . Wallops Island
 - . . West Indies
 - . . . Antigua and Barbuda
 - . . . Bahamas
 - . . . Barbados
 - . . . Cuba
 - . . . Dominica
 - . . . Grenada
 - . . . Guadeloupe
 - . . . Haiti
 - . . . Jamaica
 - . . . Lesser Antilles
 - . . . Martinique
 - . . . Puerto Rico
 - . . . Trinidad and Tobago
 - . . . Virgin Islands
 - RT archipelagoes
 - Cape Verde
 - coral reefs
 - island arcs
 - lagoons
 - Outer Banks (NC)
 - reefs
 - seamounts
- ISMU (resource utilization)*
(added August 2001)
- USE **in situ resource utilization**
- ∞ **isobars**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT baroclinity
 - barotropism
 - isobars (pressure)
 - nuclear isobars
 - polytropic processes
- isobars (pressure)**
- DEF Lines of equal or constant pressure, specifically, such lines on a weather map.
- RT atmospheric pressure
 - geostrophic wind gradients
 - ∞ isobars
 - isochoric processes
 - isopycnic processes
 - isothermal processes
 - meteorological charts
 - pressure
 - pressure distribution
 - pressure gradients
- isobutane*
(added March 1996)
- USE **butanes**
- isobutylene*
- USE **butenes**
- isochoric processes**
- RT isobars (pressure)
 - isopycnic processes
 - thermodynamic equilibrium
 - volume
- isochromatics**
- RT color
 - dichroism
 - diffraction
 - interferometry
 - refraction
 - speckle interferometry
- isocyanates**
- GS esters
 - . **isocyanates**
 - . . diisocyanates
 - . . fulminates
 - nitrogen compounds
 - . cyano compounds
 - . . **isocyanates**
- . . . diisocyanates
 - . . . fulminates
- isoelectronic sequence**
- RT atomic structure
 - spectra
 - spectroscopy
- isoenergetic processes**
- RT adiabatic conditions
 - isentropic processes
 - thermodynamic equilibrium
- isolation**
- GS **isolation**
 - . social isolation
 - RT confinement
 - confining
 - deprivation
 - disposal
 - exclusion
 - gnotobiotics
 - insulation
 - isolators
 - ∞ separation
 - spacing
- isolators**
- GS **isolators**
 - . vibration isolators
 - RT attenuators
 - insulation
 - isolation
 - noise reduction
 - shock absorbers
 - spacers
 - suppressors
 - vibration
- isomerization**
- DEF Process for converting hydrocarbon or other organic compound to an isomer.
- GS **isomerization**
 - . ortho para conversion
 - RT ∞ conversion
 - refining
- isomers**
- DEF Nuclides having the same mass number A and atomic number Z, but existing for measurable times in different quantum states with different energies and radioactive properties. Molecules having the same atomic composition and molecular weight, but differing in geometrical configuration.
- GS **isomers**
 - . enantiomers
 - RT atoms
 - congeners
 - isopropyl alcohol
 - nuclear chemistry
 - phenanthrene
 - stereochemistry
 - tautomers
- isomorphism**
- UF *morphotropism*
 - GS morphology
 - . **isomorphism**
 - RT crystal lattices
 - crystal structure
 - duality theorem
 - enantiomers
 - homomorphisms
- isoparametric finite elements**
- DEF The basis for the calculation of physical properties of structural shapes including stress analyses.
- RT conformal mapping
 - coordinate transformations
 - ∞ elements
 - finite element method
 - fracture mechanics
 - numerical analysis
 - stress analysis
- isoperimetric problem**
- RT analytic functions
 - continuity (mathematics)
- Lagrange multipliers
 - matrices (mathematics)
 - ∞ problems
 - topology
- isophotes**
- RT ∞ illumination
- isopleths*
- USE **nomographs**
- isopropyl alcohol**
- GS hydroxyl compounds
 - . alcohols
 - . . **isopropyl alcohol**
 - isopropyl compounds
 - . **isopropyl alcohol**
 - RT isomers
- isopropyl compounds**
- GS **isopropyl compounds**
 - . isopropyl alcohol
 - RT ∞ chemical compounds
- isopropyl nitrate**
- GS alkyl compounds
 - . **isopropyl nitrate**
 - esters
 - . nitrate esters
 - . . **isopropyl nitrate**
 - nitrogen compounds
 - . nitrate esters
 - . . **isopropyl nitrate**
- isopycnic processes**
- UF *isosteric processes*
 - RT density (mass/volume)
 - isentropic processes
 - isobars (pressure)
 - isochoric processes
- isostasy**
- DEF A supposed equality existing in vertical sections of the Earth, whereby the weight of any column from the surface of the Earth to a constant depth is approximately the same as that of any other column of equal area, the equilibrium being maintained by plastic flow from one part of the Earth to another.
- RT ∞ equilibrium
 - geomorphology
 - geophysics
 - glaciology
 - gravitation
 - hydrostatics
 - orography
 - seismology
 - subsidence
- isostatic pressure**
- GS pressure
 - . **isostatic pressure**
 - RT atmospheric pressure
 - hot isostatic pressing
 - hydrostatic pressure
 - static pressure
- isosteric processes*
- USE **isopycnic processes**
- isotenoid structures**
- DEF Filamentary structures in which the filaments are uniformly stressed throughout for the design loading conditions.
- RT composite wrapping
 - filament winding
 - pressure vessels
 - prestressing
 - shells (structural forms)
 - spiral wrapping
 - ∞ structures
 - tensegrity structures
- isothermal flow**
- GS fluid flow
 - . **isothermal flow**
 - RT flow distribution
 - isotherms

isothermal layers

temperature distribution

isothermal layers

RT isotherms
laminar boundary layer
stratosphere
stratospheric warming
temperature distribution
temperature gradients
thermal mapping
tropopause

isothermal processes

DEF Thermodynamic changes of state of a system that take place at constant temperature.
RT adiabatic conditions
isobars (pressure)
isotherms
thermodynamic equilibrium

isotherms

DEF Lines connecting points of equal temperature.
RT Atmospheric & Oceanographic Inform Sys
atmospheric temperature gradients
isothermal flow
isothermal layers
isothermal processes
meteorological parameters
meteorology
temperature
temperature distribution
temperature gradients
thermal mapping
thermodynamics

isotonicity

RT body fluids
osmosis

isotope abundance ratios

USE **isotope ratios**

isotope effect

UF *isotope shift*
RT ∞ effects
isotopes
radioactive isotopes

isotope ratios

(added March 1995)
UF *isotope abundance ratios*
isotopic analysis (quantitative)
GS composition (property)
. **isotope ratios**
ratios
. **isotope ratios**
RT atmospheric composition
cosmochemistry
geochemistry
geochronology
interstellar chemistry
meteoritic composition
stellar composition

isotope separation

RT atoms
heavy ions
ion exchanging
ion extraction
isotopes
jet membrane process

isotope shift

USE **isotope effect**

isotopes

DEF Different forms of the same chemical element that differ only by the number of neutrons in their nucleus. Most elements have more than one naturally occurring isotope.
GS chemical elements
. nuclides
. **isotopes**
. . . aluminum isotopes
. . . . aluminum 26
. . . . aluminum 27
. . . antimony isotopes

. . . argon isotopes
. . . arsenic isotopes
. . . barium isotopes
. . . beryllium isotopes
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
. . . bismuth isotopes
. . . boron isotopes
. . . . boron 10
. . . bromine isotopes
. . . cadmium isotopes
. . . calcium isotopes
. . . carbon isotopes
. . . . carbon 12
. . . . carbon 13
. . . . carbon 14
. . . cerium isotopes
. . . . cerium 137
. . . . cerium 144
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . . cesium vapor
. . . chromium isotopes
. . . cobalt isotopes
. . . . cobalt 58
. . . . cobalt 60
. . . dysprosium isotopes
. . . erbium isotopes
. . . europium isotopes
. . . fluorine isotopes
. . . gadolinium isotopes
. . . gallium isotopes
. . . germanium isotopes
. . . gold isotopes
. . . . gold 198
. . . hafnium isotopes
. . . helium isotopes
. . . holmium isotopes
. . . hydrogen isotopes
. . . . deuterium
. . . . hydrogen 4
. . . . metallic hydrogen
. . . . tritium
. . . iodine isotopes
. . . . iodine 125
. . . . iodine 131
. . . . iodine 132
. . . iridium isotopes
. . . iron isotopes
. . . . iron 57
. . . . iron 58
. . . . iron 59
. . . krypton isotopes
. . . . krypton 85
. . . lanthanum isotopes
. . . lead isotopes
. . . lithium isotopes
. . . lutetium
. . . . lutetium isotopes
. . . magnesium isotopes
. . . manganese isotopes
. . . mercury isotopes
. . . molybdenum isotopes
. . . neodymium isotopes
. . . neon isotopes
. . . nickel isotopes
. . . niobium isotopes
. . . . niobium 95
. . . nitrogen isotopes
. . . . nitrogen 15
. . . . nitrogen 16
. . . nobelium isotopes
. . . osmium isotopes
. . . oxygen isotopes
. . . . oxygen 17
. . . . oxygen 18
. . . palladium isotopes
. . . phosphorus isotopes
. . . . phosphorus 32
. . . platinum isotopes
. . . polonium isotopes
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
. . . praseodymium isotopes
. . . promethium isotopes
. . . protactinium isotopes
. . . radioactive isotopes
. . . . astatine isotopes
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
. . . . carbon 14
. . . . cerium 137
. . . . cerium 144
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . . . cobalt 58
. . . . cobalt 60
. . . . copper isotopes
. . . . gold 198
. . . . indium isotopes
. . . . iodine 125
. . . . iodine 131
. . . . iodine 132
. . . . iron 59
. . . . krypton 85
. . . . niobium 95
. . . . nitrogen 16
. . . . phosphorus 32
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
. . . . potassium 38
. . . . potassium 40
. . . . rubidium 86
. . . . sodium 22
. . . . sodium 24
. . . . strontium 85
. . . . strontium 88
. . . . strontium 89
. . . . strontium 90
. . . . transuranium elements
. americium
. americium isotopes
. americium 241
. berkelium
. californium
. californium isotopes
. curium
. curium isotopes
. curium 242
. curium 244
. einsteinium
. fermium
. lawrencium
. mendelevium
. neptunium
. neptunium isotopes
. nobelium
. plutonium
. plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
. sergenium
. tritium
. . . . uranium 232
. . . . uranium 233
. . . . uranium 238
. . . . xenon 133
. . . . xenon 135
. . . . zirconium 95
. . . radium isotopes
. . . . radium 226
. . . radon isotopes
. . . rhenium isotopes
. . . rhodium isotopes
. . . rubidium isotopes
. . . . rubidium 86
. . . ruthenium isotopes
. . . samarium isotopes
. . . scandium isotopes
. . . selenium isotopes
. . . silicon isotopes
. . . silver isotopes
. . . sodium isotopes

- ... sodium 22
 - ... sodium 24
 - ... strontium isotopes
 - ... strontium 85
 - ... strontium 87
 - ... strontium 89
 - ... strontium 90
 - ... sulfur isotopes
 - ... tantalum isotopes
 - ... technetium isotopes
 - ... tellurium
 - ... tellurium isotopes
 - ... terbium isotopes
 - ... thallium isotopes
 - ... thorium isotopes
 - ... thulium isotopes
 - ... tin isotopes
 - ... titanium isotopes
 - ... tungsten isotopes
 - ... uranium isotopes
 - ... uranium 232
 - ... uranium 233
 - ... uranium 234
 - ... uranium 235
 - ... uranium 238
 - ... vanadium isotopes
 - ... xenon isotopes
 - ... xenon 129
 - ... xenon 133
 - ... xenon 135
 - ... ytterbium isotopes
 - ... yttrium isotopes
 - ... zinc isotopes
 - ... zirconium isotopes
 - ... zirconium 95
- RT atoms
heavy ions
isotope effect
isotope separation
isotopic enrichment
isotopic labeling
jet membrane process
metals
nuclear isobars
nuclei (nuclear physics)
radioactive materials
- isotopic analysis (quantitative)*
USE **isotope ratios**
- isotopic enrichment**
DEF Process by which the relative abundance of the isotopes of a given element are altered in a batch to produce a form of the element enriched in a particular isotope.
GS enrichment
. **isotopic enrichment**
. jet membrane process
RT beneficiation
chemical elements
∞ concentration
isotopes
nuclides
- isotopic labeling**
GS marking
. **isotopic labeling**
RT chemical analysis
isotopes
radioactive isotopes
radiochemistry
trace elements
∞ tracers
- isotopic spin**
GS spin
. particle spin
. **isotopic spin**
- isotropic media**
GS isotropy
. **isotropic media**
RT anisotropic media
- isotropic turbulence**
DEF Turbulence in which the products and squares of the velocity components and their derivatives are independent of direction, or, more precisely, invariant with respect to rotation and reflection of the coordinate axes in a coordinate system moving with the mean motion of the fluid.
GS turbulence
. **isotropic turbulence**
RT atmospheric turbulence
coordinate transformations
homogeneous turbulence
instrument receivers
invariant imbeddings
Kolmogorov theory
magnetohydrodynamic turbulence
turbulent flow
- isotropism**
RT refractivity
symmetry
- isotropy**
DEF Having the same properties in all directions. Used for spatial isotropy.
UF *spatial isotropy*
GS **isotropy**
. isotropic media
RT anisotropic fluids
anisotropy
Bragg angle
crystal structure
crystallography
crystals
dendritic crystals
directivity
field strength
mechanical properties
metallography
optical properties
∞ orientation
∞ physical properties
- Israel**
GS nations
. **Israel**
RT Asia
Israeli space program
Israeli spacecraft
- Israeli space program**
(added March 1989)
GS programs
. space programs
. **Israeli space program**
RT Israel
Israeli spacecraft
- Israeli spacecraft**
(added May 1993)
RT Israel
Israeli space program
∞ spacecraft
- ISRO**
UF *Indian Space Research Organization*
GS organizations
. **ISRO**
RT India
space programs
- ISRU (resource utilization)*
(added August 2001)
USE **in situ resource utilization**
- ISS (space station)*
(added June 2000)
USE **International Space Station**
- isthmuses**
DEF Narrow strips or necks of land, bordering on both sides by water, connecting two larger land areas, such as peninsulas and the mainland or two continents (Isthmus of Panama).
GS land
. **isthmuses**
landforms
. **isthmuses**
RT geology
oceanography
peninsulas
topography
- water
- ISY*
USE **International Space Year**
- Italian space program**
GS programs
. space programs
. European space programs
. **Italian space program**
RT Italy
Orbiting Frog Otolith
SIRIO satellite
- Italy**
GS nations
. **Italy**
RT Adriatic Sea
Alps Mountains (Europe)
Europe
Italian space program
San Marino
Sicily
SIRIO satellite
Vatican City
- itching**
RT contact dermatitis
dermatitis
histamines
sensitivity
sensory perception
- iteration**
GS analysis (mathematics)
. numerical analysis
. **iteration**
. conjugate gradient method
. iterative solution
. Newton methods
. Newton-Raphson method
. predictor-corrector methods
RT multigrid methods
probability theory
problem solving
- iterative networks**
GS circuits
. **iterative networks**
networks
. **iterative networks**
RT impedance matching
- iterative solution**
GS analysis (mathematics)
. numerical analysis
. iteration
. **iterative solution**
problem solving
. **iterative solution**
RT asymptotic methods
Cholesky factorization
conjugate gradient method
finite element method
ill-posed problems (mathematics)
multigrid methods
Newton methods
predictor-corrector methods
sorting algorithms
strange attractors
- ITO (semiconductors)**
DEF Semiconductor devices consisting of a layer of tin sandwiched between an indium layer and an oxide layer. Used for indium-tin-oxide semiconductors.
UF *indium-tin-oxide semiconductors*
GS electronic equipment
. solid state devices
. semiconductor devices
. metal oxide semiconductors
. **ITO (semiconductors)**
semiconductors (materials)
. metal oxide semiconductors
. **ITO (semiconductors)**
RT charge coupled devices
charge transfer devices
CMOS
heterojunction devices
ion implantation

ITOS 1

rectifiers
SOS (semiconductors)

ITOS 1

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . ITOS satellites
. . . . **ITOS 1**
RT TIROS M
TIROS N series satellites
TIROS operational satellite system

ITOS 2

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . ITOS satellites
. . . . **ITOS 2**
RT TIROS M
TIROS N series satellites
TIROS operational satellite system

ITOS 3

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . ITOS satellites
. . . . **ITOS 3**
RT TIROS M
TIROS N series satellites

TIROS operational satellite system

ITOS 4

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . ITOS satellites
. . . . **ITOS 4**
RT TIROS M
TIROS N series satellites
TIROS operational satellite system

ITOS satellites

(added August 1990)
DEF Second generation, polar orbiting, environmental satellite used to augment NOAA's world-wide weather observation capabilities.

UF *Improved TIROS Operational Satellites*

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **ITOS satellites**
. . . . ITOS 1
. . . . ITOS 2
. . . . ITOS 3
. . . . ITOS 4

RT TIROS M
TIROS N series satellites

IUE

UF *International Ultraviolet Explorer SAS-D*
GS artificial satellites

. scientific satellites
. . astronomical satellites

. . . **IUE**
observatories
. astronomical observatories
. . astronomical satellites

. . . **IUE**
RT Explorer satellites
Extreme Ultraviolet Explorer satellite
radio astronomy
spaceborne astronomy
ultraviolet radiation

IUS

USE **Inertial Upper Stage**

Ivory Coast

USE **Cote d'Ivoire**

Ivuna meteorite

GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. **Ivuna meteorite**
. . . . chondrites
. . . . carbonaceous chondrites
. **Ivuna meteorite**

Izsak ellipsoid

USE **ellipsoids**
geodesy

J

J integral

DEF A contour energy integral formulated by Rice and used for evaluating fracture toughness of elastoplastic materials.

- GS analysis (mathematics)
 - . functional analysis
 - . integral equations
 - . . . **J integral**
 - . real variables
 - . measure and integration
 - . . . **J integral**
- RT crack initiation
 - crack propagation
 - crack propagation
 - cracking (fracturing)
 - creep rupture strength
 - elastoplasticity
 - fracture mechanics
 - fracture strength
 - integral calculus
 - mechanical properties
 - plastic deformation
 - structural analysis
 - toughness
 - yield strength

J-2 engine

- GS engines
 - . rocket engines
 - . liquid propellant rocket engines
 - . . . hydrogen oxygen engines
 - **J-2 engine**
- RT Ares 1 upper stage
 - Ares 5 cargo launch vehicle
 - Nova launch vehicles
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles

J-33 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-33 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-33 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-33 engine**
 - turbomachinery
 - . **J-33 engine**
- RT Mace missiles

J-34 engine

- UF *XJ-34-WE-32 engine*
- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-34 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-34 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-34 engine**

J-47 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-47 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines

- **J-47 engine**
- . turbine engines
- . gas turbine engines
- . jet engines
- . . . turbojet engines
- **J-47 engine**

J-52 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-52 engine**
 - . aircraft engines
 - . **J-52 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-52 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-52 engine**

J-57 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-57 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-57 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-57 engine**
- RT afterburning

J-58 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-58 engine**
 - . aircraft engines
 - . **J-58 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-58 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-58 engine**

J-65 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-65 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-65 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-65 engine**
- RT A-4 aircraft

J-69-T-25 engine

- UF *Marbore 2 engine*
- GS engines
 - . air breathing engines

- . gas turbine engines
- . jet engines
- . . . turbojet engines
- **J-69-T-25 engine**
- . internal combustion engines
- . gas turbine engines
- . jet engines
- . . . turbojet engines
- **J-69-T-25 engine**
- . turbine engines
- . gas turbine engines
- . jet engines
- . . . turbojet engines
- **J-69-T-25 engine**

J-71 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-71 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-71 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-71 engine**

J-73 engine

- UF *YJ-73-GE-3 engine*
- GS engines
 - . *YJ73 turbojet engine*
 - . engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-73 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-73 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-73 engine**

J-75 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-75 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-75 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-75 engine**

J-79 engine

- UF *XJ-79-GE-1 engine*
- GS engines
 - . *YJ-79 engine*
 - . engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-79 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-79 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-79 engine**

J-85 engine

. . . . turbojet engines

. . . . **J-79 engine**

RT F-4 aircraft

J-85 engine

UF *YJ-85 engine*

GS engines

. air breathing engines

. . gas turbine engines

. . . jet engines

. . . . turbojet engines

. **J-85 engine**

. internal combustion engines

. . gas turbine engines

. . . jet engines

. . . . turbojet engines

. **J-85 engine**

. turbine engines

. . gas turbine engines

. . . jet engines

. . . . turbojet engines

. **J-85 engine**

RT Blue Goose missile

Osprey missile

J-93 engine

UF *J93-MJ252H engine*

J93-MJ280G engine

YJ-93 engine

YJ-93-GE-3 engine

GS engines

. air breathing engines

. . gas turbine engines

. . . jet engines

. . . . turbojet engines

. **J-93 engine**

. internal combustion engines

. . gas turbine engines

. . . jet engines

. . . . turbojet engines

. **J-93 engine**

. turbine engines

. . gas turbine engines

. . . jet engines

. . . . turbojet engines

. **J-93 engine**

J93-MJ252H engine

USE **J-93 engine**

J93-MJ280G engine

USE **J-93 engine**

J-97 engine

GS engines

. air breathing engines

. . gas turbine engines

. . . jet engines

. . . . turbojet engines

. turbofan engines

. **J-97 engine**

. aircraft engines

. . **J-97 engine**

. internal combustion engines

. . gas turbine engines

. . . jet engines

. . . . turbojet engines

. turbofan engines

. **J-97 engine**

. turbine engines

. . gas turbine engines

. . . jet engines

. . . . turbojet engines

. turbofan engines

. **J-97 engine**

Jabiru rocket vehicle

USE **Jaguar rocket vehicle**

jackets

SN (EXCLUDES CLOTHING)

DEF Coverings or casings of some kind. Specifically, a shell around the combustion chamber of a liquid fuel rocket, through which the propellant is circulated in regenerative cooling. Coatings of one material over another to prevent damage such as oxidation or micrometeoroid penetration.

RT absorbers (materials)

∞ casing

cooling

coverings

heating

insulation

linings

sheaths

jacking equipment

USE **jacks (lifts)**

∞ **jacks**

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

electric connectors

elevators (lifts)

jacks (lifts)

jacks (electrical)

USE **electric connectors**

jacks (lifts)

UF *jacking equipment*

RT ∞ jacks

∞ lifts

positioning devices (machinery)

tunneling (excavation)

Jacobi integral

GS analysis (mathematics)

. real variables

. . **Jacobi integral**

RT

conformal mapping

diffusion theory

elliptic functions

Green's functions

potential theory

Weierstrass functions

Jacobi matrix method

GS analysis (mathematics)

. real variables

. . **Jacobi matrix method**

RT

calculus of variations

eigenvalues

eigenvectors

Hermitian polynomial

∞ methodology

Jacobi polynomials

USE **hypergeometric functions**

Jaguar aircraft

GS attack aircraft

. fighter aircraft

. . **Jaguar aircraft**

single engine aircraft

. **Jaguar aircraft**

supersonic aircraft

. **Jaguar aircraft**

RT ∞ aircraft

Breguet aircraft

∞ military aircraft

Jaguar rocket vehicle

UF *Jabiru rocket vehicle*

GS rocket vehicles

. multistage rocket vehicles

. . **Jaguar rocket vehicle**

. . sounding rockets

. . **Jaguar rocket vehicle**

RT

solid propellant rocket engines

Jahn-Teller effect

DEF The effect whereby, except for linear molecules, degenerate orbital states in molecules are unstable.

RT ∞ effects

electron paramagnetic resonance

electron transitions

orbitals

Jamaica

GS landforms

. islands

. . West Indies

. . . **Jamaica**

nations

. **Jamaica**

RT Caribbean region

James Webb Space Telescope

(added October 2003)

DEF Orbiting infrared observatory comprised of an optical telescope element, integrated science instrument module, and a space support module. Successor telescope to the Hubble Space Telescope.

UF *JWST (observatory)*

GS artificial satellites

. scientific satellites

. . astronomical satellites

. . . **James Webb Space Telescope**

observatories

. astronomical observatories

. . astronomical satellites

. . . **James Webb Space Telescope**

telescopes

. spaceborne telescopes

. . **James Webb Space Telescope**

RT Hubble Space Telescope

infrared astronomy

infrared telescopes

Next Generation Space Telescope

project

spaceborne astronomy

jammers

RT air defense

jamming

radar equipment

radio equipment

jamming

DEF Intentional transmission or reradiation of radio signals in such a way as to interfere with reception of desired signals by the intended receiver.

GS countermeasures

. **jamming**

electromagnetic interference

. **jamming**

RT

clutter

electronic countermeasures

electronic warfare

frequency hopping

∞ interference

jammers

radio frequency interference

space-time adaptive processing

white noise

Janus

DEF One of the natural satellites of Saturn.

GS celestial bodies

. natural satellites

. . Saturn satellites

. . . **Janus**

RT

Saturn (planet)

Janus Reactor

GS nuclear reactors

. nuclear research and test reactors

. . **Janus Reactor**

Janus spacecraft

GS gliders

. **Janus spacecraft**

lifting bodies

. lifting reentry vehicles

. . **Janus spacecraft**

maneuverable spacecraft

. **Janus spacecraft**

manned spacecraft

. **Janus spacecraft**

reentry vehicles

. maneuverable reentry bodies

. . lifting reentry vehicles

. . . **Janus spacecraft**

soft landing spacecraft

. **Janus spacecraft**

Japan

GS landforms

. islands

. . Pacific islands

. . . **Japan**

nations

. **Japan**

- RT Asia
 - Japanese space program
 - Japanese spacecraft
 - Japanese space program**
 - GS programs
 - . space programs
 - . . **Japanese space program**
 - RT Ginga satellite
 - HOPE aerospace plane
 - Japan
 - Japanese spacecraft
 - Kibo Japanese Experiment Module
 - meteorological satellites
 - ∞ research projects
 - satellite design
 - space missions
 - space transportation
 - ∞ spacecraft
 - spacecraft design
 - Tenma satellite
 - Japanese spacecraft**
 - DEF Spacecraft operated by the Japanese government. Used for MOS (Japanese spacecraft).
 - UF *MOS (Japanese spacecraft)*
 - GS **Japanese spacecraft**
 - . EXOS satellites
 - . . EXOS-A satellite
 - . . EXOS-B satellite
 - . . EXOS-C satellite
 - . . EXOS-D satellite
 - . Engineering Test Satellites
 - . Ginga satellite
 - . Nozomi Mars Orbiter
 - . Tenma satellite
 - RT Japan
 - Japanese space program
 - ∞ spacecraft
- jarring*
 - USE **mechanical shock**
- JAS-39 aircraft**
 - (added June 1995)
 - UF *Gripen aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - . . **JAS-39 aircraft**
 - RT ∞ aircraft
 - canard configurations
 - Sweden
- JATO engines**
 - UF *jet assisted takeoff*
 - GS engines
 - . **JATO engines**
 - launchers
 - . aircraft launching devices
 - . . **JATO engines**
 - RT short takeoff aircraft
 - solid propellant rocket engines
 - takeoff
- Java (programming language)**
 - (added December 1998)
 - GS languages
 - . programming languages
 - . . high level languages
 - . . . **Java (programming language)**
 - RT C++ (programming language)
 - client server systems
 - internets
 - object-oriented programming
 - World Wide Web
- Javelin aircraft*
 - USE **GA-5 aircraft**
- Javelin rocket vehicle**
 - GS rocket vehicles
 - . multistage rocket vehicles
 - . . **Javelin rocket vehicle**
 - RT Argo rocket vehicles
 - rocket propelled sleds
 - solid propellant rocket engines
- sounding rockets
- Jayhawk helicopter*
 - USE **H-60 Helicopter**
- JC-130 aircraft*
 - USE **C-130 aircraft**
- Jeans theory**
 - RT gravitational instability
 - ∞ theories
- jeeps*
 - USE **automobiles**
- jerboas**
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . rodents
 - mice
 - **jerboas**
- jet aircraft**
 - UF *jet flight*
 - GS **jet aircraft**
 - . *turbojet aircraft*
 - . A-2 aircraft
 - . A-3 aircraft
 - . A-4 aircraft
 - . A-5 aircraft
 - . A-6 aircraft
 - . Alpha jet aircraft
 - . AVRO 707 aircraft
 - . B-1 aircraft
 - . B-2 aircraft
 - . B-47 aircraft
 - . B-52 aircraft
 - . B-57 aircraft
 - . B-58 aircraft
 - . B-66 aircraft
 - . B-70 aircraft
 - . Boeing 747 aircraft
 - . Boeing 777 aircraft
 - . Boeing 2707 aircraft
 - . Buccaneer aircraft
 - . C-5 aircraft
 - . C-8A augmentor wing aircraft
 - . C-9 aircraft
 - . C-135 aircraft
 - . C-140 aircraft
 - . Canberra aircraft
 - . CL-41 aircraft
 - . CL-823 aircraft
 - . Comet 4 aircraft
 - . CV-880 aircraft
 - . D-558 aircraft
 - . DC 9 aircraft
 - . DC 10 aircraft
 - . DH 112 aircraft
 - . DH 115 aircraft
 - . DH 125 aircraft
 - . DHC 2 aircraft
 - . European Airbus
 - . . A-300 aircraft
 - . . A-310 aircraft
 - . . A-320 aircraft
 - . . A-330 aircraft
 - . . A-340 aircraft
 - . . A-380 aircraft
 - . F-2 aircraft
 - . F-4 aircraft
 - . F-8 aircraft
 - . F-9 aircraft
 - . F-14 aircraft
 - . F-15 aircraft
 - . F-16 aircraft
 - . F-17 aircraft
 - . F-18 aircraft
 - . F-20 aircraft
 - . F-22 aircraft
 - . F-84 aircraft
 - . F-86 aircraft
 - . F-89 aircraft
 - . F-94 aircraft
 - . F-100 aircraft
 - . F-101 aircraft
 - . F-102 aircraft
 - . F-104 aircraft
 - . F-105 aircraft
 - . F-106 aircraft
 - . F-117A aircraft
 - . FD 2 aircraft
 - . G-91 aircraft
 - . G-95/4 aircraft
 - . GA-5 aircraft
 - . H-17 helicopter
 - . H-126 aircraft
 - . HFB-320 aircraft
 - . HP-115 aircraft
 - . HS-801 aircraft
 - . IL-76 aircraft
 - . IL-86 aircraft
 - . IL-96 aircraft
 - . jet provost aircraft
 - . Jetstream aircraft
 - . Jindivik target aircraft
 - . L-29 jet trainer
 - . L-1011 aircraft
 - . L-2000 aircraft
 - . Lear jet aircraft
 - . MD 11 aircraft
 - . MD 80 aircraft
 - . Mirage aircraft
 - . . Mirage 3 aircraft
 - . Mystere 50 aircraft
 - . Nord 1500 aircraft
 - . P-308 aircraft
 - . PD-808 aircraft
 - . S-3 aircraft
 - . SC-1 aircraft
 - . Scimitar aircraft
 - . T-2 aircraft
 - . T-33 aircraft
 - . T-37 aircraft
 - . T-38 aircraft
 - . T-39 aircraft
 - . TS-11 aircraft
 - . TSR-2 aircraft
 - . TU-104 aircraft
 - . TU-124 aircraft
 - . TU-154 aircraft
 - . TU-204 aircraft
 - . turbofan aircraft
 - . . A-7 aircraft
 - . . BAC 111 aircraft
 - . . Boeing 707 aircraft
 - . . Boeing 717 aircraft
 - . . Boeing 720 aircraft
 - . . Boeing 727 aircraft
 - . . Boeing 733 aircraft
 - . . Boeing 737 aircraft
 - . . Boeing 757 aircraft
 - . . Boeing 767 aircraft
 - . . C-141 aircraft
 - . . CL-600 challenger aircraft
 - . . Concorde aircraft
 - . . CV-990 aircraft
 - . . DC 8 aircraft
 - . . DH 121 aircraft
 - . . DO-31 aircraft
 - . . F-5 aircraft
 - . . F-28 transport aircraft
 - . . F-111 aircraft
 - . . IL-62 aircraft
 - . . Mystere 20 aircraft
 - . . P-1127 aircraft
 - . . P-1154 aircraft
 - . . Saab 37 aircraft
 - . . Saab 105 aircraft
 - . . SE-210 aircraft
 - . . TU-134 aircraft
 - . . TU-144 aircraft
 - . turboprop aircraft
 - . . AN-22 aircraft
 - . . AN-24 aircraft
 - . . Argosy MK-1 aircraft
 - . . ATR-72 aircraft
 - . . Breguet 941 aircraft
 - . . Breguet 1150 aircraft
 - . . C-2 aircraft
 - . . C-130 aircraft
 - . . C-133 aircraft
 - . . C-160 aircraft
 - . . CL-44 aircraft
 - . . CL-84 aircraft
 - . . DHC 5 aircraft
 - . . DO-328 aircraft
 - . . E-2 aircraft

jet aircraft noise

- . . Electra aircraft
- . . F-27 aircraft
- . . G-222 aircraft
- . . HS-748 aircraft
- . . MH-262 aircraft
- . . OV-1 aircraft
- . . OV-10 aircraft
- . . P-3 aircraft
- . . SC-5 aircraft
- . . Viscount aircraft
- . . YS-11 aircraft
- . U-2 aircraft
- . Valiant aircraft
- . Vampire MK 35 aircraft
- . VC-10 aircraft
- . Victor MK-1 aircraft
- . VJ-101 aircraft
- . Vulcan aircraft
- . X-3 aircraft
- . X-5 aircraft
- . X-13 aircraft
- . X-14 aircraft
- . X-21 aircraft
- . X-21A aircraft
- . X-31 aircraft
- . X-32 aircraft
- . X-35 aircraft
- . XC-142 aircraft
- . XV-4 aircraft
- . XV-5 aircraft
- . XV-9A aircraft
- . Yak 40 aircraft

RT ∞ aircraft
aircraft noise
attack aircraft
bomber aircraft
cargo aircraft
commercial aircraft
fighter aircraft
flying platforms
general aviation aircraft
hypersonic aircraft
∞ jets
∞ low wing aircraft
∞ military aircraft
passenger aircraft
reconnaissance aircraft
research aircraft
short takeoff aircraft
∞ subsonic aircraft
supersonic aircraft
tailless aircraft
tandem wing aircraft
training aircraft
transport aircraft
turbojet engines
V/STOL aircraft
∞ winged vehicles
YF-12 aircraft

jet aircraft noise

UF *jet noise*
GS elastic waves
. sound waves
. noise (sound)
. . . aircraft noise
. . . . **jet aircraft noise**

RT acoustic retrofitting
aerodynamic noise
∞ aircraft
aircraft runup
engine noise
mufflers
noise measurement
noise reduction
quiet engine program
screech tones
sonic booms

jet airstreams

USE **jet streams (meteorology)**

jet amplifiers

UF *fluid jet amplifiers*
GS amplifiers
. fluid amplifiers
. . **jet amplifiers**

RT Coanda effect
fluid jets
∞ jet nozzles

nozzle walls

jet assisted takeoff

USE **JATO engines**

jet augmented wing flaps

USE **jet flaps**
wing flaps

jet blast effects

RT ∞ blasts
∞ effects
exhaust gases
ground effect (aerodynamics)
noise (sound)
pressure effects
temperature effects

jet boundaries

GS boundaries
. fluid boundaries
. . **jet boundaries**
interfaces
. fluid boundaries
. . **jet boundaries**

RT free jets
liquid surfaces
wall jets

jet condensers

GS condensers (liquefiers)
. **jet condensers**

RT ∞ condensers
liquefaction
nucleation
spray condensers
working fluids

jet control

RT automatic control
boundary layer control
∞ control
directional control
satellite attitude control
satellite control
thrust control
variable thrust

jet damping

USE **damping**
spin reduction

Jet Dragon aircraft

USE **DH 125 aircraft**

jet drive

USE **jet propulsion**

jet engine fuels

UF *jet fuels*
GS fuels
. chemical fuels
. hydrocarbon fuels
. . . **jet engine fuels**
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. liquid fuels
. . . **jet engine fuels**
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel

RT aircraft fuels
antimisting fuels
gasoline
kerosene
turbines

jet engines

SN (EXCLUDES HYDROJET ENGINES)
DEF Broadly, engines that eject jets or streams of gas or fluids, obtaining all or most of their thrust by reaction to the ejection. Specifically, aircraft engines that derive all or most of their thrust by reaction to their ejection of combustion products (or heated air) in a jet and that obtains oxygen from the atmosphere for the

combustion of their fuel (or outside air for heating, as in the case of the nuclear jet engine), distinguished in this sense from a rocket engine. Jet engines of this kind may have compressors, commonly turbine driven, to take in and compress air (turbojets), or they may be compressorless, taking in and compressing air by other means (pulsejets, ramjets).

GS engines

- . air breathing engines
- . gas turbine engines
- . . . **jet engines**- ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turbooramjet engines
- turbojet engines
- Bristol-Siddeley Olympus 593 engine
- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
- J-34 engine
- J-47 engine
- J-52 engine
- J-57 engine
- J-58 engine
- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turbooramjet engines
- internal combustion engines
- gas turbine engines
- **jet engines**- ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turbooramjet engines
- turbojet engines
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- J-73 engine
- J-75 engine
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- J-93 engine
- RA-28 engine

- turbofan engines
- Bristol-Siddeley BS 53 engine
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- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- turbine engines
- gas turbine engines
- **jet engines**
- ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turboramjet engines
- turbojet engines
- Bristol-Siddeley Olympus 593 engine
- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
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- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- RT afterburning
- RT aircraft engines
- RT combustion chambers
- RT ejectors
- RT engine starters
- RT exhaust nozzles
- RT flameout
- RT flying ejection seats
- RT fuel injection
- RT fuel pumps
- RT helicopter engines
- RT hybrid propellant rocket engines
- RT hybrid propulsion
- RT infrared suppression
- ∞ jet nozzles
- ∞ quiet engine program
- ∞ reaction products
- ∞ rocket engines
- thrust
- jet exhaust**
- UF *hot jet exhaust*
- RT base heating
- RT exhaust emission
- RT exhaust gases
- RT infrared suppression
- RT rocket exhaust
- jet flames*
- USE **flames**
- jet flow**
- jet flaps**
- UF *jet augmented wing flaps*
- GS airfoils
- GS . flaps (control surfaces)
- GS . . **jet flaps**
- GS control surfaces
- GS . flaps (control surfaces)
- GS . . **jet flaps**
- RT externally blown flaps
- RT H-126 aircraft
- RT short takeoff aircraft
- RT split flaps
- RT tangential blowing
- RT trailing edge flaps
- RT vortex flaps
- RT wing flaps
- jet flight*
- USE **jet aircraft**
- jet flow**
- UF *hot jets*
- UF *jet flames*
- UF *laminar jets*
- UF *reaction jets*
- GS fluid flow
- GS . **jet flow**
- GS . . air jets
- GS . . jet mixing flow
- GS . . peripheral jet flow
- GS . . supersonic jet flow
- RT fluid jets
- RT free boundaries
- RT free jets
- RT gas streams
- RT hydraulic jets
- RT injectors
- RT jet membrane process
- ∞ jets
- ∞ nozzle flow
- ∞ particle laden jets
- ∞ spanwise blowing
- ∞ two dimensional jets
- ∞ vapor jets
- ∞ wall jets
- jet fuels*
- USE **jet engine fuels**
- jet impingement**
- GS impingement
- GS . **jet impingement**
- RT ablation
- RT base heating
- jet lag**
- DEF Desynchronization of biological rhythms because of transmeridian flight.
- GS biological effects
- GS . **jet lag**
- GS disorientation
- GS . **jet lag**
- GS psychological effects
- GS . **jet lag**
- RT desynchronization (biology)
- RT disorders
- RT flight stress (biology)
- RT rhythm (biology)
- RT supersonic flight
- jet lift**
- GS aerodynamic characteristics
- GS . lift
- GS . . **jet lift**
- GS aerodynamic forces
- GS . lift
- GS . . **jet lift**
- GS dynamic characteristics
- GS . lift
- GS . . **jet lift**
- RT distribution (property)
- jet membrane process**
- DEF Method for separating or enriching isotopes of the same element by using a condensable vapor as the carrier fluid. A process gas containing the isotopes enters a chamber into which a heavy condensable gas (the jet) flows. The lighter of the two isotopes is enriched, relative to the heavier species, and is collected by a probe downstream for further enrichment or analysis.
- GS enrichment
- GS . isotopic enrichment
- GS . . **jet membrane process**
- RT gas dynamics
- RT isotope separation
- RT isotopes
- RT jet flow
- RT membranes
- ∞ processes
- ∞ uranium
- jet mixing flow**
- GS fluid flow
- GS . jet flow
- GS . . **jet mixing flow**
- RT fluid jets
- RT free boundaries
- RT fuel injection
- RT injectors
- ∞ jets
- ∞ mixing
- ∞ mixing layers (fluids)
- ∞ premixing
- ∞ screech tones
- ∞ two dimensional jets
- jet noise*
- USE **jet aircraft noise**
- ∞ **jet nozzles**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT carburetors
- RT conical nozzles
- RT exhaust diffusers
- RT exhaust nozzles
- RT fuel injection
- RT injectors
- RT jet amplifiers
- RT jet engines
- RT skirts
- jet pilots*
- USE **aircraft pilots**
- jet propulsion**
- UF *jet drive*
- GS propulsion
- GS . **jet propulsion**
- RT aircraft engines
- RT chemical propulsion
- RT helicopter propeller drive
- RT marine propulsion
- RT rocket engines
- RT SQUID project
- RT turbines
- jet provost aircraft**
- UF *Hunting P-84 aircraft*
- UF *P-84 aircraft*
- GS attack aircraft
- GS . fighter aircraft
- GS . . **jet provost aircraft**
- GS BAC aircraft
- GS . **jet provost aircraft**
- GS jet aircraft
- GS . **jet provost aircraft**
- GS monoplanes
- GS . **jet provost aircraft**
- GS single engine aircraft
- GS . **jet provost aircraft**
- GS training aircraft
- GS . **jet provost aircraft**

jet pumps

RT ∞ aircraft

jet pumps

SN (EXCLUDES DEVICES USING A LIQUID OR GAS TO INDUCE MOVEMENT OF A GAS SUCH AS AIR EJECTORS)
GS pumps
. **jet pumps**
RT ejectors
fuel pumps
∞ jets
∞ pumping
turbine pumps
vacuum pumps

Jet Star aircraft

USE **C-140 aircraft**

jet streams (meteorology)

DEF Strong bands of wind or winds in the upper troposphere or in the stratosphere, moving in a general direction from west to east and often reaching velocities of hundreds of miles an hour. Used for jet airstreams.

UF *jet airstreams*

GS fluid flow
. gas flow
. . air flow
. . . air currents
. . . . **jet streams (meteorology)**
mesoscale phenomena
. **jet streams (meteorology)**
wind (meteorology)
. winds aloft
. . **jet streams (meteorology)**
RT air jets
atmospheric circulation
circumpolar westerlies
clear air turbulence
Coanda effect
fluid jets
free boundaries
turbulent jets
zonal flow (meteorology)

jet thrust

DEF The thrust of a fluid, especially as distinguished from the thrust of a propeller. Used for reaction jets.

UF *reaction jets*

GS thrust
. **jet thrust**
RT cold gas
convertible fan-shaft engines
high thrust
low thrust
microthrust
rocket thrust
static thrust
thrust loads
variable thrust

jet vanes

DEF Vanes either fixed or movable, used in a jetstream, especially in the jetstream of a rocket, for purposes of stability or control under conditions where external aerodynamic controls are ineffective. Also called blast vane.

GS control surfaces

. guide vanes
. . **jet vanes**
vanes
. guide vanes
. . **jet vanes**
RT airfoils
thrust vector control
wall jets

jetavators

USE **guide vanes**

∞ jets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air jets
fluid jets
free jets
gas jets
injectors
jet aircraft

jet flow
jet mixing flow
jet pumps
plasma jets
sprayers
turbulent jets
two dimensional jets
wall jets

Jetstream aircraft

GS commercial aircraft
. **Jetstream aircraft**
Grumman aircraft
. **Jetstream aircraft**
jet aircraft
. **Jetstream aircraft**
passenger aircraft
. **Jetstream aircraft**
RT ∞ aircraft

jetties

USE **breakwaters**

jettison systems

RT bailout
ejection
ejection seats
escape (abandonment)
escape systems
jettisoning
∞ systems
wing tanks

jettisoning

RT bailout
disposal
dumping
ejection
emptying
escape (abandonment)
expulsion
jettison systems
spilling

JF 101 aircraft

USE **F-101 aircraft**

JFET

DEF Junction field effect transistors in which semiconductor channels of low conductivity join the source and drain and in which these channels are reduced and cut off by the junction depletion regions, which reduce the conductivity and cause a voltage to be applied between the gate electrodes. Used for junction field effect transistors.

UF *junction field effect transistors*

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . field effect transistors
. **JFET**
. . . . junction transistors
. **JFET**

RT barrier layers
∞ junctions

jigs

GS positioning devices (machinery)
. **jigs**
RT clamps
fixtures
holders
mechanical devices
tools

Jikiken satellite

USE **EXOS-B satellite**

jimsphere balloons

GS expandable structures
. inflatable structures
. . balloons
. . . high altitude balloons
. . . . **jimsphere balloons**
. . . meteorological balloons
. . . . **jimsphere balloons**

RT wind (meteorology)

Jindivik target aircraft

GS drone vehicles
. drone aircraft
. . target drone aircraft
. . . **Jindivik target aircraft**
jet aircraft
. **Jindivik target aircraft**
monoplanes
. **Jindivik target aircraft**
pilotless aircraft
. drone aircraft
. . target drone aircraft
. . . **Jindivik target aircraft**
targets
. **Jindivik target aircraft**
RT ∞ aircraft
remotely piloted vehicles

jitter

USE **vibration**

jobs

USE **tasks**

Jodrell Bank Observatory

DEF A large radio telescope, located near Manchester, England.

GS observatories
. **Jodrell Bank Observatory**
RT astronomical observatories
ground stations
radio telescopes
tracking stations

Johnston Island

GS landforms
. islands
. . Pacific islands
. . . **Johnston Island**

joined wings

GS airfoils
. wings
. . **joined wings**
RT aircraft configurations
dual wing configurations
research aircraft
tandem wing aircraft
wing tips

∞ joining

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *interconnection linking*
RT adhesion
adhesive bonding
assembling
beam leads
binding
bonding
brazing
cold working
couplings
crosslinking
fitting
fusion (melting)
inertia bonding
joints (junctions)
locking
mooring
mounting
positioning
retaining
riveting
sealing
sewing
soldering
splicing
ultrasonic soldering
welding
yokes

Joint European Torus

GS nuclear reactors
. tokamak devices
. . **Joint European Torus**
plasma generators

- . tokamak devices
- . . . **Joint European Torus**
- RT controlled fusion reactor technology
- joints (anatomy)**
- GS anatomy
 - . musculoskeletal system
 - . . . **joints (anatomy)**
 - elbow (anatomy)
 - knee (anatomy)
 - wrist
- RT arthritis
 - bones
 - connective tissue
 - flexors
 - ligaments
 - shoulders
- joints (junctions)**
- UF *connections*
- shanks*
- GS **joints (junctions)**
 - . bolted joints
 - . bonded joints
 - . butt joints
 - . interference fit
 - . lap joints
 - . metal joints
 - . . . soldered joints
 - . . . welded joints
 - spot welds
 - . riveted joints
 - . scarf joints
 - . seams (joints)
- RT adapters
 - adhesives
 - balls
 - barrier layers
 - bellows
 - bonding
 - clamped structures
 - closures
 - connectors
 - corners
 - couplings
 - fasteners
 - fillets
 - fittings
 - ∞ joining
 - ∞ junctions
 - linkages
 - metal bonding
 - sleeves
 - structural members
 - swivels
 - unions (connectors)
- Jordan**
- GS nations
 - . **Jordan**
- Jordan form**
- GS algebra
 - . vector spaces
 - . . . matrices (mathematics)
 - . . . **Jordan form**
- RT eigenvalues
 - linear transformations
 - tensors
- Josephson effect**
- (added April 1999)
- UF *Josephson tunneling*
- RT electron tunneling
 - Josephson junctions
 - SIS (superconductors)
 - superconducting devices
 - superconductors (materials)
- Josephson junctions**
- RT high temperature superconductors
 - Josephson effect
 - SIS (superconductors)
 - squid (detectors)
 - superconductivity
- tunnel junctions
- Josephson tunneling*
- (added April 1999)
- USE **Josephson effect**
- Joukowski transformation**
- RT airfoil profiles
 - complex variables
 - coordinate transformations
 - Kutta-Joukowski condition
 - Theodorsen transformation
- Joule heating*
- USE **ohmic dissipation resistance heating**
- Joule-Thomson effect**
- DEF A change of temperature in a gas undergoing Joule-Thomson expansion.
- RT cryogenics
 - ∞ effects
 - enthalpy
 - gas expansion
 - gas flow
 - kinetic theory
 - ohmic dissipation
 - thermodynamic properties
 - thermodynamics
 - throttling
- journal bearings**
- DEF Bearings that support the cylindrical journal of a shaft in rotating machinery.
- GS bearings
 - . **journal bearings**
- RT antifriction bearings
 - foil bearings
- ∞ **journals**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT news media
 - periodicals
 - shafts (machine elements)
- journals (documents)*
- USE **periodicals**
- journals (shafts)*
- USE **shafts (machine elements)**
- JP-4 jet fuel**
- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . jet engine fuels
 - **JP-4 jet fuel**
 - . . . liquid fuels
 - jet engine fuels
 - **JP-4 jet fuel**
- RT JP-6 jet fuel
 - JP-8 jet fuel
 - RP-1 rocket propellants
- JP-5 jet fuel**
- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . jet engine fuels
 - **JP-5 jet fuel**
 - . . . liquid fuels
 - jet engine fuels
 - **JP-5 jet fuel**
- JP-6 jet fuel**
- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . jet engine fuels
 - **JP-6 jet fuel**
 - . . . liquid fuels
 - jet engine fuels
 - **JP-6 jet fuel**
- RT JP-4 jet fuel
 - JP-8 jet fuel
- JP-7 jet fuel**
- (added September 1995)
- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . jet engine fuels
 - **JP-7 jet fuel**
 - . . . liquid fuels
 - jet engine fuels
 - **JP-7 jet fuel**
- . chemical fuels
- . . hydrocarbon fuels
- . . . jet engine fuels
- **JP-7 jet fuel**
- . . . liquid fuels
- jet engine fuels
- **JP-7 jet fuel**
- RT JP-8 jet fuel
 - kerosene
- JP-8 jet fuel**
- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . jet engine fuels
 - **JP-8 jet fuel**
 - . . . liquid fuels
 - jet engine fuels
 - **JP-8 jet fuel**
- RT JP-4 jet fuel
 - JP-6 jet fuel
 - JP-7 jet fuel
 - kerosene
- judgments**
- RT decision making
 - decisions
 - legal liability
 - penalties
- Judi-Dart rocket**
- GS measuring instruments
 - . sondes
 - . . **Judi-Dart rocket**
 - rocket vehicles
 - . sounding rockets
 - . . **Judi-Dart rocket**
- RT rocket sounding
- juices**
- GS liquids
 - . **juices**
- RT creatine
- jumpers**
- DEF Short lengths of conductors used to complete electrical circuits, usually temporary, between terminals, or bypassing an existing circuit.
- GS conductors
 - . electrolytes
 - . . **jumpers**
- RT connectors
 - short circuits
- ∞ terminals
 - wire
- junction diodes**
- GS electronic equipment
 - . diodes
 - . . semiconductor diodes
 - . . . **junction diodes**
 - MIM diodes
 - step recovery diodes
 - . . . solid state devices
 - . . . semiconductor devices
 - . . . **junction diodes**
 - MIM diodes
 - step recovery diodes
- RT barrier layers
 - Barritt diodes
 - germanium diodes
 - heterojunction devices
 - heterojunctions
 - tunnel diodes
 - varactor diodes
- junction field effect transistors*
- USE **JFET**
- junction transistors**
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . transistors
 - **junction transistors**
 - JFET
- RT barrier layers
 - epitaxy
 - ion implantation

junctions

∞ junctions
MBM junctions
phototransistors
thyristors

∞ junctions

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF In semiconductor devices, regions of transition between semiconducting regions of different electrical properties.

RT connectors
intersections
JFET
joints (junctions)
junction transistors
p-i-n junctions
p-n junctions
p-n-p junctions
p-n-p-n junctions
semiconductor devices
semiconductor junctions

jungles

USE **tropical regions**

Juno 1 launch vehicle

GS launch vehicles
. Juno launch vehicles
. . **Juno 1 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Juno launch vehicles
. . . **Juno 1 launch vehicle**
RT Explorer satellites
Jupiter C rocket vehicle
liquid propellant rocket engines
sergeant missiles
solid propellant rocket engines

Juno 2 launch vehicle

GS launch vehicles
. Juno launch vehicles
. . **Juno 2 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Juno launch vehicles
. . . **Juno 2 launch vehicle**
RT Explorer 11 satellite
Jupiter missile
liquid propellant rocket engines
Pioneer 3 space probe
Pioneer 4 space probe
Pioneer 6 space probe
Pioneer 7 space probe
Pioneer 8 space probe
Pioneer space probes
sergeant missiles
solid propellant rocket engines

Juno launch vehicles

GS launch vehicles
. **Juno launch vehicles**
. . Juno 1 launch vehicle
. . Juno 2 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . **Juno launch vehicles**
. . . Juno 1 launch vehicle
. . . Juno 2 launch vehicle
RT liquid propellant rocket engines
solid propellant rocket engines
∞ vehicles

Jupiter (planet)

GS celestial bodies
. planets
. . gas giant planets

. . . Jupiter (planet)

RT Adrastea
Amalthea
Amor asteroid
Apollo asteroids
Callisto
Carne
Elara
Europa
Galilean satellites
Galileo probe
Galileo spacecraft
Ganymede
Himalia
Io
Jupiter atmosphere
Jupiter probes
Jupiter red spot
Jupiter rings
Jupiter satellites
Leda
Lysithea
Metis
Pasiphae
Shoemaker-Levy 9 comet
Sinope
Thebe
Trojan asteroids
Voyager 1 spacecraft
Voyager 2 spacecraft
Voyager 1977 mission

Jupiter atmosphere

GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . **Jupiter atmosphere**
RT aerospace environments
Galileo project
geophysical fluid flow cells
Jupiter (planet)
Jupiter rings
planetary ionospheres
planetary meteorology

Jupiter C rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . **Jupiter C rocket vehicle**
RT Explorer satellites
Juno 1 launch vehicle
Jupiter missile
launch vehicles
liquid propellant rocket engines
sergeant missiles
solid propellant rocket engines

Jupiter missile

GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . **Jupiter missile**
. . surface to surface missiles
. . intermediate range ballistic missiles
. . . **Jupiter missile**
RT Juno 2 launch vehicle
Jupiter C rocket vehicle
liquid propellant rocket engines

Jupiter probes

GS interplanetary spacecraft
. **Jupiter probes**
. . Galileo probe
. . Galileo spacecraft
unmanned spacecraft
. space probes
. . **Jupiter probes**

. . . Galileo probe
. . . Galileo spacecraft
RT Galileo project
Jupiter (planet)
Voyager 1 spacecraft
Voyager 2 spacecraft
Voyager 1977 mission

Jupiter project

GS programs
. NASA programs
. . NASA space programs
. . . **Jupiter project**
. . projects
. . . **Jupiter project**
. . space programs
. . NASA space programs
. . . **Jupiter project**
RT launch vehicles

Jupiter red spot

RT gas giant planets
Jupiter (planet)
planetary surfaces
planets
surface properties
topography

Jupiter rings

DEF Ring structures around the planet Jupiter discovered on March 4, 1979 by Voyager 1.
GS celestial bodies
. planetary rings
. . **Jupiter rings**
RT Jupiter (planet)
Jupiter atmosphere
Jupiter satellites
moonlets
planetary composition
planetary structure
planetology
∞ rings
Saturn rings
space exploration
Uranus rings
Voyager 1 spacecraft

Jupiter satellites

DEF Any or all of the natural satellites surrounding the planet Jupiter.
GS celestial bodies
. natural satellites
. . **Jupiter satellites**
. . . Adrastea
. . . Amalthea
. . . Carne
. . . Elara
. . . Galilean satellites
. . . . Callisto
. . . . Europa
. . . . Ganymede
. . . . Io
. . . Himalia
. . . Leda
. . . Lysithea
. . . Metis
. . . Pasiphae
. . . Sinope
. . . Thebe
RT icy satellites
Jupiter (planet)
Jupiter rings
solar system

JWST (observatory)

(added October 2003)

USE **James Webb Space Telescope**

K

K band
USE **extremely high frequencies**

K lines

GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 **K lines**
 RT absorption spectra
 emission spectra
 H lines

K stars

GS celestial bodies
 . stars
 . . late stars
 . . . cool stars
 **K stars**
 RT dwarf stars
 giant stars
 main sequence stars
 stellar spectra
 supergiant stars

KA band

USE **extremely high frequencies**

Kakutani theorem

GS theorems
 . **Kakutani theorem**
 RT lattices (mathematics)
 stochastic processes
 vector spaces

Kalahari Basin (Africa)

GS landforms
 . structural basins
 . . **Kalahari Basin (Africa)**
 RT Africa
 deserts
 Republic of South Africa

Kalman filters

GS linear filters
 . **Kalman filters**
 RT electric filters
 ∞ filters
 linear quadratic Gaussian control
 linear quadratic regulator
 navigation aids
 optimization
 reduced order filters
 state estimation

Kalman-Schmidt filtering

RT ∞ applications of mathematics
 feedback control
 inertial platforms
 navigation instruments
 optimal control
 optimization
 remote control
 stochastic processes
 time series analysis

kamacite

GS alloys
 . nickel alloys
 . . **kamacite**
 minerals
 . **kamacite**
 RT iron alloys
 iron meteorites
 meteoritic composition

Kaman aircraft

GS **Kaman aircraft**
 . H-43 helicopter
 . HH-43 helicopter
 . UH-2 helicopter

RT ∞ aircraft

Kaman UH-2A helicopter

USE **UH-2 helicopter**

Kampuchea

USE **Cambodia**

Kansas

GS nations
 . United States
 . . **Kansas**
 RT Missouri River (US)

kaolinite

DEF A hydrous silicate of aluminum. It constitutes the principle mineral in kaolin.

GS aluminum compounds
 . aluminum silicates
 . . **kaolinite**
 clays
 . **kaolinite**
 minerals
 . **kaolinite**
 silicon compounds
 . silicates
 . . aluminum silicates
 . . . **kaolinite**
 RT aluminum oxides
 ion exchanging
 soils

kaon production

GS particle production
 . **kaon production**
 RT kaons
 particle accelerators

kaons

UF *k-mesons*
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **kaons**
 . . hadrons
 . . . mesons
 **kaons**
 . nuclear particles
 . . bosons
 . . . mesons
 **kaons**
 RT baryons
 charged particles
 kaon production
 pions
 Pomeranchuk theorem

Kapitza resistance

RT ∞ resistance

Kapoeta achondrite

GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . achondrites
 **Kapoeta achondrite**

Kappa 8 rocket vehicle

GS rocket vehicles
 . multistage rocket vehicles
 . . Kappa rocket vehicles
 . . . **Kappa 8 rocket vehicle**
 . . sounding rockets
 . . Kappa rocket vehicles
 . . . **Kappa 8 rocket vehicle**
 RT solid propellant rocket engines

Kappa 9 rocket vehicle

GS rocket vehicles
 . multistage rocket vehicles
 . . Kappa rocket vehicles
 . . . **Kappa 9 rocket vehicle**
 . . sounding rockets
 . . Kappa rocket vehicles
 . . . **Kappa 9 rocket vehicle**

RT solid propellant rocket engines

Kappa rocket vehicles

GS rocket vehicles
 . multistage rocket vehicles
 . . **Kappa rocket vehicles**
 . . . Kappa 8 rocket vehicle
 . . . Kappa 9 rocket vehicle
 . sounding rockets
 . . **Kappa rocket vehicles**
 . . . Kappa 8 rocket vehicle
 . . . Kappa 9 rocket vehicle
 RT solid propellant rocket engines
 ∞ vehicles

kappa-epsilon turbulence model

USE **k-epsilon turbulence model**

kappa-omega turbulence model

(added June 1997)
 USE **k-omega turbulence model**

Kapton (trademark)

GS nitrogen compounds
 . amides
 . . polyimides
 . . . **Kapton (trademark)**
 polymeric films
 . **Kapton (trademark)**
 RT ∞ films
 plastics
 ∞ polymers

Karhunen-Loeve expansion

GS data processing
 . **Karhunen-Loeve expansion**
 expansion
 . **Karhunen-Loeve expansion**
 RT principal components analysis

Karl Fischer reagent

GS chemical tests
 . chemical analysis
 . . **Karl Fischer reagent**
 RT dioxides
 methyl alcohol
 pyridines
 quantitative analysis

Karman vortex street

DEF A double trail of vortices formed alternately on both sides of a cylinder of similar body moving at right angles to its axis through a fluid, the vortices in one row rotating in a direction opposite to that of the other row. (After Theodore von Karman, 1881-1963, Hungarian born American scientist).

GS vortex streets
 . **Karman vortex street**
 RT aeolian tones
 subsonic flow
 Von Karman equation
 vorticity equations

Karman-Bodewadt flow

GS fluid flow
 . axisymmetric flow
 . . **Karman-Bodewadt flow**
 . parallel flow
 . . three dimensional flow
 . . . **Karman-Bodewadt flow**
 . viscous flow
 . . **Karman-Bodewadt flow**
 translational motion
 . three dimensional motion
 . . three dimensional flow
 . . . **Karman-Bodewadt flow**
 RT rotating disks
 rotating fluids

karst

GS landforms
 . structural basins
 . . **karst**
 . . sinkholes
 RT caves
 cavities
 kettles (geology)
 ∞ ridges

Kawasaki aircraft

rocks

Kawasaki aircraft

RT ∞ aircraft

Kazakhstan

(added August 1993)

GS nations

. **Kazakhstan**

RT Asia

KC-130 aircraft

USE **C-130 aircraft**

KC-135 aircraft

USE **C-135 aircraft**

keels

GS hydrofoils

. **keels**

RT boats

hulls (structures)

longerons

ships

stabilizers (fluid dynamics)

KEL-F

GS halogen compounds

. fluorine compounds

. . . fluoro compounds

. . . . fluorine organic compounds

. **KEL-F**

organic compounds

. fluorine organic compounds

. . fluoropolymers

. . . **KEL-F**

RT copolymers

∞ polymers

kelp

USE **seaweeds**

Kelvin waves

(added July 1994)

RT atmospheric circulation

Coriolis effect

gravity waves

ocean currents

planetary waves

∞ waves

Kelvin-Helmholtz instability

RT collisionless plasmas

flow stability

∞ Helmholtz equations

magnetohydrodynamic flow

magnetohydrodynamic stability

mass flow

nonuniform plasmas

plasmas (physics)

superfluidity

Kentucky

GS nations

. United States

. . **Kentucky**

RT Ohio River (US)

Tennessee Valley (AL-KY-TN)

Kenya

GS nations

. **Kenya**

RT Africa

Kepler laws

DEF The three empirical laws governing the motions of the planets in their orbits, discovered by Johannes Kepler (1571-1630). These are: (a) the orbits of the planets are ellipses, with the sun at a common focus; (b) as a planet moves in its orbit, the line joining the planet and the sun sweeps over equal areas in equal intervals of time (also called law of equal areas); (c) the squares of the periods of revolution of any two planets are proportional to the cubes of their mean distances from the sun.

GS laws

. **Kepler laws**

mechanics (physics)

. classical mechanics

. . space mechanics

. . . orbital mechanics

. . . . **Kepler laws**

k-epsilon turbulence model

(added September 1988)

UF *kappa-epsilon turbulence model*

GS models

. mathematical models

. . turbulence models

. . . **k-epsilon turbulence model**

RT closure law

computational fluid dynamics

flow equations

k-omega turbulence model

turbulent boundary layer

turbulent flow

keratins

GS biopolymers

. proteins

. . **keratins**

organic compounds

. proteins

. . **keratins**

RT hair

wool

keratitis

GS diseases

. eye diseases

. . **keratitis**

infectious diseases

. . bacterial diseases

. . . **keratitis**

RT conjunctiva

cornea

kernel functions

GS analysis (mathematics)

. real variables

. . **kernel functions**

functions (mathematics)

. **kernel functions**

RT Mellin transforms

meshfree methods

kerogen

DEF Fossilized insoluble organic material found in sedimentary rocks, usually shales, which can be converted to petroleum products by distillation.

GS organic compounds

. **kerogen**

resources

. Earth resources

. . **kerogen**

RT fuel oils

fuels

gasoline

greases

hydrocarbon fuels

kerosene

lubricants

oils

petroleum products

shale oil

kerosene

GS fuels

. chemical fuels

. . liquid fuels

. . . **kerosene**

RT antimisting fuels

diesel fuels

fuel oils

gasoline

hydrocarbon fuels

jet engine fuels

JP-7 jet fuel

JP-8 jet fuel

kerogen

paraffins

RP-1 rocket propellants

shale oil

Kerr cells

RT camera shutters

∞ cells

∞ electric cells

polarized electromagnetic radiation

polarizers

∞ Kerr effects

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ effects

electro-optical effect

Kerr electrooptical effect

Kerr magnetooptical effect

magnetic fields

Kerr electrooptical effect

GS electromagnetic properties

. optical properties

. . birefringence

. . . **Kerr electrooptical effect**

refraction

. birefringence

. . **Kerr electrooptical effect**

RT ∞ effects

electromagnetic radiation

electro-optics

∞ Kerr effects

Kerr magnetooptical effect

lasers

light modulation

polarization (waves)

Kerr magnetooptical effect

GS electromagnetic properties

. **Kerr magnetooptical effect**

RT ∞ effects

Faraday effect

∞ Kerr effects

Kerr electrooptical effect

magneto-optics

optical properties

polarization (waves)

polarized light

Kestrel aircraft

USE **P-1127 aircraft**

ketenes

RT ketones

ketones

DEF A class of organic compounds possessing a carbonyl group attached to two hydrocarbon groups.

GS **ketones**

. acetone

. acetylacetone

. anthraquinones

. camphor

. Nembutal (trademark)

. pentanone

. trimethadione

RT ketenes

PEEK

quinones

kettles (geology)

DEF Steepsided, usually basin or bowlshaped holes or depressions, commonly without surface drainage, in glacial drift deposits (especially outwash and kame fields). Kettles often contain lakes or swamps; formed by the melting of large detached blocks of stagnant ice (left behind by retreating glaciers) that had been wholly or partly buried by glacial drift. Kettles range in depth from about a meter to as much as 13 km. Thoreau's Walden Pond is an example.

GS geology

. **kettles (geology)**

landforms

. structural basins

. . **kettles (geology)**

RT caves

cavities

Earth resources

glacial drift

karst

lakes

sinkholes

Kevlar (trademark)

DEF A Dupont synthetic textile material,

lightweight and nonflammable, and with high impact resistance.

- GS fibers
 - . reinforcing fibers
 - . . . aramid fibers
 - **Kevlar (trademark)**
 - . synthetic fibers
 - . . . aramid fibers
 - **Kevlar (trademark)**
- plastics
 - . synthetic resins
 - . . thermosetting resins
 - . . . furan resins
 - polyamide resins
 - **Kevlar (trademark)**
- resins
 - . synthetic resins
 - . . thermosetting resins
 - . . . furan resins
 - polyamide resins
 - **Kevlar (trademark)**
- RT aramid fiber composites
 - nonflammable materials
 - synthetic fibers

keying

- GS **keying**
 - . frequency shift keying
 - . phase shift keying
 - . . binary phase shift keying
 - . . quadrature phase shift keying
- RT Morse code
 - radio telegraphy
 - teleprinters
 - teletypewriters

keys (islands)

- UF *cays*
- GS landforms
 - . islands
 - . . **keys (islands)**
- RT coral reefs
 - Earth resources
 - island arcs
 - oceans

Kibo Japanese Experiment Module

(added May 2008)

DEF A permanent science module for the International Space Station developed by the Japanese Aerospace Exploration Agency. As Japan's primary contribution to the ISS, Kibo consists of six components, two of which are research facilities used for spaceborne experiments.

- GS laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Kibo Japanese Experiment Module**
- manned spacecraft
 - . manned orbital laboratories
 - . . **Kibo Japanese Experiment Module**
- modules
 - . space station modules
 - . . **Kibo Japanese Experiment Module**
- RT International Space Station
 - Japanese space program
 - spaceborne experiments
 - spacecraft modules

kidney calculi

(added August 2004)

USE **kidney stones**

kidney diseases

- GS diseases
 - . **kidney diseases**
 - . . kidney stones
 - . . nephritis
- RT cholera

kidney stones

(added August 2004)

DEF Calculi occurring in the kidney. Calculi too large to pass spontaneously range in size from 1 cm to the staghorn stones that occupy the renal pelvis and calyces.

- UF *kidney calculi*
- renal calculi*
- GS diseases
 - . kidney diseases
 - . . **kidney stones**
 - signs and symptoms
 - . **kidney stones**
- RT calcium phosphates
 - genitourinary system
 - kidneys
 - renal function

kidneys

- GS anatomy
 - . genitourinary system
 - . . **kidneys**
 - . . . glomerulus
- RT kidney stones
 - renal function
 - renin
 - urine
 - uroolithiasis
 - urology

kilometer wave orbiting telescope

- GS radio equipment
 - . radio telescopes
 - . . **kilometer wave orbiting telescope**
- telescopes
 - . radio telescopes
 - . . **kilometer wave orbiting telescope**

kilometric waves

DEF Electromagnetic waves with wavelengths between 1,000 and 10,000 meters.

- GS electromagnetic radiation
 - . **kilometric waves**
- RT ∞ waves

kimberlite

USE **biotite**
peridotite

kinematic equations

- GS equations of motion
 - . kinetic equations
 - . . **kinematic equations**
- RT ∞ equations

kinematics

DEF The branch of mechanics dealing with the description of the motion of bodies or fluids without reference to the forces producing the motion.

- GS **kinematics**
 - . body kinematics
 - . inverse kinematics
- RT acceleration (physics)
 - ∞ dynamics
 - equations of motion
 - hodographs
 - kinetics
 - mechanics (physics)
 - microwave reflectometers
 - ∞ motion
 - nutaton
 - velocity

kinescopes

USE **picture tubes**

kinesthesia

- GS perception
 - . sensory perception
 - . . **kinesthesia**
- RT proprioception

kinesthesia

USE **proprioception**

kinetic energy

DEF The energy which a body possesses as a consequence of its motion. Used for momentum energy.

- UF *momentum energy*
- GS kinetics
 - . **kinetic energy**
- RT chemical energy

- electron energy
- ∞ energy
- equipartition theorem
- Froude number
- hydrodynamic ram effect
- internal energy
- Lagrange similarity hypothesis
- Lagrangian function
- particle energy
- potential energy
- proton energy
- thermal energy
- virial theorem
- work
- zero point energy

kinetic equations

- GS equations of motion
 - . **kinetic equations**
 - . . hydrodynamic equations
 - . . . Burnett equations
 - . . . Helmholtz vorticity equation
 - . . kinematic equations
- RT BBGKY hierarchy
 - Bethe-Salpeter equation
 - BGK model
 - Einstein equations
- ∞ equations
 - partial differential equations
 - virial theorem

kinetic friction

- GS friction
 - . **kinetic friction**
 - . . sliding friction
- RT coefficient of friction
 - dry friction
 - friction measurement
 - static friction

kinetic heating

- GS heating
 - . **kinetic heating**
 - . . aerodynamic heating
 - . . . shock heating
- RT gas heating
 - magnetic pumping
 - plasma heating

kinetic theory

DEF The derivation of the bulk properties of fluids from the properties of their constituent molecules, their motions and interactions.

- GS **kinetic theory**
 - . transport theory
 - . . Chapman-Enskog theory
 - . . Eyring theory
 - . . mixing length flow theory
- RT BGK model
 - binary fluids
 - Boltzmann distribution
 - Boltzmann transport equation
 - diffusion
 - diffusion theory
 - diffusion waves
 - dynamic pressure
 - equations of state
 - free molecular flow
 - gas transport
 - gaseous self-diffusion
 - ideal gas
 - Joule-Thomson effect
 - Knudsen flow
 - Krook equation
 - Lorentz gas
 - mass flow
 - Maxwell-Boltzmann density function
 - mobility
 - momentum transfer
 - Morse potential
 - real gases
 - ∞ theories
 - transport properties

kinetics

- GS **kinetics**
 - . electrokinetics
 - . kinetic energy
 - . Newton second law
 - . Newton Theory

kink bands

- . reaction kinetics
- . variable mass systems
- RT acceleration (physics)
- angular momentum
- body kinematics
- ∞ dynamics
- fluid dynamics
- fluid mechanics
- ∞ force
- gas dynamics
- hydromechanics
- ideal gas
- kinematics
- mechanics (physics)
- momentum transfer
- motion aftereffects
- newton
- particle collisions
- ∞ physics
- velocity

kink bands

(added March 1998)

- RT buckling
- compression loads
- edge dislocations
- failure modes
- fiber composites
- microstructure
- plastic deformation
- reinforcing fibers
- single crystals

kinking

(added April 1998)

- RT bending
- buckling
- compression loads
- cracking (fracturing)
- deformation
- displacement
- failure modes
- fiber composites
- folding
- heaving
- twisting
- wrinkling

kinofom

- GS display devices
- . **kinofom**
- imagery
- . **kinofom**
- RT computer programming
- holography
- wave front reconstruction

∞ Kirchhoff law

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT Kirchhoff law of networks
- Kirchhoff law of radiation

Kirchhoff law of networks

- RT circuits
- electric current
- electric potential
- ∞ Kirchhoff law
- ∞ nets
- network analysis
- network synthesis

Kirchhoff law of radiation

DEF The radiation law which states that at a given temperature the ratio of the emissivity to the absorptivity for a given wavelength is the same for all bodies and is equal to the emissivity of an ideal black body at that temperature and wavelength.

- GS laws
- . radiation laws
- . . . **Kirchhoff law of radiation**
- RT absorptivity
- black body radiation
- ∞ Kirchhoff law
- ∞ radiation
- Stefan-Boltzmann law

thermodynamics

Kirchhoff-Helmholtz flow
USE **pipe flow**

Kirchhoff-Huygens principle
USE **diffraction**
wave propagation

Kirkendall effect

- RT diffusion theory
- diffusion welding
- diffusivity
- ∞ effects
- thermal diffusion

kite balloons

USE **tethered balloons**

kits

- RT first aid
- survival
- tools

KIWI B reactors

- GS nuclear electric power generation
- . nuclear power reactors
- . . . KIWI reactors
- **KIWI B reactors**
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- nuclear reactors
- . gas cooled reactors
- . . . KIWI reactors
- **KIWI B reactors**
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . nuclear power reactors
- . . . KIWI reactors
- **KIWI B reactors**
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . nuclear research and test reactors
- . . . KIWI reactors
- **KIWI B reactors**
- KIWI B-1 Reactor
- KIWI B-4 Reactor

KIWI B-1 Reactor

- GS nuclear electric power generation
- . nuclear power reactors
- . . . KIWI reactors
- KIWI B reactors
- **KIWI B-1 Reactor**
- nuclear reactors
- . gas cooled reactors
- . . . KIWI reactors
- KIWI B reactors
- **KIWI B-1 Reactor**
- . nuclear power reactors
- . . . KIWI reactors
- KIWI B reactors
- **KIWI B-1 Reactor**
- . nuclear research and test reactors
- . . . KIWI reactors
- KIWI B reactors
- **KIWI B-1 Reactor**

KIWI B-4 Reactor

- GS nuclear electric power generation
- . nuclear power reactors
- . . . KIWI reactors
- KIWI B reactors
- **KIWI B-4 Reactor**
- nuclear reactors
- . gas cooled reactors
- . . . KIWI reactors
- KIWI B reactors
- **KIWI B-4 Reactor**
- . nuclear power reactors
- . . . KIWI reactors
- KIWI B reactors
- **KIWI B-4 Reactor**
- . nuclear research and test reactors
- . . . KIWI reactors
- KIWI B reactors
- **KIWI B-4 Reactor**

KIWI reactors

- UF *KIWI rocket reactors*

- GS nuclear electric power generation
- . nuclear power reactors
- . . . **KIWI reactors**
- KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- nuclear reactors
- . gas cooled reactors
- . . . **KIWI reactors**
- KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . nuclear power reactors
- . . . **KIWI reactors**
- KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . nuclear research and test reactors
- . . . **KIWI reactors**
- KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- RT NFX reactors
- nuclear engine for rocket vehicles
- Phoebus nuclear reactor
- Rover project

KIWI rocket reactors

USE **KIWI reactors**

Kjeldahl method

- GS chemical tests
- . chemical analysis
- . . . quantitative analysis
- **Kjeldahl method**
- RT ammonia
- ∞ methodology
- nitrogen
- titration

Klebsiella

- GS microorganisms
- . bacteria
- . . . **Klebsiella**

Klein-Dunham potential

- RT ∞ potential
- quantum theory

Klein-Gordon equation

- GS wave equations
- . **Klein-Gordon equation**
- RT Dirac equation
- ∞ equations

klippen

USE **outliers (landforms)**

klystrons

DEF Electron tubes for converting direct current energy into radio frequency energy by alternately speeding up and slowing down the electrons.

- GS electron tubes
- . vacuum tubes
- . . . microwave tubes
- **klystrons**
- microwave equipment
- . microwave tubes
- . . . **klystrons**
- RT amplifiers
- catchers
- cavity resonators
- cyclotron resonance devices
- electron bunching
- electron cyclotron heating
- electrostatic generators
- magnetrons
- microwave oscillators

k-mesons

USE **kaons**

knee (anatomy)

- GS anatomy
- . limbs (anatomy)
- . . . leg (anatomy)
- **knee (anatomy)**
- . musculoskeletal system
- . . . joints (anatomy)

- ... **knee (anatomy)**
 appendages
 . leg (anatomy)
 . . **knee (anatomy)**
 RT femur
- knight shift*
 USE **nuclear magnetic resonance**
- knobs**
 RT handles
 levers
 manual control
- knockout mice**
(added April 2004)
 DEF Mice whose genome contains a gene whose function has been disrupted, or "knocked-out". Knockout mice are used as animal models for various diseases, such as cystic fibrosis, and help to clarify the functions of genes studied within the fields of immunology, cancer genetics, and developmental biology.
 GS animals
 . vertebrates
 . . mammals
 . . . rodents
 mice
 **knockout mice**
 models
 . animal models
 . . **knockout mice**
- Knoop hardness**
 DEF Relative microhardness as determined by the Knoop diamond-pyramid indentation test.
 GS mechanical properties
 . hardness
 . . microhardness
 . . . **Knoop hardness**
 RT hardness tests
 nanoindentation
- knowledge**
 GS **knowledge**
 . lessons learned
 RT axioms
 documentation
 education
 learning
 literature
 paradoxes
 perception
 philosophy
 textbooks
 training evaluation
- knowledge based systems**
(added April 1993)
 GS information systems
 . **knowledge based systems**
 . . expert systems
 RT artificial intelligence
 computer techniques
 data structures
 decision support systems
 knowledge bases (artificial intelligence)
 knowledge representation
 natural language processing
 pilot support systems
- knowledge bases (artificial intelligence)**
(added November 1988)
 DEF Facts, assumptions, beliefs, and heuristics, used in dealing with a database to achieve desired results such as a diagnosis, an interpretation, or a solution to a problem.
 GS data bases
 . **knowledge bases (artificial intelligence)**
 RT artificial intelligence
 expert systems
 knowledge based systems
- knowledge representation
 ∞ theories
 turbulent flow
 vortices
- knowledge discovery*
(added April 2000)
 USE **data mining**
- knowledge extraction*
(added April 2000)
 USE **data mining**
- knowledge representation**
 DEF The use of symbolic data structures to represent knowledge so that a computer can manipulate them.
 RT artificial intelligence
 belief networks
 cognition
 expert systems
 hypertext
 knowledge based systems
 knowledge bases (artificial intelligence)
 natural language (computers)
- Knudsen cells*
 USE **Knudsen gages**
- Knudsen flow**
 UF *Knudsen number*
 GS fluid flow
 . gas flow
 . . **Knudsen flow**
 . . internal flow
 . . ducted flow
 . . . **Knudsen flow**
 RT BGK model
 boundary layer transition
 free molecular flow
 kinetic theory
 mean free path
 molecular flow
 pressure gradients
 rarefied gas dynamics
 transition points
 vacuum
 viscous flow
- Knudsen gages**
 DEF Gages which measure pressure in terms of the net rate of transfer of momentum by molecules between two surfaces maintained at different temperatures and separated by a distance smaller than the mean free path of the gas molecules. Used for Knudsen cells.
 UF *Knudsen cells*
 GS measuring instruments
 . pressure gages
 . . vacuum gages
 . . . **Knudsen gages**
 vacuum apparatus
 . vacuum gages
 . . **Knudsen gages**
 RT ionization gages
 Mcleod gages
 Pirani gages
 pressure measurement
 radiometers
- Knudsen number*
 USE **Knudsen flow**
- knurling**
 RT grooving
 machining
 metal cutting
- Kohoutek comet**
 GS celestial bodies
 . comets
 . . **Kohoutek comet**
 RT Bessel-Bredichin theory
 ∞ coma
 radiation pressure
 solar system
- Kolmogorov theory**
(added July 1993)
 RT isotropic turbulence
 Lagrange similarity hypothesis
 shear flow
- Kolmogorov-Smirnov test**
(added July 1993)
 GS statistical analysis
 . statistical tests
 . . **Kolmogorov-Smirnov test**
 RT probability theory
 statistical distributions
- k-omega turbulence model**
(added June 1997)
 UF *kappa-omega turbulence model*
 GS models
 . mathematical models
 . . turbulence models
 . . . **k-omega turbulence model**
 RT computational fluid dynamics
 k-epsilon turbulence model
 turbulent boundary layer
 turbulent flow
- Kondo effect**
 DEF Change in superconductivity characteristics resulting from magnetic impurities in the compounds involved.
 GS electrical properties
 . electrical resistivity
 . . superconductivity
 . . . **Kondo effect**
 transport properties
 . electrical resistivity
 . . superconductivity
 . . . **Kondo effect**
 RT alloys
 ∞ effects
 low temperature physics
 magnetic materials
 nuclear spin
 transition temperature
- ∞ **Korea**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT North Korea
 South Korea
- Korteweg-Devries equation**
 DEF The mathematical representation describing the propagation of long waves of small but finite amplitude.
 GS wave equations
 . **Korteweg-Devries equation**
 RT ∞ equations
- Kossel pattern**
 GS distribution (property)
 . radiation distribution
 . . diffraction patterns
 . . . **Kossel pattern**
 RT crystal lattices
- Kovar (trademark)**
 GS alloys
 . **Kovar (trademark)**
 RT cobalt alloys
- KP index**
 GS ratios
 . indexes (ratios)
 . . **KP index**
 RT Earth magnetosphere
 geomagnetic pulsations
 geomagnetism
 ∞ indexes
 magnetic disturbances
 magnetic properties
 magnetic variations
- Kraft process (woodpulp)**
 DEF Woodpulping process in which sodium sulfate is used in the caustic soda pulp-digestion liquor. Also known as sulfate pulping or Kraft pulping.
 RT manufacturing
 paper (material)

Kramers-Kronig formula

∞ processes

Kramers-Kronig formula

DEF The relationship between the attenuation coefficient and the dispersion (frequency dependent phase velocity) for viscoelastic waves.

RT ∞ dispersion
∞ formulas
opacity
spectrum analysis

Krebs cycle

RT cells (biology)
metabolism

kreep

DEF A yellow-brown glassy lunar mineral enriched in potassium, rare earth elements, and phosphate.

GS minerals
. **kreep**
rocks
. lunar rocks
. **kreep**
RT geology
lunar soil
phosphates
potassium
rare earth elements

kriging

DEF A method of providing unbiased estimates of variables in regions where the available data exhibit spatial autocorrelation, and these estimates are obtained in such a way that they have minimum variance.

RT variance (statistics)

Kronecker product

USE **orthogonality**

Krook equation

RT ∞ equations
hydrodynamics
kinetic theory
shear flow
shock wave profiles

Krueger flaps

USE **leading edge flaps**

krypton

GS chemical elements
. rare gases
. **krypton**
. . . krypton isotopes
. . . . krypton 85
gases
. rare gases
. **krypton**
. . . krypton isotopes
. . . . krypton 85

krypton 85

GS chemical elements
. nuclides

. . isotopes
. . . krypton isotopes
. . . . **krypton 85**
. . . radioactive isotopes
. . . . **krypton 85**
. rare gases
. krypton
. . . krypton isotopes
. . . . **krypton 85**
gases
. rare gases
. krypton
. . . krypton isotopes
. . . . **krypton 85**

krypton fluoride lasers

DEF Rare gas halide ultraviolet stimulated emission devices in which krypton fluoride is the active lasing medium.

GS stimulated emission devices
. lasers
. . gas lasers
. . . rare gas-halide lasers
. . . . **krypton fluoride lasers**
RT coherent electromagnetic radiation
lasing
masers
optical pumping

krypton isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **krypton isotopes**
. . . . krypton 85
. rare gases
. krypton
. . . **krypton isotopes**
. . . . krypton 85
gases
. rare gases
. krypton
. . . **krypton isotopes**
. . . . krypton 85

KS-3 aircraft

USE **S-3 aircraft**

K-T boundary

USE **Cretaceous-Tertiary boundary**

KU band

USE **superhigh frequencies**

Kuiper Airborne Observatory

(added June 1990)
GS observatories
. **Kuiper Airborne Observatory**
RT airborne equipment
astronomical spectroscopy
C-141 aircraft
infrared astronomy
SOFIA (airborne observatory)

Kuiper belt

(added June 1997)
RT asteroids

comets
dwarf planets
New Horizons mission
Oort cloud
Quaoar
solar system
solar system evolution
trans-Neptunian objects

Kurile Islands

GS landforms
. islands
. . Pacific islands
. . . **Kurile Islands**
RT U.S.S.R.

kurtosis

DEF In statistics, the extent to which a frequency distribution is peaked or concentrated about the mean; it is sometimes defined as the ratio of the fourth moment of the distribution to the square of the second moment.

GS distribution (property)
. frequency distribution
. . **kurtosis**
RT ∞ distribution
Fourier analysis
∞ patterns
statistical distributions

Kutta-Joukowski condition

GS conditions
. **Kutta-Joukowski condition**
RT airfoil profiles
boundary layer separation
Joukowski transformation

Kuwait

GS nations
. **Kuwait**
RT Asia

Kvant modules

(added April 1995)
GS modules
. space station modules
. . **Kvant modules**
RT Mir space station
Russian Space Program
Soyuz spacecraft
space station structures
x ray telescopes

KWIC indexes

GS classifications
. indexes (documentation)
. . **KWIC indexes**
RT ∞ indexes
thesauri

Kyokko satellite

USE **EXOS-A satellite**

Kyrgyzstan

(added August 1993)
GS nations
. **Kyrgyzstan**
RT Asia

L

L band
USE **ultrahigh frequencies**

L-28 aircraft
USE **U-10 aircraft**

L-29 aircraft
USE **L-29 jet trainer**

L-29 jet trainer
UF *Delfin aircraft*
L-29 aircraft
Omnipol L-29 aircraft
GS jet aircraft
. **L-29 jet trainer**
monoplanes
. **L-29 jet trainer**
single engine aircraft
. **L-29 jet trainer**
tilt wing aircraft
. **L-29 jet trainer**
training aircraft
. **L-29 jet trainer**
V/STOL aircraft
. **L-29 jet trainer**

L-1011 aircraft
GS commercial aircraft
. **L-1011 aircraft**
jet aircraft
. **L-1011 aircraft**
Lockheed aircraft
. **L-1011 aircraft**
passenger aircraft
. **L-1011 aircraft**
transport aircraft
. **L-1011 aircraft**
RT ∞ aircraft
turbofan engines

L-2000 aircraft
UF *Lockheed L-2000 aircraft*
GS jet aircraft
. **L-2000 aircraft**
Lockheed aircraft
. **L-2000 aircraft**
passenger aircraft
. **L-2000 aircraft**
supersonic aircraft
. **L-2000 aircraft**
transport aircraft
. **L-2000 aircraft**
RT ∞ aircraft

labeling (marking)
USE **marking**

labor
RT manpower
mediation
personnel selection

laboratories
GS **laboratories**
. engine testing laboratories
. environmental laboratories
. human factors laboratories
. lunar laboratories
. . . lunar receiving laboratory
. lunar mobile laboratories
. space laboratories
. . . Advanced Technology Laboratory
. . . Atmospheric Cloud Physics Lab
(Spacelab)
. . . Earth Viewing Applications
Laboratory
. . . Long Duration Exposure Facility
. . . manned orbital laboratories
. . . Columbus module
. . . Destiny Laboratory Module
. . . Kibo Japanese Experiment
Module
. . . Skylab 1
. . . Skylab 2
. . . Skylab 3
. . . Skylab 4
. . . Spacelab
. underwater research laboratories

RT experiment design
experimentation
nuclear research
research facilities
SAIL project
test facilities
∞ tests

laboratory astrophysics
(added June 2004)
DEF Investigation of the formation, properties, and interactions of interstellar matter conducted through laboratory experimentation.
GS astrophysics
. **laboratory astrophysics**
RT astronomical spectroscopy
computational astrophysics
cosmochemistry
interstellar chemistry
interstellar matter
molecular clouds

laboratory equipment
GS **laboratory equipment**
. image furnaces
. syringes
RT ampoules
∞ equipment
glassware
measuring instruments
pipettes

Labrador
RT Canada

labyrinth
GS anatomy
. sense organs
. . ear
. . . **labyrinth**
. . . . cochlea
. . . . Corti organ
. . . . otolith organs
. . . . semicircular canals
. . . . vestibules

labyrinth seals
DEF Minimum leakage seals that offer resistance to fluid flow while providing radial or axial clearance.
GS seals (stoppers)
. **labyrinth seals**
RT fluid flow
gaskets
glands (seals)
hermetic seals
leakage
O ring seals
packings (seals)
plugs
pump seals
rotor speed

labyrinthectomy
GS medical science
. surgery
. . **labyrinthectomy**
RT ear

LACATE (experiment)
DEF A NASA balloonborne experiment conducted from a balloon platform carried by a balloon over 400 feet in diameter. The acronym stands for the Lower Atmospheric Composition and Temperature Experiment. The experiment was conducted in 1974. Used for Lower Atmospheric Composition Experiment.
UF *Lower Atmospheric Composition Experiment*
RT atmospheric composition
atmospheric temperature
lower atmosphere

LACE (engine)
USE **liquid air cycle engines**

lacquers
GS coatings
. **lacquers**

finishes
. **lacquers**
RT metal coatings
primers (coatings)
protective coatings
sprayed coatings

lactates
GS esters
. **lactates**

lactic acid
GS acids
. carboxylic acids
. . **lactic acid**
organic compounds
. carboxylic acids
. . **lactic acid**

lactose
GS organic compounds
. carbohydrates
. . sugars
. . . **lactose**

lacunas
RT lichens
plants (botany)

ladders
RT escalators
stairways

lag (delay)
USE **time lag**

LAGEOS (satellite)
UF *Laser Geodynamic Satellite*
GS artificial satellites
. passive satellites
. . **LAGEOS (satellite)**
RT laser range finders
retroreflection
satellite laser ranging

lagoons
DEF Shallow stretches of seawater, such as sounds, channels, bays (topographic features), or saltwater lakes, near or communicating with seas and partly or completely separated from them by low, narrow, elongated strips of land, such as reefs, barrier islands, sandbanks, or spits. Lagoons are often used to describe sheets of water between offshore coral reefs and the mainland. They often extend roughly parallel to the coast and are little affected by tides. Lagoons are also considered shallow freshwater ponds or lakes near or communicating with larger lakes or rivers.

GS landforms
. **lagoons**
RT atolls
bars (landforms)
beaches
coasts
dunes
inlets (topography)
island arcs
islands
lakes
ponds
reservoirs
topography

Lagrange coordinates
DEF Systems of coordinates by which fluid parcels are identified for all times by assigning them coordinates which do not vary with time. Examples of such coordinates are: (a) the values of any properties of the fluid conserved in the motion; or (b) more generally, the positions in space of the parcels at some arbitrarily selected moment. Subsequent positions in space of the parcels are then the dependent variables, functions of time and of the Lagrange coordinates. Also called material coordinates.

GS coordinates
. **Lagrange coordinates**
RT classical mechanics

Lagrange multipliers

hydrodynamics
Lagrangian function
librational motion

Lagrange equations of motion

USE **Euler-Lagrange equation**

Lagrange multipliers

RT chiral dynamics
differential equations
isoperimetric problem
Lagrangian function
multipliers
operations research
optimization

Lagrange similarity hypothesis

GS hypotheses
. **Lagrange similarity hypothesis**
theorems
. similarity theorem
. . **Lagrange similarity hypothesis**
RT energy dissipation
energy transfer
kinetic energy
Kolmogorov theory
turbulent flow

Lagrangian

USE **Lagrangian function**

Lagrangian equilibrium points

GS gravitational effects
. **Lagrangian equilibrium points**
RT celestial mechanics
gravitational fields
orbital mechanics
Trojan asteroids

Lagrangian function

(added April 1993)
UF *Lagrangian*
GS functions (mathematics)
. **Lagrangian function**
RT Euler-Lagrange equation
kinetic energy
Lagrange coordinates
Lagrange multipliers
potential energy

Laguerre functions

GS analysis (mathematics)
. complex variables
. . **Laguerre functions**
functions (mathematics)
. **Laguerre functions**
RT orthogonal functions

LA-ICP-MS (spectrometry)

(added March 2001)

USE **inductively coupled plasma mass spectrometry**

lake beds

USE **beds (geology)**

Lake Champlain Basin (NY-VT)

GS landforms
. structural basins
. . **Lake Champlain Basin (NY-VT)**
RT Canada
lakes
New York
Vermont

Lake Erie

GS lakes
. Great Lakes (North America)
. . **Lake Erie**
RT hydrology
rivers
streams
water
water management

Lake Huron

GS lakes
. Great Lakes (North America)
. . **Lake Huron**
RT hydrology
rivers

Saginaw Bay (MI)
streams
water
water management

lake ice

DEF Ice formed on lakes, regardless of observed location; it is usually freshwater ice.
GS ice
. **lake ice**
. . ice floes
RT bay ice
ice formation
lakes
land ice
sea ice
water

Lake Michigan

GS lakes
. Great Lakes (North America)
. . **Lake Michigan**
RT hydrology
rivers
streams
water
water management

Lake Ontario

GS lakes
. Great Lakes (North America)
. . **Lake Ontario**
RT hydrology
rivers
streams
water
water management

Lake Pontchartrain (LA)

GS lakes
. **Lake Pontchartrain (LA)**
RT Louisiana

Lake Superior

GS lakes
. Great Lakes (North America)
. . **Lake Superior**
RT hydrology
rivers
streams
water
water management

Lake Tahoe (CA-NV)

GS lakes
. **Lake Tahoe (CA-NV)**
RT California
Nevada

Lake Texoma (OK-TX)

GS lakes
. **Lake Texoma (OK-TX)**
RT limnology
Oklahoma
reservoirs
texas
vadose water

lakes

DEF Inland bodies of standing water occupying depressions in the Earth's surface, generally of appreciable size (larger than a pond) and too deep to permit vegetation (excluding subaqueous vegetation) to take root completely across the expanse of water; the water may be fresh or saline. The term includes expanded parts of rivers, reservoirs behind dams, or lake basins intermittently or formerly covered by water.

GS **lakes**
. Great Lakes (North America)
. . Lake Erie
. . Lake Huron
. . Lake Michigan
. . Lake Ontario
. . Lake Superior
. Great Salt Lake (UT)
. Lake Pontchartrain (LA)
. Lake Tahoe (CA-NV)
. Lake Texoma (OK-TX)

. Pyramid Lake (NV)
RT aquifers
bayous
beaches
coasts
Earth hydrosphere
eutrophication
inland waters
kettles (geology)
lagoons
Lake Champlain Basin (NY-VT)
lake ice
limnology
playas
ponds
regional planning
reservoirs
river basins
shoals
shorelines
springs (water)
straits
surface water
thermal pollution
water circulation
water color
water depth
water resources
waterways

Lallemand cameras

GS optical equipment
. cameras
. . **Lallemand cameras**
photographic equipment
. cameras
. . **Lallemand cameras**
RT astronomical photography
electro-optical photography
image converters
image intensifiers
image transducers
light amplifiers
spectroscopy
television cameras

Lamb waves

DEF Waves that propagate within the thickness of a thin plate, and that can only be generated at particular values of angle of incidence, frequency, and plate thickness. The velocity of the wave is dependent on the mode and the product of plate thickness and frequency.

GS elastic waves
. sound waves
. . **Lamb waves**
RT acoustic properties
acoustics
Sturm-Liouville theory
ultrasonic tests

Lambda rocket vehicles

GS rocket vehicles
. multistage rocket vehicles
. . **Lambda rocket vehicles**
. sounding rockets
. . **Lambda rocket vehicles**
RT solid propellant rocket engines
 ∞ vehicles

Lambda Tauri stars

GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . eclipsing binary stars
. . . . **Lambda Tauri stars**
. . . . variable stars
. . . **Lambda Tauri stars**

Lambert law

USE **Bouguer law**

Lambert surface

RT reflection
 ∞ surface geometry
 ∞ surfaces

Lame functions

GS functions (mathematics)

- . **Lame functions**
- RT boundary value problems
differential equations
- Lame wave equations**
- GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . **Lame wave equations**
 wave equations
 - . **Lame wave equations**
- RT acoustics
elastic waves
- ∞ equations
- ∞ Sturm-Liouville theory
wave propagation
- lamella**
- RT bones
- lamella (metallurgy)**
- DEF Crystalline materials whose grains are in the form of thin sheets.
- RT aluminum alloys
copper alloys
crystallography
eutectic alloys
microstructure
- lamina*
- USE **layers**
- laminar boundary layer**
- DEF In fluid flow, layer next to the fixed boundary. The fluid velocity is zero at the boundary layer but the molecular viscous stress is large because the velocity gradient normal to the wall is large. Used for laminar boundary layer separation and laminar flow control.
- UF *laminar boundary layer separation*
laminar flow control
- GS boundary layers
 - . **laminar boundary layer**
- RT boundary layer combustion
boundary layer transition
compressible boundary layer
Goertler instability
hypersonic boundary layer
incompressible boundary layer
interactional aerodynamics
isothermal layers
Pohlhausen method
supersonic boundary layers
thermal boundary layer
three dimensional boundary layer
turbulent boundary layer
two dimensional boundary layer
X-21 aircraft
- laminar boundary layer separation*
- USE **boundary layer separation**
laminar boundary layer
- laminar flames*
- USE **flames**
laminar flow
- laminar flow**
- DEF In fluid flow, a smooth flow in which no crossflow of fluid particles occurs between adjacent stream lines; hence, a flow conceived as made up of layers -- commonly distinguished from turbulent flow. Used for laminar flames, laminar jets, Poiseuille flow, and streamline flow.
- UF *laminar flames*
laminar jets
Poiseuille flow
streamline flow
- GS fluid flow
 - . **laminar flow**
 - . . Blasius flow
 - . . Hartmann flow
 - . . stratified flow
- RT aerodynamics
atmospheric turbulence
boundary layer transition
capillary flow
critical flow
Falkner-Skan equation
flow characteristics
- flow geometry
flow stability
forced convection
free convection
gas flow
gas streams
inviscid flow
liquid flow
low Reynolds number
mass flow
multiphase flow
Newton pressure law
open channel flow
orifice flow
parallel flow
pipe flow
Prandtl-Meyer expansion
Rayleigh-Benard convection
Reynolds number
Roshko prediction
single-phase flow
steady flow
steam flow
Tollmien-Schlichting waves
- ∞ transition layers
- ∞ turbulent flow
- ∞ two phase flow
- ∞ uniform flow
- ∞ unsteady flow
- ∞ viscous drag
- ∞ viscous flow
- ∞ wedge flow
- ∞ X-21A aircraft
- laminar flow airfoils**
- GS airfoils
 - . **laminar flow airfoils**
- laminar flow control*
- USE **boundary layer control**
laminar boundary layer
- laminar heat transfer**
- GS transmission
 - . heat transmission
 - . . heat transfer
 - . . . **laminar heat transfer**
- RT conductive heat transfer
convective heat transfer
thermohydraulics
turbulent heat transfer
- laminar jets*
- USE **jet flow**
laminar flow
- laminar mixing**
- GS mixing
 - . **laminar mixing**
- RT fluid injection
gas mixtures
mixing layers (fluids)
turbulent mixing
- laminar wakes**
- GS wakes
 - . **laminar wakes**
- RT aircraft wakes
turbulent wakes
- laminated materials*
- USE **laminates**
- laminates**
- DEF Products made by bonding together two or more layers of material or materials. Used for laminated materials, laminations, and multi-layer structures.
- UF *laminated materials*
laminations
multilayer structures
- GS composite structures
 - . **laminates**
 - . . Boral
 - . . plywood
- RT bonding
boron-epoxy composites
cladding
clamped structures
coatings
- composite materials
debonding (materials)
fabrics
fiber composites
filament winding
- ∞ films
formica
glass fiber reinforced plastics
honeycomb structures
hybrid composites
interlaminar stress
interlayers
- ∞ layers
lay-up
magnetic cores
- ∞ materials
matrix materials
metal bonding
metallizing
multilayer insulation
netting (materials/structures)
papers
plating
ply orientation
polymer matrix composites
prepregs
reinforced plastics
reinforced plates
sandwich structures
- ∞ sheets
stacking sequence (composite materials)
substrates
thermosetting resins
veneers
- laminations*
- USE **laminates**
- lamps*
- USE **luminaires**
- LAMPS program*
- USE **Light Airborne Multipurpose System**
- LAN (computer networks)*
- USE **local area networks**
- Lance missile**
- GS missiles
 - . surface to surface missiles
 - . . **Lance missile**
- RT liquid propellant rocket engines
Trailblazer 1 reentry vehicle
TX-77 engine
- land**
- DEF In a general sense, that part of the Earth's surface that stands above mean sea level. The inclusion of Antarctica's permanent ice in calculating the land surface of the Earth is controversial.
- GS **land**
 - . Allegheny Plateau (US)
 - . arid lands
 - . badlands
 - . barren land
 - . Cascade Range (CA-OR-WA)
 - . Colorado Plateau (US)
 - . deserts
 - . . Gobi desert
 - . . Libyan desert
 - . . Mojave Desert (CA)
 - . . Sahara Desert (Africa)
 - . farmlands
 - . grasslands
 - . . Llanos Orientales (Colombia)
 - . isthmuses
 - . parks
 - . . national parks
 - . . . Yellowstone National Park (ID-MT-WY)
 - . plains
 - . . coastal plains
 - . . flood plains
 - . . Llanos Orientales (Colombia)
 - . . pampas
 - . . playas
 - . . tundra

land ice

- . rangelands
- . wetlands
- . . marshlands
- RT capes (landforms)
- desertification
- desertline
- peninsulas
- residential areas
- rural areas
- rural land use
- sites
- sod
- soils
- topography

land ice

DEF Any ice masses formed from snow, rain or other freshwater on land, as ice shelves or glaciers, even though they may be floating in seas as icebergs.

UF *ice shelves*

GS ice

- . **land ice**
- resources
- . Earth resources
- . . **land ice**

RT Antarctic regions

- glacial drift
- glaciers
- icebergs
- lake ice
- sea ice

land management

GS management

- . resources management
- . . **land management**

RT environment management

- regional planning
- rural land use
- urban planning
- wilderness

land mobile satellite service

DEF A proposed radio relay satellite system for serving thinly populated or large geographical areas.

GS mobile communication systems

- . **land mobile satellite service**

RT communication satellites

- ground stations
- MSAT
- radio communication

land surface temperature

(added February 1993)

GS surface properties

- . surface temperature
- . . **land surface temperature**

temperature

- . surface temperature
- . . **land surface temperature**

RT air land interactions

- atmospheric temperature
- sea surface temperature

land use

GS **land use**

- . rural land use

RT AgRISTARS project

- airport planning
- barren land
- change detection
- conservation
- desertification
- ∞ development
- Earth resources
- economic development
- energy policy
- environment management
- exploitation
- ∞ facilities
- farmlands
- forest management
- grasslands
- industrial areas
- landfills
- leasing
- residential areas
- site selection

SPOT (French satellite)

Starsite program

- suburban areas
- urban development
- urban planning
- urban research

Landau damping

DEF The damping of a space charge wave by electrons which move at the phase velocity of the wave and gain energy transferred from the wave.

GS damping

- . **Landau damping**

RT electron plasma

- Landau factor
- magnetic damping
- phase velocity
- plasma waves
- space charge

Landau factor

RT atomic energy levels

- atomic theory
- Landau damping
- plasmas (physics)
- superconductivity

Landau-Ginzburg equations

RT ∞ equations

- quantum electrodynamics
- superconductivity

landfills

DEF Disposal sites for solid wastes which are buried in layers of earth.

RT industrial wastes

- land use
- methane
- solid wastes
- waste disposal
- waste management
- waste utilization
- water pollution

landforms

DEF Any physical recognizable forms or features of the Earth's surface, having characteristic shapes, and produced by natural causes. Landforms include major forms such as plains, plateaus, and mountains and minor forms such as hills, valleys, slopes, glacial drift, and dunes. Taken together, landforms make up the surface configuration of the Earth.

GS **landforms**

- . arroyos
- . barriers (landforms)
- . . Outer Banks (NC)
- . . reefs
- . bars (landforms)
- . beds (geology)
- . . salt beds
- . bridges (landforms)
- . calderas
- . canals
- . canyons
- . . Grand Canyon (AZ)
- . capes (landforms)
- . . Cape Hatteras (NC)
- . cones (volcanoes)
- . cusps (landforms)
- . Death Valley (CA)
- . deltas
- . . Mississippi Delta (LA)
- . . Rhone Delta (France)
- . divides (landforms)
- . dunes
- . escarpments
- . fans (landforms)
- . fiords
- . flats (landforms)
- . . tidal flats
- . gaps (geology)
- . inlets (topography)
- . . bayous
- . . Cook Inlet (AK)
- . inliers (landforms)
- . island arcs
- . islands
- . . Aleutian Islands (US)
- . . Assateague Island (MD-VA)
- . . atolls
- . . Azores
- . . Bahrain
- . . Bermuda
- . . Canary Islands
- . . Cyprus
- . . Greenland
- . . Hawaii
- . . Iceland
- . . Indonesia
- . . Ireland
- . . keys (islands)
- . . Long Island (NY)
- . . Madagascar
- . . Maldive Islands
- . . Malta
- . . Mauritius
- . . Merritt Island (FL)
- . . Newfoundland
- . . nunataks
- . . Pacific islands
- . . . Guam
- . . . Japan
- . . . Johnston Island
- . . . Kurile Islands
- . . . New Guinea (island)
- . . . New Zealand
- . . . Philippines
- . . . Samoa
- . . Prince Edward Island
- . . Seychelles
- . . Sicily
- . . Tasmania
- . . Wallops Island
- . . West Indies
- . . . Antigua and Barbuda
- . . . Bahamas
- . . . Barbados
- . . . Cuba
- . . . Dominica
- . . . Grenada
- . . Guadeloupe
- . . . Haiti
- . . . Jamaica
- . . . Lesser Antilles
- . . . Martinique
- . . . Puerto Rico
- . . . Trinidad and Tobago
- . . . Virgin Islands
- . isthmuses
- . lagoons
- . Magdalena-Cauca Valley (Colombia)
- . massifs
- . mountains
- . . Adirondack Mountains (NY)
- . . Alps Mountains (Europe)
- . . Andes Mountains (South America)
- . . Appalachian Mountains (North America)
- . . Bighorn Mountains (MT-WY)
- . . Black Hills (SD-WY)
- . . Carpathian Mountains (Europe)
- . . Cascade Range (CA-OR-WA)
- . . Caucasus Mountains (U.S.S.R.)
- . . coastal ranges (CA)
- . . Great Smoky Mountains (NC-TN)
- . . Himalayas
- . . Peninsular Ranges (CA)
- . . Pyrenees Mountains (Europe)
- . . Rocky Mountains (North America)
- . . San Juan Mountains (CO)
- . . Sierra Nevada Mountains (CA)
- . . Wind River Range (WY)
- . . Wrangell Mountains (AK)
- . muskegs
- . outliers (landforms)
- . peaks (landforms)
- . . Pike's Peak (CO)
- . peninsulas
- . . Delmarva Peninsula (DE-MD-VA)
- . . Phoenix quadrangle (AZ)
- . plains
- . . coastal plains
- . . flood plains
- . . Llanos Orientales (Colombia)
- . . pampas
- . . playas
- . . tundra

- . ravines
- . St Lawrence Valley (North America)
- . steppes
- . structural basins
 - . . cirques (landforms)
 - . . Great Basin (US)
 - . . Kalahari Basin (Africa)
 - . . karst
 - . . . sinkholes
 - . . . kettles (geology)
 - . . Lake Champlain Basin (NY-VT)
 - . . river basins
 - . . . Atchafalaya River Basin (LA)
 - . . . Chena River Basin (AK)
 - . . . Columbia River Basin (ID-OR-WA)
 - . . . Delaware River Basin (US)
 - . . . Feather River Basin (CA)
 - . . . Missouri River Basin (US)
 - . . . Susquehanna River Basin (MD-NY-PA)
 - . . . Wabash River Basin (IL-IN-OH)
 - . . wadis
 - . . watersheds
 - . . Williston Basin (North America)
- . terraces (landforms)
 - . . plateaus
 - . . . Allegheny Plateau (US)
 - . . . Colorado Plateau (US)
 - . . . Great Basin (US)
 - . . . mesas
 - buttes
 - piedmonts
 - Central Piedmont (US)
- . volcanoes
 - . . Mars volcanoes

RT archipelagoes
crossbedding (geology)
ditches
earthquake resistance

∞ faults
geological faults
glacial drift
landmarks
landslides

∞ platforms

∞ ridges
seamounts
slopes
structural properties (geology)
terrain
topography

landing

GS **landing**

- . aircraft landing
- . blind landing
- . glide landings
- . . horizontal spacecraft landing
- . hard landing
- . soft landing
- . spacecraft landing
 - . . horizontal spacecraft landing
 - . . lunar landing
 - . . planetary landing
 - . . . Mars landing
 - . . ditching (landing)
 - . . emergency landing
 - . . touchdown
 - . . vertical landing
 - . . water landing

RT air traffic control
approach
approach and landing tests (STS)
arrivals
guidance (motion)
instrument flight rules
instrument landing systems
maneuvers
runways
takeoff
visual flight

landing aids

UF *landing systems*

GS **landing aids**

- . airport beacons
- . . discrete address beacon system
- . airport lights

- . . runway lights
- . arresting gear
- . instrument landing systems
 - . . all-weather landing systems
- . landing instruments
 - . . approach indicators
 - . . landing radar
 - . . microvision landing aid
 - . . microwave landing systems
 - . . microwave scanning beam landing system

RT ∞ aids

- air traffic control
- air traffic controllers (personnel)
- airborne radar approach
- aircraft equipment
- aircraft instruments
- aircraft landing
- aircraft safety
- airport towers
- airports
 - antiskid devices
- approach
 - approach control
 - automatic pilots
 - enhanced vision
 - ground based control
 - ground support equipment
 - head-up displays
 - heliports
 - instrument approach
 - military air facilities
 - National Aviation System
 - navigation aids
 - PLAT system
 - radar approach control
 - radio beacons
 - runways
 - safety devices
 - solar compasses

landing gear

DEF The apparatus comprising those components of an aircraft or spacecraft that support and provide mobility for the craft on land, water, or other surface. The landing gear consists of wheels, floats, skis, bogies, and treads, or other devices, together with all associated struts, bracing, or shock absorbers. Used for retractable landing gear.

UF *retractable landing gear*

RT aircraft parts

- aircraft tires
- airframes

∞ bicycle

- brakes (for arresting motion)
- carriages
- fairings
- floats

∞ gear

- hydrofoils
- nose wheels
- retractable equipment
- self alignment
- shock absorbers
- skidding
- skis
- spray ingestion
- tires
- undercarriages
- vehicle wheels
- wheel brakes
- wheels

landing instruments

GS landing aids

- . **landing instruments**
- . . approach indicators

RT air traffic control
aircraft equipment
aircraft instruments
altimeters
automatic control
blind landing
flight instruments
instrument landing systems
manual control
measuring instruments
radar approach control

speed indicators

landing loads

GS loads (forces)

- . dynamic loads
- . . transient loads
- . . . **landing loads**

RT deceleration
impact loads
shock loads
structural design criteria

landing mats

RT aircraft landing
airports
military air facilities
runways

landing modules

GS modules

- . spacecraft modules
- . . **landing modules**
- . . . lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - Altair Lunar Lander
 - Mars Excursion Module
- . soft landing spacecraft
- . **landing modules**
- . . lunar landing modules
 - . . . Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - Altair Lunar Lander
 - Mars Excursion Module
- . spacecraft components
- . spacecraft modules
- . . **landing modules**
- . . . lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - Altair Lunar Lander
 - Mars Excursion Module

RT Apollo spacecraft
interplanetary spacecraft
launch vehicles
maneuverable spacecraft
manned spacecraft
reentry vehicles
reusable spacecraft
space capsules
spacecraft docking modules

landing radar

GS landing aids

- . **landing radar**
- . radar
- . **landing radar**

RT air traffic control
aircraft landing
aircraft safety
approach control
instrument approach
radar approach control

landing simulation

GS simulation

- . **landing simulation**

RT altitude simulation
atmospheric entry simulation
computerized simulation
flight simulation
spacecraft landing
training simulators

landing sites

GS sites

- . **landing sites**
- . . lunar landing sites
- . . Mars landing sites

landing speed

RT heliports
Mars Pathfinder
recovery zones
runways
trajectory control

landing speed

GS rates (per time)
. **landing speed**
velocity
. **landing speed**
RT high speed
low speed

landing systems

USE **landing aids**

landmarks

RT landforms
terrain
topography

Landsat 1

UF *Earth Resources Technology Satellite 1*
ERTS-A
GS artificial satellites
. Landsat satellites
. . **Landsat 1**

Landsat 2

UF *Earth Resources Technology Satellite B*
ERTS-B
GS artificial satellites
. Landsat satellites
. . **Landsat 2**

Landsat 3

DEF The third Landsat satellite (Landsat C) successfully launched and in orbit. Used for Earth Resources Technology Satellite C and ERTS-C.

UF *Earth Resources Technology Satellite C*
ERTS-C
GS artificial satellites
. Landsat satellites
. . **Landsat 3**
RT plasma interaction experiment

Landsat 4

UF *Earth Resources Technology Satellite D*
ERTS-D
GS artificial satellites
. Landsat satellites
. . **Landsat 4**
RT thematic mappers (LANDSAT)

Landsat 5

GS artificial satellites
. Landsat satellites
. . **Landsat 5**
RT thematic mappers (LANDSAT)

Landsat 6

(added April 1995)
GS artificial satellites
. Landsat satellites
. . **Landsat 6**
RT Earth Observing System (EOS)
remote sensing
spectral resolution

Landsat 7

(added April 1995)
GS artificial satellites
. Landsat satellites
. . **Landsat 7**
RT Earth Observing System (EOS)
remote sensing
spectral resolution

Landsat E

UF *Earth Resources Technology Satellite E*
EOS-A
ERTS-E
GS artificial satellites
. Landsat satellites

. . Landsat E

Landsat F

UF *Earth Resources Technology Satellite F*
EOS-B
ERTS-F
GS artificial satellites
. Landsat satellites
. . **Landsat F**

Landsat follow-on missions

UF *LFO*
RT ∞ missions
multimission modular spacecraft

Landsat satellites

UF *Earth Resources Technology Satellites*
ERTS
GS artificial satellites
. **Landsat satellites**
. . Landsat 1
. . Landsat 2
. . Landsat 3
. . Landsat 4
. . Landsat 5
. . Landsat 6
. . Landsat 7
. . Landsat E
. . Landsat F
RT AgRISTARS project
data products
Earth observations (from space)
Earthnet
Mapsat
NASA programs
oceanography
satellite observation
SEASAT 1
SEASAT program
SEASAT satellites
SEASAT-B satellite
Synchronous Earth Observatory
satellite

landscape

USE **terrain**
topography

landslides

DEF A general term covering a wide variety of mass movement landforms and processes involving the downslope transport, under gravitational influence, of soil and rock material en masse. Usually the displaced material moves over a relatively confined zone or surface of shear.

GS Earth movements
. **landslides**
RT cliffs
flood damage
landforms
rain erosion
rocks
slopes
soil erosion
soils
storm damage

lanes

USE **paths**

Langevin formula

RT dispersing
ferromagnetism
magnetic moments

Langley complex coordinator

GS simulators
. environment simulators
. . space simulators
. . . **Langley complex coordinator**
RT flight simulators
gravitational effects
rotating environments
space environment simulation

weightlessness simulation

Langmuir monolayers

(added March 2001)
USE **monomolecular films**

Langmuir probes

USE **electrostatic probes**

Langmuir turbulence

(added August 1994)
GS turbulence
. magnetohydrodynamic turbulence
. . plasma turbulence
. . . **Langmuir turbulence**
RT Auger effect
magnetohydrodynamic stability
plasma dynamics
plasma heating
plasma oscillations
plasma waves
thin films

Langmuir-Blodgett films

(added March 1993)
GS thin films
. monomolecular films
. . **Langmuir-Blodgett films**
RT coatings
 ∞ films
integrated optics
molecular electronics
polymeric films

language programming

GS computer programming
. **language programming**
RT computer assisted instruction
data processing
high level languages
languages
machine oriented languages
machine translation
symbolic programming
 ∞ translators

languages

GS **languages**
. command languages
. . query languages
. . document markup languages
. . English language
. . hardware description languages
. . programming languages
. . . ALGOL
. . . APL (programming language)
. . . Assembly language
. . . autocoders
. . . COMPASS (programming language)
. . . MAP (programming language)
. . . BASIC (programming language)
. . . Cobol
. . . COGO (programming language)
. . . context free languages
. . . Forth (programming language)
. . . FORTRAN
. . . HAL/S (language)
. . . high level languages
. . . Ada (programming language)
. . . C (programming language)
. . . C++ (programming language)
. . . Java (programming language)
. . . LISP (programming language)
. . . machine oriented languages
. . . natural language (computers)
. . . Pascal (programming language)
. . . PL/1
. . . Prolog (programming language)
RT alphabets
articulation (speech)
coding
communication theory
grammars
language programming
linguistics
machine translation
orthography
phonemes
phonemics

phonetics
 semantics
 sentences
 speech
 symbols
 syntax
 translating
 verbal communication
 vowels
 words (language)

lanthanide series metals
 USE **rare earth elements**

lanthanum

GS chemical elements
 . rare earth elements
 . . **lanthanum**
 . . . lanthanum isotopes
 metals
 . rare earth elements
 . . **lanthanum**
 . . . lanthanum isotopes
 RT didymium

lanthanum 140
 USE **lanthanum isotopes**

lanthanum alloys

GS alloys
 . rare earth alloys
 . . **lanthanum alloys**

lanthanum chlorides

GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **lanthanum chlorides**
 . halides
 . . chlorides
 . . . **lanthanum chlorides**
 . . metal halides
 . . . **lanthanum chlorides**
 lanthanum compounds
 . **lanthanum chlorides**

lanthanum compounds

GS **lanthanum compounds**
 . lanthanum chlorides
 . lanthanum fluorides
 . lanthanum oxides
 . lanthanum tellurides
 RT ∞ chemical compounds
 ∞ metal compounds

lanthanum fluorides

GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **lanthanum fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **lanthanum fluorides**
 . . metal halides
 . . . metal fluorides
 **lanthanum fluorides**
 lanthanum compounds
 . **lanthanum fluorides**

lanthanum isotopes

UF *lanthanum 140*
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **lanthanum isotopes**
 . rare earth elements
 . . lanthanum
 . . . **lanthanum isotopes**
 metals
 . rare earth elements
 . . lanthanum
 . . . **lanthanum isotopes**

lanthanum oxides

GS chalcogenides
 . oxides
 . . metal oxides
 . . . **lanthanum oxides**

lanthanum compounds
 . **lanthanum oxides**

lanthanum tellurides

GS chalcogenides
 . tellurides
 . . **lanthanum tellurides**
 lanthanum compounds
 . **lanthanum tellurides**
 rare earth compounds
 . **lanthanum tellurides**
 tellurium compounds
 . tellurides
 . . **lanthanum tellurides**

Laos

GS nations
 . **Laos**
 RT Asia

lap joints

GS joints (junctions)
 . **lap joints**
 RT bolted joints
 butt joints
 metal joints
 riveted joints
 scarf joints
 soldered joints
 welded joints

Laplace equation

RT ∞ equations
 harmonic functions
 partial differential equations
 Poisson equation
 Stokes-Beltrami equation

Laplace operators

USE **Laplace transformation**

Laplace transformation

UF *Laplace operators*
 GS analysis (mathematics)
 . functional analysis
 . . integral transformations
 . . . **Laplace transformation**
 functions (mathematics)
 . **Laplace transformation**
 transformations (mathematics)
 . integral transformations
 . . **Laplace transformation**
 RT differential equations
 operators (mathematics)

lapse rate

DEF The decrease of an atmospheric variable with height, the variable being temperature, unless otherwise specified. The term applies ambiguously to the environmental lapse rate and the process lapse rate, and the meaning must often be ascertained from the context.

RT humidity
 temperature
 temperature inversions
 tephigrams

LARA aircraft

USE **COIN aircraft**

large aperture seismic array

GS arrays
 . **large aperture seismic array**
 RT Earth movements
 earthquakes
 measuring instruments
 seismic waves
 seismology

Large Area Crop Inventory Experiment

RT agriculture
 agrophysical units
 crop growth
 crop inventories
 ∞ crops
 Earth resources
 Earth Resources Program
 farm crops

inventories

Large Deployable Reflector

(added September 1988)
 UF *LDR (telescope)*
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . **Large Deployable Reflector**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **Large Deployable Reflector**
 telescopes
 . infrared telescopes
 . . **Large Deployable Reflector**
 . reflecting telescopes
 . . **Large Deployable Reflector**
 . spaceborne telescopes
 . . **Large Deployable Reflector**
 RT infrared astronomy
 large space structures
 reflectors
 space erectable structures
 submillimeter waves

large eddy simulation

(added October 1997)
 UF *LES (mathematics)*
 GS simulation
 . **large eddy simulation**
 RT atmospheric models
 computational fluid dynamics
 dynamic models
 eddy viscosity
 mathematical models
 Navier-Stokes equation
 Reynolds averaging
 turbulence models
 turbulent flow
 vortices

Large Infrared Telescope on Spacelab

USE **LIRTS (telescope)**

large scale integration

UF *LSI*
 GS circuits
 . integrated circuits
 . . **large scale integration**
 microelectronics
 . **large scale integration**
 RT application specific integrated circuits
 chips (electronics)
 DTL integrated circuits
 electronic packaging
 linear integrated circuits
 medium scale integration
 microminiaturization
 microprocessors
 molecular electronics
 printed circuits
 systems-on-a-chip
 TTL integrated circuits
 very large scale integration
 VHSIC (circuits)

large space structures

RT Columbus space station
 continuum modeling
 expandable structures
 flexible spacecraft
 hoop column antennas
 Integrated Truss Structure P1
 Integrated Truss Structure S1
 International Space Station
 intraorbit transfer vehicles
 Large Deployable Reflector
 laser gyroscopes
 maypole antennas
 megamechanics
 orbital servicing
 orbital space tests
 self shadowing
 shape control
 smart structures
 solar power satellites
 space erectable structures
 Space Operations Center (NASA)
 Space Station Freedom

large-scale structure of the universe

- space station structures
- space stations
- space technology experiments
- spacecraft structures
- ∞ structures

Large Space Telescope

USE **Hubble Space Telescope**

large-scale structure of the universe

(added May 2002)

DEF Distribution of matter in the universe at the largest scale including the distribution of galactic clusters and superclusters.

UF *LSS (cosmology)*

RT big bang cosmology
cosmology
dark matter
galactic clusters
galactic evolution
missing mass (astrophysics)
relic radiation
string theory
universe

LARGOS satellite

GS artificial satellites
. geodetic satellites
. . . **LARGOS satellite**
RT Explorer 29 satellite
Explorer 36 satellite
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite

Larissa

(added July 1995)

DEF A natural satellite of Neptune, orbiting at a mean distance of 73,600 kilometers.

GS celestial bodies
. natural satellites
. . Neptune satellites
. . . **Larissa**
RT Neptune (planet)

Larmor precession

GS gyration
. precession
. . **Larmor precession**
RT cyclotron frequency
cyclotron radiation

Larmor radius

DEF For a charged particle moving transversely in a uniform magnetic field, the radius of curvature of the projection of its path on a plane perpendicular to the field. Named after the English mathematician Sir Joseph Larmor (1857-1942).

GS dimensions
. radii
. . **Larmor radius**
geometry
. Euclidean geometry
. . radii
. . . **Larmor radius**
RT cyclotron radiation
gyromagnetism
plasma physics
precession

larvae

GS **larvae**
. bollworms
. silkworms
RT animals
arthropods
infestation
insects
invertebrates
pupa
worms

larynx

GS anatomy
. respiratory system
. . **larynx**
. . . glottis
. . . vocal cords

RT cartilage

laser ablation

(added February 1992)

GS ablation
. **laser ablation**
utilization
. laser applications
. . **laser ablation**
RT laser annealing
laser beams
laser damage
laser drilling
laser heating
laser plasmas
laser target interactions
laser welding
nanostructure growth

laser altimeters

GS measuring instruments
. distance measuring equipment
. . altimeters
. . . **laser altimeters**
RT aircraft instruments
altitude control
Ice, Cloud and Land Elevation
Satellite
∞ instruments
lasers
optical radar
satellite instruments
spacecraft instruments

laser anemometers

DEF Measuring instruments in which the wind being measured passes through two perpendicular light beams and the resulting change in velocity of one or both beams is measured.

GS measuring instruments
. anemometers
. . **laser anemometers**
RT flow velocity
velocity measurement

laser annealing

DEF Rapid heating of metals and/or alloys with the use of lasers.

GS heat treatment
. annealing
. . **laser annealing**
utilization
. laser applications
. . **laser annealing**
RT heating
laser ablation
laser cutting
lasers
normalizing (heat treatment)
recrystallization
simulated annealing
tempering

laser applications

GS utilization
. **laser applications**
. . laser ablation
. . laser annealing
. . laser cooling
. . laser cutting
. . laser deposition
. . . pulsed laser deposition
. . laser drilling
. . laser fusion
. . laser guidance
. . laser guide stars
. . laser heating
. . laser induced fluorescence
. . laser interferometry
. . laser machining
. . laser microscopy
. . laser power beaming
. . laser propulsion
. . laser spectroscopy
. . . optogalvanic spectroscopy
. . laser ranging
. . laser weapons
. . laser welding
. . . satellite laser ranging
RT airborne lasers

data transmission
hole burning
laser-induced breakdown
spectroscopy
metal working
optical data storage materials
optical disks
optical radar
optical relay systems
photoacoustic spectroscopy
plasmadynamic lasers
production engineering
quantum electronics
rapid ballistics identification
spaceborne lasers
speckle holography
speckle interferometry
technology utilization
ultrashort pulsed lasers

laser arrays

(added January 1991)

DEF A group of laser emitters arranged to give a desired combined output.

GS arrays
. **laser arrays**
RT coupled modes
far fields
laser beams
laser modes
laser outputs
lasers
linear arrays
near fields
optical coupling
phased arrays
semiconductor lasers
stimulated emission devices
surface emitting lasers

laser beam defocusing

USE **thermal blooming**

laser beams

(added September 1988)

SN (LIMITED TO THE TRANSMISSION AND INTERACTIONS OF LASER RADIATION; FOR THE QUANTITATIVE AND QUALITATIVE CHARACTERISTICS OF THE RADIATION PRODUCED BY A LASER USE 'LASER OUTPUTS')
UF *laser radiation*
GS beams (radiation)
. light beams
. . **laser beams**
coherent radiation
. coherent electromagnetic radiation
. . **laser beams**
electromagnetic radiation
. coherent electromagnetic radiation
. . **laser beams**
. light beams
. . **laser beams**
RT beam steering
beamforming
four-wave mixing
free-space optical communication
holographic optical elements
laser ablation
laser arrays
thermal lensing

laser cavities

UF *optical generators*
GS cavities
. **laser cavities**
RT amplifiers
laser stability
lasers
light amplifiers
∞ optics
pulse generators
semiconductor lasers
solid state devices
solid state lasers
stimulated emission devices

laser communication

USE **optical communication**

laser cooling

(added March 1995)

SN ((COOLING OF ATOMIC PARTICLES BY LASERS, NOT COOLING OF LASERS))
 GS cooling
 . **laser cooling**
 utilization
 . laser applications
 . . **laser cooling**
 RT atom optics
 atomic energy levels
 optical pumping
 Penning effect
 quenching (atomic physics)
 trapped particles

laser cutting

DEF The cutting of material by means of lasers.
 GS cutting
 . **laser cutting**
 utilization
 . laser applications
 . . **laser cutting**
 RT blanking (cutting)
 cutters
 focusing
 forming techniques
 laser annealing
 laser drilling
 laser heating
 laser machining
 laser outputs
 laser target interactions
 machining
 ∞ materials science
 metal cutting
 micromachining
 splitting
 thermal blooming

laser damage

GS damage
 . radiation damage
 . . **laser damage**
 radiation effects
 . radiation damage
 . . **laser damage**
 RT burns (injuries)
 laser ablation
 pulsed radiation
 radiation hazards

laser deposition

(added December 1992)
 GS deposition
 . **laser deposition**
 . . pulsed laser deposition
 utilization
 . laser applications
 . . **laser deposition**
 . . . pulsed laser deposition
 RT crystal growth
 epitaxy
 excimer lasers
 laser heating
 nanostructure growth
 superconducting films
 vapor deposition

laser diodes

USE **semiconductor lasers**

laser doppler velocimeters

GS measuring instruments
 . **laser doppler velocimeters**
 optical equipment
 . **laser doppler velocimeters**
 RT flow measurement
 nonintrusive measurement
 optical measuring instruments
 particle image velocimetry
 velocity measurement

laser drilling

GS drilling
 . **laser drilling**
 utilization
 . laser applications
 . . **laser drilling**
 RT focusing
 laser ablation

laser cutting
 micromachining

laser fusion

GS utilization
 . laser applications
 . . **laser fusion**
 RT aspheric optics
 ∞ fusion
 glass lasers
 high power lasers
 inertial fusion (reactor)
 Nova Laser System
 plasmas (physics)
 Shiva laser system

Laser Geodynamic Satellite
 USE **LAGEOS (satellite)**

laser guidance

DEF Guidance system for rockets or projectiles, utilizing a laser beam for a precise trajectory to a designated target.
 GS guidance (motion)
 . terminal guidance
 . . **laser guidance**
 utilization
 . laser applications
 . . **laser guidance**
 RT computer programs
 homing devices
 impact prediction
 laser guide stars
 missile control

laser guide stars

(added November 1994)
 DEF Use of a laser to excite either Rayleigh backscattering or the mesospheric sodium layer to create artificial references for adaptive optics.
 GS utilization
 . laser applications
 . . **laser guide stars**
 RT adaptive optics
 celestial reference systems
 image processing
 instrument compensation
 laser guidance
 reference stars
 star trackers

laser gyroscopes

DEF Ring-laser angular rotation sensors for stabilizing and controlling large space structures, for space vehicle guidance, etc.
 GS gyroscopes
 . **laser gyroscopes**
 RT large space structures
 optical gyroscopes
 Sagnac effect
 ∞ sensors
 spacecraft guidance
 stabilization
 Titan 4B launch vehicle

laser heating

GS heating
 . **laser heating**
 utilization
 . laser applications
 . . **laser heating**
 RT heat sources
 laser ablation
 laser cutting
 laser deposition
 pulse heating
 pulsed laser deposition
 pulsed lasers
 thermal blooming
 YAG lasers

laser induced fluorescence

DEF Emission of electromagnetic radiation that is caused by the flow of laser radiation into the emitting body and which ceases abruptly with the excitation. Used for LIF (fluorescence).
 UF *LIF (fluorescence)*
 GS emission
 . light emission
 . . luminescence

. . . fluorescence
 . . . **laser induced fluorescence**
 utilization
 . laser applications
 . . **laser induced fluorescence**
 RT electromagnetic absorption
 excitation
 extinction
 irradiation
 laser outputs
 laser spectroscopy
 Mossbauer effect
 phosphors
 photoionization
 photoluminescence
 plasma radiation

Laser Interferometer Gravitational-Wave Observatory
 (added December 2000)
 USE **LIGO (observatory)**

Laser Interferometer Space Antenna
 (added December 2000)
 USE **LISA (observatory)**

laser interferometry

DEF The design and use of interferometers in which a laser is the light source. The monochromaticity and brilliance of the laser light enables the differentiation between interfering beams of hundreds of meters, in contrast to a maximum of 20 centimeters for the classical interferometers.
 GS interferometry
 . **laser interferometry**
 utilization
 . laser applications
 . . **laser interferometry**
 RT LIGO (observatory)
 LISA (observatory)
 Sagnac effect

laser machining

(added June 1995)
 UF *laser micromachining*
 GS machining
 . **laser machining**
 utilization
 . laser applications
 . . **laser machining**
 RT laser cutting
 metal working

laser materials

RT alexandrite
 fiber lasers
 gadolinium-gallium garnet
 maser materials
 ∞ materials
 metal vapor lasers
 quantum well lasers
 rhodamine
 sulfur hexafluoride
 xenon chloride lasers
 xenon fluoride lasers
 YAG lasers

laser micromachining

USE **laser machining**

laser microscopy

DEF The application of a laser microscope having a ceramic tube in which a metal vapor is formed at 1600 degrees C. Copper (or other metal atoms) are excited and amplify light so that, when used with a projection microscope, the object to be magnified is illuminated. The power of the emitted beam on the screen remains constant.
 GS microscopy
 . **laser microscopy**
 utilization
 . laser applications
 . . **laser microscopy**
 RT electro-optics
 light amplifiers
 metal vapor lasers

laser mode locking

microelectronics

laser mode locking

- GS locking
 - . **laser mode locking**
- RT injection locking
- lasers
- optical coupling

laser modes

- GS modes
 - . **laser modes**
- RT axial modes
- field mode theory
- helium-neon lasers
- laser arrays
- laser stability
- optical resonators
- TEA lasers
- waveguide lasers
- wavelengths

laser outputs

- SN (LIMITED TO THE QUANTITATIVE AND QUALITATIVE CHARACTERISTICS OF THE RADIATION PRODUCED BY A LASER; FOR THE TRANSMISSION AND INTERACTIONS OF LASER RADIATION USE 'LASER BEAMS')
- GS output
 - . **laser outputs**
- RT atmospheric lasers
- ∞ coherence
- coherent light
- diffraction radiation
- distributed feedback lasers
- dye lasers
- excimer lasers
- frequency pulling
- gasdynamic lasers
- glass lasers
- helium-neon lasers
- high power lasers
- holographic interferometry
- laser arrays
- laser cutting
- laser induced fluorescence
- laser stability
- maser outputs
- Nova Laser System
- optical resonators
- optical waveguides
- phase matching
- photon beams
- picosecond pulses
- pulse duration
- quantum efficiency
- radiant flux density
- Shiva laser system
- speckle patterns
- thermal blooming
- tube lasers
- two-wavelength lasers
- ultraviolet lasers
- volumetric efficiency
- waveguide lasers
- wavelengths
- x ray lasers
- xenon chloride lasers
- xenon fluoride lasers
- YAG lasers

laser plasma interactions

- DEF The results of the actions of laser beams on electrically ducting fluids, such as plasmas or ionized gases.
- GS electromagnetic interactions
 - . plasma-electromagnetic interaction
 - . . **laser plasma interactions**
 - plasma interactions
 - . plasma-electromagnetic interaction
 - . . **laser plasma interactions**
- RT backscattering
- electromagnetic coupling
- glass lasers
- ∞ interactions
- plasmas (physics)
- theta pinch

laser plasmas

- SN (EXCLUDES LASER OUTPUTS)

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **laser plasmas**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **laser plasmas**
- RT inertial fusion (reactor)
- laser ablation
- laser-induced breakdown
- spectroscopy
- lasers

laser power beaming

- (added November 1989)
- DEF Space-to-Earth power transmission utilizing a laser.
- UF *power transmission (lasers)*
- GS power beaming
 - . **laser power beaming**
 - utilization
 - . laser applications
 - . . **laser power beaming**
- RT energy conversion
- laser propulsion
- microwave power beaming
- microwave transmission
- satellite power transmission
- spacecraft power supplies

laser propulsion

- DEF The use of high power lasers for aircraft, rocket, or spacecraft propulsion by indirect conversion of laser heated propellants or working fluids to produce thrust; direct thrust generation with laser light pressure on the vehicle; direct conversion of laser energy into electricity for propulsion.
- GS propulsion
 - . electric propulsion
 - . . **laser propulsion**
 - . low thrust propulsion
 - . . photonic propulsion
 - . . . **laser propulsion**
 - . spacecraft propulsion
 - . . photonic propulsion
 - . . . **laser propulsion**
 - utilization
 - . laser applications
 - . . **laser propulsion**
- RT aircraft engines
- hybrid propulsion
- laser power beaming
- optical pumping
- power beaming
- propulsion system configurations
- propulsive efficiency
- Rankine cycle
- rocket engines
- spacecraft propulsion
- thermodynamic cycles

laser pumping

- DEF The application of a laser beam of appropriate frequency to a laser medium so that absorption of the radiation increases the population of atoms or molecules in higher energy states.
- GS optical pumping
 - . **laser pumping**
- RT fiber lasers
- lasers
- maser pumping
- ∞ pumping
- rare gas-halide lasers
- solar-pumped lasers
- stimulated emission devices
- wiggler magnets

laser radar

- USE **optical radar**

laser radiation

- USE **laser beams**

laser range finders

- GS measuring instruments
- . distance measuring equipment

- . . range finders
- . . . optical range finders
- **laser range finders**
- . optical measuring instruments
- . . optical range finders
- . . . **laser range finders**
- optical equipment
- . optical measuring instruments
- . . optical range finders
- . . . **laser range finders**
- RT LAGEOS (satellite)
- laser ranging
- lunar rangefinding
- lunar retroreflectors
- navigation aids
- navigation instruments
- satellite laser ranging

laser rangefinding

- (added July 2001)
- USE **laser ranging**

laser ranger/tracker

- RT airborne lasers
- range finders
- rangefinding
- tracking (position)

laser ranging

- (added July 2001)
- DEF A technique for determining the distance to a target by measuring the absolute time-of-flight of a laser pulse traveling from a transmitter to a reflector on the target and back to a detector at the transmission site.

- UF *laser rangefinding*
- LLR (*ranging*)
- lunar laser ranging

- GS rangefinding
 - . **laser ranging**
 - . . satellite laser ranging
 - utilization
 - . laser applications
 - . . **laser ranging**
 - . . . satellite laser ranging
- RT laser range finders
- lunar rangefinding
- retroreflection
- retroreflectors

laser spark spectroscopy

- (added June 2001)
- USE **laser-induced breakdown spectroscopy**

laser spectrometers

- DEF Spectrometers that use a laser.
- GS measuring instruments
- . spectrometers
- . . **laser spectrometers**
- RT absorption spectra
- infrared spectroscopy
- laser spectroscopy

laser spectroscopy

- DEF The use of lasers for spectroscopic analysis; particularly in Raman spectroscopy.
- GS spectroscopy
 - . optical emission spectroscopy
 - . . **laser spectroscopy**
 - . . . optogalvanic spectroscopy
 - utilization
 - . laser applications
 - . . **laser spectroscopy**
 - . . . optogalvanic spectroscopy
- RT chemical analysis
- laser induced fluorescence
- laser spectrometers
- laser-induced breakdown spectroscopy
- photoacoustic spectroscopy
- spectroscopic analysis
- spectrum analysis

laser stability

- DEF Characteristic of a laser beam free from oscillations.
- GS stability
 - . **laser stability**
- RT continuous wave lasers

- frequency pulling
- frequency stability
- laser cavities
- laser modes
- laser outputs

laser target designators

DEF Laser equipment aboard spacecraft for identifying satellites, missiles, and objects in space.

RT ∞ detectors

- missile tracking
- satellite tracking
- target recognition
- targets

laser target interactions

DEF Interactions where lasers are used to produce heating, fusion, or damage in targets.

RT ∞ interactions

- laser ablation
- laser cutting
- lasers
- pulsed lasers
- targets

laser targets

DEF Objects subjected to laser radiation, especially for laser fusion applications.

GS targets

- . laser targets

RT glass lasers

- lasers

laser weapons

DEF Military applications of high power lasers (mainly gasdynamic and chemical mixing lasers).

GS utilization

- . laser applications
- . . laser weapons
- weapon systems
- . laser weapons
- weapons
- . laser weapons

RT fusion weapons

- lasers
- military technology
- space weapons
- stimulated emission devices

laser welding

DEF Microspot welding with a laser beam.

GS utilization

- . laser applications
- . . laser welding
- welding
- . fusion welding
- . . laser welding

RT bonding

- heating
- laser ablation
- pulsed lasers
- soldering

laser windows

GS windows (intervals)

- . laser windows

RT bandwidth

- energy bands
- lasers

laser-induced breakdown spectroscopy

(added June 2001)

DEF A non-intrusive, spectroscopic technique wherein a laser pulse is focused on the target sample to form a laser spark or plasma. The emitted light from the spark is then used to identify elemental constituents and quantify abundances of measured species.

UF laser spark spectroscopy

- LASS (spectroscopy)
- LIBS (spectroscopy)

GS spectroscopy

- . laser-induced breakdown spectroscopy

RT absorption spectroscopy

- emission spectra
- laser applications
- laser plasmas

- laser spectroscopy
- plasma diagnostics
- Raman spectroscopy
- spectroscopic analysis

lasers

DEF Devices for producing light by emission of energy stored in a molecular or atomic system when stimulated by light or an electric discharge. (From Light Amplification by Stimulated Emission of Radiation.) Used for Fabry-Perot lasers, natural lasers, and optical masers.

UF Fabry-Perot lasers

- natural lasers
- optical masers

GS stimulated emission devices

. lasers

- . . airborne lasers
- . . argon lasers
- . . atmospheric lasers
- . . carbon lasers
- . . chemical lasers
- . . . HCL lasers
- HCL argon lasers
- . . . chemical oxygen-iodine lasers
- . . continuous wave lasers
- . . distributed feedback lasers
- . . free electron lasers
- . . gamma ray lasers
- . . gas lasers
- . . . carbon dioxide lasers
- . . . carbon monoxide lasers
- . . . DF lasers
- . . . excimer lasers
- . . . HCL lasers
- HCL argon lasers
- . . . HCN lasers
- . . . helium-neon lasers
- . . . HF lasers
- . . . nitrogen lasers
- . . . rare gas-halide lasers
- krypton fluoride lasers
- xenon chloride lasers
- xenon fluoride lasers
- . . . TEA lasers
- . . . ultraviolet lasers
- . . gasdynamic lasers
- . . glass lasers
- . . high power lasers
- . . . Nova Laser System
- . . . Shiva laser system
- . . infrared lasers
- . . injection lasers
- . . . quantum cascade lasers
- . . iodine lasers
- . . chemical oxygen-iodine lasers
- . . liquid lasers
- . . metal vapor lasers
- . . neodymium lasers
- . . nuclear pumped lasers
- . . organic lasers
- . . . dye lasers
- . . plasmadynamic lasers
- . . pulsed lasers
- . . . Q switched lasers
- . . . ultrashort pulsed lasers
- . . . ultraviolet lasers
- . . Raman lasers
- . . ring lasers
- . . semiconductor lasers
- . . . aluminum gallium arsenide lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . YLF lasers
- . . solar-pumped lasers
- . . solid state lasers
- . . . aluminum gallium arsenide lasers
- . . . DBR lasers
- . . . fiber lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . ruby lasers
- . . . YAG lasers
- . . . YLF lasers
- . . spaceborne lasers
- . . surface emitting lasers
- . . tunable lasers

- . . two-wavelength lasers
- . . waveguide lasers
- . . . fiber lasers
- . . x ray lasers

RT alkali vapor lamps

- amplifiers
- beam switching

∞ coherence

- coherent electromagnetic radiation
- coherent light
- electron pumping
- gadolinium-gallium garnet garnets
- hole burning
- holography
- infrared windows
- interplanetary communication
- interstellar masers
- Kerr electrooptical effect
- laser altimeters
- laser annealing
- laser arrays
- laser cavities
- laser mode locking
- laser plasmas
- laser pumping
- laser target interactions
- laser targets
- laser weapons
- laser windows
- lasing
- light amplifiers
- light modulation
- light sources
- light transmission
- lunar communication
- masers
- microballoons
- molecular oscillators
- nuclear pumping
- optical communication
- optical data processing
- optical memory (data storage)
- optical pumping
- optical resonators

∞ optics

- phase matching
- photodiodes
- photonics
- pulse generators
- pulsed radiation
- quantum amplifiers
- quantum electronics
- rapid ballistics identification
- Senarmont polariscopes
- solid state devices
- space communication
- stimulated emission
- thermal blooming
- threshold currents
- transient oscillations
- traveling wave modulation

lasing

DEF Generation of visible or IR light waves having very nearly a single frequency by pumping or exciting electrons into high energy states in a stimulated emission device (laser).

RT distributed feedback lasers

- electron transitions
- excimer lasers
- hole burning
- krypton fluoride lasers
- lasers
- nitrogen lasers
- optical transition
- rare gas-halide lasers
- stimulated emission devices
- surface emitting lasers

LASS (spectroscopy)

(added June 2001)

USE laser-induced breakdown spectroscopy

LASV

USE F-111 aircraft

latches

latches

DEF Devices that fasten one thing to another, as a rocket to a launcher, but are subject to ready release so that things may be separated.

RT fasteners
holders
linkages
pins

latch-up

DEF A p-n-p-n self-sustaining low impedance state which is a type of electronic malfunction.

RT CMOS
electrical impedance
integrated circuits
p-n-p-n junctions
switching circuits

late stars

GS celestial bodies
. stars
. . . **late stars**
. . . . cool stars
. . . . carbon stars
. . . . flare stars
. . . . K stars
. . . . M stars
. Van Biesbroeck star
. . . . Mira variables
. Omicron Ceti star
. . . . S stars

RT asymptotic giant branch stars
dwarf stars
early stars
giant stars
main sequence stars
red dwarf stars
red giant stars
stellar evolution
subgiant stars

lateness

RT delay
scheduling

latent heat

DEF The unit quantity of heat required for isothermal change in a state of a unit mass of matter. Latent heat is termed heat of fusion, heat of sublimation, heat of vaporization, depending on the change of state involved.

GS chemical properties
. thermochemical properties
. . . **latent heat**
. . . . heat of fusion
. . . . heat of vaporization
heat
. enthalpy
. . . **latent heat**
. . . . heat of fusion
. . . . heat of vaporization
thermodynamic properties
. enthalpy
. . . **latent heat**
. . . . heat of fusion
. . . . heat of vaporization
. thermochemical properties
. . . **latent heat**
. . . . heat of fusion
. . . . heat of vaporization
. thermophysical properties
. . . **latent heat**
. . . . heat of fusion
. . . . heat of vaporization

latent heat of fusion

USE **heat of fusion**

lateral control

UF *lateralization*
roll control

GS attitude control
. **lateral control**

RT ailerons
aircraft control
altitude control
automatic control
∞ control

directional control
elevons
helicopter control
longitudinal control
manual control
missile control
roll
satellite attitude control
satellite control

lateral oscillation

UF *snaking*

RT directional stability
roll
stability augmentation
transverse oscillation
turning flight
wing rock
yaw
yawing moments

lateral stability

UF *dihedral effect*
laterality

GS dynamic characteristics
. dynamic stability
. . . motion stability
. . . . attitude stability
. **lateral stability**
stability
. dynamic stability
. . . motion stability
. . . . attitude stability
. **lateral stability**

RT aerodynamic stability
aircraft stability
dihedral angle
directional stability
flow stability
handedness
hovering stability
longitudinal stability
roll
rolling moments
rotary stability
spacecraft stability
turning flight
vertical orientation

laterality

USE **lateral stability**

lateralization

USE **lateral control**

laterites

GS soils
. **laterites**

RT decomposition
rocks
tropical regions
water

latex

RT acrylic resins
elastomers
rubber
synthetic rubbers

lathes

GS tools
. machine tools
. . . **lathes**
. . . . turret lathes

RT ∞ construction materials
grinding machines

Latin square method

DEF In mathematics, the use of an $n \times n$ square array of n different symbols, each symbol appearing once in each row and once in each column.

RT ∞ mathematics
∞ methodology
∞ variable

latitude

DEF Angular distance from a primary great circle or plane.

GS **latitude**

. geomagnetic latitude
RT coordinates
geodetic coordinates
longitude
position (location)

latitude measurement

RT longitude measurement
∞ measurement
navigation
positioning

lattice energy

(added March 2002)

DEF A measure of the stability of a crystal lattice, given by the energy that would be released in bringing constituent ions from an infinite distance apart to their locations in a stable lattice.

RT binding energy
crystal lattices
∞ energy
interatomic forces
ionic crystals
lattice parameters
lattice vibrations

lattice imperfections

USE **crystal defects**

lattice parameters

GS independent variables
. **lattice parameters**

RT crystal lattices
crystallography
lattice energy
Patterson map
superlattices
x ray analysis

lattice vibrations

GS vibration
. **lattice vibrations**

RT crystal defects
crystal lattices
forbidden bands
lattice energy
particle motion
phonons
random vibration
spin-lattice relaxation
thermal energy

∞ lattices

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT crystal lattices
lattices (mathematics)

lattices (mathematics)

UF *sublattices*

GS mathematical logic
. **lattices (mathematics)**
. . . Boolean algebra
. . . . Boolean functions

RT communication theory
Kakutani theorem
∞ lattices
∞ mathematics
∞ matrices
set theory
vortex lattice method

Latvia

GS nations
. **Latvia**

RT Baltic sea
Europe

Laue method

GS x ray analysis
. **Laue method**

RT crystal lattices
crystallography
diffraction
∞ methodology
x ray diffraction

laughing

RT emotions

human reactions

launch clouds

USE **exhaust clouds**

launch complexes

USE **launching bases**

launch costs

(added December 1995)

GS costs

. **launch costs**

RT cost reduction
financial management
launch vehicles
spacecraft launching

launch dates

RT launching
spacecraft launching
time
turnaround (STS)

launch escape systems

UF *LES (escape systems)*

GS escape systems

. **launch escape systems**

RT escape capsules
escape rockets
∞ systems

launch time

USE **launch windows**

launch vehicle configurations

RT Advanced Launch System (STS)
aerodynamic configurations
∞ configurations
HOTOL launch vehicle
missile configurations
propulsion system configurations
recoverable launch vehicles
spacecraft configurations

launch vehicles

DEF Rockets or other vehicles used to transport satellites, space probes, or other payloads from the Earth (or other terrestrial surfaces) to space.

UF *carrier rockets*

GS **launch vehicles**

- . Ablestar launch vehicle
- . Ariane launch vehicle
- . . Ariane 4 launch vehicle
- . . Ariane 5 launch vehicle
- . Atlas launch vehicles
- . . Atlas Able 5 launch vehicle
- . . Atlas Agena B launch vehicle
- . . Atlas Agena launch vehicles
- . . Atlas Centaur launch vehicle
- . . Atlas SLV-3 launch vehicle
- . Blue Scout rocket vehicle
- . Blue Streak launch vehicle
- . Centaur launch vehicle
- . . Atlas Centaur launch vehicle
- . Delta launch vehicle
- . . Delta 3 launch vehicle
- . . Delta 4 Heavy launch vehicle
- . . Delta 4 launch vehicle
- . Diamant launch vehicle
- . Eldo launch vehicle
- . Europa launch vehicles
- . . Europa 1 launch vehicle
- . . Europa 2 launch vehicle
- . . Europa 3 launch vehicle
- . . Europa 4 launch vehicle
- . heavy lift launch vehicles
- . . Ares 5 cargo launch vehicle
- . . Delta 4 Heavy launch vehicle
- . . Energiya launch vehicle
- . . Proton launch vehicle
- . Hyla-Star rocket vehicle
- . Juno launch vehicles
- . . Juno 1 launch vehicle
- . . Juno 2 launch vehicle
- . Little Joe 2 launch vehicle
- . Nomad launch vehicle
- . Nova launch vehicles
- . Pegasus air-launched booster
- . RAM B launch vehicle

- . recoverable launch vehicles
- . reusable launch vehicles
- . . single stage to orbit vehicles
- . . . Delta Clipper
- . . . HOTOL launch vehicle
- . . X-33 reusable launch vehicle
- . . X-34 reusable launch vehicle
- . Saturn launch vehicles
- . . Saturn 1 launch vehicles
- . . . Saturn 1 SA-1 launch vehicle
- . . . Saturn 1 SA-10 launch vehicle
- . . . Saturn 1 SA-2 launch vehicle
- . . . Saturn 1 SA-3 launch vehicle
- . . . Saturn 1 SA-4 launch vehicle
- . . . Saturn 1 SA-5 launch vehicle
- . . . Saturn 1 SA-6 launch vehicle
- . . . Saturn 1 SA-7 launch vehicle
- . . . Saturn 1 SA-8 launch vehicle
- . . . Saturn 1 SA-9 launch vehicle
- . . Saturn 1B launch vehicles
- . . Saturn 2 launch vehicles
- . . Saturn 5 launch vehicles
- . . Saturn D launch vehicle
- . Scout launch vehicle
- . Standard Launch Vehicles
- . . Atlas SLV-3 launch vehicle
- . . Standard Launch Vehicle 5
- . Thor launch vehicles
- . . Thor Able rocket vehicle
- . . Thor Agena launch vehicle
- . . Thor Delta launch vehicle
- . Thorad launch vehicles
- . . Thor Able rocket vehicle
- . . Thor Agena launch vehicle
- . . Thor Delta launch vehicle
- . Titan Centaur launch vehicle
- . Titan launch vehicles
- . . Titan 3 launch vehicle
- . . Titan 4 launch vehicle
- . . . Titan 4B launch vehicle
- . Ares 1 launch vehicle
- . Long March launch vehicles
- . vanguard 2 launch vehicle
- . Vega launch vehicle
- . Zenit launch vehicles
- . . Ares 1 first stage
- . . Ares 1 upper stage

RT Advanced Launch System (STS)
aerospace planes
booster rocket engines
∞ booster rockets
∞ boosters
Centaur project
exhaust clouds
flight test vehicles
Jupiter C rocket vehicle
Jupiter project
landing modules
launch costs
launchers
launching
missile launchers
missiles
multiengine vehicles
multistage rocket vehicles
National Launch Vehicle Program
rocket catapults
rocket engines
rocket launchers
rocket launching
rocket vehicles
∞ rockets
Saturn project
Scout project
Space Processing Applications
Rocket
∞ spacecraft
spacecraft launching
sustainer rocket engines
test vehicles
Titan project
∞ vehicles
Vernier engines
∞ winged vehicles

launch windows

DEF The postulated openings in the continuum of time or of space, through which a spacecraft or missile must be launched in order

to achieve a desired encounter, rendezvous, impact or the like. Used for launch time.

UF *launch time*

GS windows (intervals)

. **launch windows**

RT launching
rocket launching
spacecraft launching

launchers

DEF Specifically, structures or devices, often incorporating tubes, a group of tubes, or a set of tracks, from which self-propelled missiles are sent forth and by means of which the missiles usually are aimed or imparted initial guidance -- distinguished in this specific sense the catapult. Broadly, structures, machines, or devices, including catapults, by means of which airplanes, rockets, or the like are directed, hurled, or sent forth. Used for launching devices.

UF *launching devices*

GS **launchers**

- . aircraft launching devices
- . . JATO engines
- . catapults
- . . rocket catapults
- . gun launchers
- . hypervelocity launchers
- . missile launchers
- . . mobile missile launchers
- . rocket launchers
- . . rocket catapults

RT launch vehicles
launching
launching pads
launching sites
mass drivers
National Launch Vehicle Program
rocket launching
Titan project

launching

GS **launching**

- . air launching
- . rocket launching
- . . liftoff (launching)
- . . lunar launch
- . . orbital launching
- . sea launching
- . spacecraft launching
- . . liftoff (launching)

RT countdown
exhaust clouds
launch dates
launch vehicles
launch windows
launchers
missile launchers
National Launch Vehicle Program
prelaunch tests
rocket launchers
∞ shot
starting
Titan project

launching bases

DEF Areas such as Cape Kennedy or Vandenberg Air Force Base that have several launch sites. Used for launch complexes.

UF *launch complexes*

GS **launching bases**

. Cape Kennedy launch complex
RT ∞ facilities
ground support equipment

launching devices

USE **launchers**

launching pads

DEF The load-bearing base or platform from which a rocket vehicle is launched.

GS sites

- . launching sites
- . . **launching pads**

RT flame deflectors
gantry cranes
ground support equipment
launchers
liftoff (launching)

∞ pad

launching sites

- ∞ platforms
- spacecraft launching
- umbilical towers

launching sites

DEF Defined areas from which a rocket vehicle is launched, either, operationally or for test purposes; specifically, at Cape Kennedy or Vandenberg, any of the several areas equipped to launch a rocket.

- GS sites
 - . **launching sites**
 - . . launching pads
- RT exhaust clouds
 - gantry cranes
 - ground support equipment
 - launchers
 - missile launchers
 - missile silos
 - missiles
 - National Launch Vehicle Program
 - rocket catapults
 - rocket launchers

lava

DEF A general term for a molten extrusive; also, for the rock that is solidified from it.

- GS effusives
 - . **lava**
 - geophysical fluids
 - . **lava**
- RT aggregates
 - calderas
 - cones (volcanoes)
 - Earth resources
 - igneous rocks
 - magma
 - maria
 - Mars volcanoes
 - minerals
 - regolith
 - rhyolite
 - rocks
 - soils
 - volcanic eruptions
 - volcanoes
 - volcanology

Laval number

- GS dimensionless numbers
 - . **Laval number**
 - ratios
 - . **Laval number**

Laves phases

- (added August 1998)
- GS solid phases
 - . **Laves phases**
 - RT alloys
 - crystal lattices
 - crystal structure
 - cubic lattices
 - interstitials
 - microstructure
 - phase transformations

∞ law

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT claiming
 - law (jurisprudence)
 - laws

law (jurisprudence)

DEF A written rule or collection of rules for action or conduct binding upon the population of a community.

- UF *forensic sciences*
- statutes*
- GS **law (jurisprudence)**
 - . international law
 - . . air law
 - . . sea law
 - . . space law
 - . public law
 - . . liabilities
 - . . legal liability
 - . . penalties
- RT constitution
- crime

intellectual property

- ∞ law
- politics
- regulations
- voting

lawrencium

- GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . **lawrencium**
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - **lawrencium**
 - metals
 - . actinide series
 - . . transuranium elements
 - . . . **lawrencium**

laws

- GS **laws**
 - . Child-Langmuir law
 - . closure law
 - . Coffin-Manson law
 - . conservation laws
 - . Fourier law
 - . Hookes law
 - . Kepler laws
 - . Newton pressure law
 - . Newton second law
 - . Newton-Busemann law
 - . Ohms law
 - . radiation laws
 - . . Kirchhoff law of radiation
 - . . Stefan-Boltzmann law
 - . . Stokes law of radiation
 - . Biot-Savart law
 - . scaling laws
 - . similitude law
 - . Snells law
 - . Tafel law
 - . Weber-Fechner law
- RT ∞ law
- rules
- ∞ Stokes law

∞ layers

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *lamina*
- plies*
- RT anticlines
 - atmospheric boundary layer
 - barrier layers
 - boundary layers
 - coatings
 - deep scattering layers
 - Earth ionosphere
 - Ekman layer
 - flat layers
 - folds (geology)
 - formations
 - geosynclines
 - intercalation
 - interlayers
 - laminates
 - membranes
 - mixing layers (fluids)
 - monomolecular films
 - multilayer insulation
 - plasma layers
 - ply orientation
 - regions
 - sedimentary rocks
 - shear layers
 - shock layers
 - strata
 - stratification
 - substrates
 - surface layers
 - synclines
 - three dimensional boundary layer
 - turbulent boundary layer

layouts

- RT blueprints
- circuit diagrams

- construction
- descriptive geometry
- ∞ design
- ∞ drawing
- drawings
- engineering drawings
- models
- ∞ plans
- surveys

lay-up

DEF Production of reinforced plastics by positioning the reinforced material (such as glass) in the mold prior to impregnation with resin.

- RT aramid fibers
- carbon fiber reinforced plastics
- composite materials
- composite structures
- epoxy resins
- fiber orientation
- laminates
- reinforcing fibers
- stacking sequence (composite materials)

Lazarev meteorite

- GS celestial bodies
 - . meteorites
 - . . iron meteorites
 - . . . **Lazarev meteorite**
- RT stony meteorites

LC circuits

- GS circuits
 - . **LC circuits**
- RT inductance
 - network analysis
 - network synthesis
 - parametric amplifiers
 - RC circuits
 - RL circuits
 - RLC circuits
 - time constant

LCRE Reactor

- USE **Lithium Cooled Reactor Experiment**

LDEF

- USE **Long Duration Exposure Facility**

LDR (telescope)

- USE **Large Deployable Reflector**

leaching

- RT autoclaving
- beneficiation
- dissolving
- elution
- extraction
- flushing
- hydrometallurgy
- percolation
- permeability
- ∞ separation

lead (metal)

- GS chemical elements
 - . **lead (metal)**
 - . . lead isotopes
 - metals
 - . **lead (metal)**
 - . . lead isotopes
- RT heavy metals

lead acetates

- GS acetates
 - . **lead acetates**
 - esters
 - . **lead acetates**
 - lead compounds
 - . **lead acetates**
 - organic compounds
 - . lead organic compounds
 - . . **lead acetates**

lead acid batteries

DEF The common automobile batteries in which the electrodes are grids of metallic lead

containing lead oxides that change in composition during charging and discharging. The electrolyte generally is dilute sulfuric acid.

- GS electrochemical cells
 - . electric batteries
 - . . storage batteries
 - . . . **lead acid batteries**
- RT chemical auxiliary power units
 - ∞ electric cells
 - electrolytic cells
 - energy storage
 - nickel iron batteries
 - ∞ power supplies

lead alloys

- GS alloys
 - . **lead alloys**
- RT bearing alloys
 - indium alloys
 - solders

lead chlorides

- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **lead chlorides**
 - . halides
 - . . chlorides
 - . . . **lead chlorides**
 - . . metal halides
 - . . . **lead chlorides**
 - lead compounds
 - . **lead chlorides**

lead compounds

- UF *plumbane*
- GS **lead compounds**
 - . lead acetates
 - . lead chlorides
 - . lead molybdates
 - . lead oxides
 - . lead selenides
 - . lead sulfides
 - . lead tellurides
 - . lead titanates
 - . . lead zirconate titanates
 - . lead tungstates
- RT ∞ chemical compounds
 - ∞ Group 4A compounds
 - ∞ metal compounds

lead isotopes

- GS chemical elements
 - . lead (metal)
 - . . **lead isotopes**
 - . nuclides
 - . . isotopes
 - . . . **lead isotopes**
 - metals
 - . lead (metal)
 - . . **lead isotopes**

lead molybdates

- GS lead compounds
 - . **lead molybdates**
 - molybdenum compounds
 - . molybdates
 - . . **lead molybdates**

lead organic compounds

- GS organic compounds
 - . **lead organic compounds**
 - . . lead acetates
- RT ∞ chemical compounds
 - ∞ metal compounds

lead oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **lead oxides**
 - lead compounds
 - . **lead oxides**

lead poisoning

- GS diseases
 - . toxic diseases
 - . . **lead poisoning**
 - toxicity
 - . **lead poisoning**

- RT occupational diseases
 - ∞ poisoning
 - smog

lead selenides

- GS chalcogenides
 - . selenides
 - . . **lead selenides**
 - lead compounds
 - . **lead selenides**
 - selenium compounds
 - . selenides
 - . . **lead selenides**

lead sulfides

- GS chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . **lead sulfides**
 - lead compounds
 - . **lead sulfides**
 - sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . **lead sulfides**

lead tellurides

- GS chalcogenides
 - . tellurides
 - . . **lead tellurides**
 - lead compounds
 - . **lead tellurides**
 - tellurium compounds
 - . tellurides
 - . . **lead tellurides**

lead titanates

- GS lead compounds
 - . **lead titanates**
 - . . lead zirconate titanates
 - titanium compounds
 - . titanates
 - . . **lead titanates**
 - . . . lead zirconate titanates

lead tungstates

- GS lead compounds
 - . **lead tungstates**
 - tungsten compounds
 - . tungstates
 - . . **lead tungstates**

lead zirconate titanates

DEF Dense ceramics with high piezoelectric coefficients and a high relative permittivity.

- GS ceramics
 - . **lead zirconate titanates**
 - lead compounds
 - . lead titanates
 - . . **lead zirconate titanates**
 - titanium compounds
 - . titanates
 - . . lead titanates
 - . . . **lead zirconate titanates**
 - . . zirconium titanates
 - . . . **lead zirconate titanates**
 - zirconium compounds
 - . zirconium titanates
 - . . **lead zirconate titanates**
- RT ferroelectric materials
 - piezoelectric ceramics

leaders (meteorology)

- (added August 1999)
- GS electric current
 - . electric discharges
 - . . lightning
 - . . . **leaders (meteorology)**
 - stepped leaders

leadership

- RT morale
 - personnel management

leading edge flaps

DEF Control surfaces at the leading edges of airfoils. Hinged panels deflected downward to induce and control separation of the air flow.

- UF *Krueger flaps*
- GS airfoils

- . flaps (control surfaces)
- . . wing flaps
- . . . **leading edge flaps**
- brakes (for arresting motion)
- . aerodynamic brakes
- . . wing flaps
- . . . **leading edge flaps**
- aircraft brakes
- . . wing flaps
- . . . **leading edge flaps**
- control surfaces
- . flaps (control surfaces)
- . . wing flaps
- . . . **leading edge flaps**
- drag devices
- . aerodynamic brakes
- . . wing flaps
- . . . **leading edge flaps**
- aircraft structures
- vortex flaps
- ∞ winged vehicles
- wings

leading edge slats

- UF *wing slats*
- GS airfoils
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **leading edge slats**
 - brakes (for arresting motion)
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **leading edge slats**
 - aircraft brakes
 - . . wing flaps
 - . . . **leading edge slats**
 - control surfaces
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **leading edge slats**
 - drag devices
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **leading edge slats**
 - boundary layer control
 - split flaps
 - spoilers
 - trailing edge flaps
 - wing slots

leading edge sweep

- GS geometry
 - . Euclidean geometry
 - . . angles (geometry)
 - . . . sweep angle
 - sweepback
 - **leading edge sweep**

leading edge thrust

DEF The increase in lift produced by highly swept, low-aspect ratio wings which develop a strong separation vortex; however, an even larger increase in drag is produced.

- GS thrust
 - . **leading edge thrust**
- RT aerodynamic forces
 - airfoils
 - leading edges
 - lift
 - wing loading

leading edges

- GS edges
 - . **leading edges**
 - . . blunt leading edges
 - . . sharp leading edges
- RT airfoils
 - forebodies
 - leading edge thrust
 - thrust distribution
 - trailing edges
 - vortex flaps
 - wing rock

leaf area index

- GS ratios
 - . indexes (ratios)
 - . . vegetative index
 - . . . **leaf area index**
- RT canopies (vegetation)

leakage

crop identification
crop inventories
leaves
photosynthetically active radiation
remote sensing
spectral reflectance

leakage

RT brush seals
cavities
cracks
defects
∞ escape
fluid flow
intrusion
labyrinth seals
loss of coolant
losses
permeability
pinholes
porosity
∞ reduction
seepage
wastes

Lear jet aircraft

GS commercial aircraft
. **Lear jet aircraft**
jet aircraft
. **Lear jet aircraft**
RT ∞ aircraft

learning

GS **learning**
. astronaut training
. conditioning (learning)
. habituation (learning)
. maze learning
. transfer of training
RT achievement
aptitude
behavior
child device
deconditioning
education
educational resources
educational television
habits
instructors
knowledge
memory
motivation
reinforcement (psychology)
responses
retention (psychology)
students
teaching machines
textbooks
training analysis
training evaluation
universities

learning curves

RT asymptotic methods
∞ curves

learning machines

USE **machine learning**

learning theory

RT child device
education
problem solving
∞ theories

leasing

DEF Contracting for the use and possession of land, buildings, etc., for a specified time and fixed payments.
GS procurement
. **leasing**
RT contracts
land use
NASA programs
resources management
site selection

least squares method

DEF Any statistical procedure that involves minimizing the sum of squared differences.

GS analysis (mathematics)
. numerical analysis
. . . approximation
. . . **least squares method**
RT backpropagation (artificial intelligence)
correlation
curve fitting
Gauss-Markov theorem
mean square values
∞ methodology
optimization
parameter identification
quality control
regression analysis
simultaneous equations

leather

RT clothing
collagens
shoes
skin (anatomy)

leaves

RT brown wave effect
canopies (vegetation)
deciduous trees
defoliants
defoliation
foliage
green wave effect
herbicides
leaf area index
plant physiology
plants (botany)

Lebanon

GS nations
. **Lebanon**
RT Asia

Lebesgue theorem

GS analysis (mathematics)
. real variables
. . . measurement and integration
. . . **Lebesgue theorem**
theorems
. **Lebesgue theorem**
RT set theory

lectures

UF *speeches*
RT education
public speaking
speech
verbal communication

LED (diodes)

USE **light emitting diodes**

Leda

(*added January 1996*)
DEF A natural satellite of Jupiter orbiting at a mean distance of 11,094,000 kilometers.
GS celestial bodies
. natural satellites
. . . Jupiter satellites
. . . **Leda**
RT Jupiter (planet)

ledges

RT cliffs
rocks
topography

lee waves

DEF Internal waves occurring on the down-stream sides of submarine ridges.
RT air currents
barotropic flow
surface waves
tropospheric waves
vertical air currents

leg (anatomy)

GS anatomy
. limbs (anatomy)
. . . **leg (anatomy)**
. . . feet (anatomy)
. . . knee (anatomy)
. . . thigh

appendages
. **leg (anatomy)**
. . . feet (anatomy)
. . . knee (anatomy)
. . . thigh
RT femur
gait
tibia

legal liability

GS law (jurisprudence)
. public law
. . . liabilities
. . . **legal liability**
RT air law
contracts
insurance (contracts)
intellectual property
international law
judgments
losses
penalties
prohibition

Legendre code

USE **computer programming**
neutron scattering

Legendre functions

UF *Legendre polynomials*
Legendre transformation
GS analysis (mathematics)
. complex variables
. . . **Legendre functions**
functions (mathematics)
. **Legendre functions**
RT orthogonal functions
spherical harmonics

Legendre polynomials

USE **Legendre functions**

Legendre transformation

USE **Legendre functions**

legibility

RT character recognition
contrast
perception
printing
reading
resolution
symbols
visibility
vision

leguminous plants

GS farm crops
. **leguminous plants**
. . . soybeans
plants (botany)
. **leguminous plants**
. . . soybeans
RT agriculture
botany
Earth resources
∞ food
hay
nitrogenation
nodules
vegetables

Leidenfrost phenomenon

GS phase transformations
. vaporizing
. . . boiling
. . . nucleate boiling
. . . **Leidenfrost phenomenon**
RT film boiling
heat transfer

LEM (lunar module)

USE **Lunar Module**

lemmas

USE **theorems**

length

DEF The larger of the two dimensions of the open face.
GS dimensions

- . **length**
 - . . diffusion length
- RT distance
- RT thickness
- Lennard-Jones gas**
 - RT binary fluids
 - gas viscosity
 - Lennard-Jones potential
- Lennard-Jones potential**
 - RT computerized simulation
 - intermolecular forces
 - Lennard-Jones gas
 - molecular interactions
 - potential theory
- lens antennas**
 - GS antennas
 - . directional antennas
 - . . **lens antennas**
 - . radio antennas
 - . . microwave antennas
 - . . . **lens antennas**
 - microwave equipment
 - . microwave antennas
 - . . **lens antennas**
 - radio equipment
 - . radio antennas
 - . . microwave antennas
 - . . . **lens antennas**
 - RT antenna design
 - dipole antennas
 - horn antennas
 - lenses
 - multibeam antennas
 - radar antennas
 - waveguide antennas
 - wire grid lenses
- lens design**
 - RT antireflection coatings
 - aspheric optics
 - computer aided design
 - ∞ design
 - gradient index optics
 - lenses
 - optical correction procedure
 - ∞ optics
 - product development
 - stigmatism
 - zoom lenses
- lenses**
 - DEF Transparent optical elements, so constructed that they serve to change the degree of convergence of the transmitted rays.
 - GS **lenses**
 - . aspheric optics
 - . contact lenses
 - . Fresnel lenses
 - . gravitational lenses
 - . magnetic lenses
 - . wide angle lenses
 - . wire grid lenses
 - . zoom lenses
 - RT astigmatism
 - cameras
 - cataracts
 - circumsolar telescopes
 - eye (anatomy)
 - eyepieces
 - focusing
 - gradient index optics
 - integrated optics
 - lens antennas
 - lens design
 - magnification
 - numerical aperture
 - optical coatings
 - optical equipment
 - optical filters
 - optical materials
 - ∞ optics
 - panoramic cameras
 - photographic equipment
 - refracting telescopes
 - refraction
 - reticles
 - stigmatism
- streak cameras
- telescopes
- vignetting
- lenticular bodies**
 - GS symmetrical bodies
 - . **lenticular bodies**
 - RT axisymmetric bodies
 - ∞ bodies
 - convexity
- LEO**
 - USE **low Earth orbits**
- LEO environments**
 - USE **Earth orbital environments**
- Leonardo Logistics Module (ISS)**
 - (added April 2005)
 - USE **Multi-Purpose Logistics Modules**
- Leonid meteoroids**
 - GS celestial bodies
 - . meteoroid showers
 - . . **Leonid meteoroids**
 - . meteoroids
 - . . **Leonid meteoroids**
- leptons**
 - DEF In the classification of subatomic particles according to mass, the lightest of all particles; examples of leptons are the electron and positron.
 - GS particles
 - . elementary particles
 - . . fermions
 - . . . **leptons**
 - antineutrinos
 - electrons
 - conduction electrons
 - free electrons
 - high energy electrons
 - relativistic electron beams
 - hot electrons
 - N electrons
 - negatrons
 - photoelectrons
 - pi-electrons
 - polarons
 - solar electrons
 - muons
 - neutrinos
 - solar neutrinos
 - positrons
 - RT charged particles
 - charm (particle physics)
 - gluons
 - mesons
 - partons
 - quantum chromodynamics
 - quark parton model
- LES (escape systems)**
 - USE **launch escape systems**
- LES (mathematics)**
 - (added October 1997)
 - USE **large eddy simulation**
- LES (satellites)**
 - USE **Lincoln Experimental Satellites**
- LESA (lunar exploration system)**
 - USE **Lunar Exploration System for Apollo**
- lesions**
 - GS injuries
 - . **lesions**
 - . . pulmonary lesions
 - RT abrasion
 - burns (injuries)
- Lesotho**
 - GS nations
 - . **Lesotho**
 - RT Africa
 - Republic of South Africa
- Lesser Antilles**
 - GS landforms
 - . islands
 - . . West Indies
 - . . . **Lesser Antilles**
 - RT Atlantic Ocean
- lessons learned**
 - (added March 2008)
 - DEF Knowledge or understanding gained by experience. The lesson must be significant in that it has real or assumed impact on operations; valid in that it is factually and technically correct; and applicable in that it identifies a specific design, process, or decision that reduces or eliminates the potential for failures and mishaps, or reinforces a positive result.
 - GS knowledge
 - . **lessons learned**
 - RT accident investigation
 - accident prevention
 - accidents
 - documentation
 - experience
 - failure analysis
 - mission planning
 - quality control
 - reliability engineering
- lethality**
 - RT carbon monoxide poisoning
 - damage
 - destruction
- lethargy**
 - RT boredom
 - ∞ depression
 - detachment
 - frustration
 - human behavior
 - ∞ inhibition
 - monotony
- letters (symbols)**
 - USE **symbols**
- leucine**
 - GS acids
 - . amino acids
 - . . **leucine**
 - . . . norleucine
 - organic compounds
 - . amino acids
 - . . **leucine**
 - . . . norleucine
- leukemias**
 - GS diseases
 - . tumors
 - . . neoplasms
 - . . . cancer
 - **leukemias**
 - RT bone marrow
 - occupational diseases
- leukocytes**
 - UF *white blood cells*
 - GS cells (biology)
 - . blood cells
 - . . **leukocytes**
 - . . . eosinophils
 - . . . lymphocytes
 - . . . monocytes
 - . . . neutrophils
 - RT biocompatibility
 - blood cell count
 - bone marrow
 - erythrocytes
 - immune systems
 - interleukins
- leukopenia**
 - GS signs and symptoms
 - . **leukopenia**
 - RT infectious diseases
- ∞ **level**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT chemical energy
 - free energy
 - height

level (horizontal)

internal energy
level (horizontal)
level (quantity)

level (horizontal)

GS **level (horizontal)**

. liquid levels

RT ∞ grade

gradients

∞ level

slopes

level (quantity)

GS **level (quantity)**

. effective perceived noise levels

. energy levels

. . atomic energy levels

. . electron states

. . ground state

. . molecular energy levels

. . . intermolecular forces

. . . rotational states

. . . vibrational states

. . yrast state

RT

amplitudes

displacement

∞ flux

flux (rate)

flux density

∞ intensity

∞ level

loudness

magnitude

value

leveling

SN (EXCLUDES METAL WORKING)

RT

adjusting

consistency

datum (elevation)

flattening

metal working

∞ rolling

smoothing

winding

levers

RT

cantilever members

handles

knobs

∞ machinery

manual control

mechanical devices

pedals

levitation

GS **levitation**

. acoustic levitation

RT

buoyancy

electrostatic gyroscopes

flotation

frictionless environments

levitation melting

magnetic bearings

magnetic levitation vehicles

suspension systems (vehicles)

vacuum melting

levitation melting

DEF A metallurgical process in which a piece of metal placed above a coil carrying a high frequency current can be supported against gravity by the Lorentz force caused by the induced surface currents in the metal. At the same time, the heat produced by Joule dissipation melts the metal.

GS phase transformations

. melting

. . **levitation melting**

RT

electric current

external surface currents

levitation

liquid metals

low gravity manufacturing

magnetic suspension

∞ metallurgy

ohmic dissipation

resistance heating

space manufacturing

space processing

Lewis base

RT amines

electrons

Lewis numbers

GS dimensionless numbers

. **Lewis numbers**

ratios

. **Lewis numbers**

RT density (mass/volume)

diffusion coefficient

fluid flow

heat transfer

mass flow

mass transfer

specific heat

thermal conductivity

Lexan (trademark)

GS carbon compounds

. carbonates

. . polycarbonates

. . . **Lexan (trademark)**

esters

. polycarbonates

. . **Lexan (trademark)**

RT ∞ polymers

resins

LFA thrusters

(added April 2001)

USE **magnetoplasmadynamic thrusters**

LFO

USE **Landsat follow-on missions**

liabilities

GS law (jurisprudence)

. public law

. . **liabilities**

. . . legal liability

RT

air law

commerce

disciplining

losses

penalties

regulations

Liapunov functions

UF *Lyapunov functions*

GS analysis (mathematics)

. real variables

. . **Liapunov functions**

functions (mathematics)

. **Liapunov functions**

RT differential equations

Liberia

GS nations

. **Liberia**

RT Africa

libraries

RT bibliographies

catalogs (publications)

data retrieval

documentation

documents

information dissemination

information resources management

information retrieval

information systems

integrated library systems

interservice data exchange program

literature

museums

∞ reference systems

selective dissemination of information

textbooks

world data centers

libration

DEF A real or apparent oscillatory motion, particularly the apparent oscillation of the moon. Because of libration more than half of the moon's surface is revealed to an observer on the Earth even though the same side of the moon is always toward the Earth, because the moon's

periods of rotation and revolution are the same. Other motions regarded as librations are long period orbital motions and periodic perturbations in orbital elements.

RT Earth limb

Lissajous figures

lunar far side

lunar limb

∞ motion

nutiation

orbital resonances (celestial

mechanics)

precession

rotation

librational motion

RT Lagrange coordinates

∞ motion

nutiation

orbital resonances (celestial

mechanics)

LIBS (spectroscopy)

(added June 2001)

USE **laser-induced breakdown spectroscopy**

Libya

UF *Lybia*

GS nations

. **Libya**

RT Africa

Libyan desert

GS land

. deserts

. . **Libyan desert**

RT Africa

licensing

GS **licensing**

. open source licensing (computers)

RT

copyrights

intellectual property

patent applications

policies

regulations

lichens

GS plants (botany)

. **lichens**

RT

algae

fungi

lacunas

symbiosis

lidar

USE **optical radar**

lie groups

GS algebra

. **lie groups**

. . spinor groups

geometry

. differential geometry

. . **lie groups**

. . . spinor groups

RT

group theory

supergravity

supersymmetry

Liechtenstein

GS nations

. **Liechtenstein**

RT Europe

Lienard potential

GS potential energy

. electric potential

. . **Lienard potential**

RT

electric current

electric fields

lies

RT galvanic skin response

mental performance

LIF (fluorescence)

USE **laser induced fluorescence**

life (biology)

USE **life sciences**

life (durability)

UF *lifetime (durability)*

GS **life (durability)**

. carrier lifetime

. fatigue life

. half life

. plasma lifetime

. satellite lifetime

. service life

. storage stability

RT accelerated life tests

aircraft survivability

depletion

depreciation

durability

failure analysis

long term effects

∞ longevity

Mills ratio

MTBF

∞ resistance

retirement for cause

systems health monitoring

vulnerability

life cycle costs

DEF The sum of the acquisition costs and maintenance costs for the life of a system.

GS costs

. **life cycle costs**

RT concurrent engineering

cost analysis

cost effectiveness

design to cost

financial management

management planning

production costs

systems engineering

value engineering

life detectors

RT biomarkers

biosatellites

∞ detectors

extraterrestrial life

life rafts

GS rafts

. **life rafts**

RT floats

inflatable structures

lifeboats

life sciences

DEF A collective discipline encompassing biology, physiology, psychology, medicine, and sometimes sociology and other related areas. Used for life (biology).

UF *life (biology)*

GS **life sciences**

. extraterrestrial life

. molecular biology

RT abiogenesis

aging (biology)

biological evolution

∞ biology

chemical evolution

environmental engineering

neurology

∞ physical sciences

psychopharmacology

∞ science

life span

SN (LIMITED TO THE LIFE SCIENCES)

RT age factor

aging (biology)

death

existence

gerontology

∞ longevity

mortality

∞ span

life support systems

GS support systems

. **life support systems**

. . biopaks

. . closed ecological systems

. . emergency life sustaining systems

. . . AEPS

. . portable life support systems

. . . AEPS

. . . IMLSS

RT aerospace environments

air conditioning

artificial gravity

astronaut locomotion

∞ atmospheres

biosatellites

breathing apparatus

Chlorella

environmental engineering

environments

exobiology

extravehicular mobility units

human factors engineering

long term effects

lunar environment

lunar logistics

lunar shelters

manned maneuvering units

∞ nutrients

onboard equipment

oxygen masks

oxygen supply equipment

planetary environments

pressure suits

pressurized cabins

provisioning

rebreathing

Service Module (ISS)

space flight feeding

space habitats

spacecraft environments

survival

∞ sustaining

∞ systems

thermal environments

underwater breathing apparatus

vapor barrier clothing

ventilation

waste management

water

weightlessness

lifeboats

GS surface vehicles

. boats

. . **lifeboats**

water vehicles

. boats

. . **lifeboats**

RT Assured Crew Return Vehicle

life rafts

rafts

survival equipment

X-38 crew return vehicle

lifetime (durability)

USE **life (durability)**

lift

DEF That component of the total aerodynamic force acting on a body perpendicular to the undisturbed airflow relative to the body. To lift off, to take off in vertical ascent. Said of rocket vehicles. Used for aerodynamic lift, lift coefficients, lift distribution, lift forces, and variable lift.

UF *aerodynamic lift*

lift coefficients

lift distribution

lift forces

variable lift

GS aerodynamic characteristics

. **lift**

. . interference lift

. . jet lift

. . rotor lift

. . zero lift

aerodynamic forces

. **lift**

. . interference lift

. . jet lift

. . rotor lift

. . zero lift

dynamic characteristics

. **lift**

. . interference lift

. . jet lift

. . rotor lift

. . zero lift

RT aerodynamic coefficients

aerodynamic configurations

aerodynamic drag

aerodynamics

airfoils

angle of attack

aspect ratio

camber

distribution (property)

drag

externally blown flaps

gliding

ground effect (aerodynamics)

hypersonic forces

leading edge thrust

pressure distribution

sweep effect

under surface blowing

upper surface blowing

lift augmentation

RT boundary layer control

circulation control airfoils

downwash

peripheral jet flow

spanwise blowing

STOVL aircraft

tangential blowing

upper surface blown flaps

vortex flaps

lift coefficients

USE **aerodynamic coefficients**
lift

lift devices

UF *lifting surfaces*

RT boundary layer control

∞ devices

direct lift controls

drag devices

externally blown flaps

flaps (control surfaces)

magnetic levitation vehicles

slots

upper surface blown flaps

lift distribution

USE **force distribution**
lift

lift drag ratio

DEF The ratio of lift to drag obtained by dividing the lift by the drag or the lift coefficient by the drag coefficient. Used for drag balance.

UF *drag balance*

GS ratios

. **lift drag ratio**

RT aerodynamic balance

aerodynamic coefficients

aerodynamic drag

aerodynamic stalling

boundary layer separation

drag reduction

force distribution

pressure ratio

lift fans

UF *fanlift devices*

RT ducted fans

fan in wing aircraft

lifting rotors

propeller fans

rotary wings

short takeoff aircraft

turbofans

vertical takeoff aircraft

lifting bodies

- XV-11A aircraft
- lift forces*
- USE **lift**
- lifting bodies**
- UF *lifting surfaces*
- GS **lifting bodies**
 - . lifting reentry vehicles
 - . . FDL-5 reentry vehicle
 - . . HL-10 reentry vehicle
 - . . HLD-35 reentry vehicle
 - . . Janus spacecraft
 - . . M-2 lifting body
 - . . . M-2F2 lifting body
 - . . X-20 aircraft
 - . . X-24 aircraft
 - . M-2F3 lifting body
- RT aerodynamic configurations
 - airfoils
 - bluff bodies
- ∞ bodies
- ∞ devices
 - lunar flying vehicles
 - reentry vehicles
 - towed bodies
 - waveriders
- lifting reentry vehicles**
- UF *reentry gliders*
 - space gliders*
- GS **lifting bodies**
 - . **lifting reentry vehicles**
 - . . FDL-5 reentry vehicle
 - . . HL-10 reentry vehicle
 - . . HLD-35 reentry vehicle
 - . . Janus spacecraft
 - . . M-2 lifting body
 - . . . M-2F2 lifting body
 - . . X-20 aircraft
 - . . X-24 aircraft
- reentry vehicles
 - . maneuverable reentry bodies
 - . . **lifting reentry vehicles**
 - . . . FDL-5 reentry vehicle
 - . . . HL-10 reentry vehicle
 - . . . HLD-35 reentry vehicle
 - . . . Janus spacecraft
 - . . . M-2 lifting body
 - M-2F2 lifting body
 - . . . X-20 aircraft
 - . . . X-24 aircraft
- RT aerospace planes
- ∞ aircraft
 - ASSET gliders
 - Astro vehicle
 - boostglide vehicles
 - gliders
 - HOPE aerospace plane
 - hypersonic gliders
 - manned reentry
 - manned spacecraft
 - recoverable spacecraft
 - reentry
 - spacecraft reentry
- lifting rotors**
- GS airfoils
 - . wings
 - . . rotary wings
 - . . . **lifting rotors**
 - bearingless rotors
- rotating bodies
 - . rotors
 - . . rotary wings
 - . . . **lifting rotors**
 - bearingless rotors
- RT ground effect machines
 - lift fans
 - rotary wing aircraft
 - short takeoff aircraft
 - vertical takeoff aircraft
- lifting surfaces*
- USE **lift devices**
 - lifting bodies**
 - surfaces**
- liftoff (launching)**
- GS launching
 - . rocket launching
 - . . **liftoff (launching)**
 - . . spacecraft launching
 - . . . **liftoff (launching)**
- RT booster rocket engines
 - countdown
 - launching pads
 - rocket firing
 - rocket thrust
- ∞ **lifts**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT conveyors
 - cranes
 - elevators (lifts)
 - escalators
 - jacks (lifts)
 - winches
- ligaments**
- RT connective tissue
 - joints (anatomy)
- ligands**
- RT chemical bonds
 - chemical composition
 - coordination number
- light (visible radiation)**
- DEF Visible radiation (about 0. 4 to 0. 7 microns in wavelength) considered in terms of its luminous efficiency, i.e., evaluated in proportion to its ability to stimulate the sense of sight. Used for optical spectrum and visible radiation.
- UF *optical spectrum*
 - visible radiation*
- GS electromagnetic radiation
 - . **light (visible radiation)**
 - . . coherent light
 - . . gegenschein
 - . . polarized light
 - . . sky radiation
 - . . . airglow
 - geocoronal emissions
 - nightglow
 - twilight glow
 - . . . dayglow
 - . . . elves
 - . . . sprites (atmospheric physics)
 - . . sunlight
 - . . zodiacal light
- RT atmospheric radiation
 - attenuation
 - beams (radiation)
 - black body radiation
 - brightness
 - Cerenkov radiation
 - coherent electromagnetic radiation
 - coherent radiation
 - color
 - critical frequencies
 - darkness
 - dichroism
 - electromagnetic spectra
 - energy absorption
 - excitons
 - extraterrestrial radiation
- ∞ flash
 - geometrical optics
 - glare
 - illuminance
 - incandescence
 - infrared radiation
 - light curve
 - lighting equipment
 - line spectra
 - lumens
 - luminaires
 - luminance
 - luminescence
 - luminosity
 - luminous intensity
 - monochromatic radiation
 - near infrared radiation
 - near ultraviolet radiation
 - opacity
 - optical depolarization
 - optical emission spectroscopy
- optical measurement
- optical properties
- ∞ optics
 - photics
 - photometry
 - photons
 - photonuclear reactions
 - photoperiod
 - photophilic plants
 - photophoresis
 - photosensitivity
 - planetary radiation
 - polarized electromagnetic radiation
 - polarizers
- ∞ radiation
 - Raman spectra
 - reflection
 - refraction
 - refractivity
 - shadows
 - sky brightness
 - solar radiation
 - thermal radiation
 - transmittance
 - ultraviolet spectra
 - visibility
 - visible spectrum
- light absorption*
- USE **electromagnetic absorption**
- light adaptation**
- GS adaptation
 - . retinal adaptation
 - . . **light adaptation**
 - sensitivity
 - . . photosensitivity
 - . . . **light adaptation**
- RT flash blindness
 - night vision
 - pupillometry
 - thresholds (perception)
 - vision
- Light Airborne Multipurpose System**
- UF *LAMPS program*
- GS navigation aids
 - . **Light Airborne Multipurpose System**
 - onboard equipment
 - airborne equipment
 - . . **Light Airborne Multipurpose System**
- RT aircraft equipment
 - flight instruments
 - navigation instruments
- ∞ systems
- light aircraft**
- GS **light aircraft**
 - . Beech 99 aircraft
 - . . Beechcraft 18 aircraft
 - . . C-33 aircraft
 - . . C-35 aircraft
 - . Cessna 172 aircraft
 - . Cessna 205 aircraft
 - . Cessna 210 aircraft
 - . Cessna 402B aircraft
 - . Cessna L-19 aircraft
 - . DH 125 aircraft
 - . DO-27 aircraft
 - . DO-28 aircraft
 - . F-28 helicopter
 - . Firebee 2 target drone aircraft
 - . G-1 aircraft
 - . light helicopters
 - . . OH-4 helicopter
 - . . OH-5 helicopter
 - . . OH-6 helicopter
 - . . OH-58 helicopter
 - . light intratheater transport
 - . MH-262 aircraft
 - . Mystere 20 aircraft
 - . OH-13 helicopter
 - . OH-23 helicopter
 - . PD-808 aircraft
 - . Piper aircraft
 - . . PA-34 Seneca aircraft
 - . Saab 105 aircraft
 - . SC-7 aircraft

. U-10 aircraft
 . VZ-8 aircraft
 RT agricultural aircraft
 ∞ aircraft
 biplanes
 drone aircraft
 general aviation aircraft
 ∞ low wing aircraft
 ∞ military aircraft
 observation aircraft
 passenger aircraft
 pilotless aircraft
 reconnaissance aircraft
 submersible aircraft
 ∞ subsonic aircraft
 training aircraft
 transport aircraft
 ultralight aircraft
 utility aircraft
 water takeoff and landing aircraft

light alloys

GS alloys
 . **light alloys**
 . . aluminum alloys
 . . . aluminum-lithium alloys
 . . beryllium alloys
 . . magnesium alloys
 RT ∞ metallurgy
 metals

light amplifiers

UF *optical amplifiers*
 GS amplifiers
 . **light amplifiers**
 RT fiber lasers
 four-wave mixing
 HCN lasers
 image converters
 image enhancement
 image intensifiers
 Lallemand cameras
 laser cavities
 laser microscopy
 lasers
 microchannels
 ∞ optics
 photocathodes
 quantum amplifiers
 ultrashort pulsed lasers
 ultraviolet lasers

light armed reconnaissance aircraft

USE **COIN aircraft**

light beams

UF *light probes*
 GS beams (radiation)
 . **light beams**
 . . laser beams
 electromagnetic radiation
 . **light beams**
 . . laser beams
 RT Bragg cells
 four-wave mixing
 optical waveguides
 photon beams
 rare gas-halide lasers

light bulbs

USE **luminaires**

light communication

USE **optical communication**

light curve

RT ∞ curves
 light (visible radiation)
 stellar radiation

light duration

USE **flash**
pulse duration

light elements

GS chemical elements
 . **light elements**
 RT ∞ elements

low density materials

light emission

UF *optical emission*
 GS emission
 . **light emission**
 . . incandescence
 . . luminescence
 . . . bioluminescence
 . . . cathode glow
 . . . cathodoluminescence
 . . . chemiluminescence
 . . . electroluminescence
 . . . fluorescence
 laser induced fluorescence
 phosphorescence
 resonance fluorescence
 x ray fluorescence
 . . . lunar luminescence
 . . . optical resonance
 . . . photoluminescence
 triboluminescence
 x ray fluorescence
 . . . shock wave luminescence
 . . . sonoluminescence
 . . . spacecraft glow
 . . . thermoluminescence
 RT airglow
 auroral absorption
 auroral ionization
 auroral spectroscopy
 auroras
 diffraction radiation
 dimming
 electromagnetic radiation
 linear polarization
 ∞ optics
 self sustained emission
 sky brightness
 spectral emission
 stimulated emission
 white holes (astronomy)

light emitting diodes

DEF Pn junction semiconductor devices that emit incoherent optical radiation when biased in the forward direction. Used for LED (diodes).

UF *LED (diodes)*
 GS electronic equipment
 . diodes
 . . semiconductor diodes
 . . . **light emitting diodes**
 . . . solid state devices
 . . semiconductor devices
 . . . **light emitting diodes**
 optoelectronic devices
 . **light emitting diodes**
 RT aircraft instruments
 alphanumeric characters
 display devices
 electroluminescence
 fiber optics
 luminescence
 photonics
 surface emitting lasers

light gas guns

GS gas guns
 . **light gas guns**
 RT hypervelocity projectiles

light helicopters

(added June 1989)
 GS light aircraft
 . **light helicopters**
 . . OH-4 helicopter
 . . OH-5 helicopter
 . . OH-6 helicopter
 . . OH-58 helicopter
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **light helicopters**
 OH-4 helicopter
 OH-5 helicopter
 OH-6 helicopter
 OH-58 helicopter
 RT ∞ aircraft
 military helicopters

observation aircraft

light intensity

USE **luminous intensity**

light intratheater transport

GS light aircraft
 . **light intratheater transport**
 transport aircraft
 . **light intratheater transport**
 RT ∞ aircraft
 COIN aircraft

light ions

DEF Ions of helium, boron, and other elements used in implantation experiments.
 GS ions
 . **light ions**
 RT chemical elements
 heavy ions
 plasmas (physics)

light modulation

UF *optical maser modulation*
optical modulation
 GS modulation
 . **light modulation**
 . . Mirov system
 . . ultrasonic light modulation
 RT amplitude modulation
 Bragg cells
 deformable mirrors
 electro-optical effect
 frequency modulation
 Kerr electrooptical effect
 lasers
 light modulators
 light valves
 modulators
 optical heterodyning
 optical resonators
 optical switching
 ∞ optics
 polarization modulation
 pulse modulation
 traveling wave modulation
 tunable lasers

light modulators

(added September 1995)
 GS modulators
 . **light modulators**
 RT acousto-optics
 electro-optics
 light modulation
 magneto-optics
 optical data processing

light pressure

USE **illuminance**

light probes

USE **light beams**

light scattering

GS scattering
 . wave scattering
 . . electromagnetic scattering
 . . . **light scattering**
 halos
 transmission
 . electromagnetic wave transmission
 . . light transmission
 . . . **light scattering**
 halos
 . wave propagation
 . . **light scattering**
 . . . halos
 RT afterglows
 atmospheric scattering
 bidirectional reflectance
 Brillouin effect
 circumsolar radiation
 diffuse radiation
 electromagnetic absorption
 forward scattering
 gravitational lenses
 infrared absorption
 optical coatings
 Rayleigh scattering

light scattering meters

reflection nebulae
scatter plates (optics)
speckle patterns
transmissivity
tropospheric scattering
Umkehr effect

light scattering meters

GS measuring instruments
. optical measuring instruments
. . . **light scattering meters**
optical equipment
. optical measuring instruments
. . . **light scattering meters**
RT meteorological instruments

light sources

GS **light sources**
. illuminators
RT arc lamps
cathodoluminescence
dayglow
duochromators
electric arcs
electroluminescence
flash lamps
glow discharges
HCN lasers
heat sources
illuminating
lasers
lighting equipment
luminaires
mercury lamps
monochromators
moon
plasma display devices
point sources
porous silicon
radiation sources
sun

light speed

GS rates (per time)
. **light speed**
velocity
. **light speed**
RT high speed
relativistic velocity
Schwarzschild metric

light transmission

UF *optical absorption*
GS transmission
. electromagnetic wave transmission
. . . **light transmission**
. . . . light scattering
. . . . halos
RT absorptance
atmospheric optics
atmospheric refraction
Fermat principle
fiber optics
flicker
gamma ray lasers
geometrical optics
haze
holographic optical elements
illuminating
∞ illumination
integrated optics
lasers
low visibility
molecular absorption
opacity
optical bistability
optical coupling
optical properties
optical reflection
optical waveguides
rainbows
Sagnac effect
squeezed states (quantum theory)
stimulated emission devices
thermochromic coatings
translucence
transparence
turbidity
ultraviolet lasers
visibility

wave dispersion
wave propagation

light transport aircraft

DEF A classification of multiengine airplanes having a maximum passenger capacity of 30 seats and a gross weight of about 35,000 pounds.

GS commercial aircraft
. **light transport aircraft**
transport aircraft
. **light transport aircraft**
RT ∞ aircraft
multiengine vehicles
passenger aircraft

light valves

DEF Optical shutters which, when activated by light, become either transparent or opaque.
RT electro-optics
light modulation
liquid crystals
optical data processing

light water

DEF Water in which both hydrogen atoms in each molecule are of the isotope protium. Used for protium.
UF *protium*
GS hydrogen compounds
. **light water**
water
. **light water**

light water breeder reactors

GS nuclear reactors
. breeder reactors
. . . **light water breeder reactors**
RT heavy water reactors

light water reactors

DEF Nuclear reactors using ordinary (rather than heavy) water as moderator.
GS nuclear reactors
. liquid cooled reactors
. . . water cooled reactors
. . . . **light water reactors**
RT water moderated reactors

light-cone expansion

RT field theory (physics)
Minkowski space
quantum mechanics
relativity
space-time functions

Lighthill gas model

GS models
. **Lighthill gas model**
RT boundary layer flow
gas mixtures
gas transport
hypersonic flow
molecular theory
transport properties

Lighthill method

RT airfoil profiles
airfoils
conformal mapping
flow theory
integral transformations
∞ methodology

lighting

USE **illuminating**

lighting equipment

GS **lighting equipment**
. illuminators
. luminaires
. . . aircraft lights
. . . airport lights
. . . runway lights
. . . arc lamps
. . . flash lamps
. . . alkali vapor lamps
. . . mercury lamps
. . . quartz lamps
. . . searchlights

. . . xenon lamps
RT ∞ electric equipment
∞ equipment
∞ flares
illuminating
light (visible radiation)
light sources
onboard equipment
waste energy utilization

lightning

DEF A discharge of atmospheric electricity accompanied by a vivid flash of light.

GS electric current
. electric discharges
. . . **lightning**
. . . . ball lightning
. . . . cloud-to-cloud discharges
. . . . cloud-to-ground discharges
. . . . intracloud discharges
. . . . leaders (meteorology)
. . . . stepped leaders
RT ∞ arresters
atmospheric electricity
electric arcs
electric sparks
electricity
electrodeless discharges
elves
gas discharges
lightning suppression
nitrogenation
radiative recombination
sprites (atmospheric physics)
static electricity
thunderstorms
whistlers

lightning suppression

GS weather modification
. **lightning suppression**
RT atmospheric electricity
climatology
electric discharges
lightning
thunderstorms

lights

USE **luminaires**

lignin

DEF That part of plant material which is not saccharified by the action of 72 percent sulfuric acid or 42 percent hydrochloric acid, after the resins, waxes, and tannins have been removed.
GS biopolymers
. **lignin**
RT cellulose
∞ polymers

lignite

DEF Coal of relatively recent origin, an intermediate between peat and bituminous coal.
GS fuels
. chemical fuels
. . . hydrocarbon fuels
. . . . fossil fuels
. coal
. **lignite**
resources
. Earth resources
. . . fossil fuels
. . . . coal
. **lignite**
rocks
. sedimentary rocks
. . . carbonaceous rocks
. . . . coal
. **lignite**
RT ashes
bitumens
carbonaceous materials
coal gasification
coal liquefaction
coal utilization
coke
energy conversion
energy policy
energy technology
gaseous fuels

hydrocarbon fuel production
hydrogen production
hydrolysis
synthane

LIGO (observatory)

(added December 2000)

UF *Laser Interferometer**Gravitational-Wave Observatory*

GS antennas

. gravitational wave antennas

. . **LIGO (observatory)**

observatories

. astronomical observatories

. . **LIGO (observatory)**

RT astronomical interferometry

gravitational waves

laser interferometry

likelihood ratio

DEF The probability of a random drawing of a specified sample from a population, assuring a given hypothesis about the parameters of the population, divided by the probability of a random drawing of the same sample, assuring that the parameters of the population are such that this probability is maximized.

GS ratios

. **likelihood ratio**

statistical analysis

. **likelihood ratio**

RT estimates

Fisher information

mathematical models

maximum likelihood estimates

probability theory

statistical tests

limb brightening

DEF The increase in the intensity of radio or x ray brightness of the sun or other stars from its center to its limb.

RT B stars

brightness

brightness temperature

∞ limbs

solar flux

solar flux density

solar granulation

solar limb

stellar atmospheres

stellar luminosity

limb darkening

DEF A condition, sometimes observed on celestial bodies, in which the brightness of the object decreases as the edges or limbs of the object are approached. The sun and Jupiter exhibit limb darkening.

GS darkening

. **limb darkening**

RT B stars

binary stars

∞ limbs

solar limb

stellar atmospheres

stellar luminosity

∞ limbs

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT Earth limb

limb brightening

limb darkening

limbs (anatomy)

lunar limb

planetary limb

solar limb

limbs (anatomy)

GS anatomy

. **limbs (anatomy)**

. . arm (anatomy)

. . . elbow (anatomy)

. . . forearm

. . hand (anatomy)

. . fingers

. . leg (anatomy)

. . . feet (anatomy)

. . . knee (anatomy)

. . . thigh

RT appendages

hindlimb suspension

human body

∞ limbs

*lime*USE **calcium oxides****limen**

DEF Threshold; a psychophysical concept denoting the lowest detectable intensity of any sensory stimulus.

RT psychological tests

thresholds (perception)

limestone

DEF Sedimentary rock composed principally of calcium carbonate (the mineral calcite) or the double carbonate of calcium and magnesium (the mineral dolomite) or mixture of the two.

GS rocks

. sedimentary rocks

. . **limestone**

RT aggregates

calcium carbonates

dolomite (mineral)

Earth resources

fluxes

minerals

schist

soils

*limitations*USE **constraints****limiter amplifiers**

GS amplifiers

. **limiter amplifiers****limiter circuits**

GS circuits

. **limiter circuits**

. . clipper circuits

RT circulators (phase shift circuits)

clamping circuits

current regulators

power limiters

limiters (fusion reactors)

DEF Material aperture in fusion power reactors which collect particles from the outer surfaces of the plasmas to control their transport to regions of low density.

RT blankets (fusion reactors)

controlled fusion

divertors (fusion reactors)

fusion reactors

moderation (energy absorption)

moderators

plasma control

plasma loss

reactor design

reactor materials

tokamak devices

toroidal plasmas

walls

∞ limits

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ignition limits

limits (mathematics)

range (extremes)

limits (mathematics)

GS analysis (mathematics)

. calculus

. . **limits (mathematics)**

. . real variables

. . extremum values

. . . **limits (mathematics)**

RT differential calculus

∞ envelopes

∞ limits

limnology

DEF The physical, chemical, meteorological, and especially the biological and ecological

conditions in inland waters.

RT

aquifers

arroyos

Earth hydrosphere

fresh water

geochemistry

geophysics

ground water

∞ hydraulics

hydrography

hydrology

Lake Texoma (OK-TX)

lakes

marine biology

marine chemistry

ponds

potable water

rain

streams

water

water management

water pollution

water resources

wells

limonite

GS iron compounds

. **limonite**

minerals

. **limonite****Lincoln Experimental Satellites**UF *LES (satellites)*

GS artificial satellites

. **Lincoln Experimental Satellites****line current**

GS electric current

. **line current**

RT electric power supplies

electrodynamics

magnetohydrodynamic flow

plasma currents

∞ power supplies

line of sight

DEF An aim or observation taken with mechanical or optical aid to establish a direct path to an objective, target, etc.

RT area

coordinates

∞ direction

loci

proportional navigation

targets

line of sight communication

DEF Electromagnetic wave propagation, usually microwaves, in a straight line between the transmitter and receiver. The useful transmission distance is generally limited to the horizon as sighted from the elevation of the transmitter.

GS telecommunication

. communication

. . **line of sight communication**

RT boresight error

frequency modulation

space communication

television transmission

line shape

GS shapes

. **line shape**

RT curves (geometry)

inflection points

∞ profiles

line spectra

DEF The spontaneous emission of electromagnetic radiation from the bound electrons as they jump from high to low energy levels in an atom. Used for spectral lines.

UF *spectral lines*

GS spectra

. radiation spectra

. . electromagnetic spectra

. . . **line spectra**

. . . Balmer series

. . . D lines

linear accelerators

- electronic spectra
- Fraunhofer lines
- H lines
- H alpha line
- H beta line
- H gamma line
- K lines
- Lyman spectra
- Paschen series
- Rydberg series
- telluric lines

RT absorption spectra
atomic energy levels
Bohr theory
emission spectra
fine structure
flame spectroscopy
frequencies
hyperfine structure
infrared spectra
light (visible radiation)

∞ lines

molecular spectroscopy
oscillator strengths
pressure broadening
Raman spectra
Raman spectroscopy
resonance lines
rotational spectra
Seyfert galaxies
solar spectra
spectral bands
spectral emission
spectral energy distribution
spectral line width
spectral resolution
spectrograms
spectrum analysis
Stark effect
stellar spectra
ultraviolet spectra
visible spectrum

lineament

USE **structural properties (geology)**

linear AC alternators

USE **linear alternators**

linear accelerators

DEF Devices for accelerating charged particles employing alternate electrodes and gaps arranged in a straight line, so proportioned that when their potentials are varied in the proper amplitudes and frequency, particles passing through them receive successive increments of energy.

GS particle accelerators
. **linear accelerators**

RT ∞ accelerators
electron accelerators
ion sources
multipactor discharges
neutron sources

linear alternators

(added July 1991)

DEF An electromagnetic energy converter that converts reciprocating linear harmonic motion and driving force input to AC electrical power and energy output.

UF *linear AC alternators*

GS electric generators
. AC generators
. **linear alternators**

RT free-piston engines
∞ generators
Stirling engines

linear amplifiers

GS amplifiers
. **linear amplifiers**

linear arrays

DEF Antenna arrays whose elements are equally spaced along a straight line.

GS arrays
. antenna arrays
. **linear arrays**
. . . endfire arrays

. . . . Yagi antennas

. . . multispectral linear arrays

RT dipole antennas
focal plane devices
laser arrays
multiple beam interval scanners
phased arrays
pushbroom sensor modes

linear circuits

GS circuits
. **linear circuits**

RT amplifiers
distributed parameter systems
electrical resistance
superposition (mathematics)
transconductance
volt-ampere characteristics

linear energy transfer (LET)

GS energy transfer
. **linear energy transfer (LET)**

RT ionizing radiation

linear equations

GS algebra
. **linear equations**
. . Ffowcs Williams-Hawkins equation
. . linear evolution equations
. . Riccati equation
analysis (mathematics)
real variables
. **linear equations**
. . . Ffowcs Williams-Hawkins equation
. . linear evolution equations
. . Riccati equation

RT determinants
differential equations
∞ equations
Floquet theorem
Gaussian elimination
linear operators
matrices (mathematics)
operational calculus
polynomials

linear evolution equations

DEF Denotes a large class of differential or integral differential equations which are used to describe the evolution in time of some physical systems from an initial state. The equation is said to be linear if the unknown functions and their derivatives appear linearly.

GS algebra
. linear equations
. **linear evolution equations**
analysis (mathematics)
real variables
. linear equations
. . **linear evolution equations**

RT difference equations
∞ equations

linear filters

GS **linear filters**
. Kalman filters
. reduced order filters

RT adaptive filters
electric filters
electromagnetic wave filters

∞ filters
frequency response
nonlinear filters

linear integrated circuits

GS circuits
. integrated circuits
. **linear integrated circuits**

RT electronic packaging
large scale integration
microminiaturization
molecular electronics
operational amplifiers
transistor circuits

linear operators

GS operators (mathematics)
. **linear operators**

RT linear equations
linear systems
linear transformations

linear parameter-varying control

(added July 2002)

RT ∞ control
control systems design
feedback control
H-infinity control
multivariable control

linear polarization

DEF Polarization of an electromagnetic wave in which the electric vector at a fixed point in space remains pointing in a fixed direction although varying in magnitude. Also known as plane polarization.

GS polarization (waves)
. **linear polarization**

RT light emission
microwave emission
optical polarization

∞ polarization
polarized electromagnetic radiation
polarized radiation
radio astronomy

linear prediction

GS predictions
. **linear prediction**

RT computation
differential pulse code modulation
mathematical models
operations research
quality control
statistical analysis

linear programming

DEF An optimization problem characterization in which a set of parameter values are to be determined, subject to given linear constraints.

GS optimization
. mathematical programming
. . **linear programming**
research
. **linear programming**

RT ∞ applications of mathematics
computer programming
constraints
dynamic programming
formalism
game theory
matrices (mathematics)
nonlinear programming
numerical analysis
operations research

∞ programming
simplex method

linear quadratic Gaussian control

DEF A type of optimal-state feedback control whose design considers noise. It is primarily used to control aircraft and spacecraft systems. Used for LQG control.

UF *LQG control*

GS automatic control
. optimal control
. . **linear quadratic Gaussian control**

optimization
. linear quadratic regulator
. . **linear quadratic Gaussian control**
. optimal control
. . **linear quadratic Gaussian control**

RT ∞ control
control systems design
control theory
feedback control
H-2 control
H-infinity control
Kalman filters

linear quadratic regulator

DEF A type of optimal-state feedback controller that does not consider noise. It is primarily used to control aircraft and spacecraft. Used for linear regulator and LQR.

- UF *linear regulator*
LQR
- GS optimization
. **linear quadratic regulator**
. . linear quadratic Gaussian control
- RT ∞ control
control systems design
control theory
controllers
feedback control
Kalman filters
optimal control
- linear receivers**
- GS receivers
. **linear receivers**
- RT frequency response
Nyquist frequencies
- linear regulator*
USE **linear quadratic regulator**
- linear systems**
- RT distributed parameter systems
linear operators
nonlinear systems
robustness (mathematics)
state estimation
 ∞ systems
tracking problem
uncertain systems
- linear transformations**
- GS algebra
. **linear transformations**
functions (mathematics)
. **linear transformations**
transformations (mathematics)
. **linear transformations**
- RT Fourier analysis
Jordan form
linear operators
matrices (mathematics)
orthogonal functions
Schwartz inequality
vector spaces
- linear vibration**
- GS vibration
. structural vibration
. . **linear vibration**
- RT free vibration
missile vibration
random vibration
vibration mode
- linearity**
- DEF The maximum deviation between an actual instrument reading and the reading predicted by a straight line drawn between upper and lower calibration points; usually expressed as a percentage of the full scale.
- GS **linearity**
. collinearity
- RT accuracy
consistency
differential equations
dynamic characteristics
errors
functions (mathematics)
instrument errors
linearization
nonlinearity
tolerances (mechanics)
variability
- linearization**
- RT Bernoulli theorem
 ∞ equations
Galerkin method
linearity
simplification
- linen**
- GS fabrics
. **linen**
fibers
. **linen**
textiles
. **linen**
- RT organic materials
 ∞ tubes
- liners*
USE **linings**
- ∞ **lines**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT delay lines
line spectra
lines of force
pipelines
terminator lines
tetherlines
transmission lines
underground transmission lines
- lines (geometry)**
- GS geometry
. Euclidean geometry
. . **lines (geometry)**
. . . chords (geometry)
. . . geodesic lines
- RT radii
reciprocal theorems
segments
- lines of force**
- RT barium ion clouds
conjugate points
field aligned currents
flux pinning
flux transfer events
 ∞ force
 ∞ lines
magnetic circuits
magnetic domains
magnetic fields
magnetic flux
magnetic mirrors
magnetic properties
magnetostatic fields
nonuniform magnetic fields
polar cusps
- Ling-Temco-Vought aircraft**
- UF *LTV aircraft*
- GS **Ling-Temco-Vought aircraft**
. A-7 aircraft
. F-8 aircraft
. XC-142 aircraft
- RT ∞ aircraft
- linguistics**
- GS **linguistics**
. machine translation
. phonemics
. phonetics
. psycholinguistics
. semantics
. syntax
- RT languages
natural language processing
orthography
phonemes
predicate logic
speech
speech recognition
- lining processes**
- RT coating
coatings
insulation
linings
sealing
tunneling (excavation)
- linings**
- UF *liners*
- GS **linings**
. rocket linings
- RT bushings
 ∞ casing
coatings
inserts
insulation
jackets
lining processes
sheaths
shielding
- linkages**
- RT cams
connectors
coupling
couplings
eccentrics
fasteners
fittings
joints (junctions)
latches
 ∞ links
mechanical devices
unions (connectors)
yokes
- linking*
USE **joining**
- ∞ **links**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT chains
data links
linkages
links (mathematics)
- links (mathematics)**
- GS geometry
. topology
. . **links (mathematics)**
- RT ∞ links
- Liouville equations**
- GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Liouville equations**
- RT ∞ equations
plasma physics
plasmas (physics)
statistical mechanics
- Liouville theorem**
- GS analysis (mathematics)
. complex variables
. . **Liouville theorem**
theorems
. **Liouville theorem**
- lip reading**
- GS communicating
. **lip reading**
reading
. **lip reading**
- lipid metabolism**
- GS metabolism
. protein metabolism
. . **lipid metabolism**
- RT glucocorticoids
 ∞ nutrients
oils
- lipids**
- GS organic compounds
. **lipids**
. . calciferol
. . castor oil
. . fats
. . lipoproteins
. . phylloquinone
. . retinene
. . steroids
. . . cholesterol
. . . corticosteroids
. . . . aldosterone
. . . . hydroxycorticosteroid
. cortisone
. . . . glucocorticoids
. . . estrogens
. . . prostaglandins
. . tocopherol
- RT amino acids
esters
glycerols
myelin

lipoic acid

∞ nutrients

lipoic acid

- GS acids
 - . carboxylic acids
 - . . . fatty acids
 - **lipoic acid**
- organic compounds
 - . carboxylic acids
 - . . . fatty acids
 - **lipoic acid**

lipoproteins

- GS biopolymers
 - . proteins
 - . . . **lipoproteins**
- organic compounds
 - . lipids
 - . . . **lipoproteins**
 - . proteins
 - . . . **lipoproteins**

lips (anatomy)

- GS anatomy
 - . digestive system
 - . . mouth
 - . . . **lips (anatomy)**
 - face (anatomy)
 - mouth
 - **lips (anatomy)**
- RT head (anatomy)

Lipschitz condition

- GS analysis (mathematics)
 - . real variables
 - . . . **Lipschitz condition**
- conditions
 - . **Lipschitz condition**
- RT differential equations

liquefaction

- GS phase transformations
 - . **liquefaction**
 - . . coal liquefaction
- RT ∞ condensation
- ∞ conversion
 - . jet condensers
 - . melting
 - . noncondensable gases
 - . thixotropy

liquefied gases

- GS gases
 - . **liquefied gases**
 - . . liquefied natural gas
 - . . liquid air
 - . . liquid ammonia
 - . . liquid fluorine
 - . . liquid helium
 - . . . liquid helium 2
 - . . liquid hydrogen
 - . . liquid neon
 - . . liquid nitrogen
 - . . liquid oxygen
- liquids
 - . **liquefied gases**
 - . . liquefied natural gas
 - . . liquid air
 - . . liquid ammonia
 - . . liquid fluorine
 - . . liquid helium
 - . . . liquid helium 2
 - . . liquid hydrogen
 - . . liquid neon
 - . . liquid nitrogen
 - . . liquid oxygen
- RT condensates
 - . condensers (liquefiers)
 - . cryogenic rocket propellants
 - . cryogenics
 - . gas mixtures
 - . liquid rocket propellants
 - . solid cryogen cooling

liquefied natural gas

- UF LNG
- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . fossil fuels

- natural gas
- **liquefied natural gas**
- . gaseous fuels
 - . . natural gas
 - . . . **liquefied natural gas**
- gases
 - . flammable gases
 - . . gaseous fuels
 - . . . natural gas
 - **liquefied natural gas**
 - **liquefied natural gas**
 - . liquefied gases
 - . . **liquefied natural gas**
- geophysical fluids
 - . natural gas
 - . . **liquefied natural gas**
- liquids
 - . liquefied gases
 - . . **liquefied natural gas**
 - organic compounds
 - . hydrocarbons
 - . . natural gas
 - . . . **liquefied natural gas**
 - resources
 - . Earth resources
 - . . fossil fuels
 - . . . natural gas
 - **liquefied natural gas**
- RT methane

liquid air

- GS gases
 - . gas mixtures
 - . . air
 - . . . **liquid air**
 - . liquefied gases
 - . . **liquid air**
- liquids
 - . liquefied gases
 - . . **liquid air**
 - mixtures
 - . solutions
 - . . gas mixtures
 - . . . air
 - **liquid air**

liquid air cycle engines

- UF LACE (engine)
- GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **liquid air cycle engines**
- RT aerospace planes
 - . hydrogen oxygen engines
 - . sustainer rocket engines
 - . turborocket engines

liquid alloys

- GS alloys
 - . **liquid alloys**
- RT metals

liquid ammonia

- GS gases
 - . ammonia
 - . . **liquid ammonia**
 - . liquefied gases
 - . . **liquid ammonia**
- inorganic compounds
 - . ammonia
 - . . **liquid ammonia**
- liquids
 - . liquefied gases
 - . . **liquid ammonia**
 - nitrogen compounds
 - . ammonia
 - . . **liquid ammonia**
- RT fuels
 - . liquid fuels

liquid atomization

- GS atomizing
 - . **liquid atomization**
- RT gas atomization
 - . spraying

liquid bearings

- GS bearings
 - . **liquid bearings**

RT lubrication

liquid breathing

- GS respiration
 - . **liquid breathing**
- RT acclimatization
 - . pressure breathing
 - . resuscitation

liquid bridges

- (added September 1993)
- DEF Axisymmetric liquid columns held by capillary forces and forming an interface between two solids or between two gaps in a solid. Useful in space processing.
- RT ∞ bridges
 - . capillary flow
 - . containerless melts
 - . interfacial tension
 - . liquid-solid interfaces
 - . low gravity manufacturing
 - . Marangoni convection
 - . space manufacturing
 - . space processing

liquid chromatography

- GS chemical tests
 - . chemical analysis
 - . . chromatography
 - . . . **liquid chromatography**
- RT colorimetry
 - . gel chromatography
 - . paper chromatography
 - . sorption

liquid cooled reactors

- GS nuclear reactors
 - . **liquid cooled reactors**
 - . . liquid metal cooled reactors
 - . . . advanced sodium cooled reactor
 - . . . Experimental Breeder Reactor 1
 - . . . Experimental Breeder Reactor 2
 - . . . Lithium Cooled Reactor Experiment
 - . . . Los Alamos Molten Plutonium Reactor
 - . . . military compact reactors
 - . . . sodium graphite reactors
 - . . . sodium reactor experiment
 - . . organic cooled reactors
 - . . . experimental organic cooled reactors
 - . . . water cooled reactors
 - . . . boiling water reactors
 - experimental boiling water reactors
 - Halden Boiling Water Reactor
 - Los Alamos Water Boiler Reactor
 - Pathfinder nuclear reactor
 - Spert reactors
 - . . . heavy water reactors
 - heavy water components test reactors
 - plutonium recycle test reactor
 - zero power reactor 2
 - . . . light water reactors
 - . . . NRX reactors
 - . . . Plum Brook Reactor
 - . . . pressurized water reactors
 - spectral shift control reactor
 - swimming pool reactors
 - zero power reactors
 - zero power reactor 2
 - zero power reactor 3
 - zero power reactor 6
 - zero power reactor 9
 - . . sodium cooled reactors
 - . . . experimental organic cooled reactors
- RT sodium cooling

liquid cooling

- SN (COOLING WITH LIQUIDS)
- UF water cooling
- GS cooling
 - . **liquid cooling**
 - . . film cooling
- RT air cooling
 - . capillary pumped loops
 - . coolants
 - . cooling systems
 - . sodium cooling

space cooling (buildings)
sweat cooling
thermal pollution
water immersion

liquid crystals

GS crystals
. **liquid crystals**
RT anisotropic fluids
cholesterol
ferroelectric materials
light valves

liquid drops

USE **drops (liquids)**

liquid filled shells

GS shells (structural forms)
. fluid filled shells
. . **liquid filled shells**
RT hydrodynamic ram effect
propellant tanks
reinforced shells
shell stability
∞ storage
tanks (containers)
∞ vessels

liquid flow

GS fluid flow
. **liquid flow**
. . open channel flow
. . water flow
RT critical flow
gas flow
head (fluid mechanics)
head flow
hydrodynamic coefficients
laminar flow
mass flow
multiphase flow
nonNewtonian flow
orifice flow
pipe flow
pressure gradients
pressure heads
rheology
single-phase flow
Soret coefficient
steady flow
subcritical flow
supercritical flow
turbulent flow
two phase flow
uniform flow
unsteady flow

liquid fluorine

GS chemical elements
. halogens
. . fluorine
. . . **liquid fluorine**
gases
. liquefied gases
. . **liquid fluorine**
liquids
. liquefied gases
. . **liquid fluorine**

liquid fuels

GS fuels
. chemical fuels
. . **liquid fuels**
. . . antimisting fuels
. . . diesel fuels
. . . gasoline
. . . hydrogen fuels
. . . jet engine fuels
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. . . fuel oils
. . . kerosene
RT aircraft fuels
automobile fuels
fuel production
gaseous fuels
liquid ammonia

liquid hydrogen
liquid rocket propellants
liquids
synthetic fuels

liquid helium

UF *helium 2*
GS chemical elements
. rare gases
. . helium
. . . **liquid helium**
. . . . liquid helium 2
gases
. liquefied gases
. . **liquid helium**
. . . liquid helium 2
. . rare gases
. . helium
. . . **liquid helium**
. . . . liquid helium 2
liquids
. cryogenic fluids
. . **liquid helium**
. . . liquid helium 2
. . liquefied gases
. . **liquid helium**
. . . liquid helium 2
RT cryostats
superfluidity
two fluid models

liquid helium 2

GS chemical elements
. rare gases
. . helium
. . . liquid helium
. . . . **liquid helium 2**
gases
. liquefied gases
. . liquid helium
. . . **liquid helium 2**
. . rare gases
. . helium
. . . liquid helium
. . . . **liquid helium 2**
liquids
. cryogenic fluids
. . liquid helium
. . . **liquid helium 2**
. . liquefied gases
. . liquid helium
. . . **liquid helium 2**
RT cryostats
superfluidity

liquid hydrogen

GS chemical elements
. hydrogen
. . **liquid hydrogen**
gases
. hydrogen
. . **liquid hydrogen**
. . liquefied gases
. . **liquid hydrogen**
liquids
. cryogenic fluids
. . **liquid hydrogen**
. . liquefied gases
. . **liquid hydrogen**
RT cryogenic rocket propellants
fuels
hydrogen fuels
hydrogen-based energy
liquid fuels
slush hydrogen
topping cycle engines

liquid injection

GS injection
. fluid injection
. . **liquid injection**
. . . deep well injection (wastes)
. . . water injection
RT film cooling
fuel injection
fuel sprays
mixing
propellant sprays

thrust vector control

liquid lasers

GS stimulated emission devices
. lasers
. . **liquid lasers**
RT carbon lasers
chemical lasers
dye lasers
infrared lasers
organic lasers

liquid levels

GS level (horizontal)
. **liquid levels**
RT fluid boundaries

liquid lithium

GS chemical elements
. alkali metals
. . lithium
. . . **liquid lithium**
liquids
. liquid metals
. . **liquid lithium**
metals
. alkali metals
. . lithium
. . . **liquid lithium**
. liquid metals
. . **liquid lithium**

liquid mercury

USE **mercury (metal)**

liquid metal cooled reactors

UF *LMCR (reactors)*
GS nuclear reactors
. liquid cooled reactors
. . **liquid metal cooled reactors**
. . . advanced sodium cooled reactor
. . . Experimental Breeder Reactor 1
. . . Experimental Breeder Reactor 2
. . . Lithium Cooled Reactor
Experiment
. . . Los Alamos Molten Plutonium
Reactor
. . . military compact reactors
. . . sodium graphite reactors
. . . sodium reactor experiment
RT Enrico Fermi atomic power plant
sodium

liquid metal fast breeder reactors

UF *LMFBR*
GS nuclear reactors
. breeder reactors
. . **liquid metal fast breeder
reactors**
. fast nuclear reactors
. . **liquid metal fast breeder
reactors**
RT nuclear power reactors

liquid metals

GS liquids
. **liquid metals**
. . liquid lithium
. . liquid potassium
. . liquid sodium
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
metals
. **liquid metals**
. . liquid lithium
. . liquid potassium
. . liquid sodium
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
RT casting
levitation melting
lubricants
melting
metal vapors
squeeze casting

liquid neon

GS chemical elements

liquid nitrogen

- . rare gases
- . . neon
- . . . **liquid neon**

gases

- . liquefied gases
- . . **liquid neon**
- . rare gases
- . . neon
- . . . **liquid neon**

liquids

- . liquefied gases
- . . **liquid neon**

liquid nitrogen

GS chemical elements

- . nitrogen
- . . **liquid nitrogen**

gases

- . liquefied gases
- . . **liquid nitrogen**
- . nitrogen
- . . **liquid nitrogen**

liquids

- . cryogenic fluids
- . . **liquid nitrogen**
- . liquefied gases
- . . **liquid nitrogen**

RT high temperature superconductors

solid cryogenes

liquid oxidizers

GS liquids

- . **liquid oxidizers**

oxidizers

- . **liquid oxidizers**

RT rocket oxidizers

liquid oxygen

UF *LOX (oxygen)*

GS chemical elements

- . oxygen
- . . **liquid oxygen**

gases

- . liquefied gases
- . . **liquid oxygen**
- . oxygen
- . . **liquid oxygen**

liquids

- . cryogenic fluids
- . . **liquid oxygen**
- . liquefied gases
- . . **liquid oxygen**

oxidizers

- . **liquid oxygen**

RT cryogenic rocket propellants

FLOX oxygen-hydrocarbon rocket engines

rocket oxidizers

liquid oxygen hydrocarbon rocket engines

USE **oxygen-hydrocarbon rocket engines**

liquid phase epitaxy

DEF A liquid phase transformation during crystal growth.

GS growth

- . crystal growth
- . . epitaxy
- . . . **liquid phase epitaxy**

RT crystal structure

liquid phases

vapor phase epitaxy

liquid phase sintering

(added August 1991)

DEF Sintering of a compact, or loose powder aggregate under conditions where a liquid phase is present during part of the sintering cycle.

GS sintering

- . **liquid phase sintering**

RT consolidation

metal powder

powder metallurgy

liquid phases

RT alloys

critical pressure

electroepitaxy

eutectics

liquid phase epitaxy

liquids

liquidus

melting points

phase diagrams

phase separation (materials)

∞ phases

solid phases

solid solutions

solidus

solubility

supercritical pressures

syntectic alloys

transition temperature

vapor phase epitaxy

vapor phases

liquid plus solid zones

USE **mushy zones**

liquid potassium

GS chemical elements

- . alkali metals
- . . potassium
- . . . **liquid potassium**

liquids

- . liquid metals
- . . **liquid potassium**

metals

- . alkali metals
- . . potassium
- . . . **liquid potassium**
- . liquid metals
- . . **liquid potassium**

liquid propellant rocket engines

DEF Rocket engines using a propellant or propellants in liquid form.

GS engines

- . rocket engines
- . . **liquid propellant rocket engines**
- . . . AJ-10 engine
- . . . F-1 rocket engine
- . . . H-1 engine
- . . . hydrazine engines
- . . . hydrogen oxygen engines
- J-2 engine
- M-1 engine
- RL-10-A-1 engine
- RL-10-A-3 engine
- . . . liquid air cycle engines
- . . . LR-62-RM-2 engine
- . . . LR-87-AJ-5 engine
- . . . LR-91-AJ-5 engine
- . . . MA-2 engine
- . . . MA-3 engine
- . . . MA-5 engine
- . . . oxygen-hydrocarbon rocket engines
- . . . RL-10 engines
- RL-10-A-1 engine
- RL-10-A-3 engine
- . . . pulse detonation engines
- . . . Space Shuttle Main Engine
- . . . X-405 engine
- . . . XLR-99 engine
- . . . YLR-91-AJ-1 engine

RT Ablestar launch vehicle

Atlas SLV-3 launch vehicle

Black Knight rocket vehicle

Blue Steel missile

Blue Streak launch vehicle

Blue Streak missile

BOMARC A missile

BOMARC B missile

booster rocket engines

Centaur launch vehicle

Corporal missile

Corvus missile

Delta 4 Heavy launch vehicle

Delta Clipper

Diamant launch vehicle

Dornier paraglider rocket vehicle

ducted rocket engines

hybrid propellant rocket engines

∞ hybrid rocket engines

Hyla-Star rocket vehicle

internal combustion engines

Juno 1 launch vehicle

Juno 2 launch vehicle

Juno launch vehicles

Jupiter C rocket vehicle

Jupiter missile

Lance missile

Meteor 1 rocket vehicle

Navaho missile

Nike-Ajax missile

Nomad launch vehicle

Nova launch vehicles

propellant tanks

restartable rocket engines

retrorocket engines

Saturn S-1 stage

Saturn S-1B stage

Saturn S-1C stage

Saturn S-2 stage

Saturn S-4 stage

Saturn S-4B stage

Saturn stages

solid propellant rocket engines

Sparrow 3 missile

sustainer rocket engines

Talos missile

Thor Able rocket vehicle

Thor Agena launch vehicle

Thor Delta launch vehicle

Thor launch vehicles

Thorad launch vehicles

Titan ICBM

Titan launch vehicles

V-1 missile

V-2 missile

vanguard 2 launch vehicle

Vega launch vehicle

Vernier engines

Veronique rocket vehicles

Viking rocket vehicle

X-33 reusable launch vehicle

X-34 reusable launch vehicle

liquid rocket propellants

DEF Specifically, rocket propellants in liquid form. Examples of liquid propellants include fuels such as alcohol, gasoline, aniline, liquid ammonia, and liquid hydrogen; oxidants such as liquid oxygen, hydrogen peroxide (also applicable as a monopropellant), and nitric acid; additives such as water; and monopropellants such as nitromethane. Used for bipropellants and tripropellants.

UF *bipropellants*

tripropellants

GS propellants

- . rocket propellants
- . . **liquid rocket propellants**
- . . . cryogenic rocket propellants
- . . . gelled rocket propellants
- . . . hypergolic rocket propellants
- . . . monopropellants
- . . . RP-1 rocket propellants
- . . . slurry propellants
- . . . slush hydrogen
- . . . aeroxine

RT aircraft fuels

chemical compatibility

chlorine fluorides

fuel tank pressurization

gaseous rocket propellants

high energy propellants

hybrid propellants

hydrazines

hydrogen fuels

liquefied gases

liquid fuels

liquids

monomethylhydrazines

nitrogen tetroxide

propellant sprays

solid rocket propellants

storable propellants

liquid rotation

USE **rotating liquids**

liquid sloshing

DEF The back and forth movement of a liquid fuel in its tank, creating problems of stability and control in the vehicle. Used for sloshing.

- UF *sloshing*
 RT aerodynamic stability
 aircraft stability
 baffles
 controllability
 fuel control
 fuel tanks
 interface stability
 propellant tanks
 propellant transfer
 rotating fluids
 spacecraft stability
 storage stability
 tank geometry
 ullage
- liquid sodium**
 GS chemical elements
 . alkali metals
 . . sodium
 . . . **liquid sodium**
 liquids
 . liquid metals
 . . **liquid sodium**
 metals
 . alkali metals
 . . sodium
 . . . **liquid sodium**
 . liquid metals
 . . **liquid sodium**
- liquid surfaces**
 GS **liquid surfaces**
 . menisci
 RT fluid boundaries
 free boundaries
 interfacial tension
 jet boundaries
 solid surfaces
 surface waves
 ∞ surfaces
- liquid wastes**
 DEF The liquid counterpart of solid wastes from industrial, chemical, metabolic, and/or mineral sources.
 GS wastes
 . **liquid wastes**
 . . urine
 . . waste water
 RT drainage
 effluents
 human wastes
 industrial wastes
 metabolic wastes
 ponds
 sewage
 sludge
 solid wastes
- liquid-gas mixtures**
 GS mixtures
 . dispersions
 . . **liquid-gas mixtures**
 . . . aerosols
 . . . fog
 RT air water interactions
 binary mixtures
 gas mixtures
 menisci
 solubility
 vapor phases
 vapor pressure
- liquid-liquid interfaces**
 GS boundaries
 . fluid boundaries
 . . **liquid-liquid interfaces**
 interfaces
 . fluid boundaries
 . . **liquid-liquid interfaces**
 RT boundary layers
 free boundaries
 heat transfer
 interface stability
 interfacial energy
 interfacial tension
 pressure gradients
- solubility
- liquids**
 DEF Substances in a state in which the individual particles move freely with relation to each other and take the shape of the container, but do not expand to fill the container.
 GS **liquids**
 . cryogenic fluids
 . . Fermi liquids
 . . FLOX
 . . liquid helium
 . . . liquid helium 2
 . . liquid hydrogen
 . . liquid nitrogen
 . . liquid oxygen
 . ferrofluids
 . hydraulic fluids
 . . Skydrol (trademark)
 . juices
 . liquefied gases
 . . liquefied natural gas
 . . liquid air
 . . liquid ammonia
 . . liquid fluorine
 . . liquid helium
 . . . liquid helium 2
 . . liquid hydrogen
 . . liquid neon
 . . liquid nitrogen
 . . liquid oxygen
 . liquid metals
 . . liquid lithium
 . . liquid potassium
 . . liquid sodium
 . . mercury (metal)
 . . . mercury isotopes
 . . . mercury vapor
 . liquid oxidizers
 . organic liquids
 . potable liquids
 . . beverages
 . . . wines
 . . potable water
 . . rotating liquids
 RT ∞ fluids
 globules
 glycerols
 liquid fuels
 liquid phases
 liquid rocket propellants
 nonpoint sources
 phase diagrams
 vapor phases
 water
- liquid-solid interfaces**
 GS boundaries
 . fluid boundaries
 . . **liquid-solid interfaces**
 interfaces
 . fluid boundaries
 . . **liquid-solid interfaces**
 RT boundary layers
 fluid films
 fluid-solid interactions
 ∞ fusion
 heat transfer
 interface stability
 liquid bridges
 melting
 menisci
 metal surfaces
 phase change materials
 solid phases
 solid-solid interfaces
 squeeze films
- liquidus**
 RT crystallization
 liquid phases
 melting points
 phase diagrams
 solid phases
 solid solutions
 solidus
- liquid-vapor equilibrium**
 UF *vapor liquid equilibrium*
 RT ∞ equilibrium
- thermodynamic equilibrium
 vapors
- liquid-vapor interfaces**
 GS boundaries
 . fluid boundaries
 . . **liquid-vapor interfaces**
 interfaces
 . fluid boundaries
 . . **liquid-vapor interfaces**
 RT air water interactions
 evaporation
 free boundaries
 heat transfer
 interface stability
 menisci
 pressure gradients
 solubility
 vapor phases
 vapor pressure
- LIRTS (telescope)**
 DEF A proposed large infrared telescope for Spacelab superseded by the German infrared laboratory. Used for Large Infrared Telescope on Spacelab.
 UF *Large Infrared Telescope on Spacelab*
 GS telescopes
 . spaceborne telescopes
 . . **LIRTS (telescope)**
 RT European Space Agency
 payloads
 space shuttles
 Spacelab
- LISA (observatory)**
 (added December 2000)
 UF *Laser Interferometer Space Antenna*
 GS antennas
 . gravitational wave antennas
 . . **LISA (observatory)**
 artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . **LISA (observatory)**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **LISA (observatory)**
 RT astronomical interferometry
 gravitational waves
 laser interferometry
 spaceborne astronomy
- LISP (programming language)**
 GS languages
 . programming languages
 . . **LISP (programming language)**
 RT computer programming
 recursive functions
- Lissajous figures**
 DEF Figures where the path of a particle moving in a plane when the components of its position along two perpendicular axes each undergo simple harmonic motions and the ratio of their frequencies is a rational number.
 RT eccentric orbits
 equations of motion
 libration
 lunar orbits
 satellite orbits
- lists**
 GS **lists**
 . hardware utilization lists
 RT ∞ catalogs
 display devices
 enumeration
 indexes (documentation)
 printouts
- literature**
 GS **literature**
 . biography
 . documentation
 RT bibliographies
 documents
 indexes (documentation)

lithergol rocket engines

knowledge
libraries
papers
philosophy

lithergol rocket engines

GS engines
. rocket engines
. . hybrid propellant rocket engines
. . . **lithergol rocket engines**
RT ∞ hybrid rocket engines

lithergolic propellants

USE **hybrid propellants**

lithiasis

GS diseases
. **lithiasis**
RT calculi
dental calculi

lithium

GS chemical elements
. alkali metals
. . **lithium**
. . . liquid lithium
. . . lithium isotopes
metals
. alkali metals
. . **lithium**
. . . liquid lithium
. . . lithium isotopes

lithium 4

USE **lithium isotopes**

lithium 6

USE **lithium isotopes**

lithium alloys

GS alloys
. **lithium alloys**
. . aluminum-lithium alloys
RT aircraft construction materials
aluminum alloys
copper alloys
magnesium alloys
zirconium alloys

lithium aluminum hydrides

GS aluminum compounds
. **lithium aluminum hydrides**
hydrogen compounds
. hydrides
. . metal hydrides
. . . lithium hydrides
. . . . **lithium aluminum hydrides**
lithium compounds
. lithium hydrides
. . **lithium aluminum hydrides**
RT powdered aluminum

lithium batteries

(added December 1999)
GS electrochemical cells
. electric batteries
. . **lithium batteries**
. . . lithium sulfur batteries
RT storage batteries

lithium borates

GS boron compounds
. borates
. . **lithium borates**
lithium compounds
. **lithium borates**

lithium chlorides

GS halogen compounds
. chlorine compounds
. . chlorides
. . . **lithium chlorides**
. halides
. . chlorides
. . . **lithium chlorides**
. . metal halides
. . . **lithium chlorides**
lithium compounds

. lithium chlorides

lithium compounds

GS **lithium compounds**
. lithium borates
. lithium chlorides
. lithium fluorides
. lithium hydrides
. . lithium aluminum hydrides
. lithium hydroxides
. lithium iodates
. lithium niobates
. lithium oxides
. lithium perchlorates
. lithium sulfates
. organic lithium compounds
. spodumene
RT ∞ alkali metal compounds
∞ chemical compounds
∞ metal compounds
metal fuels

Lithium Cooled Reactor Experiment

UF *LCRE Reactor*
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **Lithium Cooled Reactor Experiment**

lithium fluorides

GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **lithium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **lithium fluorides**
. . metal halides
. . . metal fluorides
. . . . **lithium fluorides**
lithium compounds
. **lithium fluorides**

lithium hydrides

GS hydrogen compounds
. hydrides
. . metal hydrides
. . . **lithium hydrides**
. . . . lithium aluminum hydrides
lithium compounds
. **lithium hydrides**
. . lithium aluminum hydrides

lithium hydroxides

GS bases (chemical)
. alkalis
. . **lithium hydroxides**
hydroxides
. **lithium hydroxides**
lithium compounds
. **lithium hydroxides**

lithium iodates

DEF Salts of iodic acid containing the 10 to the third power radical.
GS halogen compounds
. iodine compounds
. . iodates
. . . **lithium iodates**
lithium compounds
. **lithium iodates**
RT ∞ metal compounds

lithium isotopes

UF *lithium 4*
lithium 6
GS chemical elements
. alkali metals
. . lithium
. . . **lithium isotopes**
. nuclides
. . isotopes
. . . **lithium isotopes**
metals
. alkali metals
. . lithium

. . . lithium isotopes

lithium niobates

GS lithium compounds
. **lithium niobates**
niobium compounds
. niobates
. . **lithium niobates**

lithium oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **lithium oxides**
lithium compounds
. **lithium oxides**

lithium perchlorates

GS halogen compounds
. chlorine compounds
. . perchlorates
. . . **lithium perchlorates**
lithium compounds
. **lithium perchlorates**

lithium sulfates

GS lithium compounds
. **lithium sulfates**
sulfur compounds
. sulfates
. . **lithium sulfates**

lithium sulfur batteries

DEF Primary cells for producing electrical energy using lithium metal for one electrode and sulfur for the other.
GS electrochemical cells
. electric batteries
. . lithium batteries
. . . **lithium sulfur batteries**
RT ∞ cells
∞ electric cells
∞ energy sources
∞ power supplies

lithography

DEF The process of printing from a plane surface on which the image to be printed is ink receptive and water repellent and the non-image area is ink repellent and water receptive.
UF *stereolithography*
ultraviolet lithography
GS printing
. **lithography**
. . photolithography
RT nanofabrication
photomechanical effect
reproduction (copying)

lithology

DEF Description of the physical character of rocks as determined by eye or with a low-power magnifier and based on color, structure, mineralogic components, and grain size.
GS geology
. petrology
. . **lithology**
RT regolith
rocks

lithosphere

DEF The solid portion of the Earth, as compared to atmosphere and hydrosphere.
UF *geosphere*
GS **lithosphere**
. Earth core
. Earth crust
. Earth mantle
. Earth surface
RT asthenosphere
Earth planetary structure
planetary mantles
plates (tectonics)
subduction (geology)

Lithuania

GS nations
. **Lithuania**

RT Europe

Little Joe 2 launch vehicle
 GS launch vehicles
 . **Little Joe 2 launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . **Little Joe 2 launch vehicle**

RT Algol engine
 Mercury project
 sergeant missiles
 solid propellant rocket engines
 TX-354 engine
 XM-33 engine

Little John rocket vehicle
 GS rocket vehicles
 . single stage rocket vehicles
 . . **Little John rocket vehicle**
 . surface to surface rockets
 . . **Little John rocket vehicle**

RT Hercules engine
 solid propellant rocket engines

littoral currents
 USE **coastal currents**

littoral drift
 DEF Material (such as shingle, gravel, sand, and shell fragments) that is moved along the shore by coastal currents.

RT bars (landforms)
 beaches
 breakwaters
 coasts
 ocean currents
 sands
 sediments

littoral transport
 RT breakwaters
 ocean currents
 sands
 water waves
 ∞ waves

liver
 GS anatomy
 . **liver**

RT gastrointestinal system
 glands (anatomy)
 hepatitis
 tyrosine

Livermore Pool Type Reactor
 UF *LPTR Reactor*
 GS nuclear reactors
 . nuclear research and test reactors
 . . **Livermore Pool Type Reactor**

liverworts
 USE **Bryophytes**

livestock
 GS animals
 . **livestock**

RT calves
 cattle
 deer
 goats
 horses
 rangelands
 sheep
 swine
 turkeys

lixiscopes
 DEF Portable light weight battery operated low intensity x ray imaging systems with medical, industrial, and scientific applications. Used for Low Intensity X Ray Imaging Scopes.

UF *Low Intensity X Ray Imaging Scopes*
 GS medical equipment
 . x ray apparatus
 . . **lixiscopes**

RT portable equipment
 radiography
 x ray astronomy

x ray imagery

lizards
 GS animals
 . vertebrates
 . . reptiles
 . . . **lizards**

Llanos Orientales (Colombia)
 GS land
 . grasslands
 . . **Llanos Orientales (Colombia)**
 . plains
 . . **Llanos Orientales (Colombia)**
 landforms
 . plains
 . . **Llanos Orientales (Colombia)**

RT Colombia

LLR (ranging)
 (added July 2001)
 USE **laser ranging**
lunar rangefinding

LMCR (reactors)
 USE **liquid metal cooled reactors**

LMFBR
 USE **liquid metal fast breeder reactors**

LNG
 USE **liquefied natural gas**

load carrying capacity
 (added August 1991)
 SN (LIMITED TO STRUCTURAL MECHANICS)
 DEF The capacity of a structure to bear loads.

GS mechanical properties
 . yield strength
 . . **load carrying capacity**

RT compressive strength
 creep strength
 critical loading
 fracture strength
 loads (forces)
 ∞ strength
 structural failure
 structural stability
 structural strain
 tensile strength

load distribution (forces)
 GS distribution (property)
 . **load distribution (forces)**

RT ∞ distribution
 transverse loads

load factors
 USE **loads (forces)**

load testing machines
 RT ∞ machinery
 ∞ test equipment

load tests
 RT compression tests
 creep tests
 destructive tests
 fatigue tests
 impact tests
 loading rate
 nondestructive tests
 shock tests
 specimen geometry
 spin tests
 static tests
 tensile tests
 ∞ tests
 variable amplitude loading

∞ **loading**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *dummy loads*
 RT feeding (supplying)
 filling
 input
 loading operations
 loads (forces)

payloads
 refilling
 replenishment
 shafts (machine elements)
 sweep effect
 variable amplitude loading

loading forces
 USE **loads (forces)**

loading moments
 GS moments
 . **loading moments**

RT aerodynamic loads
 bending moments
 flexing
 loads (forces)
 mass distribution
 moment distribution
 pressure distribution
 static loads
 structural analysis
 torque
 transverse loads

loading operations
 RT feeders
 ∞ loading
 materials handling
 ∞ operations
 unloading

loading rate
 GS rates (per time)
 . **loading rate**

RT impact loads
 load tests
 loads (forces)
 strain rate
 variable amplitude loading
 velocity

loading waves
 USE **elastic waves**
loads (forces)

UF *load factors*
loading forces
loading waves

GS **loads (forces)**
 . axial loads
 . . axial compression loads
 . compression loads
 . . axial compression loads
 . . impact loads
 . contact loads
 . . impact loads
 . . rolling contact loads
 . critical loading
 . dynamic loads
 . . aerodynamic loads
 . . . blast loads
 . . . gust loads
 . . . cyclic loads
 . . . rolling contact loads
 . . thrust loads
 . . transient loads
 . . . gust loads
 . . . impact loads
 . . . landing loads
 . . . shock loads
 blast loads
 . . . variable amplitude loading
 . . vibratory loads
 . . wing loading
 . edge loading
 . random loads
 . . gust loads
 . static loads
 . transverse loads

RT ballast (mass)
 ∞ equilibrium
 ∞ force
 force distribution
 Hugoniot equation of state
 load carrying capacity
 ∞ loading
 loading moments
 loading rate

lobes

mass distribution
mechanics (physics)
moment distribution
payloads
plane stress
pressure
pressure distribution
pressure effects
shafts (machine elements)
shearing
stress concentration
stress intensity factors
stresses
structural design criteria
weight (mass)
wind pressure

∞ lobes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT antenna design
antenna radiation patterns
backlobes
sidelobes

local area networks

DEF Networks, generally microcomputer based, that enable users in the same location to use the same programs and equipment such as printers. Used for LAN (computer networks).

UF LAN (computer networks)

GS networks
. communication networks
. . . **local area networks**
. computer networks
. . . **local area networks**

RT architecture (computers)
carrier sense multiple access
data transmission
Ethernet
interprocessor communication
network control
protocol (computers)
VSAT (network)
wide area networks

local group (astronomy)

DEF The cluster of galaxies to which our galaxy belongs. It is a poor, irregular cluster with some 20 certain members including the Milky Way Galaxy, the Andromeda Galaxy, the Triangulum, four irregular galaxies, and about 13 intermediate or dwarf ellipticals.

GS celestial bodies
. galactic clusters
. . . **local group (astronomy)**

RT Andromeda Galaxy
barred galaxies
cosmology
disk galaxies
dwarf galaxies
elliptical galaxies
Milky Way Galaxy
solar neighborhood
spiral galaxies
Virgo galactic cluster

local scientific survey module

GS modules
. **local scientific survey module**

RT instrument packages
lunar exploration
measuring instruments

local thermodynamic equilibrium

(added April 1991)

UF LTE (astronomy)

RT stellar atmospheres
stellar physics
thermodynamic equilibrium

localization

USE **position (location)**

LOCATES system

UF Location of Air Traffic Satellites

RT air traffic control
Beacon satellites
navigation satellites
satellite guidance

∞ systems

location

USE **position (location)**

Location of Air Traffic Satellites

USE **LOCATES system**

loci

GS geometry
. Euclidean geometry
. . . analytic geometry
. . . . **loci**
RT ∞ centers
conics
foci
line of sight
points (mathematics)
resolution

Lockheed 186 helicopter

USE **XH-51 helicopter**

Lockheed aircraft

GS **Lockheed aircraft**
. C-5 aircraft
. C-121 aircraft
. C-130 aircraft
. C-140 aircraft
. C-141 aircraft
. CL-823 aircraft
. Electra aircraft
. F-94 aircraft
. F-104 aircraft
. L-1011 aircraft
. L-2000 aircraft
. Lockheed model 18 aircraft
. P-3 aircraft
. S-3 aircraft
. SR-71 aircraft
. T-33 aircraft
. U-2 aircraft
. X-35 aircraft
. XH-51 helicopter
. XV-4 aircraft
RT ∞ aircraft

Lockheed C-5 aircraft

USE **C-5 aircraft**

Lockheed CL-595 helicopter

USE **XH-51 helicopter**

Lockheed CL-823 aircraft

USE **CL-823 aircraft**

Lockheed Constellation aircraft

USE **C-121 aircraft**

Lockheed L-2000 aircraft

USE **L-2000 aircraft**

Lockheed model 18 aircraft

GS Lockheed aircraft
. **Lockheed model 18 aircraft**
monoplanes
. **Lockheed model 18 aircraft**
transport aircraft
. **Lockheed model 18 aircraft**
RT ∞ aircraft

Lockheed U-2 aircraft

USE **U-2 aircraft**

Lockheed XV-4A aircraft

USE **XV-4 aircraft**

locking

UF interlocking
GS **locking**
. laser mode locking
RT fasteners
∞ joining
locks (fasteners)
retaining

∞ locks

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air locks

locks (fasteners)

locks (fasteners)

GS fasteners
. **locks (fasteners)**
RT locking
∞ locks

locomotion

UF motility
GS **locomotion**
. astronaut locomotion
. gait
. running
. walking
RT exercise physiology
navigation
propulsion
wheelchairs

locomotives

RT diesel engines
handling equipment
rail transportation
windshields

locusts

GS animals
. invertebrates
. . . arthropods
. . . . insects
. . . . **locusts**
RT farm crops
foliage
infestation
vegetation

LOFAR

RT sonar
underwater acoustics

LOFTI satellites

USE **low frequency transionospheric satellites**

lofting

RT aircraft design
ascent trajectories
computer aided design
differential geometry
engineering drawings
mathematical models
spacecraft design
structural design
∞ surface geometry
templates

log periodic antennas

GS antennas
. directional antennas
. . . **log periodic antennas**
RT antenna arrays
antenna design
broadband
dipole antennas
frequency response
parasitic elements (antennas)

log spiral antennas

GS antennas
. spiral antennas
. . . **log spiral antennas**
RT dipole antennas

logarithmic receivers

GS receivers
. **logarithmic receivers**
RT communication equipment
frequency response
intermediate frequency amplifiers
transfer functions

logarithms

DEF The power to which a fixed number, called the base, usually 10 or e (2. 7182818) must be raised to produce the value to which the logarithm corresponds.

GS analysis (mathematics)
. complex variables
. . . exponential functions
. . . . **logarithms**

- functions (mathematics)
 . transcendental functions
 . . exponential functions
 . . . **logarithms**
 RT exponents
- logging (industry)**
 DEF The business of felling trees, cutting them up into logs and transporting the logs to sawmills or to a place of sale.
 RT forests
 trees (plants)
- ∞ **logic**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT artificial intelligence
 axioms
 Boolean algebra
 branching (mathematics)
 complements (mathematics)
 expert systems
 fluid logic
 fluidics
 formalism
 information theory
 logic circuits
 logic design
 mathematical logic
 paradoxes
 philosophy
 predicate calculus
 predicate logic
 ∞ principles
 temporal logic
 threshold logic
 transistor logic
- logic circuits**
 UF *logic networks*
 GS circuits
 . **logic circuits**
 . . threshold gates
 RT adding circuits
 architecture (computers)
 arithmetic and logic units
 central processing units
 computers
 counting circuits
 decisions
 digital computers
 evolvable hardware
 fluid logic
 gates (circuits)
 ∞ logic
 logical elements
 matrices (circuits)
 multipliers
 multivibrators
 neural nets
 programmable logic devices
 reconfigurable hardware
 ∞ relay
 switching circuits
 threshold logic
 transistor circuits
 transistor logic
- logic design**
 RT amplifier design
 architecture (computers)
 computer aided design
 computer design
 computer programming
 ∞ design
 design analysis
 evolvable hardware
 hardware description languages
 ∞ logic
 logic programming
 logical elements
 programmable logic devices
 switching theory
 transistor logic
- logic networks*
 USE **logic circuits**
- logic programming**
 GS computer programming
- . **logic programming**
 RT artificial intelligence
 expert systems
 logic design
 temporal logic
- logic units*
 USE **arithmetic and logic units**
- logical elements**
 DEF In computers or data processing systems, the smallest building blocks which can be represented by operators in an appropriate system of symbolic logic. Typical logical elements are the AND gate and flip-flop, which can be represented as operators in a suitable symbolic logic. Used for decision elements.
 UF *decision elements*
 RT computer components
 digital electronics
 ∞ elements
 gates (circuits)
 logic circuits
 logic design
- logistics**
 GS **logistics**
 . lunar logistics
 . space logistics
 RT aircraft maintenance
 Army-Navy instrumentation program
 command and control
 cranes
 deployment
 downtime
 ∞ electric equipment
 energy policy
 ∞ facilities
 inventory management
 maintenance
 matrix management
 portable equipment
 rapid transit systems
 resource allocation
 resources
 services
 shipyards
 site selection
 stockpiling
 ∞ storage
 stowage (onboard equipment)
 transportation
 ∞ travel
 utilities
- logistics management**
 GS management
 . **logistics management**
 . . inventory management
 . . . inventory controls
 RT ∞ facilities
 maintenance
 resources
 services
 spare parts
 ∞ storage
- logistics over the shore (LOTS) carrier**
 RT military technology
- LOH helicopter*
 USE **OH-6 helicopter**
- Loki rocket vehicle**
 GS rocket vehicles
 . single stage rocket vehicles
 . . **Loki rocket vehicle**
 . . sounding rockets
 . . **Loki rocket vehicle**
 RT solid propellant rocket engines
 WASP sounding rocket
- LOLA (simulator)*
 USE **lunar orbit and landing simulators**
- Lomonosov current**
 GS circulation
 . water circulation
 . . water currents
 . . . ocean currents
- . . . **Lomonosov current**
 RT Atlantic Ocean
 Gulf Stream
 tropical regions
- Long Duration Exposure Facility**
 UF *LDEF*
 GS artificial satellites
 . scientific satellites
 . . **Long Duration Exposure Facility**
 laboratories
 . space laboratories
 . . **Long Duration Exposure Facility**
 space platforms
 . **Long Duration Exposure Facility**
 RT space weathering
 spaceborne experiments
- long duration space flight**
 DEF Space flight involving interplanetary and/or interstellar travel. Used for extended duration space flight.
 UF *extended duration space flight*
 GS space flight
 . **long duration space flight**
 RT Crew Exploration Vehicle
 deep space
 extraterrestrial environments
 ∞ flight
 flyby missions
 interplanetary flight
 interstellar travel
 manned Mars missions
 manned space flight
 Mars bases
 ∞ missions
 planetary environments
 space adaptation syndrome
- Long Island (NY)**
 GS landforms
 . islands
 . . **Long Island (NY)**
 RT Atlantic Ocean
 New York
- Long March launch vehicles**
(added January 1999)
 GS launch vehicles
 . **Long March launch vehicles**
 RT Chinese space program
 Chinese spacecraft
 heavy lift launch vehicles
 Shenzhou 5 spacecraft
- long period variables*
 USE **Mira variables**
- long range navigation*
 USE **loran**
- long range weather forecasting**
 GS meteorology
 . weather forecasting
 . . **long range weather forecasting**
 predictions
 . forecasting
 . . weather forecasting
 . . . **long range weather forecasting**
 RT Atmospheric General Circulation
 Models
 numerical weather forecasting
 statistical weather forecasting
- long term effects**
 UF *secular perturbation*
 RT celestial mechanics
 climate
 closed ecological systems
 cycles
 durability
 ∞ effects
 life (durability)
 life support systems
 orbit perturbation
 ∞ performance
 periodic variations
 perturbation
 storage stability
 time temperature parameter

long wave radiation

weather

Long Term Zonal Earth Energy Experiment
USE **LZEEBE satellite**

long wave radiation
GS electromagnetic radiation
. radio waves
. . . **long wave radiation**
RT far infrared radiation
monochromatic radiation
∞ radiation
short wave radiation
solar radiation
Surface Meteorology and Solar Energy project
Surface Radiation Budget project

long waves (meteorology)
USE **planetary waves**

longerons
UF *astromasts*
GS structural members
. **longerons**
RT keels
reinforcement (structures)
ribs (supports)
strakes
stringers
structural stability

∞ **longevity**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT life (durability)
life span

longitude
DEF Angular distance, along a primary great circle, from the adopted reference point; the angle between a reference plane through the polar axis and a second plane through that axis.
GS **longitude**
. solar longitude
RT coordinates
geodetic coordinates
latitude
position (location)

longitude measurement
RT latitude measurement
∞ measurement
navigation
positioning

longitudinal control
UF *pitch attitude control*
GS attitude control
. **longitudinal control**
RT aircraft control
altitude control
automatic control
∞ control
directional control
helicopter control
lateral control
manual control
missile control
pilot induced oscillation
pitch (inclination)
satellite attitude control
satellite control

longitudinal stability
GS dynamic characteristics
. dynamic stability
. . . motion stability
. . . . attitude stability
. . . . **longitudinal stability**
stability
. dynamic stability
. . . motion stability
. . . . attitude stability
. . . . **longitudinal stability**
RT aerodynamic stability
aircraft stability
directional stability
flow stability

hovering stability
lateral stability
pitch (inclination)
pitching moments
POGO effects
rotary stability
spacecraft stability

longitudinal waves
DEF Waves in which the direction of displacement at each point of the medium is normal to the wave front.
GS **longitudinal waves**
. plane waves
RT beams (radiation)
dilatational waves
elastic waves
electrostatic waves
frequencies
normal shock waves
∞ radiation
seismic waves
shock waves
solar radiation
sound waves
transverse waves
wave packets
wavelengths
∞ waves

longshore currents
USE **coastal currents**

look angles (electronics)
DEF The solid angle in which an instrument operates effectively, generally used to describe radars, optical instruments, and space radiation detectors.
GS geometry
. Euclidean geometry
. . . angles (geometry)
. . . . **look angles (electronics)**
RT alignment
directivity
installing
instrument orientation
optical equipment
positioning
radar equipment

look angles (tracking)
DEF The elevation and azimuth at which a particular satellite is predicted to be found at a specified time.
GS geometry
. Euclidean geometry
. . . angles (geometry)
. . . . **look angles (tracking)**
RT azimuth
elevation angle
field of view

loop antennas
DEF Antennas whose configuration is that of a loop. If the current in the loop, or in the parallel turns of the loop is essentially uniform and the loop circumference is small compared with the wavelength, the radiation pattern approximates that of a magnetic dipole.
GS antennas
. directional antennas
. . . **loop antennas**
RT aircraft antennas
loops
monopole antennas

loop transfer functions
(added September 1993)
GS functions (mathematics)
. transfer functions
. . . **loop transfer functions**
RT control systems design
feedback control
loop transfer recovery

loop transfer recovery
(added September 1993)
DEF The recovery of the transfer properties of the controller in a feedback control system compensator design.

RT compensators
control stability
control systems design
control theory
error signals
feedback control
loop transfer functions
∞ recovery
systems stability

loops
GS **loops**
. corrosion test loops
RT circuits
closed cycles
loop antennas
toruses
trusses

LOR (rendezvous)
USE **lunar orbital rendezvous**

LORAC navigation system
GS navigation
. radio navigation
. . . hyperbolic navigation
. . . . **LORAC navigation system**
RT distance measuring equipment
navigation aids
navigation instruments
surface navigation
∞ systems

loran
DEF A two dimensional pulse synchronized radio navigation system to determine hyperbolic lines of position through pulse time differencing from a master compared to two slave stations. Used for long range navigation.
UF *long range navigation*
GS navigation
. radio navigation
. . . hyperbolic navigation
. . . . **loran**
. loran C
. loran D
RT air navigation
Decca navigation
distance measuring equipment
navigation aids
navigation instruments
polar navigation
solar compasses
surface navigation
surveys

loran C
GS navigation
. radio navigation
. . . hyperbolic navigation
. . . . loran
. **loran C**
RT air navigation
Decca navigation
navigation aids

loran D
GS navigation
. radio navigation
. . . hyperbolic navigation
. . . . loran
. **loran D**
RT air navigation
Decca navigation
navigation aids

Lorentz contraction
UF *Fitzgerald-Lorentz contraction*
RT relativity

Lorentz force
DEF The force affecting a charged particle due to the motion of the particle in a magnetic field.
RT charged particles
∞ force
magnetic fields

ponderomotive forces

Lorentz force accelerator thrusters
(added April 2001)
USE **magnetoplasmadynamic thrusters**

Lorentz gas
GS gases
. ionized gases
. . **Lorentz gas**
particles
. charged particles
. . ionized gases
. . . **Lorentz gas**
RT gas dynamics
kinetic theory

Lorentz transformations
GS functions (mathematics)
. **Lorentz transformations**
RT Dirac equation
invariance
Mandelstam representation

LORV
USE **low observable reentry vehicles**

Los Alamos Molten Plutonium Reactor
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **Los Alamos Molten Plutonium Reactor**
. nuclear research and test reactors
. . **Los Alamos Molten Plutonium Reactor**

Los Alamos Turret Reactor
USE **high temperature nuclear reactors**

Los Alamos Water Boiler Reactor
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . **Los Alamos Water Boiler Reactor**

loss of coolant
UF *coolant loss*
GS accidents
. **loss of coolant**
RT coolants
leakage
losses
nuclear reactors
reactor materials

losses
GS **losses**
. dielectric loss
RT auditory defects
commerce
damage
depletion
eddy currents
energy dissipation
impairment
insertion loss
leakage
legal liability
liabilities
loss of coolant
ohmic dissipation
plasma loss
seepage
transmission loss
wastes
water loss
yield

lossless equipment
RT lossless materials

lossless materials
DEF Dielectric materials that do not dissipate energy or that do not dampen oscillations.
GS dielectrics
. **lossless materials**
RT lossless equipment

∞ materials

lossy media
DEF A material that dissipates electromagnetic or acoustic energy passing through it.
RT electromagnetic wave transmission
ionospheric propagation
transmission loss
wave propagation

lost wax process
USE **investment casting**

LOTS cargo ships
USE **cargo ships**

loudness
DEF The intensive attribute of an auditory sensation, in terms of which sounds may be ordered on a scale extending from soft to loud. Loudness is measured in sones. Loudness depends primarily upon the sound pressure of the stimulus, but it also depends upon the frequency and waveform of the stimulus.
RT acoustics
effective perceived noise levels
flux density
hearing
∞ intensity
level (quantity)
noise (sound)
noise measurement
noise reduction
power spectra
sound intensity
sound pressure
sound waves

loudspeakers
GS audio equipment
. **loudspeakers**
transducers
. sound transducers
. . electroacoustic transducers
. . . **loudspeakers**
RT monaural signals
radio receivers
sound generators

Louisiana
GS nations
. United States
. . **Louisiana**
RT Atchafalaya River Basin (LA)
Gulf of Mexico
Lake Pontchartrain (LA)
Mississippi Delta (LA)

∞ **lounges**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT mobile lounges
rooms
seats

louvers
RT apertures
baffles
∞ diffusers
∞ screening
shades
shielding
∞ shutters
slots
vents

Love waves
DEF Surface waves having a horizontal motion that is shear or transverse to the direction of propagation. Their velocity depends only on density and rigidity and not on bulk modulus. They are named after A.E.H. Love, the English mathematician who discovered them.
GS elastic waves
. seismic waves
. . **Love waves**

RT surface waves

low alloy steels
USE **high strength steels**

low altitude
GS altitude
. **low altitude**
RT elevation
lower atmosphere
midaltitude
nap-of-the-earth navigation
terrain following

low aspect ratio
GS ratios
. aspect ratio
. . **low aspect ratio**

low aspect ratio wings
UF *diamond wings*
GS airfoils
. wings
. . **low aspect ratio wings**
. . . delta wings
. . . trapezoidal wings
RT cruciform wings
fixed wings
rigid wings
wing planforms

low carbon steels
DEF Iron alloys containing carbon in low percentages that display temper and malleability characteristics not found in ordinary carbon steels.
GS alloys
. iron alloys
. . steels
. . . carbon steels
. . . . **low carbon steels**
RT iron

low concentrations
GS composition (property)
. concentration (composition)
. . **low concentrations**
RT dilution

low conductivity
RT electric current
electrical resistivity
transconductance

low cost
GS costs
. **low cost**
RT economy

low currents
GS electric current
. **low currents**
RT dark current
low voltage
plasma currents

low density flow
GS fluid flow
. **low density flow**
RT ∞ flow
molecular flow
rarefied gas dynamics
rarefied gases

low density gases
USE **rarefied gases**

low density materials
RT absorbents
absorbers (materials)
foams
granular materials
honeycomb cores
honeycomb structures
light elements
∞ materials
polyurethane foam
porous materials
porous plates

low density research

powder metallurgy

low density research

GS research
. **low density research**
RT blowdown wind tunnels
collisionless plasmas
composite materials
epoxy matrix composites
nonuniform plasmas
plasmas (physics)
rarefied gases
shock tubes
shock tunnels
shock wave luminescence
ultrahigh vacuum
vacuum apparatus

low density wind tunnels

GS test facilities
. wind tunnels
. . **low density wind tunnels**
RT hypersonic wind tunnels
hypervelocity wind tunnels
plasma jets
rarefied gas dynamics
shock tubes
shock tunnels
slip flow
supersonic wind tunnels

low Earth orbital environments

USE **Earth orbital environments**

low Earth orbits

(added April 1995)

DEF Nominally circular Earth orbits of low altitude (typically between 100 and 1,000 km.) and short periodicity.

UF **LEO**
GS orbits
. Earth orbits
. . **low Earth orbits**
RT Earth orbital environments
elliptical orbits
interplanetary transfer orbits
parking orbits
polar orbits
remote sensing
satellite orbits

low frequencies

SN (30 TO 300 KHZ)
GS frequencies
. radio frequencies
. . **low frequencies**
. . . very low frequencies
RT ∞ bands
extremely low frequencies
high frequencies
intermediate frequencies
ultrahigh frequencies
very high frequencies

low frequency transionospheric satellites

UF **LOFTI satellites**
GS artificial satellites
. communication satellites
. . **low frequency transionospheric satellites**

low gravity

USE **microgravity**

low gravity manufacturing

GS manufacturing
. **low gravity manufacturing**
RT containerless melts
drop towers
fabrication
levitation melting
liquid bridges
Marangoni convection
metal foams
microgravity
∞ microgravity applications
space manufacturing
space processing
space tools

technologies

Low Intensity X Ray Imaging Scopes

USE **lixiscopes**

low latitudes

USE **tropical regions**

low level turbulence

GS turbulence
. atmospheric turbulence
. . **low level turbulence**
RT homogeneous turbulence

low mass

USE **mass**

low molecular weights

GS molecular properties
. molecular weight
. . **low molecular weights**
RT diatomic molecules
molecules
monatomic molecules
weight (mass)

low noise

RT preamplifiers
signal to noise ratios

low observable reentry vehicles

UF **LORV**
GS reentry vehicles
. **low observable reentry vehicles**
RT radar cross sections
reentry
reentry physics
∞ vehicles

low pass filters

DEF Wave filters having a single transmission band extending from zero frequency up to some critical or bounding frequency, not infinite.

RT bandstop filters
electric filters
electromagnetic wave filters
∞ filters
Gabor filters
microwave filters
optical filters

low pressure

GS pressure
. **low pressure**
. . high altitude pressure
RT altitude tolerance
cyclogenesis
cyclones
∞ depression
high altitude environments
high pressure
hypobaric atmospheres
troughs
vacuum

low pressure chambers

USE **vacuum chambers**

∞ **low resistance**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chemical properties
electrical resistance
flow resistance
mechanical properties
∞ resistance
thermal resistance
transconductance

low Reynolds number

SN (RN BELOW 2,000)
DEF A Reynolds number below the critical Reynolds number of a sphere.
GS dimensionless numbers
. Reynolds number
. . **low Reynolds number**
ratios
. Reynolds number
. . **low Reynolds number**
RT direct numerical simulation

high Reynolds number
laminar flow
viscosity

low speed

UF *low velocity*
GS rates (per time)
. **low speed**
velocity
. **low speed**
RT airspeed
flow velocity
ground speed
landing speed
subsonic speed

low speed stability

GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **low speed stability**
stability
. dynamic stability
. . motion stability
. . . **low speed stability**
RT aerodynamic stability
aerodynamic stalling
aircraft stability
attitude stability
controllability
dynamic tests
flight characteristics
flow stability
hovering stability
spacecraft stability

low speed wind tunnels

GS test facilities
. wind tunnels
. . **low speed wind tunnels**
. . . subsonic wind tunnels
RT blowdown wind tunnels

low temperature

GS temperature
. **low temperature**
. . cryogenic temperature
RT bay ice
cooling
cryogenics
freezing
frost
frost damage
ice formation
magnetic cooling
pressure ice
refrigerating

low temperature brazing

GS welding
. fusion welding
. . gas welding
. . . brazing
. . . . **low temperature brazing**
RT soldering

low temperature environments

GS environments
. **low temperature environments**
RT cold strength
cold weather
high altitude environments
lunar temperature
magnetic cooling
mountain inhabitants
thermal environments

low temperature physics

RT cryochemistry
cryogenics
high temperature superconductors
Kondo effect
∞ physics
∞ science
solidified gases
superconducting power transmission
superconductivity

- YBCO superconductors
- low temperature plasmas*
USE **cold plasmas**
- low temperature tests**
GS environmental tests
. **low temperature tests**
RT chemical tests
cold strength
cold weather tests
cryostats
hardness tests
lubricant tests
melting points
nondestructive tests
quality control
temperature control
∞ tests
thermal expansion
thermal stability
- low thrust**
GS thrust
. **low thrust**
. . microthrust
RT high thrust
jet thrust
rocket thrust
variable thrust
- low thrust propulsion**
GS propulsion
. **low thrust propulsion**
. . electromagnetic propulsion
. . magnetic sails
. . electrostatic propulsion
. . ion propulsion
. . man operated propulsion systems
. . photonic propulsion
. . laser propulsion
. . plasma propulsion
. . solar propulsion
. . solar electric propulsion
. . solar thermal propulsion
RT electric propulsion
microthrust
rocket thrust
space station propulsion
spacecraft propulsion
variable thrust
- low turbulence**
GS turbulence
. **low turbulence**
RT steady flow
- low vacuum**
SN (PRESSURES BETWEEN 3. 001 AND 1. 0 TORR)
DEF The condition in a gas filled space at pressures less than 760 torr corresponding approximately to the vapor pressure of water at 25 deg. C and to 1 inch of mercury.
GS pressure
. vacuum
. . **low vacuum**
RT high vacuum
- low velocity*
USE **low speed**
- low visibility**
GS visibility
. **low visibility**
RT aircraft landing
all-weather landing systems
hazards
haze
instrument flight rules
light transmission
- low voltage**
GS potential energy
. electric potential
. . **low voltage**
RT low currents
- low volume ramjet engines**
GS engines
. air breathing engines
- . . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **low volume ramjet engines**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **low volume ramjet engines**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **low volume ramjet engines**
- low weight**
RT gravitation
microgravity
weightlessness
- ∞ **low wing aircraft**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ aircraft
aircraft configurations
Beech 99 aircraft
general aviation aircraft
hypersonic aircraft
jet aircraft
light aircraft
monoplanes
passenger aircraft
tailless aircraft
transport aircraft
turbofan aircraft
turbo-prop aircraft
- lower atmosphere**
SN (ALTITUDE BELOW ABOUT 50 KM)
DEF Generally, and quite loosely, that part of the atmosphere in which most weather phenomena occur (i.e., the troposphere and lower stratosphere); hence, used in contrast to the common meaning for the upper atmosphere.
GS Earth atmosphere
. **lower atmosphere**
. . troposphere
. . . tropopause
RT biosphere
chemosphere
heterosphere
homosphere
Intasat satellite
LACATE (experiment)
low altitude
mesometeorology
middle atmosphere
- Lower Atmospheric Composition Experiment*
USE **LACATE (experiment)**
- lower body negative pressure**
DEF Application and/or measurement of reduced pressure in the portion of the body below the iliac crests. Used as a simulator or orthostatic stress or as an indicator of cardiovascular deconditioning in a weightless environment.
GS hemodynamics
. **lower body negative pressure**
pressure
. blood pressure
. . **lower body negative pressure**
RT acceleration stresses (physiology)
artificial gravity
cardiovascular system
fluid shifts (biology)
gravitational effects
head up tilt
orthostatic tolerance
space flight stress
stress (physiology)
tilt-table test
weightlessness
- Lower California (Mexico)**
UF *Baja California*
RT Mexico
- North America
- lower ionosphere**
GS Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . **lower ionosphere**
. . . D region
RT E region
- LOX (oxygen)*
USE **liquid oxygen**
- LOX-hydrocarbon rocket engines*
USE **oxygen-hydrocarbon rocket engines**
- LOX-hydrogen engines*
USE **hydrogen oxygen engines**
- LPTR Reactor*
USE **Livermore Pool Type Reactor**
- LQG control*
USE **linear quadratic Gaussian control**
- LQR*
USE **linear quadratic regulator**
- LR circuits*
USE **RL circuits**
- LR-62-RM-2 engine**
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **LR-62-RM-2 engine**
RT Bullpup missiles
- LR-87-AJ-5 engine**
GS engines
. rocket engines
. . booster rocket engines
. . . **LR-87-AJ-5 engine**
. . liquid propellant rocket engines
. . . **LR-87-AJ-5 engine**
RT Titan 1 ICBM
- LR-91-AJ-5 engine**
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **LR-91-AJ-5 engine**
RT Titan ICBM
- LRC circuits*
USE **RLC circuits**
- LRV (vehicle)*
USE **lunar roving vehicles**
- L-Sat**
DEF A communications satellite designed by European Space Agency member states to meet future communications satellite market needs such as European broadcast services, global telecommunications trunk services, and mobile services. Used for European Large Telecomm Satellite.
UF *European Large Telecomm Satellite*
GS artificial satellites
. communication satellites
. . **L-Sat**
. . ESA satellites
. . . **L-Sat**
. . ESA spacecraft
. . ESA satellites
. . . **L-Sat**
RT satellite networks
- LSI*
USE **large scale integration**
- LSS (cosmology)*
(added May 2002)
USE **large-scale structure of the universe**
- LSSM**
UF *Lunar Surface Scientific Modules*
GS lunar spacecraft

lubricant tests

- . lunar landing modules
 - . . Lunar Module
 - . . . **LSSM**
- manned spacecraft
 - . Lunar Module
 - . . **LSSM**
- modules
 - . spacecraft modules
 - . . landing modules
 - . . . lunar landing modules
 - Lunar Module
 - **LSSM**
- soft landing spacecraft
 - . landing modules
 - . . lunar landing modules
 - . . . Lunar Module
 - **LSSM**
- spacecraft components
 - . spacecraft modules
 - . . landing modules
 - . . . lunar landing modules
 - Lunar Module
 - **LSSM**

RT Apollo project
lunar laboratories

∞ surfaces

LST

USE **Hubble Space Telescope**

LTE (astronomy)

USE **local thermodynamic equilibrium**

LTV aircraft

USE **Ling-Temco-Vought aircraft**

lubricant tests

RT engine tests
high temperature tests
low temperature tests

∞ materials tests

∞ tests

tribometers

wear resistance

lubricants

DEF Substances interposed between two surfaces for the purpose of reducing the friction or wear between them.

GS **lubricants**

- . gas lubricants
- . high temperature lubricants
- . lubricating oils
- . solid lubricants

RT additives
boundary lubrication
graphite
greases
kerogen
liquid metals
lubrication
lubrication systems
maintenance
oils
petroleum products
squeeze films

lubricating oils

GS lubricants

- . **lubricating oils**
- oils
 - . **lubricating oils**

RT detergents
lubrication
mineral oils
petroleum products
shale oil

lubrication

GS **lubrication**

- . boundary lubrication
- . self lubrication
- . spacecraft lubrication
- . vapor phase lubrication

RT bearings
elastohydrodynamics
engines
friction reduction
gears
impregnating

- liquid bearings
- lubricants
- lubricating oils
- lubrication systems
- maintenance
- self lubricating materials
- sliding
- tribology

lubrication systems

RT automobiles
cooling systems
internal combustion engines
lubricants
lubrication
pumps

∞ systems

vapor phase lubrication

Lucite (trademark)

USE **polymethyl methacrylate**

Luder bands

USE **plastic deformation yield point**

Ludox (trademark)

DEF Composite material utilizing colloidal silica matrixes.

GS refractory materials

- . **Ludox (trademark)**

RT densification
heat shielding
reentry shielding
spacecraft construction materials
thermal protection
tiles

lugs

RT fasteners
holders
studs (structural members)
supports

lumbar region

GS anatomy

- . **lumbar region**
- regions
 - . **lumbar region**

RT human body
sciatic region

lumbering areas

USE **forests**

lumens

DEF Units of luminous flux equal to the luminous flux radiated into a unit solid angle (steradian) from a point source having a luminous intensity of 1 candela.

GS pressure

- . radiation pressure
- . . **lumens**
- rates (per time)
- . flux density
- . . radiant flux density
- . . . **lumens**

RT light (visible radiation)
luminance
luminescence
luminosity
optical properties
radiance

luminaires

UF **electroluminescent lamps**
lamps
light bulbs
lights

GS lighting equipment

- . **luminaires**
- . . aircraft lights
- . . airport lights
- . . . runway lights
- . . arc lamps
- . . flash lamps
- . . . alkali vapor lamps
- . . mercury lamps
- . . quartz lamps
- . . searchlights

- . . xenon lamps

RT ballasts (impedances)
bulbs
fixtures

∞ flares

∞ globes

- illuminating
- light (visible radiation)
- light sources
- projectors
- visual signals

luminance

SN (LIMITED TO EMISSION RATE PER UNIT AREA OF VISIBLE RADIATION)

DEF In photometry, a measure of the intrinsic luminous intensity emitted by a source in a given direction; the illuminance produced by light from the source upon a unit surface area oriented normal to the line of sight at any distance from the source, divided by the solid angle subtended by the source at the receiving surface. Also called brightness but luminance is preferred.

GS pressure

- . radiation pressure
- . . luminous intensity
- . . . **luminance**
- rates (per time)
- . flux density
- . . radiant flux density
- . . . luminous intensity
- **luminance**

RT brightness
glare
illuminance
illuminating

∞ intensity

- irradiance
- light (visible radiation)
- lumens
- optical properties
- photometry
- sky brightness
- solar flux density
- stellar magnitude

luminescence

DEF Light emission by a process in which kinetic heat energy is not essential for the mechanism of excitation. Used for glow and noctilucence.

UF *glow*
noctilucence

GS emission

- . light emission
- . . **luminescence**
- . . . bioluminescence
- . . . cathode glow
- . . . cathodoluminescence
- . . . chemiluminescence
- . . . electroluminescence
- . . . fluorescence
- laser induced fluorescence
- phosphorescence
- resonance fluorescence
- x ray fluorescence
- . . . lunar luminescence
- . . . optical resonance
- . . . photoluminescence
- triboluminescence
- x ray fluorescence
- . . . shock wave luminescence
- . . . sonoluminescence
- . . . spacecraft glow
- . . . thermoluminescence

RT afterglows
alkali vapor lamps
brightness
electron-hole drops
Fraunhofer line discriminators

∞ illumination

- illuminators
- incandescence
- light (visible radiation)
- light emitting diodes
- lumens
- luminosity
- luminous intensity
- noctilucence clouds

optical transition
 plasma radiation
 stellar luminosity
 Stokes law of radiation
 temperature sensitive paints
 visibility

luminescent intensity

USE **luminous intensity**

luminescent proteins

(added August 2004)

DEF Proteins which are involved in the phenomenon of light emission in living systems. Included are the "enzymatic" and "non-enzymatic" types of system with or without the presence of oxygen or co-factors.

GS biopolymers
 . proteins
 . . **luminescent proteins**
 organic compounds
 . proteins
 . . **luminescent proteins**
 RT bioluminescence

luminosity

GS electromagnetic properties
 . optical properties
 . . **luminosity**
 . . . stellar luminosity
 RT brightness
 emissivity
 emittance
 illuminance
 incandescence
 light (visible radiation)
 lumens
 luminescence
 mass to light ratios
 phosphene
 radiance
 radiant flux density
 Tully-Fisher relation
 visibility

luminous flux density

USE **luminous intensity**

luminous intensity

SN (LIMITED TO EMISSION OR DETECTION RATE PER UNIT AREA OF VISIBLE RADIATION)

DEF Luminous energy per unit time per unit solid angle; the intensity (flux per unit solid angle) of visible radiation weighted to take into account the variable response of the human eye as a function of the wavelength of light; usually expressed in candles. Used for light intensity, luminescent intensity, and luminous flux density.

UF *light intensity*
luminescent intensity
luminous flux density
 GS pressure
 . radiation pressure
 . . **luminous intensity**
 . . . illuminance
 . . . luminance
 rates (per time)
 . flux density
 . . radiant flux density
 . . . **luminous intensity**
 illuminance
 luminance

RT BL Lacertae objects
 brightness
 emittance
 flux (rate)
 incandescence
 ∞ intensity
 irradiance
 light (visible radiation)
 luminescence
 mass to light ratios
 radiance
 Seyfert galaxies
 solar flux density
 stellar magnitude

lumped parameter systems

DEF Systems in which the parameters may be considered to represent, for purposes of

analysis, a single inductance, capacitance, resistance, etc., throughout the frequency range of interest.

RT lumping
 mathematical models
 matrices (mathematics)
 ∞ systems

lumping

RT agglomeration
 coagulation
 collection
 composition (property)
 lumped parameter systems

LUNA lunar probes

USE **Lunik lunar probes**

lunar albedo

GS albedo
 . **lunar albedo**
 RT absorptance
 cosmic ray albedo
 Earth albedo
 optical properties
 surface properties

lunar atmosphere

UF *lunar ionosphere*
 GS environments
 . extraterrestrial environments
 . . lunar environment
 . . . **lunar atmosphere**
 . . . satellite atmospheres
 . . . **lunar atmosphere**
 RT moon
 planetary atmospheres

lunar based equipment

(added December 1990)

GS **lunar based equipment**
 . lunar construction equipment
 . lunar excavation equipment
 . lunar retroreflectors
 RT ∞ equipment
 lunar bases
 lunar flying vehicles
 lunar laboratories
 lunar logistics
 lunar mining
 lunar shelters
 lunar surface vehicles

lunar bases

GS space bases
 . **lunar bases**
 RT AEPS
 Altair Lunar Lander
 ∞ astronauts
 ∞ bases
 lunar based equipment
 lunar construction equipment
 lunar laboratories
 lunar mining
 Mars bases
 moon
 orbiting lunar stations
 space colonies
 stations
 terraforming

lunar cinematography

USE **lunar photography**

lunar communication

GS telecommunication
 . space communication
 . . **lunar communication**
 . . . circumlunar communication
 RT facsimile communication
 interplanetary communication
 lasers
 moon
 optical communication
 radar
 radio communication
 satellite communication

spacecraft communication

lunar composition

GS composition (property)
 . **lunar composition**
 RT lunar core
 Lunar Prospector
 moon
 pre-Imbrian period
 selenology
 siderophile elements

lunar construction equipment

(added December 1990)

GS lunar based equipment
 . **lunar construction equipment**
 RT lunar bases
 lunar excavation equipment
 lunar shelters
 lunar surface vehicles

lunar core

GS cores
 . **lunar core**
 RT lunar composition
 lunar geology
 planetary cores
 selenology

lunar craters

DEF A depression, usually circular, on the surface of the moon, usually with a raised rim called a ringwall.

GS craters
 . **lunar craters**
 . . Ptolemaeus Crater
 . . Tycho crater
 RT meteorite craters
 moon
 pre-Imbrian period
 selenography
 selenology

lunar crust

GS crusts
 . **lunar crust**
 RT Earth crust
 moon
 planetary crusts
 selenography
 selenology

lunar dust

GS particles
 . dust
 . . **lunar dust**
 soils
 . lunar soil
 . . **lunar dust**
 RT moon
 selenology

lunar echoes

GS echoes
 . **lunar echoes**
 . . lunar radar echoes
 RT radio echoes
 selenology

lunar eclipses

DEF The phenomenon observed when the moon enters the shadow of the Earth.

GS eclipses
 . **lunar eclipses**
 RT moon
 selenology

lunar effects

UF *lunar perturbation*
 GS **lunar effects**
 . lunar gravitational effects
 . lunar tides
 RT ∞ effects
 orbit perturbation
 selenology

lunar environment

GS environments
 . extraterrestrial environments
 . . **lunar environment**

lunar equator

RT . . . lunar atmosphere
aerospace environments
bioastronautics
exobiology
life support systems
moon
planetary environments
selenology
terraforming
thermal environments

lunar equator

GS equators
. **lunar equator**
RT infrared imagery
radar imagery
selenology

lunar escape devices

RT escape capsules
escape rockets

lunar evolution

GS evolution (development)
. **lunar evolution**
RT moon
pre-Imbrian period
selenology
solar system evolution

lunar excavation equipment

(added December 1990)
GS lunar based equipment
. **lunar excavation equipment**
RT ∞ equipment
excavation
lunar construction equipment
lunar mining
lunar resources
lunar surface vehicles
tractors

lunar exploration

GS exploration
. space exploration
. . **lunar exploration**
RT Altair Lunar Lander
Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
Apollo lunar experiment module
Apollo Lunar Surface Experiments
Package
Apollo project
Clementine spacecraft
Crew Exploration Vehicle
EASEP
extraterrestrial resources
local scientific survey module
Lunar Prospector
lunar resources
Mars exploration
moon
selenology

Lunar Exploration System for Apollo

UF *LESA (lunar exploration system)*
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight

Apollo project
∞ systems

lunar far side

RT libration
moon
selenology

lunar figure

RT selenology

lunar flight

GS space flight
. **lunar flight**
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
circumlunar trajectories
cislunar space
Earth-Moon trajectories
∞ flight
flyby missions
moon-Earth trajectories
orbits

lunar flying vehicles

RT ∞ flight vehicles
lifting bodies
lunar based equipment
∞ vehicles

lunar geology

DEF The science that applies geologic principles and techniques to the study of the moon, especially its composition and the origin of its surface features.

GS geology
. **lunar geology**
RT geomorphology
lunar core
lunar maria
lunar seismographs
moon
moonquakes
planetary geology
pre-Imbrian period
regolith
seismology
selenology

lunar gravitation

GS gravitation
. **lunar gravitation**
RT moon
planetary gravitation
selenology

lunar gravitational effects

GS gravitational effects
. **lunar gravitational effects**
lunar effects
. **lunar gravitational effects**
RT ∞ effects
selenology

Lunar Gravity Simulator

GS simulators
. environment simulators
. . **Lunar Gravity Simulator**
RT gravitation

lunar ionosphere

USE **lunar atmosphere**

lunar laboratories

(added April 1993)
GS laboratories
. **lunar laboratories**
. . lunar receiving laboratory
RT LSSM

lunar based equipment
lunar bases
lunar observatories
space laboratories

lunar landing

GS landing
. spacecraft landing
. . **lunar landing**
RT Altair Lunar Lander
Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
Apollo lunar experiment module
crash landing
hard landing
planetary landing
soft landing
Surveyor project

lunar landing modules

GS lunar spacecraft
. **lunar landing modules**
. . Lunar Module
. . . Apollo lunar experiment module
. . . LSSM
. . . Lunar Module 5
. . . Lunar Module 7
. . Altair Lunar Lander
modules
. spacecraft modules
. . landing modules
. . . **lunar landing modules**
. . . . Lunar Module
. Apollo lunar experiment
module
. LSSM
. Lunar Module 5
. Lunar Module 7
. . . . Altair Lunar Lander
soft landing spacecraft
. landing modules
. . **lunar landing modules**
. . . Lunar Module
. . . . Apollo lunar experiment module
. . . . LSSM
. Lunar Module 5
. Lunar Module 7
. . . . Altair Lunar Lander
spacecraft components
. spacecraft modules
. . landing modules
. . . **lunar landing modules**
. . . . Lunar Module
. Apollo lunar experiment
module
. LSSM
. Lunar Module 5
. Lunar Module 7
. . . . Altair Lunar Lander
RT Apollo extension system
maneuverable spacecraft
manned spacecraft
reusable spacecraft
unmanned spacecraft

lunar landing sites

GS sites
. landing sites
. . **lunar landing sites**
RT moon
selenography

lunar laser ranging

(added July 2001)
USE **laser ranging**
lunar rangefinding

lunar launch

GS launching

- . rocket launching
- . . **lunar launch**
- RT Apollo 5 flight
- Apollo 6 flight
- Apollo 7 flight
- Apollo 8 flight
- Apollo 9 flight
- Apollo 10 flight
- Apollo 11 flight
- Apollo 12 flight
- Apollo 13 flight
- Apollo 14 flight
- Apollo 15 flight
- Apollo 16 flight
- Apollo 17 flight
- orbital launching
- Saturn project
- lunar limb**
- RT libration
- ∞ limbs
- moon
- planetary limb
- selenology
- lunar logistics**
- GS logistics
- . **lunar logistics**
- RT Altair Lunar Lander
- life support systems
- lunar based equipment
- manned lunar surface vehicles
- materials handling
- lunar luminescence**
- GS emission
- . light emission
- . . luminescence
- . . . **lunar luminescence**
- RT moon
- selenology
- lunar magnetic fields**
- GS magnetic fields
- . **lunar magnetic fields**
- RT moon
- selenology
- lunar mantle**
- RT core-mantle boundary
- crusts
- Earth mantle
- planetary mantles
- planetary structure
- regolith
- selenology
- lunar maps**
- GS maps
- . **lunar maps**
- RT astronomical maps
- Clementine spacecraft
- moon
- selenography
- lunar maria**
- GS maria
- . **lunar maria**
- RT basalt
- lunar geology
- lunar rocks
- selenology
- lunar mining**
- (added December 1990)
- GS mining
- . **lunar mining**
- RT lunar based equipment
- lunar bases
- lunar excavation equipment
- lunar resources
- lunar rocks
- lunar soil
- mineral deposits
- mines (excavations)
- space commercialization
- space industrialization
- strip mining
- lunar mobile laboratories**
- UF *MOLABS*
- GS laboratories
- . **lunar mobile laboratories**
- surface vehicles
- . lunar surface vehicles
- . . **lunar mobile laboratories**
- RT Apollo project
- manned lunar surface vehicles
- selenography
- Lunar Module**
- UF *LEM (lunar module)*
- GS lunar spacecraft
- . lunar landing modules
- . . **Lunar Module**
- . . . Apollo lunar experiment module
- . . . LSSM
- . . . Lunar Module 5
- . . . Lunar Module 7
- manned spacecraft
- . **Lunar Module**
- . . Apollo lunar experiment module
- . . LSSM
- . . Lunar Module 5
- . . Lunar Module 7
- modules
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- **Lunar Module**
- Apollo lunar experiment module
- LSSM
- Lunar Module 5
- Lunar Module 7
- soft landing spacecraft
- . landing modules
- . . lunar landing modules
- . . . **Lunar Module**
- Apollo lunar experiment module
- LSSM
- Lunar Module 5
- Lunar Module 7
- spacecraft components
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- **Lunar Module**
- Apollo lunar experiment module
- LSSM
- Lunar Module 5
- Lunar Module 7
- spacecraft components
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- **Lunar Module**
- Apollo lunar experiment module
- LSSM
- Lunar Module 5
- Lunar Module 7
- RT Apollo 5 flight
- Apollo 6 flight
- Apollo 7 flight
- Apollo 8 flight
- Apollo 9 flight
- Apollo 10 flight
- Apollo 11 flight
- Apollo 12 flight
- Apollo 13 flight
- Apollo 14 flight
- Apollo 15 flight
- Apollo 16 flight
- Apollo 17 flight
- Apollo spacecraft
- ascent propulsion systems
- Lunar Module 5**
- GS lunar spacecraft
- . lunar landing modules
- . . Lunar Module
- . . . **Lunar Module 5**
- manned spacecraft
- . Lunar Module
- . . **Lunar Module 5**
- modules
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- Lunar Module
- **Lunar Module 5**
- soft landing spacecraft
- . landing modules
- . . lunar landing modules
- . . . Lunar Module
- Lunar Module 7**
- GS lunar spacecraft
- . lunar landing modules
- . . Lunar Module
- . . . **Lunar Module 7**
- manned spacecraft
- . Lunar Module
- . . **Lunar Module 7**
- modules
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- Lunar Module
- **Lunar Module 7**
- soft landing spacecraft
- . landing modules
- . . lunar landing modules
- . . . Lunar Module
- RT Apollo spacecraft
- Lunar Module 5**
- spacecraft components
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- **Lunar Module 5**
- RT Apollo spacecraft
- Lunar Module 7**
- GS lunar spacecraft
- . lunar landing modules
- . . Lunar Module
- . . . **Lunar Module 7**
- manned spacecraft
- . Lunar Module
- . . **Lunar Module 7**
- modules
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- Lunar Module
- **Lunar Module 7**
- soft landing spacecraft
- . landing modules
- . . lunar landing modules
- . . . Lunar Module
- **Lunar Module 7**
- spacecraft components
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- Lunar Module
- **Lunar Module 7**
- RT Apollo spacecraft
- Lunar Module Ascent Stage**
- RT ascent
- ascent trajectories
- rocket engines
- stage separation
- lunar observatories**
- GS observatories
- . **lunar observatories**
- RT astronomical observatories
- lunar laboratories
- lunar occultation**
- GS occultation
- . **lunar occultation**
- . . solar eclipses
- RT Exosat satellite
- moon
- selenology
- stellar occultation
- lunar orbit and landing simulators**
- UF *LOLA (simulator)*
- GS simulators
- . **lunar orbit and landing simulators**
- RT flight simulators
- training simulators
- lunar orbital rendezvous**
- UF *LOR (rendezvous)*
- GS maneuvers
- . orbital maneuvers
- . . orbital rendezvous
- . . . **lunar orbital rendezvous**
- rendezvous
- . space rendezvous
- . . orbital rendezvous
- . . . **lunar orbital rendezvous**
- RT Earth orbital rendezvous
- orbital mechanics
- spacecraft trajectories
- Lunar Orbiter**
- GS artificial satellites
- . lunar satellites
- . . **Lunar Orbiter**
- . . . Lunar Orbiter 1
- . . . Lunar Orbiter 2
- . . . Lunar Orbiter 3
- . . . Lunar Orbiter 4
- . . . Lunar Orbiter 5
- lunar spacecraft
- . lunar satellites
- . . **Lunar Orbiter**

Lunar Orbiter 1

- . . . Lunar Orbiter 1
- . . . Lunar Orbiter 2
- . . . Lunar Orbiter 3
- . . . Lunar Orbiter 4
- . . . Lunar Orbiter 5

Lunar Orbiter 1

- UF *Lunar Orbiter A*
- GS artificial satellites
 - . lunar satellites
 - . . Lunar Orbiter
 - . . . **Lunar Orbiter 1**
- lunar spacecraft
- . lunar satellites
- . . Lunar Orbiter
- . . . **Lunar Orbiter 1**

Lunar Orbiter 2

- UF *Lunar Orbiter B*
- GS artificial satellites
 - . lunar satellites
 - . . Lunar Orbiter
 - . . . **Lunar Orbiter 2**
- lunar spacecraft
- . lunar satellites
- . . Lunar Orbiter
- . . . **Lunar Orbiter 2**

Lunar Orbiter 3

- UF *Lunar Orbiter C*
- GS artificial satellites
 - . lunar satellites
 - . . Lunar Orbiter
 - . . . **Lunar Orbiter 3**
- lunar spacecraft
- . lunar satellites
- . . Lunar Orbiter
- . . . **Lunar Orbiter 3**

Lunar Orbiter 4

- UF *Lunar Orbiter D*
- GS artificial satellites
 - . lunar satellites
 - . . Lunar Orbiter
 - . . . **Lunar Orbiter 4**
- lunar spacecraft
- . lunar satellites
- . . Lunar Orbiter
- . . . **Lunar Orbiter 4**

Lunar Orbiter 5

- UF *Lunar Orbiter E*
- GS artificial satellites
 - . lunar satellites
 - . . Lunar Orbiter
 - . . . **Lunar Orbiter 5**
- lunar spacecraft
- . lunar satellites
- . . Lunar Orbiter
- . . . **Lunar Orbiter 5**

Lunar Orbiter A

- USE **Lunar Orbiter 1**

Lunar Orbiter B

- USE **Lunar Orbiter 2**

Lunar Orbiter C

- USE **Lunar Orbiter 3**

Lunar Orbiter D

- USE **Lunar Orbiter 4**

Lunar Orbiter E

- USE **Lunar Orbiter 5**

lunar orbits

- UF *evection*
- GS orbits
 - . **lunar orbits**
- RT artificial satellites
 - . circular orbits
 - . circumlunar trajectories
 - . cislunar space
 - . command service modules
 - . Earth orbits
 - . Earth-Moon trajectories
 - . elliptical orbits
 - . equatorial orbits
 - . Lissajous figures
 - . moon

- orbital mechanics
- parking orbits
- perilunes
- polar orbits
- satellite orbits
- spacecraft orbits
- transfer orbits

lunar perturbation

- USE **lunar effects**

lunar phases

- RT moon
- ∞ phases
 - . selenology
 - . terminator lines

lunar photographs

- GS photographs
 - . **lunar photographs**
- RT astronomical photography
 - . photography
 - . Ranger project
 - . spaceborne photography

lunar photography

- UF *lunar cinematography*
- GS imagery
 - . photography
 - . . **lunar photography**
- RT astronomical photography
 - . black and white photography
 - . infrared photography
 - . moon
 - . Ranger project
 - . spaceborne photography

lunar probes

- DEF Probes for exploring and reporting on conditions on or about the Moon.

- GS lunar spacecraft
 - . **lunar probes**
 - . . Lunik lunar probes
 - . . . Lunik 2 lunar probe
 - . . . Lunik 3 lunar probe
 - . . . Lunik 9 lunar probe
 - . . . Lunik 10 lunar probe
 - . . . Lunik 11 lunar probe
 - . . . Lunik 12 lunar probe
 - . . . Lunik 13 lunar probe
 - . . . Lunik 14 lunar probe
 - . . . Lunik 16 lunar probe
 - . . . Lunik 17 lunar probe
 - . . . Lunik 19 lunar probe
 - . . . Lunik 20 lunar probe
 - . . . Lunik 22 lunar probe
 - . . Ranger lunar probes
 - . . . Ranger 1 lunar probe
 - . . . Ranger 2 lunar probe
 - . . . Ranger 3 lunar probe
 - . . . Ranger 4 lunar probe
 - . . . Ranger 5 lunar probe
 - . . . Ranger 6 lunar probe
 - . . . Ranger 7 lunar probe
 - . . . Ranger 8 lunar probe
 - . . . Ranger 9 lunar probe
 - . . . Ranger lunar landing vehicles
 - . . Surveyor lunar probes
 - . . . Surveyor 1 lunar probe
 - . . . Surveyor 2 lunar probe
 - . . . Surveyor 3 lunar probe
 - . . . Surveyor 4 lunar probe
 - . . . Surveyor 5 lunar probe
 - . . . Surveyor 6 lunar probe
 - . . . Surveyor 7 lunar probe
 - . unmanned spacecraft
 - . space probes
 - . . **lunar probes**
 - . . . Lunik lunar probes
 - Lunik 2 lunar probe
 - Lunik 3 lunar probe
 - Lunik 9 lunar probe
 - Lunik 10 lunar probe
 - Lunik 11 lunar probe
 - Lunik 12 lunar probe
 - Lunik 13 lunar probe
 - Lunik 14 lunar probe
 - Lunik 16 lunar probe
 - Lunik 17 lunar probe
 - Lunik 19 lunar probe

- . . . Lunik 20 lunar probe
- . . . Lunik 22 lunar probe
- . . . Ranger lunar probes
 - Ranger 1 lunar probe
 - Ranger 2 lunar probe
 - Ranger 3 lunar probe
 - Ranger 4 lunar probe
 - Ranger 5 lunar probe
 - Ranger 6 lunar probe
 - Ranger 7 lunar probe
 - Ranger 8 lunar probe
 - Ranger 9 lunar probe
 - Ranger lunar landing vehicles
- . . . Surveyor lunar probes
 - Surveyor 1 lunar probe
 - Surveyor 2 lunar probe
 - Surveyor 3 lunar probe
 - Surveyor 4 lunar probe
 - Surveyor 5 lunar probe
 - Surveyor 6 lunar probe
 - Surveyor 7 lunar probe
- RT Apollo project
 - . Atlas Able 5 launch vehicle
 - . maneuverable spacecraft
 - . Pioneer project
 - . Ranger project
 - . soft landing spacecraft
 - . Surveyor project

lunar programs

- GS programs
 - . **lunar programs**
 - . . Apollo project
 - . . Surveyor project
- RT Lunar Prospector

Lunar Prospector

- (added February 1998)
- GS artificial satellites
 - . lunar satellites
 - . . **Lunar Prospector**
- lunar spacecraft
- . lunar satellites
- . . **Lunar Prospector**
- RT lunar composition
 - . lunar exploration
 - . lunar programs
 - . lunar resources
 - . lunar surface

lunar radar echoes

- UF *lunar scattering*
- GS echoes
 - . lunar echoes
 - . . **lunar radar echoes**
 - . . radar echoes
 - . . . **lunar radar echoes**
- RT selenology

lunar radiation

- GS extraterrestrial radiation
 - . **lunar radiation**
- RT ∞ radiation
 - . selenology

lunar rangefinding

- UF *LLR (ranging)*
 - . *lunar laser ranging*
- GS rangefinding
 - . **lunar rangefinding**
- RT distance measuring equipment
 - . laser range finders
 - . laser ranging
 - . measuring instruments
 - . optical range finders
 - . range finders

lunar rays

- SN (EXCLUDES RADIATION)
- RT meteorite craters
 - . moon
 - ∞ rays
 - . selenography

lunar receiving laboratory

- GS laboratories
 - . lunar laboratories

lunar trajectories

selenology
surface properties
surface roughness

lunar trajectories

GS trajectories
. spacecraft trajectories
. . . **lunar trajectories**
. . . . circumlunar trajectories
. . . . Earth-Moon trajectories
. . . . moon-Earth trajectories

RT parking orbits
transfer orbits

lunation

USE **month**

luneberg lenses

USE **radar corner reflectors**

lung morphology

GS morphology
. **lung morphology**

RT alveoli
pulmonary lesions
respiratory diseases

lungs

GS anatomy
. respiratory system
. . . **lungs**
. . . . alveoli

RT alveolar air
atelectasis
bronchi
pleurae
pneumography
pneumothorax
pulmonary circulation
pulmonary functions
pulmonary lesions
spirometers

Lunik 2 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 2 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 2 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 2 lunar probe**

Lunik 3 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 3 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 3 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 3 lunar probe**

Lunik 9 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 9 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 9 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 9 lunar probe**

Lunik 10 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 10 lunar probe**

Soviet spacecraft
. Lunik lunar probes
. . **Lunik 10 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 10 lunar probe**

Lunik 11 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 11 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 11 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 11 lunar probe**

Lunik 12 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 12 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 12 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 12 lunar probe**

Lunik 13 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 13 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 13 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 13 lunar probe**

Lunik 14 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 14 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 14 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 14 lunar probe**

Lunik 16 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 16 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 16 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 16 lunar probe**

Lunik 17 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 17 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 17 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes

. . . Lunik lunar probes
. . . . **Lunik 17 lunar probe**

Lunik 19 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 19 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 19 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 19 lunar probe**

RT U.S.S.R. space program

Lunik 20 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 20 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 20 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 20 lunar probe**

Lunik 22 lunar probe

GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 22 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 22 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 22 lunar probe**

RT U.S.S.R. space program

Lunik lunar probes

DEF Russian term for a space probe launched to the moon's vicinity or to impact on the Moon. Used for LUNA lunar probes.

UF *LUNA lunar probes*

GS lunar spacecraft
. lunar probes
. . **Lunik lunar probes**
. . . Lunik 2 lunar probe
. . . Lunik 3 lunar probe
. . . Lunik 9 lunar probe
. . . Lunik 10 lunar probe
. . . Lunik 11 lunar probe
. . . Lunik 12 lunar probe
. . . Lunik 13 lunar probe
. . . Lunik 14 lunar probe
. . . Lunik 16 lunar probe
. . . Lunik 17 lunar probe
. . . Lunik 19 lunar probe
. . . Lunik 20 lunar probe
. . . Lunik 22 lunar probe
Soviet spacecraft
. **Lunik lunar probes**
. . Lunik 2 lunar probe
. . Lunik 3 lunar probe
. . Lunik 9 lunar probe
. . Lunik 10 lunar probe
. . Lunik 11 lunar probe
. . Lunik 12 lunar probe
. . Lunik 13 lunar probe
. . Lunik 14 lunar probe
. . Lunik 16 lunar probe
. . Lunik 17 lunar probe
. . Lunik 19 lunar probe
. . Lunik 20 lunar probe
. . Lunik 22 lunar probe
unmanned spacecraft
. space probes
. . lunar probes
. . . **Lunik lunar probes**
. . . Lunik 2 lunar probe
. . . Lunik 3 lunar probe
. . . Lunik 9 lunar probe

- . . . Lunik 10 lunar probe
 . . . Lunik 11 lunar probe
 . . . Lunik 12 lunar probe
 . . . Lunik 13 lunar probe
 . . . Lunik 14 lunar probe
 . . . Lunik 16 lunar probe
 . . . Lunik 17 lunar probe
 . . . Lunik 19 lunar probe
 . . . Lunik 20 lunar probe
 . . . Lunik 22 lunar probe
 RT Lunokhod lunar roving vehicles
 U.S.S.R. space program
- Lunokhod lunar roving vehicles**
 GS surface vehicles
 . lunar surface vehicles
 . lunar roving vehicles
 . . . **Lunokhod lunar roving vehicles**
 . roving vehicles
 . lunar roving vehicles
 . . . **Lunokhod lunar roving vehicles**
 RT Lunik lunar probes
 Marsokhod Mars roving vehicles
 U.S.S.R. space program
 ∞ vehicles
- luster**
 DEF The appearance characteristic of a specimen due to pronounced changes in intensity of light reflected from elemental areas of the specimen when the angle of illumination or view is changed. Used for dullness.
 UF *dullness*
 RT brightness
 finishes
 glare
 reflectance
- lutetium**
 GS chemical elements
 . nuclides
 . isotopes
 . . . **lutetium**
 . . . lutetium isotopes
 . rare earth elements
 . . **lutetium**
 . . . lutetium isotopes
 metals
 . rare earth elements
 . . **lutetium**
 . . . lutetium isotopes
- lutetium 176*
 USE **lutetium isotopes**
- lutetium compounds**
 GS rare earth compounds
 . **lutetium compounds**
 RT ∞ chemical compounds
 ∞ metal compounds
- lutetium isotopes**
 UF *lutetium 176*
 GS chemical elements
 . nuclides
 . isotopes
 . . . lutetium
 . . . **lutetium isotopes**
 . rare earth elements
 . . lutetium
 . . . **lutetium isotopes**
 metals
 . rare earth elements
 . . lutetium
 . . . **lutetium isotopes**
- Luxembourg**
 GS nations
 . **Luxembourg**
 RT Europe
 Luxembourg space program
- Luxembourg effect**
 RT ∞ effects
 ionospheric cross modulation
 ionospheric propagation
- Luxembourg space program**
(added March 1989)
 GS programs
- . space programs
 . . European space programs
 . . . **Luxembourg space program**
 RT Luxembourg
- Lyapunov functions*
 USE **Liapunov functions**
- Lybia*
 USE **Libya**
- Lyman alpha radiation**
 DEF The radiation emitted by hydrogen at 1216 angstrom, first observed in the solar spectrum by rocket borne spectrographs. Lyman alpha is very important in the heating of the upper atmosphere thus affecting other atmospheric phenomena.
 GS electromagnetic radiation
 . ultraviolet radiation
 . . far ultraviolet radiation
 . . . **Lyman alpha radiation**
 RT atomic spectra
 extraterrestrial radiation
 polarized electromagnetic radiation
 ∞ radiation
 ultraviolet astronomy
- Lyman beta radiation**
 GS electromagnetic radiation
 . ultraviolet radiation
 . . far ultraviolet radiation
 . . . **Lyman beta radiation**
 RT atomic spectra
 extraterrestrial radiation
 polarized electromagnetic radiation
 ∞ radiation
 ultraviolet astronomy
- Lyman spectra**
 GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 **Lyman spectra**
 RT atomic spectra
 electronic spectra
 emission spectra
 H lines
 solar spectra
 spectral theory
 ultraviolet spectra
- lymph**
 GS body fluids
 . **lymph**
 RT lymphatic system
 lymphocytes
- lymph nodes*
(added February 2002)
 USE **lymphatic system**
- lymphatic system**
(added February 2002)
 DEF A major component of the immune system consisting of a network of vessels, organs, and nodes that collect and filter lymph from body tissues and return it to the bloodstream.
 UF *lymph nodes*
lymphoid system
 GS anatomy
 . immune systems
 . . **lymphatic system**
 . . . spleen
 . . . thymus gland
 RT antibodies
 bone marrow
 immunology
 lymph
 lymphocytes
 metastasis
- lymphocytes**
 GS cells (biology)
 . blood cells
 . . leukocytes
 . . . **lymphocytes**
 RT blood cell count
- immune systems
 lymph
 lymphatic system
- lymphoid system*
(added February 2002)
 USE **lymphatic system**
- lyophilization*
 USE **colloiding**
- lyophils*
 USE **colloids**
- Lyra constellation**
 GS constellations
 . **Lyra constellation**
 RT celestial bodies
 celestial sphere
 stars
- lysergine**
 GS bases (chemical)
 . alkaloids
 . . **lysergine**
 nitrogen compounds
 . alkaloids
 . . **lysergine**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **lysergine**
- lysimeters**
 DEF Instruments for measuring the water percolating through soils and determining the materials dissolved by the water.
 GS measuring instruments
 . **lysimeters**
 RT ground water
 moisture content
 percolation
 soil moisture
 soils
 water balance
 water pollution
- lysine**
 GS acids
 . amino acids
 . . **lysine**
 . carboxylic acids
 . . **lysine**
 organic compounds
 . amino acids
 . . **lysine**
 . carboxylic acids
 . . **lysine**
 RT digesting
 lysogenesis
- Lysithea**
(added January 1996)
 DEF A natural satellite of Jupiter orbiting at a mean distance of 11,720,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . Jupiter satellites
 . . . **Lysithea**
 RT Jupiter (planet)
- lysogenesis**
 RT disintegration
 lysine
- lysosomes**
 GS organelles
 . **lysosomes**
 RT cells (biology)
 cytology
 enzyme activity
 lysozyme

lysozyme

lysozyme

GS biopolymers
. proteins
. . enzymes
. . . **lysozyme**
organic compounds
. proteins
. . enzymes

. . . lysozyme

RT body fluids
lysosomes

LZEEBE satellite

UF *Earth Energy Budget Experiment*
Long Term Zonal Earth Energy
Experiment

Zonal Earth Energy Budget *Experiment*

GS artificial satellites
. scientific satellites
. . **LZEEBE satellite**

M

M region

- GS regions
 - . **M region**
- RT geomagnetism
 - solar atmosphere
 - solar corpuscular radiation
 - solar wind

M stars

- GS celestial bodies
 - . stars
 - .. late stars
 - ... cool stars
 - **M stars**
 - Van Biesbroeck star
- RT asymptotic giant branch stars
 - flare stars
 - giant stars
 - main sequence stars
 - Mira variables
 - red giant stars
 - S stars
 - subgiant stars
 - supergiant stars
 - symbiotic stars

M wings

- USE **variable sweep wings**

M-1 engine

- UF *AJ-1000 engine*
- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **M-1 engine**
 - .. liquid propellant rocket engines
 - ... hydrogen oxygen engines
 - **M-1 engine**
- RT Nova launch vehicles
 - Saturn 1 launch vehicles
 - Saturn 1B launch vehicles

M-2 lifting body

- GS lifting bodies
 - . lifting reentry vehicles
 - .. **M-2 lifting body**
 - ... M-2F2 lifting body
 - reentry vehicles
 - . maneuverable reentry bodies
 - .. lifting reentry vehicles
 - ... **M-2 lifting body**
 - M-2F2 lifting body

M-2F2 lifting body

- GS lifting bodies
 - . lifting reentry vehicles
 - .. M-2 lifting body
 - ... **M-2F2 lifting body**
 - reentry vehicles
 - . maneuverable reentry bodies
 - .. lifting reentry vehicles
 - ... M-2 lifting body
 - **M-2F2 lifting body**

M-2F3 lifting body

- GS lifting bodies
 - . **M-2F3 lifting body**

M-46 engine

- GS engines
 - . rocket engines
 - .. solid propellant rocket engines
 - ... **M-46 engine**
- RT Falcon missile

M-55 engine

- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **M-55 engine**
 - .. solid propellant rocket engines
 - ... **M-55 engine**
- RT Minuteman ICBM

M-56 engine

- GS engines
 - . rocket engines
 - .. solid propellant rocket engines
 - ... **M-56 engine**

- RT Minuteman ICBM

M-57 engine

- GS engines
 - . rocket engines
 - .. solid propellant rocket engines
 - ... **M-57 engine**
- RT Minuteman ICBM

M-100 engine

- GS engines
 - . rocket engines
 - .. **M-100 engine**

MA-2 engine

- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **MA-2 engine**
 - .. liquid propellant rocket engines
 - ... **MA-2 engine**
- RT Atlas ICBM
 - Vernier engines

MA-2 mission

- USE **Mercury MA-2 flight**

MA-3 engine

- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **MA-3 engine**
 - .. liquid propellant rocket engines
 - ... **MA-3 engine**
- RT Atlas ICBM
 - Vernier engines

MA-3 flight

- USE **Mercury MA-3 flight**

MA-4 flight

- USE **Mercury MA-4 flight**

MA-5 engine

- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **MA-5 engine**
 - .. liquid propellant rocket engines
 - ... **MA-5 engine**
- RT Atlas launch vehicles
 - Atlas SLV-3 launch vehicle
 - Vernier engines

MA-5 flight

- USE **Mercury MA-5 flight**

MA-8 flight

- USE **Mercury MA-8 flight**

MA-9 flight

- USE **Mercury MA-9 flight**

maars

- USE **craters**

Mace missiles

- GS missiles
 - . surface to surface missiles
 - .. **Mace missiles**
- RT booster rocket engines
 - J-33 engine
 - solid propellant rocket engines
 - turbojet engines

Mach cones

DEF The cone shaped shock waves theoretically emanating from an infinitesimally small particle moving at supersonic speed through a fluid medium. It is the locus of the Mach lines. The cone shaped shock waves generated by a sharp pointed body, as at the nose of a high speed aircraft.

- GS cones
 - . **Mach cones**
 - elastic waves
 - . shock waves
 - .. **Mach cones**
- RT acoustic velocity
 - bow waves

- hypersonic shock
- sound waves
- supersonic flight
- supersonic flow
- supersonics

Mach inertia principle

- GS inertia
 - . inertia principle
 - .. **Mach inertia principle**
- RT equations of motion
 - moments of inertia

Mach number

DEF A number expressing the ratio of the speed of a body or a point on a body with respect to the surrounding air or other fluid, or the speed of a flow, to the speed of sound in the medium; the speed represented by this number. Used for critical Mach number and Glauert coefficient.

- UF *critical Mach number*
- Glauert coefficient*
- GS dimensionless numbers
 - . **Mach number**
 - ratios
 - . **Mach number**
- RT acoustic velocity
 - aerodynamics
 - airspeed
 - shock waves
 - superharmonics
 - sweep angle

Mach reflection

DEF The reflection of a shock wave from a rigid wall in which the shock strength of the reflected wave and the angle of reflection both have the smaller of the two values theoretically possible.

- GS reflection
 - . wave reflection
 - .. **Mach reflection**
- RT shock waves

machine aided indexing

- (added April 2000)
- USE **indexing (information science)**

machine learning

- (added May 1989)
- UF *learning machines*
- RT adaptive control
 - artificial intelligence
 - automata theory
 - backpropagation (artificial intelligence)
 - cybernetics
 - data mining
 - feedback control
 - genetic algorithms
 - ∞ machinery
 - membership functions
 - self organizing systems
 - teaching machines

machine life

- USE **service life**

machine oriented languages

- GS languages
 - . programming languages
 - .. **machine oriented languages**
- RT ALGOL
 - Assembly language
 - autocoders
 - language programming
 - PL/1

machine recognition

- USE **artificial intelligence**

machine storage

- USE **computer storage devices**
- core storage**

machine tools

- GS tools
 - . **machine tools**
 - .. boring machines

machine translation

. . grinding machines
. . lathes
. . . turret lathes
. . milling machines
. . shapers
RT cutters
dies
drills
∞ machinery
machining
mandrels
mechanical devices
mechanical engineering
metal cutting
numerical control
presses
punches
saws
shears
taps
ultrasonic cleaning

machine translation
GS linguistics
. **machine translation**
translating
RT **machine translation**
computer programs
information theory
language programming
languages
natural language processing

machine vision
USE **computer vision**

machine-independent programs
GS computer programs
. **machine-independent programs**
RT computer programming
computers
multiprogramming

∞ **machinery**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT boring machines
computers
drafting machines
engines
fatigue testing machines
grinding machines
ground effect machines
impact testing machines
levers
load testing machines
machine learning
machine tools
mechanical engineering
∞ mechanism
mechanization
milling machines
positioning devices (machinery)
refrigerating machinery
∞ rotating electrical machines
self focusing
teaching machines
tide powered machines
tools
turbomachinery
Turing machines
vibration simulators
walking machines
waterwave powered machines
welding machines
windmills (windpowered machines)

machining
UF *material removal (machining)*
GS **machining**
. chemical machining
. . electrochemical machining
. hot machining
. laser machining
. micromachining
. milling (machining)
. spark machining
. ultrasonic machining
RT ∞ cut-off

cutting
drilling
finishes
forming techniques
grinding (material removal)
grooving
knurling
laser cutting
machine tools
metal cutting
metal working
planing
residual stress
setups
surface finishing
surface roughness
tooling
V grooves

MACHOs (astronomy)
(added November 1999)
USE **massive compact halo objects**

Mach-Zehnder interferometers
GS measuring instruments
. interferometers
. . **Mach-Zehnder interferometers**
RT aerodynamics
argon lasers
carbon dioxide lasers
diffractometers
gas lasers
goniometers
optical equipment
optical measuring instruments
Schlieren photography

Macintosh PC
USE **Macintosh personal computers**

Macintosh personal computers
(added September 1992)
UF *Macintosh PC*
GS data processing equipment
. computers
. . digital computers
. . . microcomputers
. . . . personal computers
. **Macintosh personal computers**
RT computer graphics
computer programs

MacLaurin series
UF *McLaurin series*
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . power series
. . . . Taylor series
. **MacLaurin series**
. real variables
. . series (mathematics)
. . . power series
. . . . Taylor series
. **MacLaurin series**

macroclimate
USE **climate**

macromolecules
(added March 1990)
GS molecules
. **macromolecules**
. . dendrimers
RT molecular chains
molecular structure
molecular weight
∞ polymers
proteins

macrophages
GS cells (biology)
. **macrophages**
RT tissues (biology)

macroscopic equations
RT ∞ equations
∞ measurement
∞ properties

statistical mechanics

macular vision
USE **vision**

Madagascar
(added September 1993)
UF *Malagasy Republic*
GS landforms
. islands
. . **Madagascar**
nations
. **Madagascar**
RT Africa
Indian Ocean

Madden-Julian Oscillation
(added September 2000)
DEF The most dominant and coherent component of the intraseasonal variability in the tropical atmosphere; characterized by a strong eastward propagation of atmospheric features, with a typical period of 30-60 days. The Madden-Julian Oscillation (MJO) may influence the tropical climate and its short-term variability by modulating the timing and strength of El Nino - Southern Oscillation (ENSO) events, contributing to the mean heat budget of the western Pacific, and regulating the annual cycle of the tropical western Pacific, especially the Australian summer monsoon.
UF *MJO (meteorology)*
GS oscillations
. **Madden-Julian Oscillation**
variations
. periodic variations
. . intraseasonal variations
. . . **Madden-Julian Oscillation**
RT air water interactions
annual variations
atmospheric circulation
atmospheric models
climatology
el Nino
monsoons
Southern Oscillation
tropical meteorology
zonal flow (meteorology)

Maffei galaxies
GS celestial bodies
. galaxies
. . **Maffei galaxies**
RT nebulae
radio astronomy
radio galaxies
radio sources (astronomy)
spiral galaxies

magazines (supply chambers)
RT ammunition
photographic film
spools

Magdalena-Cauca Valley (Colombia)
GS landforms
. **Magdalena-Cauca Valley (Colombia)**
valleys
. **Magdalena-Cauca Valley (Colombia)**
RT Colombia
South America

Magellan Mission (ESA)
USE **Magellan ultraviolet astronomy satellite**

Magellan project (NASA)
SN (DOES NOT INCLUDE THE MAGELLAN ULTRAVIOLET ASTRONOMY SATELLITE)
DEF A Venus exploratory mission to acquire radar imagery and topographic profiles of the planet surface and determine the characteristics of the Venusian gravity field. (This term is used to designate general project reviews, chronologies, and project management and planning.) Used for Venus Radar Mapper Project.
UF *Venus Radar Mapper Project*
GS programs
. NASA programs

. . NASA space programs
 . . . **Magellan project (NASA)**
 . projects
 . . **Magellan project (NASA)**
 . space programs
 . . NASA space programs
 . . . **Magellan project (NASA)**
 RT Magellan spacecraft (NASA)
 space exploration
 space missions
 Venus orbiting imaging radar
 (spacecraft)
 Venus probes
 Venus surface
Magellan spacecraft (NASA)
 SN (DOES NOT INCLUDE THE MAGELLAN
 ULTRAVIOLET ASTRONOMY SATELLITE)
 DEF A Venus probe incorporating Voyager
 and Galileo hardware designs equipped with a
 synthetic aperture radar system to acquire sur-
 face imagery, altimetric profiles, and surface
 radiothermal emissivities. Earth-based Doppler
 radio tracking of the spacecraft will be used to
 derive gravimetric data. (This term designates
 the spacecraft intrinsic and support hardware,
 instrumentation acquired data.) Used for Venus
 Radar Mapper.
 UF *Venus Radar Mapper*
 GS interplanetary spacecraft
 . Venus probes
 . . **Magellan spacecraft (NASA)**
 unmanned spacecraft
 . space probes
 . . Venus probes
 . . . **Magellan spacecraft (NASA)**
 RT Magellan project (NASA)
 radar imagery
 ∞ spacecraft
 synthetic aperture radar
 Venus orbiting imaging radar
 (spacecraft)
 Venus surface
Magellan ultraviolet astronomy satellite
 DEF This ESA mission will provide high
 resolution spectra of celestial sources down to
 sixteenth magnitude over the extreme ultraviolet
 wavelength range (between 50 and 150 nm).
 This mission is still in the study phase. Used for
 Magellan Mission (ESA).
 UF *Magellan Mission (ESA)*
 GS artificial satellites
 . ESA satellites
 . . **Magellan ultraviolet astronomy**
satellite
 . scientific satellites
 . . astronomical satellites
 . . . **Magellan ultraviolet astronomy**
satellite
 ESA spacecraft
 . ESA satellites
 . . **Magellan ultraviolet astronomy**
satellite
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **Magellan ultraviolet astronomy**
satellite
 RT extreme ultraviolet radiation
 far ultraviolet radiation
 spaceborne astronomy
Magellanic clouds
 GS celestial bodies
 . galaxies
 . . **Magellanic clouds**
 RT ∞ clouds
 nebulae
 Orion nebula
 star clusters
 stars
 supernova 1987A

magic tees

DEF Compound waveguides or coaxial tees
 with four arms which exhibit directional charac-
 teristics, when properly matched, so that a sig-
 nal entering one arm will be split between two of
 the other arms but not the third. A signal entering

another arm is likewise split with half the energy
 entering one of the arms common to the other
 input but not its second arm and the other half of
 the energy entering the arm not used by the
 other input. Magic tees are used in radar as
 transmitter receiver duplexers.
 RT duplexers

magma

DEF Naturally occurring mobile rock mate-
 rials, generated within the Earth and capable of
 intrusion and extrusion, from which igneous
 rocks are thought to have been derived by
 solidification and related processes.

GS geophysical fluids

. **magma**

RT igneous rocks
 lava
 petrogenesis
 regolith
 rhyolite
 rocks
 soils
 volcanic eruptions

magnesium

GS chemical elements
 . **magnesium**
 . . magnesium isotopes
 metals
 . **magnesium**
 . . magnesium isotopes

magnesium alloys

GS alloys
 . light alloys
 . . **magnesium alloys**
 RT aluminum-lithium alloys
 bismuth alloys
 lithium alloys
 silicon alloys

magnesium bromides

GS halogen compounds
 . bromine compounds
 . . bromides
 . . . **magnesium bromides**
 . halides
 . . bromides
 . . . **magnesium bromides**
 . metal halides
 . . . **magnesium bromides**
 magnesium compounds
 . **magnesium bromides**

magnesium cells

DEF Primary cells with the negative elec-
 trodes made of magnesium or its alloy.

GS electric generators
 . direct power generators
 . . primary batteries
 . . . dry cells
 **magnesium cells**
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . dry cells
 **magnesium cells**
 RT chemical auxiliary power units
 electrolytic polarization

magnesium chlorides

GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **magnesium chlorides**
 . halides
 . . chlorides
 . . . **magnesium chlorides**
 magnesium compounds
 . **magnesium chlorides**

magnesium compounds

GS **magnesium compounds**
 . brucite
 . chlorophylls
 . cordierite
 . dolomite (mineral)
 . enstatite
 . forsterite

. magnesium bromides
 . magnesium chlorides
 . magnesium fluorides
 . magnesium germanates
 . magnesium germanides
 . magnesium oxides
 . . akermanite
 . . periclase
 . magnesium perchlorates
 . magnesium sulfates
 . . hexahedrite
 . magnesium titanates
 . merwinite
 . monticellite
 . talc
 RT ∞ alkaline earth compounds
 ∞ chemical compounds
 ∞ metal compounds

magnesium fluorides

GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **magnesium fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **magnesium fluorides**
 . metal halides
 . . metal fluorides
 **magnesium fluorides**
 magnesium compounds
 . **magnesium fluorides**

magnesium germanates

GS germanium compounds
 . germanates
 . . **magnesium germanates**
 magnesium compounds
 . **magnesium germanates**

magnesium germanides

GS germanium compounds
 . germanides
 . . **magnesium germanides**
 magnesium compounds
 . **magnesium germanides**

magnesium isotopes

GS chemical elements
 . magnesium
 . . **magnesium isotopes**
 . nuclides
 . . isotopes
 . . . **magnesium isotopes**
 metals
 . magnesium
 . . **magnesium isotopes**

magnesium oxides

GS chalcogenides
 . oxides
 . . metal oxides
 . . . alkaline earth oxides
 **magnesium oxides**
 akermanite
 periclase
 magnesium compounds
 . **magnesium oxides**
 . . akermanite
 . . periclase

magnesium perchlorates

GS halogen compounds
 . chlorine compounds
 . . perchlorates
 . . . **magnesium perchlorates**
 magnesium compounds
 . **magnesium perchlorates**

magnesium sulfates

GS magnesium compounds
 . **magnesium sulfates**
 . . hexahedrite
 sulfur compounds
 . sulfates
 . . **magnesium sulfates**
 . . . hexahedrite

magnesium titanates

RT bloedite

magnesium titanates

GS magnesium compounds
. **magnesium titanates**
titanium compounds
. titanates
. . **magnesium titanates**

Magnesy (trademark)

USE **servomotors**

magnet coils

GS electric coils
. magnetic coils
. . **magnet coils**

RT ∞ coils
electromagnetism
electromagnets
field coils
inductors
magnetic circuits
magnetic cores
magnetic energy storage
magnets
saturable reactors
solenoids
superconducting magnets
toroids
transformers
wire winding
yokes

magnetars

(added January 2000)

DEF Highly magnetized neutron stars believed to emit quasi-steady x-rays along with bursts of soft gamma rays-- emissions powered by their magnetic energy. According to the magnetar theory, these stars form in some fraction of all supernovae. When they are young (with ages less than about 10,000 years) magnetars may be observed as soft gamma repeaters (SGRs) or anomalous X-ray pulsars.

GS celestial bodies
. stars
. . magnetic stars
. . . **magnetars**
. . neutron stars
. . . **magnetars**

RT pulsars
soft gamma repeaters
supernova remnants
x ray sources

magnetic absorption

USE **electromagnetic absorption**

magnetic amplifiers

GS amplifiers
. **magnetic amplifiers**

RT magnetostatic amplifiers
nonlinearity
power amplifiers
saturable reactors
voltage amplifiers

magnetic annular arc

RT ∞ arcs
current distribution
plasma accelerators
plasma control
plasma propulsion

magnetic annular shock tubes

UF *MAST shock tubes*
GS shock wave generators
. shock tubes
. . **magnetic annular shock tubes**

magnetic anomalies

UF *geomagnetic anomalies*
GS anomalies
. **magnetic anomalies**
. . geomagnetic hollow

RT aeromagnetism
geomagnetism

nonuniform magnetic fields

magnetic bearings

DEF Any application of the principle in which something capable of rotation and translation is held by the use of electromagnetic force without touching it. Applications range from small instruments to very large forces.

GS bearings
. **magnetic bearings**

RT levitation
magnetic suspension

magnetic charge density

UF *scalar magnetic charge*
GS divergence
. **magnetic charge density**

RT ∞ charging
constitutive equations
Maxwell equation

magnetic circuits

GS circuits
. **magnetic circuits**

RT flux (rate)
lines of force
magnet coils
saturable reactors
transformers

magnetic clouds

GS magnetic fields
. **magnetic clouds**
particles
. charged particles
. . plasma clouds
. . . **magnetic clouds**

RT ∞ clouds
interplanetary magnetic fields
interplanetary medium
interstellar gas
interstellar magnetic fields
magnetic field configurations
solar corona
solar wind
stellar mass ejection

magnetic coils

GS electric coils
. **magnetic coils**
. . field coils
. . magnet coils

RT ∞ coils
electromagnetic hammers
electromagnetism
flux pumps

magnetic compasses

DEF Compasses whose operation depends upon an element that senses the Earth's magnetic field, e.g., an instrument having a magnetic needle that turns freely on a pivot in a horizontal plane and that always swings to such a position that one end points to magnetic north.

GS measuring instruments
. indicating instruments
. . compasses
. . . **magnetic compasses**
navigation aids
. navigation instruments
. . compasses
. . . **magnetic compasses**

RT gyrocompasses
solar compasses

magnetic compression

DEF The force exerted by a magnetic field on an electrically conducting fluid or on a plasma.

RT compressing
confinement
plasma control
plasmas (physics)

magnetic control

RT attitude control
∞ control

magnetic damping

magnetic cooling

DEF Keeping a substance cooled to about 0. 2 K by using a working substance (paramagnetic salt) in a cycle of processes between a high-temperature reservoir (liquid helium) at 1. 2 K and a low temperature reservoir containing the substance to be cooled.

GS cooling
. **magnetic cooling**

RT absorption cooling
adiabatic demagnetization cooling
low temperature
low temperature environments
refrigerating

magnetic cores

GS cores
. **magnetic cores**

RT bubble memory devices
electric coils
ferrites
ferromagnetism
laminates
magnet coils
magnets
parametrons
saturable reactors
toroids
transformers

magnetic damping

(added January 2004)

DEF Mechanical, electromagnetic, or plasmadynamic damping induced by an applied magnetic field.

GS damping
. **magnetic damping**
magnetic properties
. magnetic effects
. . **magnetic damping**

RT Landau damping
magnetic control
vibration damping

magnetic diffusion

SN (DIFFUSION VIA A MAGNETIC FIELD)
GS diffusion
. **magnetic diffusion**

RT field strength

magnetic dipoles

RT ∞ dipoles
electric dipoles
∞ physical properties
∞ poles

magnetic disks

GS computer components
. computer storage devices
. . **magnetic disks**
magnetic storage
. **magnetic disks**

RT core storage
disk operating system (DOS)

∞ disks
memory (computers)
peripheral equipment (computers)
video disks

magnetic dispersion

RT ∞ dispersion
electromagnetic scattering
ferromagnetism
magnetization
wave scattering

magnetic disturbances

GS **magnetic disturbances**
. magnetic storms
. . polar substorms

RT auroras
Birkeland currents

∞ disturbances
geomagnetism
KP index
nonadiabatic theory
solar activity
solar activity effects

solar flares
 solar planetary interactions
 solar terrestrial interactions
 solar wind velocity
 space weather
 starspots
 stellar activity
 sudden ionospheric disturbances
 sudden storm commencements
 sunspots

magnetic domains

DEF Small areas on the surface of the body of thin films of a magnetic medium, each of which maintains a discrete magnetic field orientation relative to the others around it.

GS domains
 . **magnetic domains**
 RT bubble memory devices
 bubble technique
 dipole moments
 domain wall
 lines of force
 magnetic force microscopy

magnetic drums

DEF Memory devices used in computers; rotating cylinders on which information may be stored as magnetically polarized areas, usually along several parallel tracks around the periphery.

GS computer components
 . computer storage devices
 . . **magnetic drums**
 magnetic storage
 . **magnetic drums**
 RT core storage
 ∞ drums

magnetic effects

UF *geomagnetic effects*
 GS magnetic properties
 . **magnetic effects**
 . . magnetic damping
 . . magnetic rigidity
 RT ∞ effects
 flux transfer events
 geomagnetism
 magnetoactivity
 plasma compression
 quantum Hall effect
 temperature effects

magnetic energy storage

GS energy storage
 . **magnetic energy storage**
 RT energy technology
 magnet coils
 magnetic fields
 superconducting magnets

magnetic equator

DEF That line on the surface of the Earth connecting all points at which the magnetic dip is zero. Used for geomagnetic equator.

UF *geomagnetic equator*
 GS equators
 . **magnetic equator**
 RT geomagnetism
 ∞ inclination

magnetic field configurations

GS **magnetic field configurations**
 . magnetic islands
 RT astrophysics
 divertors (fusion reactors)
 electromagnetic fields
 flux transfer events
 force-free magnetic fields
 helical windings
 magnetic clouds
 magnetic field reconnection
 plasma compression
 plasma control
 plasma physics
 polar cusps
 poloidal flux
 spheromaks

stellar magnetic fields

magnetic field intensity
 USE **magnetic flux**

magnetic field inversions

GS inversions
 . **magnetic field inversions**
 RT electromagnetic fields
 electromagnetism
 electromechanics
 field theory (physics)

magnetic field reconnection

DEF A change in topology of the magnetic field configuration resulting from a localized breakdown of the requirement for 'connection' of fluid elements at one time on a common magnetic field line. Alternatively, it occurs when an electric field exists with a component parallel to a locally two-dimensional X-type magnetic neutral line which is equivalent to a breakdown in connection.

GS magnetic properties
 . magnetoactivity
 . . **magnetic field reconnection**
 RT field aligned currents
 flux transfer events
 interplanetary magnetic fields
 magnetic field configurations
 magnetic fields
 magnetic flux
 magnetic islands
 magnetosphere-ionosphere coupling
 solar magnetic field
 space plasmas

magnetic fields

DEF Regions of space wherein magnetic dipoles would experience a magnetic force or torque; often represented as the geometric array of the imaginary magnetic lines of force that exist in relation to magnetic poles. Magnetic fields are also considered to be the regions of influence of magnetized bodies or electric currents.

GS **magnetic fields**
 . biomagnetism
 . force-free magnetic fields
 . geomagnetism
 . interplanetary magnetic fields
 . interstellar magnetic fields
 . lunar magnetic fields
 . magnetic clouds
 . magnetostatic fields
 . nonuniform magnetic fields
 . paleomagnetism
 . planetary magnetic fields
 . stellar magnetic fields
 . . solar magnetic field
 . trapped magnetic fields

RT Bernstein energy principle
 beta factor
 Biot-Savart law
 conjugate points
 constitutive equations
 crossed fields
 demagnetization
 Earth magnetosphere
 electric fields
 electromagnetic acceleration
 electromagnetic fields
 electromagnetism
 electromechanics
 electron-hole drops
 ferromagnetic resonance
 field emission
 field strength
 field theory (physics)
 ∞ fields
 flux pumps
 flux transfer events
 geomagnetic tail
 Helios satellites
 Intasat satellite
 ∞ Kerr effects
 lines of force
 Lorentz force
 magnetic energy storage
 magnetic field reconnection

magnetic force microscopy
 magnetization
 magnetoactivity
 magneto-optics
 magnetoplasma dynamics
 magnetoresistivity
 magnetostatics
 magnets
 multipolar fields
 nonthermal radiation
 particle acceleration
 pinch effect
 polar cusps
 polarity
 pulsar magnetospheres
 racetracks (particle accelerators)
 radiation belts
 screw pinch
 Scylla
 self consistent fields
 square wells
 stellar magnetospheres
 Suhl effect
 Zeeman effect

magnetic films

GS coatings
 . **magnetic films**
 RT ∞ films

magnetic flux

DEF The magnetic force exerted on an imaginary unit magnetic pole placed at any specified point of space. It is a vector quantity. Its direction is taken as the direction toward which a north magnetic pole would tend to move under the influence of the field. If the force is measured in dynes and the unit pole is a cgs unit pole, the field intensity is given in oersteds. Used for magnetic field intensity.

UF *magnetic field intensity*
 GS field strength
 . **magnetic flux**
 rates (per time)
 . flux (rate)
 . . **magnetic flux**
 RT beta factor
 constitutive equations
 current sheets
 flux pinning
 flux quantization
 flux transfer events
 force-free magnetic fields
 lines of force
 magnetic field reconnection
 pinning

magnetic force microscopy

(added June 2004)

DEF A form of microscopy designed to study magnetic materials on a nanometer scale by detecting magnetic forces or force gradients exerted on a probing tip that is moved over a sample surface.

UF *MFM (microscopy)*
 GS microscopy
 . **magnetic force microscopy**
 RT imaging techniques
 magnetic domains
 magnetic fields
 magnetic materials
 magnetic measurement
 magnetic probes
 magnetic resonance

magnetic forming

GS forming techniques
 . **magnetic forming**
 metal working
 . **magnetic forming**
 RT bulging
 cold working
 deep drawing
 electromagnetic hammers
 metal drawing

magnetic induction

UF *electromagnetic deduction*
 GS magnetic properties
 . **magnetic induction**

magnetic islands

RT coupling coefficients
flux (rate)
inductance
∞ induction
induction heating

magnetic induction probes
USE **magnetic probes**

magnetic islands

(added October 1994)
GS magnetic field configurations
. **magnetic islands**
RT coalescing
collisionless plasmas
current sheets
geomagnetic tail
magnetic field reconnection

magnetic lenses

UF *quadrupole lenses*
GS lenses
. **magnetic lenses**
RT cathode ray tubes
electron beams
electron guns
electron microscopes
electron microscopy
plasma guns
plasma jets
scanning electron microscopy
transmission electron microscopy
wire grid lenses

magnetic levitation vehicles

GS surface vehicles
. **magnetic levitation vehicles**
RT levitation
lift devices
mass drivers
rail transportation
suspension systems (vehicles)
∞ vehicles

magnetic materials

UF *magnetic metals*
GS **magnetic materials**
. ferrimagnetic materials
. ferromagnetic materials
. . ferrofluids
. . ferromagnetic films
. . magnetite
. . Permalloys (trademark)
RT Kondo effect
magnetic force microscopy
magnetorheological fluids
magnets
∞ materials
permanent magnets

magnetic measurement

SN (MEASUREMENT OF MAGNETIC PROPERTIES, QUANTITIES OR CONDITIONS)
UF *fluxmeters*
magnetometry
RT electromagnetic measurement
magnetic force microscopy
magnetometers
∞ materials tests
∞ measurement
squid (detectors)

magnetic memories

USE **magnetic storage**

magnetic metals

USE **magnetic materials**
metals

magnetic mirrors

DEF Magnetic fields so arranged that they will theoretically confine a hot plasma.
GS mirrors
. **magnetic mirrors**
. . tandem mirrors
RT lines of force
mirror fusion
mirror point
nonuniform magnetic fields
nuclear fusion

plasma control
plasma equilibrium
Q devices
Scylla
spheromaks

magnetic moments

DEF The quantities obtained by multiplying the distances between two magnetic poles by the average strength of the poles. Measures of the magnetic flux set up by the gyration of an electric field in a magnetic field. Moments are negative, indicating they are diagramatic, and equal to the energy of rotation divided by the magnetic field. In atomic and nuclear physics, moments, measured in Bohr magnetrons, are associated with the intrinsic spin of the particle and with the orbital motion of the particle in a system.

GS magnetic properties
. **magnetic moments**
moments
. dipole moments
. . **magnetic moments**
RT Bohr magneton
electric moments
Langevin formula
quenching (atomic physics)

magnetic monopoles

GS monopoles
. **magnetic monopoles**
particles
. elementary particles
. . **magnetic monopoles**
RT quantum theory

magnetic nozzles

(added September 1999)
DEF Nozzle devices used in some nuclear and plasma propulsion systems that utilize magnetic fields to direct and accelerate plasma flows, thereby providing thrust for propulsion.

RT coaxial plasma accelerators
electric rocket engines
∞ nozzles
nuclear propulsion
nuclear rocket engines
plasma acceleration
plasma engines
plasma propulsion
rocket nozzles
spacecraft propulsion
VASIMR (propulsion system)

magnetic permeability

UF *magnetic susceptibility*
susceptibility (magnetism)
GS magnetic properties
. **magnetic permeability**
RT Curie-Weiss law
dielectric permeability
hysteresis
neel temperature
reluctance

magnetic pistons

GS pistons
. **magnetic pistons**
RT hypersonic wind tunnels
hypervelocity wind tunnels
shock tubes
shock wave generators

magnetic poles

DEF Either of the two places on the surface of the Earth where the magnetic dip is 90 deg., that in the Northern Hemisphere (at, approximately, latitude 73 deg. 8 N, longitude 101 deg. W in 1955) being designated north magnetic pole, and that in the Southern Hemisphere (at, approximately, latitude, 68 deg. S, longitude 144 deg. E in 1955) being designated south magnetic pole. Either of those two points of a magnet where the magnetic force is the greatest. In magnetic theory, a fictitious entity analogous to a unit charge of electrostatic theory. In nature, only dipoles, not isolate magnetic poles exist.

RT auroral zones
∞ dipoles

geomagnetism
polarity
∞ poles

magnetic probes

UF *magnetic induction probes*
GS measuring instruments
. **magnetic probes**
RT magnetic force microscopy
magnetometers
resonance probes
space probes

magnetic properties

GS **magnetic properties**
. antiferromagnetism
. biomagnetism
. Curie temperature
. diamagnetism
. ferrimagnetism
. ferromagnetism
. geomagnetism
. gyromagnetism
. . gyrofrequency
. magnetic effects
. . magnetic damping
. . magnetic rigidity
. magnetic induction
. magnetic moments
. magnetic permeability
. magnetic relaxation
. . spin-lattice relaxation
. magnetic suspension
. magnetoacoustics
. magnetoactivity
. . flux transfer events
. . magnetic field reconnection
. . magnetoconductivity
. magnetostriction
. paleomagnetism
. paramagnetism
. polarization characteristics
. reluctance
. remanence
. thermomagnetic effects
RT coercivity
Curie-Weiss law
dipole moments
eddy currents
electrical properties
electromagnetic properties
electromagnetism
ferritic stainless steels
field strength
hysteresis
inductance
KP index
lines of force
magnetization
magnetomechanics (physics)
magnets
Maxwell equation
∞ physical properties
polarization (spin alignment)
∞ properties
∞ solid state physics
spin glass

magnetic pumping

RT electron cyclotron heating
induction heating
ion cyclotron radiation
kinetic heating
plasma heating
∞ pumping

magnetic recording

UF *magnetic tape recorders*
GS recording
. **magnetic recording**
RT bubble memory devices
data recording
recording heads

magnetic relaxation

GS magnetic properties
. **magnetic relaxation**
. . spin-lattice relaxation

- RT relaxation (mechanics)
- magnetic resonance**
 GS resonance
 . **magnetic resonance**
 . . ferromagnetic resonance
 . . nuclear magnetic resonance
 . . . proton magnetic resonance
 . . . proton resonance
 . . paramagnetic resonance
 . . . electron paramagnetic resonance
 RT magnetic force microscopy
 magnetic resonance spectroscopy
 nuclear spin
 Overhauser effect
 spectrum analysis
- magnetic resonance spectroscopy**
(added August 2004)
 DEF Spectroscopic method of measuring the magnetic moment of elementary particles such as atomic nuclei, protons or electrons. It is employed in clinical applications such as NMR Tomography (magnetic resonance imaging).
 GS spectroscopy
 . magnetic spectroscopy
 . . **magnetic resonance spectroscopy**
 RT chemical analysis
 magnetic resonance
- magnetic rigidity**
 UF *gyrointeraction*
 GS magnetic properties
 . magnetic effects
 . . **magnetic rigidity**
 RT electron trajectories
 ionospheric drift
 particle mass
 particle motion
 ∞ rigidity
- magnetic sails**
(added May 1995)
 DEF Devices that provide low thrust spacecraft propulsion by deflecting plasma winds with a superconducting cable-generated magnetic field.
 UF *field sails*
magsails
 GS propulsion
 . electric propulsion
 . . electromagnetic propulsion
 . . . **magnetic sails**
 . low thrust propulsion
 . . electromagnetic propulsion
 . . . **magnetic sails**
 . spacecraft propulsion
 . . electromagnetic propulsion
 . . . **magnetic sails**
 sails
 . **magnetic sails**
 RT interplanetary flight
 interstellar travel
 ion propulsion
 manned Mars missions
 particle beams
 plasma propulsion
 solar wind
- magnetic shielding**
 GS shielding
 . **magnetic shielding**
 RT electromagnetic shielding
 magnetometers
 radiation shielding
- magnetic signals**
 RT nuclear magnetic resonance
 signal mixing
 ∞ signals
- magnetic signatures**
 UF *magnetograms*
 GS signatures
 . **magnetic signatures**
 RT pattern registration
- magnetic spectroscopy**
 GS spectroscopy
- . **magnetic spectroscopy**
 . . magnetic resonance spectroscopy
 RT Alpha Magnetic Spectrometer
 gas spectroscopy
 mass spectroscopy
 spectroscopic analysis
 vacuum spectroscopy
- magnetic stars**
 GS celestial bodies
 . stars
 . . **magnetic stars**
 . . . magnetars
 RT peculiar stars
- magnetic storage**
 DEF In computer terminology, any device which makes use of the magnetic properties of materials for the storage of information. Used for magnetic memories.
 UF *magnetic memories*
 GS **magnetic storage**
 . bubble memory devices
 . core storage
 . magnetic disks
 . magnetic drums
 RT computer storage devices
 data recording
 data storage
 ∞ drums
 parametrons
 ∞ storage
 virtual memory systems
- magnetic storms**
 DEF Worldwide disturbances of the Earth's magnetic field. Used for geomagnetic storms and magnetic substorms.
 UF *geomagnetic storms*
magnetic substorms
 GS magnetic disturbances
 . **magnetic storms**
 . . polar substorms
 storms
 . **magnetic storms**
 . . polar substorms
 RT Birkeland currents
 dawn chorus
 Forbush decreases
 IMAGE satellite
 noise storms
 solar storms
 solar terrestrial interactions
 space weather
 spread F
 sudden ionospheric disturbances
 sudden storm commencements
- magnetic substorms*
 USE **magnetic storms**
- magnetic surveys**
 UF *magnetotelluric profiling*
 RT aeromagnetism
 geomagnetism
- magnetic susceptibility*
 USE **magnetic permeability**
- magnetic suspension**
 GS magnetic properties
 . **magnetic suspension**
 suspending (hanging)
 . **magnetic suspension**
 RT annular suspension and pointing
 system
 levitation melting
 magnetic bearings
- magnetic switching**
 GS switching
 . **magnetic switching**
 RT antiferromagnetism
 beam switching
 bubble memory devices
- saturable reactors
- magnetic tape recorders*
 USE **magnetic recording tape recorders**
- magnetic tape transports**
 GS mechanical drives
 . **magnetic tape transports**
 RT tape recorders
- magnetic tapes**
 DEF Ribbons of paper, metal, or plastic, coated or impregnated with magnetic material on which information may be stored in the form of magnetically polarized areas.
 GS **magnetic tapes**
 . computer compatible tapes
 RT audio tapes
 peripheral equipment (computers)
 plastic tapes
 playbacks
 punched tapes
 readers
 recording heads
 reels
 tape recorders
 ∞ tapes
 video tapes
- magnetic transducers**
 GS transducers
 . **magnetic transducers**
 RT electromagnetic measurement
 electronic transducers
 microphones
- magnetic variations**
 DEF Changes in magnetic fields in time or space.
 GS variations
 . **magnetic variations**
 . . geomagnetic pulsations
 . . . geomagnetic micropulsations
 . . . nocturnal variations
 RT aeromagnetism
 annual variations
 diurnal variations
 ionospheric disturbances
 KP index
 Scylla
 traveling ionospheric disturbances
- magnetically trapped particles**
 GS particles
 . charged particles
 . . **magnetically trapped particles**
 . . . radiation belts
 artificial radiation belts
 inner radiation belt
 outer radiation belt
 proton belts
 . trapped particles
 . . **magnetically trapped particles**
 . . . radiation belts
 artificial radiation belts
 inner radiation belt
 outer radiation belt
 proton belts
 RT plasma control
 trapped magnetic fields
- magnetite**
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . iron oxides
 **magnetite**
 iron compounds
 . iron oxides
 . . **magnetite**
 magnetic materials
 . ferromagnetic materials
 . . **magnetite**
 minerals
 . **magnetite**
- magnetization**
 UF *remagnetization*
 RT coercivity

magnetoacoustic waves

- magnetic dispersion
- magnetic fields
- magnetic properties
- magnetomechanics (physics)
- magnets
- magnons
- ∞ polarization
- polarization (charge separation)
- polarization (spin alignment)

magnetoacoustic waves

- GS elastic waves
 - . magnetoelastic waves
 - . . **magnetoacoustic waves**
- RT magnetohydrodynamic waves
- plasma waves

magnetoacoustics

- GS acoustics
 - . **magnetoacoustics**
- magnetic properties
- . **magnetoacoustics**

magnetoactivity

- GS magnetic properties
 - . **magnetoactivity**
 - . . flux transfer events
 - . . magnetic field reconnection
 - . . magnetoresistivity
- RT magnetic effects
- magnetic fields

magnetocardiography

- GS bioengineering
 - . biometrics
 - . . cardiology
 - . . . **magnetocardiography**
- RT bioinstrumentation

magnetoelastic vibrations

USE **magnetoelastic waves**

magnetoelastic waves

- UF *magnetoelastic vibrations*
- GS elastic waves
 - . **magnetoelastic waves**
 - . . magnetoacoustic waves
- RT electrostatic waves
- magnetosonic resonance
- magnetospheric instability
- magnetostriction
- plasma waves
- sound waves
- ultrasonic radiation

magnetoelasticity

USE **magnetostriction**

magnetolectric media

- RT dielectrics
- magnetoionics
- Maxwell equation
- mechanical drives

magnetogasdynamics

USE **magnetohydrodynamics**

magnetograms

USE **magnetic signatures**

magnetohydrodynamic acceleration

USE **plasma acceleration**

magnetohydrodynamic flow

- UF *hydromagnetic flow*
- plasma flow*
- GS fluid flow
 - . **magnetohydrodynamic flow**
- RT compressible flow
- core flow
- gas flow
- geomagnetic hollow
- Hartmann flow
- Kelvin-Helmholtz instability
- line current
- magnetohydrodynamic simulation
- magnetohydrodynamics
- plasma flux measurement
- plasma turbulence
- plasmas (physics)
- reverse field pinch

- screw pinch
- solar wind velocity
- transverse waves
- two fluid models

magnetohydrodynamic generators

- GS electric generators
 - . direct power generators
 - . . **magnetohydrodynamic generators**
- RT fuel cells
- ∞ generators
- magnetohydrodynamics
- plasma accelerators
- plasma generators
- thermionic converters
- thermoelectric generators

magnetohydrodynamic shear heating

- GS heating
 - . **magnetohydrodynamic shear heating**
- RT plasma heating
- plasma sheaths
- shock heating
- viscous flow

magnetohydrodynamic simulation

(added June 2005)

DEF Simulation of the interaction that exists between a magnetic field and an electrically conducting fluid.

- GS simulation
 - . **magnetohydrodynamic simulation**
- RT magnetohydrodynamic flow
- magnetohydrodynamics
- meshfree methods
- plasma turbulence
- turbulence models

magnetohydrodynamic stability

- UF *hydromagnetic stability*
- plasma instability*
- plasma stability*
- GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . flow stability
 - **magnetohydrodynamic stability**
 - Weibel instability
 - flow characteristics
 - flow stability
 - **magnetohydrodynamic stability**
 - Weibel instability
 - stability
 - dynamic stability
 - motion stability
 - flow stability
 - **magnetohydrodynamic stability**
 - Weibel instability
- RT ballooning modes
- beta factor
- elastic waves
- elliptical plasmas
- force-free magnetic fields
- helical flow
- Kelvin-Helmholtz instability
- Langmuir turbulence
- magnetohydrodynamics
- magnetohydrostatics
- nonequilibrium plasmas
- nonuniform plasmas
- plasma conductivity
- plasma cooling
- plasma decay
- plasma drift
- plasma equilibrium
- plasma lifetime
- plasma loss
- plasma pinch
- plasma temperature
- plasma turbulence
- plasmas (physics)
- plasmons
- space plasmas
- strongly coupled plasmas

- thermal instability
- zeta pinch

magnetohydrodynamic turbulence

- GS turbulence
 - . **magnetohydrodynamic turbulence**
 - . . plasma turbulence
 - . . . Langmuir turbulence
- RT homogeneous turbulence
- isotropic turbulence

magnetohydrodynamic waves

DEF Low frequency waves in an electrically highly conducting fluid (such as a plasma) permeated by static magnetic fields. The restoring forces of the waves are, in general, the combination of a magnetic tensile stress along the magnetic field lines and the comprehensive stress between the field lines and the fluid pressure. Used for Alfvén waves, hydromagnetic waves, and plasma sound waves.

- UF *Alfvén waves*
- hydromagnetic waves*
- plasma sound waves*
- GS elastic waves
 - . **magnetohydrodynamic waves**
 - . . plasma waves
 - . . . electrostatic waves
- RT magnetoacoustic waves
- magnetohydrodynamics
- normal shock waves
- oblique shock waves
- shock waves
- wave-particle interactions

magnetohydrodynamics

DEF The study of the interaction that exists between a magnetic field and an electrically conducting fluid. Used for geometrical hydro-magnetics, hydromagnetics, hydromagnetism, and magnetogasdynamics.

- UF *geometrical hydromagnetics*
- hydromagnetics*
- hydromagnetism*
- magnetogasdynamics*
- GS mechanics (physics)
 - . fluid mechanics
 - . . fluid dynamics
 - . . . hydrodynamics
 - **magnetohydrodynamics**
 - hydromechanics
 - hydrodynamics
 - **magnetohydrodynamics**
- RT alpha plasma devices
- conducting fluids
- ∞ dynamics
- electric arcs
- electrohydrodynamics
- gas dynamics
- gas transport
- Hall accelerators
- Hall effect
- Hartmann flow
- Hartmann number
- ionization
- magnetohydrodynamic flow
- magnetohydrodynamic generators
- magnetohydrodynamic simulation
- magnetohydrodynamic stability
- magnetohydrodynamic waves
- magnetohydrostatics
- magnetoionics
- magnetosonic resonance
- pinch effect
- plasma currents
- plasma dynamics
- plasma physics
- plasma propulsion
- plasmas (physics)
- space charge
- space mechanics
- space plasmas
- stellar activity
- stellarators
- thermonuclear reactions
- uranium plasmas
- wave-particle interactions

magnetohydrostatics

- GS mechanics (physics)

- . fluid mechanics
 - . . . hydromechanics
 - hydrostatics
 - **magneto-hydrostatics**
 - statics
 - . hydrostatics
 - . . **magneto-hydrostatics**
 - RT magnetohydrodynamic stability
 - magnetohydrodynamics
 - magnetoionics
 - plasma physics
 - static stability
- magnetoionic plasma*
- USE **plasmas (physics)**
- magnetoionics**
- RT electromagnetic wave transmission
 - elliptical polarization
 - geomagnetism
 - gyrofrequency
 - ionospheric propagation
 - magnetolectric media
 - magnetohydrodynamics
 - magneto-hydrostatics
 - plasmas (physics)
 - radio transmission
- magnetomechanics (physics)**
- DEF Study of the effects which the magnetization of a material and its strain have on each other.
 - RT magnetic properties
 - magnetization
 - ∞ physics
- magnetometers**
- DEF Instruments used in the study of geomagnetism for measuring a magnetic element. Used for Gaussmeters.
 - UF *Gaussmeters*
 - GS measuring instruments
 - . **magnetometers**
 - . . . variometers
 - RT electrical measurement
 - field intensity meters
 - geomagnetism
 - ∞ gradiometers
 - magnetic measurement
 - magnetic probes
 - magnetic shielding
 - MagSat 1 satellite
 - Magsat A satellite
 - MagSat B satellite
 - MagSat satellites
 - nuclear magnetic resonance
 - proton masers
- magnetometry*
- USE **magnetic measurement**
- magneto-optics**
- RT acousto-optics
 - electromagnetic radiation
 - electro-optics
 - Faraday effect
 - Kerr magneto-optical effect
 - light modulators
 - magnetic fields
 - optical switching
 - ∞ optics
 - polarization (waves)
 - polarized electromagnetic radiation
- magnetopause**
- GS environments
 - . Earth magnetosphere
 - . . **magnetopause**
 - RT Chapman-Ferraro problem
 - flux transfer events
 - IMAGE satellite
 - magnetosheath
 - magnetospheric instability
 - planetary magnetotails
 - polar cusps
 - satellite atmospheres
 - solar wind
- magnetoplasma-dynamic thrusters**
(added April 2001)
- DEF Electromagnetic rocket engines that produce thrust via the Lorentz body force ejecting a high velocity plasma stream. The thrusters can be operated in either steady-state or pulsed mode, and typically have an axisymmetric geometry (annular anode surrounding a central cathode).
 - UF *LFA thrusters*
 - Lorentz force accelerator thrusters*
 - MPD thrusters*
 - GS engines
 - . rocket engines
 - . . electric rocket engines
 - . . . plasma engines
 - **magnetoplasma-dynamic thrusters**
 - RT arc jet engines
 - electromagnetic propulsion
 - magnetoplasma-dynamics
 - plasma accelerators
 - plasma propulsion
 - spacecraft propulsion
 - ∞ thrusters
- magnetoplasma-dynamics**
- DEF The study of the dynamics of generating electricity by passing a beam of ionized gas through a magnetic field.
 - RT magnetic fields
 - magnetoplasma-dynamic thrusters
 - plasma density
 - plasma propulsion
 - rocket engines
 - spacecraft propulsion
- magnetoplasmas*
- USE **plasmas (physics)**
- magneto-resistivity**
- GS electrical properties
 - . electrical resistivity
 - . . **magneto-resistivity**
 - electromagnetic properties
 - . **magneto-resistivity**
 - magnetic properties
 - . magnetoactivity
 - . . **magneto-resistivity**
 - transport properties
 - . electrical resistivity
 - . . **magneto-resistivity**
 - RT ∞ conductivity
 - electromagnetism
 - Fermi surfaces
 - Hall resistance
 - magnetic fields
 - reluctance
 - ∞ resistance
- magnetorheological fluids**
(added September 2000)
- DEF Fluids comprised of magnetically soft particles dispersed in liquids and possessing rheological properties that can be rapidly and reversibly altered by the application of a magnetic field.
 - RT electrorheological fluids
 - ferrofluids
 - ferromagnetic materials
 - ∞ fluids
 - magnetic materials
 - rheology
 - smart materials
 - vibration damping
- magnetosheath**
- GS environments
 - . Earth magnetosphere
 - . . **magnetosheath**
 - RT bow waves
 - Earth environment
 - geomagnetism
 - magnetopause
 - plasma sheaths
 - shock fronts
 - solar planetary interactions
 - solar terrestrial interactions
 - solar wind
- magnetosonic resonance**
- GS resonance
- . **magnetosonic resonance**
 - RT magnetoelastic waves
 - magneto-hydrodynamics
- magnetosphere-ionosphere coupling**
- UF *ionosphere-magnetosphere coupling*
 - GS coupling
 - . **magnetosphere-ionosphere coupling**
 - RT aeronomy
 - atmospheric physics
 - coupled modes
 - Earth ionosphere
 - Earth magnetosphere
 - electromagnetic coupling
 - flux transfer events
 - ∞ ionospheres
 - magnetic field reconnection
 - magnetospheric instability
 - planetary ionospheres
- ∞ **magnetospheres**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF Region surrounding a celestial body where its magnetic field controls the motions of charged particles.
 - RT cometary magnetospheres
 - Earth magnetosphere
 - planetary magnetospheres
 - pulsar magnetospheres
 - stellar magnetospheres
- magnetospheric electron density**
- GS density (number/volume)
 - . particle density (concentration)
 - . . electron density (concentration)
 - . . . **magnetospheric electron density**
 - RT atmospheric density
 - ionospheric electron density
 - plasma density
- magnetospheric instability**
- GS stability
 - . **magnetospheric instability**
 - RT geomagnetic pulsations
 - magnetoelastic waves
 - magnetopause
 - magnetosphere-ionosphere coupling
- magnetospheric ion density**
- GS density (number/volume)
 - . particle density (concentration)
 - . . ion density (concentration)
 - . . . **magnetospheric ion density**
 - magnetospheric proton density
 - RT atmospheric density
 - ionospheric ion density
 - plasma density
 - positive ions
- magnetospheric proton density**
- GS density (number/volume)
 - . particle density (concentration)
 - . . ion density (concentration)
 - . . . magnetospheric ion density
 - **magnetospheric proton density**
 - proton density (concentration)
 - **magnetospheric proton density**
 - RT atmospheric density
 - plasma density
- magnetostatic amplifiers**
- GS amplifiers
 - . **magnetostatic amplifiers**
 - RT gadolinium-gallium garnet
 - magnetic amplifiers
 - parametric amplifiers
 - traveling wave tubes
 - yttrium-aluminum garnet
 - yttrium-iron garnet
- magnetostatic fields**
- GS magnetic fields
 - . **magnetostatic fields**
 - RT field theory (physics)

magnetostatics

lines of force

magnetostatics

GS electromagnetism
. **magnetostatics**
RT electrostatics
flux (rate)
magnetic fields

magnetostratigraphy

(added April 1999)
GS stratigraphy
. **magnetostratigraphy**
RT geochronology
paleomagnetism

magnetostriction

DEF The phenomenon wherein ferromagnetic materials experience an elastic strain when subjected to an external magnetic field. The converse in which mechanical stresses cause a change in the magnetic induction of a ferromagnetic material. Used for magnetoelasticity.

UF *magnetoelasticity*
GS magnetic properties
. **magnetostriction**
mechanical properties
. elastic properties
. . . **magnetostriction**
RT electrostriction
magnetoelastic waves

∞ magnetotails

(added April 1990)
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED-CONSULT TERMS LISTED BELOW)
RT geomagnetic tail
planetary magnetotails

magnetotelluric profiling

USE **magnetic surveys**

magnetovariographs

USE **variometers**

magnetron sputtering

DEF A deposition method in which a microwave tube is utilized to confine a plasma magnetically to produce high deposition rates and a low working-gas partial pressure.

GS sputtering
. **magnetron sputtering**
RT deposition
metal coatings

magnetrons

DEF Electron tubes characterized by the interaction of electrons with the electric field of a circuit element in crossed steady electric and magnetic fields to produce alternating current power output.

GS electron tubes
. vacuum tubes
. . . microwave tubes
. . . . **magnetrons**
. nigtotrons
microwave equipment
. microwave oscillators
. . **magnetrons**
. . . nigtotrons
. microwave tubes
. . **magnetrons**
. . . nigtotrons
oscillators
. microwave oscillators
. . **magnetrons**
. . . nigtotrons
RT cavity resonators
crossed field amplifiers
crossed fields
electrostatic generators
klystrons
multimode resonators
planotrons
resonators

traveling wave tubes

magnets

DEF Bodies which produce magnetic fields around themselves.

GS **magnets**
. cryogenic magnets
. electromagnets
. . high field magnets
. . superconducting magnets
. ferrimagnets
. permanent magnets
. wiggler magnets
RT electrets
ferromagnetic materials
ferromagnetism
magnet coils
magnetic cores
magnetic fields
magnetic materials
magnetic properties
magnetization
Permalloys (trademark)

magnification

DEF A ratio of the size of an image to its corresponding object. This is usually determined by linear measurement. Used for magnifiers.

UF *magnifiers*
RT amplification
increasing
lenses
∞ projection

magnifiers

USE **magnification**

magnitude

GS **magnitude**
. stellar magnitude
RT amplitudes
dimensions
displacement
∞ intensity
level (quantity)

magnons

UF *spin waves*
GS elementary excitations
. **magnons**
RT antiferromagnetism
ferrimagnetism
ferromagnetism
magnetization
plasmons

Magnus effect

RT Bernoulli theorem
boundary layer flow
∞ effects
fluid dynamics
fluid flow
missile design
rotating cylinders

magsails

USE **magnetic sails**

MagSat 1 satellite

DEF A scientific satellite launched by NASA for surveying the Earth's magnetic field. It was launched in October 1979 and reentered in June 1980.

GS artificial satellites
. scientific satellites
. . MagSat satellites
. . . **MagSat 1 satellite**
RT geomagnetism
magnetometers

Magsat A satellite

GS artificial satellites
. scientific satellites
. . MagSat satellites
. . . **Magsat A satellite**
RT geomagnetism
magnetometers

MagSat B satellite

DEF The second in a series of satellites for

measuring the Earth's magnetic field. Similar magnetic measurements are proposed as part of the Geopotential Research Mission.

GS artificial satellites
. scientific satellites
. . MagSat satellites
. . . **MagSat B satellite**
RT geomagnetism
magnetometers

MagSat satellites

DEF A series of satellites used to study the magnetic field.

GS artificial satellites
. scientific satellites
. . **MagSat satellites**
. . . MagSat 1 satellite
. . . Magsat A satellite
. . . MagSat B satellite
RT geomagnetism
magnetometers

main sequence stars

GS celestial bodies
. stars
. . **main sequence stars**
. . . dwarf stars
. . . . dwarf novae
. . . . flare stars
. . . . red dwarf stars
. . . sun
RT color-magnitude diagram
early stars
F stars
G stars
giant stars
K stars
late stars
M stars
pre-main sequence stars
stellar evolution
stellar mass
subdwarf stars
subgiant stars

Maine

GS nations
. United States
. . **Maine**
RT St Lawrence Valley (North America)

maintainability

DEF A measure of the ease and rapidity with which a system or equipment can be retained in operational status through preventive maintenance or restored to operational status following a failure. It is characteristic of equipment design and installation, personnel availability in the required skill levels, adequacy of maintenance procedures and test equipment, and the physical environment under which maintenance is performed.

RT design analysis
maintenance
reliability

maintenance

UF *repairing*
troubleshooting
GS **maintenance**
. aircraft maintenance
. file maintenance (computers)
. preventive maintenance
. space maintenance
. spacecraft maintenance
RT checkout
construction
damage assessment
downtime
equipment specifications
fault detection
∞ fixing
ground crews
ground support equipment
installing
logistics
logistics management
lubricants
lubrication
maintainability

- manuals
 - mechanical engineering
 - operating costs
 - reliability
 - replacing
 - self repairing devices
 - service life
 - shipyards
 - shops
 - spare parts
 - specifications
- maintenance training**
- GS education
 - . **maintenance training**
- majority carriers**
- GS charge carriers
 - . **majority carriers**
 - RT additives
 - bipolar transistors
 - carrier injection
 - electron mobility
 - electrons
 - holes (electron deficiencies)
 - semiconductors (materials)
- Malagasy Republic*
- USE **Madagascar**
- Malawi**
- GS nations
 - . **Malawi**
 - RT Africa
- Malaya*
- USE **Malaysia**
- Malaysia**
- UF *Malaya*
 - GS nations
 - . **Malaysia**
 - RT Asia
- Maldivé Islands**
- GS landforms
 - . islands
 - . . **Maldivé Islands**
 - nations
 - . **Maldivé Islands**
- maleates**
- GS esters
 - . **maleates**
- males**
- RT adults
 - children
 - females
 - human beings
 - sex
 - sex factor
- malfunctions**
- DEF Improper functioning of components, causing improper operation of a system.
 - RT aborted missions
 - aircraft accidents
 - aircraft hazards
 - downtime
 - errors
 - failure
 - system failures
- Mali**
- GS nations
 - . **Mali**
 - RT Africa
- Malkus theory**
- RT statistical mechanics
 - ∞ theories
- malleability**
- GS mechanical properties
 - . **malleability**
 - RT ductility
 - metal working
- malononitrile**
- GS cyanides
- . **malononitrile**
 - nitrogen compounds
 - . nitriles
 - . . **malononitrile**
 - organic compounds
 - . nitriles
 - . . **malononitrile**
- Malta**
- GS landforms
 - . islands
 - . . **Malta**
 - nations
 - . **Malta**
 - RT Mediterranean Sea
- mammals**
- GS animals
 - . vertebrates
 - . . **mammals**
 - . . . bats
 - . . . bears
 - . . . cats
 - . . . cattle
 - . . . calves
 - . . . deer
 - caribous
 - goats
 - horses
 - marine mammals
 - dolphins
 - manatees
 - porpoises
 - seals (animals)
 - whales
 - . . . moles
 - . . . primates
 - apes
 - chimpanzees
 - baboons
 - human beings
 - monkeys
 - rodents
 - guinea pigs
 - hamsters
 - mice
 - jerboas
 - knockout mice
 - pocket mice
 - rabbits
 - rats
 - squirrels
 - ground squirrels
 - . . . dogs
 - . . . sheep
 - . . . swine
 - . . . wolves
 - RT Earth resources
 - homeotherms
 - mammary glands
- mammary glands**
- GS anatomy
 - . chest
 - . . breast
 - . . . **mammary glands**
 - . . . glands (anatomy)
 - . . **mammary glands**
 - RT mammals
- man*
- USE **human beings**
- man environment interactions**
- RT biomass burning
 - climate change
 - desertification
 - environment effects
 - environment management
 - human beings
 - ∞ interactions
 - International Geosphere-Biosphere program
 - resources
- man machine systems**
- DEF Systems in which the functions of the man and the machine are interrelated and necessary for the operation of the system.
 - GS **man machine systems**
- . human-computer interface
 - RT astronaut performance
 - ∞ automation
 - balancing
 - bionics
 - biotechnology
 - computer systems design
 - consoles
 - cybernetics
 - data processing terminals
 - depersonalization
 - display devices
 - ∞ engineering
 - human factors engineering
 - management
 - mechanization
 - office automation
 - pilot induced oscillation
 - pilot support systems
 - robotics
 - ∞ systems
 - systems analysis
 - systems engineering
 - systems management
 - teleoperators
 - virtual reality
 - workstations
- man operated propulsion systems**
- UF *MOPS (propulsion systems)*
 - GS propulsion
 - . low thrust propulsion
 - . . **man operated propulsion systems**
 - RT astronaut locomotion
 - compressed air
 - extravehicular activity
 - gaseous rocket propellants
 - manned space flight
 - pilot performance
 - retrorocket engines
 - ∞ systems
- man powered aircraft**
- DEF Aircraft powered by human energy.
 - RT ∞ aircraft
 - hang gliders
 - soaring
 - ultralight aircraft
 - ∞ winged vehicles
- man tended free flyers**
- (added July 1989)
 - DEF Intermittently manned spacecraft or platforms designed primarily to carry out experiments in reduced gravity and life science research. They also serve as annexes or components of space stations. Used for MTFF (space station).
 - UF *MTFF (space station)*
 - GS artificial satellites
 - . space stations
 - . . **man tended free flyers**
 - manned spacecraft
 - . **man tended free flyers**
 - space platforms
 - . **man tended free flyers**
 - stations
 - . space stations
 - . . **man tended free flyers**
 - RT Columbus space station
 - European space programs
 - orbital servicing
 - space station payloads
 - spaceborne experiments
 - spacecraft modules
- management**
- UF *administration*
 - GS **management**
 - . configuration management
 - . contract management
 - . data management
 - . environment management
 - . financial management
 - . industrial management
 - . . engineering management
 - . . inventory management
 - . . . inventory controls
 - . . . personnel management

management analysis

- . information management
- . . information resources management
- . . records management
- . logistics management
- . . inventory management
- . . . inventory controls
- . matrix management
- . procurement management
- . production management
- . project management
- . research management
- . resources management
- . . forest management
- . . . reforestation
- . . information resources management
- . . land management
- . . resource allocation
- . safety management
- . systems management
- . terminal area energy management
- . total quality management
- . waste management
- . water management
- . weapon system management
- . . waste disposal
- . . . composting
- . . . hazardous material disposal (in space)
- . . waste treatment
- . . . sewage treatment
- . . waste utilization
- . risk management
- RT autonomy
- Central Electronic Management System
- command and control
- contract negotiation
- cost analysis
- cost estimates
- cost incentives
- cost reduction
- cybernetics
- decision making
- decisions
- ∞ direction
- economic analysis
- economic factors
- evaluation
- fiduciaries
- forecasting
- GERT
- incentive techniques
- incentives
- information flow
- man machine systems
- marketing
- mission planning
- operations research
- performance prediction
- personnel development
- prejudices
- problem solving
- procurement policy
- product development
- production engineering
- progress
- project planning
- ∞ research projects
- statistical analysis
- systems engineering

management analysis

RT ∞ analyzing
cost analysis
GERT
PERT
tradeoffs

management information systems

GS information systems
. **management information systems**
management systems
. **management information systems**

RT computer techniques
data base management systems
data retrieval
data storage
data systems
information retrieval

information theory
records management
∞ systems

management methods

GS **management methods**
. Delphi method (forecasting)
. pattern method (forecasting)
. probe method (forecasting)
. profile method (forecasting)

RT computer techniques
cost reduction
critical path method
decision making
estimates
forecasting
GERT
incentives
matrix management
∞ methodology
multidisciplinary research
NASA Interactive Planning System
operations research
PERT
retraining
Starsite program
systems management
total quality management

management planning

GS planning
. **management planning**
. . production planning
. . project planning

RT consulting
cost analysis
cost reduction
decision making
∞ development
economy
estimates
feasibility analysis
finance
forecasting
GERT
human resources
interfaces
life cycle costs
mediation
mission planning
operations research
personnel management
PERT
program trend line analysis
project management
research and development
selective dissemination of information
systems engineering
tradeoffs
value engineering

management systems

GS **management systems**
. flight management systems
. management information systems

RT computer techniques
information systems
project management
∞ systems

manatees

DEF Large plant eating aquatic mammals living in shallow tropical waters near the coasts of North and South America.

GS animals
. vertebrates
. . mammals
. . . marine mammals
. . . . **manatees**

man-computer interface

USE **human-computer interface**

Mandelstam representation

GS models
. mathematical models
. . **Mandelstam representation**

RT elementary particle interactions
inelastic scattering
Lorentz transformations

nuclear scattering
quantum theory
scattering amplitude

mandrels

RT cores
machine tools
molds
shafts (machine elements)

maneuverability

RT air slew missiles
aircraft control
aircraft maneuvers
aircraft performance
controllability
flight characteristics
flight control
flight envelopes
helicopter performance
maneuvers
spacecraft maneuvers

maneuverable reentry bodies

DEF (1) Reentry vehicles capable of performing preplanned flight maneuvers during the reentry phase. (2) Ballistic missile reentry vehicles whose ballistic trajectory can be adjusted by internal or external mechanisms, enabling them to evade antiballistic defenses and/or strike their target with a high degree of accuracy.

GS reentry vehicles
. **maneuverable reentry bodies**
. . lifting reentry vehicles
. . . FDL-5 reentry vehicle
. . . HL-10 reentry vehicle
. . . HLD-35 reentry vehicle
. . . Janus spacecraft
. . . M-2 lifting body
. . . . M-2F2 lifting body
. . . X-20 aircraft
. . . X-24 aircraft

RT ∞ bodies

maneuverable spacecraft

GS **maneuverable spacecraft**
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . VentureStar launch vehicle
. . X-30 vehicle
. . X-37 vehicle
. . X-40A vehicle
. Apollo spacecraft
. . Apollo lunar experiment module
. Astro vehicle
. evasive satellites
. ferry spacecraft
. Janus spacecraft
. rendezvous spacecraft
. X-20 aircraft

RT artificial satellites
interplanetary spacecraft
landing modules
lunar landing modules
lunar probes
lunar satellites
manned spacecraft
MARS (Manned Reusable Spacecraft)
recoverable spacecraft
reentry vehicles
space probes
∞ spacecraft
spacecraft maneuvers
thrust vector control

maneuvers

GS **maneuvers**
. aircraft maneuvers
. docking
. evasive actions
. hovering
. . autonomous docking
. . offshore docking
. . spacecraft docking
. . spacecraft maneuvers
. . spacecraft docking
. . orbital maneuvers
. . terrain following

. . orbital rendezvous
 . . . Earth orbital rendezvous
 . . . lunar orbital rendezvous
 RT aerobatics
 aircraft spin
 flight control
 landing
 maneuverability
 minor circle turning flight
 rendezvous
 self maneuvering units
 sideslip
 takeoff
 turning flight

manganese

GS chemical elements
 . **manganese**
 . . manganese isotopes
 metals
 . transition metals
 . . **manganese**
 . . . manganese isotopes
 RT strategic materials

manganese 53

USE **manganese isotopes**

manganese 54

USE **manganese isotopes**

manganese 56

USE **manganese isotopes**

manganese alloys

GS alloys
 . **manganese alloys**
 . . Manganin (trademark)

manganese compounds

GS **manganese compounds**
 . manganese oxides
 . . Hopcalite (trademark)
 . manganese phosphides
 . permanganates
 RT ∞ chemical compounds
 ∞ Group 7B compounds
 ∞ metal compounds

manganese ions

GS ions
 . metal ions
 . . **manganese ions**
 RT permanganates

manganese isotopes

UF *manganese 53*
manganese 54
manganese 56
 GS chemical elements
 . manganese
 . . **manganese isotopes**
 . nuclides
 . . isotopes
 . . . **manganese isotopes**
 metals
 . transition metals
 . . manganese
 . . . **manganese isotopes**

manganese oxides

GS chalcogenides
 . oxides
 . . metal oxides
 . . . **manganese oxides**
 . . . Hopcalite (trademark)
 manganese compounds
 . **manganese oxides**
 . . Hopcalite (trademark)

manganese phosphides

GS manganese compounds
 . **manganese phosphides**
 phosphorus compounds
 . phosphides
 . . **manganese phosphides**

Manganin (trademark)

GS alloys
 . copper alloys
 . . **Manganin (trademark)**

. manganese alloys
 . . **Manganin (trademark)**
 RT electrical resistance
 thermocouples

manifolds

RT air intakes
 exhaust systems
 fuel systems
 intake systems
 pipes (tubes)
 plenum chambers
 ∞ tubes
 ∞ water intakes

manifolds (mathematics)

GS **manifolds (mathematics)**
 . Riemann manifold
 RT coordinates
 curves (geometry)
 fibers (mathematics)
 fixed points (mathematics)
 topology

manipulation

USE **manipulators**

manipulators

SN (LIMITED TO MECHANICAL DEVICES FOR REMOTE HANDLING)
 UF *manipulation*
 GS **manipulators**
 . remote manipulator system
 . . Space Station Mobile Servicing System
 RT control equipment
 ∞ effectors
 end effectors
 inverse kinematics
 payload deployment & retrieval system
 remote control
 remote handling
 robot arms
 robot dynamics
 robotics
 servocontrol
 shielding
 tactile sensors (robotics)
 teleoperators
 telerobotics
 torque sensors (robotics)

Manitoba

GS nations
 . Canada
 . . **Manitoba**

Manitou (CO)

GS cities
 . **Manitou (CO)**
 RT Colorado

Manned Aerodynamic Reusable Spaceship

USE **MARS (Manned Reusable Spacecraft)**

manned lunar surface vehicles

GS surface vehicles
 . lunar surface vehicles
 . . lunar roving vehicles
 . . . **manned lunar surface vehicles**
 . roving vehicles
 . . lunar roving vehicles
 . . . **manned lunar surface vehicles**
 RT crawler tractors
 lunar logistics
 lunar mobile laboratories
 ∞ surfaces
 ∞ vehicles
 walking machines

manned maneuvering units

SN (LIMITED TO ASTRONAUT PROPULSIVE UNITS OF THAT NAME DESIGNED FOR THE SPACE TRANSPORTATION SYSTEM AND THE SPACE STATION)
 DEF A propulsive backpack device for extravehicular activity. It uses a low thrust, dry, cold nitrogen propellant.
 GS astronaut maneuvering equipment
 . **manned maneuvering units**

RT astronaut locomotion
 extravehicular activity
 life support systems
 orbital servicing
 self maneuvering units
 space transportation system

manned Mars missions

DEF Any of several options for manned missions to Mars in which spacecraft are built for a particular mission. A mission is estimated by around 2020 and may last from one year to three years depending on speed and design.

GS space missions
 . Mars missions

. . **manned Mars missions**

RT Crew Exploration Vehicle
 in situ resource utilization
 interplanetary flight
 interplanetary spacecraft
 long duration space flight
 magnetic sails
 manned spacecraft
 Mars (planet)
 Mars exploration
 NASA space programs
 return to Earth space flight
 space exploration
 terraforming

manned orbital laboratories

UF *MOL (orbital laboratories)*
MORL

GS laboratories
 . space laboratories

. . **manned orbital laboratories**

. . . Columbus module
 . . . Destiny Laboratory Module
 . . . Kibo Japanese Experiment Module
 . . . Skylab 1
 . . . Skylab 2
 . . . Skylab 3
 . . . Skylab 4
 . . . Spacelab
 manned spacecraft
 . **manned orbital laboratories**
 . . Columbus module
 . . Destiny Laboratory Module
 . . Kibo Japanese Experiment Module
 . . Skylab 1
 . . Skylab 2
 . . Skylab 3
 . . Skylab 4
 . . Spacelab

RT Apollo spacecraft
 Columbus space station
 International Space Station
 orbital workshops
 reconnaissance spacecraft
 space stations
 ∞ spacecraft
 Titan 3 launch vehicle

manned orbital space stations

USE **space stations**

manned orbital telescopes

UF *MOT (orbital telescopes)*
 GS telescopes

. **manned orbital telescopes**

. . Apollo telescope mount
 RT OAO

manned reentry

GS atmospheric entry
 . reentry
 . . **manned reentry**
 space flight
 . manned space flight
 . . **manned reentry**
 RT descent trajectories
 environmental control
 lifting reentry vehicles
 reentry communication
 spacecraft reentry

manned space flight

GS space flight
 . **manned space flight**

manned space flight network

- .. Apollo flights
- ... Apollo 5 flight
- ... Apollo 6 flight
- ... Apollo 7 flight
- ... Apollo 8 flight
- ... Apollo 9 flight
- ... Apollo 10 flight
- ... Apollo 11 flight
- ... Apollo 12 flight
- ... Apollo 13 flight
- ... Apollo 14 flight
- ... Apollo 15 flight
- ... Apollo 16 flight
- ... Apollo 17 flight
- .. Gemini flights
- ... Gemini 3 flight
- ... Gemini 4 flight
- ... Gemini 5 flight
- ... Gemini 6 flight
- ... Gemini 7 flight
- ... Gemini 8 flight
- ... Gemini 9 flight
- ... Gemini 10 flight
- ... Gemini 11 flight
- ... Gemini 12 flight
- .. manned reentry
- .. Mercury flights
- ... Mercury MA-1 flight
- ... Mercury MA-2 flight
- ... Mercury MA-3 flight
- ... Mercury MA-4 flight
- ... Mercury MA-5 flight
- ... Mercury MA-6 flight
- ... Mercury MA-7 flight
- ... Mercury MA-8 flight
- ... Mercury MA-9 flight
- ... Mercury MR-1 flight
- ... Mercury MR-2 flight
- ... Mercury MR-3 flight
- ... Mercury MR-4 flight
- .. Space Shuttle missions
- ... Space Shuttle mission 31-A
- ... Space Shuttle mission 31-B
- ... Space Shuttle mission 31-C
- ... Space Shuttle mission 31-D
- ... Space Shuttle mission 41-A
- ... Space Shuttle mission 41-B
- ... Space Shuttle mission 41-C
- ... Space Shuttle mission 41-D
- ... Space Shuttle mission 41-G
- ... Space Shuttle mission 51-A
- ... Space Shuttle mission 51-B
- ... Space Shuttle mission 51-C
- ... Space Shuttle mission 51-D
- ... Space Shuttle mission 51-E
- ... Space Shuttle mission 51-F
- ... Space Shuttle mission 51-G
- ... Space Shuttle mission 51-H
- ... Space Shuttle mission 51-I
- ... Space Shuttle mission 51-J
- ... Space Shuttle mission 51-L
- ... Space Shuttle mission 61-A
- ... Space Shuttle mission 61-B
- ... Space Shuttle mission 61-C
- ... Space Shuttle mission 61-E
- RT aerospace environments
- Apollo extension system
- Atlantis (orbiter)
- Columbia (Orbiter)
- Constellation program
- Crew Exploration Vehicle
- Discovery (Orbiter)
- Enterprise (Orbiter)
- extravehicular activity
- Gemini 2 spacecraft
- Gemini (GT-1) spacecraft
- Gemini B spacecraft
- Gemini spacecraft
- human factors engineering
- Indian space program
- interplanetary flight
- interstellar travel
- intravehicular activity
- long duration space flight
- man operated propulsion systems
- Mercury project
- space adaptation syndrome
- space communication
- space exploration
- space flight stress
- space logistics
- space programs
- space psychology
- Space Shuttle orbiters
- space shuttles
- spacecrew transfer
- suborbital flight
- manned space flight network**
- GS networks
- .. tracking networks
- ... **manned space flight network**
- RT Advanced Range Instrumentation Ship
- unified S band
- manned spacecraft**
- GS **manned spacecraft**
- .. Apollo spacecraft
- .. Apollo lunar experiment module
- .. Astro vehicle
- .. Columbus space station
- .. ferry spacecraft
- .. Gemini B spacecraft
- .. Gemini spacecraft
- .. Gemini 2 spacecraft
- .. Gemini (GT-1) spacecraft
- .. Janus spacecraft
- .. Lunar Module
- .. Apollo lunar experiment module
- .. LSSM
- .. Lunar Module 5
- .. Lunar Module 7
- .. man tended free flyers
- .. manned orbital laboratories
- .. Columbus module
- .. Destiny Laboratory Module
- .. Kibo Japanese Experiment Module
- .. Skylab 1
- .. Skylab 2
- .. Skylab 3
- .. Skylab 4
- .. Spacelab
- .. MARS (Manned Reusable Spacecraft)
- .. Mercury spacecraft
- .. Aurora 7
- .. Faith 7
- .. Friendship 7
- .. SIGMA 7
- .. Mir space station
- .. orbital workshops
- .. Saturn workshops
- ... Saturn 1 workshop
- ... Saturn 5 workshop
- .. Skylab 1
- .. Skylab 2
- .. Skylab 3
- .. Skylab 4
- .. Salyut space station
- .. Soyuz spacecraft
- .. Space Operations Center (NASA)
- .. space shuttles
- .. Buran space shuttle
- .. Hermes manned spaceplane
- .. Space Shuttle orbiters
- ... Atlantis (orbiter)
- ... Challenger (Orbiter)
- ... Columbia (Orbiter)
- ... Discovery (Orbiter)
- ... Endeavour (orbiter)
- ... Enterprise (Orbiter)
- .. voskhod manned spacecraft
- .. Voskhod 1 spacecraft
- .. Voskhod 2 spacecraft
- .. Vostok spacecraft
- .. Vostok 1 spacecraft
- .. Vostok 2 spacecraft
- .. Vostok 3 spacecraft
- .. Vostok 4 spacecraft
- .. Vostok 5 spacecraft
- .. Vostok 6 spacecraft
- .. Altair Lunar Lander
- .. Crew Exploration Vehicle
- .. HOPE aerospace plane
- .. Shenzhou 5 spacecraft
- RT Apollo 7 flight
- Apollo 8 flight
- Apollo 10 flight
- Apollo 11 flight
- Apollo 12 flight
- Apollo 13 flight
- Apollo 14 flight
- Apollo 15 flight
- Apollo 16 flight
- Apollo 17 flight
- Apollo project
- Apollo Soyuz test project
- approach and landing tests (STS)
- artificial satellites
- biosatellites
- boostglide vehicles
- command service modules
- environmental control
- gravity gradient satellites
- interplanetary spacecraft
- landing modules
- lifting reentry vehicles
- lunar landing modules
- lunar satellites
- lunar spacecraft
- maneuverable spacecraft
- manned Mars missions
- Mercury flights
- Mercury project
- military spacecraft
- reconnaissance spacecraft
- recoverable spacecraft
- rendezvous spacecraft
- reusable spacecraft
- Shuttle Derived Vehicles
- space capsules
- space navigation
- Space Shuttle Boosters
- space stations
- ∞ spacecraft
- spacecraft cabin simulators
- unmanned spacecraft
- X-20 aircraft
- Manning theory**
- RT fluid flow
- ∞ theories
- wall flow
- mannitol**
- GS organic compounds
- .. carbohydrates
- .. sugars
- ... **mannitol**
- Mann-Whitney-Wilcoxon U test**
- GS statistical analysis
- .. statistical tests
- ... **Mann-Whitney-Wilcoxon U test**
- RT quality control
- manometers**
- DEF Instruments for measuring pressure of gases and vapors above and below atmospheric pressure. Used for micromanometers and U tubes.
- UF *micromanometers*
- U tubes*
- GS measuring instruments
- .. pressure gages
- ... **manometers**
- RT barometers
- blood pressure
- flame probes
- pressure distribution
- pressure measurement
- vacuum gages
- manpower**
- GS **manpower**
- .. engineers
- .. scientists
- RT engineering management
- human resources
- labor
- personnel
- research management
- resources

retraining

mantle (Earth structure)

USE **Earth mantle**

∞ **manual**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT manual control
manuals

manual control

GS **manual control**
. visual control
RT aircraft control
attitude control
automatic control
∞ buttons
consoles
∞ control
control boards
control equipment
control sticks
directional control
engine control
guidance (motion)
handles
helicopter control
human factors engineering
knobs
landing instruments
lateral control
levers
longitudinal control
∞ manual
pedals
reentry guidance
remote control
satellite control
satellite guidance
servocontrol
spacecraft control
spacecraft guidance
speed control
temperature control

manuals

GS documents
. **manuals**
. . installation manuals
. . user manuals (computer programs)
RT directories
educational resources
handbooks
maintenance
∞ manual
textbooks

manufacturing

GS **manufacturing**
. computer aided manufacturing
. group technology (manufacturing)
. low gravity manufacturing
. space manufacturing
RT aircraft production costs
commerce
commodities
containerless melts
contract negotiation
economic development
fabrication
industries
Kraft process (woodpulp)
∞ processing
production management
products
space industrialization
technologies
technology assessment
technology utilization

manures

DEF Materials that fertilize land. Refuse of stables and barnyards consisting of mammal and bird excreta with or without litter.
GS wastes
. **manures**
RT biomass energy production
metabolic wastes
waste disposal

waste utilization

many body problem

UF *many particle theory*
N-body problem
RT BCS theory
celestial mechanics
density functional theory
elementary excitations
field theory (physics)
four body problem
Green's functions
Hartree approximation
orbital mechanics
orbits
particle theory
perturbation
perturbation theory
∞ problems
∞ quantum statistics
statistical mechanics
superfluidity
three body problem
Trojan orbits
two body problem

many electron effects

RT autoionization
electron capture
electron scattering
electron states
electron transitions

many particle theory

USE **many body problem**

MAP (programming language)

GS languages
. programming languages
. . Assembly language
. . . **MAP (programming language)**
RT computer programming

MAP (space probe)

(added November 2002)

USE **Microwave Anisotropy Probe**

map matching guidance

GS guidance (motion)
. **map matching guidance**
RT airborne equipment
display devices
image correlators
radar maps
radar navigation
TERCOM
terrain following
video landmark acquisition and tracking

mapping

SN (EXCLUDES CONFORMAL MAPPING)
UF *cartography*
flux mapping
GS **mapping**
. cadastral mapping
. computer aided mapping
. ice mapping
. photomapping
. planetary mapping
. soil mapping
. thematic mapping
. thermal mapping
RT astrography
Bonne projection
contours
declination
fixed points (mathematics)
functions (mathematics)
geographic applications program
geography
Heat Capacity Mapping Mission
hypsography
maps
Magsat
orthophotography
Phoenix quadrangle (AZ)
photogrammetry
photography
scale (ratio)

SPOT (French satellite)

surveys

terrain analysis

topography

topology

triangulation

maps

GS **maps**
. astronomical maps
. . planispheres
. lunar maps
. meteorological charts
. photomaps
. radar clutter maps
. radar maps
. relief maps
RT Bonne projection
cadastral mapping
charts
computer aided mapping
coordinates
datum (elevation)
geography
∞ globes
hypsography
mapping
Mercator projection
navigation aids
photomapping
soil mapping
surveys
thematic mapping

Magsat

DEF A proposed stereoscopic system for mapping the Earth from space to replace Landsat D as defined by the US Geological Survey.

GS artificial satellites

. **Magsat**

RT Landsat satellites
mapping
remote sensing
stereophotography

maraging

GS hardening (materials)
. precipitation hardening
. . **maraging**
heat treatment
. **maraging**

maraging steels

GS alloys
. high strength alloys
. . high strength steels
. . . **maraging steels**
. iron alloys
. . steels
. . . high strength steels
. . . . **maraging steels**
RT martensitic stainless steels
stainless steels

Marangoni convection

DEF Convective flow induced by surface tension gradients. This is important in both ground and space processing where a free surface is present.

GS convection

. surface tension driven convection

. . **Marangoni convection**

RT convective flow
free convection
interfacial tension
liquid bridges
low gravity manufacturing
melts (crystal growth)
microgravity
space processing
thermocapillary migration

Marbore 2 engine

USE **J-69-T-25 engine**

Marecs maritime satellites

DEF The European Space Agency's system of two satellites provides maritime communications links between ships and coast Earth stations. Originally known as Marots, the system

margins

operates with one satellite over the Atlantic Ocean and one over the Pacific Ocean. It was leased to the International Maritime Satellite Organization for five years. Also known as the maritime European communications satellite.

- GS artificial satellites
 - . communication satellites
 - . . . **Marecs maritime satellites**
 - . ESA satellites
 - . . . **Marecs maritime satellites**
 - . maritime satellites
 - . . . **Marecs maritime satellites**
- ESA spacecraft
- . ESA satellites
- . . . **Marecs maritime satellites**
- RT European space programs
- satellite networks

margins

- RT borders
- edges
- rims

maria

- GS **maria**
 - . lunar maria
- RT lava
- meteorite craters
- topography

marijuana

- GS drugs
 - . psychotropic drugs
 - . . . **marijuana**
- RT alkaloids

marine biology

DEF The study of marine fauna and flora and related topics.

- RT algae
- aquatic plants
- aquaculture
- ∞ biology
 - environment effects
 - environmental quality
 - fisheries
 - limnology
 - oceanography
 - phytoplankton
- ∞ science
 - sea grasses
 - seals (animals)
 - seaweeds
 - shellfish
 - thermal pollution
 - waterfowl
 - wetlands
 - zooplankton

marine chemistry

DEF The study of the chemical processes in oceanic environments.

- GS environmental chemistry
 - . **marine chemistry**
- RT biochemistry
- ∞ chemistry
 - geochemistry
 - hydrology
 - limnology
 - ocean bottom
- ∞ science
 - sediments

marine environments

- GS environments
 - . **marine environments**
- RT aquaculture
- beaches
- coastal ecology
- coasts
- environment effects
- ice environments
- nearshore water
- ocean models
- oceanography
- red tide
- sea breeze
- shellfish
- waterfowl

wetlands

marine mammals

- GS animals
 - . vertebrates
 - . . . mammals
 - **marine mammals**
 - dolphins
 - manatees
 - porpoises
 - seals (animals)
 - whales

marine meteorology

- GS meteorology
 - . hydrometeorology
 - . . **marine meteorology**
- RT fronts (meteorology)
- GOES 13
- oceanography
- ∞ science
 - typhoons
 - wind (meteorology)

marine navigation

- USE **surface navigation**

marine propulsion

- GS propulsion
 - . **marine propulsion**
 - . . underwater propulsion
 - . . . submarine propulsion
- RT chemical propulsion
- electric propulsion
- jet propulsion
- nuclear electric propulsion
- nuclear propulsion
- propeller drive
- Savannah nuclear ship

marine resources

- GS resources
 - . Earth resources
 - . . **marine resources**
- RT aquaculture
- coastal ecology
- fisheries
- oceanography
- oceans
- sea water
- shellfish
- underwater resources
- water pollution
- wetlands

marine rudders

- GS control surfaces
 - . rudders
 - . . **marine rudders**
- RT aerial rudders
- hydrofoils
- tail assemblies

marine technology

- GS technologies
 - . **marine technology**
- RT aquaculture
- artificial harbors
- deepwater terminals
- oceanography
- offshore docking
- offshore energy sources
- offshore platforms
- tanker terminals
- wharves

marine transportation

- GS transportation
 - . **marine transportation**
- RT air transportation
- deepwater terminals
- harbors
- offshore docking
- rail transportation
- ships
- tanker ships
- water vehicles

Mariner 1 space probe

- GS interplanetary spacecraft

- . Mariner space probes
- . . **Mariner 1 space probe**
- . Venus probes
- . . **Mariner 1 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 1 space probe**
- . Venus probes
- . . . **Mariner 1 space probe**

Mariner 2 space probe

- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 2 space probe**
- . Venus probes
- . . **Mariner 2 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 2 space probe**
- . Venus probes
- . . . **Mariner 2 space probe**
- RT Atlas Agena B launch vehicle

Mariner 3 space probe

- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 3 space probe**
- . Mars probes
- . . **Mariner 3 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 3 space probe**
- . Mars probes
- . . . **Mariner 3 space probe**

Mariner 4 space probe

- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 4 space probe**
- . Mars probes
- . . **Mariner 4 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 4 space probe**
- . Mars probes
- . . . **Mariner 4 space probe**

Mariner 5 space probe

- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 5 space probe**
- . Venus probes
- . . **Mariner 5 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 5 space probe**
- . Venus probes
- . . . **Mariner 5 space probe**
- RT Atlas Agena launch vehicles

Mariner 6 space probe

- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 6 space probe**
- . Mars probes
- . . **Mariner 6 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 6 space probe**
- . Mars probes
- . . . **Mariner 6 space probe**
- RT Atlas Agena launch vehicles
- Mars 69 project

Mariner 7 space probe

- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 7 space probe**
- . Mars probes
- . . **Mariner 7 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 7 space probe**

- . . Mars probes
- . . . **Mariner 7 space probe**
- RT Mars 69 project
- Mariner 8 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 8 space probe**
- . Mars probes
- . . **Mariner 8 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 8 space probe**
- . Mars probes
- . . **Mariner 8 space probe**
- RT Mars 71 project
- Mariner 9 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 9 space probe**
- . Mars probes
- . . **Mariner 9 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 9 space probe**
- . Mars probes
- . . **Mariner 9 space probe**
- Mariner 10 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 10 space probe**
- . Venus probes
- . . **Mariner 10 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 10 space probe**
- . Venus probes
- . . . **Mariner 10 space probe**
- RT Mariner Venus-Mercury 1973
- Mariner-Mercury 1973
- Mariner 11 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 11 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 11 space probe**
- Mariner C spacecraft**
- GS interplanetary spacecraft
- . Mariner spacecraft
- . . **Mariner C spacecraft**
- unmanned spacecraft
- . space probes
- . . Mariner spacecraft
- . . . **Mariner C spacecraft**
- Mariner Jupiter-Saturn flyby**
- GS space missions
- . flyby missions
- . . Grand Tours
- . . . **Mariner Jupiter-Saturn flyby**
- RT interplanetary flight
- ∞ missions
- space flight
- Mariner Jupiter-Uranus flyby**
- GS space missions
- . flyby missions
- . . Grand Tours
- . . . **Mariner Jupiter-Uranus flyby**
- RT interplanetary flight
- ∞ missions
- space flight
- Mariner Mark 2 Spacecraft**
- DEF A NASA concept of a basic planetary spacecraft for studying the outer planets, comets, and asteroids. The first of the series will be a comet rendezvous mission to be launched in 1994.
- RT Cassini mission
- Comet Rendezvous Asteroid Flyby Mission
- flyby missions
- interplanetary flight
- ∞ spacecraft
- Mariner program**
- GS programs
- . NASA programs
- . . NASA space programs
- . . . **Mariner program**
- Mariner Venus-Mercury 1973
- Mariner-Mercury 1973
- . space programs
- . . NASA space programs
- . . . **Mariner program**
- Mariner Venus-Mercury 1973
- Mariner-Mercury 1973
- RT Agena B rocket vehicle
- Agena rocket vehicles
- Atlas Agena launch vehicles
- Atlas launch vehicles
- Centaur project
- flyby missions
- Mars probes
- space probes
- unmanned spacecraft
- Venus probes
- Mariner R 2 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner R 2 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner R 2 space probe**
- Mariner space probes**
- GS interplanetary spacecraft
- . **Mariner space probes**
- . . Mariner 1 space probe
- . . Mariner 2 space probe
- . . Mariner 3 space probe
- . . Mariner 4 space probe
- . . Mariner 5 space probe
- . . Mariner 6 space probe
- . . Mariner 7 space probe
- . . Mariner 8 space probe
- . . Mariner 9 space probe
- . . Mariner 10 space probe
- . . Mariner 11 space probe
- . . Mariner R 2 space probe
- unmanned spacecraft
- . space probes
- . . **Mariner space probes**
- . . . Mariner 1 space probe
- . . . Mariner 2 space probe
- . . . Mariner 3 space probe
- . . . Mariner 4 space probe
- . . . Mariner 5 space probe
- . . . Mariner 6 space probe
- . . . Mariner 7 space probe
- . . . Mariner 8 space probe
- . . . Mariner 9 space probe
- . . . Mariner 10 space probe
- . . . Mariner 11 space probe
- . . . Mariner R 2 space probe
- Mariner spacecraft**
- GS interplanetary spacecraft
- . **Mariner spacecraft**
- . . Mariner C spacecraft
- . . Mariner Venus 67 spacecraft
- unmanned spacecraft
- . space probes
- . . **Mariner spacecraft**
- . . . Mariner C spacecraft
- . . . Mariner Venus 67 spacecraft
- Mariner Venus 67 spacecraft**
- GS interplanetary spacecraft
- . Mariner spacecraft
- . . **Mariner Venus 67 spacecraft**
- unmanned spacecraft
- . space probes
- . . Mariner spacecraft
- . . . **Mariner Venus 67 spacecraft**
- RT Venus probes
- Mariner Venus-Mercury 1973**
- GS programs
- . NASA programs
- . . NASA space programs
- . . . Mariner program
- **Mariner Venus-Mercury 1973**
- . space programs
- . . NASA space programs
- . . . Mariner program
- **Mariner Venus-Mercury 1973**
- space missions
- . flyby missions
- . . **Mariner Venus-Mercury 1973**
- RT Mariner 10 space probe
- Mariner-Mercury 1973
- Mariner-Mercury 1973**
- GS programs
- . NASA programs
- . . NASA space programs
- . . . Mariner program
- **Mariner-Mercury 1973**
- . space programs
- . . NASA space programs
- . . . Mariner program
- **Mariner-Mercury 1973**
- space missions
- . flyby missions
- . . **Mariner-Mercury 1973**
- RT Mariner 10 space probe
- Mariner Venus-Mercury 1973
- Marisat 1 satellite**
- DEF The first commercial maritime communication satellite.
- GS artificial satellites
- . Marisat satellites
- . . **Marisat 1 satellite**
- RT radio communication
- Marisat satellites**
- DEF A class of maritime commercial communication service satellites designed to provide telephone, telegraph, radio, distress messages and facsimile services to merchant ships, etc.
- GS artificial satellites
- . **Marisat satellites**
- . . Marisat 1 satellite
- RT communication
- Fleet Satellite Communication System
- INMARSAT satellites
- Marots (ESA)
- radio communication
- Maritime Communication Satellite (ESA)*
- USE **Marots (ESA)**
- Maritime Orbital Test Satellite*
- USE **Marots (ESA)**
- maritime satellites**
- GS artificial satellites
- . **maritime satellites**
- . . ERS-1 (ESA satellite)
- . . Marecs maritime satellites
- . . Marots (ESA)
- RT MSAT
- National Oceanic Satellite System
- TOPEX
- Mark 1 reentry body**
- GS reentry vehicles
- . **Mark 1 reentry body**
- RT intercontinental ballistic missiles
- intermediate range ballistic missiles
- Mark 1 spacecraft**
- RT ∞ spacecraft
- Mark 2 reentry body**
- GS reentry vehicles
- . **Mark 2 reentry body**
- RT intercontinental ballistic missiles
- intermediate range ballistic missiles
- Mark 3 reentry body**
- GS reentry vehicles
- . **Mark 3 reentry body**

Mark 4 reentry body

RT intercontinental ballistic missiles
intermediate range ballistic missiles

Mark 4 reentry body

GS reentry vehicles
. **Mark 4 reentry body**
RT intercontinental ballistic missiles

Mark 5 reentry body

GS reentry vehicles
. **Mark 5 reentry body**
RT intercontinental ballistic missiles

Mark 6 reentry body

GS reentry vehicles
. **Mark 6 reentry body**
RT intercontinental ballistic missiles

Mark 11 reentry body

GS reentry vehicles
. **Mark 11 reentry body**
RT intercontinental ballistic missiles

Mark 12 reentry body

GS reentry vehicles
. **Mark 12 reentry body**
RT intercontinental ballistic missiles

Mark 17 reentry body

GS reentry vehicles
. **Mark 17 reentry body**
RT intercontinental ballistic missiles

Markarian galaxies

GS celestial bodies
. galaxies
. . . active galaxies
. . . **Markarian galaxies**
RT Seyfert galaxies

∞ markers

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT beacons
biomarkers
buoys
crayons
dyes
radio beacons
runway lights
smoke

market research

GS research
. **market research**
RT commerce
commodities
consumers
marketing
product development

marketing

RT commerce
commercialization
consumers
finance
industrial areas
management
market research
product development
supplying

marking

UF *labeling (marking)*
tagging
GS **marking**
. isotopic labeling
RT detection
identifying
materials handling
packaging
staining
∞ tracers

Markov chains

GS stochastic processes
. Markov processes
. . . **Markov chains**
RT Monte Carlo method

random walk

Markov processes

GS stochastic processes
. **Markov processes**
. . Markov chains
RT random processes
zero sum games

markup languages

(added June 2000)
USE **document markup languages**

Marots (ESA)

DEF Earlier name for the Marecs maritime
satellites. Used for Maritime Communication
Satellite (ESA) and Maritime Orbital Test Satel-
lite.

UF *Maritime Communication Satellite*
(ESA)

Maritime Orbital Test Satellite

GS artificial satellites
. communication satellites
. . **Marots (ESA)**
. ESA satellites
. . **Marots (ESA)**
. maritime satellites
. . **Marots (ESA)**

ESA spacecraft
. ESA satellites
. . **Marots (ESA)**

RT European Space Agency
Marisat satellites
ranging finding
rescue operations
ship terminals

Marquardt R4D engine

GS engines
. **Marquardt R4D engine**
RT Apollo project
auxiliary propulsion
command modules
∞ reaction control
satellite attitude control
spacecraft control

∞ mars

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT MARS (Manned Reusable
Spacecraft)
Mars (planet)
navigation aids
tracking stations

Mars 1 spacecraft

GS interplanetary spacecraft
. Mars probes
. . **Mars 1 spacecraft**
Soviet spacecraft
. **Mars 1 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 1 spacecraft**
RT U.S.S.R. space program

Mars 2 spacecraft

GS interplanetary spacecraft
. Mars probes
. . **Mars 2 spacecraft**
Soviet spacecraft
. **Mars 2 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 2 spacecraft**
RT U.S.S.R. space program

Mars 3 spacecraft

GS interplanetary spacecraft
. Mars probes
. . **Mars 3 spacecraft**
Soviet spacecraft
. **Mars 3 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 3 spacecraft**

RT U.S.S.R. space program

Mars 4 Spacecraft

DEF One of a series of Soviet unmanned
spacecraft designed for Mars exploration.
GS interplanetary spacecraft
. Mars probes
. . **Mars 4 Spacecraft**
Soviet spacecraft
. **Mars 4 Spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 4 Spacecraft**
RT U.S.S.R. space program

Mars 5 spacecraft

GS interplanetary spacecraft
. Mars probes
. . **Mars 5 spacecraft**
Soviet spacecraft
. **Mars 5 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 5 spacecraft**
RT U.S.S.R. space program

Mars 6 spacecraft

GS interplanetary spacecraft
. Mars probes
. . **Mars 6 spacecraft**
Soviet spacecraft
. **Mars 6 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 6 spacecraft**
RT U.S.S.R. space program

Mars 7 spacecraft

GS interplanetary spacecraft
. Mars probes
. . **Mars 7 spacecraft**
Soviet spacecraft
. **Mars 7 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 7 spacecraft**
RT U.S.S.R. space program

Mars 69 project

GS programs
. NASA programs
. . NASA space programs
. . . **Mars 69 project**
. projects
. . **Mars 69 project**
. space programs
. . NASA space programs
. . . **Mars 69 project**
RT Mariner 6 space probe
Mariner 7 space probe
space exploration

Mars 71 project

GS programs
. NASA programs
. . NASA space programs
. . . **Mars 71 project**
. projects
. . **Mars 71 project**
. space programs
. . NASA space programs
. . . **Mars 71 project**
RT Mariner 8 space probe
space exploration

MARS (Manned Reusable Spacecraft)

SN (NOT RESTRICTED TO SPACECRAFT
FOR FLIGHT TO PLANET MARS)
UF *Manned Aerodynamic Reusable*
Spaceship
GS manned spacecraft
. **MARS (Manned Reusable**
Spacecraft)
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft

Mars Pathfinder

- MGCO
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Observer**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Observer**
 - RT Mars Global Surveyor
 - Mars missions
- Mars Orbiter Camera (MOC)*
 - (added January 2004)
 - USE **Mars Global Surveyor**
- Mars Orbiter Laser Altimeter (MOLA)*
 - (added January 2004)
 - USE **Mars Global Surveyor**
- Mars Pathfinder**
 - (added January 1996)
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Pathfinder**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Pathfinder**
 - RT exobiology
 - landing sites
 - Mars landing
 - Mars missions
 - parachute descent
 - planetary geology
 - Mars photographs**
 - GS photographs
 - . **Mars photographs**
 - RT photography
 - satellite-borne photography
 - spaceborne photography
 - Mars Polar Lander**
 - (added March 1999)
 - DEF One of two spacecraft comprising the Mars Surveyor 98 program; launched January 1999. After a soft landing near the Martian south pole, the Lander will search for near-surface ice and possible surface records of cyclic climate change, and characterize physical processes key to the seasonal cycles of water, carbon dioxide and dust on Mars. Prior to landing, the Deep Space 2 microprobes will be released as part of a technology-validation mission related to multiple-lander spacecraft.
 - UF *Mars Surveyor 98 Lander*
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Polar Lander**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Polar Lander**
 - RT Mars atmosphere
 - Mars Climate Orbiter
 - Mars missions
 - Mars surface
 - Mars Surveyor 98 Program
 - Mars probes**
 - GS interplanetary spacecraft
 - . **Mars probes**
 - . . Advanced Reconn Electric Spacecraft
 - . . Mariner 3 space probe
 - . . Mariner 4 space probe
 - . . Mariner 6 space probe
 - . . Mariner 7 space probe
 - . . Mariner 8 space probe
 - . . Mariner 9 space probe
 - . . Mars 1 spacecraft
 - . . Mars 2 spacecraft
 - . . Mars 3 spacecraft
 - . . Mars 4 spacecraft
 - . . Mars 5 spacecraft
 - . . Mars 6 spacecraft
 - . . Mars 7 spacecraft
 - . . Mars Observer
 - . . Mars Pathfinder
 - . . Viking 1975 entry vehicle
 - . . Viking spacecraft
 - . . . Viking 1 spacecraft
 - Viking lander 1
 - Viking orbiter 1
 - . . . Viking 2 spacecraft
 - Viking lander 2
 - Viking orbiter 2
 - . . Viking lander spacecraft
 - Viking lander 1
 - Viking lander 2
 - . . Viking orbiter spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
 - . . Mars Climate Orbiter
 - . . Mars Express
 - . . Mars Global Surveyor
 - . . Mars Polar Lander
 - . . Mars Reconnaissance Orbiter
 - . . Nozomi Mars Orbiter
 - . . Phobos spacecraft
 - . . Phoenix Mars Lander
 - . . Zond 2 space probe
 - RT Mariner program
 - Mars missions
 - Mars sample return missions
 - outer planets explorers
 - Venus probes
 - Voyager project
 - Zond space probes
 - Mars Reconnaissance Orbiter**
 - (added August 2005)
 - DEF A spacecraft launched on August 12, 2005 to determine how long water existed on Mars by conducting surface and subsurface mapping. The Mars Reconnaissance Orbiter carries instruments for geological and meteorological observations from Martian orbit, and for spacecraft navigation and communication. After completion of its science mission, the spacecraft will provide data relay services between other Mars missions and Earth.
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Reconnaissance Orbiter**
 - unmanned spacecraft
 - . space probes
 - RT extraterrestrial water
 - ground penetrating radar
 - interplanetary communication
 - Mars (planet)
 - Mars exploration
 - Mars missions
 - Mars surface
 - planetary mapping
 - radar geology
 - soil mapping
 - Mars Rover Sample Return Mission*
 - USE **Mars sample return missions**
 - Mars roving vehicles**
 - (added March 2003)
 - DEF Remote-, autonomous-, or human-controlled ground vehicles designed for the exploration of the Martian surface.
 - GS surface vehicles
 - . roving vehicles
 - . . **Mars roving vehicles**
 - . . . Marsokhod Mars roving vehicles
 - RT Mars exploration
 - Mars missions
 - Mars surface
 - planetary surfaces
 - research vehicles
 - ∞ vehicles
 - Mars sample return missions**
 - (added March 1989)
 - UF *Mars Rover Sample Return Mission*
 - GS space missions
 - . Mars missions
 - . . **Mars sample return missions**
 - . sample return missions
 - . . **Mars sample return missions**
 - RT Mars (planet)
 - Mars landing
 - Mars probes
 - Mars surface samples
 - NASA space programs
 - planetary protection
 - roving vehicles
 - samples
 - space exploration
 - Mars satellites**
 - GS celestial bodies
 - . natural satellites
 - . . **Mars satellites**
 - . . . Deimos
 - . . . Phobos
 - Mars surface**
 - GS planetary surfaces
 - . **Mars surface**
 - RT 2001 Mars Odyssey
 - canals
 - dust storms
 - Mars (planet)
 - Mars Climate Orbiter
 - Mars Express
 - Mars Global Surveyor
 - Mars landing sites
 - Mars Polar Lander
 - Mars Reconnaissance Orbiter
 - Mars roving vehicles
 - Mars Surveyor 98 Program
 - Mars Surveyor 2001 Mission
 - Mars volcanoes
 - meteorite craters
 - Phoenix Mars Lander
 - planetary craters
 - SNC meteorites
 - ∞ surfaces
 - terraforming
 - topography
 - Mars surface samples**
 - GS samples
 - . **Mars surface samples**
 - RT assaying
 - chemical analysis

Mars missions
 Mars sample return missions
 Mars Surveyor 2001 Mission
 soil sampling
 specimens
 ∞ surfaces
 Viking lander 1
 Viking lander 2

Mars Surveyor 98 Lander
 (added March 1999)
 USE **Mars Polar Lander**

Mars Surveyor 98 Orbiter
 (added March 1999)
 USE **Mars Climate Orbiter**

Mars Surveyor 98 Program
 (added March 1999)

DEF Mars exploration program consisting of two mission spacecraft-- the Mars Climate Orbiter and the Mars Polar Lander. Two surface penetrating microprobes (part of the associated Deep Space 2 mission) for detecting water ice are also piggybacking on the Lander.

GS programs
 . NASA programs
 . . NASA space programs
 . . . **Mars Surveyor 98 Program**
 . space programs
 . . NASA space programs
 . . . **Mars Surveyor 98 Program**

RT Mars atmosphere
 Mars Climate Orbiter
 Mars missions
 Mars Polar Lander
 Mars surface

Mars Surveyor 2001 Mission
 (added July 1999)

DEF Mars exploration mission including an orbiter with a gamma ray spectrometer and a multispectral thermal imager, and a lander with an extensive set of instrumentation, a robotic arm, and the Marie Curie Rover. (In March 2000, the lander portion of the mission was cancelled; the orbiter mission was superceded by the 2001 Mars Odyssey mission.)

GS space missions
 . Mars missions
 . . **Mars Surveyor 2001 Mission**

RT 2001 Mars Odyssey
 Mars environment
 Mars surface
 Mars surface samples
 NASA space programs

Mars volcanoes

DEF Volcanoes on the planet Mars.

GS geology
 . planetary geology
 . . **Mars volcanoes**
 . volcanoes
 . . **Mars volcanoes**
 landforms
 . volcanoes
 . . **Mars volcanoes**

RT basalt
 calderas
 cones (volcanoes)
 effusives
 lava
 Mars (planet)
 Mars atmosphere
 Mars environment
 Mars surface
 mountains
 orography
 paleomagnetism
 petrology
 Rouse belts
 volcanology

marshes

USE **marshlands**

marshlands

DEF Transitional land-water areas, covered at least part of the time by estuarine or coastal waters and characterized by aquatic and grass-

like vegetation. Used for bogs, coastal marshlands, marshes, and swamps.

UF *bogs*
coastal marshlands
marshes
swamps

GS land
 . wetlands
 . . **marshlands**

RT bayous
 Earth resources
 Earth surface
 flats (landforms)
 muskegs
 oceanography
 tidal flats
 waterfowl

Marsokhod Mars roving vehicles
 (added August 1995)

GS surface vehicles
 . roving vehicles
 . . Mars roving vehicles
 . . . **Marsokhod Mars roving vehicles**

RT Lunokhod lunar roving vehicles
 Mars exploration
 planetary surfaces
 ∞ vehicles

martensite

RT austenite
 hardening (materials)
 heat treatment
 iron alloys
 martensitic stainless steels
 microstructure
 phase transformations
 steels

martensitic stainless steels

GS alloys
 . iron alloys
 . . steels
 . . . stainless steels
 **martensitic stainless steels**
 RT austenitic stainless steels
 maraging steels
 martensite

martensitic transformation

DEF A phase transformation occurring in some metals and resulting in formation of martensite.

GS phase transformations
 . **martensitic transformation**
 RT austenite

Martian meteorites

(added March 1998)

USE **SNC meteorites**

Martin aircraft

GS **Martin aircraft**
 . B-26 aircraft
 . B-57 aircraft
 RT ∞ aircraft

martingales

DEF In game theory, a procedure for recouping one's losses in previous wagers by doubling or otherwise increasing the amount bet.

RT decision theory
 game theory
 ∞ mathematics
 probability theory
 stochastic processes

Martinique

GS landforms
 . islands
 . . West Indies
 . . . **Martinique**
 nations
 . France
 . . **Martinique**

RT Caribbean region

Maryland

GS nations
 . United States
 . . **Maryland**
 RT Allegheny Plateau (US)
 Assateague Island (MD-VA)
 Chesapeake Bay (US)
 Delmarva Peninsula (DE-MD-VA)
 Potomac River Valley (MD-VA-WV)
 Susquehanna River Basin
 (MD-NY-PA)

mascons

DEF Large scale, high density lunar mass concentrations below ringed mare.
 GS composition (property)
 . concentration (composition)
 . . **mascons**
 RT center of mass
 gravity anomalies
 mass
 weight (mass)

maser materials

(added June 1989)
 RT laser materials
 masers
 ∞ materials
 ∞ materials science

maser outputs

GS output
 . **maser outputs**
 RT ∞ coherence
 diffraction radiation
 laser outputs
 maser pumping
 pulse duration
 radiant flux density
 water masers
 wavelengths

maser pumping

(added June 1989)
 RT laser pumping
 maser outputs
 masers
 optical pumping
 ∞ pumping

maser resonators

USE **masers**

masers

DEF Amplifiers or oscillators utilizing the principle of microwave amplification by stimulated emission of radiation.

UF *maser resonators*
paramagnetic amplifiers
rasers

GS stimulated emission devices
 . **masers**
 . . gas masers
 . . . hydrogen masers
 . . interstellar masers
 . . proton masers
 . . traveling wave masers
 . . water masers

RT amplifiers
 atomic clocks
 coherent electromagnetic radiation
 cross relaxation
 diffraction radiation
 frequency standards
 krypton fluoride lasers
 lasers
 maser materials
 maser pumping
 microwave amplifiers
 molecular oscillators
 resonators
 stimulated emission
 transient oscillations
 two-wavelength lasers
 ultraviolet lasers

masking

GS **masking**

masks

RT . target masking
audiometry
chemisorption
coverings
photomasks

masks

GS **masks**
. oxygen masks
RT chemical defense
protective clothing

Masonite (trademark)

RT cellulose
∞ construction materials
trees (plants)
wood

masonry

GS **masonry**
. bricks
RT cements
ceramics
clays
concretes
construction
∞ construction materials
mortars (material)
structural members
tiles
veneers

mass

DEF A quantity characteristic of a body, which relates the attraction of this body toward another body. Since the mass of a body is not fixed in magnitude, all masses are referred to the standard kilogram, which is a lump of platinum. Used for low mass.

UF *low mass*

GS **mass**
. center of mass
. critical mass
. galactic mass
. missing mass (astrophysics)
. particle mass
. . . electron mass
. planetary mass
. stellar mass
. subcritical mass

RT center of gravity
de Broglie wavelengths
inertia
mascons
mass to light ratios
moments of inertia
negative matter
relativistic effects
weight (mass)

∞ mass balance

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT balance
mass distribution
material balance
variable mass systems

mass distribution

GS distribution (property)
. **mass distribution**
RT aerodynamic balance
aerodynamic stability
angular distribution
balance
ballast (mass)
charge distribution
cosmology
counterbalances
density wave model
∞ distribution
flux density
force distribution
galactic mass
intergalactic media
interplanetary medium
interstellar matter
loading moments
loads (forces)
∞ mass balance

mass to light ratios
meteoroid concentration
missing mass (astrophysics)
moment distribution
moments of inertia
pressure distribution
size distribution
star distribution
static loads
structural design criteria
variable mass systems

mass drivers

(added May 1989)

DEF Electromagnetic devices for the linear acceleration of projectiles or payloads. Applications include orbital insertion and transfer, propulsion systems, and hypervelocity accelerators.

RT ∞ accelerators
electromagnetic acceleration
electromagnetic propulsion
launchers
magnetic levitation vehicles
moon-Earth trajectories
propulsion
railgun accelerators
spacecraft propulsion

mass filters

USE **fluid filters**

mass flow

GS fluid flow
. **mass flow**
RT Crocco-Lee theory
∞ flow
flow theory
gas flow
Kelvin-Helmholtz instability
kinetic theory
laminar flow
Lewis numbers
liquid flow
molecular interactions
multiphase flow
pipe flow
sediment transport
single-phase flow
sliding
slumping
solids flow
steady flow
steam flow
turbulent flow
uniform flow
unsteady flow

mass flow factors

RT discharge coefficient
flow coefficients
heat transfer coefficients
heat transmission
nozzle geometry

mass flow rate

GS rates (per time)
. **mass flow rate**
RT convective flow
diffusion coefficient
flow velocity
pneumatic probes
specific impulse
transient pressures

mass ratios

DEF The ratios of the mass of the propellant charge of a rocket to the total mass of the rocket when charged with the propellant.

GS ratios
. **mass ratios**
. . . mass to light ratios
. . . mixing ratios
. . . payload mass ratio
. . . propellant mass ratio
RT metallicity
pressure ratio
structural weight

thrust-weight ratio

mass spectra

GS spectra
. **mass spectra**
RT energy spectra
molecular spectra
radiation spectra

mass spectrometers

DEF Instruments that are capable of separating ionized molecules of different mass to charge ratio and measuring the respective ion currents. Used for ion spectrometers and retarding ion mass spectrometers.

UF *ion spectrometers*
retarding ion mass spectrometers
GS measuring instruments
. spectrometers
. . . **mass spectrometers**
RT chemical analysis
gas analysis
ion mobility spectroscopy
ion optics
microanalysis
neutron activation analysis
qualitative analysis
secondary ion mass spectrometry

mass spectrometry

USE **mass spectroscopy**

mass spectroscopy

UF *mass spectrometry*
GS spectroscopy
. **mass spectroscopy**
. . . inductively coupled plasma mass spectrometry
. . . secondary ion mass spectrometry
RT chemical analysis
gas spectroscopy
magnetic spectroscopy
nuclear radiation spectroscopy
spectroscopic analysis
vacuum spectroscopy

mass to light ratios

DEF The ratio of the mass of celestial body to its luminosity.

GS ratios
. mass ratios
. . . **mass to light ratios**

RT astronomy
astrophysics
galactic radiation
indexes (ratios)
luminosity
luminous intensity
mass
mass distribution
missing mass (astrophysics)
radiant flux density
stellar luminosity
stellar mass

mass transfer

RT ablation
charge transfer
convective flow
convective heat transfer
energy transfer
gas transport
gas-liquid interactions
heat transfer
Lewis numbers
porous boundary layer control
sediment transport
transferring
transpiration

Massachusetts

GS nations
. United States
. . . **Massachusetts**

massaging

GS therapy
. **massaging**
RT fatigue (biology)

relaxation (physiology)

massifs

DEF Massive topographic and structural features, especially in orogenic belts, commonly formed of rocks more rigid than those of their surroundings. These rocks may be protruding bodies of basement rocks, consolidated during earlier orogenies, or younger plutonic bodies.

GS landforms
 . **massifs**
 RT Earth crust

∞ faults
 geological faults
 geology
 mountains

massive compact halo objects

(added November 1999)

DEF Objects, such as brown dwarfs, black holes, and massive planets, hypothesized to account for the dark matter in the halo of the Milky Way. The signature of these objects is the occasional amplification of the light from extragalactic stars by the gravitational lens effect.

UF *MACHOs (astronomy)*

GS celestial bodies

. **massive compact halo objects**

RT brown dwarf stars
 dark matter
 galactic halos
 gravitational lenses
 Milky Way Galaxy
 missing mass (astrophysics)
 red dwarf stars

massive stars

(added July 1991)

GS celestial bodies
 . stars
 . . **massive stars**

RT black holes (astronomy)
 degenerate matter
 stellar mass
 supergiant stars
 supermassive stars

massively parallel processors

(added December 1988)

UF *MPP (computers)*
 GS data processing equipment
 . computers

. . digital computers
 . . . parallel computers
 **massively parallel processors**
 Connection Machine

RT architecture (computers)
 parallel processing (computers)

MAST shock tubes

USE **magnetic annular shock tubes**

mastication

UF *chewing*
 RT digesting
 eating
 teeth

mastoids

GS anatomy
 . head (anatomy)
 . . skull
 . . . **mastoids**
 . musculoskeletal system
 . . bones
 . . . skull
 **mastoids**

RT cranium
 ear

matched filters

GS electromagnetic wave filters
 . **matched filters**
 RT communication equipment
 demodulators
 ∞ filters
 modulators

signal to noise ratios

matching

RT adjusting
 comparison
 fitting
 homology
 image resolution
 impedance matching
 mismatch (electrical)
 pattern registration

material absorption

RT absorbents
 absorbers (equipment)
 ∞ absorption
 assimilation
 bioavailability
 extraction
 hygroscopicity
 radiation absorption
 sorption
 water treatment

material balance

GS balance
 . **material balance**
 . . water balance
 RT heat balance
 ∞ mass balance
 stoichiometry

material removal (machining)

USE **machining**

material strength

USE **mechanical properties**

∞ materials

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *substances*

RT ablative materials
 absorbents
 absorbers (materials)
 acceptor materials
 aging (materials)
 aircraft construction materials
 airframe materials
 amorphous materials
 anisotropic media
 binary systems (materials)
 binders (materials)
 bitumens
 boron reinforced materials
 Borsic (tradename)
 brittle materials
 carbonaceous materials
 composite materials
 concrete structures
 ∞ construction materials
 contaminants
 cork (materials)
 curl (materials)
 dislocations (materials)
 donor materials
 dredged materials
 electric furnaces
 electrons
 epoxy matrix composites
 fatigue (materials)
 ferrimagnetic materials
 ferroelastic materials
 ferroelectric materials
 ferromagnetic materials
 fissionable materials
 foams
 foils (materials)
 fractures (materials)
 glass
 glassy carbon
 granular materials
 graphite-epoxy composites
 hazardous materials
 holes (electron deficiencies)
 ∞ inorganic materials
 insulation
 laminates
 laser materials
 lossless materials

low density materials
 magnetic materials
 maser materials
 materials handling
 materials recovery
 ∞ materials science
 ∞ materials tests
 matrix materials
 mechanical properties
 metal matrix composites
 molding materials
 nonflammable materials
 optical materials
 organic materials
 paper (material)
 phase change materials
 photoelastic materials
 photoelectric materials
 polymer matrix composites
 porous materials
 pyrolytic materials
 pyrophoric materials
 radioactive materials
 radome materials
 reactor materials
 refractory materials
 reinforcing materials
 reserves
 resources
 self lubricating materials
 semiconductors (materials)
 sizing materials
 smart materials
 solids
 spacecraft construction materials
 sponges (materials)
 strategic materials
 superhybrid materials
 thermochromatic materials
 thermoelectric materials
 thickeners (materials)
 three dimensional composites
 vitreous materials
 Vycor

materials handling

GS **materials handling**
 . ground handling
 . propellant transfer
 . remote handling
 RT airfield surface movements
 ∞ automation
 blowers
 canals
 cargo
 cargo aircraft
 carts
 chemical engineering
 chutes
 ∞ containers
 contingency
 conveyors
 cranes
 delivery
 dispensers
 disposal
 distributing
 ∞ distribution
 distributors
 dollies
 dumping
 ejection
 ejectors
 emptying
 encapsulating
 excavation
 feeders
 feeding (supplying)
 fluid flow
 fuel pumps
 hauling
 heavy lift airships
 hoppers
 loading operations
 lunar logistics
 marking
 ∞ materials
 mechanical engineering
 mines (excavations)

materials recovery

- mooring
- packaging
- pipelines
- ∞ pumping
- ∞ pumps
- railroad humping tests
- releasing
- rigging
- services
- siphons
- sprayers
- spreading
- stacks
- ∞ storage
- tanks (containers)
- tractors
- transferring
- transportation
- trucks
- unloading
- vacuum pumps
- waste disposal
- wharves

materials recovery

SN (LIMITED TO TREATMENT OF A MATERIAL TO RECLAIM ONE OR MORE OF ITS COMPONENTS)

DEF The treatment of a material to reclaim one or more of its components.

GS reclamation

- . **materials recovery**
- . . gas recovery
- . . nuclear fuel reprocessing
- . . solvolysis
- . . water reclamation

RT ∞ absorption

- by-products
- centrifuging
- crystallization
- disposal
- distillation
- extraction
- filtration
- in situ resource utilization

∞ materials

∞ precipitation

- precipitation (chemistry)

∞ processing

∞ recovery

- recycling
- refining
- removal

∞ separation

- waste management

∞ materials science

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ceramics

- laser cutting
- maser materials

∞ materials

- metal foams
- plastics

∞ properties

∞ science

materials selection

(added August 2001)

DEF Process of choosing the most appropriate materials for a given application.

GS selection

- . **materials selection**

RT aircraft construction materials

- airframe materials

∞ construction materials

∞ materials tests

- optical materials
- reactor materials
- spacecraft construction materials
- structural design
- structural weight
- weight reduction

materials testing reactors

USE **nuclear research and test reactors**

∞ materials tests

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT bend tests

- burst tests
- Charpy impact test
- chemical analysis
- compression tests
- corrosion tests
- destructive tests
- electrophotometry
- environmental tests
- fatigue tests
- fiber pullout
- fiber pushout
- fuel tests
- gas analysis
- hardness tests
- high temperature tests
- impact tests
- lubricant tests
- magnetic measurement

∞ materials

- materials selection
- mechanical properties
- metallography
- microanalysis
- nanindentation
- neutron radiography
- nondestructive tests
- propellant tests
- quality
- quality control
- radiography
- specifications
- static tests

∞ tests

- ultrasonic tests
- wear tests
- x ray analysis
- x ray spectroscopy

mathematical analysis

USE **applications of mathematics**

mathematical logic

GS **mathematical logic**

- . algorithms
- . . backpropagation (artificial intelligence)
- . . genetic algorithms
- . . greedy algorithms
- . . parsing algorithms
- . . simplex method
- . . sorting algorithms
- . axioms
- . formulas (mathematics)
- . . Bethe-Heitler formula
- . lattices (mathematics)
- . . Boolean algebra
- . . . Boolean functions
- . predicate calculus
- . set theory
- . . Borel sets
- . . equivalence
- . . threshold logic

RT branching (mathematics)

- functions (mathematics)
- hypotheses
- induction (mathematics)
- instruction sets (computers)

∞ logic

- philosophy
- proving
- temporal logic
- theorems
- Turing machines
- Venn diagrams

mathematical models

GS models

- . **mathematical models**
- . . analog simulation
- . . BGK model
- . . biological models (mathematics)
- . . digital simulation
- . . Mandelstam representation
- . . Petri nets
- . . Thomas-Fermi model
- . . turbulence models
- . . . Baldwin-Lomax turbulence model
- . . . k-epsilon turbulence model
- . . . k-omega turbulence model

. . Veneziano model

RT aircraft models

- ∞ applications of mathematics
- astronomical models
- asymptotic properties
- atmospheric models
- bond graphs
- broken symmetry
- chaos
- computational astrophysics
- computational grids
- computational mechanics
- computer systems simulation
- computerized simulation
- continuum modeling
- control systems design
- decision theory
- dynamic models
- dynamic programming
- dynamical systems
- Euler-Bernoulli beams
- exhaust flow simulation
- experiment design
- factorial design
- flow charts
- footprints
- forecasting
- functions (mathematics)
- game theory
- goodness of fit
- graph theory
- inelastic stress
- inventory controls
- large eddy simulation
- likelihood ratio
- linear prediction
- lofting
- lumped parameter systems
- method of moments

∞ missile simulators

- model reference adaptive control
- Monte Carlo method
- multiscale models
- numerical weather forecasting
- ocean models
- operations research
- outliers (statistics)
- parameter identification
- parameterization
- quantiles
- queueing theory
- regression coefficients
- risk
- robustness (mathematics)
- scheduling
- similarity theorem
- simulation
- spacecraft models
- spatial dependencies
- statistical distributions
- stochastic processes
- system identification
- systems analysis
- systems engineering
- systems simulation
- three dimensional models
- trajectory analysis
- two dimensional bodies
- two dimensional models
- validity
- war games

mathematical programming

SN (LIMITED TO MATHEMATICAL OPTIMIZATION THEORY--EXCLUDES COMPUTER PROGRAMMING)

GS optimization

- . **mathematical programming**
- . . dynamic programming
- . . linear programming
- . . nonlinear programming
- . . quadratic programming

RT game theory

- operations research

∞ programming

- simplex method

mathematical tables

GS tables (data)

- . **mathematical tables**

- RT information
numerical analysis
random numbers
- ∞ **mathematics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The study of the logical relationships among abstract entities. These relationships are expressed in numbers, symbols, and signs and may also be applied to concrete instances such as measures and properties of shapes. The main subdivisions include algebra, geometry, and analysis.
RT algebra
analysis (mathematics)
axioms
bond graphs
calculus
current algebra
duality theorem
formulas (mathematics)
fractals
functions (mathematics)
geometry
inequalities
information theory
integrals
Latin square method
lattices (mathematics)
martingales
morphology
number theory
numerical analysis
primitive equations
∞ principles
probability theory
rings (mathematics)
∞ science
series expansion
stars (mathematics)
statistical analysis
superposition (mathematics)
symbols
theorems
- Mathieu equation*
USE **Mathieu function**
- Mathieu function**
UF *Mathieu equation*
GS analysis (mathematics)
. complex variables
. . **Mathieu function**
functions (mathematics)
. **Mathieu function**
RT boundary value problems
differential equations
eigenvectors
∞ equations
Hill determinant
orthogonal functions
- Matra missile**
GS missiles
. air to air missiles
. . **Matra missile**
RT solid propellant rocket engines
- ∞ **matrices**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT composite materials
epoxy matrix composites
eutectic composites
∞ grids
∞ imbeddings
lattices (mathematics)
matrices (circuits)
matrices (mathematics)
metal matrix composites
monotectic alloys
polymer matrix composites
- matrices (circuits)**
GS circuits
. **matrices (circuits)**
RT logic circuits
∞ matrices
- switching circuits
- matrices (mathematics)**
UF *differential algebra*
matrix analysis
GS algebra
. vector spaces
. . **matrices (mathematics)**
. . . adjoints
. . . canonical forms
. . . eigenvalues
. . . eigenvectors
. . . Hessian matrices
. . . Jordan form
. . . stiffness matrix
RT arrays
chiral dynamics
determinants
energy methods
factor analysis
finite element method
Gaussian elimination
Hermitian polynomial
isoperimetric problem
linear equations
linear programming
linear transformations
lumped parameter systems
∞ matrices
method of moments
roots of equations
simplex method
simultaneous equations
subgroups
U spin space
Walsh function
- matrix analysis*
USE **matrices (mathematics)**
- matrix management**
DEF An organized approach to administration of a program by defining and structuring all elements to form a single system with components united by interaction.
GS management
. **matrix management**
RT allocations
logistics
management methods
∞ methodology
operations research
productivity
project planning
scheduling
tasks
- matrix materials**
DEF The ingredients used as binding agents to produce composite materials.
RT bismaleimide
ceramic matrix composites
composite materials
debonding (materials)
epoxy matrix composites
fiber composites
fiber-matrix interfaces
functionally gradient materials
laminates
∞ materials
metal matrix composites
polymer matrix composites
reinforcing materials
resin matrix composites
resin transfer molding
- matrix methods**
SN (LIMITED TO METHODS FOR STRUCTURAL ANALYSIS)
UF *matrix stress calculation*
GS structural analysis
. **matrix methods**
RT equilibrium methods
∞ methodology
NASTRAN
- spline functions
- matrix stress calculation*
USE **matrix methods**
- matrix theory**
RT operators (mathematics)
∞ theories
- matter (physics)**
GS **matter (physics)**
. dark matter
. degenerate matter
. negative matter
. rotating matter
. . rotating fluids
. . . rotating liquids
. . . rotating plasmas
RT antimatter
condensed matter physics
extraterrestrial matter
∞ physics
- matter-antimatter propulsion**
(added December 1988)
DEF Spacecraft propulsion by use of matter-antimatter annihilation reactions.
GS propulsion
. spacecraft propulsion
. . **matter-antimatter propulsion**
RT annihilation reactions
antimatter
interplanetary flight
interplanetary spacecraft
interstellar travel
negative matter propulsion
nuclear propulsion
positron annihilation
proton-antiproton interactions
rocket engines
- MATTS (systems)**
UF *multiple target trajectory systems*
GS networks
. tracking networks
. . **MATTS (systems)**
RT abort trajectories
airborne equipment
angular correlation
target acquisition
- maturing*
USE **growth**
- Mauler missile**
GS missiles
. anti-aircraft missiles
. . **Mauler missile**
. . antimissile missiles
. . **Mauler missile**
. surface to air missiles
. . **Mauler missile**
RT single stage rocket vehicles
solid propellant rocket engines
- Mauritania**
GS nations
. **Mauritania**
RT Africa
- Mauritius**
(added February 1989)
GS landforms
. islands
. . **Mauritius**
nations
. **Mauritius**
RT Africa
Indian Ocean
- Maverick missiles**
GS missiles
. air to surface missiles
. . **Maverick missiles**
- Max Holste MH-262 aircraft*
USE **MH-262 aircraft**
- maxima**
GS analysis (mathematics)
. real variables

maximum entropy method

. . extremum values
. . . **maxima**

RT apexes
calculus of variations
cusps (mathematics)
minima
optimization
∞ peaks
penalty function
range (extremes)
zenith

maximum entropy method
DEF Procedure used in estimating high resolution power spectra from short data lengths.
GS entropy (statistics)
. **maximum entropy method**
spectrum analysis
. **maximum entropy method**

RT distribution functions
entropy
Fourier transformation
information theory
∞ methodology
power spectra
signal processing
signal to noise ratios
statistical analysis
time series analysis

maximum likelihood estimates
RT confidence limits
Cramer-Rao bounds
forecasting
goodness of fit
likelihood ratio
parameter identification
predictions
reliability
risk
system identification

maximum principle
RT complex variables
differential equations
elliptic differential equations
harmonic functions
pontryagin principle
real variables

maximum usable frequency
DEF For a given distance from a transmitter, the highest frequency at which sky waves can be received.
GS frequencies
. **maximum usable frequency**

RT frequency assignment
frequency reuse
high frequencies
very high frequencies

Maxwell bodies
RT classical mechanics
continuum mechanics
Hookes law
oscillation dampers
relaxation time

Maxwell equation
RT Biot-Savart law
Boltzmann-Vlasov equation
Born-Infeld theory
electricity
electrodynamics
electromechanics
∞ equations
Gauss equation
magnetic charge density
magnetic properties
magnetoelectric media
perfectly matched layers
Poynting theorem
∞ Stokes law

Maxwell fluids
RT compressible fluids
fluid mechanics
∞ fluids
rheology

viscoelasticity
viscous flow
viscous fluids

Maxwell-Boltzmann density function
UF *Maxwellian distribution (density)*
GS functions (mathematics)
. **Maxwell-Boltzmann density function**
statistical analysis
. **Maxwell-Boltzmann density function**

RT density distribution
kinetic theory
probability theory
statistical mechanics

Maxwellian distribution (density)
USE **Maxwell-Boltzmann density function**

Maxwell-Mohr method
RT deflection
∞ equilibrium
∞ methodology
static deformation
trusses

Mayer problem
RT ∞ condensation
critical point
Gibbs free energy
∞ molecular physics
∞ problems
supersaturation

maypole antennas
DEF A class of antennas which use the deployable reflector concept for large space systems applications.
GS antennas
. **maypole antennas**

RT antenna design
large space structures
space erectable structures

maze learning
GS learning
. **maze learning**

RT problem solving

MB-1 rocket vehicle
USE **Genie rocket vehicle**

MBM junctions
DEF Diode devices using metal-barrier-metal layers. Used for metal-barrier-metal junctions.
UF *metal-barrier-metal junctions*
GS semiconductor junctions
. **MBM junctions**

RT barrier layers
∞ barriers
junction transistors
solid state devices

Mcdonnell aircraft
GS McDonnell Douglas aircraft
. **Mcdonnell aircraft**
. . C-9 aircraft
. . DC 10 aircraft
. . F-4 aircraft
. . F-101 aircraft
RT ∞ aircraft

McDonnell Douglas aircraft
GS **McDonnell Douglas aircraft**
. C-17 aircraft
. Douglas aircraft
. . A-1 aircraft
. . A-3 aircraft
. . A-4 aircraft
. . B-66 aircraft
. . C-9 aircraft
. . C-47 aircraft
. . C-54 aircraft
. . C-118 aircraft
. . C-124 aircraft
. . C-133 aircraft
. . D-558 aircraft

. . DC 3 aircraft
. . DC 7 aircraft
. . DC 8 aircraft
. . DC 9 aircraft
. . DC 10 aircraft
. . PD-808 aircraft
. . X-3 aircraft
. F-18 aircraft
. Mcdonnell aircraft
. . C-9 aircraft
. . DC 10 aircraft
. . F-4 aircraft
. . F-101 aircraft
. MD 11 aircraft
. MD 80 aircraft
. X-36 aircraft

RT ∞ aircraft
Boeing aircraft

McLaurin series
USE **MacLaurin series**

Mcleod gages
GS measuring instruments
. pressure gages
. . vacuum gages
. . . **Mcleod gages**
vacuum apparatus
. vacuum gages
. . **Mcleod gages**

RT ionization gages
Knudsen gages
Pirani gages
pressure measurement

McMurdo sound
GS regions
. polar regions
. . Antarctic regions
. . . **McMurdo sound**
. remote regions
. . Antarctic regions
. . . **McMurdo sound**
sounds (topographic features)
. **McMurdo sound**
Southern Hemisphere
. Antarctic regions
. . **McMurdo sound**

RT Ross ice shelf

MCR reactors
USE **military compact reactors**

MD 11 aircraft
(added October 1994)
UF *DC 11 aircraft*
GS commercial aircraft
. **MD 11 aircraft**
jet aircraft
. **MD 11 aircraft**
McDonnell Douglas aircraft
. **MD 11 aircraft**
passenger aircraft
. **MD 11 aircraft**
transport aircraft
. **MD 11 aircraft**
RT ∞ aircraft

MD 80 aircraft
(added October 1994)
GS commercial aircraft
. **MD 80 aircraft**
jet aircraft
. **MD 80 aircraft**
McDonnell Douglas aircraft
. **MD 80 aircraft**
passenger aircraft
. **MD 80 aircraft**
transport aircraft
. **MD 80 aircraft**
RT ∞ aircraft

- DC 9 aircraft
 . . . J integral
 . . . Lebesgue theorem
 . . . numerical integration
 . . . Runge-Kutta method
 . . . Stieltjes integral
 . . . weighting functions
 RT Fourier analysis
- MDA
 USE **multiple docking adapters**
- ME P-160 aircraft
 USE **P-160 aircraft**
- ME P-308 aircraft
 USE **P-308 aircraft**
- meadowlands
 USE **grasslands**
- MEAM (physical chemistry)
 (added February 1998)
 USE **embedded atom method**
- mean**
 GS average
 . **mean**
 moments
 . distribution moments
 . . **mean**
 RT median (statistics)
 mode (statistics)
 normality
 quality control
 range (extremes)
 statistical analysis
 variance (statistics)
- mean free path**
 DEF Of any particle, the average distance that a particle travels between successive collisions with the other particles of an ensemble. Specifically, the average distance traveled by the molecules of a perfect gas between consecutive collisions with one another. For any process the reciprocal of the cross section per unit volume for that process.
 RT collision parameters
 ∞ cross sections
 Knudsen flow
 particle collisions
 particle motion
 ∞ paths
 scattering
 vacuum
- mean square values**
 DEF In statistics, values representing the average of the sum of the squares of the deviations from the mean value.
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **mean square values**
 RT algorithms
 error analysis
 least squares method
- mean time between failures
 USE **MTBF**
- meanders**
 DEF Freely developing sinuous curves, bends, loops, turns, or windings in the courses of streams. They are produced by mature streams swinging from side to side as they flow across flood plains or shift course laterally toward the convex side of an original curve.
 RT open channel flow
 rapids
 river basins
 rivers
 streams
 topography
 valleys
- measure and integration**
 UF *integration (real variables)*
measure theory
Riemann integral
 GS analysis (mathematics)
 . real variables
 . . **measure and integration**
 . . . binary integration
 . . . Borel sets
 . . . functional integration
 . . . integral calculus
- measure theory*
 USE **measure and integration**
- ∞ **measurement**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF The technical action required to assign values (numbers) to represent certain properties or attributes, using rules based on scientific laws. Used for determination, measuring, and quantization.
 UF *determination*
measuring
quantization
 RT acceleration measurement
 accuracy
 acoustic measurement
 airborne range and orbit
 determination
 aircraft instruments
 analog data
 astrometry
 audiometry
 chemical analysis
 confidence limits
 consistency
 counting
 ∞ data
 definition
 densimeters
 density measurement
 depth measurement
 detection
 dilatometry
 dimensional measurement
 Downrange Antimissile Measurement Program
 downrange measurement
 drag measurement
 Earth terminal measurement system
 electrical measurement
 electromagnetic measurement
 electromagnetic noise measurement
 ellipsometry
 estimating
 evaluation
 examination
 flow measurement
 frequency measurement
 friction measurement
 gamma ray absorptiometry
 geometry
 gravimetry
 heat measurement
 high alt target and background
 measurement
 humidity measurement
 identifying
 in situ measurement
 International System of Units
 latitude measurement
 longitude measurement
 macroscopic equations
 magnetic measurement
 ∞ measures
 measuring instruments
 mechanical measurement
 metrology
 monitors
 noise measurement
 nonintrusive measurement
 optical measurement
 optometry
 photographic measurement
 pneumography
 precipitation measurement
 pressure measurement
 proving
 pupillometry
 radar measurement
 radiation measurement
- radioactive age determination
 rangefinding
 signal measurement
 size determination
 sounding
 sphygmography
 standards
 strain measurement
 synoptic measurement
 temperature measurement
 thrust measurement
 time measurement
 trajectory measurement
 ultrasonic densimeters
 units of measurement
 velocity measurement
 vibration measurement
 weight measurement
 wind measurement
- ∞ **measures**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT criteria
 ∞ measurement
 standards
- measuring*
 USE **measurement**
- measuring instruments**
 UF *fluxmeters*
gages
meters
rate meters
 GS **measuring instruments**
 . accelerometers
 . . strain gage accelerometers
 . ammeters
 . . micromillimeters
 . . thermoelement ammeters
 . analyzers
 . . engine analyzers
 . . signal analyzers
 . anemometers
 . . drag force anemometers
 . . hot-film anemometers
 . . hot-wire anemometers
 . . laser anemometers
 . . sonic anemometers
 . balloon-borne instruments
 . bathymeters
 . burettes
 . calorimeters
 . . bomb calorimeters
 . . drop calorimeters
 . . flame calorimeters
 . comparators
 . conductivity meters
 . . electrical conductivity meters
 . coulometers
 . counters
 . . radiation counters
 . . . Cerenkov counters
 . . . electron counters
 . . . Geiger counters
 . . . neutron counters
 . . . neutron spectrometers
 . . . particle telescopes
 . . . proportional counters
 . . . quantum counters
 . . . scintillation counters
 . . . spark chambers
 . deformeters
 . densimeters
 . . ultrasonic densimeters
 . densitometers
 . . microdensitometers
 . distance measuring equipment
 . . altimeters
 . . . laser altimeters
 . . . radio altimeters
 . . geodimeters
 . . range finders
 . . . optical range finders
 . . . laser range finders
 . . stadimeters
 . . tellurometers
 . dynamometers

measuring instruments

- . elastometers
- . electrometers
- . electron probes
- . engine monitoring instruments
- . ergometers
- . eudiometers
- . extensometers
- . field intensity meters
- . flame probes
- . flight recorders
- . . flight load recorders
- . flowmeters
- . . gas meters
- . . hot-wire flowmeters
- . . rheometers
- . force vector recorders
- . fuel gages
- . . capacitive fuel gages
- . galvanometers
- . Gerdiem condensers
- . goniometers
- . . photogoniometers
- . . radiogoniometers
- . gravimeters
- . gravity gradiometers
- . heliometers
- . . pyroheliometers
- . hydrometers
- . hypsometers
- . impedance probes
- . . radio frequency impedance probes
- . indicating instruments
- . . approach indicators
- . . astrolabes
- . . attitude indicators
- . . . gyro horizons
- . . cloud height indicators
- . . compasses
- . . . gyrocompasses
- . . . magnetic compasses
- . . . solar compasses
- . . flow direction indicators
- . . wind vanes
- . . position indicators
- . . . plan position indicators
- . . . radio direction finders
- . . . spacecraft position indicators
- . . smoke detectors
- . . speed indicators
- . . tachometers
- . . weight indicators
- . . . microbalances
- . . . strain gage balances
- . . . thermobalances
- . interferometers
- . . etalons
- . . Fabry-Perot interferometers
- . . infrared interferometers
- . . Mach-Zehnder interferometers
- . . Michelson interferometers
- . . microwave interferometers
- . . phase switching interferometers
- . . radio interferometers
- . ion probes
- . ion traps (instrumentation)
- . laser doppler velocimeters
- . lysimeters
- . magnetic probes
- . magnetometers
- . . variometers
- . mechanograms
- . meteorological instruments
- . tribometers
- . . barometers
- . . cloud height indicators
- . . dropsondes
- . . radiometeorographs
- . . radiosondes
- . . . ionosondes
- . . . rawinsondes
- . . ozonesondes
- . . rain gages
- . . weather data recorders
- . . wind vanes
- . micrometers
- . microwave probes
- . . microwave plasma probes
- . microwave sensors
- . . Advanced Microwave Sounding Unit
- . moisture meters
- . . hygrometers
- . . . psychrometers
- . . monochromators
- . . noise meters
- . . ohmmeters
- . optical measuring instruments
- . . cathetometers
- . . diffractometers
- . . Ebert spectrometers
- . . ellipsometers
- . . etalons
- . . geodimeters
- . . haploscopes
- . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . light scattering meters
- . . microdensitometers
- . . nephelometers
- . . oculometers
- . . optical pyrometers
- . . optical range finders
- . . . laser range finders
- . . photogoniometers
- . . photometers
- . . . electrophotometers
- . . . ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . . . quantum well infrared photodetectors
- . . . ultraviolet spectrophotometers
- . . polarimeters
- . . reflectometers
- . . . microwave reflectometers
- . . refractometers
- . . sextants
- . . spectrophotometers
- . . . infrared spectrophotometers
- . . . ultraviolet spectrophotometers
- . . transits
- . . . theodolites
- cinetheodolites
- . . transmissometers
- . oscillographs
- . oxygen analyzers
- . penetrometers
- . plasma probes
- . . electrostatic probes
- . . polariscopes
- . . Senarmont polariscopes
- . . potentiometers (instruments)
- . . pressure gages
- . . barometers
- . . manometers
- . . osmometers
- . . piezoelectric gages
- . . piezometers
- . . vacuum gages
- . . ionization gages
- . . . alphasources
- Bayard-Alpert ionization gages
- Penning gages
- Philips ionization gages
- . . . Knudsen gages
- . . McLeod gages
- . . Pirani gages
- . . profilometers
- . protractors
- . radiation measuring instruments
- . . actinometers
- . . . infrared spectrometers
- filter wheel infrared spectrometers
- . . . pyranometers
- . . . radiometers
- Dicke radiometers
- infrared detectors
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- quantum well infrared photodetectors
- ultraviolet spectrophotometers
- quantum well infrared photodetectors
- infrared interferometers
- infrared spectrometers
- filter wheel infrared spectrometers
- infrared spectrophotometers
- photometers
- electrophotometers
- ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- quantum well infrared photodetectors
- ultraviolet spectrophotometers
- radiation counters
- Cerenkov counters
- electron counters
- Geiger counters
- neutron counters
- neutron spectrometers
- particle telescopes
- proportional counters
- quantum counters
- scintillation counters
- spark chambers
- radiation detectors
- dosimeters
- threshold detectors (dosimeters)
- Golay detector cells
- silicon radiation detectors
- riometers
- radiometers
- resonance probes
- respirometers
- satellite-borne instruments
- Advanced Microwave Sounding Unit
- Advanced Very High Resolution Radiometer
- AMPS (satellite payload)
- MISR (radiometry)
- Total Ozone Mapping Spectrometer
- scatterometers
- shock measuring instruments
- sondes
- dropsondes
- Judi-Dart rocket
- radiosondes
- ionosondes
- rawinsondes
- ozonesondes
- spectrometers
- photodetectors
- microwave radiometers
- Advanced Microwave Sounding Unit
- passive L-band radiometers
- pressure modulator radiometers
- spectroradiometers
- MISR (radiometry)
- MODIS (radiometry)
- solar spectrometers
- spectroheliographs
- spectrophotometers
- infrared spectrophotometers
- ultraviolet spectrophotometers
- ultraviolet detectors
- ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- ultraviolet spectrophotometers
- x ray detectors
- bolometers
- Ebert spectrometers
- electrostatic probes
- Fabry-Perot spectrometers
- hodoscopes
- infrared instruments
- infrared detectors
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- quantum well infrared photodetectors
- infrared interferometers
- infrared spectrometers
- filter wheel infrared spectrometers
- infrared spectrophotometers
- photometers
- electrophotometers
- ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- quantum well infrared photodetectors
- ultraviolet spectrophotometers
- radiation counters
- Cerenkov counters
- electron counters
- Geiger counters
- neutron counters
- neutron spectrometers
- particle telescopes
- proportional counters
- quantum counters
- scintillation counters
- spark chambers
- radiation detectors
- dosimeters
- threshold detectors (dosimeters)
- Golay detector cells
- silicon radiation detectors
- riometers
- radiometers
- resonance probes
- respirometers
- satellite-borne instruments
- Advanced Microwave Sounding Unit
- Advanced Very High Resolution Radiometer
- AMPS (satellite payload)
- MISR (radiometry)
- Total Ozone Mapping Spectrometer
- scatterometers
- shock measuring instruments
- sondes
- dropsondes
- Judi-Dart rocket
- radiosondes
- ionosondes
- rawinsondes
- ozonesondes
- spectrometers

- . . Ebert spectrometers
- . . Fabry-Perot spectrometers
- . . gamma ray spectrometers
- . . imaging spectrometers
- . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . laser spectrometers
- . . mass spectrometers
- . . microwave spectrometers
- . . neutron spectrometers
- . . Solar Backscatter UV Spectrometer
- . . solar spectrometers
- . . spectroheliographs
- . . time of flight spectrometers
- . . ultraviolet spectrometers
- . . . high dispersion spectrographs
- . . . Total Ozone Mapping Spectrometer
- . . Alpha Magnetic Spectrometer
- . . x ray spectrometers
- . sputtering gages
- . strain gages
- . temperature measuring instruments
- . . bathythermographs
- . . optical pyrometers
- . . pneumatic probes
- . . pyrometers
- . . . radiation pyrometers
- . . . thermocouple pyrometers
- . . temperature probes
- . . thermometers
- . . . resistance thermometers
- . tensiometers
- . tensometers
- . thermal conductivity gages
- . tiltmeters
- . time measuring instruments
- . . clocks
- . . . atomic clocks
- . . . autonomous spacecraft clocks
- . . . chronometers
- . . timing devices
- . . titrimeters
- . . torquemeters
- . . turbulence meters
- . . vibration meters
- . . seismographs
- . . . lunar seismographs
- . . viscometers
- . . voltmeters
- . . millivoltmeters
- . . wattmeters
- RT aircraft instruments
- automatic control
- automatic test equipment
- bioinstrumentation
- calibrating
- circumsolar telescopes
- control moment gyroscopes
- controllers
- ∞ detectors
- drag measurement
- duochromators
- electric bridges
- electrical measurement
- flight instruments
- forest fire detection
- Fraunhofer line discriminators
- IMBLMS
- instrument receivers
- instrument transmitters
- ∞ instruments
- International System of Units
- laboratory equipment
- landing instruments
- large aperture seismic array
- local scientific survey module
- lunar ranging
- ∞ measurement
- metrology
- microinstrumentation
- monitors
- navigation instruments
- ∞ probes
- propellant actuated instruments
- radio probing
- radio telemetry
- rapid ballistics identification

- recording instruments
- remote sensors
- rocket-borne instruments
- Ronchi test
- satellite instruments
- ∞ sensors
- sound detecting and ranging
- spacecraft instruments
- synchrosopes
- telemetry
- ∞ test equipment
- transducers
- ultrasonic scanners
- Venturi tubes
- Wheatstone bridges
- wind tunnel calibration

mecamylamine

- GS organic compounds
- . amines
- . . **mecamylamine**
- terpenes
- . **mecamylamine**

mechanical devices

- RT cams
- clamps
- clips
- clutches
- ∞ devices
- ∞ equipment
- holders
- jigs
- levers
- linkages
- machine tools
- ∞ mechanism
- mechanization
- tools

mechanical drawings

USE **engineering drawings**

mechanical drives

- UF *rotary drives*
- GS **mechanical drives**
- . magnetic tape transports
- . propeller drive
- . . helicopter propeller drive
- . transmissions (machine elements)
- RT clutches
- counter-rotating wheels
- coupling
- couplings
- ∞ drives
- ∞ gear
- gear teeth
- gears
- magnetolectric media
- ∞ power transmission
- shafts (machine elements)
- vehicle wheels
- wind tunnel drives
- windmills (windpowered machines)

mechanical engineering

DEF Branch of engineering dealing with the design, development and operation of machines including mechanical devices and prime movers, vehicles, machine tools, and manufacturing machinery.

- RT aeronautical engineering
- aerospace engineering
- ∞ engineering
- fluid flow
- flywheels
- furnaces
- heat transfer
- machine tools
- ∞ machinery
- maintenance
- materials handling
- stress analysis
- thermodynamics

vibration tests

mechanical fingers

USE **end effectors**

mechanical hands

USE **end effectors**

mechanical impedance

- GS impedance
- . **mechanical impedance**
- RT attenuation
- damping
- friction
- impedance measurement

mechanical measurement

- SN (MEASUREMENT OF MECHANICAL PROPERTIES, QUANTITIES OR CONDITIONS)
- GS **mechanical measurement**
- . displacement measurement
- . drag measurement
- . flow measurement
- . . particle image velocimetry
- . friction measurement
- . pressure measurement
- . stress measurement
- . . x ray stress measurement
- . thrust measurement
- . velocity measurement
- . . particle image velocimetry
- . . wind velocity measurement
- . vibration measurement
- . wind measurement
- . . wind velocity measurement
- RT accelerometers
- acoustic measurement
- deformeters
- density measurement
- depth measurement
- dynamometers
- extensometers
- flowmeters
- ∞ measurement
- strain gages
- tensiometers
- torquemeters
- weight indicators

mechanical oscillators

- GS oscillators
- . **mechanical oscillators**
- . . pendulums
- . . . gyroscopic pendulums
- RT electric choppers
- harmonic oscillators
- reciprocation
- resonant vibration
- vibration

mechanical properties

- UF *material strength*
- meteorite compression tests*
- strength of materials*
- GS **mechanical properties**
- . brittleness
- . bulk modulus
- . cold strength
- . compressibility
- . compressive strength
- . creep properties
- . . creep rupture strength
- . . shear creep
- . . steady state creep
- . . tensile creep
- . creep strength
- . dimensional stability
- . . structural stability
- . . . shell stability
- . ductility
- . earthquake resistance
- . elastic properties
- . . aeroelasticity
- . . . aeroservoelasticity
- . . . aerothermoelasticity
- . . anelasticity
- . . elastoplasticity
- . . hydroelasticity
- . . hypoelasticity
- . . magnetostriction

mechanical shock

- . . modulus of elasticity
- . . . dynamic modulus of elasticity
- . . photoelasticity
- . . . photoviscoelasticity
- . . proportional limit
- . . thermoelasticity
- . . . aerothermoelasticity
- . . viscoelasticity
- . . . photoviscoelasticity
- . . . thermoviscoelasticity
- . . ferroelasticity
- . electrostriction
- . fatigue life
- . fiber strength
- . flexibility
- . fracture strength
- . . flexural strength
- . hardness
- . . microhardness
- . . . Knoop hardness
- . . Rockwell hardness
- . . Vickers hardness
- . high strength
- . impact strength
- . malleability
- . modular ratios
- . notch strength
- . piezoelectricity
- . plastic properties
- . . elastoplasticity
- . . photoplasticity
- . . superplasticity
- . . thermoplasticity
- . . viscoplasticity
- . . yield point
- . Poisson ratio
- . resilience
- . set
- . shear properties
- . . shear strength
- . stiffness
- . stress cycles
- . stress ratio
- . stress relaxation
- . tensile properties
- . . tensile strength
- . thermal resistance
- . toughness
- . . notch sensitivity
- . wear resistance
- . . abrasion resistance
- . weld strength
- . yield strength
- . . load carrying capacity
- . . microyield strength
- RT acoustic properties
- aging (materials)
- anisotropy
- buoyancy
- cast alloys
- coefficients
- compressing
- compression loads
- deformation
- durability
- elongation
- fatigue (materials)
- ferritic stainless steels
- fiber orientation
- flatness
- ∞ high resistance
- hysteresis
- impedance
- interfacial tension
- interference fit
- internal friction
- isotropy
- J integral
- ∞ low resistance
- ∞ materials
- ∞ materials tests
- ∞ metallurgy
- micromechanics
- microporosity
- nanointerdentation
- peeling
- permeability
- ∞ physical properties
- propellant properties
- ∞ properties
- radiation effects
- reliability
- ∞ rigidity
- roughness
- ruggedness
- shear strain
- shear stress
- shock resistance
- solid mechanics
- specifications
- specimen geometry
- strain rate
- ∞ strength
- stress concentration
- stresses
- structural failure
- supercooling
- surface defects
- surface properties
- surface roughness
- tearing
- temperature inversions
- textures
- tolerances (mechanics)
- triaxial stresses
- triboluminescence
- weathering
- mechanical resonance*
- USE **resonant vibration**
- mechanical shock**
- UF *jarring*
- GS **mechanical shock**
- . hydraulic shock
- RT acceleration (physics)
- high acceleration
- hypervelocity impact
- impact
- impact acceleration
- ∞ shock
- shock absorbers
- shock resistance
- shock spectra
- shock waves
- vibration
- mechanical twinning**
- GS twinning
- . **mechanical twinning**
- RT crystal defects
- crystal growth
- crystal structure
- work hardening
- mechanics (physics)**
- SN (LIMITED TO GENERAL DISCUSSIONS OF THE BROAD BRANCH OF PHYSICS RELATED TO MOTION AND THE BEHAVIOR OF PHYSICAL SYSTEMS. USE OF A MORE SPECIFIC TERM IS RECOMMENDED.)
- DEF The branch of physics that studies the motion of bodies and the behavior of physical systems under the influence of internal and external forces.
- GS **mechanics (physics)**
- . classical mechanics
- . . space mechanics
- . . . astrodynamics
- . . . celestial mechanics
- . . . orbital mechanics
- Kepler laws
- minimum variance orbit determination
- . quantum mechanics
- . . Pauli exclusion principle
- . . quantum electrodynamics
- . fluid mechanics
- . . fluid dynamics
- . . . computational fluid dynamics
- . . . gas dynamics
- aerodynamics
- aerothermodynamics
- hypersonics
- rotor aerodynamics
- supersonics
- unsteady aerodynamics
- interactional aerodynamics
- rarefied gas dynamics
- . . . hydrodynamics
- elastohydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- . . . rotors
- . . . vortex shedding
- . . hydromechanics
- . . . hydrodynamics
- elastohydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- . . . hydrostatics
- magnetohydrostatics
- . . pneumatics
- . solid mechanics
- . . fracture mechanics
- . computational mechanics
- . continuum mechanics
- . flight mechanics
- RT ∞ dynamics
- electromechanics
- ∞ hydraulics
- kinematics
- kinetics
- loads (forces)
- ∞ mechanism
- megamechanics
- micromechanics
- statics
- statistical mechanics
- ∞ **mechanism**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT ∞ machinery
- mechanical devices
- mechanics (physics)
- ∞ methodology
- mechanization**
- RT ∞ automation
- data processing
- depersonalization
- ∞ machinery
- man machine systems
- mechanical devices
- ∞ operations
- systems engineering
- tooling
- tools
- mechanograms**
- GS measuring instruments
- . **mechanograms**
- medical equipment
- . **mechanograms**
- recording instruments
- . **mechanograms**
- RT muscular function
- mechanoreceptors**
- DEF Nerve endings that react to mechanical stimuli, such as touch, tension, and acceleration.
- GS anatomy
- . sense organs
- . . **mechanoreceptors**
- receptors (physiology)
- . **mechanoreceptors**
- RT sensitometry
- meclizine**
- GS halogen compounds
- . chlorine compounds
- . . **meclizine**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . azines
- **meclizine**
- pyrazines
- . azines
- . . **meclizine**
- media**
- SN (EXCLUDES COMMUNICATION TECHNIQUES)
- GS **media**
- . anisotropic media
- . . anisotropic fluids

- . elastic media
- . intergalactic media
- . interplanetary medium
- . . . interplanetary dust
- meteoroid dust clouds
- zodiacal dust
- . . interplanetary gas
- RT ∞ channels
- median (statistics)**
- RT average
- distribution moments
- errors
- mean
- mode (statistics)
- normality
- norms
- quality control
- statistical analysis
- ∞ tests
- mediastinum**
- RT septum
- tissues (biology)
- mediation**
- RT labor
- management planning
- medical electronics**
- RT echoencephalography
- electrocardiography
- electroencephalography
- electromyography
- ∞ electronics
- electroplethysmography
- electroretinography
- telemedicine
- medical equipment**
- GS **medical equipment**
- . artificial cardiac pacemaker
- . artificial heart valves
- . blood pumps
- . cardiostachometers
- . endoscopes
- . mechanograms
- . prosthetic devices
- . . artificial ears
- . respirators
- . stethoscopes
- . stretchers
- . surgical instruments
- . syringes
- . tourniquets
- . x ray apparatus
- . . lixiscopes
- . . x ray tubes
- RT cardiography
- dentistry
- diagnosis
- echoencephalography
- electroencephalography
- emergency life sustaining systems
- ∞ equipment
- first aid
- fluoroscopy
- hospitals
- IMBLMS
- ∞ medicine
- microtomy
- mobile quarantine facility
- telemedicine
- therapy
- medical personnel**
- GS personnel
- . **medical personnel**
- . . flight nurses
- . . physicians
- . . surgeons
- . . . flight surgeons
- RT ∞ medicine
- medical phenomena**
- RT diving (underwater)
- phenomenology
- medical science**
- GS **medical science**

- . aerospace medicine
- . . aviation psychology
- . . space psychology
- . anesthesiology
- . cardiology
- . clinical medicine
- . dentistry
- . dermatology
- . endocrinology
- . epidemiology
- . geriatrics
- . gynecology
- . histology
- . immunology
- . neurology
- . nuclear medicine
- . . radiobiology
- . ophthalmology
- . orthopedics
- . otolaryngology
- . otology
- . pathology
- . . human pathology
- . pharmacology
- . . psychopharmacology
- . psychiatry
- . . neuropsychiatry
- . . social psychiatry
- . radiology
- . radiopathology
- . sports medicine
- . surgery
- . . labyrinthectomy
- . symptomatology
- . urology
- . veterinary medicine
- RT ∞ biology
- diagnosis
- diseases
- first aid
- ∞ medicine
- optometry
- pneumothorax
- psychopharmacology
- radiation therapy
- ∞ science
- telemedicine
- transfusion
- medical services**
- GS services
- . **medical services**
- RT ambulances
- first aid
- intravenous procedures
- mobile quarantine facility
- public health
- telemedicine
- ∞ **medicine**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aerospace medicine
- clinical medicine
- drugs
- medical equipment
- medical personnel
- medical science
- neuropsychiatry
- pharmacology
- psychopharmacology
- radiobiology
- radiology
- veterinary medicine
- Mediterranean Sea**
- GS seas
- . **Mediterranean Sea**
- . . Adriatic Sea
- RT Cyprus
- Gibraltar
- Malta
- Rhone Delta (France)
- Sicily
- medium scale integration**
- GS circuits
- . integrated circuits
- . . **medium scale integration**

- microelectronics
- . **medium scale integration**
- RT electronic packaging
- large scale integration
- molecular electronics
- printed circuits
- meetings*
- USE **conferences**
- megalopolises**
- RT cities
- communities
- demography
- industrial areas
- regional planning
- residential areas
- rural areas
- suburban areas
- urban development
- urban transportation
- megamechanics**
- RT large space structures
- mechanics (physics)
- structural analysis
- structural engineering
- trusses
- Meissner effect*
- USE **diamagnetism**
- superconductivity**
- meitnerium**
- (added May 1998)
- GS chemical elements
- . **meitnerium**
- RT hassium
- melamine**
- GS organic compounds
- . amines
- . . **melamine**
- RT resins
- melanin**
- GS biopolymers
- . proteins
- . . **melanin**
- organic compounds
- . proteins
- . . **melanin**
- pigments
- . **melanin**
- RT dopa
- skin (anatomy)
- melanoidin**
- GS acids
- . amino acids
- . . **melanoidin**
- organic compounds
- . amino acids
- . . **melanoidin**
- melatonin**
- (added August 2004)
- DEF A biogenic amine that is found in animals and plants. In mammals, melatonin is produced by the pineal gland. Its secretion increases in darkness and decreases during exposure to light. Melatonin is implicated in the regulation of sleep, mood, and reproduction. Melatonin is also an effective antioxidant.
- GS organic compounds
- . amines
- . . tryptamines
- . . . **melatonin**
- . cyclic compounds
- . . heterocyclic compounds
- . . . indoles
- tryptamines
- **melatonin**
- RT antioxidants
- hormones
- moods
- photoperiod
- pineal gland
- secretions

Mellin transforms

sleep

Mellin transforms

- GS functions (mathematics)
- . **Mellin transforms**
- RT integral equations
- kernel functions

melt spinning

DEF A material process by which polymers such as nylon and polyesters and glass are melted to permit extrusion into fibers through spinnerets.

- GS crystallization
- . **melt spinning**
- melts (crystal growth)
- . **melt spinning**
- solidification
- . **melt spinning**
- RT ∞ metallurgy
- phase transformations

melting

- UF *remelting*
- thawing*
- GS phase transformations
- . **melting**
- . . arc melting
- . . fusion (melting)
- . . levitation melting
- . . vacuum melting
- . . zone melting
- RT ablation
- aufeis (ice)
- burnthrough (failure)
- casting
- coal liquefaction
- containerless melts
- cooling
- defrosting
- deicing
- drop transfer
- extraction
- freezing
- furnaces
- heat of fusion
- heating
- ice prevention
- impact melts
- induction heating
- injection molding
- liquefaction
- liquid metals
- liquid-solid interfaces
- melts (crystal growth)
- metal cutting
- metal foams
- ∞ metallurgy
- molds
- phase change materials
- pseudopotentials
- ∞ separation
- smelting
- solar furnaces
- spiking

melting points

DEF liquidus and solidus coincide at an invariant point. In a phase diagram, the temperature at which the

- UF *freezing points*
- GS thermodynamic properties
- . thermophysical properties
- . . **melting points**
- RT high temperature tests
- liquid phases
- liquidus
- low temperature tests
- phase diagrams
- reaction bonding
- solid solutions
- solid state
- solidification
- solidified gases
- specific heat
- temperature
- transition temperature

melts (crystal growth)

DEF Molten substances from which crystals

are formed during the cooling or solidifying process.

GS melts (crystal growth)

- . containerless melts
- . impact melts
- . melt spinning
- RT atomic structure
- crystal growth
- crystallization
- float zones
- Marangoni convection
- melting
- semiconductors (materials)

MEM (excursion module)

USE **Mars Excursion Module**

membership functions

(added December 2000)

DEF Characteristic functions of a fuzzy set, which assign a value indicating the degree of membership for each element in a universal set.

- GS functions (mathematics)
- . **membership functions**
- RT control systems design
- fuzzy sets
- fuzzy systems
- machine learning
- neural nets

membrane analogy

USE **membrane structures**
structural analysis

membrane structures

DEF Shell structures, often pressurized, that do not take wall bending or compression loads. Used for membrane analogy.

- UF *membrane analogy*
- GS membranes
- . **membrane structures**
- . . skin (structural member)
- structural members
- . **membrane structures**
- . . skin (structural member)
- RT diaphragms (mechanics)
- metal shells
- perforated shells
- Scotchlite (trademark)
- ∞ sheets
- shells (structural forms)
- ∞ structures
- thin walled shells
- webs (supports)

membrane theory

USE **structural analysis**

membranes

- UF *webs (membranes)*
- GS **membranes**
- . cell membranes (biology)
- . choroid membranes
- . conjunctiva
- . epicardium
- . ion exchange membrane electrolytes
- . membrane structures
- . . skin (structural member)
- . peritoneum
- . pleurae
- RT biofilms
- ∞ diaphragms
- diaphragms (mechanics)
- ∞ films
- jet membrane process
- ∞ layers
- osmosis
- reverse osmosis
- septum
- ∞ sheets
- shells (structural forms)
- skin (anatomy)
- ∞ webs
- webs (sheets)
- webs (supports)

memory

SN (LIMITED TO SENTIENT ORGANISMS--EXCLUDES COMPUTER STORAGE DEVICES AND PLASTIC MEMORY)

- RT education
- learning
- mnemonics
- recognition
- retention (psychology)

memory (computers)

DEF The component of a computer, control system, guidance system, instrumented satellite, or the like, designed to provide ready access to data or instructions previously recorded so as to make them bear upon an immediate problem, such as the guidance of a physical object, or the analysis and reduction of data.

- GS **memory (computers)**
- . random access memory
- . . core storage
- . associative memory
- . distributed memory
- . optical memory (data storage)
- RT architecture (computers)
- chips (memory devices)
- computer design
- computer storage devices
- computers
- hole burning
- magnetic disks
- video disks

MEMS (electromechanical devices)

(added October 1998)

USE **microelectromechanical systems**

mendelevium

- GS chemical elements
- . actinide series
- . . transuranium elements
- . . . **mendelevium**
- . nuclides
- . . isotopes
- . . . radioactive isotopes
- transuranium elements
- **mendelevium**
- metals
- . actinide series
- . . transuranium elements
- . . . **mendelevium**

meningitis

- GS diseases
- . infectious diseases
- . . **meningitis**
- RT acquired immunodeficiency syndrome
- bacterial diseases
- viral diseases

menisci

- GS liquid surfaces
- . **menisci**
- RT Bond number
- curves (geometry)
- liquid-gas mixtures
- liquid-solid interfaces
- liquid-vapor interfaces
- ∞ surfaces

menstruation

- RT females
- ovaries
- physiology

mental health

- GS health
- . **mental health**
- RT human performance
- intelligence
- neuropsychiatry
- psychotherapy
- Rorschach tests
- schizophrenia

mental performance

- RT abilities
- cognitive psychology
- consciousness
- human performance
- hypernea
- inspiration
- intellect
- intelligence

- intelligence tests
 - irrationality
 - lies
 - operator performance
 - ∞ performance
 - psychomotor performance
 - stress (psychology)
 - workloads (psychophysiology)
- mental stress*
USE **stress (psychology)**
- menthol**
GS organic compounds
 . cyclic compounds
 . . . cyclic hydrocarbons
 . . . **menthol**
 . hydrocarbons
 . . . cyclic hydrocarbons
 . . . **menthol**
 terpenes
 . **menthol**
- meprobamate**
GS esters
 . **meprobamate**
- mercaptan*
USE **thiols**
- mercapto compounds*
USE **thiols**
- Mercator projection**
DEF An equatorial, cylindrical, conformal map projection derived by mathematical analysis (not geometrically) in which the equator is represented by a straight line true to scale. The meridians are represented by parallel straight lines perpendicular to the equator and equally spaced according to their distance apart at the equator. The parallels are represented by straight lines perpendicular to the meridians and parallel with (and the same length as) the equator. The parallels are spaced so as to achieve conformality, their spacing increasing rapidly with their distance from the equator so that at all places the degrees of latitude and longitude have the same ratio to each other as to the sphere itself. This results in greater distortion of distances, areas, and shapes in the polar regions (above 80 deg. latitude). The scale is increasingly poleward as the secant of the latitude. Because any line of constant direction (azimuth) on the sphere is truly represented on the projection by a straight line, the Mercator projection is of great value in navigation. It is used for hydrographic charts, and also to show geographic variations of some physical property (such as magnetic declination) or to plot trajectories of Earth satellites in oblique orbits. It is named after Gerhardus Mercator (1512-1594), a Flemish mathematician and geographer, whose world map of 1569 used this projection.
GS geometry
 . Euclidean geometry
 . . . analytic geometry
 . . . **Mercator projection**
 . . . projective geometry
 . . . **Mercator projection**
RT maps
- Mercure aircraft**
GS transport aircraft
 . short haul aircraft
 . . **Mercure aircraft**
RT ∞ aircraft
 cargo aircraft
 passenger aircraft
- mercury (metal)**
UF *liquid mercury*
GS chemical elements
 . **mercury (metal)**
 . . . mercury isotopes
 . . . mercury vapor
 liquids
 . liquid metals
 . . **mercury (metal)**
 . . . mercury isotopes
- . . . mercury vapor
 - metals
 - . liquid metals
 - . . **mercury (metal)**
 - . . . mercury isotopes
 - . . . mercury vapor
 - . . . transition metals
 - . . **mercury (metal)**
 - . . . mercury isotopes
 - . . . mercury vapor
- RT heavy metals
- Mercury (planet)**
GS celestial bodies
 . planets
 . . terrestrial planets
 . . . **Mercury (planet)**
RT Mercury atmosphere
 Mercury surface
 MESSENGER (spacecraft)
 planetary craters
- mercury alloys**
GS alloys
 . **mercury alloys**
 . . mercury amalgams
- mercury amalgams**
UF *amalgams*
GS alloys
 . mercury alloys
 . . **mercury amalgams**
- mercury arcs**
GS electric current
 . electric discharges
 . . electric arcs
 . . . **mercury arcs**
RT arc lamps
 metallic plasmas
 rectifiers
- Mercury atmosphere**
GS environments
 . extraterrestrial environments
 . . planetary environments
 . . . planetary atmospheres
 **Mercury atmosphere**
RT Mercury (planet)
 Mercury surface
 planetary meteorology
- mercury cadmium tellurides**
DEF Compounds of tellurium exhibiting photovoltaic characteristics and used for photodiodes and photodetectors in the 3 to 12 micrometer wavelengths at cryogenic temperatures. Used for cadmium mercury tellurides.
UF *cadmium mercury tellurides*
GS chalcogenides
 . tellurides
 . . mercury tellurides
 . . . **mercury cadmium tellurides**
 mercury compounds
 . mercury tellurides
 . . **mercury cadmium tellurides**
 tellurium compounds
 . tellurides
 . . mercury tellurides
 . . . **mercury cadmium tellurides**
RT infrared detectors
 photoconductivity
 photoconductors
 photodiodes
- mercury compounds**
GS **mercury compounds**
 . mercury oxides
 . mercury tellurides
 . . mercury cadmium tellurides
RT ∞ chemical compounds
 ∞ Group 2B compounds
 ∞ metal compounds
- Mercury flights**
GS space flight
 . manned space flight
 . . **Mercury flights**
 . . . Mercury MA-1 flight
 . . . Mercury MA-2 flight
- . . . Mercury MA-3 flight
 - . . . Mercury MA-4 flight
 - . . . Mercury MA-5 flight
 - . . . Mercury MA-6 flight
 - . . . Mercury MA-7 flight
 - . . . Mercury MA-8 flight
 - . . . Mercury MA-9 flight
 - . . . Mercury MR-1 flight
 - . . . Mercury MR-2 flight
 - . . . Mercury MR-3 flight
 - . . . Mercury MR-4 flight
- RT Atlas launch vehicles
 manned spacecraft
 space capsules
- mercury ion engines**
DEF Machines providing thrust by expelling accelerated or high velocity mercury ions and often using energy provided by nuclear reactors.
GS engines
 . rocket engines
 . . electric rocket engines
 . . . electrostatic engines
 ion engines
 **mercury ion engines**
RT nuclear propulsion
 nuclear rocket engines
 plasma engines
- mercury isotopes**
GS chemical elements
 . mercury (metal)
 . . **mercury isotopes**
 . . . nuclides
 . . . isotopes
 **mercury isotopes**
 liquids
 . liquid metals
 . . mercury (metal)
 . . . **mercury isotopes**
 metals
 . liquid metals
 . . mercury (metal)
 . . . **mercury isotopes**
 . . . transition metals
 . . mercury (metal)
 . . . **mercury isotopes**
- mercury lamps**
GS lighting equipment
 . luminaires
 . . **mercury lamps**
RT light sources
 phosphors
 sterilization
 xenon lamps
- Mercury MA-1 flight**
GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-1 flight**
RT Atlas launch vehicles
- Mercury MA-2 flight**
UF *MA-2 mission*
GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-2 flight**
RT Atlas launch vehicles
 Faith 7
- Mercury MA-3 flight**
UF *MA-3 flight*
GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-3 flight**
RT Atlas launch vehicles
- Mercury MA-4 flight**
UF *MA-4 flight*
GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-4 flight**

Mercury MA-5 flight

RT Atlas launch vehicles

Mercury MA-5 flight

UF *MA-5 flight*

GS space flight
. manned space flight
. . Mercury flights
. . . **Mercury MA-5 flight**

RT Atlas launch vehicles

Mercury MA-6 flight

GS space flight
. manned space flight
. . Mercury flights
. . . **Mercury MA-6 flight**

RT Atlas launch vehicles
Friendship 7

Mercury MA-7 flight

GS space flight
. manned space flight
. . Mercury flights
. . . **Mercury MA-7 flight**

RT Atlas launch vehicles
Aurora 7

Mercury MA-8 flight

UF *MA-8 flight*

GS space flight
. manned space flight
. . Mercury flights
. . . **Mercury MA-8 flight**

RT Atlas launch vehicles
SIGMA 7

Mercury MA-9 flight

UF *MA-9 flight*

GS space flight
. manned space flight
. . Mercury flights
. . . **Mercury MA-9 flight**

RT Atlas launch vehicles
Faith 7

Mercury MR-1 flight

GS space flight
. manned space flight
. . Mercury flights
. . . **Mercury MR-1 flight**

Mercury MR-2 flight

GS space flight
. manned space flight
. . Mercury flights
. . . **Mercury MR-2 flight**

Mercury MR-3 flight

UF *MR-3 flight*

GS space flight
. manned space flight
. . Mercury flights
. . . **Mercury MR-3 flight**

Mercury MR-4 flight

GS space flight
. manned space flight
. . Mercury flights
. . . **Mercury MR-4 flight**

mercury oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **mercury oxides**
mercury compounds
. **mercury oxides**

Mercury project

GS programs
. NASA programs
. . NASA space programs
. . . **Mercury project**
. projects
. . **Mercury project**
. space programs
. . NASA space programs
. . . **Mercury project**

RT Apollo project
Atlas launch vehicles
Gemini project
Little Joe 2 launch vehicle

manned space flight
manned spacecraft

Mercury spacecraft

GS manned spacecraft
. **Mercury spacecraft**
. . Aurora 7
. . Faith 7
. . Friendship 7
. . SIGMA 7
reentry vehicles
. recoverable spacecraft
. . **Mercury spacecraft**
. . . Aurora 7
. . . Faith 7
. . . Friendship 7
. . . SIGMA 7
soft landing spacecraft
. **Mercury spacecraft**
. . Aurora 7
. . Faith 7
. . Friendship 7
. . SIGMA 7
space capsules
. **Mercury spacecraft**
. . Aurora 7
. . Faith 7
. . Friendship 7
. . SIGMA 7

Mercury surface

DEF The surface of the planet Mercury.

GS planetary surfaces
. **Mercury surface**

RT extraterrestrial environments
Mercury (planet)
Mercury atmosphere
MESSENGER (spacecraft)
planetary craters
satellite surfaces
solar system
terrestrial planets

mercury tellurides

GS chalcogenides
. tellurides
. . **mercury tellurides**
. . . mercury cadmium tellurides
mercury compounds
. **mercury tellurides**
. . mercury cadmium tellurides
tellurium compounds
. tellurides
. . **mercury tellurides**
. . . mercury cadmium tellurides

mercury vapor

GS chemical elements
. mercury (metal)
. . **mercury vapor**
liquids
. liquid metals
. . mercury (metal)
. . . **mercury vapor**
metals
. liquid metals
. . mercury (metal)
. . . **mercury vapor**
metal vapors
. **mercury vapor**
. transition metals
. . mercury (metal)
. . . **mercury vapor**
vapors
. metal vapors
. . **mercury vapor**

RT cesium vapor
sodium vapor

merging routines

GS computer programs
. **merging routines**

RT ∞ routines

meridional flow

GS fluid flow
. gas flow
. . air flow
. . . air currents
. . . . **meridional flow**

RT atmospheric circulation
flow geometry
wind (meteorology)
wind direction
zonal flow (meteorology)

Merlin (helicopter)

(added April 1997)

USE **EH-101 helicopter**

meromorphic functions

GS analysis (mathematics)
. complex variables
. . **meromorphic functions**
. . . elliptic functions
. . . rational functions
functions (mathematics)
. **meromorphic functions**
. . elliptic functions
. . rational functions

Merritt Island (FL)

GS landforms
. islands
. . **Merritt Island (FL)**

RT Florida

merwinite

GS calcium compounds
. **merwinite**
magnesium compounds
. **merwinite**
minerals
. **merwinite**
silicon compounds
. silicates
. . **merwinite**

mesas

DEF Isolated, nearly level landmasses standing distinctly above the surrounding country, bounded by abrupt or steeply sloping erosion scarps on all sides, and capped by layers of resistant, nearly horizontal rock (often lava). Less strictly, very broad, flat topped, usually isolated hills or mountains of moderate height bounded on at least one side by a steep cliff or slope and representing an erosion remnant. Mesas are similar to, but have more summit area than buttes and are common topographical features in arid and semiarid regions of the United States. Mesas are often considered broad terraces or comparatively flat plateaus along river valleys. They are marked by an abrupt slope or escarpment on one side.

GS landforms
. terraces (landforms)
. . plateaus
. . . **mesas**
. . . . buttes

RT flats (landforms)
highlands
mountains

MESFETs

USE **field effect transistors**

mesh

RT fabrics
 ∞ grids
strands
webbing
 ∞ webs

mesh (mathematics)

USE **computational grids**

mesh generation (mathematics)

USE **grid generation (mathematics)**

mesh refinement (mathematics)

(added August 2003)

USE **grid refinement (mathematics)**

meshfree methods

(added April 2008)

DEF Computational techniques that provide numerical solutions by using a set of arbitrarily distributed nodes (discretization points) and weight functions without the use of mesh or grid information in their formulations.

UF *gridfree methods*
meshless methods
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **meshfree methods**
 RT computational electromagnetics
 computational fluid dynamics
 computational mechanics
 finite element method
 Galerkin method
 integral equations
 kernel functions
 magnetohydrodynamic simulation
 partial differential equations
 particle in cell technique
 plasma dynamics
 solid mechanics
 weighting functions

meshless methods
 (added May 2008)
 USE **meshfree methods**

mesitylene
 GS organic compounds
 . hydrocarbons
 . . **mesitylene**

mesometeorology
 GS meteorology
 . **mesometeorology**
 RT aeronomy
 lower atmosphere
 micrometeorology

meson resonance
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **meson resonance**
 X mesons
 . . fermions
 . . . **meson resonance**
 X mesons
 . . hadrons
 . . mesons
 **meson resonance**
 X mesons
 . nuclear particles
 . . bosons
 . . mesons
 **meson resonance**
 X mesons
 resonance
 . **meson resonance**
 . . X mesons
 RT baryons
 hyperons

meson-meson interactions
 GS particle interactions
 . elementary particle interactions
 . . **meson-meson interactions**
 RT electromagnetic interactions
 ∞ interactions

meson-nucleon interactions
 GS particle interactions
 . elementary particle interactions
 . . **meson-nucleon interactions**
 RT charged particles
 ∞ interactions
 mesons
 Yukawa potential

mesons
 DEF In the classification of subatomic particles by mass, the second lightest of such particles. Their mass is intermediate between that of the lepton and the nucleon.
 GS particles
 . elementary particles
 . . bosons
 . . . **mesons**
 eta-mesons
 hyperons
 xi hyperons
 kaons

. . . . meson resonance
 X mesons
 muons
 omega-mesons
 pions
 vector mesons
 rho-mesons
 sigma-mesons
 . . hadrons
 . . . **mesons**
 eta-mesons
 hyperons
 xi hyperons
 kaons
 meson resonance
 X mesons
 muons
 omega-mesons
 pions
 vector mesons
 rho-mesons
 sigma-mesons
 RT baryons
 boson fields
 charged particles
 corpuscular radiation
 cosmic rays
 gluons
 leptons
 meson-nucleon interactions
 muonium
 Pomeranchuk theorem
 strangeness

mesopause
 SN (ALTITUDE APPROXIMATELY 90 KM)
 DEF The base of the inversion at the top of the mesosphere, usually found at 80 to 85 kilometers.
 GS Earth atmosphere
 . middle atmosphere
 . . mesosphere
 . . . **mesopause**
 RT stratopause

mesophiles
 RT microorganisms
 psychrophiles
 thermophiles

mesoscale phenomena
 DEF Meteorological phenomena extending approximately one to a hundred kilometers (mesoscale cloud patterns, for example).
 GS **mesoscale phenomena**
 . jet streams (meteorology)
 RT arc clouds
 meteorology
 phenomenology
 wind (meteorology)

mesosphere
 SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 45 AND 90 KM)
 DEF The atmospheric shell, in which temperature generally decreases with heights, extending from the stratopause at about 50 to 55 kilometers to the mesopause at about 80 to 85 kilometers.
 GS Earth atmosphere
 . middle atmosphere
 . . **mesosphere**
 . . . mesopause
 RT chemosphere
 Earth ionosphere

homosphere
 Solar Mesosphere Explorer
 stratopause

Mesozoic Era
 (added June 1989)
 DEF An era of geologic time, from the end of the Paleozoic Era to the beginning of the Cenozoic Era, or from about 225 to about 65 million years ago.
 GS **Mesozoic Era**
 . Cretaceous Period
 RT Cretaceous-Tertiary boundary
 geochronology
 paleontology
 Paleozoic Era

message processing
 DEF In communication operations, the acceptance, preparation for transmission, receipt and/or delivery of a series of words or symbols intended for conveying information.
 RT automatic repeat request
 communicating
 communication
 cryptography
 information flow
 messages
 packet transmission
 ∞ processing
 semantics
 signal processing
 signal transmission
 symbols

messages
 GS communicating
 . information dissemination
 . . **messages**
 RT automatic repeat request
 communication theory
 information theory
 intelligibility
 message processing
 semantics
 sentences
 signal transmission
 ∞ signals
 syllables
 symbols
 vocoders
 words (language)

MESSENGER (spacecraft)
 (added October 2004)
 DEF Spacecraft and related mission designed to study the structure, geochemistry, and magnetic fields of the planet Mercury. The science payload consists of the Mercury Dual Imaging System (MDIS), the Gamma-Ray and Neutron Spectrometer, the Mercury Laser Altimeter, the Mercury Atmospheric and Surface Composition Spectrometer, the Energetic Particle and Plasma Spectrometer, and a magnetometer, radio science instrument, and x-ray spectrometer. MESSENGER (MErcury Surface, Space ENvironment, Geochemistry, and Ranging) was launched August 2004.
 GS interplanetary spacecraft
 . **MESSENGER (spacecraft)**
 . unmanned spacecraft
 . space probes
 . . **MESSENGER (spacecraft)**
 RT Mercury (planet)
 Mercury surface
 planetary geology
 planetary magnetic fields
 space exploration
 space missions

messenger RNA
 USE **ribonucleic acids**

Messerschmitt ME P-160 aircraft
 USE **P-160 aircraft**

Messerschmitt ME P-308 aircraft
 USE **P-308 aircraft**

metabolic diseases
 GS diseases

metabolic wastes

- . **metabolic diseases**
- RT metabolism

metabolic wastes

- GS wastes
 - . **metabolic wastes**
 - . . human wastes
 - . . . feces
 - . . . urine
- RT activated sludge
- air pollution
- carbon dioxide
- composting
- environment effects
- environment pollution
- environmental surveys
- expired air
- liquid wastes
- manures
- metabolites
- organic wastes (fuel conversion)
- pollution
- sewage
- sewers
- solid wastes
- waste disposal

metabolism

DEF The sum of all physical and chemical processes by which living organized substance is produced and maintained and by which energy is made available for the use of the organism.

- GS **metabolism**
 - . adrenal metabolism
 - . ascorbic acid metabolism
 - . calcium metabolism
 - . carbohydrate metabolism
 - . . hyperglycemia
 - . . hypoglycemia
 - . catabolism
 - . electrolyte metabolism
 - . enzyme activity
 - . . fermentation
 - . hormone metabolisms
 - . hydrogen metabolism
 - . hypometabolism
 - . mineral metabolism
 - . nitrogen metabolism
 - . oxygen metabolism
 - . phosphorus metabolism
 - . protein metabolism
 - . . lipid metabolism

- RT adenosine monophosphate
- caloric requirements
- enzymology
- heterotrophs
- homeostasis
- Krebs cycle
- metabolic diseases
- metabolites
- nutrition
- obesity
- osteoporosis
- oxygen consumption
- physiology
- respiration
- secretions
- thermoregulation
- vasopressins

metabolites

DEF Products of biological synthesis and/or metabolism.

- RT biochemistry
- biosynthesis
- metabolic wastes
- metabolism
- organic compounds

metacomputing

(added December 2003)

- USE **grid computing (computer networks)**

metadata

(added June 2004)

DEF Data that provides information about other data. Structured information describing any object or resource.

- GS information
 - . **metadata**
- RT ∞ data
 - data bases
 - data management
 - indexing (information science)
 - information retrieval

metagalaxy

- USE **universe**

metal air batteries

- GS electric generators
 - . direct power generators
 - . . primary batteries
 - . . . **metal air batteries**
 - zinc-oxygen batteries
 - electrochemical cells
 - . electric batteries
 - . . primary batteries
 - . . . **metal air batteries**
 - zinc-oxygen batteries
- RT dry cells
 - storage batteries

metal bonding

- GS bonding
 - . **metal bonding**
 - . . metal-metal bonding
- RT adhesion
- adhesive bonding
- bimetals
- brazing
- diffusion welding
- explosive welding
- heat affected zone
- joints (junctions)
- laminates
- resin bonding
- soldering
- welding

metal clusters

(added January 1994)

DEF Bonded aggregations of like metal atoms.

- RT agglomeration
- atomic clusters
- chemisorption
- clumps
- ∞ clusters
- metals
- molecular clusters
- nanoclusters
- nucleation

metal coatings

- SN (COATINGS CONSISTING OF METAL)
- GS coatings
 - . **metal coatings**
 - . . aluminum coatings
 - . . gold coatings
 - . . nickel coatings
 - . . zinc coatings
- RT anodic stripping
- antiradar coatings
- ceramic coatings
- cladding
- corrosion
- corrosion prevention
- deposition
- electroless deposition
- hot corrosion
- ion plating
- lacquers
- magnetron sputtering
- metallizing
- ∞ metallurgy
- metals
- optical coatings
- oxides
- paints
- ∞ plates
- plating
- primers (coatings)
- protective coatings
- sprayed coatings

metal combustion

- GS combustion

- . **metal combustion**
- RT fuel combustion
- gas-metal interactions
- metals
- oxidation
- propellant combustion
- pyrophoric materials
- solid propellant combustion
- solid propellant ignition

∞ metal compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ alkali metal compounds
- aluminum compounds
- amines
- antimony compounds
- barium compounds
- beryllium compounds
- bismuth compounds
- cadmium compounds
- calcium compounds
- cerium compounds
- cesium compounds
- ∞ chemical compounds
- chromium compounds
- cobalt compounds
- copper compounds
- dysprosium compounds
- erbium compounds
- europium compounds
- gallium compounds
- germanium compounds
- hafnium compounds
- indium compounds
- iridium compounds
- iron compounds
- lanthanum compounds
- lead compounds
- lead organic compounds
- lithium compounds
- lithium iodates
- lutetium compounds
- magnesium compounds
- manganese compounds
- mercury compounds
- metal fluorides
- metal halides
- metal hydrides
- metal oxides
- metals
- molybdenum compounds
- neodymium compounds
- neptunium compounds
- nickel compounds
- niobium compounds
- organic aluminum compounds
- organic germanium compounds
- organic lithium compounds
- organic tin compounds
- organometallic compounds
- osmium compounds
- platinum compounds
- plutonium compounds
- potassium compounds
- praseodymium compounds
- protactinium compounds
- rare earth compounds
- refractory materials
- rhenium compounds
- rubidium compounds
- ruthenium compounds
- samarium compounds
- scandium compounds
- silver compounds
- sodium compounds
- strontium compounds
- strontium oxides
- tantalum compounds
- technetium compounds
- thallium compounds
- thorium compounds
- thulium compounds
- tin compounds
- titanium compounds
- tungsten compounds
- uranium compounds
- vanadium compounds
- vanadyl compounds

ytterbium compounds
yttrium compounds
zinc compounds
zirconium compounds

metal corrosion
USE **corrosion**

metal crystals
GS crystals
. **metal crystals**
RT crystal lattices
crystal structure
metallography
metals

metal cutting
GS cutting
. **metal cutting**
RT countersinking
grinding (material removal)
knurling
laser cutting
machine tools
machining
melting
micromachining
milling (machining)
perforating
planing
plasma arc cutting
scarfing
shearing
slicing
spark machining
spiking

metal drawing
GS forming techniques
. **metal drawing**
metal working
. **metal drawing**
RT bulging
bundle drawing
cold drawing
cold working
∞ drawing
ductility
hot working
magnetic forming
stretch forming

metal fatigue
GS fatigue (materials)
. **metal fatigue**
RT bending fatigue
Coffin-Manson law
crack closure
crack initiation
crack propagation
fracturing
grain size
inelastic stress
retirement for cause
rupturing
Segre characteristic
short cracks
S-N diagrams
stress corrosion
stress corrosion cracking
thermal fatigue
transgranular corrosion

metal fibers
GS fibers
. **metal fibers**
RT Borsic (tradename)
fiber composites
filament winding
reinforcing fibers

metal films
RT coatings
diamond films
∞ films
metallizing
metals
nickel coatings
pickling (metallurgy)
sputtering gages

thin films

metal finishing
GS **metal finishing**
. electropolishing
. peening
. . shot peening
RT cleaning
coating
coatings
descaling
pickling (metallurgy)
plating
surface finishing

metal fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **metal fluorides**
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . . zirconium fluorides
. halides
. . fluorides
. . . **metal fluorides**
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . . zirconium fluorides
. metal halides
. . . **metal fluorides**
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . . zirconium fluorides

. . . . zinc fluorides
. . . . zirconium fluorides
RT ∞ metal compounds

metal foams
DEF Foamed materials formed under low gravity conditions in space from sputtered metal deposits. This experimental space processing was completed in the second NASA SPAR flight.
GS foams
. **metal foams**
RT bubbles
foaming
low gravity manufacturing
∞ materials science
melting
∞ metallurgy
Space Processing Applications
Rocket

metal foils
GS foils (materials)
. **metal foils**
RT honeycomb structures
metals
multilayer insulation
∞ sheets

metal forging
USE **forging**

metal forming
USE **forming techniques**
metal working

metal fuels
GS fuels
. chemical fuels
. . **metal fuels**
RT aluminum compounds
beryllium compounds
boron compounds
cesium compounds
gelled propellants
hybrid propellants
lithium compounds
metals
slurry propellants
solid propellants

metal grinding
GS grinding (material removal)
. **metal grinding**
RT forming techniques
grinding machines
surface finishing

metal halides
GS halogen compounds
. halides
. . **metal halides**
. . . alkali halides
. . . . cesium halides
. cesium bromides
. cesium fluorides
. cesium iodides
. . . . potassium iodides
. . . . sodium bromides
. . . . sodium chlorides
. . . . sodium fluorides
. . . . sodium iodides
. . . aluminum chlorides
. . . barium fluorides
. . . beryllium chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . chromium bromides
. . . copper chlorides
. . . hafnium iodides
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium bromides
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. fluorspar

metal hydrides

- cesium fluorides
- chromium fluorides
- cobalt fluorides
- copper fluorides
- lanthanum fluorides
- lithium fluorides
- magnesium fluorides
- nickel fluorides
- plutonium fluorides
- protactinium fluorides
- sodium fluorides
- strontium fluorides
- thorium fluorides
- tungsten fluorides
- uranium fluorides
- zinc fluorides
- zirconium fluorides
- niobium iodides
- potassium bromides
- potassium chlorides
- silver halides
- silver bromides
- silver chlorides
- silver iodides
- strontium bromides
- technetium fluorides
- titanium chlorides
- tungsten halides
- tungsten chlorides
- tungsten fluorides
- zinc chlorides
- zirconium iodides

RT ∞ metal compounds

metal hardening

USE **hardening (materials)**

metal hydrides

UF *plumbane*

GS hydrogen compounds

- . hydrides
- . . **metal hydrides**
- . . . aluminum hydrides
- aluminum borohydrides
- . . . beryllium hydrides
- . . . cesium hydrides
- . . . lithium hydrides
- lithium aluminum hydrides
- . . . potassium hydrides
- . . . sodium hydrides

RT ∞ metal compounds

metal insulator semiconductors

USE **MIS (semiconductors)**

metal ions

GS ions

- . **metal ions**
- . . ferric ions
- . . manganese ions

RT barium ion clouds

- cations
- crystal field theory
- ion implantation
- ion plating
- metals
- positive ions

metal joints

GS joints (junctions)

- . **metal joints**
- . . soldered joints
- . . welded joints
- . . . spot welds

RT butt joints

- explosive welding
- lap joints
- riveted joints
- scarf joints
- seams (joints)

metal matrix composites

GS composite materials

- . **metal matrix composites**
- . . aluminum boron composites
- . . aluminum graphite composites
- . . Borsic (tradename)
- . . eutectic composites

RT aramid fiber composites

- boron fibers

- chemical compatibility
- crack bridging
- electrodeposition
- fiber composites
- fiber pullout
- fiber pushout
- fibers
- functionally gradient materials
- hybrid composites

∞ materials

∞ matrices

- matrix materials
- monotectic alloys
- particulate reinforced composites
- plasma spraying
- powder metallurgy
- reinforcing fibers
- resin matrix composites
- squeeze casting
- whisker composites

metal nitrides

GS nitrogen compounds

- . nitrides
- . . **metal nitrides**
- . . . aluminum nitrides
- . . . beryllium nitrides
- . . . gallium nitrides
- . . . tantalum nitrides
- . . . titanium nitrides
- . . . zirconium nitrides

RT transition metals

metal organic chemical vapor deposition

USE **metalorganic chemical vapor deposition**

metal oxide semiconductors

UF *MOS (semiconductors)*

GS electronic equipment

- . solid state devices
- . . semiconductor devices
- . . . **metal oxide semiconductors**
- CMOS
- ITO (semiconductors)
- SOS (semiconductors)
- semiconductors (materials)
- . **metal oxide semiconductors**
- . . CMOS
- . . ITO (semiconductors)
- . . SOS (semiconductors)

RT capacitance-voltage characteristics

- ion implantation
- rectifiers
- SOI (semiconductors)

metal oxides

GS chalcogenides

- . oxides
- . . **metal oxides**
- . . . alkaline earth oxides
- barium oxides
- beryllium oxides
- alexandrite
- calcium oxides
- akermanite
- magnesium oxides
- akermanite
- periclase
- . . . aluminum oxides
- alexandrite
- sapphire
- . . . bismuth oxides
- . . . cerium oxides
- . . . cesium oxides
- . . . chromium oxides
- . . . cobalt oxides
- . . . copper oxides
- . . . gallium oxides
- . . . hafnium oxides
- . . . iron oxides
- hematite
- ilmenite
- magnetite
- . . . lanthanum oxides
- . . . lead oxides
- . . . lithium oxides
- . . . manganese oxides
- Hopcalite (trademark)
- . . . mercury oxides

- . . . mixed oxides
- BSCCO superconductors
- YBCO superconductors
- . . . molybdenum oxides
- . . . nickel oxides
- . . . niobium oxides
- . . . platinum oxides
- . . . plutonium oxides
- . . . potassium oxides
- . . . scandium oxides
- . . . silver oxides
- . . . sodium peroxides
- . . . strontium oxides
- . . . tantalum oxides
- . . . thorium oxides
- . . . tin oxides
- . . . titanium oxides
- anatase
- ilmenite
- rutile
- . . . tungsten oxides
- scheelite
- . . . uranium oxides
- . . . vanadium oxides
- . . . yttrium oxides
- . . . zinc oxides
- . . . zirconium oxides
- yttria-stabilized zirconia

RT cathodic coatings

∞ metal compounds

- oxide films
- vanadates

metal particles

GS particles

- . **metal particles**
- . . metal powder
- . . . platinum black
- . . . powdered aluminum
- sintered aluminum powder

RT particulate reinforced composites

- powder metallurgy
- scrap
- sputtering

metal plates

UF *plate (metal)*

GS structural members

- . plates (structural members)
- . . **metal plates**
- . . . boiler plate

RT armor

- bars
- billets
- flanges
- flat plates
- girder webs
- parallel plates

∞ plates

- rectangular plates
- slabs
- thick plates
- thin plates

metal polishing

UF *polished metals*

GS polishing

- . **metal polishing**
- . . electropolishing

RT cleaning

- surface finishing

metal powder

UF *powdered metals*

GS particles

- . metal particles
- . . **metal powder**
- . . . platinum black
- . . . powdered aluminum
- sintered aluminum powder
- . powder (particles)
- . . **metal powder**
- . . . platinum black
- . . . powdered aluminum
- sintered aluminum powder

RT atomizing

- bearing alloys
- comminution
- compressibility

compressing
 electrodeposition
 flakes
 liquid phase sintering
 metals
 mixing
 porous materials
 powder metallurgy
 reduction (chemistry)
 sintering
 size separation

metal propellants

GS propellants
 . rocket propellants
 . . solid rocket propellants
 . . . **metal propellants**
 . solid propellants
 . . solid rocket propellants
 . . . **metal propellants**
 RT aluminum compounds
 beryllium compounds
 boron compounds
 gelled propellants
 gelled rocket propellants
 hybrid propellants
 monopropellants
 slurry propellants

metal sheets

UF *sheet metal*
 RT plates (structural members)
 ∞ sheets

metal shells

GS shells (structural forms)
 . **metal shells**
 RT circular shells
 cylindrical shells
 hemispherical shells
 hulls (structures)
 membrane structures
 orthotropic shells
 reinforced shells
 skin (structural member)
 spherical shells
 thin walled shells
 toroidal shells

metal spinning

UF *spin forging*
spinning (metallurgy)
 GS forming techniques
 . **metal spinning**
 . . hydrospinning
 metal working
 . **metal spinning**
 . . hydrospinning
 spin
 . **metal spinning**
 . . hydrospinning
 RT cold working
 extruding
 hot working

metal spraying

GS spraying
 . **metal spraying**
 RT arc spraying
 coating
 coatings
 flame spraying
 HVOF thermal spraying
 metallizing
 surface finishing

metal strips

RT billets
 ribbons
 strakes
 ∞ strip
 strip transmission lines

metal surfaces

RT adatoms
 crack initiation
 crystal surfaces
 erosion
 gas-solid interfaces
 liquid-solid interfaces

oxide films
 solid surfaces
 surface finishing
 surface properties
 surface reactions
 ∞ surfaces

metal vapor lasers

DEF Stimulated emission devices, the active materials of which are vaporized metals.
 GS stimulated emission devices
 . lasers
 . . **metal vapor lasers**
 RT laser materials
 laser microscopy
 optical pumping

metal vapors

GS metals
 . **metal vapors**
 . . mercury vapor
 . . sodium vapor
 vapors
 . **metal vapors**
 . . mercury vapor
 . . sodium vapor
 RT alkali metals
 alkali vapor lamps
 gas-metal interactions
 heat transfer
 liquid metals
 vapor deposition

metal whisker reinforcement

USE **whisker composites**

metal working

SN (METAL DEFORMATION FOR CHANGING SHAPE AND FOR PROPERTIES--EXCLUDES CASTING, CUTTING, DEPOSITION PROCESS AND MACHINING)
 UF *metal forming*
 GS **metal working**
 . ausforming
 . bulging
 . cladding
 . coning
 . explosive forming
 . forging
 . hydroforming
 . magnetic forming
 . metal drawing
 . metal spinning
 . . hydrospinning
 . sizing (shaping)
 RT brakes (forming or bending)
 ∞ breakdown
 casting
 cold pressing
 cold rolling
 cold working
 decarburization
 deep drawing
 dimpling
 electrohydraulic forming
 electromagnetic hammers
 explosive welding
 extruding
 flattening
 forming techniques
 hardening (materials)
 hot isostatic pressing
 hot pressing
 hot working
 laser applications
 laser machining
 leveling
 machining
 malleability
 ∞ metallurgy
 micromachining
 peening
 perforating
 piercing
 plasma arc cutting
 pressing (forming)
 pyrometallurgy
 ∞ reduction
 roll forming
 ∞ rolling

shearing
 shot peening
 squeeze casting
 stamping
 stretch forming
 stretching
 superplastic forming
 swaging
 tempering
 winding
 work hardening

metal-barrier-metal junctions

USE **MBM junctions**

metal-gas systems

RT gas lubricants
 gases
 gas-metal interactions
 metals
 ∞ systems
 vapor phases

metal-insulator-metal diodes

USE **MIM diodes**

metal-insulator-metal semiconductors

USE **MIM (semiconductors)**

metallic glasses

DEF Amorphous alloys (glassy metals) produced by extremely rapid quenching of molten transition-metal alloys (e.g., iron, nickel, and/or cobalt). These metallic glasses exhibit unique mechanical, magnetic, and electrical properties, superconductive behavior, and anticorrosion resistance, depending on the alloys, their formation and quenching techniques.

GS glass
 . **metallic glasses**
 RT glass coatings
 glass fibers
 optical properties
 silicon dioxide
 spin glass
 vitreous materials

metallic hydrogen

GS chemical elements
 . hydrogen
 . . hydrogen isotopes
 . . . **metallic hydrogen**
 . nuclides
 . isotopes
 . . . hydrogen isotopes
 **metallic hydrogen**
 gases
 . hydrogen
 . . hydrogen isotopes
 . . . **metallic hydrogen**
 RT critical temperature
 solid phases
 solid state
 solidified gases
 solids

metallic plasmas

GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **metallic plasmas**
 cesium plasma
 uranium plasmas
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **metallic plasmas**
 cesium plasma
 uranium plasmas
 RT electron plasma
 mercury arcs
 plasma sheaths

metallic stars

GS celestial bodies
 . stars
 . . **metallic stars**
 RT abundance
 chemical composition

metallicity

metallicity
 stellar atmospheres
 stellar structure

metallicity

DEF The abundance index of a metal or metals for a celestial body.

RT abundance
 chemical analysis
 chemical composition
 galactic clusters
 galaxies
 globular clusters
 hydrogen
 interstellar matter
 mass ratios
 metallic stars
 metals
 spectroscopic analysis
 star clusters
 stars

metallizing

GS coating
 . **metallizing**
 coatings
 . **metallizing**
 RT cladding
 electroplating
 finishes
 flame spraying
 laminates
 metal coatings
 metal films
 metal spraying
 plating
 spraying
 substrates
 vapor deposition

metallography

RT abrasion
 alloys
 anisotropy
 crystal lattices
 crystallography
 electropolishing
 etching
 ferrography
 inclusions
 isotropy
 ∞ materials tests
 metal crystals
 ∞ metallurgy
 metals
 microporosity
 microscopes
 microstructure
 mushy zones
 order-disorder transformations
 photomicrography
 polishing
 radiography
 replicas
 solid suspensions
 time temperature parameter
 vibratory polishing
 Widmanstatten structure
 x ray diffraction

metalloids

UF *semimetals*
 GS chemical elements
 . **metalloids**
 . . antimony
 . . antimony isotopes
 . . arsenic
 . . arsenic isotopes
 . . boron
 . . . boron isotopes
 . . . boron 10
 . . germanium
 . . . germanium isotopes
 . . polonium
 . . . polonium isotopes
 polonium 208
 polonium 209
 polonium 210
 . . silicon
 . . amorphous silicon

. . . porous silicon
 . . . silicon isotopes
 . . tellurium

RT alloys
 arsenic alloys
 boron alloys
 intermetallics
 metals
 organometallic compounds
 semiconductors (materials)

metalloorganic compounds
 USE **organometallic compounds**

metalloxiloxane polymers
 USE **organometallic polymers**

metalloxane polymers
 USE **organometallic polymers**

∞ **metallurgy**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT alloying
 alloys
 beneficiation
 casting
 coating
 coatings
 corrosion
 crystallography
 dispersion strengthening
 duplex operation
 ferrous metals
 foundries
 fractography
 furnaces
 hardening (materials)
 heat affected zone
 heat treatment
 hydrometallurgy
 levitation melting
 light alloys
 mechanical properties
 melt spinning
 melting
 metal coatings
 metal foams
 metal working
 metallography
 metals
 nonferrous metals
 ∞ physical sciences
 powder metallurgy
 pyrometallurgy
 rapid quenching (metallurgy)
 recrystallization
 ∞ science
 smelting
 thermomechanical treatment

metal-metal bonding

GS bonding
 . metal bonding
 . . **metal-metal bonding**
 RT adhesive bonding
 adhesives
 diffusion welding
 explosive welding
 heat affected zone
 inertia bonding
 resin bonding
 soldering
 welding

metal-nitride-oxide-semiconductors

DEF Class of semiconductors utilizing silicon nitride and silicon oxide dielectrics.

GS electronic equipment
 . solid state devices

. . **metal-nitride-oxide-semiconductors**
 semiconductors (materials)

. . **metal-nitride-oxide-semiconductors**
 RT chips (memory devices)

metal-nitride-oxide-silicon

UF *MNOS*

GS semiconductors (materials)
 . **metal-nitride-oxide-silicon**

metalorganic chemical vapor deposition

(added May 1991)

UF *metal organic chemical vapor deposition*
MOCVD (vapor deposition)
OMCVD (vapor deposition)
organometallic vapor deposition

GS deposition
 . vapor deposition
 . . **metalorganic chemical vapor deposition**

RT coating
 crystal growth
 organometallic compounds
 space processing

metal-oxide-metal semiconductors

USE **MOM (semiconductors)**

metals

UF *magnetic metals*
 GS **metals**
 . actinide series
 . . actinium
 . . radium
 . . . radium isotopes
 radium 226
 . . thorium
 . . . thorium isotopes
 . . transuranium elements
 . . . americium
 americium isotopes
 americium 241
 . . . berkelium
 . . . californium
 californium isotopes
 . . . curium
 curium isotopes
 curium 242
 curium 244
 . . . einsteinium
 . . . fermium
 . . . lawrencium
 . . . mendelevium
 . . . neptunium
 neptunium isotopes
 . . . nobelium
 . . . plutonium
 plutonium isotopes
 plutonium 238
 plutonium 239
 plutonium 240
 plutonium 241
 plutonium 244
 . . . sergenium
 . . uranium
 . . . uranium isotopes
 uranium 232
 uranium 233
 uranium 234
 uranium 235
 uranium 238
 . . alkali metals
 . . cesium
 . . . cesium isotopes
 cesium 133
 cesium 134
 cesium 137
 cesium 144
 . . cesium vapor
 . . francium
 . . lithium
 . . . liquid lithium
 . . . lithium isotopes
 potassium
 liquid potassium
 potassium isotopes
 potassium 38
 potassium 39
 potassium 40
 . . . rubidium
 rubidium isotopes
 rubidium 86
 . . . sodium
 . . . liquid sodium
 sodium isotopes
 sodium 22

- sodium 24
- . . . sodium vapor
- . alkaline earth metals
- . . barium isotopes
- . aluminum
- . . aluminum isotopes
- . . . aluminum 26
- . . . aluminum 27
- . antimony isotopes
- . astatine
- . . astatine isotopes
- . barium
- . . barium isotopes
- . beryllium
- . . beryllium isotopes
- . . . beryllium 7
- . . . beryllium 9
- . . . beryllium 10
- . bismuth
- . . bismuth isotopes
- . calcium
- . . calcium isotopes
- . ferrous metals
- . gallium
- . . gallium isotopes
- . indium
- . . indium isotopes
- . lead (metal)
- . . lead isotopes
- . liquid metals
- . . liquid lithium
- . . liquid potassium
- . . liquid sodium
- . . mercury (metal)
- . . . mercury isotopes
- . . . mercury vapor
- . magnesium
- . . magnesium isotopes
- . metal vapors
- . . mercury vapor
- . . sodium vapor
- . noble metals
- . . gold
- . . . gold isotopes
- gold 198
- . . ruthenium
- . . . ruthenium isotopes
- . . silver
- . . . silver isotopes
- . nonferrous metals
- . protactinium
- . . protactinium isotopes
- . rare earth elements
- . . cerium
- . . . cerium isotopes
- cerium 137
- cerium 144
- . . dysprosium
- . . . dysprosium isotopes
- . . erbium
- . . . erbium isotopes
- . . europium
- . . . europium isotopes
- . . gadolinium
- . . . gadolinium isotopes
- . . holmium
- . . . holmium isotopes
- . . lanthanum
- . . . lanthanum isotopes
- . . lutetium
- . . . lutetium isotopes
- . . neodymium
- . . . neodymium isotopes
- . . praseodymium
- . . . praseodymium isotopes
- . . promethium
- . . . promethium isotopes
- . . samarium
- . . . samarium isotopes
- . . scandium
- . . . scandium isotopes
- . . terbium
- . . . terbium isotopes
- . . thulium
- . . . thulium isotopes
- . . ytterbium
- . . . ytterbium isotopes
- . . yttrium
- . . . yttrium isotopes

- . refractory metals
- . . chromium
- . . . chromium isotopes
- . . iridium
- . . . iridium isotopes
- . . molybdenum
- . . niobium
- . . . niobium isotopes
- niobium 95
- . . osmium
- . . . osmium isotopes
- . . rhenium
- . . . rhenium isotopes
- . . tantalum
- . . . tantalum isotopes
- . . tungsten
- . . . tungsten isotopes
- . strontium
- . . strontium isotopes
- . . . strontium 85
- . . . strontium 87
- . . . strontium 89
- . . . strontium 90
- . thallium
- . . thallium isotopes
- . tin
- . . tin isotopes
- . transition metals
- . . cadmium
- . . . cadmium isotopes
- . . chromium
- . . . chromium isotopes
- . . cobalt
- . . . cobalt isotopes
- cobalt 58
- cobalt 60
- . . copper
- . . . copper isotopes
- . . gold
- . . . gold isotopes
- gold 198
- . . hafnium
- . . . hafnium isotopes
- . . iridium
- . . . iridium isotopes
- . . iron
- . . . iron isotopes
- iron 57
- iron 58
- iron 59
- . . manganese
- . . . manganese isotopes
- . . mercury (metal)
- . . . mercury isotopes
- . . . mercury vapor
- . . molybdenum
- . . nickel
- . . . nickel isotopes
- . . niobium
- . . . niobium isotopes
- niobium 95
- . . osmium
- . . . osmium isotopes
- . . palladium
- . . platinum
- . . . platinum isotopes
- . . rhenium
- . . . rhenium isotopes
- . . rhodium
- . . . rhodium isotopes
- . . ruthenium
- . . . ruthenium isotopes
- . . scandium
- . . . scandium isotopes
- . . silver
- . . . silver isotopes
- . . tantalum
- . . . tantalum isotopes
- . . technetium
- . . . technetium isotopes
- . . titanium
- . . . titanium isotopes
- . . tungsten
- . . . tungsten isotopes
- . . vanadium
- . . . vanadium isotopes
- . . yttrium
- . . . yttrium isotopes
- . . zinc

- . . . zinc isotopes
- . . zirconium
- . . . zirconium isotopes
- zirconium 95
- . heavy metals
- . ultrapure metals
- . uranium plasmas
- RT alloys
- antimony
- arsenic
- arsenic isotopes
- bimetals
- Borsic (tradename)
- cermets
- chemical elements
- composite materials
- conductors
- embedded atom method
- eutectic composites
- gadolinium alloys
- intermetallics
- isotopes
- light alloys
- liquid alloys
- metal clusters
- metal coatings
- metal combustion
- ∞ metal compounds
- metal crystals
- metal films
- metal foils
- metal fuels
- metal ions
- metal powder
- metal-gas systems
- metallicity
- metallography
- metalloids
- ∞ metallurgy
- monotectic alloys
- palladium compounds
- polonium
- polonium 208
- polonium 209
- polonium 210
- polonium isotopes
- strategic materials
- syntectic alloys

metal-semiconductor-metal semiconductors
 USE **MSM (semiconductors)**

metal-water reactions
 GS chemical reactions
 . **metal-water reactions**
 RT corrosion
 electrochemical corrosion
 erosion
 pitting
 rusting
 surface reactions

metamorphic rocks
 DEF Rocks derived from pre-existing rocks by mineralogical, chemical and/or structural changes, essentially in the solid state. These changes are in response to marked changes in temperature, pressure, shearing stress, and chemical environment, generally at the depth of the Earth's crust. Metamorphic rocks constitute one of the three main classes into which rocks are divided, the others being igneous rocks and sedimentary rocks.
 GS rocks
 . **metamorphic rocks**
 . . quartzite
 RT metamorphism (geology)

metamorphism (geology)
 DEF The mineralogical and structural adjustment of solid rocks to physical and chemical conditions which have been imposed at depth below the surface zones of weathering and cementation, which differ from the conditions under which the rocks in question originated.
 RT contacts (geology)
 metamorphic rocks
 phase transformations

metastable atoms

- rocks
- metastability*
- USE **metastable state**
- metastable atoms**
- GS atoms
- RT Penning effect
- metastable state**
- UF *metastability*
- RT excitation
- radiation trapping
- stability
- steady state
- unsteady state
- metastasis**
- (added February 2002)
- DEF The transfer of a neoplasm from one organ or part of the body to another remote from the primary site.
- RT cancer
- lymphatic system
- neoplasms
- metathesis**
- GS chemical reactions
- . **metathesis**
- RT electrolysis
- ion exchanging
- metazoa*
- USE **animals**
- Meteor 1 rocket vehicle**
- GS rocket vehicles
- . **Meteor 1 rocket vehicle**
- RT liquid propellant rocket engines
- ramjet engines
- solid propellant rocket engines
- meteor bursts*
- USE **meteoroid showers**
- meteor craters*
- USE **meteorite craters**
- meteor hazards*
- USE **meteoroid hazards**
- meteor trails**
- DEF Anything, such as light or ionization, left along the trajectory of the meteor after the head of the meteor has passed. Used for meteoritic ionization.
- UF *meteoritic ionization*
- RT bolides
- Earth atmosphere
- meteoroid showers
- meteoroids
- micrometeoroids
- ∞ paths
- Pribram meteorite
- radio meteors
- scatter propagation
- sporadic meteoroids
- ∞ tracks
- upper atmosphere
- meteorite collisions**
- UF *meteorite impacts*
- GS collisions
- . **meteorite collisions**
- RT asteroid collisions
- cometary collisions
- hypervelocity impact
- meteoritic damage
- meteoroid hazards
- near Earth objects
- shatter cones
- Tungusk meteorite
- meteorite compression tests*
- USE **compression tests**
- mechanical properties**
- meteorites**
- meteorite craters**
- UF *fossil meteorite craters*
- meteor craters*
- meteoroid craters*
- craters
- GS **meteorite craters**
- RT Canadian Shield
- cratering
- ejecta
- lunar craters
- lunar rays
- maria
- Mars craters
- Mars surface
- meteorites
- meteoritic damage
- planetary craters
- projectile cratering
- Ptolemaeus Crater
- shatter cones
- Tungusk meteorite
- Tycho crater
- meteorite impacts*
- (added July 2002)
- USE **meteorite collisions**
- meteorite parent bodies**
- (added August 2001)
- DEF Any celestial body that is the original source of meteoritic material.
- UF *meteoroid parent bodies*
- GS celestial bodies
- . **meteorite parent bodies**
- RT asteroid belts
- asteroids
- comets
- meteorites
- meteoritic composition
- meteoritic microstructures
- ∞ origins
- petrogenesis
- meteorites**
- SN (LIMITED TO METEOROIDS WHICH HAVE REACHED THE SURFACE OF AN ASTEROID, NATURAL SATELLITE OR PLANET)
- DEF Meteoroids which have reached the surface of the Earth without being completely vaporized. Used for meteorite compression tests.
- UF *meteorite compression tests*
- GS celestial bodies
- . **meteorites**
- . iron meteorites
- . . . Aroos meteorite
- . . . Lazarev meteorite
- . . . Odessa meteorite
- . . . Sikhote-Alin meteorite
- . . micrometeorites
- . . stony meteorites
- . . . achondrites
- Bondoc meteorite
- chassignites
- Kapoeta achondrite
- nakhlites
- Norton County achondrite
- shergottites
- SNC meteorites
- ureilites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- ureilites
- . . . chondrites
- Bruderheim meteorite
- carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- Harleton meteorite
- Hvittis chondrite
- Okhansk meteorite
- Pantar chondrites
- Pribram meteorite
- tektites
- australites
- bediasites
- Tungusk meteorite
- . . stony-iron meteorites
- RT bolides
- chondrule
- coesite
- foreign bodies
- impact melts
- meteorite craters
- meteorite parent bodies
- meteoritic composition
- meteoritic microstructures
- meteoroid showers
- meteoroids
- micrometeoroids
- molдавite
- near Earth objects
- meteoritic composition**
- GS composition (property)
- . **meteoritic composition**
- RT carbonaceous meteorites
- cosmochemistry
- iron meteorites
- isotope ratios
- kamacite
- meteorite parent bodies
- meteorites
- schreibersite
- siderophile elements
- solar nebula
- stony meteorites
- tektites
- troilite
- veins (petrology)
- meteoritic damage**
- GS damage
- . impact damage
- . . **meteoritic damage**
- RT ∞ bombardment
- cratering
- ejecta
- hypervelocity impact
- Mars craters
- meteorite collisions
- meteorite craters
- meteoroid hazards
- meteoroid protection
- projectile cratering
- meteoritic diamonds**
- GS diamonds
- . **meteoritic diamonds**
- RT ureilites
- meteoritic dust*
- USE **micrometeoroids**
- meteoritic ionization*
- USE **atmospheric ionization**
- meteor trails**
- meteoritic microstructures**
- GS microstructure
- . **meteoritic microstructures**
- RT chondrule
- iron meteorites
- meteorite parent bodies
- meteorites
- stony meteorites
- tektites
- Widmanstätten structure
- meteoroid concentration**
- GS composition (property)
- . concentration (composition)
- . . **meteoroid concentration**
- density (number/volume)
- . **meteoroid concentration**
- RT flux density
- mass distribution

spatial distribution
sporadic meteoroids

meteoroid craters

USE **meteorite craters**

meteoroid dust clouds

- GS celestial bodies
 - . meteoroids
 - . . micrometeoroids
 - . . . **meteoroid dust clouds**
 - zodiacal dust
- extraterrestrial matter
- . interstellar matter
- . . cosmic dust
- . . . interplanetary dust
- **meteoroid dust clouds**
- zodiacal dust
- media
- . interplanetary medium
- . . interplanetary dust
- . . . **meteoroid dust clouds**
- zodiacal dust
- particles
- . dust
- . . cosmic dust
- . . . interplanetary dust
- **meteoroid dust clouds**
- zodiacal dust
- RT ∞ clouds
 - Explorer satellites
 - terrestrial dust belt

meteoroid hazards

- UF *meteor hazards*
- GS hazards
 - . flight hazards
 - . . **meteoroid hazards**
- RT meteorite collisions
 - meteoritic damage
 - meteoroids
 - operational hazards
 - projectile cratering
 - spacecraft breakup

meteoroid parent bodies
(added August 2001)

USE **meteorite parent bodies**

meteoroid protection

- GS protection
 - . **meteoroid protection**
- RT bumpers
 - impact damage
 - meteoritic damage
 - spacecraft shielding
 - spacecraft structures

meteoroid showers

DEF Groups of meteoroids with approximately parallel trajectories. Used for meteor bursts.

- UF *meteor bursts*
- GS celestial bodies
 - . **meteoroid showers**
 - . . Aquarid meteoroids
 - . . Arietid meteoroids
 - . . Cyrillid meteoroids
 - . . Draconid meteoroids
 - . . Geminid meteoroids
 - . . Leonid meteoroids
 - . . Orionid meteoroids
 - . . Perseid meteoroids
 - . . Quadrantid meteoroids
 - . . Taurid meteoroids
- RT astronomy
 - bolides
 - comets
 - meteor trails
 - meteorites
 - meteoroids
 - ∞ showers

Meteoroid Technology Satellite

USE **Explorer 46 satellite**

meteoroids

- SN (LIMITED TO SOLID OBJECTS IN SPACE, MUCH SMALLER THAN AN ASTEROID AND MUCH LARGER THAN A MOLECULE)
- DEF Solid objects moving in interplanetary

space, of a size considerably smaller than asteroids and considerably larger than atoms or molecules. Used for meteors.

- UF *meteors*
- GS celestial bodies
 - . **meteoroids**
 - . . Aquarid meteoroids
 - . . Arietid meteoroids
 - . . bolides
 - . . . Cyrillid meteoroids
 - . . Draconid meteoroids
 - . . Geminid meteoroids
 - . . Leonid meteoroids
 - . . micrometeoroids
 - . . . meteoroid dust clouds
 - zodiacal dust
 - . . Orionid meteoroids
 - . . Perseid meteoroids
 - . . Quadrantid meteoroids
 - . . radio meteors
 - . . sporadic meteoroids
 - . . Taurid meteoroids
- RT asteroid belts
 - asteroids
 - bumpers
 - Chiron
 - comets
 - cosmic dust
 - Gaspra asteroid
 - hypervelocity projectiles
 - Iida asteroid
 - interplanetary dust
 - interplanetary medium
 - meteor trails
 - meteorites
 - meteoroid hazards
 - meteoroid showers
 - micrometeorites
 - natural satellites
 - particle tracks
 - Radiation Meteoroid spacecraft
 - solar system
 - space debris
 - Tempel 2 comet
 - Toro asteroid
 - Toutatis asteroid
 - Vesta asteroid

meteorological balloons

- GS expandable structures
 - . inflatable structures
 - . . balloons
 - . . . **meteorological balloons**
 - jimsphere balloons
 - ROBIN balloons
- RT dropsondes
 - high altitude balloons
 - radiosondes
 - rawinsondes
 - rockoons
 - skyhook balloons
 - sounding
 - superpressure balloons
 - tethered balloons
 - upper atmosphere
 - weather forecasting

meteorological charts

- UF *weather charts*
weather maps
- GS charts
 - . **meteorological charts**
 - maps
 - . **meteorological charts**
- RT isobars (pressure)
 - radar maps
 - synoptic meteorology

meteorological flight

- RT aerial reconnaissance
 - balloon flight
 - ∞ flight
 - ice reporting
 - rocket flight
 - SIRS B satellite
 - sounding
 - space flight

weather forecasting

meteorological instruments

- GS measuring instruments
 - . **meteorological instruments**
 - . . barometers
 - . . cloud height indicators
 - . . dropsondes
 - . . radiometeorographs
 - . . radiosondes
 - . . . ionosondes
 - . . . rawinsondes
 - . . ozonesondes
 - . . rain gages
 - . . weather data recorders
 - . . wind vanes
- RT anemometers
 - balloon-borne instruments
 - hot-film anemometers
 - hot-wire anemometers
 - humidity measurement
 - hygrometers
 - hypsometers
 - ∞ instruments
 - light scattering meters
 - meteorology
 - nephanalysis
 - precipitation measurement
 - psychrometers
 - recording instruments
 - rocket-borne instruments
 - SIRS B satellite
 - sodar
 - sound detecting and ranging
 - sounding rockets
 - transducers
 - weather reconnaissance aircraft
 - weather stations

meteorological parameters

- GS constraints
 - . **meteorological parameters**
 - . . Brunt-Vaisala frequency
- RT aerology
 - agroclimatology
 - annual variations
 - Atmospheric & Oceanographic Inform Sys
 - Atmospheric Cloud Physics Lab (Spacelab)
 - atmospheric pressure
 - atmospheric temperature
 - atmospheric turbulence
 - aviation meteorology
 - ceilings (meteorology)
 - cloud cover
 - cockpit weather information systems
 - cold fronts
 - equatorial atmosphere
 - fronts (meteorology)
 - hindcasting
 - humidity
 - isotherms
 - moisture
 - ocean data acquisitions systems
 - oceanographic parameters
 - precipitation (meteorology)
 - storms (meteorology)
 - teleconnections (meteorology)
 - temperature inversions
 - tropical meteorology
 - warm fronts
 - weather
 - wind direction
 - wind measurement
 - wind velocity

meteorological probes

USE **sondes**

meteorological radar

- UF *weather radar*
- GS radar
 - . **meteorological radar**
- RT precipitation measurement
 - precipitation particle measurement
 - pulse radar
 - radar scanning
 - radar tracking
 - radio meteorology

meteorological research aircraft

- surveillance radar
- weather forecasting
- meteorological research aircraft**
 - GS research vehicles
 - . research aircraft
 - . **meteorological research aircraft**
 - RT ∞ aircraft
 - . data acquisition
- meteorological rockets*
 - USE **sounding rockets**
- meteorological satellites**
 - GS artificial satellites
 - . **meteorological satellites**
 - . . . AEROS satellite
 - . . . Cosmos 144 satellite
 - . . . D-2 satellites
 - . . . DMSP satellites
 - . . . Elektron satellites
 - . . . Elektron 1 satellite
 - . . . Elektron 2 satellite
 - . . . Elektron 4 satellite
 - . . . EOLE satellites
 - . . . ESSA satellites
 - . . . ESSA 1 satellite
 - . . . ESSA 2 satellite
 - . . . ESSA 3 satellite
 - . . . ESSA 4 satellite
 - . . . ESSA 5 satellite
 - . . . ESSA 6 satellite
 - . . . ESSA 7 satellite
 - . . . ESSA 8 satellite
 - . . . ESSA 9 satellite
 - . . . Explorer 9 satellite
 - . . . Explorer 17 satellite
 - . . . Explorer 19 satellite
 - . . . GEOLE satellites
 - . . . GOES satellites
 - . . . GOES 1
 - . . . GOES 2
 - . . . GOES 3
 - . . . GOES 4
 - . . . GOES 5
 - . . . GOES 6
 - . . . GOES 7
 - . . . GOES 8
 - . . . GOES 9
 - . . . GOES 10
 - . . . GOES 13
 - . . . METEOSAT satellite
 - . . . Nimbus satellites
 - . . . Nimbus 1 satellite
 - . . . Nimbus 2 satellite
 - . . . Nimbus 3 satellite
 - . . . Nimbus 4 satellite
 - . . . Nimbus 5 satellite
 - . . . Nimbus 6 satellite
 - . . . Nimbus 7 satellite
 - . . . NOAA satellites
 - . . . NOAA 2 satellite
 - . . . NOAA 3 satellite
 - . . . NOAA 4 satellite
 - . . . NOAA 5 satellite
 - . . . NOAA 6 satellite
 - . . . NOAA 7 satellite
 - . . . NOAA 8 satellite
 - . . . NOAA 9 satellite
 - . . . NOAA 10 satellite
 - . . . NOAA 11 satellite
 - . . . NOAA 12 satellite
 - . . . NOAA 14 satellite
 - . . . San Marco satellites
 - . . . San Marco 1 satellite
 - . . . San Marco 2 satellite
 - . . . San Marco 3 satellite
 - . . . SEOGS (satellite)
 - . . . SIRS B satellite
 - . . . Sputnik 1 satellite
 - . . . Sputnik 2 satellite
 - . . . Sputnik 3 satellite
 - . . . SRET satellites
 - . . . SRET 1 satellite
 - . . . SRET 2 satellite
 - . . . Synchronous Earth Observatory satellite
 - . . . SMS 1
 - . . . SMS 2
- . . . Synchronous Meteorological Satellite
 - . . . SMS 1
 - . . . SMS 2
 - . . . TIROS satellites
 - ITOS satellites
 - ITOS 1
 - ITOS 2
 - ITOS 3
 - ITOS 4
 - TIROS 1 satellite
 - TIROS 2 satellite
 - TIROS 3 satellite
 - TIROS 4 satellite
 - TIROS 5 satellite
 - TIROS 6 satellite
 - TIROS 7 satellite
 - TIROS 8 satellite
 - TIROS 9 satellite
 - TIROS 10 satellite
 - TIROS M
 - TIROS N series satellites
 - NOAA 6 satellite
 - TRMM satellite
 - Vanguard 2 satellite
- RT AgRISTARS project
 - . . . ATS
 - . . . CALIPSO (Pathfinder satellite)
 - . . . cloud photography
 - . . . CloudSat
 - . . . geophysical satellites
 - . . . GOES 1
 - . . . GOES 2
 - . . . GOES 3
 - . . . GOES 4
 - . . . GOES 5
 - . . . infrared photography
 - . . . Japanese space program
 - . . . meteorology
 - . . . military spacecraft
 - . . . navigation satellites
 - . . . Nimbus project
 - . . . NOESS
 - . . . precipitation measurement
 - . . . satellite observation
 - . . . satellite sounding
 - . . . satellite television
 - . . . sounding rockets
 - . . . space probes
 - . . . TIROS project
 - . . . unmanned spacecraft
 - . . . Vanguard satellites
 - . . . weather forecasting
 - . . . weather stations
- meteorological services**
 - UF *World Weather Watch*
 - WWW (*meteorology*)
 - GS services
 - . **meteorological services**
 - RT automatic weather stations
 - . . . aviation meteorology
 - . . . flight conditions
 - . . . weather forecasting
 - . . . weather stations
- meteorological solenoids**
 - RT baroclinity
 - . . . vortices
- meteorological stations*
 - USE **weather stations**
- meteorology**
 - DEF The study dealing with the phenomena of the atmosphere especially as they relate to weather and climate. Used for atmospheric conditions.
 - UF *atmospheric conditions*
 - GS **meteorology**
 - . . . aerology
 - . . . agrometeorology
 - . . . Alpine meteorology
 - . . . aviation meteorology
 - . . . biometeorology
 - . . . hydrometeorology
 - . . . marine meteorology
 - . . . mesometeorology
 - . . . micrometeorology
 - . . . microbursts (meteorology)
 - . . . nuclear meteorology
 - . . . planetary meteorology
 - . . . polar meteorology
 - . . . radio meteorology
 - . . . synoptic meteorology
 - . . . tropical meteorology
 - . . . weather forecasting
 - . . . long range weather forecasting
 - . . . nowcasting
 - . . . numerical weather forecasting
 - . . . statistical weather forecasting
 - RT acid rain
 - . . . acoustic sounding
 - . . . aeronomy
 - . . . agroclimatology
 - . . . air land interactions
 - . . . air masses
 - . . . annual variations
 - . . . anticyclones
 - . . . anvil clouds
 - . . . arc clouds
 - ∞ atmospheres
 - . . . Atmospheric & Oceanographic Inform Sys
 - . . . atmospheric density
 - . . . atmospheric physics
 - . . . atmospheric turbulence
 - . . . baroclinic instability
 - . . . brightness temperature
 - . . . CALIPSO (Pathfinder satellite)
 - . . . cap clouds
 - . . . ceilings (meteorology)
 - . . . cirrocumulus clouds
 - . . . cirrostratus clouds
 - . . . cirrus shields
 - . . . climate
 - . . . climatology
 - . . . cloud cover
 - . . . clouds (meteorology)
 - . . . CloudSat
 - . . . cold fronts
 - . . . condensation nuclei
 - . . . convection
 - . . . convection clouds
 - . . . Coriolis effect
 - . . . cyclones
 - . . . DMSP satellites
 - . . . Earth cryosphere
 - . . . Earth sciences
 - . . . environmental engineering
 - . . . environmental monitoring
 - . . . fronts (meteorology)
 - . . . GARP Atlantic Tropical Experiment
 - . . . geology
 - . . . geophysics
 - . . . Global Atmospheric Research Program
 - . . . hailstorms
 - . . . humidity
 - . . . hurricanes
 - . . . hydroclimatology
 - . . . hydrodynamic equations
 - . . . hydrography
 - . . . hydrology
 - . . . insolation
 - . . . isotherms
 - . . . mesoscale phenomena
 - . . . meteorological instruments
 - . . . meteorological satellites
 - . . . METEOSAT satellite
 - . . . method of characteristics
 - . . . moisture
 - . . . National Severe Storms Project
 - . . . nephanalysis
 - . . . NOESS
 - . . . oceanography
 - ∞ physical sciences
 - . . . precipitation (meteorology)
 - ∞ science
 - . . . sea breeze
 - . . . seasons
 - . . . sodar
 - . . . sound detecting and ranging
 - . . . storms (meteorology)
 - . . . teleconnections (meteorology)
 - . . . temperature
 - . . . temperature inversions
 - . . . tropical regions
 - . . . tropical storms

- typhoons
warm fronts
weather
wind (meteorology)
wind measurement
World Meteorological Organization
zonal flow (meteorology)
- meteors*
USE **meteoroids**
- METEOSAT satellite**
GS artificial satellites
. ESA satellites
. . . **METEOSAT satellite**
. meteorological satellites
. . . **METEOSAT satellite**
ESA spacecraft
. ESA satellites
. . . **METEOSAT satellite**
RT cloud cover
cloud photography
European Space Agency
European space programs
French satellites
French space program
infrared photography
ISCCP Project
meteorology
satellite observation
weather
- meters*
USE **measuring instruments**
- methacrylate resins*
USE **acrylic resins**
- methamphetamine**
GS drugs
. **methamphetamine**
organic compounds
. amines
. . . amphetamines
. . . **methamphetamine**
- methanation**
DEF The conversion of various organic compounds to produce methane.
GS chemical reactions
. **methanation**
RT biomass energy production
coal gasification
hydrocarbon fuels
hydrolysis
- methane**
GS organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . . alkanes
. . . . **methane**
RT bioconversion
chlorofluoromethane
coal derived gases
hydrocarbon fuels
hydrolysis
landfills
liquefied natural gas
natural gas
natural gas exploration
Neptune atmosphere
oil fields
petroleum products
solvent refined coal
synthane
Uranus atmosphere
- methanol*
USE **methyl alcohol**
- methenyl*
USE **methylidyne**
- methionine**
GS acids
. amino acids
. . . **methionine**
organic compounds
. amino acids
- . . . **methionine**
- method of characteristics**
UF *characteristic method*
RT ∞ characteristics
compressible fluids
flow distribution
hyperbolic functions
meteorology
∞ methodology
partial differential equations
plastic properties
Prandtl-Meyer expansion
steady flow
unsteady flow
- method of moments**
DEF A method of estimating the parameters of a distribution by relating the parameters to moments.
RT distribution moments
integral equations
mathematical models
matrices (mathematics)
∞ methodology
moment distribution
moments
numerical analysis
- ∞ **methodology**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *methods*
techniques
RT approximation
asymptotic methods
Biot method
boundary integral method
Bridgman method
cluster variation method
critical path method
Crocco method
Czocharalski method
Debye-Scherrer method
Delphi method (forecasting)
digital techniques
embedded atom method
emergency breathing techniques
Encke method
energy methods
equilibrium methods
ethics
finite element method
finite volume method
Fujita method
Galerkin method
GERT
Glimm method
Halphen method
Hartree-Fock-Slater method
heuristic methods
Hill method
imaging techniques
in vitro methods and tests
in vivo methods and tests
Jacobi matrix method
Kjeldahl method
Latin square method
Laue method
least squares method
Lighthill method
management methods
matrix management
matrix methods
maximum entropy method
Maxwell-Mohr method
∞ mechanism
∞ method of characteristics
method of moments
Milne method
Milne-Thomson method
minimum entropy method
Moire effects
Monte Carlo method
multigrid methods
Newton-Raphson method
panel method (fluid dynamics)
particle in cell technique
pattern method (forecasting)
- Percus method
Pohlhausen method
probe method (forecasting)
problem solving
profile method (forecasting)
Rayleigh-Ritz method
relaxation method (mathematics)
Ritz averaging method
ruler method
Runge-Kutta method
Schmidt method
Schwartz method
simplex method
spectral methods
steepest descent method
strain energy methods
traveling solvent method
Van Slyke method
von Zeipel method
vortex in cell technique
Wentzel-Kramer-Brillouin method
wing flow method tests
- methods*
USE **methodology**
procedures
- methoxy systems**
RT alcohols
∞ chemical compounds
indoles
organic chemistry
organic compounds
pyrroles
∞ systems
- methyl alcohol**
UF *methanol*
GS hydroxyl compounds
. alcohols
. . . **methyl alcohol**
RT Karl Fischer reagent
- methyl chloride**
GS drugs
. anesthetics
. . . **methyl chloride**
RT chlorides
- methyl chlorosilanes**
GS hydrogen compounds
. hydrides
. . . silanes
. . . . **methyl chlorosilanes**
methyl compounds
. **methyl chlorosilanes**
silicon compounds
. silanes
. . . **methyl chlorosilanes**
- methyl compounds**
GS **methyl compounds**
. acetonitrile
. methyl chlorosilanes
. methyl nitrate
. methyl polysiloxanes
RT ∞ chemical compounds
dimethyl compounds
organic compounds
trimethyl compounds
- methyl cyanide*
USE **acetonitrile**
- methyl nitrate**
GS alkyl compounds
. **methyl nitrate**
methyl compounds
. **methyl nitrate**
nitrogen compounds
. nitrates
. . . **methyl nitrate**
- methyl polysiloxanes**
GS methyl compounds
. **methyl polysiloxanes**
silicon polymers
. silicones
. . . polysiloxanes
. . . . **methyl polysiloxanes**

methylation

RT ∞ polymers
silicon compounds

methylation

GS chemical reactions
. **methylation**
RT alkylation

methylene

GS organic compounds
. hydrocarbons
. . **methylene**
RT dyes
staining

methylene blue

GS dyes
. **methylene blue**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azines
. . . . **methylene blue**
pyrazines
. azines
. . **methylene blue**
RT chemical analysis
chemical indicators
∞ indicators
staining

methylene diamine

GS organic compounds
. amines
. . **methylene diamine**

methylhydrazine

GS hydrazines
. **methylhydrazine**
. . monomethylhydrazines
RT dimethylhydrazines

methylidyne

(added June 1993)
UF *CH (methylidyne)*
methenyl
GS organic compounds
. hydrocarbons
. . **methylidyne**
radicals
. **methylidyne**
RT ∞ aromatic compounds
carbon compounds
diatomic molecules
interstellar gas
interstellar matter
molecular clouds

Metis

(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 127,960 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Metis**
RT Jupiter (planet)

metric conversion

USE **metrication**

metric photography

DEF The recording of events by means of photography (either singly or sequentially), together with appropriate metric coordinates to form the basis for accurate measurements.
GS imagery
. photography
. . **metric photography**

metric space

GS geometry
. topology
. . **metric space**
. . . Hilbert space
. . . . Sobolev space
RT Banach space

bimetric theories

metric system

USE **International System of Units**

metrication

DEF The conversion on an industry and/or nationwide basis of English units of measurement into the International System of Units, including engineering and manufacturing standards, tools and instruments, and all affected areas in the government and private sectors.
Used for metric conversion.

UF *metric conversion*
RT ∞ conversion
International System of Units
metrology
standardization
units of measurement

metrology

DEF The science of dimensional measurement; sometimes includes the science of weighing.

RT International System of Units
∞ measurement
measuring instruments
metrication
standards
units of measurement

Metropolitan aircraft

USE **CV-440 aircraft**

metropolitan areas

USE **cities**

Mexican space program

(added March 1989)

GS programs
. space programs
. . **Mexican space program**
RT Mexico

Mexico

GS nations
. **Mexico**
RT Colorado River (North America)
Gulf of California (Mexico)
Gulf of Mexico
Imperial Valley (CA)
Lower California (Mexico)
Mexican space program
North America
Rio Grande (North America)
San Andreas Fault
Southern California

MFM (microscopy)

(added June 2004)

USE **magnetic force microscopy**

MGCO

USE **Mars Observer**

MGS (spacecraft)

(added March 1999)

USE **Mars Global Surveyor**

MH-262 aircraft

UF *Max Holste MH-262 aircraft*
Nord 262 aircraft

GS jet aircraft
. turboprop aircraft
. . **MH-262 aircraft**
light aircraft
. **MH-262 aircraft**
monoplanes
. **MH-262 aircraft**
Nord aircraft
. **MH-262 aircraft**
transport aircraft
. **MH-262 aircraft**

RT ∞ aircraft
cargo aircraft
passenger aircraft

mica

UF *fluoromica*
GS minerals
. **mica**

. . biotite
. . fluorophlogopite
. . muscovite
RT igneous rocks
vermiculite

micarta

GS composite materials
. polymer matrix composites
. . reinforced plastics
. . . **micarta**
plastics
. reinforced plastics
. . **micarta**
. . synthetic resins
. . . thermosetting resins
. . . . phenolic resins
. **micarta**
resins
. synthetic resins
. . thermosetting resins
. . . phenolic resins
. . . . **micarta**
RT fabrics
fiber composites
insulation
∞ polymers

mice

GS animals
. vertebrates
. . mammals
. . . rodents
. . . . **mice**
. jerboas
. knockout mice
. pocket mice
RT animal models
rats

micelles

(added June 2001)

DEF Electrically charged colloidal particles or ions consisting of oriented molecules; aggregates of a number of molecules held loosely together by secondary bonds.

GS molecular clusters
. **micelles**
RT agglomeration
aggregates
block copolymers
∞ clusters
colloids
flocculating
nanostructure (characteristics)
self assembly

Michael reaction

GS chemical reactions
. **Michael reaction**

Michaelis theory

RT ∞ theories

Michell theorem

GS theorems
. **Michell theorem**
RT stress analysis
structural analysis

Michelson interferometers

GS measuring instruments
. interferometers
. . **Michelson interferometers**
RT astrophysics
radio astronomy
spectrometers

Michigan

GS nations
. United States
. . **Michigan**
RT Pontiac (MI)
Saginaw Bay (MI)

microanalysis

GS chemical tests
. chemical analysis
. . **microanalysis**
RT electron microscopes

electron microscopy
 electrophotometry
 inductively coupled plasma mass spectrometry
 mass spectrometers
 ∞ materials tests
 neutron activation analysis
 qualitative analysis
 quantitative analysis
 scanning electron microscopy
 spectroscopic analysis
 transmission electron microscopy
 x ray analysis

microbalances

UF *microscales*
 GS measuring instruments
 . indicating instruments
 . . weight indicators
 . . . **microbalances**

microballoons

DEF Very small glass spheres (50 to 100 micrometers in diameter) used as targets in the laser fusion programs.
 GS expandable structures
 . inflatable structures
 . . balloons
 . . . **microballoons**
 RT globules
 lasers
 spheres
 targets

microbe

USE **microorganisms**

microbeams

GS beams (radiation)
 . **microbeams**
 RT collimation
 crystallography
 x ray analysis

microbiology

GS **microbiology**
 . bacteriology
 RT ∞ biology
 cell culturing
 culture media
 culture techniques
 cultured cells
 gnotobiotics
 organ culturing
 tissue culturing

microbursts (meteorology)

SN (EXCLUDES IONOSPHERIC RADIATION MICROBURSTS)
 DEF A strong, localized downdraft that strikes the ground creating an outflow of severe winds near the ground that diverge radically from the impact point.
 GS meteorology
 . micrometeorology
 . . **microbursts (meteorology)**
 . . storms
 . . storms (meteorology)
 . . downbursts
 . . . **microbursts (meteorology)**
 RT aviation meteorology
 flight hazards
 thunderstorms
 vertical air currents
 wind shear

microcalorimeters

USE **calorimeters**

microchannel plates

DEF An array of microchannels formed into plates and contained in a photomultiplier tube. Used for multichannel plates.
 UF *multichannel plates*
 RT channel multipliers
 dynamic range
 integrated circuits
 microchannels
 microwave equipment
 photomultiplier tubes
 ∞ plates

thin films

microchannels

RT frequencies
 image converters
 light amplifiers
 microchannel plates
 multi-anode microchannel arrays
 night vision
 optical equipment
 photocathodes
 ultraviolet radiation

microcircuits

USE **microelectronics**

microclimatology

GS climatology
 . **microclimatology**
 RT agroclimatology
 biometeorology
 micrometeorology

microcomputers

DEF Complete digital computers utilizing a microprocessor consisting of one or more integrated circuit chips as the central arithmetic and logic unit, and added chips to provide timing, program memory, random access memory interfaces for input and output signals and other functions. Some microcomputers consist of a single integrated-circuit chip.
 GS data processing equipment
 . computers
 . . digital computers
 . . . **microcomputers**
 personal computers
 IBM personal computers
 Macintosh personal computers
 RT microprocessors
 minicomputers

microcracks

GS fractures (materials)
 . cracks
 . . **microcracks**
 RT crack closure
 crack geometry
 crack initiation
 Elber equation
 surface cracks

microcrystals

GS crystals
 . **microcrystals**
 RT crystallites
 nanocrystals
 spherulites

Microcystis

GS plants (botany)
 . algae
 . . blue green algae
 . . . **Microcystis**
 . . thermophilic plants
 . . blue green algae
 . . . **Microcystis**
 RT pollution

microdensitometers

DEF Image analysis devices for resolving gray-level differences within or between features and for integrating the optical density across scanned images of irregularly shaped objects.
 GS measuring instruments
 . densitometers
 . . **microdensitometers**
 . . optical measuring instruments
 . . **microdensitometers**
 . . optical equipment
 . . optical measuring instruments
 . . **microdensitometers**
 RT gravimeters
 optical density
 optical measurement
 photometers

microelectromechanical systems

(added October 1998)
 UF *MEMS (electromechanical devices)*

GS electromechanical devices
 . **microelectromechanical systems**
 . . microoptoelectromechanical systems
 RT electroactive polymers
 microfluidic devices
 microinstrumentation
 microminiaturization
 microminiaturized electronic devices
 microsatellites
 nanosatellites
 nanotechnology
 piezoelectric actuators
 piezoelectric motors

microelectronics

UF *microcircuits*
 GS **microelectronics**
 . large scale integration
 . medium scale integration
 . very large scale integration
 RT beam leads
 chips (electronics)
 circuits
 ∞ electronics
 encapsulated microcircuits
 ion implantation
 laser microscopy
 microinstrumentation
 microminiaturization
 microminiaturized electronic devices
 micromodules
 microoptoelectromechanical systems
 molecular electronics
 nanotechnology
 photolithography
 photomasks
 photoresists
 single event upsets
 systems-on-a-chip
 transistor circuits
 wafers

microfibers

GS fibers
 . **microfibers**

microfilms

GS photographic film
 . **microfilms**
 RT data retrieval
 data storage
 microphotographs
 readers
 reproduction (copying)

microfluidic devices

(added October 2003)
 DEF Various devices that incorporate one or more micro-scale fluid channels where measurements, analysis, reactions, and separations occur. Often applied in systems for chemical analysis, biochemical sensing, and cytometry.
 RT fluidic circuits
 fluidics
 microelectromechanical systems
 microinstrumentation

micrography

USE **photomicrography**

microgravity

DEF A condition in which the acceleration acting on a body is less than normal gravity, between 0 and 1 g. Used for low gravity, reduced gravity, and subgravity.
 UF *hypogravity*
low gravity
reduced gravity
subgravity
 GS gravitation
 . **microgravity**
 RT antigravity
 bioprocessing
 clinorotation
 clinostats
 drop towers
 Earth orbital environments
 fluid management
 high gravity environments

microgravity applications

low gravity manufacturing
low weight
Marangoni convection
∞ microgravity applications
space processing
thermocapillary migration
weightlessness

∞ microgravity applications

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT bioprocessing
commerce lab
crystal growth
electrophoresis
low gravity manufacturing
microgravity
space commercialization
space manufacturing
space processing
surface tension driven convection
tissue engineering

microhardness

UF *microindentation*
GS mechanical properties
. hardness
. . **microhardness**
. . . Knoop hardness
RT nanoindentation
Rockwell hardness

microindentation

USE **microhardness**

microinstrumentation

RT measuring instruments
microelectromechanical systems
microelectronics
microfluidic devices
microminiaturization

micromachining

(added September 1993)

DEF Performing various microscopic scale cutting or grinding operations on a piece of work.

GS machining
. **micromachining**
RT cutting
drilling
grinding (material removal)
grooving
laser cutting
laser drilling
metal cutting
metal working
micromechanics
microstructure
photoengraving
photomasks
photomechanical effect
surface finishing
V grooves

micromanometers

USE **manometers**

micromechanics

DEF The study of the constraints, the grain size, and their interrelationship in materials.

RT composite materials
crack propagation
fracture mechanics
mechanical properties
mechanics (physics)
micromachining
microoptoelectromechanical systems
microstructure
reinforcing fibers
stress concentration

micrometeorites

DEF Very small meteorites or meteoritic particles with a diameter in general less than a millimeter.

GS celestial bodies
. meteorites
. . **micrometeorites**
RT cosmic dust
hypervelocity projectiles

meteoroids
micrometeoroids
space weathering
tektites
zodiacal dust

Micrometeoroid Explorer satellites

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Micrometeoroid Explorer satellites**

micrometeoroids

UF *meteoritic dust*
micrometeors
GS celestial bodies
. meteoroids
. . **micrometeoroids**
. . . meteoroid dust clouds
. . . . zodiacal dust
RT cosmic dust
Explorer satellites
interplanetary dust
meteor trails
meteorites
micrometeorites
Poynting-Robertson effect
space debris
terrestrial dust belt
zodiacal light

micrometeorology

GS meteorology
. **micrometeorology**
. . microbursts (meteorology)
RT agrometeorology
mesometeorology
microclimatology
turbulence

micrometeors

USE **micrometeoroids**

micrometers

DEF Instruments for making precise linear measurements in which the displacements measured correspond to the travel of a screw of accurately known pitch.

GS measuring instruments
. **micrometers**
RT dimensional measurement
distance measuring equipment

micromillimeters

GS measuring instruments
. ammeters
. . **micromillimeters**
RT electric current
electrical measurement
galvanometers

microminiaturization

GS miniaturization
. **microminiaturization**
RT circuits
DTL integrated circuits
integrated circuits
large scale integration
linear integrated circuits
microelectromechanical systems
microelectronics
microinstrumentation
microminiaturized electronic devices
microsatellites
miniature electronic equipment
molecular electronics
nanosatellites
semiconductor devices
subminiaturization
thick films
thin films
TTL integrated circuits
wafers

microminiaturized electronic devices

GS **microminiaturized electronic devices**
. micromodules
RT microelectromechanical systems

microelectronics
microminiaturization
microsatellites
miniature electronic equipment
nanosatellites
systems-on-a-chip

micromodules

GS electronic equipment
. electronic modules
. . **micromodules**
microminiaturized electronic devices
. **micromodules**
modules
. electronic modules
. . **micromodules**
RT beam leads
∞ containers
electronic packaging
microelectronics
microprocessors
miniature electronic equipment
photolithography

micromotors

SN (EXCLUDES ROCKET ENGINES)
GS electromechanical devices
. electric motors
. . **micromotors**
motors
. electric motors
. . **micromotors**
RT piezoelectric motors

microoptoelectromechanical systems

(added December 2005)

DEF Integrated, hybrid micro-systems that include mechanical structures, microelectronics, and optics, and allow the dynamic manipulation of light beams for applications such as optical switches, tunable filters and lasers, displays, and specialized sensors.

UF **MOEMS**
optical MEMS
GS electromechanical devices
. microelectromechanical systems
. . **microoptoelectromechanical systems**
RT actuators
microelectronics
micromechanics
optoelectronic devices
∞ sensors
systems-on-a-chip

microorganisms

UF *microbe*
GS **microorganisms**
. bacteria
. . actinomycetes
. . archaeobacteria
. . Azotobacter
. . Bacillus
. . . stearothermophilus
. . Clostridium
. . Clostridium botulinum
. . Escherichia
. . hydrogenomonas
. . Klebsiella
. . nitrobacter
. . pseudomonas
. . salmonella
. . sarcina
. . serratia
. . staphylococcus
. . streptococcus
. . streptomycetes
. . protozoa
. . amoeba
. . . pelomyxa
. . Flagellata
. . Euglena
. . . trypanosome
. . paramecia
. Rotifera
. viruses
. . adenoviruses
. . bacteriophages
. . human immunodeficiency virus
RT aerobes

- algae
 - anaerobes
 - animals
 - antibiotics
 - biofilms
 - gnatobiotics
 - invertebrates
 - mesophiles
 - microparticles
 - microspores
 - plants (botany)
 - pollution
 - psychrophiles
 - red tide
 - saprophytes
 - spores
 - virulence
- microparticles**
- GS particles
 - . **microparticles**
 - RT condensation nuclei
 - ferrofluids
 - microorganisms
 - particulate reinforced composites
- microphones**
- DEF Electroacoustic transducers which receive acoustic signals and deliver corresponding electric signals.
 - GS audio equipment
 - . **microphones**
 - transducers
 - . sound transducers
 - . . electroacoustic transducers
 - . . . **microphones**
 - RT hydrophones
 - interphones
 - magnetic transducers
 - monaural signals
 - transmitters
 - ultrasonic wave transducers
- microphotographs**
- GS photographs
 - . **microphotographs**
 - RT data storage
 - microfilms
 - photography
 - photomasks
- microphotometers*
- USE **photometers**
- microplasmas**
- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - . . . **microplasmas**
 - . corpuscular radiation
 - . energetic particles
 - . . plasmas (physics)
 - . . . **microplasmas**
- micropolar fluids**
- GS incompressible fluids
 - . **micropolar fluids**
 - RT fluid mechanics
 - ∞ fluids
 - microstructure
- microporosity**
- GS porosity
 - . **microporosity**
 - RT mechanical properties
 - metallography
 - microstructure
- microprocessors**
- GS computer components
 - . **microprocessors**
 - . . Intel 8080 microprocessor
 - data processing equipment
 - . **microprocessors**
 - . . Intel 8080 microprocessor
 - RT central processing units
 - chips (electronics)
 - computer design
 - computer storage devices
- computer techniques
 - data processing
 - distributed processing
 - firmware
 - integrated circuits
 - large scale integration
 - microcomputers
 - micromodules
 - onboard data processing
 - transputers
- microprogramming**
- GS computer programming
 - . **microprogramming**
 - RT firmware
 - ∞ programming
- micropulsations**
- GS pulses
 - . **micropulsations**
 - . . geomagnetic micropulsations
 - RT variations
- microrocket engines**
- GS engines
 - . rocket engines
 - . . **microrocket engines**
 - . . . Orbit Maneuvering Engine (Space Shuttle)
 - RT electric rocket engines
 - electrostatic engines
 - microthrust
 - Vernier engines
- microsatellites**
- (added October 1998)
 - DEF Satellites with a total mass between 10 and 100 kg often incorporating miniaturized electronic and mechanical systems.
 - UF *microsats*
 - GS artificial satellites
 - . **microsatellites**
 - RT microelectromechanical systems
 - microminiaturization
 - microminiaturized electronic devices
 - nanosatellites
 - satellite constellations
 - satellite design
 - small satellite technology
 - small scientific satellites
- microsats*
- (added October 1998)
 - USE **microsatellites**
- microscales*
- USE **microbalances**
- microscopes**
- DEF Optical instruments capable of producing a magnified image of a small object.
 - GS **microscopes**
 - . acoustic microscopes
 - . electron microscopes
 - . ion microscopes
 - . optical microscopes
 - RT binoculars
 - eyepieces
 - metallography
 - microscopy
 - optical equipment
 - optical measuring instruments
 - photomicrography
 - ultraviolet microscopy
- microscopy**
- DEF The science of the interpretive use and applications of microscopes.
 - GS **microscopy**
 - . atomic force microscopy
 - . electron microscopy
 - . . scanning electron microscopy
 - . . scanning tunneling microscopy
 - . . transmission electron microscopy
 - . laser microscopy
 - . magnetic force microscopy
 - . photoacoustic microscopy
 - . ultraviolet microscopy
 - RT cytometry
 - microscopes
- microtomy
 - phase contrast
 - photomicrography
 - slides (microscopy)
- microseisms**
- DEF Seismic pulses of short duration and low amplitude, often occurring previous to failure of a material or structures.
 - GS elastic waves
 - . seismic waves
 - . . **microseisms**
 - RT crustal fractures
 - earthquake damage
 - earthquakes
- microsonics**
- GS acoustics
 - . **microsonics**
 - RT elastic properties
 - piezoelectric crystals
 - sound fields
 - sound waves
 - surface acoustic wave devices
 - surface waves
- microspores**
- GS spores
 - . **microspores**
 - RT fungi
 - microorganisms
 - plants (botany)
 - protozoa
- microstrip antennas**
- DEF Antennas which consist of thin metallic conductors bonded to thin grounded dielectric substrates. The metallic conductors generally have some regular shape, for example, rectangular, circular, or elliptical. Feeding is often by means of a coaxial probe or a microstrip transmission line.
 - GS antennas
 - . **microstrip antennas**
 - microstrip devices
 - . **microstrip antennas**
 - RT antenna design
 - microstrip transmission lines
 - microwave antennas
 - patch antennas
 - waveguide antennas
- microstrip devices**
- GS **microstrip devices**
 - . microstrip antennas
 - . microstrip transmission lines
 - RT circuits
 - integrated circuits
 - microwave circuits
 - microwave equipment
- microstrip transmission lines**
- UF *flat coaxial transmission lines*
 - parallel strip lines*
 - GS microstrip devices
 - . **microstrip transmission lines**
 - transmission lines
 - . strip transmission lines
 - . . **microstrip transmission lines**
 - RT directional couplers
 - microstrip antennas
 - microwave transmission
- microstructure**
- GS **microstructure**
 - . meteoritic microstructures
 - . nanostructure (characteristics)
 - . Widmanstätten structure
 - RT aging (materials)
 - aging (metallurgy)
 - antiphase boundaries
 - atomic force microscopy
 - austenite
 - bainite
 - Bauschinger effect
 - cast alloys
 - casting
 - castings
 - cementite
 - crystal structure

microthrust

- crystallography
- ferrites
- grain size
- hardening (materials)
- heat treatment
- kink bands
- lamella (metallurgy)
- Laves phases
- martensite
- metallography
- micromachining
- micromechanics
- micropolar fluids
- microporosity
- molecular dynamics
- order-disorder transformations
- Ostwald ripening
- pearlite
- photomicrography
- precipitates
- quenching (cooling)
- shape memory alloys
- silicon alloys
- spherulites
- ∞ structures
- thermomechanical treatment
- vanadium alloys
- work softening

microthrust

- SN (NOT USED FOR GEOLOGICAL FAULTS, SEISMOLOGY, OR TECTONICS)
- GS thrust
 - . low thrust
 - . . **microthrust**
- RT jet thrust
 - low thrust propulsion
 - microrocket engines
 - rocket thrust
 - variable thrust

microtomy

- RT medical equipment
- microscopy

microtrons

- GS particle accelerators
 - . cyclotrons
 - . . **microtrons**
- RT betatrons
- synchrotrons

microvision landing aid

- GS display devices
 - . **microvision landing aid**
 - landing aids
 - . **microvision landing aid**

microwave absorption

(added August 1991)

- DEF The absorption of electromagnetic radiation in the microwave frequency range.
- GS energy absorption
 - . radiation absorption
 - . . electromagnetic absorption
 - . . . **microwave absorption**
- RT absorptance
- ∞ absorption
 - absorption spectra
 - absorptivity
 - activation
 - atmospheric attenuation
 - microwave attenuation
 - microwave frequencies
 - microwave scattering
 - microwave transmission
 - microwaves
 - radar
 - radar absorbers

microwave amplifiers

- GS amplifiers
 - . **microwave amplifiers**
 - . . crossed field amplifiers
 - . . cyclotron resonance devices
 - . . planotrons
 - microwave equipment
 - . **microwave amplifiers**
 - . . crossed field amplifiers
 - . . cyclotron resonance devices

- . . planotrons
- RT interstellar masers
- masers
- parametric amplifiers
- transferred electron devices

Microwave Anisotropy Probe

(added November 2002)

- DEF Spacecraft and related mission to map the relative cosmic microwave background temperature over the full sky with a high angular resolution and sensitivity. Launched June 2001.

- UF *MAP (space probe)*
- GS unmanned spacecraft
 - . space probes
 - . . **Microwave Anisotropy Probe**
- RT cosmic microwave background radiation
 - relic radiation
 - spaceborne astronomy

microwave antennas

- GS antennas
 - . radio antennas
 - . . **microwave antennas**
 - . . . horn antennas
 - . . . lens antennas
 - . . . rectennas
 - . . . spacetennas
 - microwave equipment
 - . **microwave antennas**
 - . . horn antennas
 - . . lens antennas
 - . . rectennas
 - . . spacetennas
 - radio equipment
 - . radio antennas
 - . . **microwave antennas**
 - . . . horn antennas
 - . . . lens antennas
 - . . . rectennas
 - . . . spacetennas
- RT aircraft antennas
- antenna arrays
- backfire antennas
- directional antennas
- Gregorian antennas
- helical antennas
- microstrip antennas
- missile antennas
- multibeam antennas
- omnidirectional antennas
- parabolic antennas
- parabolic reflectors
- patch antennas
- radar antennas
- reflector antennas
- slot antennas
- waveguide antennas

microwave attenuation

- GS attenuation
 - . **microwave attenuation**
 - transmission
 - . electromagnetic wave transmission
 - . . **microwave attenuation**
 - . . signal transmission
 - . . **microwave attenuation**
- RT microwave absorption
- wave propagation

microwave circuits

- GS circuits
 - . **microwave circuits**
- RT microstrip devices

microwave coupling

- GS coupling
 - . electromagnetic coupling
 - . . **microwave coupling**
- RT antenna couplers
- coupling circuits
- cross coupling
- directional antennas
- directional couplers
- optical coupling

microwave emission

- GS electromagnetic radiation
 - . radio waves

- . . short wave radiation
- . . . microwaves
- **microwave emission**
- emission
- . **microwave emission**
- RT cosmic noise
- diffraction radiation
- extraterrestrial radiation
- extraterrestrial radio waves
- linear polarization
- microwave signatures
- stellar radiation

microwave equipment

- GS **microwave equipment**
- gyrators
- . microwave filters
- . microwave amplifiers
- . . crossed field amplifiers
- . . cyclotron resonance devices
- . . planotrons
- . microwave antennas
- . . horn antennas
- . . lens antennas
- . . rectennas
- . . spacetennas
- . microwave interferometers
- . microwave oscillators
- . . magnetrons
- . . . nigotrons
- . microwave probes
- . . microwave plasma probes
- . microwave radiometers
- . . Advanced Microwave Sounding Unit
- . microwave scanning beam landing system
- . microwave tubes
- . . telescopes
- . . cyclotron resonance devices
- . . klystrons
- . . magnetrons
- . . . nigotrons
- . . planotrons
- . . traveling wave tubes
- . . . backward wave tubes
- helitrons
- carcinotrons
- . . thyratrons
- RT gas discharge tubes
- microchannel plates
- microstrip devices

microwave filters

- GS electromagnetic wave filters
 - . electric filters
 - . . **microwave filters**
 - microwave equipment
 - . gyrators
 - . . **microwave filters**
- RT bandpass filters
- bandstop filters
- digital filters
- FIR filters
- high pass filters
- low pass filters
- radar filters
- radio filters
- rectangular waveguides
- tunable filters
- waveguide filters

microwave frequencies

- SN (1 TO 100 GHZ)
- GS frequencies
 - . radio frequencies
 - . . **microwave frequencies**
 - . . . C band
 - . . . extremely high frequencies
 - . . . P band
 - . . . superhigh frequencies
- RT acoustic microscopes
- centimeter waves
- microwave absorption
- microwaves
- passive L-band radiometers
- praeterersonic devices

microwave holography

- GS imagery

- . photography
- . . . holography
- **microwave holography**
- RT imaging techniques
- microwaves
- wave front reconstruction
- microwave imagery**
- GS imagery
- . **microwave imagery**
- RT radarscopes
- synthetic aperture radar
- x ray imagery
- microwave interferometers**
- GS measuring instruments
- . interferometers
- . . . **microwave interferometers**
- microwave equipment
- . **microwave interferometers**
- RT Fabry-Perot interferometers
- plasma diagnostics
- microwave landing systems**
- DEF A precision instrument approach landing system operating in the microwave spectrum which provides lateral and vertical guidance to aircraft having compatible avionics equipment.
- GS landing aids
- . **microwave landing systems**
- . . . microwave scanning beam landing system
- RT air traffic control
- aircraft landing
- aircraft safety
- approach control
- automated en route ATC
- automatic landing control
- ∞ systems
- microwave oscillators**
- GS microwave equipment
- . **microwave oscillators**
- . . magnetrons
- . . . nigtotrons
- oscillators
- . **microwave oscillators**
- . . magnetrons
- . . . nigtotrons
- RT backward wave tubes
- Barritt diodes
- diffraction radiation
- gas discharge tubes
- klystrons
- microwave tubes
- superconducting cavity resonators
- transferred electron devices
- traveling wave tubes
- vacuum tube oscillators
- voltage controlled oscillators
- microwave photography**
- GS imagery
- . photography
- . . **microwave photography**
- RT radar data
- radar photography
- radarscopes
- microwave plasma probes**
- GS measuring instruments
- . microwave probes
- . . **microwave plasma probes**
- microwave equipment
- . microwave probes
- . . **microwave plasma probes**
- RT electron probes
- plasma flux measurement
- plasmaguides
- plasmas (physics)
- resonance probes
- microwave power beaming**
- (added November 1989)
- UF *power transmission (microwave)*
- GS power beaming
- . **microwave power beaming**
- RT laser power beaming
- microwave transmission
- satellite power transmission
- spacecraft power supplies
- microwave probes**
- GS measuring instruments
- . **microwave probes**
- . . microwave plasma probes
- microwave equipment
- . **microwave probes**
- . . microwave plasma probes
- RT radio frequency impedance probes
- microwave radiation*
- USE **microwaves**
- microwave radiometers**
- GS measuring instruments
- . radiation measuring instruments
- . . actinometers
- . . . radiometers
- **microwave radiometers**
- Advanced Microwave Sounding Unit
- microwave equipment
- . **microwave radiometers**
- . . Advanced Microwave Sounding Unit
- microwave reflectometers**
- GS measuring instruments
- . optical measuring instruments
- . . reflectometers
- . . . **microwave reflectometers**
- optical equipment
- . optical measuring instruments
- . . reflectometers
- . . . **microwave reflectometers**
- RT kinematics
- microwave resonance**
- GS resonance
- . **microwave resonance**
- RT cavity resonators
- harmonic analysis
- nonresonance
- microwave scanning beam landing system**
- DEF Primary position sensor of Space Shuttle orbiter's navigation system during the autoland phase of the flight. Used for MSBLS.
- UF *MSBLS*
- GS landing aids
- . microwave landing systems
- . . **microwave scanning beam landing system**
- microwave equipment
- . **microwave scanning beam landing system**
- navigation aids
- . **microwave scanning beam landing system**
- RT approach indicators
- Space Shuttle orbiters
- ∞ systems
- microwave scattering**
- GS scattering
- . radio scattering
- . . **microwave scattering**
- . wave scattering
- . . electromagnetic scattering
- . . . **microwave scattering**
- RT atmospheric scattering
- microwave absorption
- microwave signatures
- scatterometers
- Sunyaev-Zeldovich effect
- microwave sensors**
- GS measuring instruments
- . **microwave sensors**
- . . Advanced Microwave Sounding Unit
- RT ∞ instruments
- radar receivers
- ∞ sensors
- signal detectors
- synthetic aperture radar
- microwave signatures**
- (added September 1988)
- GS signatures
- . spectral signatures
- . . **microwave signatures**
- RT backscattering
- microwave emission
- microwave scattering
- microwaves
- radar signatures
- signature analysis
- microwave sounding**
- GS sounding
- . **microwave sounding**
- RT Advanced Microwave Sounding Unit
- imagery
- microwaves
- NOAA 12 satellite
- rocket sounding
- microwave spectra**
- UF *interstellar microwave spectra*
- GS spectra
- . radiation spectra
- . . electromagnetic spectra
- . . . radio spectra
- **microwave spectra**
- RT absorption spectra
- infrared spectra
- molecular rotation
- molecular spectra
- molecular spectroscopy
- microwave spectrometers**
- GS measuring instruments
- . spectrometers
- . . **microwave spectrometers**
- microwave switching**
- GS switching
- . **microwave switching**
- RT ferroelectricity
- gyrators
- packet switching
- phase shift
- switching circuits
- waveguides
- microwave transmission**
- GS transmission
- . electromagnetic wave transmission
- . . radio transmission
- . . . **microwave transmission**
- signal transmission
- . . radio transmission
- . . . **microwave transmission**
- RT ACTS
- circular waveguides
- dielectric waveguides
- domestic satellite communications systems
- downlinking
- Fleet Satellite Communication System
- frequency reuse
- laser power beaming
- microstrip transmission lines
- microwave absorption
- microwave power beaming
- power beaming
- satellite solar energy conversion
- satellite solar power stations
- spacetenas
- teletypewriter systems
- uplinking
- VSAT (network)
- wave propagation
- waveguides
- microwave tubes**
- GS electron tubes
- . vacuum tubes
- . . **microwave tubes**
- . . . telescopes
- cyclotron resonance devices
- klystrons
- magnetrons
- nigtotrons
- planotrons
- traveling wave tubes
- backward wave tubes
- helitrons

microwaves

- carcinotrons
- microwave equipment
- . **microwave tubes**
- telescopes
- cyclotron resonance devices
- klystrons
- magnetrons
- nigotrons
- planotrons
- traveling wave tubes
- backward wave tubes
- helitrons
- carcinotrons
- RT diffraction radiation
- gas discharge tubes
- microwave oscillators
- oscillators
- photomultiplier tubes
- phototubes
- triodes
- ∞ tubes

microwaves

DEF Of, or pertaining to, radiation in the microwave region. Used for microwave radiation.

- UF *microwave radiation*
- GS electromagnetic radiation
- . radio waves
- . . short wave radiation
- . . . **microwaves**
- centimeter waves
- cosmic microwave background radiation
- decimeter waves
- microwave emission
- millimeter waves
- RT cosmic noise
- diffraction radiation
- electromagnetic noise
- extraterrestrial radio waves
- infrared radiation
- microwave absorption
- microwave frequencies
- microwave holography
- microwave signatures
- microwave sounding
- ∞ radiation
- satellite solar energy conversion
- satellite solar power stations
- scatterometers
- submillimeter waves
- whistlers

microweighing

USE **weight measurement**

microyield strength

DEF Stress at which a microstructure (single crystal, for example) exhibits a specified deviation in its stress-strain relationship.

- GS mechanical properties
- . yield strength
- . . **microyield strength**
- RT elastic properties
- ∞ strength
- stresses
- yield point

micturition

USE **urination**

midair collisions

- GS collisions
- . **midair collisions**
- . . bird-aircraft collisions
- RT air traffic control
- aircraft accidents
- aircraft hazards
- aircraft safety
- Beacon Collision Avoidance System
- collision avoidance
- crashes
- flight hazards
- flight safety
- pilot error
- threat evaluation

midaltitude

DEF The average of many measurements

of altitudes as with satellite instruments for the compiling of planetary maps.

- GS altitude
- . **midaltitude**
- RT flight altitude
- high altitude
- low altitude

Midas 2 satellite

- GS artificial satellites
- . Midas satellites
- . . **Midas 2 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 2 satellite**

Midas 3 satellite

- GS artificial satellites
- . Midas satellites
- . . **Midas 3 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 3 satellite**

Midas 4 satellite

- GS artificial satellites
- . Midas satellites
- . . **Midas 4 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 4 satellite**

Midas 5 satellite

- GS artificial satellites
- . Midas satellites
- . . **Midas 5 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 5 satellite**

Midas 6 satellite

- GS artificial satellites
- . Midas satellites
- . . **Midas 6 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 6 satellite**

Midas 7 satellite

- GS artificial satellites
- . Midas satellites
- . . **Midas 7 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 7 satellite**

Midas satellites

- GS artificial satellites
- . **Midas satellites**
- . . Midas 2 satellite
- . . Midas 3 satellite
- . . Midas 4 satellite
- . . Midas 5 satellite
- . . Midas 6 satellite
- . . Midas 7 satellite
- military spacecraft
- . reconnaissance spacecraft
- . . **Midas satellites**
- . . . Midas 2 satellite
- . . . Midas 3 satellite
- . . . Midas 4 satellite
- . . . Midas 5 satellite
- . . . Midas 6 satellite
- . . . Midas 7 satellite
- RT Atlas Agena B launch vehicle

midcourse guidance

- GS guidance (motion)
- . **midcourse guidance**
- RT command guidance
- inertial guidance
- injection guidance
- rendezvous guidance
- spacecraft guidance

terminal guidance
transearth injection
translunar injection

midcourse trajectories

- GS trajectories
- . **midcourse trajectories**
- RT ascent trajectories
- ballistic trajectories
- coasting flight
- descent trajectories
- parabolic flight

middle atmosphere

DEF The portion of the Earth's atmosphere extending from the troposphere to 100 kilometers.

- GS Earth atmosphere
- . **middle atmosphere**
- . . mesosphere
- . . . mesopause
- . . stratosphere
- . . . ozonosphere
- . . . stratopause
- RT air
- air pollution
- ∞ atmospheres
- atmospheric chemistry
- atmospheric circulation
- atmospheric composition
- chemosphere
- climatology
- equatorial atmosphere
- free atmosphere
- heterosphere
- homosphere
- lower atmosphere
- midlatitude atmosphere
- tropopause
- upper atmosphere
- zonal flow (meteorology)

middle ear

- GS anatomy
- . sense organs
- . . ear
- . . . **middle ear**
- RT semicircular canals

middle ear pressure

- GS pressure
- . **middle ear pressure**
- RT ear pressure test
- eardrums

Middle East

(added December 1995)

- GS regions
- . **Middle East**
- RT Africa
- Asia
- Europe

midlatitude atmosphere

- GS Earth atmosphere
- . **midlatitude atmosphere**
- environments
- . **midlatitude atmosphere**
- RT Earth ionosphere
- middle atmosphere
- sporadic E layer

midlatitudes

USE **temperate regions**

mid-ocean ridges

(added July 1992)

DEF Continuous, seismic, median mountain ranges extending through the North and South Atlantic Oceans, the Indian Ocean and the South Pacific Ocean. They are broad fractured swells with a central rift valley and usually rugged topography. They are 1-3 km in elevation, about 1500 km in width, and over 84,000 km in length. According to the hypothesis of sea floor spreading, the mid-ocean ridges are the source of crustal material.

- UF *mid-oceanic ridges*
- RT Atlantic Ocean
- geological faults

Indian Ocean
ocean bottom
oceanography
Pacific Ocean
∞ ridges
sea floor spreading
seamounts
seismology
submarine hydrothermal vents

mid-oceanic ridges

USE **mid-ocean ridges**

Mie scattering

DEF Any scattering produced by spherical particles without special regard to comparative size of radiation wavelength and particle diameter. Used for Mie theory.

UF *Mie theory*

GS scattering
. wave scattering
. . electromagnetic scattering
. . . **Mie scattering**
. . . Rayleigh scattering

Mie theory

USE **Mie scattering**

MiG aircraft

DEF Any of a series of Soviet fighter aircraft, fighter-bombers, interceptors, and air supremacy aircraft, designed by Mikoyan.

GS attack aircraft
. fighter aircraft
. . **MiG aircraft**
single engine aircraft
. **MiG aircraft**
supersonic aircraft
. **MiG aircraft**
RT ∞ aircraft

migration

RT behavior
phenology
waterfowl

Mil aircraft

RT ∞ aircraft

Milankovitch theory

USE **climatology**

military air facilities

UF *aircraft bases*
RT air traffic control
∞ aircraft
aircraft carriers
airports
∞ facilities
∞ fields
hangars
heliports
landing aids
landing mats
navigation aids
stations

∞ military aircraft

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT A-37 aircraft
AH-1G helicopter
AH-1S helicopter
AH-1W helicopter
AH-63 helicopter
AH-64 helicopter
∞ aircraft
aircraft carriers
aircraft survivability
airships
Alpha jet aircraft
antisubmarine warfare aircraft
armed forces
armed forces (foreign)
armed forces (United States)
attack aircraft
attacking (assaulting)
AWACS aircraft
B-1 aircraft
B-2 aircraft

bomber aircraft
C-1A aircraft
cargo aircraft
CH-62 helicopter
CL-600 challenger aircraft
drone aircraft
drone vehicles
E-2 aircraft
E-3A aircraft
E-4A aircraft
fighter aircraft
Firebee 2 target drone aircraft
FV-12A aircraft
gliders
ground effect machines
H-60 Helicopter
Harrier aircraft
helicopters
Jaguar aircraft
jet aircraft
light aircraft
∞ military aviation
military helicopters
MRCA aircraft
nuclear propelled aircraft
observation aircraft
passenger aircraft
pilotless aircraft
reconnaissance aircraft
research aircraft
rotary wing aircraft
S-3 aircraft
short takeoff aircraft
SR-71 aircraft
submersible aircraft
tailless aircraft
tanker aircraft
target drone aircraft
training aircraft
transport aircraft
unmanned aircraft systems
utility aircraft
V-22 aircraft
V/STOL aircraft
vertical takeoff aircraft
weapon systems
X-45 aircraft
YC-14 aircraft
YF-12 aircraft

∞ military aviation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ aeronautics
air law
armed forces
aviation meteorology
bomber aircraft
fighter aircraft
∞ military aircraft
reconnaissance aircraft

military compact reactors

UF *MCR reactors*
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **military compact reactors**
. nuclear research and test reactors
. . **military compact reactors**

military helicopters

GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **military helicopters**
. . . . AH-1G helicopter
. . . . AH-1S helicopter
. . . . AH-1W helicopter
. . . . AH-63 helicopter
. . . . AH-64 helicopter
. . . . BO-105 helicopter
. . . . CH-3 helicopter
. . . . CH-21 helicopter
. . . . CH-34 helicopter
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . CH-54 helicopter
. . . . CH-62 helicopter

. . . . H-19 helicopter
. . . . H-43 helicopter
. . . . H-53 helicopter
. . . . H-54 helicopter
. . . . H-56 helicopter
. . . . H-60 Helicopter
. . . . HC-3 helicopter
. . . . HH-43 helicopter
. . . . HH-65 helicopter
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-13 helicopter
. . . . OH-23 helicopter
. . . . OH-58 helicopter
. . . . P-531 helicopter
. . . . QH-50 helicopter
. . . . S-67 helicopter
. . . . SA-321 helicopter
. . . . SA-330 helicopter
. . . . SH-3 helicopter
. . . . SH-4 helicopter
. . . . Sikorsky Whirlwind helicopter
. . . . UH-1 helicopter
. . . . UH-2 helicopter
. . . . UH-34 helicopter
. . . . UH-60A helicopter
. . . . UH-61A helicopter
. . . . Westland Whirlwind helicopter
. . . . XV-9A aircraft

RT ∞ aircraft

attack aircraft
EH-101 helicopter
light helicopters
∞ military aircraft
reconnaissance aircraft
terrain following

military operations

GS **military operations**
. combat
. electronic warfare
RT deployment
military personnel
tactics
tanks (combat vehicles)

military personnel

(added June 2004)

DEF Persons serving in any branch of the armed forces; members of a military force.

GS personnel
. **military personnel**
RT military operations
military psychology
police

military psychiatry

USE **military psychology**

military psychology

UF *military psychiatry*
GS psychology
. **military psychology**
RT aviation psychology
military personnel
psychiatry
psychological effects
psychological tests
psychometrics
space psychology

military spacecraft

GS **military spacecraft**
. DMSP satellites
. reconnaissance spacecraft
. . Inspector satellite
. . Midas satellites
. . . Midas 2 satellite
. . . Midas 3 satellite
. . . Midas 4 satellite
. . . Midas 5 satellite
. . . Midas 6 satellite
. . . Midas 7 satellite
. photo reconnaissance spacecraft
. . Samos
. . Vela satellites
RT aerospace planes
armed forces
artificial satellites

military technology

Columbus space station
evasive satellites
manned spacecraft
meteorological satellites
∞ military vehicles
navigation satellites
recoverable spacecraft
rendezvous spacecraft
satellite networks
space stations
space surveillance (spaceborne)
∞ spacecraft
synchronous satellites
unmanned spacecraft
weapon systems

military technology
GS technologies
RT . **military technology**
antimissile defense
antiradiation missiles
antisubmarine warfare
armed forces (foreign)
armed forces (United States)
Army-Navy instrumentation program
AWACS aircraft
Ballistic Missile Early Warning System
defense communications system (DCS)
defense industry
defense program
deployment
Fleet Satellite Communication System
interservice data exchange program
laser weapons
logistics over the shore (LOTS)
carrier
missile defense
optical countermeasures
radar homing missiles
Safeguard system
tactics
weapons
weapons delivery
weapons industry

∞ **military vehicles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aeroquatic vehicles
aircraft carriers
ambulances
amphibious vehicles
armed forces
armed forces (foreign)
armed forces (United States)
automobiles
boats
military spacecraft
recovery vehicles
research vehicles
ships
submarines
tanks (combat vehicles)
trucks
underwater vehicles
∞ vehicles
water vehicles

milk
RT beverages
∞ food

Milky Way Galaxy
DEF The galaxy to which the sun belongs.
GS celestial bodies
. galaxies
. . . spiral galaxies
. . . **Milky Way Galaxy**
galactic bulge
RT local group (astronomy)
massive compact halo objects
Orion nebula
radio sources (astronomy)
solar neighborhood
stars

millet
GS farm crops

. grains (food)
. . **millet**
plants (botany)
. **millet**
RT Earth resources
flour (food)
∞ food
grasses

millimeter waves
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . microwaves
. . . . **millimeter waves**
RT beam plasma amplifiers
C band
CN emission
cyclotron resonance devices
decimeter waves
electromagnetic noise
extraterrestrial radio waves
extremely high frequencies
frequencies
solar radio emission
submillimeter waves
wavelengths

∞ **milling**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT comminution
compounding

milling (machining)
GS cutting
. **milling (machining)**
machining
. **milling (machining)**
RT chemical machining
grooving
metal cutting
planing

milling (mixing)
USE **compounding**

milling machines
GS tools
. machine tools
. . **milling machines**
RT grinding machines
∞ machinery
shapers

millivoltmeters
GS measuring instruments
. voltmeters
. . **millivoltmeters**
RT galvanometers

Mills ratio
GS ratios
. **Mills ratio**
RT failure
failure analysis
life (durability)
mortality
probability density functions
statistical analysis

Milne method
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Milne method**
RT differential equations
∞ methodology

Milne-Thomson method
RT incompressible flow
∞ methodology
Navier-Stokes equation
viscous flow

MIM (semiconductors)
UF *metal-insulator-metal semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices

. . . **MIM (semiconductors)**
semiconductors (materials)
. **MIM (semiconductors)**
RT SIS (semiconductors)

MIM diodes
DEF Junction diodes each consisting of an insulating layer sandwiched between two metallic surface layers and exhibiting a negative differential resistance in its V-1 characteristics conceivably because of stimulated inelastic tunneling of electrons. Used for metal-insulator-metal diodes.
UF *metal-insulator-metal diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . junction diodes
. . . . **MIM diodes**
. solid state devices
. . semiconductor devices
. . . junction diodes
. . . . **MIM diodes**
RT electron tunneling
MSM (semiconductors)
negative resistance devices
semiconductor diodes
tunnel diodes

Mimas
DEF A satellite of Saturn orbiting at a mean distance of 186,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . **Mimas**
. . Saturn satellites
. . . **Mimas**
RT Saturn (planet)

MIMD (computers)
DEF A type of parallel processor that is essentially two or more individual computers with facilities for interaction and work sharing. Used for multiple instruction multiple data stream.
UF *multiple instruction multiple data stream*
GS data processing equipment
. computers
. . digital computers
. . . parallel computers
. . . . **MIMD (computers)**
RT architecture (computers)
computer design
computer programming
concurrent processing
interprocessor communication
operating systems (computers)
parallel processing (computers)
SIMD (computers)

MIMO (control systems)
(added January 1991)
UF *multiple input multiple output*
RT ∞ control
control stability
control systems design
control theory
feedback control
∞ systems
systems stability

Mindlin plate theory
(added April 1998)
USE **Mindlin plates**

Mindlin plates
(added April 1998)
UF *Mindlin plate theory*
Reissner-Mindlin plates
GS structural members
. plates (structural members)
. . **Mindlin plates**
RT dynamic structural analysis
finite element method
free vibration
plate theory
Reissner theory
shear strain

- structural analysis
- structural vibration
- thick plates
- mine detectors**
- GS warning systems
- . **mine detectors**
- RT ∞ detectors
- warning
- Miner rule*
- USE **Palmgren-Miner rule**
- mineral deposits**
- RT contacts (geology)
- dredging
- Earth resources
- excavation
- geology
- lunar mining
- mineralogy
- minerals
- mines (excavations)
- mining
- reserves
- strip mining
- underwater resources
- veins (petrology)
- mineral exploration**
- GS exploration
- . **mineral exploration**
- RT anthracite
- excavation
- minerals
- mines (excavations)
- mining
- mineral metabolism**
- GS metabolism
- . **mineral metabolism**
- RT body fluids
- caloric requirements
- endocrine systems
- secretions
- mineral oils**
- GS oils
- . **mineral oils**
- RT lubricating oils
- mineralogy**
- RT chondrule
- crystallography
- geochemistry
- geology
- mineral deposits
- minerals
- petrogenesis
- petrology
- ∞ physical sciences
- siderophile elements
- submarine hydrothermal vents
- minerals**
- DEF Naturally occurring inorganic elements or compounds having an orderly internal structure and characteristic chemical compositions, crystal forms, and physical properties.
- UF *apatites*
- ores*
- GS **minerals**
- . akermanite
- . amphiboles
- . anatase
- . aragonite
- . asbestos
- . barite
- . bastnasite
- . beryl
- . . alexandrite
- . bloedite
- . brucite
- . calcite
- . chromites
- . cohenite
- . cordierite
- . cryolite
- . dawsonite
- . dolomite (mineral)
- . euxenite
- . fayalite
- . feldspars
- . . plagioclase
- . fluorite
- . fluorspar
- . garnets
- . . gadolinium-gallium garnet
- . . yttrium-aluminum garnet
- . . yttrium-iron garnet
- . gehlenite
- . graphite
- . . pyrolytic graphite
- . gypsum
- . hexahedrite
- . illite
- . ilmenite
- . iron ores
- . . hematite
- . kamacite
- . kaolinite
- . krep
- . limonite
- . magnetite
- . merwinite
- . mica
- . . biotite
- . . fluorophlogopite
- . . muscovite
- . monticellite
- . montmorillonite
- . nepheline
- . nephelite
- . olivine
- . . forsterite
- . perovskites
- . proustite
- . pyrites
- . pyrophyllite
- . pyroxenes
- . . enstatite
- . pyrrhotite
- . . troilite
- . quartz
- . . coesite
- . . stishovite
- . scheelite
- . schreibersite
- . serpentine
- . siderites
- . spinel
- . spodumene
- . talc
- . tourmaline
- . vermiculite
- . wurtzite
- . zinblend
- RT aluminum silicates
- andesite
- bauxite
- beneficiation
- biogeochemistry
- bone mineral content
- boreholes
- calcium silicates
- crystallites
- diorite
- dunite
- Earth resources
- felsite
- fluorosilicates
- geology
- igneous rocks
- impact melts
- lava
- limestone
- lunar soil
- mineral deposits
- mineral exploration
- mineralogy
- monazite sands
- mullites
- ∞ nutrients
- obsidian
- potassium silicates
- rocks
- rutile
- shales
- siderophile elements
- silicates
- sodium silicates
- soils
- underground acoustics
- veins (petrology)
- zeolites
- ∞ **mines**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT mines (excavations)
- mines (ordnance)
- mines (excavations)**
- UF *quarries*
- RT core sampling
- drainage
- exploitation
- exploration
- lunar mining
- materials handling
- mineral deposits
- mineral exploration
- ∞ mines
- mining
- pits (excavations)
- reserves
- stratigraphy
- strip mining
- subsidence
- underground explosions
- underground storage
- underground structures
- waste disposal
- mines (ordnance)**
- GS weapons
- . **mines (ordnance)**
- RT ammunition
- ∞ mines
- miniature electronic equipment**
- GS electronic equipment
- . **miniature electronic equipment**
- RT circuits
- ∞ electric equipment
- electronic modules
- ∞ equipment
- microminiaturization
- microminiaturized electronic devices
- micromodules
- miniaturization
- molecular electronics
- printed circuits
- solid state devices
- subminiaturization
- thin films
- miniaturization**
- GS **miniaturization**
- . microminiaturization
- . subminiaturization
- RT circuits
- miniature electronic equipment
- printed circuits
- printed resistors
- transistors
- wafers
- minicomputers**
- GS data processing equipment
- . computers
- . . digital computers
- . . . **minicomputers**
- Nova computers
- RT airborne/spaceborne computers
- Atmospheric & Oceanographic Inform Sys
- microcomputers
- minima**
- GS analysis (mathematics)
- . real variables
- . . extremum values
- . . . **minima**
- Cramer-Rao bounds
- RT cusps (mathematics)
- differential calculus
- maxima
- operations research

minimal surfaces

- optimization
- penalty function
- range (extremes)
- steepest descent method

minimal surfaces

- DEF Surfaces for which the first variation of the area integral vanish.
- RT boundary value problems
conformal mapping
finite element method
∞ surfaces

minimax technique

- RT approximation
curve fitting
differential games
game theory
greedy algorithms
operations research
research
saddle points

minimization

- USE **optimization**

minimum drag

- GS dynamic characteristics
. drag
. . **minimum drag**
- RT aircraft performance
friction drag

minimum entropy method

- DEF Application of entropy in statistical mechanics.
- GS entropy (statistics)
. **minimum entropy method**
- RT ∞ methodology

minimum variance orbit determination

- UF *MINIVAR orbit determination*
- GS computation
. orbit calculation
. . **minimum variance orbit determination**
mechanics (physics)
. classical mechanics
. . space mechanics
. . . orbital mechanics
. . . . **minimum variance orbit determination**
orbit determination
. orbit calculation
. . **minimum variance orbit determination**
- RT statistical analysis

mining

- GS **mining**
. lunar mining
. strip mining
- RT anthracite
clays
dredging
energy policy
excavation
exploitation
mineral deposits
mineral exploration
mines (excavations)
underground structures

minitrack optical tracking system

- USE **minitrack system**

minitrack system

- DEF A satellite tracking system consisting of a field of separate antennas and associated receiving equipment interconnected so as to form interferometers which track a transmitting beacon in the payload itself. Used for minitrack optical tracking system and MOTS (tracking system).

- UF *minitrack optical tracking system*
MOTS (tracking system)

- RT Global Tracking Network
optical tracking
satellite tracking
space detection and tracking system

- space surveillance (ground based)
- spacecraft tracking
- STDN (network)
- ∞ systems
tracking networks
tracking stations
∞ tracks

MINIVAR orbit determination

- USE **minimum variance orbit determination**

Minkowski space

- RT Feynman diagrams
light-cone expansion
probability theory
space-time functions

Minnesota

- GS nations
. United States
. . **Minnesota**

minor circle turning flight

- GS turning flight
. **minor circle turning flight**
- RT aircraft control
maneuvers

Minor Planet 1221

- USE **Amor asteroid**

Minor Planet 2060

- USE **Chiron**

minor planets

- USE **asteroids**

minorities

- RT American Indians
anthropology
communities
culture (social sciences)
nations
races (anthropology)
sociology
voting

minority carriers

- GS charge carriers
. **minority carriers**
- RT additives
bipolar transistors
carrier injection
carrier lifetime
diffusion length
electron mobility
electrons
holes (electron deficiencies)
semiconductors (materials)

MINOS computer

- GS data processing equipment
. computers
. . **MINOS computer**

Minuteman ICBM

- UF *Minuteman missiles*
- GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . **Minuteman ICBM**
. surface to surface missiles
. . intercontinental ballistic missiles
. . . **Minuteman ICBM**
- RT M-55 engine
M-56 engine
M-57 engine
multistage rocket vehicles
solid propellant rocket engines
space weapons

Minuteman missiles

- USE **Minuteman ICBM**

miosis

- RT eye (anatomy)
ophthalmology
tetrad theory

- vision

Mir space station

- DEF The Soviet space station launched February 20, 1986; its name means peace or world in Russian. It is a manned, modular, permanent, and multi-mission station.

- GS artificial satellites
. space stations
. . **Mir space station**
manned spacecraft
. **Mir space station**
Soviet spacecraft
. **Mir space station**
stations
. space stations
. . **Mir space station**
- RT Granat satellite
International Space Station
Kvant modules
Priroda module
space bases
space laboratories
space station modules
spacecraft docking
U.S.S.R. space program

Mira Ceti star

- USE **Omicron Ceti star**

Mira variables

- DEF Long-period (80 to over 600 days) variable stars of red giant or red supergiant type, exemplified by the star Mira Ceti. Used for long period variables.

- UF *long period variables*
- GS celestial bodies
. stars
. . late stars
. . . cool stars
. . . . **Mira variables**
. Omicron Ceti star
. . . variable stars
. . . **Mira variables**
. . . . Omicron Ceti star
- RT asymptotic giant branch stars
carbon stars
M stars
red giant stars
S stars
stellar oscillations
supergiant stars

Mirage 3 aircraft

- UF *Dassault Mirage 3 aircraft*
- GS attack aircraft
. fighter aircraft
. . Mirage aircraft
. . . **Mirage 3 aircraft**
Dassault aircraft
. Mirage aircraft
. . **Mirage 3 aircraft**
jet aircraft
. Mirage aircraft
. . **Mirage 3 aircraft**
monoplanes
. Mirage aircraft
. . **Mirage 3 aircraft**
single engine aircraft
. Mirage aircraft
. . **Mirage 3 aircraft**
supersonic aircraft
. Mirage aircraft
. . **Mirage 3 aircraft**
tailless aircraft
. **Mirage 3 aircraft**

Mirage aircraft

- DEF Collective term for a class of French attack aircraft.

- GS attack aircraft
. fighter aircraft
. . **Mirage aircraft**
. . . Mirage 3 aircraft
Dassault aircraft
. **Mirage aircraft**
. . Mirage 3 aircraft
jet aircraft
. **Mirage aircraft**
. . Mirage 3 aircraft

- monoplanes
 - . **Mirage aircraft**
 - . . Mirage 3 aircraft
 - single engine aircraft
 - . **Mirage aircraft**
 - . . Mirage 3 aircraft
 - supersonic aircraft
 - . **Mirage aircraft**
 - . . Mirage 3 aircraft
- Miranda**
- DEF A satellite of Uranus orbiting at a mean distance of 124,000 kilometers.
 - GS celestial bodies
 - . natural satellites
 - . . Uranus satellites
 - . . . **Miranda**
 - RT Uranus (planet)
- Miranda satellite**
- DEF This United Kingdom satellite was launched in 1974 into a sun synchronous, low Earth orbit. Prime objective of the mission was to experiment with satellite attitude control. It ceased to operate the same year it was launched.
 - GS artificial satellites
 - . scientific satellites
 - . . UK satellites
 - . . . **Miranda satellite**
 - . synchronous satellites
 - . . **Miranda satellite**
 - RT attitude control
- Miros system**
- UF *modulating retrodirective optics*
 - GS modulation
 - . light modulation
 - . . **Miros system**
 - RT optical measuring instruments
 - ∞ systems
- mirror fusion**
- DEF An open-ended configuration which traps low beta plasmas. It is realized by associating two identical magnetic mirrors having the same axis.
 - RT fusion reactors
 - magnetic mirrors
 - nuclear fusion
 - plasma control
 - tandem mirrors
 - thermal barriers (plasma control)
- mirror point**
- RT magnetic mirrors
 - radiation belts
- mirrors**
- GS **mirrors**
 - . telescopes
 - . etalons
 - . Fresnel reflectors
 - . honeycomb mirrors
 - . magnetic mirrors
 - . . tandem mirrors
 - . deformable mirrors
 - . paraboloid mirrors
 - . rotating mirrors
 - . segmented mirrors
 - . solettas
 - RT Bragg reflectors
 - Cassegrain optics
 - circumsolar telescopes
 - collimators
 - heliostats
 - optical coatings
 - optical equipment
 - optical materials
 - optical resonators
 - ∞ optics
 - reflecting telescopes
 - reflectors
 - solar collectors
 - solar reflectors
 - specular reflection
 - telescopes
- x ray optics
- MIS (semiconductors)**
- UF *metal insulator semiconductors*
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . **MIS (semiconductors)**
 - semiconductors (materials)
 - . **MIS (semiconductors)**
 - RT SIS (semiconductors)
- misalignment**
- SN (EXCLUDES PSYCHOLOGICAL DISORIENTATION)
 - UF *misorientation*
 - RT attitude (inclination)
 - disorientation
 - position (location)
- mischmetal**
- (added June 1998)
 - DEF An alloy consisting of a natural mixture of rare-earth metals; used in electrode materials and hydrogen-storage alloys, as a general alloy addition, and in the production of some aluminum alloys and steels.
 - GS alloys
 - . rare earth alloys
 - . . **mischmetal**
 - RT alloying
 - aluminum alloys
 - cathodic coatings
 - cerium
 - desorption
 - electrode materials
 - intermetallics
 - steels
- miscibility*
- USE **solubility**
- miscibility gap**
- RT phase separation (materials)
 - solubility
 - space processing
 - temperature dependence
- MISFETs**
- USE **field effect transistors**
- mismatch (electrical)**
- DEF Condition in which the impedance of a source does not match or equal the impedance of the connected load or transmission line.
 - RT electrical measurement
 - impedance measurement
 - matching
- misorientation*
- USE **misalignment**
- MISR (radiometry)**
- (added May 2007)
 - DEF A high resolution imaging spectroradiometer aboard the Terra spacecraft that measures the Earth's brightness in 4 spectral bands at 9 different look angles in order to increase the understanding of the impacts of different types of atmospheric particles and clouds on global climate. Launched in August 1999.
 - UF *Multi-angle Imaging Spectroradiometer*
 - GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . radiometers
 - spectroradiometers
 - **MISR (radiometry)**
 - . satellite-borne instruments
 - . . **MISR (radiometry)**
 - RT aerosols
 - albedo
 - clouds (meteorology)
 - data products
 - Earth atmosphere
 - Earth Observing System (EOS)
 - reflectance
 - remote sensing
 - satellite imagery
 - satellite observation
- Terra spacecraft
 - terrestrial radiation
- miss distance**
- GS distance
 - . **miss distance**
 - RT accuracy
 - air to surface missiles
- missile antennas**
- GS antennas
 - . **missile antennas**
 - missile components
 - . **missile antennas**
 - RT aircraft antennas
 - directional antennas
 - microwave antennas
- missile bodies**
- UF *missile cases*
 - GS missile components
 - . **missile bodies**
 - RT airframes
 - axisymmetric bodies
 - blunt bodies
 - ∞ bodies
 - cases (containers)
 - finned bodies
 - rocket engine cases
 - slender bodies
 - streamlined bodies
- missile cases*
- USE **missile bodies**
- missile components**
- GS **missile components**
 - . missile antennas
 - . missile bodies
 - RT ∞ components
 - engines
 - fins
 - nose cones
 - warheads
 - wings
- missile configurations**
- GS **missile configurations**
 - . Sandpiper target missile
 - RT aerodynamic configurations
 - aircraft configurations
 - ∞ configurations
 - hammerhead configuration
 - launch vehicle configurations
 - missiles
 - multiengine vehicles
 - Patriot missile
 - propulsion system configurations
 - rocket engines
 - rocket vehicles
- missile construction*
- USE **missile structures**
- missile control**
- UF *missile guidance*
 - missile stabilization*
 - RT actuators
 - analog computers
 - attitude control
 - automatic control
 - automatic flight control
 - beam rider guidance
 - ∞ control
 - directional control
 - flight control
 - ground based control
 - homing
 - laser guidance
 - lateral control
 - longitudinal control
 - missiles
 - proportional navigation
 - radar homing missiles
 - radio control
 - remote control
 - rocket engine control
 - spacecraft control
 - star trackers
 - thrust vector control

missile defense

visual control

missile defense

- SN (SYSTEMS DESIGNED TO PROTECT MISSILES AGAINST ATTACK)
- RT antimissile defense
- antimissile missiles
- antiradiation missiles
- ballistic missile decoys
- ∞ defense
- defense industry
- defense program
- hardening (systems)
- military technology
- missiles
- optical countermeasures
- reentry decoys
- Safeguard system
- weapons delivery

missile design

- RT aerospace engineering
- aircraft design
- computer aided design
- ∞ design
- ∞ development
- engine design
- flight tests
- functional design specifications
- Magnus effect
- reliability
- structural design
- systems engineering

missile detection

- GS detection
- . **missile detection**
- RT early warning systems
- electronic warfare
- identifying
- target acquisition
- target recognition

missile engine cases

- USE **rocket engine cases**

missile guidance

- USE **missile control**

missile launchers

- GS launchers
- . **missile launchers**
- . . mobile missile launchers
- RT ballistic missile submarines
- catapults
- ground support equipment
- gun launchers
- launch vehicles
- launching
- launching sites
- missiles
- rocket launchers
- sea launching
- weapon systems

missile ranges

- SN (EXCLUDES DISTANCE OF MISSILE TRAVEL)
- GS ranges (facilities)
- . test ranges
- . . **missile ranges**
- test facilities
- . test ranges
- . . **missile ranges**
- RT ballistic ranges
- downrange
- hypersonic test apparatus
- missiles
- range safety
- reentry range

missile signatures

- GS signatures
- . **missile signatures**
- RT detection
- signature analysis
- target recognition

missile silos

- UF *silos (missile storage)*
- RT buildings

launching sites

- MX missile
- ∞ storage

∞ missile simulators

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT computerized simulation
- flight simulators
- mathematical models
- missiles
- simulators
- training simulators
- wind tunnel models

missile stabilization

- USE **missile control stabilization**

missile storage

- RT ground support equipment
- mobile missile launchers
- propellant storage
- ∞ storage
- underground storage

missile structures

- UF *missile construction*
- RT airframes
- ∞ structures
- tail assemblies

missile systems

- GS weapon systems
- . **missile systems**
- . . Nike X systems
- . . Safeguard system
- RT aerospace systems
- beam rider guidance
- mobile missile launchers
- radar homing missiles
- ∞ systems

missile tests

- RT captive tests
- engine tests
- flight tests
- fuel tests
- ground tests
- missiles
- prelaunch tests
- propellant tests
- stability tests
- static tests
- test firing
- test vehicles
- ∞ tests
- wind tunnel stability tests

missile tracking

- GS tracking (position)
- . **missile tracking**
- RT infrared tracking
- laser target designators
- polystation doppler tracking system
- range and range rate tracking
- space detection and tracking system
- spacecraft tracking
- tracking networks
- tracking stations

missile trajectories

- GS trajectories
- . **missile trajectories**
- RT ascent trajectories
- ballistic trajectories
- Cobra Dane (radar)
- descent trajectories
- flight mechanics
- flight paths
- impact prediction
- parabolic flight
- reentry trajectories
- spinning unguided rocket trajectory
- underwater trajectories

missile vibration

- GS vibration
- . structural vibration
- . . **missile vibration**

- RT bending vibration
- breathing vibration
- flutter
- linear vibration
- random vibration
- self induced vibration
- supersonic flutter
- torsional vibration
- transonic flutter

missiles

DEF Any objects thrown, dropped, fired, launched, or otherwise projected with the purpose of striking a target.

GS missiles

- . air slew missiles
- . air to air missiles
- . . Falcon missile
- . . Matra missile
- . . Sidewinder missiles
- . . Sparrow missiles
- . . . Sparrow 2 missile
- . . . Sparrow 3 missile
- . air to surface missiles
- . . Bullpup missiles
- . . Condor missile
- . . Harpoon missile
- . . Hound Dog missile
- . . Maverick missiles
- . . quail missile
- . . Shrike missile
- . Antelope missile
- . anti-aircraft missiles
- . . BOMARC missiles
- . . . BOMARC A missile
- . . . BOMARC B missile
- . . Falcon missile
- . . Mauler missile
- . . Nike-Ajax missile
- . . Nike-Hercules missile
- . . Redeye missile
- . . SIAM missiles
- . . Sidewinder missiles
- . . tartar missile
- . . terrier missile
- . . anti-missile missiles
- . . Mauler missile
- . . Nike-Zeus missile
- . . Spartan missile
- . . Sprint missile
- . . anti-radiation missiles
- . . anti-ship missiles
- . . ballistic missiles
- . . field army ballistic missiles
- . . intercontinental ballistic missiles
- . . . Atlas ICBM
- Atlas D ICBM
- Atlas E ICBM
- Atlas F ICBM
- . . . Minuteman ICBM
- . . . MX missile
- . . . Titan ICBM
- Titan 1 ICBM
- Titan 2 ICBM
- . . intermediate range ballistic missiles
- . . . Blue Streak missile
- . . . Jupiter missile
- polaris missiles
- Polaris A1 missile
- Polaris A2 missile
- Polaris A3 missile
- . . Pershing missile
- . . Poseidon missiles
- . . short range ballistic missiles
- . . Skybolt missile
- . . Subroc missile
- . . V-2 missile
- . Blue Steel missile
- . Bumblebee project
- . Corvus missile
- . Osprey missile
- . precision guided projectiles
- . radar homing missiles
- . ramjet missiles
- . . Navaho missile
- . . supersonic low altitude missile
- . Sandpiper target missile
- . SS-11 missile
- . surface to air missiles

- . . Blue Goose missile
- . . BOMARC missiles
- . . . BOMARC A missile
- . . . BOMARC B missile
- . . Chaparral missile
- . . Hawk missile
- . . Mauler missile
- . . Nike missiles
- . . . Nike-Ajax missile
- . . . Nike-Hercules missile
- . . . Nike-Zeus missile
- . . Patriot missile
- . . Redeye missile
- . . Sprint missile
- . . Talos missile
- . . tartar missile
- . . terrier missile
- . surface to surface missiles
- . . antitank missiles
- . . . Shillelagh missiles
- . . . tow missiles
- . . Corporal missile
- . . cruise missiles
- . . . Navaho missile
- . . . Tomahawk missiles
- . . fleet ballistic missiles
- . . . Polaris A1 missile
- . . . Polaris A2 missile
- . . . Polaris A3 missile
- . . . Poseidon missiles
- . . . Subroc missile
- . . intercontinental ballistic missiles
- . . . Atlas ICBM
- Atlas D ICBM
- Atlas E ICBM
- Atlas F ICBM
- . . . Minuteman ICBM
- . . . MX missile
- . . . Titan ICBM
- Titan 1 ICBM
- Titan 2 ICBM
- . . intermediate range ballistic missiles
- . . . Blue Streak missile
- . . . Jupiter missile
- polaris missiles
- Polaris A1 missile
- Polaris A2 missile
- Polaris A3 missile
- . . Lance missile
- . . Mace missiles
- . . Pershing missile
- . . Regulus missile
- . . sergeant missiles
- . . short range ballistic missiles
- . . supersonic low altitude missile
- . . V-1 missile
- . . underwater to surface missiles
- . . Subroc missile
- RT ammunition
- antimissile defense
- antiship warfare
- artillery
- ascent propulsion systems
- auxiliary propulsion
- bombs (ordnance)
- electromagnetic missiles
- flight test vehicles
- ∞ flight vehicles
- ground support equipment
- guidance (motion)
- homing devices
- hypersonic flight
- incendiary ammunition
- launch vehicles
- launching sites
- missile configurations
- missile control
- missile defense
- missile launchers
- missile ranges
- ∞ missile simulators
- missile tests
- multiengine vehicles
- Nike X systems
- nuclear weapons
- plasma sheaths
- propulsion
- reentry
- reentry vehicles
- rocket catapults
- rocket engines
- rocket propellants
- ∞ rockets
- ∞ SCRAM
- spacecraft launching
- spin stabilization
- stage separation
- supersonic combustion ramjet engines
- supersonic flight
- terminal ballistics
- test vehicles
- torpedoes
- trajectories
- transportation
- ∞ vehicles
- warheads
- weapon systems
- weapons
- ∞ winged vehicles
- missing mass (astrophysics)**
- DEF A problem related to a cluster of galaxies in which the mass derived from the dynamical stability of its member galaxies, the dynamical mass, is substantially larger than the mass estimated by the mass-to-luminosity ratio of the visible parts of the galaxies, the visible mass.
- GS cosmology
- . **missing mass (astrophysics)**
- mass
- . **missing mass (astrophysics)**
- RT astronomy
- astrophysics
- dark matter
- dynamic stability
- galactic clusters
- galactic halos
- galactic structure
- large-scale structure of the universe
- mass distribution
- mass to light ratios
- massive compact halo objects
- virial theorem
- weakly interacting massive particles
- mission adaptive wings**
- GS airfoils
- . wings
- . . **mission adaptive wings**
- RT adaptive control
- F-111 aircraft
- gust alleviators
- variable geometry structures
- variable sweep wings
- wing camber
- wing profiles
- mission planning**
- GS planning
- . **mission planning**
- RT budgeting
- commerce lab
- critical path method
- estimating
- forecasting
- lessons learned
- management
- management planning
- ∞ missions
- observation scheduling
- ∞ operations
- operations research
- payload integration
- ∞ plans
- predictions
- prelaunch summaries
- programs
- project management
- scheduling
- Ulysses mission
- Mission to Planet Earth**
- (added April 1995)
- DEF A NASA initiated program that uses both space and ground based measurement systems to provide the scientific basis for understanding global change.
- UF *MTPE*
- GS programs
- . NASA programs
- . . **Mission to Planet Earth**
- RT climate change
- Earth Observing System (EOS)
- geophysics
- global warming
- ∞ missions
- remote sensing
- scientific visualization
- ∞ **missions**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aborted missions
- asteroid missions
- Astro missions (STS)
- Cassini mission
- Cluster Mission
- Comet Rendezvous Asteroid Flyby Mission
- Earth-Venus trajectories
- expeditions
- flyby missions
- Galileo spacecraft
- Grand Tours
- Heat Capacity Mapping Mission
- Landsat follow-on missions
- long duration space flight
- Mariner Jupiter-Saturn flyby
- Mariner Jupiter-Uranus flyby
- Mars missions
- mission planning
- Mission to Planet Earth
- planning
- programs
- project planning
- projects
- Rosetta mission
- SOHO Mission
- Solar Maximum Mission
- Solar Maximum Mission-A
- space flight
- space missions
- Space Shuttle missions
- targets
- Ulysses mission
- Voyager 1977 mission
- Mississippi**
- GS nations
- . United States
- . . **Mississippi**
- RT Gulf of Mexico
- Mississippi Delta (LA)**
- GS landforms
- . deltas
- . . **Mississippi Delta (LA)**
- RT Louisiana
- rivers
- Mississippi River (US)**
- GS rivers
- . **Mississippi River (US)**
- RT drainage patterns
- Earth resources
- floods
- resources
- river basins
- Missouri**
- GS nations
- . United States
- . . **Missouri**
- RT Missouri River (US)
- St Louis-Kansas City Corridor (MO)
- Missouri River (US)**
- GS rivers
- . **Missouri River (US)**
- RT Iowa
- Kansas
- Missouri
- Montana
- Nebraska
- North Dakota
- river basins
- South Dakota
- United States

Missouri River Basin (US)

valleys

Missouri River Basin (US)

- GS landforms
 - . structural basins
 - . . river basins
 - . . . **Missouri River Basin (US)**
- RT rivers
- watersheds

mist

- SN (ATMOSPHERIC WATER)
- DEF Liquid, usually water in the form of particles suspended in the atmosphere at or near the surface of the Earth; small water droplets floating or falling, approaching the form of rain, and sometimes distinguished from fog as being more transparent or as having particles perceptibly moving downward.
- GS particles
 - . **mist**
- RT aerosols
- dispersions
- fog
- fog dispersal
- haze
- haze detection
- precipitation (meteorology)

mistuning (turbomachinery)

- (added July 1991)
- RT rotating disks
- ∞ rotor blades
- rotor blades (turbomachinery)
- rotors
- tuning
- turbomachine blades
- vibration

mitochondria

- GS organelles
 - . **mitochondria**
- RT cells (biology)
- cytology

mitosis

- GS cytogenesis
 - . **mitosis**
- RT cell division
- cells (biology)
- chromosome aberrations
- chromosomes
- cytology
- cytoplasm
- mutations
- physiology
- reproduction (biology)

mitra

- RT fungi
- plants (botany)

MIUS

- USE **Modular Integrated Utility System**

mixed crystals

- GS crystals
 - . **mixed crystals**
- RT powder metallurgy
- sintering

mixed flow

- USE **multiphase flow**

mixed oxides

- DEF Mixture of oxides, particularly of radioactive metals.
- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **mixed oxides**
 - BSCCO superconductors
 - YBCO superconductors
- RT high temperature superconductors
- nuclear fuels
- plutonium oxides
- strontium oxides
- uranium oxides

mixers

- SN (EXCLUDES MIXING CIRCUITS)

- RT admixtures
- aeration
- aerosols
- agitation
- baffles
- blowers
- carburetors
- coalescing
- contactors
- ∞ diffusers
- ∞ dispersion
- feeders
- grinding mills
- mixing
- mixtures
- paddles
- plows
- plungers
- separators
- shakers
- sprayers
- stirring
- tumbling motion

mixing

- GS **mixing**
 - . colloidng
 - . compounding
 - . dissolving
 - . homogenizing
 - . laminar mixing
 - . premixing
 - . signal mixing
 - . suspending (mixing)
 - . turbulent mixing
- RT aeration
- agitation
- blowing
- chokes
- diffusion
- dilution
- grinding (comminution)
- jet mixing flow
- liquid injection
- metal powder
- mixers
- mixing layers (fluids)
- mixing ratios
- mixtures
- premixed flames
- ∞ separation
- shaking
- spraying
- swirling
- tangling
- trapped vortices
- turbulence
- vortices

mixing circuits

- GS circuits
 - . **mixing circuits**
- RT frequency converters
- frequency synthesizers
- heterodyning
- preamplifiers

mixing depth

- USE **mixing height**

mixing height

- DEF The heights of the layer through which the atmosphere is well mixed. The height will vary with diurnal, seasonal, and regional variations. Used for mixing depth.
- UF *mixing depth*
- RT air pollution
- atmospheric circulation
- convection
- convection currents
- vertical air currents
- wind (meteorology)
- zonal flow (meteorology)

mixing layers (fluids)

- (added September 1988)
- DEF Fluid layers in which multicomponent mixing occurs.
- RT advection
- atmospheric boundary layer

- atmospheric stratification
- boundary layers
- convection
- Ekman layer
- jet mixing flow
- laminar mixing
- ∞ layers
- mixing
- mixing length flow theory
- shear layers
- turbulent boundary layer
- turbulent mixing
- two fluid models

mixing length flow theory

- GS flow theory
 - . **mixing length flow theory**
 - kinetic theory
 - . transport theory
 - . . **mixing length flow theory**
- RT mixing layers (fluids)
- shear flow
- ∞ theories
- turbulence models
- turbulent flow
- turbulent mixing
- vorticity transport hypothesis

mixing ratios

- (added September 1993)
- GS dimensionless numbers
 - . **mixing ratios**
 - ratios
 - . mass ratios
 - . . **mixing ratios**
- RT atmospheric composition
- atmospheric moisture
- gas mixtures
- gaseous diffusion
- humidity
- mixing
- moisture content
- water vapor

mixtures

- UF *blends*
- GS **mixtures**
 - . admixtures
 - . binary mixtures
 - . . binary fluids
 - . . eutectics
 - . . . eutectic alloys
 - . dispersions
 - . . colloids
 - . . . aerosols
 - fog
 - . . . colloidal propellants
 - . emulsions
 - . . . photographic emulsions
 - nuclear emulsions
 - . liquid-gas mixtures
 - . . . aerosols
 - fog
 - plastisols
 - smoke
 - polymer blends
 - . sialon
 - . slurries
 - . solid suspensions
 - . solutions
 - . . aqueous solutions
 - . . gas mixtures
 - . . . air
 - alveolar air
 - compressed air
 - expired air
 - high temperature air
 - liquid air
 - detonable gas mixtures
 - photographic emulsions
 - nuclear emulsions
 - solid solutions
- RT alloys
- azeotropes
- ∞ combination
- composite materials
- composition (property)
- dissolved gases
- eutectic composites
- formulations

- ingredients
- mixers
- mixing
- paste (consistency)
- solubility
- MJO (meteorology)*
(added September 2000)
- USE **Madden-Julian Oscillation**
- ML-1 nuclear power plant**
- GS electric power plants
 - . nuclear power plants
 - . . **ML-1 nuclear power plant**
- nuclear electric power generation
 - . nuclear power plants
 - . . **ML-1 nuclear power plant**
- RT ∞ power plants
- MLA*
- USE **multispectral linear arrays**
- MMH (chemistry)*
(added February 2001)
- USE **monomethylhydrazines**
- MMS*
- USE **multimission modular spacecraft**
- mnemonics**
- RT memory
 - nomenclatures
 - symbolic programming
 - symbols
- MNOS*
- USE **metal-nitride-oxide-silicon**
- mobile communication systems**
- DEF Any configuration of mobile or transportable voice and data communication equipment which allows for communication between combinations of mobile/fixed points with or without the aid of satellites.
- GS **mobile communication systems**
 - . land mobile satellite service
- RT communication satellites
 - Iridium network
 - MSAT
 - radio communication
 - Rayleigh fading
- mobile lounges**
- RT airfield surface movements
 - airports
 - ground handling
- ∞ lounges
- mobile missile launchers**
- GS launchers
 - . missile launchers
 - . . **mobile missile launchers**
- RT ballistic missile submarines
 - missile storage
 - missile systems
 - weapon systems
- mobile quarantine facility**
- RT aerospace medicine
 - evacuating (transportation)
- ∞ facilities
 - medical equipment
 - medical services
 - physical examinations
 - physiological tests
- Mobile Servicing System (ISS)*
(added September 2001)
- USE **Space Station Mobile Servicing System**
- mobility**
- SN (EXCLUDES CONSIDERATIONS OF MANNED AND UNMANNED CRAFT)
- GS **mobility**
 - . atomic mobilities
 - . carrier mobility
 - . . electron mobility
 - . . hole mobility
 - . ionic mobility
- RT ∞ conductivity
- diffusivity
- drift rate
- Hall effect
- kinetic theory
- portable equipment
- transport properties
- MOCVD (vapor deposition)*
- USE **metalloorganic chemical vapor deposition**
- modal response**
- UF *mode shapes*
- GS responses
 - . **modal response**
- RT dynamic response
 - stroking tests
- Modcomp II computer**
- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **Modcomp II computer**
- Modcomp IV computer**
- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **Modcomp IV computer**
- ∞ **mode**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT failure modes
 - mode (statistics)
 - modes
- mode (statistics)**
- RT average
 - distribution moments
 - failure modes
 - mean
 - median (statistics)
- ∞ mode
 - modes
 - moments
 - quality control
- mode coupling*
- USE **coupled modes**
- mode of vibration*
- USE **vibration mode**
- mode shapes*
- USE **modal response**
- mode transformers**
- GS transducers
 - . **mode transformers**
- transformers
 - . **mode transformers**
- RT impedance matching
 - propagation modes
 - transmission lines
 - vibration mode
 - waveguide tuners
- model reference adaptive control**
- DEF This deals with three parameters: an ideal adaptive control system whose response is agreed to be optimum; computer simulation in which both the model system and the actual system are subjected to the same stimulus; and parameters of the actual system which are adjusted to minimize the difference in the outputs of the model and the actual system. Used for MRAC (systems).
- UF *MRAC (systems)*
- GS automatic control
 - . adaptive control
 - . . **model reference adaptive control**
- RT automata theory
 - autonomy
- ∞ control
 - control theory
 - cybernetics
 - dynamic control
 - feedback control
 - feedforward control
- mathematical models
- optimal control
- self alignment
- systems simulation
- models**
- GS **models**
 - . aircraft models
 - . astronomical models
 - . . density wave model
 - . . stellar models
 - . atmospheric models
 - . . Atmospheric General Circulation Models
 - . . reference atmospheres
 - . breadboard models
 - . climate models
 - . digital elevation models
 - . dynamic models
 - . electroweak model
 - . environment models
 - . Gutenberg zone
 - . hydrology models
 - . Lighthill gas model
 - . mathematical models
 - . . analog simulation
 - . . BGK model
 - . . biological models (mathematics)
 - . . digital simulation
 - . . Mandelstam representation
 - . . Petri nets
 - . . Thomas-Fermi model
 - . . turbulence models
 - . . . Baldwin-Lomax turbulence model
 - . . . k-epsilon turbulence model
 - . . . k-omega turbulence model
 - . . Veneziano model
 - . nuclear models
 - . ocean models
 - . quark models
 - . . quark parton model
 - . scale models
 - . semispan models
 - . spacecraft models
 - . standard model (particle physics)
 - . static models
 - . three dimensional models
 - . two dimensional models
 - . vector dominance model
 - . wind tunnel models
 - . . powered models
 - . animal models
 - . multiscale models
 - . . knockout mice
- RT analogs
 - dummies
 - layouts
 - pilot plants
 - replicas
 - simulators
 - test facilities
- modems**
- UF *modulators-demodulators*
- GS demodulators
 - . **modems**
- modulators
 - . **modems**
- RT data transmission
 - peripheral equipment (computers)
 - phase demodulators
 - phase modulation
 - pulse amplitude modulation
 - pulse communication
 - pulse duration modulation
 - pulse frequency modulation
 - pulse modulation
 - pulse position modulation
- Moderate Resolution Imaging Spectroradiometer*
(added June 2003)
- USE **MODIS (radiometry)**
- moderation (energy absorption)**
- GS energy absorption
 - . **moderation (energy absorption)**
 - . . thermalization (energy absorption)
 - . . . neutron thermalization
- RT ∞ absorption

moderators

limiters (fusion reactors)
moderators

moderators

DEF Materials that have a high cross section for slowing down fast neutrons with a minimum of absorption, e.g., heavy water, beryllium, used in reactor cores.

RT beryllium
blankets (fusion reactors)
graphite
heavy water
limiters (fusion reactors)
moderation (energy absorption)
neutron absorbers
nuclear reactors
reactor materials
water

modes

GS **modes**
. axial modes
. ballooning modes
. coupled modes
. failure modes
. laser modes
. modes (standing waves)
. propagation modes
. . . whispering gallery modes
. pushbroom sensor modes
. vibration mode
. . . uncoupled modes
RT ∞ mode
mode (statistics)
tearing modes (plasmas)

modes (standing waves)

GS modes
. **modes (standing waves)**
RT uncoupled modes
vibration

MODFETS

DEF Heterojunction field effect transistor device structures in which only the larger (Al, Ga)As bandgap is doped with donors while the GaAs layer is left undoped. This results in high electron mobilities due to spatially separated electrons and donors. Used for modulation doped FETs.

UF *modulation doped fets*
GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . heterojunction devices
. . . high electron mobility transistors
. . . . **MODFETS**
. . . transistors
. . . field effect transistors
. . . . **MODFETS**
. . . high electron mobility transistors
. . . . **MODFETS**
RT aluminum gallium arsenides
doped crystals
energy gaps (solid state)
gallium arsenides
indium arsenides
ion implantation

modification

USE **revisions**

modified embedded atom method

(added February 1998)
USE **embedded atom method**

MODIS (radiometry)

(added June 2003)

DEF A high resolution spectroradiometer aboard the Terra and Aqua spacecraft designed to gather spectral data in 36 bands in order to increase the understanding of global environmental dynamics and processes. Launched in 1999.

UF *Moderate Resolution Imaging Spectroradiometer*

GS measuring instruments
. radiation measuring instruments
. . . actinometers
. . . radiometers

. . . . spectroradiometers
. . . . **MODIS (radiometry)**

RT Aqua spacecraft
data products
Earth observations (from space)
remote sensing
Terra spacecraft

Modular Integrated Utility System

DEF A joint NASA-HUD concept incorporating various utilities -- electric power plant, water supply, heating and air conditioning, sewage treatment, and waste disposal into a single system having increased efficiency and economy. Use for MIUS.

UF *MIUS*
RT air conditioning
communities
electric power plants
heating
potable water
sewage treatment
 ∞ systems
utilities
waste disposal

modular ratios

GS mechanical properties
. **modular ratios**
ratios
. **modular ratios**
RT composite materials
stress ratio
structural analysis
structural engineering

modularity

RT architecture (computers)
avionics
computer programs
electronic modules
systems engineering

modulated continuous radiation

GS continuous radiation
. **modulated continuous radiation**
electromagnetic radiation
. **modulated continuous radiation**
RT coherent electromagnetic radiation
phase deviation
 ∞ radiation

modulating retrodirective optics

USE **Miros system**

modulation

DEF The variation in the value of some parameter characterizing a periodic oscillation. Specifically, variation of some characteristic of a radio wave, called the carrier wave, in accordance with instantaneous values of another wave, called the modulating wave. Used for carrier modulation.

UF *carrier modulation*
GS **modulation**
. amplitude modulation
. . . quadrature amplitude modulation
. frequency modulation
. . . feedback frequency modulation
. . . FM/PM (modulation)
. . . frequency shift keying
. . . pulse frequency modulation
. intermodulation
. ionospheric cross modulation
. light modulation
. . . Miros system
. . . ultrasonic light modulation
. phase modulation
. . . FM/PM (modulation)
. . . phase shift keying
. . . binary phase shift keying
. . . quadrature phase shift keying
. polarization modulation
. pulse modulation
. . . pulse amplitude modulation
. . . pulse code modulation
. . . delta modulation
. . . differential pulse code modulation
. . . pulse frequency modulation
. . . pulse time modulation

. . . pulse duration modulation
. . . pulse position modulation
. traveling wave modulation
. velocity modulation

RT carrier frequencies
carrier waves
companding
crystallization
demodulation
demodulators
double sideband transmission
dynamic range
interference factor table
modulators
P.A.C.M. telemetry
pulse frequency modulation telemetry
radio transmission
remodulation
selective fading
telecommunication
wave interaction

modulation doped fets

USE **MODFETS**

modulation doping

DEF The process of doping only the larger bandgap of a heterojunction device with donors, while the other layer is left undoped. Since the electrons and donors are spatially separated, ionized impurity scattering is avoided and extremely high electron mobilities are obtained.

GS **doping (materials)**
. **modulation doping**

RT additives
donor materials
doped crystals
electron mobility
energy gaps (solid state)
heterojunction devices
heterojunctions
high electron mobility transistors
ion implantation
semiconductor devices
semiconductors (materials)

modulation transfer function

UF *MTF*
GS functions (mathematics)
. transfer functions
. . . **modulation transfer function**
RT figure of merit
imaging techniques
optical measurement
optical transfer function
 ∞ performance
system effectiveness
systems analysis

modulators

DEF Devices to effect the process of modulation.

GS **modulators**
. Bragg cells
. light modulators
. modems
RT amplifiers
amplitude modulation
demodulators
electron tubes
frequency modulation
light modulation
matched filters
modulation
phase modulation
pulse modulation

modulators-demodulators

USE **modems**

modules

DEF 1, Self contained units of a launch vehicle or spacecraft that serve as building blocks for the overall structure. 2, A one package assembly of functionally associated electronic parts, usually a plug-in unit, so arranged as to function as a system or subsystem.

GS **modules**
. airlock modules
. chemical release modules

- . electronic modules
- . . micromodules
- . local scientific survey module
- . payload assist module
- . power modules (STS)
- . service modules
- . . Multi-Purpose Logistics Modules
- . spacecraft docking modules
- . spacecraft modules
- . . command modules
- . . command service modules
- . . landing modules
- . . . lunar landing modules
- Lunar Module
- Apollo lunar experiment module
- LSSM
- Lunar Module 5
- Lunar Module 7
- Altair Lunar Lander
- Mars Excursion Module
- SIM
- . space station modules
- . . Columbus module
- . . Cupola Module
- . . Destiny Laboratory Module
- . . Kibo Japanese Experiment Module
- . . Kvant modules
- . . Multi-Purpose Logistics Modules
- . . Priroda module
- . . Service Module (ISS)
- . . Unity connecting module
- . . Zarya control module
- RT circuits
- compartments
- ∞ components
- instrument packages
- space tugs
- spare parts

modulus of elasticity

DEF The ratio of stress (nominal) to corresponding strain below the proportional limit of a material. It is expressed in force per unit area. Used for compliance (elasticity), elastic modulus, and Young modulus.

- UF *compliance (elasticity)*
- elastic modulus*
- Young modulus*
- GS mechanical properties
- . elastic properties
- . . **modulus of elasticity**
- . . . dynamic modulus of elasticity
- RT anelasticity
- bending
- Hookes law
- hydroelasticity
- nanindentation
- Poisson ratio
- proportional limit
- ∞ rigidity
- shear properties
- stiffness
- stress-strain diagrams

MOEMS

(added December 2005)

- USE **microoptoelectromechanical systems**

Mohawk aircraft

- USE **OV-1 aircraft**

Mohr circles

- USE **fracture mechanics**

Moire effects

- RT beat frequencies
- birefringence
- diffraction
- ∞ effects
- fringe multiplication
- interference grating
- ∞ methodology
- Moire fringes
- Moire interferometry
- photoelastic analysis

Schlieren photography

Moire fringes

- DEF The bands which appear in the Moire effect.
- RT diffraction patterns
- fringe multiplication
- interference grating
- Moire effects
- stress analysis
- stress concentration

Moire interferometry

DEF The use of intersecting families of curves as instruments for making precise measurement, the study of indices of refractions, etc. by utilizing the interference patterns.

- GS interferometry
- . **Moire interferometry**
- RT diffraction patterns
- holographic interferometry
- Moire effects

moisture

- GS **moisture**
- . atmospheric moisture
- . soil moisture
- RT humidity
- hygral properties
- meteorological parameters
- meteorology
- water
- water vapor

moisture content

- UF *dampness*
- water content*
- wetness*
- GS composition (property)
- . concentration (composition)
- . . **moisture content**
- . . . atmospheric moisture
- RT atmospheric composition
- chemical properties
- humidity
- hydrothermal stress analysis
- hygroscopicity
- lysimeters
- mixing ratios
- soil moisture
- water
- water vapor

moisture detectors

- USE **moisture meters**

moisture meters

- UF *moisture detectors*
- GS measuring instruments
- . **moisture meters**
- . . hygrometers
- . . . psychrometers
- RT chemical analysis
- humidity
- humidity measurement

moisture resistance

- RT caulking
- coatings
- hydrophobicity
- hydrothermal stress analysis
- hygroscopicity
- porosity
- ∞ resistance
- sealing
- waterproofing
- weatherproofing

Mojave Desert (CA)

- GS land
- . deserts
- . . **Mojave Desert (CA)**
- RT arid lands
- California
- desertification

remote regions

MOL (orbital laboratories)

- USE **manned orbital laboratories**

MOLABS

- USE **lunar mobile laboratories**

∞ **mold**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Aspergillus
- fungi
- molds
- rhizopus
- rust fungi

moldavite

- GS rocks
- . igneous rocks
- . . obsidian
- . . . **moldavite**
- RT glass
- meteorites
- soils

molding materials

- GS **molding materials**
- . sheet molding compounds
- RT binders (materials)
- casting
- clays
- cores
- injection molding
- ∞ materials
- molds
- plasters
- plastics
- resin transfer molding
- sand casting
- sands
- tenite

Moldova

- (added September 1994)
- GS nations
- . **Moldova**
- RT Europe

molds

- SN (EXCLUDES ORGANISMS)
- RT casting
- castings
- dies
- flat patterns
- foundries
- ingots
- injection molding
- mandrels
- melting
- ∞ mold
- molding materials
- organic materials
- ∞ patterns
- preforms
- pressing (forming)
- punches
- resin transfer molding
- sheet molding compounds
- tablets
- templates

molecular absorption

- GS energy absorption
- . radiation absorption
- . . **molecular absorption**
- RT ∞ absorption
- atmospheric attenuation
- Beer law
- electromagnetic absorption
- light transmission

molecular beam epitaxy

DEF Ultrahigh vacuum technique for growing very thin epitaxial layers of semiconductor crystals.

- GS growth
- . crystal growth
- . . epitaxy
- . . . **molecular beam epitaxy**

molecular beams

RT atomic layer epitaxy
indium aluminum arsenides

molecular beams

GS beams (radiation)
. particle beams
. . neutral beams
. . . **molecular beams**
RT atomic beams
atomic clocks
free molecular flow
ion beams
molecules
rarefied gas dynamics

molecular biology

GS life sciences
. **molecular biology**
RT biochemistry
∞ biology
eukaryotes
gene expression
genes
physiochemistry
prokaryotes
proteome
self assembly

molecular bonds

USE **chemical bonds**

molecular chains

RT ∞ aliphatic compounds
chains
crystal lattices
macromolecules
monomers
netting (materials/structures)

molecular clouds

DEF Thickest and densest interstellar clouds consisting mainly of molecular hydrogen but also a high concentration of dust grains.

RT astronomical models
∞ clouds
cosmic dust
diffuse interstellar bands
galactic halos
hydrogen clouds
infrared cirrus (astronomy)
interstellar chemistry
interstellar gas
interstellar masers
interstellar matter
laboratory astrophysics
methylidyne
star formation
Submillimeter Wave Astronomy
Satellite

molecular clusters

(added January 1994)
GS **molecular clusters**
. micelles
RT agglomeration
atomic clusters
chemisorption
clumps
∞ clusters
fullerenes
metal clusters
nanoclusters
nucleation

molecular collisions

GS collisions
. **molecular collisions**
particle interactions
. molecular interactions
. . **molecular collisions**
RT atomic collisions
BGK model
∞ interactions
particle collisions
rigid rotors (plasma physics)

molecular diffusion

GS diffusion
. **molecular diffusion**
RT atmospheric diffusion

diffusion coefficient
diffusion waves
dissociation
gaseous diffusion
gaseous self-diffusion
particle diffusion
self diffusion (solid state)
surface diffusion

molecular dissociation

USE **dissociation**

molecular dynamics

(added January 1994)

RT computerized simulation
crystal structure
∞ dynamics
embedded atom method
microstructure
molecular interactions
∞ molecular physics
molecular properties
molecular trajectories
physical chemistry
statistical mechanics

molecular electronics

GS electrophysics
. **molecular electronics**
RT adatoms
DTL integrated circuits
∞ electronics
integrated circuits
Langmuir-Blodgett films
large scale integration
linear integrated circuits
medium scale integration
microelectronics
microminiaturization
miniature electronic equipment
monomolecular films
pi-electrons
semiconductor devices
thin films
TTL integrated circuits
very large scale integration

molecular energy levels

GS level (quantity)
. energy levels
. . **molecular energy levels**
. . . intermolecular forces
. . . rotational states
. . . vibrational states
molecular properties
. **molecular energy levels**
. . intermolecular forces
. . rotational states
. . vibrational states

RT chemical energy
∞ energy
energy of formation
excimers
free energy
heat of solution
internal energy
∞ nuclear energy

molecular excitation

GS excitation
. **molecular excitation**
RT atomic excitations
energy levels
ionization
particle collisions
photoexcitation
rotational spectra
rotational states
vibrational states

molecular flow

SN (FLOW WITH KNUDSEN NUMBERS
GREATER THAN 0. 01--FOR SPECIFIC
FLOWS IN THIS RANGE USE
NARROWER TERMS--FOR DUCTED
MOLECULAR FLOW USE KNUDSEN
FLOW)

DEF The flow of gas through a duct under conditions such that the mean free path is greater than the largest dimension of a transverse section of the duct.

GS fluid flow
. gas flow
. . **molecular flow**
. . . slip flow
. . . transition flow
RT BGK model
boundary layer transition
continuum flow
Knudsen flow
low density flow
rarefied gas dynamics
transpiration

molecular gases

GS gases
. **molecular gases**
. . polar gases
. . polyatomic gases
. . . diatomic gases
RT association reactions
gas dynamics
monatomic gases
nonpolar gases
rarefied gases
real gases

molecular interactions

GS particle interactions
. **molecular interactions**
. . molecular collisions
RT association reactions
configuration interaction
dissociation
∞ interactions
intermolecular forces
internuclear properties
interstellar chemistry
ionic reactions
Lennard-Jones potential
mass flow
molecular dynamics
∞ molecular physics
molecular properties
transport theory

molecular ions

GS ions
. **molecular ions**
. . formyl ions
. . hydronium ions
. . vanadyl radical
RT amino radical
electron affinity
∞ molecular physics
positive ions

molecular orbitals

GS molecular properties
. **molecular orbitals**
orbitals
. **molecular orbitals**
wave functions
. **molecular orbitals**
RT quantum chemistry
self consistent fields

molecular oscillations

GS molecular properties
. **molecular oscillations**
oscillations
. **molecular oscillations**
RT argon lasers
carbon dioxide lasers
carbon monoxide lasers
gas lasers
oscillator strengths

molecular oscillators

GS oscillators
. **molecular oscillators**
RT lasers
masers
oscillator strengths
two-wavelength lasers
ultraviolet lasers

∞ molecular physics

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT internuclear properties

Mayer problem
 molecular dynamics
 molecular interactions
 molecular ions
 monatomic molecules
 ∞ physics
 ∞ science

molecular properties

(added April 2004)

DEF Fundamental information regarding molecules such as weight, structure, rotation, vibration, spectra, etc.

GS **molecular properties**
 . molecular energy levels
 . . intermolecular forces
 . . rotational states
 . . vibrational states
 . molecular orbitals
 . molecular oscillations
 . molecular relaxation
 . molecular rotation
 . molecular spectra
 . . electronic spectra
 . . Raman spectra
 . . rotational spectra
 . . vibrational spectra
 . molecular structure
 . molecular weight
 . . low molecular weights
 RT molecular dynamics
 molecular interactions

molecular pumps

GS pumps
 . vacuum pumps
 . . **molecular pumps**
 vacuum apparatus
 . vacuum pumps
 . . **molecular pumps**
 RT plasma pumping
 pump seals

molecular relaxation

UF *chemical relaxation*
vibrational relaxation
 GS molecular properties
 . **molecular relaxation**
 RT gas flow
 population inversion
 ∞ relaxation
 relaxation (mechanics)
 relaxation time
 shock waves
 thermodynamics
 vibration damping
 vibrational spectra

molecular rotation

GS gyration
 . rotation
 . . **molecular rotation**
 molecular properties
 . **molecular rotation**
 RT microwave spectra
 Raman spectra
 rigid rotors (plasma physics)
 rotational spectra

molecular shields

DEF Furlable devices used in space vacuum research to permit deployment and retrieval of instruments and the performance of experiments without contamination.

RT contamination
 high vacuum
 instrument packages
 spaceborne experiments

*molecular sieves*USE **absorbents****molecular spectra**

GS molecular properties
 . **molecular spectra**
 . . electronic spectra
 . . Raman spectra
 . . rotational spectra
 . . vibrational spectra
 spectra

. **molecular spectra**
 . . electronic spectra
 . . Raman spectra
 . . rotational spectra
 . . vibrational spectra
 RT absorption spectra
 electromagnetic spectra
 emission spectra
 energy spectra
 infrared spectra
 mass spectra
 microwave spectra
 oxygen spectra
 solar spectra
 stellar spectra
 Swan bands
 ultraviolet spectra
 Vegard-Kaplan bands
 visible spectrum

molecular spectroscopy

GS spectroscopy
 . **molecular spectroscopy**
 . . Raman spectroscopy
 RT absorption spectra
 electron spectroscopy
 emission spectra
 infrared spectroscopy
 line spectra
 microwave spectra
 optogalvanic spectroscopy
 rotational spectra
 spectroscopic analysis
 ultraviolet spectroscopy
 vacuum spectroscopy
 x ray spectroscopy

molecular structure

GS molecular properties
 . **molecular structure**
 RT atomic interactions
 atomic structure
 biopolymer denaturation
 complex compounds
 configuration interaction
 coordination number
 crystal lattices
 enantiomers
 hydrogen bonds
 infrared spectroscopy
 intermolecular forces
 intramolecular structures
 macromolecules
 molecules
 monatomic molecules
 nuclear magnetic resonance
 nuclear models
 order-disorder transformations
 polyatomic molecules
 polywater
 self assembly
 ∞ structures
 unimolecular structures
 Wiswesser notations

molecular theory

RT Lighthill gas model
 ∞ theories

molecular trajectories

GS trajectories
 . **molecular trajectories**
 RT gas flow
 molecular dynamics

molecular weight

DEF The weight of a given molecule expressed in atomic weight units.

GS molecular properties
 . **molecular weight**
 . . low molecular weights
 RT macromolecules
 molecules
 monatomic molecules
 polyatomic molecules
 weight (mass)

molecules

DEF Aggregates of two or more atoms of a

substance that exists as a unit. Used for macromolecules.

GS **molecules**
 . macromolecules
 . . dendrimers
 . monatomic molecules
 . polyatomic molecules
 . . diatomic molecules
 . . triatomic molecules
 RT atoms
 buckminsterfullerene
 chemical bonds
 ∞ chemical compounds
 ions
 low molecular weights
 molecular beams
 molecular structure
 molecular weight

moles

GS animals
 . vertebrates
 . . mammals
 . . . **moles**

Moliere formula

USE **cosmic ray showers**
secondary cosmic rays
spatial distribution

Mollier diagram

UF *enthalpy-entropy diagrams*
 GS charts
 . graphs (charts)
 . . **Mollier diagram**
 diagrams
 . **Mollier diagram**
 RT enthalpy
 entropy
 equations of state
 ideal fluids
 isentrope
 thermodynamics

mollusks

GS animals
 . invertebrates
 . . **mollusks**
 . . . cephalopods
 . . . octopuses
 . . . snails
 RT shellfish

Molniya satellites

GS artificial satellites
 . communication satellites
 . . **Molniya satellites**
 . Soviet satellites
 . . **Molniya satellites**
 RT electric discharges
 radio relay systems
 satellite networks
 telecommunication
 television transmission
 U.S.S.R. space program

molten carbonate fuel cells

(added December 1995)

GS electric generators
 . direct power generators
 . . fuel cells
 . . . **molten carbonate fuel cells**
 electrochemical cells
 . fuel cells
 . . **molten carbonate fuel cells**
 RT carbonates
 molten salt electrolytes

molten salt electrolytes

GS conductors
 . electrolytes
 . . **molten salt electrolytes**
 RT molten carbonate fuel cells

molten salt nuclear reactors

UF *MSRE reactors*
 GS nuclear reactors
 . **molten salt nuclear reactors**

molten salts

RT ∞ reactors

molten salts

DEF High temperature inorganic salt or mixtures of salts used for thermal energy storage, heat exchangers, high power electric batteries, heat treatment of alloys, etc.

RT halides
halites
inorganic compounds
nitrides
salt baths
∞ salts
sodium chlorides

molting

RT phenology
shedding

molybdates

GS molybdenum compounds
. **molybdates**
.. lead molybdates

molybdenum

GS chemical elements
. **molybdenum**
metals
. refractory metals
.. **molybdenum**
. transition metals
.. **molybdenum**
refractory materials
. refractory metals
.. **molybdenum**
RT molybdenum isotopes

molybdenum alloys

GS alloys
. heat resistant alloys
.. refractory metal alloys
... **molybdenum alloys**
.... Rene 41
.... Rene 63
.... Rene 77
.... Rene 95
refractory materials
. refractory metal alloys
.. **molybdenum alloys**
... Rene 41
... Rene 63
... Rene 77
... Rene 95
RT Hastelloy (trademark)
mulberry (alloy)
Permalloys (trademark)
stainless steels

molybdenum carbides

GS carbon compounds
. carbides
.. **molybdenum carbides**

molybdenum compounds

GS **molybdenum compounds**
. molybdates
.. lead molybdates
. molybdenum disulfides
. molybdenum oxides
RT ∞ chemical compounds
∞ Group 6B compounds
∞ metal compounds

molybdenum disulfides

GS chalcogenides
. sulfides
.. inorganic sulfides
... molybdenum sulfides
.... **molybdenum disulfides**
molybdenum compounds
. **molybdenum disulfides**
sulfur compounds
. sulfides
.. inorganic sulfides
... molybdenum sulfides
.... **molybdenum disulfides**

molybdenum isotopes

GS chemical elements
. nuclides

. . isotopes
. . . **molybdenum isotopes**
RT molybdenum

molybdenum oxides

GS chalcogenides
. oxides
.. metal oxides
... **molybdenum oxides**
molybdenum compounds
. **molybdenum oxides**

molybdenum sulfides

GS chalcogenides
. sulfides
.. inorganic sulfides
... **molybdenum sulfides**
.... molybdenum disulfides
sulfur compounds
. sulfides
.. inorganic sulfides
... **molybdenum sulfides**
.... molybdenum disulfides

MOM (semiconductors)

UF *metal-oxide-metal semiconductors*
GS electronic equipment
. solid state devices
.. semiconductor devices
... **MOM (semiconductors)**
semiconductors (materials)
. **MOM (semiconductors)**
RT ion implantation

moment distribution

GS distribution (property)
. **moment distribution**
RT angular distribution
force distribution
influence coefficient
loading moments
loads (forces)
mass distribution
method of moments
moments
moments of inertia
pressure distribution
static loads
stress concentration
structural analysis
structural design criteria

moments

GS **moments**
. bending moments
. dipole moments
.. electric moments
.. magnetic moments
. distribution moments
.. mean
.. orthogonality
.. standard deviation
. loading moments
. moments of inertia
. stability derivatives
.. pitching moments
.. rolling moments
.. yawing moments
. torque
RT method of moments
mode (statistics)
moment distribution
momentum
skewness
torsion
variance (statistics)

moments of inertia

UF *inertia moments*
GS moments
. **moments of inertia**
RT angular momentum
center of gravity
center of pressure
centroids
equations of motion
Euler equations of motion
inertia
inertia principle
Mach inertia principle

mass
mass distribution
moment distribution
pitching moments
rolling moments
stability derivatives
stress analysis
structural strain
torque
yawing moments

momentum

DEF Quantity of motion.
GS **momentum**
. angular momentum
. transverse momentum
RT classical mechanics
de Broglie wavelengths
∞ dynamics
moments
∞ motion
motion aftereffects
pendulums
turning flight

momentum energy

USE **kinetic energy**

momentum theory

RT conservation laws
Newton second law
∞ theories

momentum transfer

RT ∞ dynamics
energy transfer
gas-liquid interactions
hydrodynamic ram effect
kinetic theory
kinetics
Prandtl number
transferring

Monaco

GS nations
. **Monaco**
RT Europe

monatomic gases

UF *atomic gases*
GS gases
. **monatomic gases**
RT Chapman-Enskog theory
molecular gases
rare gases
real gases

monatomic molecules

GS molecules
. **monatomic molecules**
RT atoms
chemical bonds
∞ chemical compounds
ions
low molecular weights
∞ molecular physics
molecular structure
molecular weight
positive ions

monaural signals

RT audio equipment
audio frequencies
auditory perception
auditory signals
loudspeakers
microphones
sound transmission

monazite sands

GS phosphorus compounds
. phosphates
.. **monazite sands**
sediments
. sands
.. **monazite sands**
soils
. sands
.. **monazite sands**
RT minerals

- sedimentary rocks
- Monel (trademark)**
GS alloys
. nickel alloys
. . **Monel (trademark)**
- Monge-Ampere equation**
GS algebra
. nonlinear equations
. . **Monge-Ampere equation**
analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . elliptic differential equations
. **Monge-Ampere equation**
. . nonlinear equations
. . . **Monge-Ampere equation**
RT boundary value problems
∞ equations
- Mongolia**
GS nations
. **Mongolia**
RT Asia
- monitors**
RT aircraft instruments
analyzers
conical scanning
counters
data recorders
∞ detectors
display devices
environmental monitoring
gas detectors
helmet mounted displays
in-flight monitoring
∞ instruments
∞ measurement
measuring instruments
optical scanners
pollution monitoring
radiation measuring instruments
scanning
warning
warning systems
- monkeys**
GS animals
. vertebrates
. . mammals
. . . primates
. . . . **monkeys**
- monochromatic radiation**
SN (LIMITED TO ELECTROMAGNETIC RADIATION)
GS electromagnetic radiation
. **monochromatic radiation**
RT beams (radiation)
Brillouin effect
coherent electromagnetic radiation
coherent light
∞ filters
gamma rays
infrared radiation
ionizing radiation
light (visible radiation)
long wave radiation
monochromatization
monochromators
polarized electromagnetic radiation
polarized light
∞ radiation
radio waves
short wave radiation
ultraviolet radiation
x rays
- monochromatization**
UF *interference monochromatization*
RT monochromatic radiation
particle energy
polarization (waves)
- monochromators**
GS measuring instruments
. **monochromators**
radiation sources
- . **monochromators**
RT comparators
duochromators
goniometers
light sources
monochromatic radiation
optical equipment
optical measuring instruments
photogoniometers
spectrophotometers
- monocoque structures**
RT ∞ cylinders
shells (structural forms)
stressed-skin structures
∞ structures
- monocrystals*
USE **single crystals**
- monocular vision**
GS vision
. **monocular vision**
RT human factors engineering
motion perception
perception
space perception
- monocytes**
(added August 2004)
DEF Large, phagocytic mononuclear leukocytes produced in the vertebrate bone marrow and released into the blood; contain a large, oval or somewhat indented nucleus surrounded by voluminous cytoplasm and numerous organelles.
GS cells (biology)
. blood cells
. . leukocytes
. . . **monocytes**
RT biocompatibility
blood cell count
bone marrow
cytology
erythrocytes
immune systems
- monoethanolamine (MEA)**
GS organic compounds
. amines
. . **monoethanolamine (MEA)**
- monoids**
GS algebra
. group theory
. . homomorphisms
. . . **monoids**
- monolithic circuits*
USE **integrated circuits**
- monomers**
DEF Low molecular weight substances consisting of molecules capable of reacting with like or unlike molecules to form a polymer.
RT dibasic compounds
dimers
molecular chains
oligomers
oxetane polymers
∞ polymers
prepolymers
trimers
- monomethylhydrazines**
(added February 2001)
UF *MMH (chemistry)*
GS hydrazines
. methylhydrazine
. . **monomethylhydrazines**
RT dimethylhydrazines
hydrazine engines
hypergolic rocket propellants
liquid rocket propellants
- monomolecular films**
UF *Langmuir monolayers*
GS thin films
. **monomolecular films**
. . Langmuir-Blodgett films
- RT energy absorption films
∞ films
integrated optics
∞ layers
molecular electronics
self assembly
surface layers
surfactants
thin layer chromatography
- monoplanes**
GS **monoplanes**
. A-1 aircraft
. A-2 aircraft
. A-3 aircraft
. A-4 aircraft
. A-5 aircraft
. A-6 aircraft
. A-7 aircraft
. A-37 aircraft
. AN-22 aircraft
. AN-24 aircraft
. Argosy MK-1 aircraft
. AVRO 707 aircraft
. B-26 aircraft
. B-47 aircraft
. B-50 aircraft
. B-52 aircraft
. B-57 aircraft
. B-58 aircraft
. B-66 aircraft
. B-70 aircraft
. BAC 111 aircraft
. Beechcraft 18 aircraft
. Boeing 707 aircraft
. Boeing 720 aircraft
. Boeing 733 aircraft
. Boeing 737 aircraft
. Boeing 757 aircraft
. Boeing 767 aircraft
. Breguet 940 aircraft
. Breguet 941 aircraft
. Breguet 1150 aircraft
. Buccaneer aircraft
. C-2 aircraft
. C-33 aircraft
. C-35 aircraft
. C-46 aircraft
. C-47 aircraft
. C-54 aircraft
. C-118 aircraft
. C-121 aircraft
. C-123 aircraft
. C-124 aircraft
. C-130 aircraft
. C-131 aircraft
. C-133 aircraft
. C-135 aircraft
. C-140 aircraft
. C-141 aircraft
. C-160 aircraft
. Canberra aircraft
. Cessna 172 aircraft
. Cessna 205 aircraft
. Cessna 210 aircraft
. Cessna 402B aircraft
. Cessna L-19 aircraft
. CL-41 aircraft
. CL-44 aircraft
. Comet 4 aircraft
. CV-340 aircraft
. CV-440 aircraft
. CV-880 aircraft
. CV-990 aircraft
. D-558 aircraft
. DC 3 aircraft
. DC 7 aircraft
. DC 8 aircraft
. DH 112 aircraft
. DH 115 aircraft
. DH 121 aircraft
. DH 125 aircraft
. DHC 2 aircraft
. DHC 4 aircraft
. DHC 5 aircraft
. DO-27 aircraft
. DO-28 aircraft
. DO-31 aircraft
. Electra aircraft

monopole antennas

- . F-2 aircraft
- . F-4 aircraft
- . F-5 aircraft
- . F-8 aircraft
- . F-9 aircraft
- . F-17 aircraft
- . F-27 aircraft
- . F-28 transport aircraft
- . F-84 aircraft
- . F-86 aircraft
- . F-89 aircraft
- . F-94 aircraft
- . F-100 aircraft
- . F-102 aircraft
- . F-104 aircraft
- . F-105 aircraft
- . F-106 aircraft
- . FD 2 aircraft
- . G-1 aircraft
- . G-91 aircraft
- . G-95/4 aircraft
- . G-222 aircraft
- . GA-5 aircraft
- . H-126 aircraft
- . HFB-320 aircraft
- . HP-115 aircraft
- . HS-748 aircraft
- . IL-14 aircraft
- . IL-62 aircraft
- . jet provost aircraft
- . Jindivik target aircraft
- . L-29 jet trainer
- . Lockheed model 18 aircraft
- . MH-262 aircraft
- . Mirage aircraft
 - . . Mirage 3 aircraft
- . Boeing 717 aircraft
- . Mystere 20 aircraft
- . Nord 1500 aircraft
- . OV-1 aircraft
- . OV-10 aircraft
- . P-3 aircraft
- . P-51 aircraft
- . P-166 aircraft
- . P-308 aircraft
- . P-1127 aircraft
- . P-1154 aircraft
- . PD-808 aircraft
- . S-2 aircraft
- . S-3 aircraft
- . Saab 105 aircraft
- . SC-1 aircraft
- . SC-5 aircraft
- . SC-7 aircraft
- . Scimitar aircraft
- . SE-210 aircraft
- . Shackleton bomber
- . T-2 aircraft
- . T-28 aircraft
- . T-33 aircraft
- . T-37 aircraft
- . T-38 aircraft
- . T-39 aircraft
- . TS-11 aircraft
- . TSR-2 aircraft
- . TU-104 aircraft
- . TU-124 aircraft
- . TU-134 aircraft
- . U-2 aircraft
- . U-10 aircraft
- . Valiant aircraft
- . VC-10 aircraft
- . Victor MK-1 aircraft
- . Viscount aircraft
- . VJ-101 aircraft
- . X-1 aircraft
- . X-2 aircraft
- . X-3 aircraft
- . X-5 aircraft
- . X-13 aircraft
- . X-14 aircraft
- . X-21 aircraft
- . X-21A aircraft
- . X-31 aircraft
- . XC-142 aircraft
- . XV-4 aircraft
- . XV-5 aircraft
- . YS-11 aircraft
- . Z-37 aircraft

- RT aerodynamic configurations
 - ∞ aircraft
 - airfoils
 - biplanes
 - cargo aircraft
 - gliders
 - ∞ low wing aircraft
 - seaplanes
 - tailless aircraft
 - water takeoff and landing aircraft
 - wing planforms
 - wing profiles
 - ∞ winged vehicles

monopole antennas

- UF *spike antennas*
- GS antennas
 - . omnidirectional antennas
 - . . **monopole antennas**
 - . . . whip antennas
- RT antenna design
 - dipole antennas
 - loop antennas
 - monopoles
 - ∞ spikes

monopoles

- GS **monopoles**
 - . magnetic monopoles
- RT ∞ dipoles
 - monopole antennas
 - multipoles
 - ∞ poles

monopropellants

- GS propellants
 - . rocket propellants
 - . . liquid rocket propellants
 - . . . **monopropellants**
- RT aircraft fuels
 - chemical fuels
 - gaseous rocket propellants
 - gelled rocket propellants
 - metal propellants
 - plastic propellants
 - propellant decomposition
 - slurry propellants
 - solid rocket propellants

monopulse antennas

- GS antennas
 - . **monopulse antennas**
- RT directional antennas
 - phased arrays
 - waveguide antennas

monopulse radar

- GS radar
 - . Doppler radar
 - . . pulse Doppler radar
 - . . . **monopulse radar**
 - . . . pulse radar
 - . . . pulse Doppler radar
 - . . . **monopulse radar**
- RT Doppler radar
 - duplexers
 - radar tracking
 - tracking radar

monosaccharides

- GS organic compounds
 - . carbohydrates
 - . . sugars
 - . . . **monosaccharides**
 - hexoses
 - galactose
 - glucose
 - pentose
 - ribose
 - xylose

monoscopes

- GS electron tubes
 - . vacuum tubes
 - . . cathode ray tubes
 - . . . **monoscopes**
 - television equipment
 - . **monoscopes**
- RT camera tubes
 - electron beams

- image tubes
- secondary emission
- ∞ test equipment

monostable multivibrators

- GS circuits
 - . multivibrators
 - . . **monostable multivibrators**

monotectic alloys

- DEF Metallic composite materials having a dispersed phase of solidification products distributed within a matrix. The dispersed components can be selected to provide characteristics such as superconductivity or lubricity.

- GS alloys
 - . **monotectic alloys**
- RT composite materials
 - ∞ matrices
 - metal matrix composites
 - metals

monotone functions

- GS functions (mathematics)
 - . **monotone functions**
- RT analysis (mathematics)
 - calculus
 - real variables

monotony

- RT boredom
 - lethargy
 - sensory deprivation

monsoons

- DEF Seasonal winds caused primarily by the greater annual variation in air temperature over large land surfaces compared to ocean surfaces though other factors like land-relief are important.

- GS wind (meteorology)
 - . **monsoons**
- RT annual variations
 - atmospheric circulation
 - ground wind
 - Madden-Julian Oscillation
 - precipitation (meteorology)
 - sea breeze

Montana

- GS nations
 - . United States
 - . . **Montana**
- RT Bighorn Mountains (MT-WY)
 - Missouri River (US)
 - Williston Basin (North America)
 - Yellowstone National Park (ID-MT-WY)

Monte Carlo method

- GS analysis (mathematics)
 - . numerical analysis
 - . . **Monte Carlo method**
- RT diffusion theory
 - expectancy hypothesis
 - game theory
 - Markov chains
 - mathematical models
 - ∞ methodology
 - probability theory
 - random processes
 - random walk
 - renormalization group methods
 - simulation
 - statistical analysis
 - stochastic processes
 - transport theory

Monterey Bay (CA)

- GS bays (topographic features)
 - . **Monterey Bay (CA)**
- RT California
 - Pacific Ocean

month

- DEF The period of the revolution of the Moon around the Earth. The month is designated as sidereal, tropical, anomalistic, draconic, or synodical, according to whether the revolution is relative to the stars, the vernal equinox,

the perigee, the ascending node, of the sun. The calendar month, which is a rough approximation of the synodical month. Used for lunation.

- UF *lunation*
- RT calendars
- time
- units of measurement

monticellite

- GS calcium compounds
- . **monticellite**
- magnesium compounds
- . **monticellite**
- minerals
- . **monticellite**
- silicon compounds
- . silicates
- . . **monticellite**
- RT olivine

montmorillonite

DEF A group of monoclinic silicate clay minerals with widely varying compositions, and characterized by swelling in water.

- UF *smectite*
- GS aluminum compounds
- . aluminum silicates
- . . **montmorillonite**
- clays
- . **montmorillonite**
- minerals
- . **montmorillonite**
- silicon compounds
- . silicates
- . . aluminum silicates
- . . . **montmorillonite**
- RT bentonite

moods

- RT emotional factors
- emotions
- melatonin
- psychological effects
- psychological factors
- sensory feedback

moon

- DEF The natural satellite of the Earth.
- GS celestial bodies
- . natural satellites
- . . **moon**
- RT Earth-Moon system
- light sources
- lunar atmosphere
- lunar bases
- lunar communication
- lunar composition
- lunar craters
- lunar crust
- lunar dust
- lunar eclipses
- lunar environment
- lunar evolution
- lunar exploration
- lunar far side
- lunar geology
- lunar gravitation
- lunar landing sites
- lunar limb
- lunar luminescence
- lunar magnetic fields
- lunar maps
- lunar occultation
- lunar orbits
- lunar phases
- lunar photography
- lunar rays
- lunar shadow
- lunar soil
- lunar temperature
- lunar topography
- selenography
- selenology
- terraforming

moon illusion

- GS psychological effects
- . illusions
- . . **moon illusion**
- RT optical illusion

sensory feedback

moon-Earth trajectories

- GS trajectories
- . spacecraft trajectories
- . . lunar trajectories
- . . . **moon-Earth trajectories**
- RT Apollo 5 flight
- Apollo 6 flight
- Apollo 7 flight
- Apollo 8 flight
- Apollo 10 flight
- Apollo 11 flight
- Apollo 12 flight
- Apollo 13 flight
- Apollo 14 flight
- Apollo 15 flight
- Apollo 16 flight
- Apollo 17 flight
- circumlunar trajectories
- Earth-Moon trajectories
- Goddard Trajectory Determination System
- lunar flight
- mass drivers
- orbital mechanics
- reentry trajectories
- round trip trajectories
- transfer orbits

moonlets

- (added July 1989)
- GS celestial bodies
- . **moonlets**
- RT Jupiter rings
- natural satellites
- planetary rings
- Saturn rings
- Uranus rings

moonquakes

- GS seismology
- . **moonquakes**
- RT lunar geology
- lunar tides
- planetary quakes
- selenology

moons

- USE **natural satellites**

mooring

- UF *moorings*
- RT airports
- anchors (fasteners)
- autonomous docking
- docking
- fasteners
- ∞ joining
- materials handling
- multiple docking adapters
- spacecraft docking

moorings

- USE **mooring**

MOPS (propulsion systems)

- USE **man operated propulsion systems**

moraines

- USE **glacial drift**

morale

- RT creativity
- disciplining
- leadership
- motivation
- productivity
- psychology
- recreation

Morehouse comet

- GS celestial bodies
- . comets
- . . **Morehouse comet**

RT solar system

MORL

- USE **manned orbital laboratories**

morning

- RT daytime
- sunrise

Morocco

- GS nations
- . **Morocco**
- RT Africa

morphine

- GS bases (chemical)
- . alkaloids
- . . **morphine**
- drugs
- . narcotics
- . . **morphine**
- nitrogen compounds
- . alkaloids
- . . **morphine**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- **morphine**

morphological indexes

- GS ratios
- . indexes (ratios)
- . . **morphological indexes**
- RT morphology

morphology

- GS **morphology**
- . crystal morphology
- . geomorphology
- . isomorphism
- . lung morphology
- . polymorphism
- RT anatomy
- ∞ biology
- differentiation (biology)
- geology
- histology
- ∞ mathematics
- morphological indexes
- shapes
- vestibules

morphotropism

- USE **isomorphism**

Morse code

- RT ∞ codes
- communicating
- keying
- radio telegraphy
- telecommunication

Morse potential

- RT diatomic molecules
- kinetic theory
- potential energy

mortality

- RT aging (biology)
- death
- expiration
- life span
- Mills ratio

mortars (material)

- RT admixtures
- bricks
- cements
- ceramics
- concretes
- grout
- masonry
- plasters

mosaics

refractories

MOS (Japanese spacecraft)
USE **Japanese spacecraft**

MOS (semiconductors)
USE **metal oxide semiconductors**

mosaics

RT assemblies
diffraction
focal plane devices
photographs

Moscow

GS cities
. **Moscow**
RT Russian Federation
U.S.S.R.

MOSFET

USE **field effect transistors**

MOSS (space stations)

USE **space stations**

Mossbauer effect

RT crystal lattices
∞ effects
electromagnetic absorption
fluorescence
gamma rays
laser induced fluorescence
resonance scattering
resonant frequencies

mosses

USE **Bryophytes**

MOT (orbital telescopes)

USE **manned orbital telescopes**

moths

GS animals
. invertebrates
. . . arthropods
. . . . insects
. . . . **moths**
. . . . silkworms
RT bollworms
infestation

motility

USE **locomotion**

∞ **motion**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The act, process or instance of change of position. Also called movement, especially when used in connection with problems involving the motion of one craft relative to another. Used for movement.

UF *movement*

GS **motion**

. proper motion
RT acceleration (physics)
attitude (inclination)
Brownian movements
coning motion
displacement
domain wall
gliding
gyration
harmonic motion
head movement
heaving
high acceleration
immobilization
inertia
ion motion
ionic mobility
kinematics
libration
librational motion
momentum
nutation
orbits
oscillations
oscillators

particle motion
particle trajectories
pitch (inclination)
rotation
Saccadic eye movements
solar orbits
spacecraft motion
spacecraft trajectories
stellar motions
swarming
teetering
transit time
translational motion
tumbling motion
turbulence
velocity
vertical motion
vertical motion simulators
vibration
viscosity
yaw

motion aftereffects

RT equations of motion
kinetics
momentum

motion equations

USE **equations of motion**

motion perception

GS perception
. **motion perception**
RT binocular vision
monocular vision
visual perception

motion pictures

UF *cinelfluorography*
cineradiography
GS photographs
. **motion pictures**
RT animation
chronophotography
cinematography
computer animation
graphic arts
projectors
supplements
video equipment
video tapes

motion sickness

DEF The syndrome of pallor, sweating, nausea, and vomiting which is induced by unusual acceleration. Used for air sickness.

UF *air sickness*

GS sicknesses

. **motion sickness**

RT acceleration stresses (physiology)
aerospace medicine
dizziness
head movement
nausea
space adaptation syndrome
vomiting

motion sickness drugs

GS drugs
. **motion sickness drugs**
RT pharmacology

motion simulation

DEF Replication of exact motion or replication of part of a motion to provide the sensation of the motion.

GS simulation

. **motion simulation**

RT flight simulation
flight simulators
motion simulators
virtual reality

motion simulators

GS simulators
. **motion simulators**
RT computerized simulation
control simulation
flight simulators
motion simulation

space environment simulation
test facilities

motion stability

GS dynamic characteristics
. dynamic stability
. . **motion stability**
. . . aerodynamic stability
. . . aircraft stability
. . . . hovering stability
. . . attitude stability
. . . . directional stability
. gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
. . . flow stability
. . . boundary layer stability
. . . flame stability
. . . magnetohydrodynamic stability
. . . . Weibel instability
. . . . Goertler instability
. . . Taylor instability
. . low speed stability
. . rotary stability
. . . . gyroscopic stability
. . . spacecraft stability
stability
. dynamic stability
. **motion stability**
. . aerodynamic stability
. . aircraft stability
. . . hovering stability
. . attitude stability
. . . directional stability
. . . . gyroscopic stability
. . . lateral stability
. . . longitudinal stability
. . flow stability
. . . boundary layer stability
. . . flame stability
. . . magnetohydrodynamic stability
. . . . Weibel instability
. . . . Goertler instability
. . . Taylor instability
. . low speed stability
. . rotary stability
. . . gyroscopic stability
. . . spacecraft stability
RT combustion stability
coning motion
control stability
dynamic tests
roughness
sea keeping
spacecraft motion
stable oscillations
surface stability

motivation

GS **motivation**
. contract incentives
RT ∞ drives
incentives
learning
morale
reinforcement (psychology)
self stimulation
∞ stimuli

motor skills

(added August 2004)
USE **sensorimotor performance**

motor systems (biology)

USE **efferent nervous systems**

motor vehicles

DEF Automotive vehicles that do not run on rails, generally having rubber tires.

GS surface vehicles
. **motor vehicles**
. . automated mixed traffic vehicles
. . automobiles
. . . electric automobiles
. . electric motor vehicles
. . . electric automobiles
. . tractors
. . . crawler tractors
. . tracked vehicles
. . trucks

- . . . tank trucks
 RT transportation
 ∞ vehicles
- motors**
 SN (LIMITED TO MACHINES SUPPLIED WITH EXTERNAL ENERGY WHICH IS CONVERTED INTO FORCE AND/OR MOTION--SEE ENGINES FOR MACHINES WITH SELF-CONTAINED POWER SOURCES)
 DEF Machines supplied with external energy which is converted into force and/or motion.
 GS **motors**
 . electric motors
 . . asynchronous motors
 . . induction motors
 . . micromotors
 . . piezoelectric motors
 . . stepping motors
 . . synchronous motors
 . . torque motors
 . servomotors
 RT apogee boost motors
 ∞ electric equipment
 energy conversion efficiency
 engines
 ∞ generators
 hydraulic equipment
 stators
- MOTS (tracking system)*
 USE **minitrack system**
- mountain inhabitants**
 GS communities
 . inhabitants
 . . **mountain inhabitants**
 RT altitude acclimatization
 high altitude environments
 low temperature environments
- mountains**
 GS landforms
 . **mountains**
 . . Adirondack Mountains (NY)
 . . Alps Mountains (Europe)
 . . Andes Mountains (South America)
 . . Appalachian Mountains (North America)
 . . Bighorn Mountains (MT-WY)
 . . Black Hills (SD-WY)
 . . Carpathian Mountains (Europe)
 . . Cascade Range (CA-OR-WA)
 . . Caucasus Mountains (U.S.S.R.)
 . . coastal ranges (CA)
 . . Great Smoky Mountains (NC-TN)
 . . Himalayas
 . . Peninsular Ranges (CA)
 . . Pyrenees Mountains (Europe)
 . . Rocky Mountains (North America)
 . . San Juan Mountains (CO)
 . . Sierra Nevada Mountains (CA)
 . . Wind River Range (WY)
 . . Wrangell Mountains (AK)
 RT Central Piedmont (US)
 cirques (landforms)
 cones (volcanoes)
 continents
 divides (landforms)
 formations
 gaps (geology)
 geomorphology
 highlands
 Mars volcanoes
 massifs
 mesas
 orography
 ∞ peaks
 peaks (landforms)
 piedmonts
 Pike's Peak (CO)
 ∞ ridges
 terraces (landforms)
 volcanoes
 volcanology
 watersheds
- mounting**
 GS **mounting**
 . rigid mounting
- RT assembling
 ∞ attachment
 brackets
 ∞ joining
 suspending (hanging)
- mounts*
 USE **supports**
- mouth**
 GS anatomy
 . digestive system
 . . **mouth**
 . . . lips (anatomy)
 . . face (anatomy)
 . . **mouth**
 . . . lips (anatomy)
 RT salivary glands
 teeth
 tongue
- movement*
 USE **motion**
- moving target indicators**
 DEF Radar devices that employ a technique that enhances the detection and display of moving radar targets by suppressing fixed targets. Doppler processing is one method of implementation. Used for MTI indicators.
 UF *MTI radar*
 GS radar
 . **moving target indicators**
 RT cancellation circuits
 coherent radar
 Doppler radar
 over-the-horizon radar
 radar cross sections
 radar tracking
 target acquisition
- Mozambique**
 GS nations
 . **Mozambique**
 RT Africa
- MPD thrusters*
 (added April 2001)
 USE **magnetoplasmadynamic thrusters**
- MPLM (International Space Station)*
 (added April 2005)
 USE **Multi-Purpose Logistics Modules**
- MPP (computers)*
 USE **massively parallel processors**
- MR-3 flight*
 USE **Mercury MR-3 flight**
- MRAC (systems)*
 USE **model reference adaptive control**
- MRCIA aircraft**
 UF *multi-role combat aircraft*
Tornado aircraft
 RT ∞ aircraft
 attack aircraft
 fighter aircraft
 ∞ military aircraft
- Mrkos comet**
 GS celestial bodies
 . comets
 . . **Mrkos comet**
 RT solar system
- MSAT**
 DEF A joint Canada/United States mobile satellite system which is being developed with a voice and data communication link between mobile units and the switched telephone network or between mobile units and other mobile units via satellite. Each country will have a satellite capable of mutual backup. Launch date is planned for 1994.
 GS artificial satellites
 . communication satellites
 . . **MSAT**
 RT ground stations
 land mobile satellite service
- maritime satellites
 mobile communication systems
 radio communication
 radio relay systems
 satellite transmission
- MSBLS*
 USE **microwave scanning beam landing system**
- MSM (semiconductors)**
 DEF Semiconductor devices consisting of a semiconductor layer sandwiched between two layers of metal. Used for metal-semiconductor-metal semiconductors.
 UF *metal-semiconductor-metal semiconductors*
 GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . **MSM (semiconductors)**
 RT MIM diodes
 photodiodes
 Schottky diodes
 semiconductor junctions
 SIS (semiconductors)
- MSRE reactors*
 USE **molten salt nuclear reactors**
- MSS (International Space Station)*
 (added September 2001)
 USE **Space Station Mobile Servicing System**
- MTBF**
 DEF The mean of the distribution of time (or cycles, miles, events) between successive failure. MTBF is often estimated by dividing the total operating time for like items by the total number of failures encountered. Used for mean time between failures.
 UF *mean time between failures*
 GS time
 . **MTBF**
 RT downtime
 failure analysis
 failure modes
 life (durability)
 rates (per time)
 reliability
 statistical analysis
- MTF*
 USE **modulation transfer function**
- MTFF (space station)*
 USE **man tended free flyers**
- MTI radar*
 USE **moving target indicators**
- MTPE*
 USE **Mission to Planet Earth**
- MUBIS (scanners)*
 USE **multiple beam interval scanners**
- mucocoles**
 GS cysts
 . **mucocoles**
 RT ∞ blisters
- mucus**
 GS body fluids
 . **mucus**
 RT saliva
- mud**
 GS sediments
 . **mud**
 soils
 . **mud**
 RT alluvium
 clays
 fans (landforms)
 grout
 ocean bottom
 rain erosion
 sludge

mufflers

tidal flats

mufflers

- RT acoustic retrofitting
- aircraft noise
- attenuators
- baffles
- damping
- ∞ diffusers
- exhaust systems
- furnaces
- jet aircraft noise
- noise (sound)
- noise reduction
- propeller noise
- rocket engine noise
- silencers
- suppressors

mulberry (alloy)

- GS alloys
- . **mulberry (alloy)**
- RT antimony alloys
- molybdenum alloys

mullites

- RT aluminum silicates
- minerals

Multi-angle Imaging Spectroradiometer
(added May 2007)

USE **MISR (radiometry)**

multi-anode microchannel arrays

DEF A family of photoelectric, photon counting array detectors being developed for use in instruments on both ground based and spaceborne telescopes.

- GS arrays
- . **multi-anode microchannel arrays**
- RT anodes
- microchannels
- radiation detectors
- spaceborne telescopes
- telescopes
- x ray detectors

multibeam antennas

DEF Antennas that have the ability to form more than one beam from a single radiating aperture.

- GS antennas
- . **multibeam antennas**
- RT beams (radiation)
- lens antennas
- microwave antennas
- reflector antennas
- satellite antennas
- satellite communication

multiblock grids

(added May 1995)

UF *multiple blocked grids*

- GS coordinates
- . computational grids
- . . . structured grids (mathematics)
- . . . **multiblock grids**
- RT computational fluid dynamics

multichannel communication

- GS telecommunication
- . **multichannel communication**
- RT code division multiple access
- interference factor table
- multiple access
- radio transmitters
- teleconferencing
- time division multiple access

multichannel plates

USE **microchannel plates**

multicharged ions

USE **ions**

multidisciplinary design optimization

(added January 1995)

DEF Methodology for the design of complex engineering systems and subsystems in which the synergistic effects of coupling between various interacting disciplines and phenomena are

analyzed and exploited at every stage of the design process.

- GS optimization
- . **multidisciplinary design optimization**
- RT aircraft design
- architecture (computers)
- computer aided design
- design analysis
- genetic algorithms
- systems engineering
- Taguchi methods

multidisciplinary research

(added January 1995)

DEF Research by combining several (academic) disciplines or methods.

- GS research
- . **multidisciplinary research**
- RT concurrent engineering
- management methods
- operations research
- project management
- research management

multiengine vehicles

- RT ∞ aircraft
- B-1 aircraft
- launch vehicles
- light transport aircraft
- missile configurations
- missiles
- multistage rocket vehicles
- recoverable launch vehicles
- rocket vehicles
- ∞ vehicles

multigrid methods

(added September 1989)

DEF A numerical technique which attempts to accelerate the convergence of an iterative process by computing corrections to the solution on coarser meshes and propagating these changes to the fine mesh through interpolation.

- GS analysis (mathematics)
- . numerical analysis
- . . approximation
- . . . **multigrid methods**
- RT computational fluid dynamics
- computational grids
- finite difference theory
- finite element method
- grid generation (mathematics)
- iteration
- iterative solution
- ∞ methodology
- unstructured grids (mathematics)

multilayer insulation

- GS insulation
- . **multilayer insulation**
- interlayers
- . **multilayer insulation**
- RT composite materials
- cryogenic fluid storage
- fabrics
- ∞ foils
- foils (materials)
- laminates
- ∞ layers
- metal foils
- ply orientation
- sandwich structures
- ∞ sheets

multilayer structures

USE **laminates**

multiloop systems

USE **cascade control**

multimedia

(added March 1993)

- UF *hypermedia*
- interactive multimedia*
- intermedia*
- RT audio visual equipment
- audio visual material
- computer graphics
- electronic publishing

graphic arts

imaging techniques

information systems

teleconferencing

training devices

video communication

video data

video tape recorders

video tapes

visual aids

voice communication

multimission modular spacecraft

DEF Future spacecraft to be operated in conjunction with the Space Shuttle orbiter vehicle and serviced by its module exchange mechanism. Used for MMS.

UF *MMS*

- RT BESS (satellite)
- Landsat follow-on missions
- satellite networks
- Solar Maximum Mission

multimode resonators

- GS resonators
- . **multimode resonators**
- RT cavity resonators
- magnetrons
- propagation modes

multipactor discharges

- GS electric current
- . electric discharges
- . . **multipactor discharges**
- RT linear accelerators
- photomultiplier tubes
- secondary emission
- spark gaps

multipath transmission

DEF The process, or condition, in which radiation travels between source and receiver via more than one path. Since there can be only one direct path, some process of reflection, refraction or scattering must be involved.

- GS transmission
- . electromagnetic wave transmission
- . . radio transmission
- . . . **multipath transmission**
- . signal transmission
- . . radio transmission
- . . . **multipath transmission**
- RT cepstral analysis
- diffraction paths
- Fermat principle
- multistatic radar
- optical paths
- ∞ paths
- radio waves
- Rayleigh fading
- sound transmission
- wave propagation

multiphase flow

UF *mixed flow*

- GS fluid flow
- . **multiphase flow**
- . . two phase flow
- RT conical flow
- critical flow
- Crocco-Lee theory
- flow distortion
- flow measurement
- gas flow
- laminar flow
- liquid flow
- mass flow
- orifice flow
- pipe flow
- pressure gradients
- single-phase flow
- solids flow
- steady flow
- steam flow
- subcritical flow
- supercritical flow
- turbulent flow
- uniform flow

unsteady flow

multiphoton absorption

DEF Ionization and dissociation of a molecule under the action of powerful laser radiation. Laser-flux dependent light intensities emitted by different excited states of the molecule indicate the various absorption processes.

- GS energy absorption
 - . radiation absorption
 - . . electromagnetic absorption
 - . . . **multiphoton absorption**

RT ∞ absorption
photon absorptiometry

multiple access

DEF The allocation of communication system resources (output) among multiple users by means of power, bandwidth, and power assignment singly or in combination.

- GS telecommunication
 - . **multiple access**
 - . . Aloha system
 - . . carrier sense multiple access
 - . . code division multiple access
 - . . demand assignment multiple access
 - . . frequency division multiple access
 - . . time division multiple access
- transmission
 - . signal transmission
 - . . data transmission
 - . . . **multiple access**
 - Aloha system
 - carrier sense multiple access
 - code division multiple access
 - demand assignment multiple access
 - frequency division multiple access
 - time division multiple access

RT access control
frequency division multiplexing
multichannel communication
packet switching
pulse communication
wideband communication

multiple beam interval scanners

- UF *MUBIS (scanners)*
- GS antennas
 - . **multiple beam interval scanners**
- RT linear arrays
radar scanning

multiple blocked grids

USE **multiblock grids**

multiple docking adapters

- UF *MDA*
- GS adapters
 - . **multiple docking adapters**
- RT airlock modules
docking
mooring
orbital rendezvous
Saturn 1 workshop
Saturn 5 workshop
Saturn workshops
Skylab 1
Skylab 2
Skylab 3
Skylab 4
spacecraft docking

multiple frequency radar

USE **multispectral radar**

multiple input multiple output

USE **MIMO (control systems)**

multiple instruction multiple data stream

USE **MIMD (computers)**

multiple output programs

- GS computer programs
 - . **multiple output programs**
- RT multiprogramming
readout

time sharing

multiple target tracking

(added August 1991)

DEF The process of following movements of several targets simultaneously.

- GS tracking (position)
 - . **multiple target tracking**
- RT optical tracking
radar targets
radar tracking
target acquisition
target recognition
targets
tracking filters
tracking problem

multiple target trajectory systems

USE **MATTS (systems)**

multiplets

USE **fine structure**

multiplex transmission

USE **multiplexing**

multiplexers

USE **multiplexing**

multiplexing

DEF The simultaneous transmission of two or more signals within a single channel. The three basic methods of multiplexing involve the separation of signals by time division, frequency division, and phase division. Used for multiplex transmission and multiplexers.

- UF *multiplex transmission*
- GS transmission
 - . **multiplexing**
 - . . code division multiplexing
 - . . frequency division multiplexing
 - . . time division multiplexing
 - . . wavelength division multiplexing
- RT access control
carrier frequencies
code division multiple access
data transmission
demultiplexing
frequency division multiple access
pulse communication
radio transmission
satellite transmission
signal transmission

multiplication

- GS number theory
 - . **multiplication**
- RT arithmetic
computation
fringe multiplication

multiplier phototubes

USE **photomultiplier tubes**

multipliers

DEF Devices which have two or more inputs and whose output is a representation of the product of the quantities represented by the input signals.

- GS **multipliers**
 - . channel multipliers
- RT Lagrange multipliers
logic circuits
photomultiplier tubes

multipolar fields

- RT continuum mechanics
field theory (physics)
gravitational fields
magnetic fields
multipoles

multipoles

- RT monopoles
multipolar fields

multiprocessing (computers)

- GS data processing
 - . **multiprocessing (computers)**
- RT associative processing (computers)

- computers
 - concurrent processing
 - Connection Machine
 - data processing equipment
 - distributed memory
 - hypercube multiprocessors
 - interprocessor communication
 - multiprogramming
 - parallel programming
 - pipelining (computers)
 - real time operation
 - supercomputers
 - time sharing
 - vector processing (computers)

multiprogramming

- UF *multitasking (computers)*
- GS computer programming
 - . **multiprogramming**
- RT machine-independent programs
multiple output programs
multiprocessing (computers)
pipelining (computers)
- ∞ programming
time sharing

multipropellants

USE **rocket propellants**

Multi-Purpose Logistics Modules

(added March 2005)

DEF Pressurized logistics modules built by the Italian Space Agency ASI for NASA to transport systems and experiment racks, and resupply/stowage items to and from the International Space Station (ISS) in the cargo bay of the Space Shuttle. Also known as MPLM.

- UF *Donatello Logistics Module (ISS)*
Leonardo Logistics Module (ISS)
MPLM (International Space Station)
Raffaello Logistics Module (ISS)
- GS modules
 - . service modules
 - . . **Multi-Purpose Logistics Modules**
 - . . space station modules
 - . . **Multi-Purpose Logistics Modules**
 - . . spacecraft components
 - . . service modules
 - . . **Multi-Purpose Logistics Modules**
- RT cargo
International Space Station
payload delivery (STS)
Space Shuttle payloads
spaceborne experiments
spacecraft docking modules

multiradar tracking

USE **radar networks**

multi-role combat aircraft

USE **MRCA aircraft**

multiscale models

(added November 2002)

DEF Models or simulations that effectively address phenomena across significantly different scales.

- GS models
 - . **multiscale models**
- RT computerized simulation
mathematical models
scale effect
scale models

multisensor applications

- GS **multisensor applications**
 - . multisensor fusion
- RT enhanced vision
image processing
imaging techniques
intercalibration
pattern recognition
remote sensing
remote sensors

multisensor fusion

(added October 1994)

DEF A combination of data or images from more than one sensor source (or from multispectral sensors) for display as a single image.

multispectral band cameras

- UF *data fusion*
sensor fusion
- GS multisensor applications
 - . **multisensor fusion**
- RT data integration
 - fuzzy systems
 - imaging techniques
 - remote sensing
 - robotics
 - signal processing
 - terrain analysis
- multispectral band cameras**
- GS optical equipment
 - . cameras
 - . . **multispectral band cameras**
 - photographic equipment
 - . cameras
 - . . **multispectral band cameras**
- RT infrared photography
 - photography
- multispectral band scanners**
- GS optical equipment
 - . optical scanners
 - . . **multispectral band scanners**
 - . . thematic mappers (LANDSAT) scanners
 - . optical scanners
 - . . **multispectral band scanners**
 - . . thematic mappers (LANDSAT)
- RT band ratioing
 - change detection
 - Coastal Zone Color Scanner
 - Earth observations (from space)
 - imaging techniques
 - infrared scanners
 - ocean color scanner
 - panoramic scanning
 - photography
 - radiometric correction
 - radiometric resolution
 - scanning
 - spaceborne photography
 - spectral reconnaissance
 - vegetative index
- multispectral linear arrays**
- DEF Large number of interconnected solid state detectors in a pushbroom mode wherein the forward motion of the vehicle (spacecraft) sweeps the assembly of detectors which are oriented perpendicular to the ground track. Used for MLA.
- UF *MLA*
- GS arrays
 - . antenna arrays
 - . linear arrays
 - . . **multispectral linear arrays**
- electronic equipment
 - . solid state devices
 - . . **multispectral linear arrays**
- spacecraft instruments
 - . satellite instruments
 - . . **multispectral linear arrays**
- RT ∞ detectors
 - ∞ sensors
- multispectral photography**
- GS imagery
 - . photography
 - . . **multispectral photography**
 - . . . infrared photography
 - . . . color infrared photography
 - . . radar photography
- RT change detection
 - crop identification
 - Earth observations (from space)
 - I2S cameras
 - image resolution
 - imaging techniques
 - spectral reconnaissance
- multispectral radar**
- UF *dual frequency radar*
multiple frequency radar
- GS radar
 - . **multispectral radar**
- RT imagery
 - imaging techniques

spectral reconnaissance

Multispectral Resource Sampler

DEF An experimental remote sensing instrument for satellites to measure both intensity and polarization at several wavelengths. The first one was launched in the late 1980s.

- GS artificial satellites
 - . **Multispectral Resource Sampler**
- RT remote sensing

multispectral tracking telescopes

- GS telescopes
 - . spectroscopic telescopes
 - . . **multispectral tracking telescopes**
- RT optical measuring instruments
 - optical tracking
 - tracking (position)

multistage compressors

USE **turbocompressors**

multistage rocket vehicles

DEF Vehicles having two or more rocket units, each unit firing after the one in back of it has exhausted its propellant. Normally, each unit, or stage, is jettisoned after completing its firing.

- GS rocket vehicles
 - . **multistage rocket vehicles**
 - . . Ablestar launch vehicle
 - . . Antares rocket vehicle
 - . . Argo rocket vehicles
 - . . Astrobeer rocket vehicles
 - . . . Astrobeer 1500 rocket vehicle
 - . . Athena rocket vehicle
 - . . Atlas launch vehicles
 - . . . Atlas Able 5 launch vehicle
 - . . . Atlas Agena B launch vehicle
 - . . . Atlas Agena launch vehicles
 - . . . Atlas Centaur launch vehicle
 - . . . Atlas SLV-3 launch vehicle
 - . . Berenice rocket vehicle
 - . . Black Knight rocket vehicle
 - . . Blue Scout rocket vehicle
 - . . Diamant launch vehicle
 - . . Eldo launch vehicle
 - . . EXOS sounding rocket
 - . . Jaguar rocket vehicle
 - . . Javelin rocket vehicle
 - . . Juno launch vehicles
 - . . . Juno 1 launch vehicle
 - . . . Juno 2 launch vehicle
 - . . Jupiter C rocket vehicle
 - . . Kappa rocket vehicles
 - . . . Kappa 8 rocket vehicle
 - . . . Kappa 9 rocket vehicle
 - . . Lambda rocket vehicles
 - . . Little Joe 2 launch vehicle
 - . . Nike rocket vehicles
 - . . . Nike-Apache rocket vehicle
 - . . . Nike-Cajun rocket vehicle
 - . . . Nike-Hydac rocket vehicle
 - . . . Nike-Iroquois rocket vehicle
 - . . . Nike-Javelin rocket vehicle
 - . . . Nike-Tomahawk rocket vehicle
 - . . Nova launch vehicles
 - . . Pegasus air-launched booster
 - . . Phoenix sounding rocket
 - . . RAM B launch vehicle
 - . . Rubis rocket vehicle
 - . . Saturn launch vehicles
 - . . . Saturn 1 launch vehicles
 - Saturn 1 SA-1 launch vehicle
 - Saturn 1 SA-10 launch vehicle
 - Saturn 1 SA-2 launch vehicle
 - Saturn 1 SA-3 launch vehicle
 - Saturn 1 SA-4 launch vehicle
 - Saturn 1 SA-5 launch vehicle
 - Saturn 1 SA-6 launch vehicle
 - Saturn 1 SA-7 launch vehicle
 - Saturn 1 SA-8 launch vehicle
 - Saturn 1 SA-9 launch vehicle
 - . . . Saturn 1B launch vehicles
 - . . . Saturn 2 launch vehicles
 - . . . Saturn 5 launch vehicles
 - . . . Saturn D launch vehicle
 - . . Scout launch vehicle
 - . . Skylark rocket vehicle

- . . Thor launch vehicles
 - . . . Thor Able rocket vehicle
 - . . . Thor Agena launch vehicle
 - . . . Thor Delta launch vehicle
- . . Titan launch vehicles
 - . . . Titan 3 launch vehicle
 - . . . Titan 4 launch vehicle
 - Titan 4B launch vehicle
- . . Ares 1 launch vehicle
- . . vanguard 2 launch vehicle
- . . Vega launch vehicle
- . . WASP sounding rocket
 - . . . Ares 1 first stage
 - . . . Ares 1 upper stage
 - . . . Ares 5 cargo launch vehicle
- RT air launching
 - expendable stages (spacecraft)
 - interim stages (spacecraft)
 - launch vehicles
 - Minuteman ICBM
 - multiengine vehicles
 - Navaho missile
 - payload mass ratio
 - Pershing missile
 - piggyback systems
 - polaris missiles
 - propulsive efficiency
 - rocket engines
 - SS-11 missile
 - stage separation
 - Sunblazer space probe
 - Talos missile
 - terrier missile
 - Titan ICBM
 - Trailblazer 1 reentry vehicle
 - Trailblazer 2 reentry vehicle
 - upper stage rocket engine
- ∞ vehicles

multistatic radar

DEF System in which successive lobes of the antenna are sequentially engaged to provide a tracking capability without physical movement of the antenna. Used for bistatic radar.

- UF *bistatic radar*
- GS radar
 - . Doppler radar
 - . . **multistatic radar**
 - . surveillance radar
 - . . **multistatic radar**
- RT multipath transmission
 - pulse radar
 - radar detection
 - target recognition

multitasking (computers)

USE **multiprogramming**

multitemporal analysis

USE **temporal resolution**

multivariable control

(added July 1991)

- RT ∞ control
 - control theory
 - feedback control
 - linear parameter-varying control
 - optimal control

multivariate statistical analysis

- GS statistical analysis
 - . variance (statistics)
 - . . **multivariate statistical analysis**
 - . . . bivariate analysis
 - . . . covariance
 - . . . orthogonality
 - . . . regression analysis
 - . . . regression coefficients
- RT ∞ analyzing
 - correlation
 - discriminant analysis (statistics)
- ∞ variance

multivibrators

DEF Two-stage regenerative circuits with two possible states and an abrupt transition characteristic.

- GS circuits
 - . **multivibrators**
 - . flip-flops

- . . monostable multivibrators
- RT amplifiers
- bistable circuits
- logic circuits
- oscillators
- positive feedback
- switching circuits
- trigger circuits
- muon spin rotation**
- DEF Particle spin depolarization caused by sensitivity of muon spin to the presence of defects in certain metals.
- GS gyration
- . rotation
- . . **muon spin rotation**
- RT charged particles
- hyperfine structure
- muons
- particle diffusion
- particle spin
- precession
- muonium**
- RT electrons
- mesons
- muons**
- GS particles
- . elementary particles
- . . bosons
- . . . mesons
- **muons**
- . . . fermions
- . . . leptons
- **muons**
- . . . hadrons
- . . . mesons
- **muons**
- . . . nuclear particles
- . . bosons
- . . . mesons
- **muons**
- RT baryons
- charged particles
- electron decay rate
- muon spin rotation
- Murchison meteorite**
- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- **Murchison meteorite**
- . . . chondrites
- carbonaceous chondrites
- **Murchison meteorite**
- Murray meteorite**
- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- **Murray meteorite**
- . . . chondrites
- carbonaceous chondrites
- **Murray meteorite**
- muscle cells**
- (added December 2004)
- DEF Mature contractile cells, commonly known as myocytes, that form one of three kinds of muscle. The three types of muscle cells are skeletal (muscle fibers), cardiac, and smooth. They are derived from embryonic (precursor) muscle cells called myoblasts.
- UF *myocytes*
- GS cells (biology)
- . **muscle cells**
- . . muscle fibers
- RT muscles
- muscular function
- musculoskeletal system
- myoelectricity
- myosins
- smooth muscle
- muscle contraction*
(added August 2004)
- USE **muscular function**
- muscle fibers**
- (added August 2004)
- DEF Large, multinucleate single cells, either cylindrical or prismatic in shape, that form the basic unit of skeletal muscle tissue. They consist of a soft contractile substance enclosed in a tubular sheath.
- UF *skeletal myocytes*
- GS cells (biology)
- . muscle cells
- . . **muscle fibers**
- RT muscles
- musculoskeletal system
- myosins
- skeletal muscle
- muscle relaxants**
- GS drugs
- . **muscle relaxants**
- muscles**
- GS anatomy
- . musculoskeletal system
- . . **muscles**
- . . . constrictors
- . . . diaphragm (anatomy)
- . . . flexors
- . . . myocardium
- . . . skeletal muscle
- . . . smooth muscle
- . . . tendons
- RT aldolase
- ataxia
- congeners
- convulsions
- electrocardiography
- fibrillation
- glucocorticoids
- heart
- hypodynammia
- muscle cells
- muscle fibers
- muscular fatigue
- muscular strength
- muscular tonus
- myoelectric potentials
- myoelectricity
- myoglobin
- myosins
- spasms
- twitching
- muscovite**
- DEF An important mineral of the mica group.
- GS aluminum compounds
- . **muscovite**
- chalcogenides
- . oxides
- . . silicon oxides
- . . . **muscovite**
- minerals
- . mica
- . . **muscovite**
- silicon compounds
- . silicon oxides
- . . **muscovite**
- muscular fatigue**
- GS fatigue (biology)
- . **muscular fatigue**
- RT muscles
- musculoskeletal system
- stress (physiology)
- muscular function**
- UF *muscle contraction*
- GS **muscular function**
- . spasms
- RT cramps
- ∞ functions
- hypodynammia
- hypokinesia
- hypotonia
- mechanograms
- muscle cells
- myosins
- smooth muscle
- twitching
- muscular strength**
- RT muscles
- musculoskeletal system
- skeletal muscle
- ∞ strength
- muscular tonus**
- UF *tonus*
- GS **muscular tonus**
- . hypotonia
- RT exercise physiology
- muscles
- musculoskeletal system**
- UF *skeleton*
- GS anatomy
- . **musculoskeletal system**
- . . bones
- . . . femur
- . . . pelvis
- . . . scapula
- . . . skull
- cranium
- intracranial cavity
- mastoids
- . . . spine
- vertebrae
- . . . sternum
- . . . tibia
- . . . ulna
- . . joints (anatomy)
- . . elbow (anatomy)
- . . . knee (anatomy)
- . . . wrist
- . . muscles
- . . . constrictors
- . . . diaphragm (anatomy)
- . . . flexors
- . . . myocardium
- . . . skeletal muscle
- . . . smooth muscle
- . . . tendons
- . . cartilage
- RT connective tissue
- exoskeletons
- hypokinesia
- intervertebral disks
- muscle cells
- muscle fibers
- muscular fatigue
- muscular strength
- sciatic region
- striation
- ∞ systems
- museums**
- RT anthropology
- artifacts
- buildings
- collection
- histories
- libraries
- mushy zones**
- DEF Regions of liquid plus solid phases in alloys that solidify over a range of temperatures. Used for liquid plus solid zones.
- UF *liquid plus solid zones*
- RT casting
- cooling
- metallography
- phase transformations
- solidification
- music**
- RT arts
- octaves
- muskegs**
- GS landforms
- . **muskegs**
- RT Arctic regions
- marshlands
- soils

mutagenesis

topography
water

Mustang aircraft
USE **P-51 aircraft**

mutagenesis

(added June 2000)

DEF Induction or development of a genetic mutation via a natural environmental mutagen or through the methods of genetic engineering.

RT deoxyribonucleic acid
gene expression
genes
mutagens
mutations
radiation effects

mutagens

DEF Agents that raise the frequency of mutations above the spontaneous rate.

RT air pollution
biochemistry
biological evolution
cells (biology)
chemical analysis
genetics
mutagenesis
mutations

mutations

RT biological diversity
biological evolution
cells (biology)
chromosome aberrations
chromosomes
genes
genetics
mitosis
mutagenesis
mutagens
nucleogenesis
oncogenes
radiation hazards

MX missile

DEF United States strategic intercontinental ballistic missile.

UF *Peacekeeper missile*
GS missiles
. ballistic missiles
. . . intercontinental ballistic missiles
. . . **MX missile**
. surface to surface missiles
. . . intercontinental ballistic missiles
. . . **MX missile**
RT missile silos

myelin

RT fats
lipids
myelin sheath
nerves
nervous system

neurons

myelin sheath

(added August 2004)

DEF The lipid-rich sheath surrounding axons in both the central and peripheral nervous systems. The myelin sheath is an electrical insulator and allows faster and more energetically efficient conduction of impulses. The sheath is formed by the cell membranes of glial cells (schwann cells in the peripheral and oligodendroglia in the central nervous system).

GS anatomy
. nervous system
. . nerves
. . . **myelin sheath**
RT axons
bioelectricity
electrophysiology
myelin
nerve fibers

Mylar (trademark)

GS polymeric films
. **Mylar (trademark)**
RT polyethylene terephthalate
∞ polymers

myocardial infarction

GS diseases
. heart diseases
. . infarction
. . . **myocardial infarction**
RT arteriosclerosis
blood coagulation
coronary artery disease
hypertension
necrosis
thrombosis

myocardium

GS anatomy
. circulatory system
. . cardiovascular system
. . . heart
. . . . **myocardium**
. musculoskeletal system
. . muscles
. . . **myocardium**
RT angina pectoris
heart conduction system

myocytes

(added December 2004)

USE **muscle cells**

myoelectric potentials

GS myoelectricity
. **myoelectric potentials**
RT muscles
∞ potential

myoelectricity

GS **myoelectricity**
. myoelectric potentials
RT electromyography
muscle cells

muscles

myoglobin

GS biopolymers
. proteins
. . **myoglobin**
organic compounds
. proteins
. . **myoglobin**
RT muscles
pigments

myopia

RT vision

myosins

(added August 2004)

DEF A diverse superfamily of proteins that function as translocating proteins. They share the common characteristics of being able to bind actins and hydrolyse MgATP. Myosins generally consist of heavy chains which are involved in locomotion, and light chains which are involved in regulation.

GS biopolymers
. proteins
. . **myosins**
organic compounds
. proteins
. . **myosins**
RT adenosine triphosphate
adenosinetriphosphatase
muscle cells
muscle fibers
muscles
muscular function

Mystere 20 aircraft

UF *Dassault Mystere 20 aircraft*

GS Dassault aircraft
. **Mystere 20 aircraft**
jet aircraft
. turbofan aircraft
. . **Mystere 20 aircraft**
light aircraft
. **Mystere 20 aircraft**
monoplanes
. **Mystere 20 aircraft**
passenger aircraft
. **Mystere 20 aircraft**
transport aircraft
. **Mystere 20 aircraft**

Mystere 50 aircraft

DEF A tri-engine business jet aircraft (Dassault). Used for Dassault Mystere 50 aircraft.

UF *Dassault Mystere 50 aircraft*

GS Dassault aircraft
. **Mystere 50 aircraft**
jet aircraft
. **Mystere 50 aircraft**
passenger aircraft
. **Mystere 50 aircraft**
transport aircraft
. **Mystere 50 aircraft**
RT ∞ aircraft
turbofan engines

N

N electrons

- GS particles
 - . charged particles
 - . . . energetic particles
 - electrons
 - **N electrons**
 - corpuscular radiation
 - energetic particles
 - electrons
 - **N electrons**
 - elementary particles
 - fermions
 - leptons
 - electrons
 - **N electrons**
- RT beta particles

N-156 aircraft

- USE **F-5 aircraft**

NA-300 aircraft

- USE **OV-10 aircraft**

nacelle wing configurations

- (added August 1998)
- USE **wing nacelle configurations**

nacelles

- RT aerodynamic configurations
 - air intakes
 - airframes
 - cowlings
 - ducted bodies
 - engine inlets
 - external store separation
 - external stores
 - external tanks
 - fairings
 - housings
 - nose inlets
 - perforated shells
 - Pods (external stores)
 - protuberances
 - shells (structural forms)
 - wing-fuselage stores

Naiad

- (added January 1996)

DEF A natural satellite of Neptune orbiting at a mean distance of 48,000 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Neptune satellites
 - . . . **Naiad**
- RT Neptune (planet)

naked singularities

DEF Singularities in spacetime that will be visible and communicable to the outside world, i.e., singularities that are not shielded by an event horizon from infinity.

- GS analysis (mathematics)
 - . complex variables
 - . . singularity (mathematics)
 - . . . **naked singularities**

- RT astrophysics
 - black holes (astronomy)
 - cosmology
 - degenerate matter
 - event horizon
 - gravitational collapse
 - points (mathematics)
 - relativity
 - space-time functions
 - theoretical physics
 - white holes (astronomy)

nakhlites

- (added August 1991)

DEF Achondritic stony meteorites consisting of a holocrystalline aggregate of diopside (75 percent) and olivine.

- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . achondrites
 - **nakhlites**

- RT chassignites
- shergottites

SNC meteorites

NAMC aircraft

- USE **Nihon aircraft**

Namibia

- UF *South West Africa*
- RT Africa
 - nations
 - Republic of South Africa

naming

- GS **naming**
 - . norms
- RT nomenclatures
 - specifications
 - standardization

nanoclusters

- (added December 2006)

DEF Groups of well-ordered, uniform nanoparticles arranged in technologically useful shapes, often displaying optical, electronic, and chemical properties of interest.

- GS nanostructures (devices)
 - . **nanoclusters**
- RT metal clusters
 - molecular clusters
 - nanocrystals
 - nanofabrication
 - nanotechnology

nanocomposites

- (added December 2000)

- GS composite materials
 - . **nanocomposites**
- RT aluminum oxides
 - ceramic matrix composites
 - grain size
 - nanocrystals
 - nanostructure (characteristics)
 - particulate reinforced composites
 - polymer matrix composites
 - silicon carbides
 - silicon nitrides

nanocrystalline materials

- (added October 1997)

USE **nanocrystals**

nanocrystalline structure

- (added October 1997)

USE **nanostructure (characteristics)**

nanocrystals

- (added October 1997)

- UF *nanocrystalline materials*
- GS crystals
 - . **nanocrystals**
- RT crystal structure
 - grain size
 - microcrystals
 - nanoclusters
 - nanocomposites
 - nanoparticles
 - nanorods
 - nanostructure (characteristics)

nanofabrication

- (added January 2002)

DEF Process of, and techniques for, creating nanoscale structures and devices.

- UF *nanostructure fabrication*
- GS fabrication
 - . **nanofabrication**
- RT atomic force microscopy
 - electron beams
 - lithography
 - nanoclusters
 - nanorods
 - nanostructures (devices)
 - nanotechnology
 - nanowires
 - quantum electronics
 - scanning tunneling microscopy
 - self assembly

nanoidentation

- (added October 2001)

DEF A method for determining various mechanical properties of materials on a very small scale by observing an indentation made with a nanoscale diamond probe at a selected rate and load. Force-displacement curves derived from the indentation reflect a material's response to deformation, from which properties such as hardness and modulus of elasticity can be determined.

- GS indentation
 - . **nanoidentation**
- RT atomic force microscopy
 - hardness tests
 - Knoop hardness
- ∞ materials tests
 - mechanical properties
 - microhardness
 - modulus of elasticity
 - nanotechnology

nanoparticles

- (added March 2002)

DEF Ultra fine particles with dimensions in the range of 1 to 100 nanometers.

- GS particles
 - . **nanoparticles**
- RT fullerenes
 - nanocrystals
 - nanostructure (characteristics)
 - nanostructure growth
 - nanotechnology
 - nanotubes
 - thin films

nanorods

- (added December 2006)

DEF Elongated nanoscale objects that may be synthesized from metals or semiconducting materials, each of their dimensions ranging from 1-100 nm.

- GS nanostructures (devices)
 - . **nanorods**
- RT nanocrystals
 - nanofabrication
 - nanotechnology
 - nanotubes
 - nanowires

nanosatellites

- (added October 1998)

DEF Satellites with a total mass smaller than 10 kg incorporating miniaturized electronic and mechanical systems.

- UF *nanosats*
- GS artificial satellites
 - . **nanosatellites**
- RT microelectromechanical systems
 - microminiaturization
 - microminiaturized electronic devices
 - microsatellites
 - satellite constellations
 - satellite design
 - small satellite technology
 - small scientific satellites

nanosats

- (added October 1998)

USE **nanosatellites**

nanostructure (characteristics)

- (added October 1997)

- UF *nanocrystalline structure*
- GS microstructure
 - . **nanostructure (characteristics)**
- RT carbon nanotubes
 - ∞ characteristics
 - crystal structure
 - dendrimers
 - grain size
 - micelles
 - nanocomposites
 - nanocrystals
 - nanoparticles
 - nanostructure growth
 - nanotechnology
 - nanotubes
 - self assembly

nanostructure growth

semiconductors (materials)

nanostructure fabrication
(added January 2002)
USE **nanofabrication**

nanostructure growth
(added September 2001)

DEF The progressive formation of nano-scale material structures by various means including catalytic formation, laser ablation, chemical vapor deposition, and plasma deposition.

GS growth
. **nanostructure growth**
RT crystal growth
fullerenes
laser ablation
laser deposition
nanoparticles
nanostructure (characteristics)
nanostructures (devices)
nanotechnology
nanotubes
nanowires
vapor deposition

nanostructures (devices)
(added October 1997)

GS **nanostructures (devices)**
. nanotubes
. quantum dots
. . carbon nanotubes
. nanowires
. . quantum wires
. nanoclusters
. nanorods
. single electron transistors
RT adatoms
∞ devices
nanofabrication
nanostructure growth
nanotechnology
quantum electronics
semiconductor devices

nanotechnology
(added June 2000)

DEF The creation of functional materials, devices, and systems through control of matter on the nanometer-length scale; exploitation of novel phenomena and properties at the nanometer scale.

GS technologies
. **nanotechnology**
RT adatoms
microelectromechanical systems
microelectronics
nanoclusters
nanofabrication
nanoindentation
nanoparticles
nanorods
nanostructure (characteristics)
nanostructure growth
nanostructures (devices)
nanotubes
nanowires
quantum dots
quantum electronics
quantum wires
resonant tunneling diodes
self assembly
single electron transistors

nanotubes
(added June 2000)

DEF Nanostructures having a closed, tubular morphology that can be single-walled or multi-walled. The structures are believed to be defect free, leading to high strength despite their low density; and can be either electrically conductive or semiconductive, depending on their helicity.

UF *nanotubules*
GS nanostructures (devices)
. **nanotubes**
. . carbon nanotubes
RT fullerenes
graphite

nanoparticles
nanorods
nanostructure (characteristics)
nanostructure growth
nanotechnology
∞ tubes

nanotubules
(added June 2000)
USE **nanotubes**

nanowires
(added March 2005)

DEF Wire structures with thickness measured in nanometers (below 1 micron or 1 x 10(exp -6) meters in thickness).
GS nanostructures (devices)
. **nanowires**
. . quantum wires
RT nanofabrication
nanorods
nanostructure growth
nanotechnology
quantum electronics

naphthalene
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **naphthalene**
. hydrocarbons
. . cyclic hydrocarbons
. . . **naphthalene**

naphthenes
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **naphthenes**
. hydrocarbons
. . cyclic hydrocarbons
. . . **naphthenes**

nap-of-the-earth navigation
DEF Low altitude flight of helicopters during night or day utilizing electronic means for detection and recognition of landmarks and targets. Used for NOE navigation.

UF *NOE navigation*
GS navigation
. air navigation
. . **nap-of-the-earth navigation**
. . . terrain following
RT helicopters
image processing
low altitude
night flights (aircraft)
night vision
target recognition
terrain analysis

nappes
USE **folds (geology)**

narcolepsy
GS diseases
. **narcolepsy**

narcosis
DEF A state of profound stupor, produced by the toxic effect of certain substances; in diluent gas narcosis, by excessive partial pressure of the diluent.
GS unconsciousness
. **narcosis**
RT physiology
∞ poisoning

narcotics
GS drugs
. **narcotics**
. . morphine
RT pentobarbital
phenobarbital
psychotropic drugs

narrowband
DEF A description of frequency measurement whose frequency band of energy is smaller relative to the rest of the band.

GS bandwidth
. **narrowband**
RT ∞ bands
broadband
frequencies

NASA Communication Network
USE **NASCOM network**

NASA End-to-End Data System
USE **needs (data system)**

NASA Interactive Planning System

UF *NIPS (system)*
RT computer programs
Earth resources
management methods
NASA programs
project planning
resource allocation
resources management
∞ systems

NASA programs

GS programs
. **NASA programs**
. . ACEE program
. . Assess program
. . ATLIT project
. . DAST program
. . NASA space programs
. . . Apollo applications program
. . . Apollo project
. . . Bioastronautical Orbital Space System
. . . Centaur project
. . . Earth & Ocean Physics Applications Program
. . . Earth Resources Program
. . . . Earth Resources Survey Program
. . . . SEASAT program
. . . Echo project
. . . Galileo project
. . . Gemini project
. . . Helios Project
. . . Jupiter project
. . . Magellan project (NASA)
. . . Mariner program
. . . . Mariner Venus-Mercury 1973
. . . . Mariner-Mercury 1973
. . . Mars 69 project
. . . Mars 71 project
. . . Mercury project
. . . National Launch Vehicle Program
. . . NEW MOONS project
. . . Nimbus project
. . . OPEN Project
. . . Pioneer project
. . . Project SETI
. . . Ranger project
. . . . Agena B Ranger Program
. . . Constellation program
. . . Mars Surveyor 98 Program
. . . New Horizons mission
. . . Rover project
. . . SAIL project
. . . Saturn project
. . . Scout project
. . . Skylab program
. . . Starprobe mission
. . . Surveyor project
. . . Synchronous Communications Satellite Proj
. . . . Tektite project
. . . TIROS project
. . . Titan project
. . . Vanguard project
. . . Viking Mars program
. . . Voyager project
. . . Mission to Planet Earth
. . National Aerospace Plane Program
. . quiet engine program
. . supersonic cruise aircraft research
. . TACT program
. . Terminal Configured Vehicle Program
. . Tilt Rotor Research Aircraft Program
RT Advanced Launch System (STS)

- AgRISTARS project
 - Apollo extension system
 - Canadian space program
 - Committee on Space Research
 - Communications Technology Satellite
 - Earth Resources Information System
 - GARP Atlantic Tropical Experiment
 - geographic applications program
 - Global Atmospheric Research Program
 - grants
 - Gravity Probe B
 - Landsat satellites
 - leasing
 - NASA Interactive Planning System
 - NASTRAN
 - NOESS
 - OSS-1 payload
 - payload deployment & retrieval system
 - Quasat
 - Questol aircraft
 - ∞ research projects
 - rotor systems research aircraft
 - SEASAT satellites
 - single stage to orbit vehicles
 - space programs
 - space transportation system
 - Spacelab
 - SPHINX
 - Starsite program
 - StormSat satellite
 - Synchronous Earth Observatory satellite
 - technology utilization
 - Transit navigation system
 - university program
- NASA space programs**
- GS programs
 - . NASA programs
 - . . **NASA space programs**
 - . . . Apollo applications program
 - . . . Apollo project
 - . . . Bioastronautical Orbital Space System
 - . . . Centaur project
 - . . . Earth & Ocean Physics Applications Program
 - . . . Earth Resources Program
 - Earth Resources Survey Program
 - SEASAT program
 - . . . Echo project
 - . . . Galileo project
 - . . . Gemini project
 - . . . Helios Project
 - . . . Jupiter project
 - . . . Magellan project (NASA)
 - . . . Mariner program
 - Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
 - . . . Mars 69 project
 - . . . Mars 71 project
 - . . . Mercury project
 - . . . National Launch Vehicle Program
 - . . . NEW MOONS project
 - . . . Nimbus project
 - . . . OPEN Project
 - . . . Pioneer project
 - . . . Project SETI
 - . . . Ranger project
 - Agena B Ranger Program
 - . . . Constellation program
 - . . . Mars Surveyor 98 Program
 - . . . New Horizons mission
 - . . . Rover project
 - . . . SAIL project
 - . . . Saturn project
 - . . . Scout project
 - . . . Skylab program
 - . . . Starprobe mission
 - . . . Surveyor project
 - . . . Synchronous Communications Satellite Proj
 - . . . Tektite project
 - . . . TIROS project
 - . . . Titan project
 - . . . Vanguard project
 - . . . Viking Mars program
 - . . . Voyager project
 - RT Advanced Launch System (STS)
 - Cassini mission
 - Cluster Mission
 - Comet Rendezvous Asteroid Flyby Mission
 - Deep Space 1 Mission
 - International Space Year
 - manned Mars missions
 - Mars sample return missions
 - Mars Surveyor 2001 Mission
 - Next Generation Space Telescope project
 - Space Station Freedom
- NASA Structural Analysis program*
- USE **NASTRAN**
- NASCOM network**
- UF *NASA Communication Network*
 - GS communicating
 - . point to point communication
 - . . **NASCOM network**
 - networks
 - . communication networks
 - . . **NASCOM network**
 - RT Fleet Satellite Communication System
 - Global Tracking Network
 - radio communication
 - telecommunication
- NASTRAN**
- UF *NASA Structural Analysis program*
 - GS computer programs
 - . applications programs (computers)
 - . . **NASTRAN**
 - RT bending moments
 - computer techniques
- . . . Viking Mars program
 - . . . Voyager project
 - . space programs
 - . . **NASA space programs**
 - . . . Apollo applications program
 - . . . Apollo project
 - . . . Bioastronautical Orbital Space System
 - . . . Centaur project
 - . . . Earth & Ocean Physics Applications Program
 - . . . Earth Resources Program
 - Earth Resources Survey Program
 - SEASAT program
 - . . . Echo project
 - . . . Galileo project
 - . . . Gemini project
 - . . . Helios Project
 - . . . Jupiter project
 - . . . Magellan project (NASA)
 - . . . Mariner program
 - Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
 - . . . Mars 69 project
 - . . . Mars 71 project
 - . . . Mercury project
 - . . . National Launch Vehicle Program
 - . . . NEW MOONS project
 - . . . Nimbus project
 - . . . OPEN Project
 - . . . Pioneer project
 - . . . Project SETI
 - . . . Ranger project
 - Agena B Ranger Program
 - . . . Constellation program
 - . . . Mars Surveyor 98 Program
 - . . . New Horizons mission
 - . . . Rover project
 - . . . SAIL project
 - . . . Saturn project
 - . . . Scout project
 - . . . Skylab program
 - . . . Starprobe mission
 - . . . Surveyor project
 - . . . Synchronous Communications Satellite Proj
 - . . . Tektite project
 - . . . TIROS project
 - . . . Titan project
 - . . . Vanguard project
- dynamic loads
 - finite element method
 - matrix methods
 - NASA programs
 - stress analysis
 - structural analysis
- National Aerospace Plane Program**
- GS programs
 - . NASA programs
 - . . **National Aerospace Plane Program**
 - RT aerospace planes
 - hypersonic vehicles
 - transatmospheric vehicles
 - X-30 vehicle
- National Airspace System**
- RT air traffic control
 - aircraft safety
 - airports
 - airspace
 - National Airspace Utilization System
 - National Aviation System
- National Airspace Utilization System**
- RT air law
 - air navigation
 - air traffic
 - air traffic control
 - aircraft approach spacing
 - airspace
 - collision avoidance
 - flight paths
 - flight plans
 - flight rules
 - National Airspace System
 - ∞ systems
- National Aviation System**
- RT air traffic
 - air traffic control
 - air transportation
 - aircraft approach spacing
 - flight rules
 - landing aids
 - National Airspace System
 - ∞ systems
 - traffic control
- National Launch Vehicle Program**
- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **National Launch Vehicle Program**
 - . . . space programs
 - . . . NASA space programs
 - **National Launch Vehicle Program**
 - RT launch vehicles
 - launchers
 - launching
 - launching sites
- National Oceanic Satellite System**
- DEF Joint NASA (Goddard)-DOD venture.
 - RT artificial satellites
 - maritime satellites
 - ∞ systems
- National Operational Environmental Sat Sys*
- USE **NOESS**
- national parks**
- DEF Areas of scenic beauty or historical importance preserved and maintained by a national government for the enjoyment of the public.
 - GS land
 - . parks
 - . . **national parks**
 - . . . Yellowstone National Park (ID-MT-WY)
- National Severe Storms Project**
- RT meteorology
 - tornadoes

nations

warning systems

nations

GS

nations

- . Afghanistan
- . Albania
- . Algeria
- . Andorra
- . Angola
- . Antigua and Barbuda
- . Argentina
- . Armenia
- . Australia
- . Austria
- . Azerbaijan
- . Bahamas
- . Bahrain
- . Bangladesh
- . Barbados
- . Belarus
- . Belgium
- . Belize
- . Benin
- . Bhutan
- . Bolivia
- . Botswana
- . Brazil
- . Brunei
- . Bulgaria
- . Burkina
- . Burma
- . Burundi
- . Cambodia
- . Cameroon
- . Canada
 - . . Alberta
 - . . British Columbia
 - . . Manitoba
 - . . New Brunswick
 - . . Newfoundland
 - . . Northwest Territories
 - . . Nova Scotia
 - . . Ontario
 - . . Prince Edward Island
 - . . Quebec
 - . . Saskatchewan
 - . . Yukon Territory
- . Cape Verde
- . Central African Republic
- . Chad
- . Chile
- . China
- . Colombia
- . Congo (Brazzaville)
- . Costa Rica
- . Cote d'Ivoire
- . Croatia
- . Cuba
- . Cyprus
- . Czech Republic
- . Czechoslovakia
- . Denmark
- . Djibouti
- . Dominica
- . Dominican Republic
- . East Germany
- . Ecuador
- . Egypt
- . El Salvador
- . Estonia
- . Ethiopia
- . Finland
- . France
 - . . French Guiana
 - . . Guadeloupe
 - . . Martinique
- . Gabon
- . Gambia
- . Georgia (Eurasia)
- . Germany
- . Ghana
- . Greece
- . Grenada
- . Guatemala
- . Guinea
- . Guyana
- . Haiti
- . Honduras
- . Hungary

- . Iceland
- . India
- . Indonesia
- . Iran
- . Iraq
- . Ireland
- . Israel
- . Italy
- . Jamaica
- . Japan
- . Jordan
- . Kazakhstan
- . Kenya
- . Kuwait
- . Kyrgyzstan
- . Laos
- . Latvia
- . Lebanon
- . Lesotho
- . Liberia
- . Libya
- . Liechtenstein
- . Lithuania
- . Luxembourg
- . Madagascar
- . Malawi
- . Malaysia
- . Maldive Islands
- . Mali
- . Malta
- . Mauritania
- . Mauritius
- . Mexico
- . Moldova
- . Monaco
- . Mongolia
- . Morocco
- . Mozambique
- . Nepal
- . Netherlands
- . New Zealand
- . Nicaragua
- . Niger
- . Nigeria
- . North Korea
- . Norway
- . Oman
- . Pakistan
- . Panama
- . Papua New Guinea
- . Paraguay
- . Peru
- . Philippines
- . Poland
- . Portugal
 - . . Azores
- . Qatar
- . Republic of South Africa
- . Romania
- . Russian Federation
- . Rwanda
- . San Marino
- . Saudi Arabia
- . Senegal
- . Seychelles
- . Sierra Leone
- . Sikkim
- . Singapore
- . Slovakia
- . Somalia
- . South Korea
- . Southern Yemen
- . Spain
 - . . Canary Islands
- . Sri Lanka
- . Sudan
- . Surinam
- . Swaziland
- . Sweden
- . Switzerland
- . Syria
- . Taiwan
- . Tajikistan
- . Tanzania
- . Thailand
- . Tibet
- . Togo
- . Trinidad and Tobago
- . Tunisia

- . Turkey
 - . Turkmenistan
 - . U.S.S.R.
 - . Uganda
 - . Ukraine
 - . United Arab Emirates
 - . United Kingdom
 - . . England
 - . . Gibraltar
 - . . Northern Ireland
 - . . Scotland
 - . . Wales
 - . United States
 - . . Alabama
 - . . Alaska
 - . . Arizona
 - . . Arkansas
 - . . California
 - . . Colorado
 - . . Connecticut
 - . . Delaware
 - . . District of Columbia
 - . . Florida
 - . . Georgia
 - . . Guam
 - . . Hawaii
 - . . Idaho
 - . . Illinois
 - . . Indiana
 - . . Iowa
 - . . Kansas
 - . . Kentucky
 - . . Louisiana
 - . . Maine
 - . . Maryland
 - . . Massachusetts
 - . . Michigan
 - . . Minnesota
 - . . Mississippi
 - . . Missouri
 - . . Montana
 - . . Nebraska
 - . . Nevada
 - . . New Hampshire
 - . . New Jersey
 - . . New Mexico
 - . . New York
 - . . North Carolina
 - . . North Dakota
 - . . Ohio
 - . . Oklahoma
 - . . Oregon
 - . . Pennsylvania
 - . . Puerto Rico
 - . . Rhode Island
 - . . South Carolina
 - . . South Dakota
 - . . Tennessee
 - . . Texas
 - . . Utah
 - . . Vermont
 - . . Virgin Islands
 - . . Virginia
 - . . Washington
 - . . West Virginia
 - . . Wisconsin
 - . . Wyoming
 - . Bosnia and Herzegovina
 - . Democratic Republic of Congo
 - . Serbska Republic
 - . Uruguay
 - . Uzbekistan
 - . Vatican City
 - . Venezuela
 - . Vietnam
 - . West Germany
 - . Yemen
 - . Yugoslavia
 - . Zambia
 - . Zimbabwe
- RT
- Africa
 - Asia
 - cities
 - Commonwealth of Independent States
 - communities
 - demography
 - developing nations
 - Europe

federations
 Hong Kong
 international law
 minorities
 Namibia
 politics
 regimes
 Spanish Sahara
 United Nations

NATO 3B satellite

GS artificial satellites
 . communication satellites
 . . Communications Technology Satellite
 . . . **NATO 3B satellite**

natural convection

USE **free convection**

natural frequencies

USE **resonant frequencies**

natural gas

DEF (A) Hydrocarbons that exist as a gas or vapor at ordinary pressures and temperatures. Methane is the most important, but ethane, propane, or others may be present. (B) Gaseous hydrocarbons trapped in the zone of ground water saturation under pressure from, and partially dissolved in, underlying water or petroleum.

GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . fossil fuels
 **natural gas**
 liquefied natural gas
 . . gaseous fuels
 . . **natural gas**
 . . . liquefied natural gas
 gases
 . flammable gases
 . . gaseous fuels
 . . . **natural gas**
 liquefied natural gas
 geophysical fluids
 . **natural gas**
 . . liquefied natural gas
 organic compounds
 . hydrocarbons
 . . **natural gas**
 . . . liquefied natural gas
 resources
 . Earth resources
 . . fossil fuels
 . . . **natural gas**
 liquefied natural gas
 RT methane
 natural gas exploration
 oil fields
 petroleum products

natural gas exploration

DEF Searching the geological features to identify locations for stimulating wells for recovery of natural gas.

GS exploration
 . **natural gas exploration**
 RT drilling
 methane
 natural gas
 oil exploration
 photogeology

natural language (computers)

DEF A computer language whose rules reflect and describe current rather than prescribed usage. The language is often loose and ambiguous in interpretation.

GS languages
 . programming languages
 . . **natural language (computers)**
 RT computer programming
 context
 data processing
 knowledge representation

natural language processing

(added September 1993)

RT artificial intelligence
 expert systems
 human-computer interface
 information analysis
 knowledge based systems
 linguistics
 machine translation
 parsing algorithms
 semantics
 syntax

natural lasers

USE **lasers**

natural satellites

SN (EXCLUDES PLANETS)
 UF *Dactyl*
moons
planetary satellites
 celestial bodies
 GS . **natural satellites**
 . . icy satellites
 . . . Ariel
 . . . Callisto
 . . . Dione
 . . . Enceladus
 . . . Europa
 . . . Ganymede
 . . . Hyperion
 . . . Iapetus
 . . . Mimas
 . . . Rhea (astronomy)
 . . . Tethys
 . . . Titania
 . . Jupiter satellites
 . . . Adrastea
 . . . Amalthea
 . . . Carme
 . . . Elara
 . . . Galilean satellites
 . . . Callisto
 . . . Europa
 . . . Ganymede
 . . . Io
 . . . Himalia
 . . . Leda
 . . . Lysithea
 . . . Metis
 . . . Pasiphae
 . . . Sinope
 . . . Thebe
 . . Mars satellites
 . . . Deimos
 . . . Phobos
 . . moon
 . . Neptune satellites
 . . . Galatea
 . . . Larissa
 . . . Naiad
 . . . Nereid
 . . . Proteus
 . . . Triton
 . . Pluto satellites
 . . . Charon
 . . . Hydra
 . . . Nix
 . . Saturn satellites
 . . . Calypso
 . . . Dione
 . . . Enceladus
 . . . Epimetheus
 . . . Helene
 . . . Hyperion
 . . . Iapetus
 . . . Janus
 . . . Mimas
 . . . Pandora
 . . . Phoebe
 . . . Prometheus
 . . . Rhea (astronomy)
 . . . Teleso
 . . . Tethys
 . . . Titan
 . . . Uranus satellites
 . . . Ariel
 . . . Cordelia
 . . . Miranda
 . . . Oberon
 . . . Puck
 . . . Titania

. . . Umbriel
 RT artificial satellites
 Cyrrillid meteoroids
 Earth-Moon system
 meteoroids
 moonlets
 planets
 Roche limit
 satellite atmospheres
 satellite surfaces
 ∞ satellites
 Saturn rings
 solar system
 tektites
 Uranus rings

nausea

DEF A feeling of discomfort in the region of the stomach, with aversion to food and a tendency to vomit.

GS signs and symptoms
 . **nausea**
 RT antiemetics and antinauseants
 motion sickness
 vomiting

nautical charts

DEF Charts and maps of oceans, coasts and harbors now compiled from satellite data for precision and correction of local errors.

GS charts
 . **nautical charts**
 RT navigation aids
 navigation satellites
 surface navigation

Navaho missile

GS missiles
 . ramjet missiles
 . . **Navaho missile**
 . . surface to surface missiles
 . . . cruise missiles
 . . . **Navaho missile**
 RT liquid propellant rocket engines
 multistage rocket vehicles
 ramjet engines

Navier-Stokes equation

DEF The equation of motion for a viscous fluid.

GS equations of motion
 . **Navier-Stokes equation**
 flow equations
 . **Navier-Stokes equation**
 RT Burger equation
 computational fluid dynamics
 direct numerical simulation
 ∞ equations
 flow theory
 incompressible flow
 incompressible fluids
 large eddy simulation
 Milne-Thomson method
 Newtonian fluids
 Oseen approximation
 Reynolds averaging
 Reynolds equation
 Reynolds stress
 viscous flow
 viscous fluids

navigation

DEF The practice or art of directing the movement of a craft from one point to another. Navigation usually implies the presence of a human, a navigator, aboard the craft.

GS **navigation**
 . air navigation
 . . all-weather air navigation
 . . area navigation
 . . nap-of-the-earth navigation
 . . . terrain following
 . autonomous navigation
 . celestial navigation
 . . Astroguide Navigation System
 . . astronavigation
 . dead reckoning
 . digital navigation
 . Doppler navigation
 . hybrid navigation systems

navigation aids

- . inertial navigation
- . . Astroguide Navigation System
- . . gimballess inertial navigation
- . Omega Navigation System
- . polar navigation
- . radar navigation
- . radio navigation
- . . hyperbolic navigation
- . . . Decca navigation
- . . . LORAC navigation system
- . . . loran
- loran C
- loran D
- Shoran
- . . Tacan
- . . VHF omnirange navigation
- . space navigation
- . . interplanetary navigation
- . proportional navigation
- . surface navigation
- RT automatic flight control
- azimuth
- bay ice
- declination
- distance measuring equipment
- ∞ fixing
- flight control
- flight paths
- Global Positioning System
- guidance (motion)
- gyroscopic coupling
- homing devices
- latitude measurement
- locomotion
- longitude measurement
- orbital position estimation
- plotting
- position (location)
- position errors
- positioning
- star trackers
- stationkeeping
- ∞ systems
- triangulation

navigation aids

- GS **navigation aids**
- . beacons
- . . airport beacons
- . . . discrete address beacon system
- . . radar beacons
- . . . discrete address beacon system
- . . radio beacons
- . . . omnidirectional radio ranges
- self calibrating omnirange
- . . radio direction finders
- . Light Airborne Multipurpose System
- . microwave scanning beam landing system
- . navigation instruments
- . . attitude indicators
- . . . gyro horizons
- . . compasses
- . . . gyrocompasses
- . . . magnetic compasses
- . . . solar compasses
- . . radio direction finders
- . TERCOM

RT ∞ aids

- air navigation
- air traffic control
- aircraft equipment
- aircraft instruments
- aircraft safety
- airports
- all-weather air navigation
- altimeters
- approach indicators
- automatic flight control
- automatic pilots
- automatic traffic advisory and resolution
- autonomous navigation
- buoys
- charts
- Decca navigation
- display devices
- distance measuring equipment
- echo sounding

- flight control
- flight management systems
- flight paths
- gyrostabilizers
- head-up displays
- heliports
- homing devices
- hybrid navigation systems
- inertial navigation
- Kalman filters
- landing aids
- laser range finders
- LORAC navigation system
- loran
- loran C
- loran D
- maps
- ∞ mars
- military air facilities
- nautical charts
- plotters
- position indicators
- radio navigation
- range finders
- reduced order filters
- reference stars
- sextants
- Shoran
- solar sensors
- sonar
- star trackers
- surface navigation
- Tacan
- VHF omnirange navigation
- weather

navigation instruments

- GS navigation aids
- . **navigation instruments**
- . . attitude indicators
- . . . gyro horizons
- . . compasses
- . . . gyrocompasses
- . . . magnetic compasses
- . . . solar compasses
- . . radio direction finders
- RT aircraft equipment
- aircraft instruments
- altimeters
- autonomous navigation
- boresight error
- flight control
- flight instruments
- gimballess inertial navigation
- horizon scanners
- hybrid navigation systems
- inertial platforms
- ∞ instruments
- Kalman-Schmidt filtering
- laser range finders
- Light Airborne Multipurpose System
- LORAC navigation system
- loran
- measuring instruments
- position indicators
- radar
- solar sensors
- star trackers
- TERCOM

navigation satellites

- GS artificial satellites
- . **navigation satellites**
- . . Aerosat satellites
- . . Explorer 22 satellite
- . . navigation technology satellites
- . . NAVSTAR satellites
- . . Nova satellites
- . . Refsat
- . . Transit Attitude Control satellite
- . . Transit satellites
- RT active satellites
- ATS
- geodetic satellites
- LOCATES system
- meteorological satellites
- military spacecraft
- nautical charts
- passive satellites

- satellite navigation systems
- satellite networks
- synchronous satellites
- Transit navigation system

navigation technology satellites

- DEF Class of navigation satellites utilizing the global positioning system as well as a precise frequency and timing system. Used for NTS.
- UF *NTS*
- GS artificial satellites
- . navigation satellites
- . . **navigation technology satellites**
- RT NAVSTAR satellites

navigators

- GS personnel
- . **navigators**
- RT flight crews
- flying personnel

Navion aircraft

- GS **Navion aircraft**
- . G-1 aircraft
- RT ∞ aircraft

Navion G-1 aircraft

- USE **G-1 aircraft**

Navion Rangemaster aircraft

- USE **G-1 aircraft**

NAVSTAR satellites

- GS artificial satellites
- . navigation satellites
- . . **NAVSTAR satellites**
- RT active satellites
- ATS
- geodetic satellites
- INMARSAT satellites
- navigation technology satellites
- Refsat
- satellite networks

navy

- GS armed forces
- . **navy**
- RT aircraft carriers
- ballistic missile submarines
- Fleet Satellite Communication System
- nuclear powered ships
- ships
- submarines
- trident submarine
- ∞ vessels

N-body problem

- USE **many body problem**

NC-130 aircraft

- USE **C-130 aircraft**

NDM semiconductor devices

- SN (NEGATIVE DIFFERENTIAL MOBILITY SEMICONDUCTOR DEVICES)
- UF *negative diff mobility semiconductors*
- GS electronic equipment
- . solid state devices
- . . semiconductor devices
- . . . **NDM semiconductor devices**
- RT conduction bands
- ∞ devices
- diffusivity
- electron mobility
- ionic mobility

NDVI (remote sensing)

(added June 2001)

- USE **normalized difference vegetation index**

Near Earth Asteroid Rendezvous Mission

(added March 1996)

- GS space missions
- . asteroid missions
- . . **Near Earth Asteroid Rendezvous Mission**
- . flyby missions
- . . **Near Earth Asteroid Rendezvous Mission**

RT Comet Rendezvous Asteroid Flyby Mission
Earth orbits
EROS asteroid
near Earth objects
rendezvous trajectories
Rosetta mission

near Earth objects

(added November 2001)

DEF Asteroids, meteoroids, or short-period comets having trajectories that intersect the orbit of Earth or that are within 0.3 Astronomical Units (AU) of Earth. Asteroids and comets with perihelion distance less than 1.3 AU.

UF *NEO (astronomy)*

GS celestial bodies

. **near Earth objects**

RT asteroid collisions
asteroids
cometary collisions
comets
Earth orbital environments
meteorite collisions
meteorites
Near Earth Asteroid Rendezvous Mission
space debris

near fields

GS electromagnetic fields

. **near fields**

RT antenna radiation patterns
antennas
electromagnetic radiation
far fields
laser arrays
radio equipment
sidelobes

near infrared radiation

SN (0.75 TO 3 MICRONS)

GS electromagnetic radiation

. infrared radiation

. . **near infrared radiation**

RT far infrared radiation
infrared photometry
light (visible radiation)
 ∞ radiation
radiative heat transfer
radiative transfer
terrestrial radiation
thermal radiation

near ultraviolet radiation

SN (2000 TO 4000 ANGSTROMS)

GS electromagnetic radiation

. ultraviolet radiation

. . **near ultraviolet radiation**

RT far ultraviolet radiation
light (visible radiation)
 ∞ radiation

near wakes

GS wakes

. **near wakes**

nearshore water

GS water

. **nearshore water**

. . coastal water
RT marine environments
oceans
sea water
vadose water
water depth
wetlands

Nebraska

GS nations

. United States

. . **Nebraska**

RT Missouri River (US)
Sand Hills Region (NE)

nebulae

DEF Clouds of interstellar gas and dust, seen either as a luminous patch of light or a dark cloud against a bright background. The term nebula was coined to describe objects that

appeared fuzzy when viewed through early telescopes.

GS celestial bodies

. **nebulae**

. . Cassiopeia A
. . Crab nebula
. . Gum nebula
. . H I regions
. . H II regions
. . Herbig-Haro objects
. . Orion nebula
. . planetary nebulae
. . reflection nebulae
. . solar nebula

RT galaxies

interstellar matter
irregular galaxies
Maffei galaxies
Magellanic clouds
North Polar Spur (astronomy)
Ophiuchi clouds
Opik theory
solar corona
star formation
supernovae

neck (anatomy)

GS anatomy

. **neck (anatomy)**

RT vertebrae

necrosis

(added October 2000)

DEF One of the two mechanisms by which cell death occurs (the other being the physiological process of APOPTOSIS). A pathological process caused by the progressive degradative action of enzymes that is generally associated with severe cellular trauma. It is characterized by mitochondrial swelling, nuclear flocculation, uncontrolled cell lysis, and ultimately cell death. In general, cell or tissue death caused by disease or injury.

UF *pathological cell death*

GS pathological effects

. **necrosis**

RT apoptosis
cells (biology)
cytology
death
diseases
hypoxia
injuries
myocardial infarction
pathology
tissues (biology)

needle bearings

GS bearings

. antifriction bearings

. . roller bearings

. . . **needle bearings**

RT ball bearings

needles

RT dendritic crystals

sewing

single crystals

surgical instruments

needs (data system)

UF *NASA End-to-End Data System*

GS data systems

. **needs (data system)**

end-to-end data systems

. **needs (data system)**

RT data acquisition

data processing

satellite instruments

∞ systems

VSAT (network)

neel temperature

GS temperature

. **neel temperature**

RT antiferromagnetism
magnetic permeability
phase transformations
specific heat

thermal expansion

negative conductance

RT avalanche diodes

gallium arsenides

Gunn effect

tunnel diodes

negative diff mobility semiconductors

USE **NDM semiconductor devices**

negative electron affinity

GS affinity

. **negative electron affinity**

RT electron affinity
electron emission
gallium arsenides
photoelectric emission
semiconductors (materials)

negative feedback

DEF Feedback which results in decreasing the amplification. Used for degenerative feedback.

UF *degenerative feedback*

GS feedback

. **negative feedback**

RT automatic control
damping
degeneration
feedback control
nonlinear feedback
oscillators
transfer functions

negative ions

DEF Ions singly or in groups which acquire negative charges by gaining one or more electrons.

GS ions

. **negative ions**

. . anions

RT free radicals
ionic mobility
nitrogen ions
oxygen ions
plasma physics

negative matter

(added August 1991)

SN (NOT ANTIMATTER)

DEF A hypothetical form of matter whose active-gravitational, passive-gravitational, inertial, and rest mass are opposite in sign to normal, positive matter. Negative matter is not antimatter.

GS matter (physics)

. **negative matter**

RT antimatter
condensed matter physics
extraterrestrial matter
mass

negative matter propulsion

(added August 1991)

GS propulsion

. spacecraft propulsion

. . **negative matter propulsion**

RT interplanetary flight
interstellar travel
matter-antimatter propulsion
rocket engines

negative resistance circuits

GS circuits

. **negative resistance circuits**

RT ∞ resistance
resonant tunneling diodes
tunnel diodes

negative resistance devices

GS **negative resistance devices**

. resonant tunneling diodes

RT aluminum gallium arsenides
gallium arsenides
Gunn diodes
Gunn effect
MIM diodes
negatrons
parametric amplifiers

negatrons

Ramsauer effect
∞ resistance
resonant tunneling

negatrons

DEF Negative electrons. Sometimes shortened to negatons.

GS particles
. charged particles
. energetic particles
. . . electrons
. . . . **negatrons**
. corpuscular radiation
. energetic particles
. . . electrons
. . . . **negatrons**
. elementary particles
. fermions
. . leptons
. . . electrons
. . . . **negatrons**

RT negative resistance devices

Nembutal (trademark)

GS drugs
. **Nembutal (trademark)**
ketones
. **Nembutal (trademark)**
sodium compounds
. **Nembutal (trademark)**

RT pentobarbital sodium

Nemesis (star)

UF *solar companion star*

GS celestial bodies
. stars
. double stars
. . . binary stars
. . . . companion stars
. **Nemesis (star)**

RT dwarf stars
extinction
Oort cloud
solar neighborhood
stellar orbits
stellar systems

NEO (astronomy)

(added November 2001)
USE **near Earth objects**

neodymium

GS chemical elements
. rare earth elements
. . **neodymium**
metals
. rare earth elements
. . **neodymium**

RT didymium

neodymium alloys

GS alloys
. rare earth alloys
. . **neodymium alloys**

neodymium compounds

GS rare earth compounds
. **neodymium compounds**

RT ∞ chemical compounds
∞ metal compounds

neodymium isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **neodymium isotopes**
. rare earth elements
. . **neodymium isotopes**
metals
. rare earth elements
. . **neodymium isotopes**

neodymium lasers

GS stimulated emission devices
. lasers
. . **neodymium lasers**

RT coherent light
glass lasers
optical pumping

rare earth elements

neon

GS chemical elements
. rare gases
. . **neon**
. . . liquid neon
. . . neon isotopes
gases
. rare gases
. . **neon**
. . . liquid neon
. . . neon isotopes

neon 19

USE **neon isotopes**

neon isotopes

UF *neon 19*

GS chemical elements
. nuclides
. isotopes
. . **neon isotopes**
. rare gases
. . neon
. . . **neon isotopes**
gases
. rare gases
. . neon
. . . **neon isotopes**

neopentane

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . pentanes
. **neopentane**

neoplasms

GS diseases
. tumors
. . **neoplasms**
. . . cancer
. . . . leukemias

RT carcinogens
cysts
metastasis
tumor suppressor genes
tumor suppressor proteins

neoprenes

USE **chloroprene resins**

neotectonics

(added May 2002)
DEF Study of the most recent crustal movements and structures of the Earth or other terrestrial planets.

GS geology
. tectonics
. . **neotectonics**

RT Earth movements
plates (tectonics)
sea floor spreading
structural properties (geology)
subduction (geology)

neovascularization

(added June 2004)
USE **angiogenesis**

Nepal

GS nations
. **Nepal**

RT Asia

nephanalysis

DEF A type of analysis using satellite cloud pictures to study the relationship between cloud formation and storm systems.

RT Alpine meteorology
anvil clouds
Atmospheric Cloud Physics Lab (Spacelab)
cap clouds
chemical analysis
cirrocumulus clouds
cirrostratus clouds
cloud cover

cloud physics
clouds (meteorology)
convection clouds
meteorological instruments
meteorology
nephelometers
precipitation (meteorology)
synoptic measurement
synoptic meteorology
weather forecasting

nepheline

GS aluminum compounds
. **nepheline**
minerals
. **nepheline**
potassium compounds
. **nepheline**
silicon compounds
. silicates
. . **nepheline**
sodium compounds
. **nepheline**

RT nephelite

nephelite

GS aluminum compounds
. **nephelite**
chalcogenides
. oxides
. . silicon oxides
. . . **nephelite**
minerals
. **nephelite**
silicon compounds
. silicon oxides
. . **nephelite**

RT nepheline

nephelometers

DEF General name for instruments which measure, at more than one angle, the scattering function of particles suspended in a medium. Instruments for chemical analysis by measuring the light scattering properties of a suspension.

GS measuring instruments
. optical measuring instruments
. . **nephelometers**
optical equipment
. optical measuring instruments
. . **nephelometers**

RT nephanalysis
optical measurement
photometers

nephritis

GS diseases
. kidney diseases
. . **nephritis**

RT bacterial diseases

Neptune (planet)

GS celestial bodies
. planets
. . gas giant planets
. . . **Neptune (planet)**

RT Galatea
Larissa
Naiaid
Neptune atmosphere
Neptune satellites
Nereid
Proteus
Triton
Voyager 2 spacecraft

Neptune atmosphere

DEF The atmosphere of the planet Neptune which is primarily composed of hydrogen and methane.

GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . **Neptune atmosphere**

RT aerospace environments
∞ atmospheres
gas giant planets
hydrogen
methane

- Neptune (planet)
planetary ionospheres
Triton
- Neptune satellites**
(added August 1989)
GS celestial bodies
. natural satellites
. . . **Neptune satellites**
. . . Galatea
. . . Larissa
. . . Naiad
. . . Nereid
. . . Proteus
. . . Triton
RT Neptune (planet)
- neptunium**
GS chemical elements
. actinide series
. . . transuranium elements
. . . **neptunium**
. . . . neptunium isotopes
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. **neptunium**
. neptunium isotopes
metals
. actinide series
. . transuranium elements
. . . **neptunium**
. . . . neptunium isotopes
- neptunium compounds**
GS actinide series compounds
. **neptunium compounds**
RT ∞ chemical compounds
∞ metal compounds
- neptunium isotopes**
GS chemical elements
. actinide series
. . transuranium elements
. . . neptunium
. . . . **neptunium isotopes**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. neptunium
. **neptunium isotopes**
metals
. actinide series
. . transuranium elements
. . . neptunium
. . . . **neptunium isotopes**
- Nereid**
(added August 1989)
GS celestial bodies
. natural satellites
. . Neptune satellites
. . . **Nereid**
RT Neptune (planet)
- Nernst generators**
USE **thermomagnetic cooling**
- Nernst heat theorem**
USE **Nernst-Ettingshausen effect**
- Nernst-Ettingshausen effect**
UF *Nernst heat theorem*
GS galvanomagnetic effects
. **Nernst-Ettingshausen effect**
RT ∞ effects
temperature effects
thermomagnetic effects
- NERVA (engine)**
USE **nuclear engine for rocket vehicles**
- nerve fibers**
(added August 2004)
DEF Slender processes of neurons, including the axons and their glial envelopes (myelin sheath). Nerve fibers conduct nerve impulses to and from the central nervous system.
- GS anatomy
. nervous system
. . nerves
. . . **nerve fibers**
- RT axons
electrophysiology
myelin sheath
neurons
- nerves**
GS anatomy
. nervous system
. . **nerves**
. . . ganglia
. . . myelin sheath
. . . nerve fibers
. . . oculomotor nerves
RT carotid sinus body
carotid sinus reflex
dendrites
His bundle
myelin
neuritis
neurons
sciatic region
synapses
- nervous system**
UF *vasomotor nervous system*
GS anatomy
. **nervous system**
. . afferent nervous systems
. . autonomic nervous system
. . . sympathetic nervous system
. . central nervous system
. . . brain
. . . . brain stem
. . . . cerebellum
. . . . cerebral ventricles
. . . . cerebrum
. cerebral cortex
. occipital lobes
. diencephalon
. hypothalamus
. pineal gland
. thalamus
. hippocampus
. . . spinal cord
. . efferent nervous systems
. . nerves
. . . ganglia
. . . myelin sheath
. . . nerve fibers
. . . oculomotor nerves
. . peripheral nervous system
RT dendrites
electrophysiology
homeostasis
myelin
neurasthenia
neuritis
neuroglia
neurons
neuropsychiatry
neurotransmitters
proprioceptors
psychopharmacology
sense organs
synapses
∞ systems
- Netherlands**
UF *Holland*
GS nations
. **Netherlands**
RT Astronomical Netherlands Satellite
Europe
Netherlands space program
Surinam
- Netherlands space program**
(added March 1989)
GS programs
. space programs
. . European space programs
. . . **Netherlands space program**
RT Astronomical Netherlands Satellite
Infrared Astronomy Satellite
- Netherlands
- ∞ **nets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED -- CONSULT THE TERMS LISTED BELOW)
RT coordinates
distribution functions
geodetic coordinates
graph theory
Kirchhoff law of networks
netting (materials/structures)
networks
Petri nets
structured grids (mathematics)
superposition (mathematics)
topology
trees (mathematics)
- netting (materials/structures)**
(added July 1995)
RT camouflage
coverings
crosslinking
crystal growth
fibers
filament winding
laminates
molecular chains
∞ nets
parachute fabrics
webs (sheets)
- network analysis**
UF *Tellegen theory*
GS **network analysis**
. critical path method
. sneak circuit analysis
RT ∞ analyzing
circuits
data flow analysis
distributed parameter systems
duality principle
electric terminals
equivalent circuits
Foster theory
gyrators
hydraulic equipment
insertion
Kirchhoff law of networks
LC circuits
∞ paths
RC circuits
RL circuits
RLC circuits
signal flow graphs
superposition (mathematics)
- network control**
DEF The management of acquisition, routing, and switching primarily in satellite communication.
RT communication networks
communication satellites
computer networks
∞ control
local area networks
packet switching
satellite networks
transmission efficiency
- network synthesis**
UF *Tellegen theory*
RT communication theory
equivalent circuits
hydraulic equipment
Kirchhoff law of networks
LC circuits
networks
RC circuits
Richards theorem
RL circuits
RLC circuits
superposition (mathematics)
switching theory
∞ synthesis
topology
- networks**
GS **networks**
. belief networks

Neumann problem

- . communication networks
 - .. Aloha system
 - .. Deep Space Network
 - .. internets
 - ... ARPA computer network
 - ... World Wide Web
 - .. Iridium network
 - .. local area networks
 - .. NASCOM network
 - .. VSAT (network)
 - .. wide area networks
 - . computer networks
 - .. internets
 - ... ARPA computer network
 - ... World Wide Web
 - .. client server systems
 - .. local area networks
 - .. wide area networks
 - . defense communications system (DCS)
 - . electric networks
 - . iterative networks
 - . neural nets
 - . Orion (radio interferometry network)
 - . Petri nets
 - . quadrupole networks
 - . satellite networks
 - .. Argos system
 - .. satellite constellations
 - ... Constellation-X
 - ... Iridium network
 - .. VSAT (network)
 - . tracking networks
 - .. Deep Space Network
 - .. Global Tracking Network
 - .. manned space flight network
 - .. MATTS (systems)
 - .. polystation doppler tracking system
 - .. radar networks
 - .. space detection and tracking system
 - .. Space Flight Tracking and Data Network
 - .. STDN (network)
 - RT data links
 - educational television
 - gravimetry
 - ground stations
 - information systems
 - ∞ nets
 - network synthesis
 - protocol (computers)
 - telecommunication
- Neumann problem**
 - GS analysis (mathematics)
 - . real variables
 - .. **Neumann problem**
 - boundary value problems
 - . **Neumann problem**
 - RT differential equations
 - partial differential equations
 - ∞ problems
- neural nets**
 - GS networks
 - . **neural nets**
 - RT associative memory
 - backpropagation (artificial intelligence)
 - belief networks
 - cybernetics
 - evolvable hardware
 - Gabor filters
 - genetic algorithms
 - logic circuits
 - membership functions
- neurasthenia**
 - GS diseases
 - . **neurasthenia**
 - RT nervous system
- neuristors**
 - GS electronic equipment
 - . solid state devices
 - .. semiconductor devices
 - ... **neuristors**
- RT bionics
- neuritis**
 - GS diseases
 - . **neuritis**
 - RT nerves
 - nervous system
- neuroblasts**
 - GS cells (biology)
 - . neurons
 - .. **neuroblasts**
 - RT embryology
- neuroglia**
 - GS tissues (biology)
 - . **neuroglia**
 - RT brain
 - cells (biology)
 - ganglia
 - nervous system
 - spinal cord
- neurology**
 - DEF The study of the anatomy, physiology, and pathology of the nervous system. Used for neuroscience.
 - UF *neuroscience*
 - GS medical science
 - . **neurology**
 - RT brain
 - chemical defense
 - electrophysiology
 - life sciences
 - neuropsychiatry
 - thresholds (perception)
- neuromuscular transmission**
 - RT acetylcholine
 - bioelectricity
 - cholinesterase
 - neurotransmitters
 - peripheral nervous system
 - synapses
- neuron transmission*
- USE **bioelectricity**
- neurons**
 - GS cells (biology)
 - . **neurons**
 - .. axons
 - .. dendrites
 - .. neuroblasts
 - RT blood-brain barrier
 - myelin
 - nerve fibers
 - nerves
 - nervous system
 - synapses
 - syncoders
- neurophysiology**
 - GS physiology
 - . **neurophysiology**
 - RT dopamine
 - ganglia
 - information processing (biology)
 - ion channels (biology)
 - ontogeny
 - psychotropic drugs
 - ∞ science
- neuropsychiatry**
 - GS medical science
 - . psychiatry
 - .. **neuropsychiatry**
 - RT human behavior
 - ∞ medicine
 - mental health
 - nervous system
 - neurology
 - psychotherapy
- neuroscience*
- USE **neurology**
- neuroses**
 - GS **neuroses**
 - . neurotic depression
 - RT fear
- fear of flying
- psychoses
- neurospora**
 - GS plants (botany)
 - . fungi
 - .. **neurospora**
 - RT genetics
- neurotic depression**
 - GS neuroses
 - . **neurotic depression**
 - RT ∞ depression
 - psychotic depression
- neurotransmitters**
 - DEF Chemical substances secreted by the terminal ends of axons, which stimulate a muscle fiber contraction or an impulse in other neurons.
 - GS **neurotransmitters**
 - . acetylcholine
 - . vasopressins
 - RT angiotensins
 - axons
 - catecholamine
 - cells (biology)
 - dopamine
 - epinephrine
 - nervous system
 - neuromuscular transmission
 - norepinephrine
 - synapses
- neurotropism**
 - GS tropism
 - . **neurotropism**
- neutral atmospheres**
 - RT ∞ atmospheres
 - neutral gases
- neutral atoms**
 - DEF Atoms in which the number of electrons surrounding the nucleus equals the number of protons in the nucleus resulting in no net electric charge.
 - GS atoms
 - . **neutral atoms**
 - RT atomic beams
 - charge distribution
 - ∞ elements
 - H I regions
 - neutral beams
 - neutral gases
- neutral beams**
 - GS beams (radiation)
 - . particle beams
 - .. **neutral beams**
 - ... molecular beams
 - ... neutron beams
 - RT atomic beams
 - beam injection
 - beam neutralization
 - neutral atoms
 - particles
 - pion beams
- neutral buoyancy simulation**
 - GS environmental tests
 - . underwater tests
 - .. **neutral buoyancy simulation**
 - simulation
 - . environment simulation
 - .. space environment simulation
 - ... weightlessness simulation
 - ... **neutral buoyancy simulation**
 - RT buoyancy
 - space simulators
 - weightlessness
- neutral currents**
 - DEF Weak interaction currents that carry zero electric charge.
 - RT current distribution
 - gravitational collapse
 - neutral particles
 - neutrinos
 - neutron stars

- particle interactions
- stellar evolution
- neutral gases**
 - DEF In astronomy, gas clouds of some nebulae which have not been ionized by hot stars.
 - GS gases
 - . **neutral gases**
 - RT cosmic gases
 - H I regions
 - hydrogen clouds
 - interplanetary gas
 - interstellar gas
 - ionized gases
 - neutral atmospheres
 - neutral atoms
 - plasmas (physics)
- neutral particles**
 - GS particles
 - . **neutral particles**
 - .. gravitinos
 - .. neutrons
 - ... cold neutrons
 - ... fast neutrons
 - ... photoneutrons
 - ... solar neutrons
 - ... thermal neutrons
 - RT electron recombination
 - neutral currents
- neutral sheets**
 - RT atmospheric physics
 - charged particles
 - Earth magnetosphere
 - particle motion
 - plasma physics
 - ∞ sheets
- neutralizers**
 - RT additives
 - ∞ agents
 - buffers (chemistry)
 - dischargers
 - inhibitors
 - preservatives
 - retardants
 - stabilizers (agents)
 - suppressors
- neutrino beams**
 - DEF Organized collections of neutrinos traveling outward from the source.
 - GS beams (radiation)
 - . particle beams
 - .. **neutrino beams**
- neutrinos**
 - DEF Subatomic particles of zero, or near zero, rest mass, having no electric charge, postulated by Fermi (1934) in order to explain apparent contradictions to the law of conservation of energy in beta particle emission.
 - GS particles
 - . elementary particles
 - .. fermions
 - ... leptons
 - ... **neutrinos**
 - ... solar neutrinos
 - RT antineutrinos
 - dark matter
 - gravitinos
 - neutral currents
- neutron absorbers**
 - GS absorbers (materials)
 - . **neutron absorbers**
 - RT control rods
 - moderators
 - poisoning (reaction inhibition)
 - radiation absorption
 - radiation shielding
- neutron activation analysis**
 - GS activation analysis
 - . **neutron activation analysis**
 - chemical tests
 - chemical analysis
 - .. **neutron activation analysis**
- RT mass spectrometers
- microanalysis
- qualitative analysis
- quantitative analysis
- spectroscopic analysis
- neutron beams**
 - GS beams (radiation)
 - . particle beams
 - .. neutral beams
 - ... **neutron beams**
 - nuclear radiation
 - . **neutron beams**
 - RT atomic beams
 - particles
 - pion beams
 - proton beams
- neutron counters**
 - UF *neutron detectors*
 - GS measuring instruments
 - . counters
 - .. radiation counters
 - ... **neutron counters**
 - ... neutron spectrometers
 - . radiation measuring instruments
 - .. radiation counters
 - ... **neutron counters**
 - ... neutron spectrometers
 - RT dosimeters
 - Geiger counters
 - ionization chambers
 - proportional counters
 - scintillation counters
 - spark chambers
- neutron cross sections**
 - RT absorption cross sections
 - ∞ cross sections
 - nuclear particles
 - scattering cross sections
 - stopping power
- neutron decay**
 - GS decay
 - . particle decay
 - .. **neutron decay**
 - RT hot atoms
- neutron detectors*
- USE **neutron counters**
- neutron diffraction**
 - GS diffraction
 - . **neutron diffraction**
 - RT crystallography
- neutron distribution**
 - GS distribution (property)
 - . **neutron distribution**
 - RT nuclear particles
- neutron emission**
 - GS decay
 - . radioactive decay
 - .. **neutron emission**
 - emission
 - . particle emission
 - .. **neutron emission**
 - nuclear reactions
 - . radioactive decay
 - .. **neutron emission**
 - RT neutrons
 - selection rules (nuclear physics)
- neutron flux*
- USE **flux (rate)**
- neutron flux density**
 - SN (LIMITED TO NEUTRON EMISSION OR DETECTION RATE PER UNIT AREA)
 - DEF A measure of the intensity of neutron radiation within a given range of neutron energies; the product of the neutron density and velocity, measured in neutrons per square meter-second or neutrons per square centimeter-second.
 - GS rates (per time)
 - . flux density
 - .. radiant flux density
 - ... particle flux density
- ... **neutron flux density**
- RT high flux isotope reactors
- irradiance
- nuclear fission
- radiance
- radiancy
- radiation shielding
- solar neutrons
- neutron irradiation**
 - GS irradiation
 - . **neutron irradiation**
 - RT ion irradiation
 - neutron transmutation doping
 - transmutation
- neutron physics**
 - RT ∞ physics
 - ∞ science
- neutron radiography**
 - DEF Nondestructive testing and inspection utilizing neutron beams from nuclear reactors, particle accelerators, and/or radioisotopes. Imagery displaying structural defects utilizes neutron image recorders or screens.
 - GS imagery
 - . radiography
 - .. **neutron radiography**
 - nondestructive tests
 - . **neutron radiography**
 - RT ∞ materials tests
- neutron scattering**
 - UF *Legendre code*
 - GS nuclear reactions
 - . nuclear scattering
 - .. **neutron scattering**
 - scattering
 - . nuclear scattering
 - .. **neutron scattering**
 - RT elementary particles
 - nuclear particles
 - resonance scattering
- neutron sources**
 - GS radiation sources
 - . **neutron sources**
 - RT linear accelerators
 - nuclear fuels
 - nuclear research and test reactors
 - particle accelerators
 - spent fuels
- neutron spectra**
 - GS spectra
 - . energy spectra
 - .. **neutron spectra**
- neutron spectrometers**
 - UF *triple axis spectrometers*
 - GS measuring instruments
 - . counters
 - .. radiation counters
 - ... neutron counters
 - ... **neutron spectrometers**
 - . radiation measuring instruments
 - .. radiation counters
 - ... neutron counters
 - ... **neutron spectrometers**
 - . spectrometers
 - .. **neutron spectrometers**
- neutron stars**
 - SN (EXCLUDES TRACKS OF PARTICLES EMANATING FROM A NUCLEAR COLLISION)
 - GS celestial bodies
 - . stars
 - .. **neutron stars**
 - ... magnetars
 - ... pulsars
 - ... soft gamma repeaters
 - RT degenerate matter
 - gravitational binding energy
 - gravitational lenses
 - neutral currents
 - starquakes
 - supernova remnants
 - x ray binaries

neutron thermalization

x ray stars

neutron thermalization

GS energy absorption
. moderation (energy absorption)
. . thermalization (energy absorption)
. . . **neutron thermalization**

neutron transmutation

USE **nuclear reactions**

neutron transmutation doping

(added June 2003)

DEF A doping technique for creating impurity isotopes from the host atoms of a material through the use of thermal neutron irradiation and subsequent radioactive decay

GS doping (materials)
. **neutron transmutation doping**
RT additives
doped crystals
neutron irradiation
transmutation

neutrons

DEF Subatomic particles with no electric charge, and with a mass of 1. 67482 times 10 to the minus 24 gram.

GS particles
. elementary particles
. . fermions
. . . **neutrons**
. . . . cold neutrons
. . . . fast neutrons
. . . . photoneutrons
. . . . solar neutrons
. . . . thermal neutrons
. neutral particles
. . **neutrons**
. . . cold neutrons
. . . fast neutrons
. . . photoneutrons
. . . solar neutrons
. . . thermal neutrons

RT baryons
chain reactions (nuclear physics)
charged particles
corpuscular radiation
cosmic rays
neutron emission
nuclear radiation
nuclei (nuclear physics)
nucleon potential
nucleons
radiation effects
radiation shielding

neutrophils

(added August 2004)

DEF Granular leukocytes having a nucleus with three to five lobes connected by slender threads of chromatin, and cytoplasm containing fine inconspicuous granules and stainable by neutral dyes.

GS cells (biology)
. blood cells
. . leukocytes
. . . **neutrophils**
RT chromatin
cytoplasm
immune systems

Nevada

GS nations
. United States
. . **Nevada**
RT Great Basin (US)
Lake Tahoe (CA-NV)
Pyramid Lake (NV)
Southern California

New Brunswick

GS nations
. Canada
. . **New Brunswick**

New England (US)

GS regions
. **New England (US)**

RT United States

New Guinea (island)

GS landforms
. islands
. . Pacific islands
. . . **New Guinea (island)**
RT Papua New Guinea
Torres Strait

New Hampshire

GS nations
. United States
. . **New Hampshire**
RT St Lawrence Valley (North America)

New Haven (CT)

GS cities
. **New Haven (CT)**
RT Connecticut

New Horizons mission

(added January 2006)

DEF Flyby mission to study the composition, geology, and morphology of Pluto and its moon Charon; search for rings and additional satellites around Pluto; and to conduct similar investigations of one or more Kuiper Belt Objects.

GS programs
. NASA programs
. . NASA space programs
. . . **New Horizons mission**
. space programs
. . NASA space programs
. . . **New Horizons mission**
space missions
. flyby missions
. . **New Horizons mission**
RT asteroid missions
Charon
Kuiper belt
Pluto (planet)
space exploration

New Jersey

GS nations
. United States
. . **New Jersey**
RT Delaware Bay (US)
Delaware River Basin (US)
Hudson River (NY-NJ)

New Mexico

GS nations
. United States
. . **New Mexico**
RT Colorado Plateau (US)
Rio Grande (North America)

NEW MOONS project

GS programs
. NASA programs
. . NASA space programs
. . . **NEW MOONS project**
. projects
. . **NEW MOONS project**
. space programs
. . NASA space programs
. . . **NEW MOONS project**
RT nuclear propulsion
structural weight
weight analysis

New York

GS nations
. United States
. . **New York**
RT Adirondack Mountains (NY)
Delaware River Basin (US)
Hudson River (NY-NJ)
Lake Champlain Basin (NY-VT)
Long Island (NY)
New York City (NY)
St Lawrence Valley (North America)
Susquehanna River Basin
(MD-NY-PA)

New York City (NY)

GS cities

. **New York City (NY)**

RT New York

New Zealand

GS landforms
. islands
. . Pacific islands
. . . **New Zealand**
nations
. **New Zealand**
RT New Zealand space program

New Zealand space program

(added June 1989)

GS programs
. space programs
. . **New Zealand space program**
RT New Zealand

Newfoundland

GS landforms
. islands
. . **Newfoundland**
nations
. Canada
. . **Newfoundland**

news

RT documentation

news media

RT data acquisition
information
Internet resources
∞ journals

newton

DEF The unit of force in the SI system; that force which gives to a mass of 1 kilogram an acceleration of 1 meter per second squared.

RT ∞ force
kinetics
Newtonian fluids
nonNewtonian fluids

Newton methods

GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Newton methods**
. . . . Newton-Raphson method
. . iteration
. . . **Newton methods**
. . . . Newton-Raphson method
RT iterative solution
problem solving
roots of equations

Newton pressure law

GS laws
. **Newton pressure law**
RT compressible flow
laminar flow
Newtonian fluids
Prandtl-Meyer expansion
pressure
pressure distribution

Newton second law

GS kinetics
. **Newton second law**
laws
. **Newton second law**
RT conservation
momentum theory

Newton Theory

GS kinetics
. **Newton Theory**
theoretical physics
. **Newton Theory**
RT conservation laws
Newtonian fluids
nonNewtonian fluids
nonrelativistic mechanics
∞ theories

Newton-Busemann law

GS laws

. **Newton-Busemann law**

Newtonian fluids
 RT anisotropic fluids
 ∞ fluids
 Navier-Stokes equation
 newton
 Newton pressure law
 Newton Theory
 nonNewtonian fluids
 stress-strain-time relations
 viscous fluids

Newton-Raphson method
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . Newton methods
 **Newton-Raphson method**
 . . iteration
 . . . Newton methods
 **Newton-Raphson method**
 RT ∞ methodology

Next Generation Space Telescope project
 (added December 1999)
 DEF Project in the NASA Origins program with the goal of developing a spaceborne observatory to succeed the Hubble Space Telescope after 2005. The telescope is foreseen to have an aperture of 8 meters and be optimized for near infrared wavelengths (0. 6-10+ microns) in order to enable the exploration of the most remote high redshift universe.
 UF *NGST project*
 GS programs
 . projects
 . . **Next Generation Space Telescope project**
 RT astronomical observatories
 infrared telescopes
 James Webb Space Telescope
 NASA space programs
 spaceborne telescopes

NGST project
 (added December 1999)
 USE **Next Generation Space Telescope project**

Nicaragua
 GS nations
 . **Nicaragua**
 RT Central America

Nichrome (trademark)
 GS alloys
 . nickel alloys
 . . **Nichrome (trademark)**

nickel
 GS chemical elements
 . **nickel**
 . . nickel isotopes
 metals
 . transition metals
 . . **nickel**
 . . . nickel isotopes
 RT constantan

nickel alloys
 GS alloys
 . **nickel alloys**
 . . Astrolloy (trademark)
 . . Hastelloy (trademark)
 . . Inconel (trademark)
 . . kamacite
 . . Monel (trademark)
 . . Nichrome (trademark)
 . . nitinol alloys
 . . Rene 41
 . . Rene 63
 . . Rene 77
 . . Rene 95
 . . Udimet alloys
 . . Waspaloy
 RT aluminides
 gold alloys
 heat resistant alloys
 nickel aluminides

nimonic alloys
 Permalloys (trademark)
 shape memory alloys
 silicon alloys
 stainless steels
 sulfidation

nickel aluminides
 (added June 1997)
 GS aluminum compounds
 . aluminides
 . . **nickel aluminides**
 nickel compounds
 . **nickel aluminides**
 RT intermetallics
 nickel alloys

nickel cadmium batteries
 DEF Alkaline storage batteries in which the positive active material is nickel oxide and the negative contains cadmium.
 UF *cadmium nickel batteries*
 GS electrochemical cells
 . electric batteries
 . . storage batteries
 . . . **nickel cadmium batteries**
 RT dry cells
 silver cadmium batteries

nickel coatings
 GS coatings
 . metal coatings
 . . **nickel coatings**
 RT corrosion prevention
 metal films
 protective coatings

nickel compounds
 GS **nickel compounds**
 . cohenite
 . nickel aluminides
 . nickel fluorides
 . nickel oxides
 . schreibersite
 RT ∞ chemical compounds
 ∞ Group 8 compounds
 ∞ metal compounds

nickel fluorides
 GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **nickel fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **nickel fluorides**
 . . metal halides
 . . . metal fluorides
 **nickel fluorides**
 nickel compounds
 . **nickel fluorides**

nickel hydrogen batteries
 GS electrochemical cells
 . electric batteries
 . . storage batteries
 . . . **nickel hydrogen batteries**
 RT energy storage
 hydrogen-based energy
 spacecraft power supplies

nickel iron batteries
 DEF Alkaline-type electric cells using potassium hydroxide as the electrolyte and anodes of steel wool substrate with active iron material and cathodes of nickel plated steel wool substrate with active nickel material.
 GS electrochemical cells
 . electric batteries
 . . **nickel iron batteries**
 RT lead acid batteries
 nickel zinc batteries
 storage batteries

nickel isotopes
 GS chemical elements
 . nickel
 . . **nickel isotopes**

. nuclides
 . . isotopes
 . . . **nickel isotopes**
 metals
 . transition metals
 . . nickel
 . . . **nickel isotopes**

nickel oxides
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **nickel oxides**
 nickel compounds
 . **nickel oxides**

nickel plate
 GS plating
 . **nickel plate**
 RT electroplating
 gold coatings

nickel steels
 DEF Steels containing nickel as a main alloying element.
 GS alloys
 . iron alloys
 . . steels
 . . . **nickel steels**
 RT stainless steels

nickel zinc batteries
 UF *zinc nickel batteries*
 GS electric generators
 . direct power generators
 . . primary batteries
 . . . dry cells
 **nickel zinc batteries**
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . dry cells
 **nickel zinc batteries**
 . . storage batteries
 . . . **nickel zinc batteries**
 RT nickel iron batteries

nicotinamide
 GS bases (chemical)
 . alkaloids
 . . **nicotinamide**
 nitrogen compounds
 . alkaloids
 . . **nicotinamide**
 . amides
 . . **nicotinamide**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **nicotinamide**
 vitamins
 . **nicotinamide**

nicotine
 GS bases (chemical)
 . alkaloids
 . . **nicotine**
 nitrogen compounds
 . alkaloids
 . . **nicotine**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **nicotine**
 RT tobacco

nicotinic acid
 GS acids
 . carboxylic acids
 . . **nicotinic acid**
 organic compounds
 . carboxylic acids
 . . **nicotinic acid**
 . cyclic compounds
 . . heterocyclic compounds
 . . . **nicotinic acid**
 vitamins

Niger

. **nicotinic acid**

Niger

GS nations
. **Niger**
RT Africa

Nigeria

GS nations
. **Nigeria**
RT Africa

night

RT darkening
darkness
daytime
diurnal variations
evening
shadows
sky brightness
twilight glow

night airglow

USE **nightglow**

night E layer

USE **E region**
night sky

night F layer

USE **F region**
night sky

night flights (aircraft)

RT ∞ aircraft
approach control
blind landing
darkness
flight instruments
instrument approach
instrument landing systems
nap-of-the-earth navigation
radar
radio beacons
visibility

night sky

UF *night E layer*
night F layer
GS sky
. **night sky**
RT airglow
auroras
gegenschein
nightglow
sky brightness
twilight glow
zodiacal light

night vision

GS vision
. **night vision**
RT dark adaptation
enhanced vision
image intensifiers
light adaptation
microchannels
nap-of-the-earth navigation

nightglow

UF *night airglow*
GS atmospheric radiation
. sky radiation
. . . airglow
. . . **nightglow**
electromagnetic radiation
. light (visible radiation)
. . . sky radiation
. . . airglow
. . . . **nightglow**
RT biometeorology
night sky
radio auroras
sky brightness

nigotrons

GS electron tubes
. vacuum tubes
. . . microwave tubes
. . . magnetrons
. . . . **nigotrons**

microwave equipment
. microwave oscillators
. . . magnetrons
. . . . **nigotrons**
. . . microwave tubes
. . . magnetrons
. . . . **nigotrons**
oscillators
. microwave oscillators
. . . magnetrons
. . . . **nigotrons**

Nihon aircraft

UF *NAMC aircraft*
GS **Nihon aircraft**
. YS-11 aircraft
RT ∞ aircraft

Nihon YS-11 aircraft

USE **YS-11 aircraft**

Nike booster rocket engines

GS engines
. rocket engines
. . . booster rocket engines
. . . . **Nike booster rocket engines**
. . . solid propellant rocket engines
. . . . **Nike booster rocket engines**
RT ∞ Nike rockets

Nike missiles

GS missiles
. surface to air missiles
. . . **Nike missiles**
. . . Nike-Ajax missile
. . . Nike-Hercules missile
. . . Nike-Zeus missile
RT antiaircraft missiles
antimissile missiles
∞ Nike rockets
Sentinel system

Nike project

GS programs
. projects
. . . **Nike project**
RT ∞ Nike rockets

Nike rocket vehicles

GS rocket vehicles
. multistage rocket vehicles
. . . **Nike rocket vehicles**
. . . Nike-Apache rocket vehicle
. . . Nike-Cajun rocket vehicle
. . . Nike-Hydac rocket vehicle
. . . Nike-Iroquois rocket vehicle
. . . Nike-Javelin rocket vehicle
. . . Nike-Tomahawk rocket vehicle
RT ∞ Nike rockets
∞ vehicles

∞ Nike rockets

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT Nike booster rocket engines
Nike missiles
Nike project
Nike rocket vehicles

Nike X systems

GS weapon systems
. missile systems
. . . **Nike X systems**
RT antimissile missiles
missiles
surface to air missiles
∞ systems

Nike-Ajax missile

GS missiles
. antiaircraft missiles
. . . **Nike-Ajax missile**
. . . surface to air missiles
. . . Nike missiles
. . . . **Nike-Ajax missile**
RT Argo rocket vehicles
EXOS sounding rocket
liquid propellant rocket engines
solid propellant rocket engines

Trailblazer 1 reentry vehicle

Nike-Apache rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . . Nike rocket vehicles
. . . . **Nike-Apache rocket vehicle**
RT solid propellant rocket engines

Nike-Cajun rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . . Nike rocket vehicles
. . . . **Nike-Cajun rocket vehicle**
RT Cajun rocket vehicle
solid propellant rocket engines

Nike-Hercules missile

GS missiles
. antiaircraft missiles
. . . **Nike-Hercules missile**
. . . surface to air missiles
. . . Nike missiles
. . . . **Nike-Hercules missile**
RT solid propellant rocket engines

Nike-Hydac rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . . Nike rocket vehicles
. . . . **Nike-Hydac rocket vehicle**
RT ∞ vehicles

Nike-Iroquois rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . . Nike rocket vehicles
. . . . **Nike-Iroquois rocket vehicle**
RT ∞ vehicles

Nike-Javelin rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . . Nike rocket vehicles
. . . . **Nike-Javelin rocket vehicle**
RT solid propellant rocket engines
sounding rockets

Nike-Tomahawk rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . . Nike rocket vehicles
. . . . **Nike-Tomahawk rocket vehicle**
RT solid propellant rocket engines

Nike-Zeus missile

UF *Zeus missile*
GS missiles
. antimissile missiles
. . . **Nike-Zeus missile**
. . . surface to air missiles
. . . Nike missiles
. . . . **Nike-Zeus missile**
RT solid propellant rocket engines
Spartan missile
Sprint missile

nimbostratus clouds

UF *nimbus clouds*
GS clouds (meteorology)
. **nimbostratus clouds**
RT cumulonimbus clouds
precipitation (meteorology)
stratus clouds

Nimbus 1 satellite

GS artificial satellites
. meteorological satellites
. . . Nimbus satellites
. . . . **Nimbus 1 satellite**
RT cloud photography
Thor Agena launch vehicle

Nimbus 2 satellite

GS artificial satellites
. meteorological satellites
. . . Nimbus satellites
. . . . **Nimbus 2 satellite**
RT cloud photography

Thor Agena launch vehicle

Nimbus 3 satellite

GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 3 satellite**

Nimbus 4 satellite

GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 4 satellite**

Nimbus 5 satellite

GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 5 satellite**

Nimbus 6 satellite

GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 6 satellite**

Nimbus 7 satellite

DEF One in a series of meteorological satellites.

GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 7 satellite**

RT Total Ozone Mapping Spectrometer

nimbus clouds

USE **nimbostratus clouds**

Nimbus project

GS programs
 . NASA programs
 . . NASA space programs
 . . . **Nimbus project**
 . projects
 . . **Nimbus project**
 . space programs
 . . NASA space programs
 . . . **Nimbus project**

RT cloud photography
 meteorological satellites
 satellite observation

Nimbus satellites

GS artificial satellites
 . meteorological satellites
 . . **Nimbus satellites**
 . . . Nimbus 1 satellite
 . . . Nimbus 2 satellite
 . . . Nimbus 3 satellite
 . . . Nimbus 4 satellite
 . . . Nimbus 5 satellite
 . . . Nimbus 6 satellite
 . . . Nimbus 7 satellite

RT cloud photography
 ESSA satellites
 infrared photography
 satellite observation
 Thor Agena launch vehicle

nimonic alloys

GS alloys
 . heat resistant alloys
 . . **nimonic alloys**

RT iron alloys
 nickel alloys

NIMPHE (engine)

USE **hydrazine engines**

Nimrod accelerator

GS particle accelerators
 . **Nimrod accelerator**

RT ∞ accelerators

niobates

GS niobium compounds
 . **niobates**
 . . lithium niobates

RT euxenite
 oxides

∞ oxygen compounds

niobium

UF *columbium*

GS chemical elements
 . **niobium**
 . . niobium isotopes
 . . . niobium 95
 metals
 . refractory metals
 . . **niobium**
 . . . niobium isotopes
 niobium 95
 . transition metals
 . . **niobium**
 . . . niobium isotopes
 niobium 95
 . refractory materials
 . . refractory metals
 . . **niobium**
 . . . niobium isotopes
 niobium 95

niobium 95

GS chemical elements
 . niobium
 . . niobium isotopes
 . . . **niobium 95**
 . nuclides
 . . isotopes
 . . . niobium isotopes
 **niobium 95**
 . . . radioactive isotopes
 **niobium 95**
 metals
 . refractory metals
 . . niobium
 . . . niobium isotopes
 **niobium 95**
 . transition metals
 . . niobium
 . . . niobium isotopes
 **niobium 95**
 refractory materials
 . refractory metals
 . . niobium
 . . . niobium isotopes
 **niobium 95**

niobium alloys

GS alloys
 . heat resistant alloys
 . . refractory metal alloys
 . . . **niobium alloys**
 refractory materials
 . refractory metal alloys
 . . **niobium alloys**

RT hafnium alloys

niobium carbides

GS carbon compounds
 . carbides
 . . **niobium carbides**
 niobium compounds
 . **niobium carbides**

niobium compounds

GS **niobium compounds**
 . niobates
 . . lithium niobates
 . . niobium carbides
 . . niobium iodides
 . . niobium oxides
 . . niobium stannides

RT ∞ chemical compounds
 ∞ Group 5B compounds
 ∞ metal compounds

niobium iodides

GS halogen compounds
 . halides
 . . metal halides
 . . . **niobium iodides**
 . . iodine compounds
 . . . iodides
 . . . **niobium iodides**
 niobium compounds

. **niobium iodides****niobium isotopes**

GS chemical elements
 . niobium
 . . **niobium isotopes**
 . . . niobium 95
 . nuclides
 . . isotopes
 . . . **niobium isotopes**
 niobium 95
 metals
 . refractory metals
 . . niobium
 . . . **niobium isotopes**
 niobium 95
 . transition metals
 . . niobium
 . . . **niobium isotopes**
 niobium 95
 refractory materials
 . refractory metals
 . . niobium
 . . . **niobium isotopes**
 niobium 95

niobium oxides

GS chalcogenides
 . oxides
 . . metal oxides
 . . . **niobium oxides**
 niobium compounds
 . **niobium oxides**

niobium stannides

GS niobium compounds
 . **niobium stannides**
 tin compounds
 . stannides
 . . **niobium stannides**

NIPS (system)

USE **NASA Interactive Planning System**

nitinol alloys

DEF Shape memory alloys of titanium and nickel.

GS alloys
 . nickel alloys
 . . **nitinol alloys**
 . shape memory alloys
 . . **nitinol alloys**
 . titanium alloys
 . . **nitinol alloys**
 ferroelastic materials
 . shape memory alloys
 . . **nitinol alloys**

nitramine propellants

GS propellants
 . rocket propellants
 . . **nitramine propellants**
 . solid propellants
 . . **nitramine propellants**

RT oxidizers

nitrasol explosives

GS explosives
 . **nitrasol explosives**
 propellants
 . **nitrasol explosives**

nitrate esters

GS esters
 . **nitrate esters**
 . . isopropyl nitrate
 . . propyl nitrate
 nitrogen compounds
 . **nitrate esters**
 . . isopropyl nitrate
 . . propyl nitrate

nitrates

GS nitrogen compounds
 . **nitrates**
 . . dinitrates
 . . inorganic nitrates
 . . . ammonium nitrates
 . . . hydrazine nitrate
 . . . potassium nitrates

nitration

- . . . silver nitrates
- . . . sodium nitrates
- . . methyl nitrate
- . . organic nitrates
- . . . cellulose nitrate
- . . . nitroforms
- . . . hydrazine nitroform
- . . . nitroglycerin
- . . . PETN

nitration

GS chemical reactions
. **nitration**
RT denitrogenation

nitric acid

GS acids
. **nitric acid**
nitrogen compounds
. **nitric acid**
RT nitrous acid

nitric oxide

GS chalcogenides
. oxides
. . . nitrogen oxides
. . . **nitric oxide**
nitrogen compounds
. . . nitrogen oxides
. . . **nitric oxide**
RT nitrosyls

nitrides

GS nitrogen compounds
. **nitrides**
. . . boron nitrides
. . . metal nitrides
. . . aluminum nitrides
. . . beryllium nitrides
. . . gallium nitrides
. . . tantalum nitrides
. . . titanium nitrides
. . . zirconium nitrides
. . . carbon nitrides
. . . oxynitrides
. . . silicon nitrides
RT ceramic nuclear fuels
molten salts

nitriding

GS chemical reactions
. **nitriding**
hardening (materials)
. **nitriding**
heat treatment
. **nitriding**

nitriles

GS nitrogen compounds
. **nitriles**
. . . acetonitrile
. . . acrylonitriles
. . . polyacrylonitrile
. . . malononitrile
. . . phosphonitriles
. . . succinonitrile
organic compounds
. **nitriles**
. . . acetonitrile
. . . acrylonitriles
. . . polyacrylonitrile
. . . malononitrile
. . . phosphonitriles
. . . succinonitrile
RT cyano compounds

nitrites

GS nitrogen compounds
. **nitrites**

nitro compounds

GS nitrogen compounds
. **nitro compounds**
. . . nitrobenzenes
. . . trinitrotoluene
. . . nitroglycerin
. . . nitroguanidine
. . . nitromethane
. . . nitropropane
. . . picrates

- . . . ammonium picrates
- . . . polybutadiene tetranitramine
- . . . tetryl
- . . . trinitro compounds

RT ∞ chemical compounds

nitroamines

GS nitrogen compounds
. **nitroamines**
organic compounds
. amines
. . **nitroamines**

nitrobacter

GS microorganisms
. bacteria
. . **nitrobacter**

nitrobenzenes

GS nitrogen compounds
. nitro compounds
. . **nitrobenzenes**
. . . trinitrotoluene

nitrocellulose

USE **cellulose nitrate**

nitrofluoramines

GS halogen compounds
. fluorine compounds
. . . fluoro compounds
. fluorine organic compounds
. fluoroamines
. **nitrofluoramines**
nitrogen compounds
. **nitrofluoramines**
organic compounds
. amines
. . . fluoroamines
. . . **nitrofluoramines**
. . . fluorine organic compounds
. . . fluoroamines
. . . **nitrofluoramines**

nitroformates

GS formates
. **nitroformates**
nitrogen compounds
. **nitroformates**

nitroforms

GS esters
. organic nitrates
. . **nitroforms**
. . . hydrazine nitroform
nitrogen compounds
. nitrates
. . organic nitrates
. . . **nitroforms**
. hydrazine nitroform

nitrogen

GS chemical elements
. **nitrogen**
. . liquid nitrogen
. . . nitrogen isotopes
. nitrogen 15
. nitrogen 16
. . . solid nitrogen
gases
. **nitrogen**
. . liquid nitrogen
. . . nitrogen isotopes
. nitrogen 15
. nitrogen 16
. . . solid nitrogen
RT Kjeldahl method
nitrogen atoms
nitrogen ions
nitrogen lasers
nitrogenation
nitrolysis
reaction bonding
sialon
Vegard-Kaplan bands
Wolf-Rayet stars

nitrogen 15

GS chemical elements
. nitrogen

- . . . nitrogen isotopes
- . . . **nitrogen 15**
- . . . nuclides
- . . . isotopes
- nitrogen isotopes
- **nitrogen 15**
- gases
- nitrogen
- nitrogen isotopes
- **nitrogen 15**

nitrogen 16

GS chemical elements
. nitrogen
. . . nitrogen isotopes
. **nitrogen 16**
. nuclides
. isotopes
. nitrogen isotopes
. **nitrogen 16**
. radioactive isotopes
. **nitrogen 16**
gases
. nitrogen
. . . nitrogen isotopes
. **nitrogen 16**

nitrogen atoms

GS atoms
. **nitrogen atoms**
RT nitrogen

nitrogen compounds

GS **nitrogen compounds**
. alkaloids
. . . atropine
. . . betaines
. . . caffeine
. . . colchicine
. . . ergotamine
. . . hyoscine
. . . lysergine
. . . morphine
. . . nicotinamide
. . . nicotine
. . . pilocarpine
. . . reserpine
. . . strychnine
. . . tropyli compounds
. . . amides
. acetanilide
. acetazolamide
. carbamides
. cyanamides
. formhydroxamic acid
. nicotinamide
. oxamic acids
. polyimides
. bismaleimide
. Kapton (trademark)
. succinimides
. ureas
. difluorourea
. thioureas
. thiuronium
. ammonia
. liquid ammonia
. azides (inorganic)
. hydrogen azides
. sodium azides
. azides (organic)
. sodium azides
. triaminoguanidinium azide
. azo compounds
. HMX
. RDX
. cyano compounds
. cyanamides
. cyanoacetylene
. isocyanates
. diisocyanates
. fulminates
. folic acid
. hydrazinium compounds
. hydrazoic acid
. hydrazones
. hydrocyanic acid
. imides
. bismaleimide
. phthalimides

- . . succinimides
- . imines
- . nitrate esters
- . . isopropyl nitrate
- . . propyl nitrate
- . nitrates
 - . . dinitrates
 - . . inorganic nitrates
 - . . . ammonium nitrates
 - . . . hydrazine nitrate
 - . . . potassium nitrates
 - . . . silver nitrates
 - . . . sodium nitrates
 - . . methyl nitrate
 - . . organic nitrates
 - . . . cellulose nitrate
 - . . . nitroforms
 - hydrazine nitroform
 - . . . nitroglycerin
 - . . . PETN
 - . . nitric acid
 - . . nitrides
 - . . boron nitrides
 - . . metal nitrides
 - . . . aluminum nitrides
 - . . . beryllium nitrides
 - . . . gallium nitrides
 - . . . tantalum nitrides
 - . . . titanium nitrides
 - . . . zirconium nitrides
 - . . carbon nitrides
 - . . oxynitrides
 - . . silicon nitrides
 - . . nitrites
 - . . nitro compounds
 - . . nitrobenzenes
 - . . . trinitrotoluene
 - . . nitroglycerin
 - . . nitroguanidine
 - . . nitromethane
 - . . nitropropane
 - . . picrates
 - . . . ammonium picrates
 - . . polybutadiene tetranitramine
 - . . tetryl
 - . . trinitro compounds
 - . . nitroamines
 - . . nitrofluoramines
 - . . nitroformates
 - . . nitrogen fluorides
 - . . nitrogen hydrides
 - . . . amino radical
 - . . nitrogen oxides
 - . . nitric oxide
 - . . nitrogen dioxide
 - . . nitrogen tetroxide
 - . . nitrous oxides
 - . . nitrogen polymers
 - . . polyacrylonitrile
 - . . polybenzimidazole
 - . . polybutadiene tetranitramine
 - . . Pyrrones (trademark)
 - . . nitrosamine
 - . . nitroso compounds
 - . . nitrosyls
 - . . . nitrosyl chlorides
 - . . nitroxychlorides
 - . . nitryl chlorides
 - . . nitryl fluorides
 - . . quinoline
 - . . thiazine (trademark)
 - . . thymine
 - . . trinitramine
 - . . tryptophan
 - . . uracil
 - . . xanthines
 - . . . caffeine
 - . . . guanines
 - . . . uric acid
 - . . nitriles
 - . . acetonitrile
 - . . acrylonitriles
 - . . . polyacrylonitrile
 - . . malononitrile
 - . . phosphonitriles
 - . . succinonitrile
- RT ∞ chemical compounds
- ∞ Group 5A compounds
- phosphazene
- nitrogen dioxide**
 - GS chalcogenides
 - . oxides
 - . . nitrogen oxides
 - . . . **nitrogen dioxide**
 - . . nitrogen compounds
 - . . . nitrogen oxides
 - . . . **nitrogen dioxide**
- nitrogen fixation
- USE **nitrogenation**
- nitrogen fluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **nitrogen fluorides**
 - . . halides
 - . . . fluorides
 - . . . **nitrogen fluorides**
 - . . nitrogen compounds
 - . . . **nitrogen fluorides**
- nitrogen hydrides**
 - GS hydrogen compounds
 - . hydrides
 - . . **nitrogen hydrides**
 - . . . amino radical
 - . . nitrogen compounds
 - . . . **nitrogen hydrides**
 - . . amino radical
 - . . . ammonia
 - RT hydrazoic acid
- nitrogen ions**
 - GS ions
 - . **nitrogen ions**
 - RT negative ions
 - . nitrogen
- nitrogen isotopes**
 - GS chemical elements
 - . nitrogen
 - . . **nitrogen isotopes**
 - . . . nitrogen 15
 - . . . nitrogen 16
 - . . nuclides
 - . . . isotopes
 - **nitrogen isotopes**
 - nitrogen 15
 - nitrogen 16
 - . . . gases
 - nitrogen
 - **nitrogen isotopes**
 - nitrogen 15
 - nitrogen 16
- nitrogen lasers**
 - DEF Stimulated emission devices in which the nitrogen molecule is the lasing medium.
 - GS stimulated emission devices
 - . lasers
 - . . gas lasers
 - . . . **nitrogen lasers**
 - RT lasing
 - . nitrogen
 - . . population inversion
 - . . pulsed lasers
 - . . ultraviolet lasers
 - nitrogen metabolism**
 - GS metabolism
 - . **nitrogen metabolism**
 - RT biochemistry
 - ∞ biology
 - . enzymology
 - . hydrogen metabolism
 - . nutrition
 - nitrogen oxides**
 - GS chalcogenides
 - . oxides
 - . . **nitrogen oxides**
 - . . . nitric oxide
 - . . . nitrogen dioxide
 - . . . nitrogen tetroxide
 - . . . nitrous oxides
 - . . nitrogen compounds
 - . . . nitrogen compounds
 - . **nitrogen oxides**
 - . . nitric oxide
 - . . nitrogen dioxide
 - . . nitrous oxides
 - . nitrosyls
 - . . nitrous acid
 - . . photochemical oxidants
 - RT nitrosyls
 - . nitrous acid
 - . photochemical oxidants
 - nitrogen plasma**
 - GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **nitrogen plasma**
 - corpuscular radiation
 - energetic particles
 - plasmas (physics)
 - **nitrogen plasma**
 - nitrogen polymers**
 - GS nitrogen compounds
 - . **nitrogen polymers**
 - . . polyacrylonitrile
 - . . polybenzimidazole
 - . . polybutadiene tetranitramine
 - . . Pyrrones (trademark)
 - RT ∞ polymers
 - nitrogen tetroxide**
 - GS chalcogenides
 - . oxides
 - . . nitrogen oxides
 - . . . **nitrogen tetroxide**
 - . . nitrogen compounds
 - . . . nitrogen oxides
 - **nitrogen tetroxide**
 - RT liquid rocket propellants
 - . rocket oxidizers
 - nitrogenation**
 - UF *nitrogen fixation*
 - GS chemical reactions
 - . **nitrogenation**
 - . . leguminous plants
 - . . lightning
 - . . nitrogen
 - nitroglycerin**
 - GS esters
 - . organic nitrates
 - . . **nitroglycerin**
 - . . . nitrogen compounds
 - nitrates
 - organic nitrates
 - **nitroglycerin**
 - nitro compounds
 - **nitroglycerin**
 - . . . double base propellants
 - double base rocket propellants
 - . . . dynamite
 - explosives
 - glycerides
 - glycerols
 - RT **nitroglycerin**
 - . double base propellants
 - . double base rocket propellants
 - . dynamite
 - . explosives
 - . glycerides
 - . glycerols
 - nitroguanidine**
 - UF *HBNQ*
 - GS nitrogen compounds
 - . nitro compounds
 - . . **nitroguanidine**
 - RT explosives
 - . solid propellants
 - nitrolysis**
 - GS chemical reactions
 - . **nitrolysis**
 - . . decomposition
 - . . **nitrolysis**
 - RT cracking (chemical engineering)
 - . nitrogen
 - nitromethane**
 - GS nitrogen compounds
 - . nitro compounds
 - . . **nitromethane**
 - RT BSX
 - . explosives
 - nitronium compounds**
 - GS **nitronium compounds**

nitronium perchlorate

. nitronium perchlorate
RT ∞ chemical compounds

nitronium perchlorate

GS halogen compounds
. chlorine compounds
. perchlorates
. . . **nitronium perchlorate**
nitronium compounds
. **nitronium perchlorate**
RT rocket oxidizers

nitropropane

GS nitrogen compounds
. nitro compounds
. . . **nitropropane**
organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . alkanes
. . . . **nitropropane**
RT propane

nitrosamine

GS nitrogen compounds
. **nitrosamine**
organic compounds
. amines
. . . **nitrosamine**

nitroso compounds

GS nitrogen compounds
. **nitroso compounds**
. . nitrosyls
. . . nitrosyl chlorides
RT ∞ chemical compounds
organic compounds

nitrosyl chlorides

GS halogen compounds
. chlorine compounds
. chlorides
. . . **nitrosyl chlorides**
halides
. chlorides
. . . **nitrosyl chlorides**
nitrosyls
. . **nitrosyl chlorides**
nitrogen compounds
. nitroso compounds
. . nitrosyls
. . . **nitrosyl chlorides**

nitrosyls

GS halogen compounds
. **nitrosyls**
. . nitrosyl chlorides
nitrogen compounds
. nitroso compounds
. . **nitrosyls**
. . . nitrosyl chlorides
RT amines
esters
halides
nitric oxide
nitrogen oxides

nitrous acid

RT air pollution
atmospheric chemistry
nitric acid
nitrogen oxides
reaction kinetics

nitrous oxides

GS chalcogenides
. oxides
. . nitrogen oxides
. . . **nitrous oxides**
nitrogen compounds
. nitrogen oxides
. . **nitrous oxides**

nitroxychlorides

GS halogen compounds
. chlorine compounds
. chlorides
. . . **nitroxychlorides**
halides
. chlorides

. . . **nitroxychlorides**
nitrogen compounds
. **nitroxychlorides**

nitryl chlorides

GS halogen compounds
. chlorine compounds
. . chlorides
. . . **nitryl chlorides**
halides
. chlorides
. . . **nitryl chlorides**
nitrogen compounds
. **nitryl chlorides**

nitryl fluorides

GS halogen compounds
. fluorine compounds
. . fluorides
. . . **nitryl fluorides**
halides
. fluorides
. . . **nitryl fluorides**
nitrogen compounds
. **nitryl fluorides**

Nix

(added September 2006)
DEF Natural satellite of Pluto discovered May 2005.
GS celestial bodies
. natural satellites
. . Pluto satellites
. . . **Nix**
RT Hydra
Pluto (planet)

NMR

USE **nuclear magnetic resonance**

n-n junctions

GS semiconductor junctions
. **n-n junctions**

NOAA 2 satellite

GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 2 satellite**

NOAA 3 satellite

GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 3 satellite**

NOAA 4 satellite

DEF One of a series of meteorological satellites launched by NASA for the National Oceanic and Atmospheric Administration.
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 4 satellite**

NOAA 5 satellite

DEF One of a series of environmental satellites launched by NASA for the National Oceanic and Atmospheric Administration for the sensing and recording of atmospheric, hydrological, and oceanographic environmental data.
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 5 satellite**

NOAA 6 satellite

DEF Designation for a NOAA meteorological satellite conforming to the TIROS N configuration.
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 6 satellite**
. . . TIROS satellites
. . . TIROS N series satellites
. . . . **NOAA 6 satellite**

RT Advanced Very High Resolution Radiometer

NOAA 7 satellite

DEF Designation for the seventh NOAA meteorological satellite conforming to the TIROS N configuration.
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 7 satellite**
RT Advanced Very High Resolution Radiometer
TIROS N series satellites

NOAA 8 satellite

UF **NOAA E**
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 8 satellite**
RT Advanced Very High Resolution Radiometer
SarSat

NOAA 9 satellite

(added July 1990)
UF **NOAA F satellite**
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 9 satellite**

NOAA 10 satellite

(added July 1990)
UF **NOAA G satellite**
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 10 satellite**

NOAA 11 satellite

(added May 1997)
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 11 satellite**
RT Advanced Very High Resolution Radiometer
Solar Backscatter UV Spectrometer

NOAA 12 satellite

(added May 1997)
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 12 satellite**
RT Advanced Very High Resolution Radiometer
microwave sounding

NOAA 14 satellite

(added May 1997)
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 14 satellite**
RT Solar Backscatter UV Spectrometer

NOAA E

USE **NOAA 8 satellite**

NOAA F satellite

USE **NOAA 9 satellite**

NOAA G satellite

USE **NOAA 10 satellite**

NOAA satellites

GS artificial satellites
. meteorological satellites
. . **NOAA satellites**
. . . NOAA 2 satellite
. . . NOAA 3 satellite
. . . NOAA 4 satellite
. . . NOAA 5 satellite
. . . NOAA 6 satellite
. . . NOAA 7 satellite
. . . NOAA 8 satellite
. . . NOAA 9 satellite
. . . NOAA 10 satellite

. . . NOAA 11 satellite
 . . . NOAA 12 satellite
 . . . NOAA 14 satellite
 RT Advanced Microwave Sounding Unit
 SMS 1
 SMS 2

nobelium

GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **nobelium**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements
 **nobelium**
 metals
 . actinide series
 . . transuranium elements
 . . . **nobelium**
 RT nobelium isotopes

nobelium isotopes

GS chemical elements
 . nuclides
 . . isotopes
 . . . **nobelium isotopes**
 RT nobelium

noble gases

USE **rare gases**

noble metals

UF *precious metals*
 GS metals
 . **noble metals**
 . . gold
 . . . gold isotopes
 gold 198
 . . ruthenium
 . . . ruthenium isotopes
 . . silver
 . . . silver isotopes
 RT ∞ Group 1B compounds

noctilucence

USE **luminescence**

noctilucent clouds

DEF Clouds of unknown composition which occur at great heights, 75 to 90 kilometers. They resemble thin cirrus clouds, but usually with a bluish or silverish color, although sometimes orange to red, standing out against a dark night sky. Sometimes called luminous clouds.

GS clouds (meteorology)
 . **noctilucent clouds**
 RT luminescence

nocturnal variations

GS variations
 . magnetic variations
 . . **nocturnal variations**
 . periodic variations
 . . **nocturnal variations**
 RT diurnal variations
 geomagnetic micropulsations
 geomagnetic pulsations

nodes (standing waves)

DEF Points, lines, or surfaces in standing waves where some characteristic of the wave field has essentially zero amplitude.

RT antinodes
 harmonics
 resonant frequencies
 standing waves
 vibration
 wavelengths
 ∞ waves

nodules

RT leguminous plants
 particles
 spheres

spherulites

NOE navigation

USE **nap-of-the-earth navigation**

NOESS

SN (NATIONAL OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM)
 DEF The acronym for the National Operational Environmental Satellite System. This term is no longer in use. Used for National Operational Environmental Sat Sys.
 UF *National Operational Environmental Sat Sys*
 RT meteorological satellites
 meteorology
 NASA programs
 observation
 ∞ systems

∞ **noise**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Any undesired signal (electrical or acoustic) that tends to interfere with the reception, interpretation, or processing of the desired signal.

RT background noise
 continuous noise
 effective perceived noise levels
 electromagnetic noise
 hum
 information theory
 noise (sound)
 noise injuries
 noise propagation
 noise spectra
 random noise
 signal to noise ratios
 spatial filtering
 white noise

noise (sound)

UF *noise hazards*
 GS elastic waves
 . sound waves
 . . **noise (sound)**
 . . . aircraft noise
 blade slap noise
 jet aircraft noise
 propeller noise
 sonic booms
 . . engine noise
 rocket engine noise
 . . flow noise
 . . thermal noise
 aerodynamic noise
 blade slap noise
 propeller noise
 screech tones

RT acoustics
 aeolian tones
 aircraft hazards
 ambience
 auditory stimuli
 auditory tasks
 background noise
 echoes
 effective perceived noise levels
 flight hazards
 human factors engineering
 hypersonic shock
 jet blast effects
 loudness
 mufflers
 ∞ noise

∞ noise measurement
 noise spectra
 operational hazards
 random noise
 random vibration
 reverberation
 shock waves
 sound pressure
 underwater acoustics

white noise

noise attenuation

USE **noise reduction**

noise elimination

USE **noise reduction**

noise generators

RT electromagnetic noise
 ∞ generators
 radio frequency interference
 random noise
 sound generators
 sound propagation

noise hazards

USE **hazards**
noise (sound)

noise injuries

GS injuries
 . **noise injuries**
 RT ear protectors
 ∞ noise

noise intensity

RT aircraft noise
 auditory stimuli
 effective perceived noise levels
 electromagnetic noise
 ∞ intensity
 propeller noise
 psychoacoustics
 sirens
 sound intensity

noise measurement

GS acoustic measurement
 . **noise measurement**
 RT aerodynamic noise
 aircraft noise
 background noise
 jet aircraft noise
 loudness
 ∞ measurement
 noise (sound)
 propeller noise
 sound intensity

noise meters

SN (LIMITED TO ACOUSTIC NOISE)
 GS measuring instruments
 . **noise meters**
 RT acoustic measurement
 field intensity meters
 pressure measurement

noise pollution

DEF Objectional or harmful levels of noise.
 GS pollution
 . **noise pollution**
 RT acoustics
 audio frequencies
 environment effects
 environment pollution
 environmental quality
 human reactions
 human tolerances
 physiological effects
 physiological factors
 sound waves

noise prediction

DEF Estimation of intensity and frequencies based on analyses of probable oscillation of vibration producing components.

GS predictions
 . **noise prediction**
 . . noise prediction (aircraft)
 RT Ffowcs Williams-Hawkings equation

noise prediction (aircraft)

DEF Estimating or forecasting of aircraft noise. Used for aircraft noise prediction.

UF *aircraft noise prediction*
 GS predictions
 . noise prediction
 . . **noise prediction (aircraft)**
 RT aeroacoustics
 ∞ aircraft

noise propagation

aircraft noise
computational aeroacoustics
estimates
Flowcs Williams-Hawkings equation
forecasting
propeller noise
sound waves

noise propagation

RT acoustics
coherence coefficient
continuous noise
far fields
∞ noise
signal to noise ratios
sound propagation

noise reduction

UF *noise attenuation*
noise elimination
noise suppressors
RT acoustic attenuation
acoustic ducts
acoustic retrofitting
acoustics
aerodynamic noise
aircraft noise
coaxial nozzles
ear protectors
echo suppressors
effective perceived noise levels
electrical grounding
electromagnetic interference
electromagnetic noise
flight rules
grazing flow
Helmholtz resonators
interference immunity
isolators
jet aircraft noise
loudness
mufflers
propeller noise
quiet engine program
∞ reduction
shock wave attenuation
silence
squelch circuits
suppressors
synchronizing
vibration isolators

noise spectra

GS spectra
. **noise spectra**
RT acoustic frequencies
background noise
channel noise
electromagnetic compatibility
electromagnetic noise
electromagnetic spectra
∞ noise
noise (sound)
radiation spectra
random noise
random signals
shock spectra
signal to noise ratios
white noise

noise storms

GS storms
. **noise storms**
RT cosmic noise
electromagnetic noise
ionospheric storms
magnetic storms
radio frequency interference
solar storms

noise suppressors

USE **noise reduction**

noise temperature

GS temperature
. **noise temperature**
RT electromagnetic noise
electron energy
electron states
temperature measurement

thermal noise

noise threshold

RT auditory fatigue
auditory perception
background noise
signal to noise ratios
∞ thresholds

noise tolerance

RT hazards
human tolerances
tolerances (physiology)

Nomad launch vehicle

GS launch vehicles
. **Nomad launch vehicle**
rocket vehicles
. single stage rocket vehicles
. . **Nomad launch vehicle**
RT Atlas launch vehicles
liquid propellant rocket engines

nomenclatures

RT definition
descriptions
dictionaries
mnemonics
naming
semantics
symbols
terminology
thesauri

nominal values

USE **approximation**

nomograms

USE **nomographs**

nomographs

DEF On charts or graphs, lines of constant value of given quantities with respect to either space or time. Used for isopleths and nomograms.

UF *isopleths*

nomograms

GS analysis (mathematics)
. numerical analysis
. . **nomographs**

RT charts
graphs (charts)

nonadiabatic conditions

DEF In thermodynamics, changes in volume, temperature, flow, etc., accompanied by a transfer of heat.

GS conditions

. **nonadiabatic conditions**

RT energy transfer
heat transfer
nonisothermal processes
thermodynamics

nonadiabatic processes

USE **heat transfer**

nonadiabatic theory

RT adiabatic equations
charged particles
energy dissipation
ionization cross sections
magnetic disturbances
∞ theories
wave propagation

nonanes

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **nonanes**

nonaqueous electrolytes

GS conductors
. electrolytes
. . **nonaqueous electrolytes**
RT electric batteries
∞ electric cells
electrochemistry
electrolytic cells

primary batteries
storage batteries
wet cells

noncondensable gases

GS gases
. **noncondensable gases**
RT critical temperature
gas-liquid interactions
liquefaction

nonconductors

USE **electrical insulation**

nonconservative forces

RT conservation
conservation equations
conservation laws
continuity equation
∞ force

nondestructive tests

DEF Testing that does not alter the material under test in a permanent manner or introduce any permanent changes to the material properties and structure.

UF *flaw detection*

GS **nondestructive tests**

. neutron radiography
RT acoustic emission
acoustic imaging
adhesion tests
chemical tests
destructive tests
electronic equipment tests
engine tests
ground penetrating radar
hardness tests
high temperature tests
infrared inspection
inspection
load tests
low temperature tests
∞ materials tests
nonintrusive measurement
photoacoustic microscopy
preventive maintenance
quality control
radiography
reliability
SH waves
shearography
static tests
∞ tests
thermography
tolerances (mechanics)
ultrasonic flaw detection
ultrasonic spectroscopy
ultrasonic tests
x ray inspection

nonelectrolytes

RT electrolytes

nonequilibrium conditions

GS conditions
. **nonequilibrium conditions**
RT ∞ equilibrium
unsteady state

nonequilibrium drag

USE **friction drag**

nonequilibrium flow

GS fluid flow
. gas flow
. . **nonequilibrium flow**
RT equilibrium flow
∞ fluids
heat transmission
oscillating flow
quasi-steady states
unsteady flow

nonequilibrium ionization

GS ionization
. **nonequilibrium ionization**

nonequilibrium plasmas

GS particles

- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **nonequilibrium plasmas**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **nonequilibrium plasmas**
- RT magnetohydrodynamic stability
- nonuniform plasmas
- plasma composition
- plasma potentials
- plasma radiation
- plasma sheaths
- rotating plasmas

nonequilibrium radiation

- GS electromagnetic radiation
- . **nonequilibrium radiation**
- RT nonthermal radiation
- shock wave propagation

nonequilibrium thermodynamics

- GS thermodynamics
- . **nonequilibrium thermodynamics**
- RT irreversible processes

nonEuclidian geometry

- USE **differential geometry**

nonferrous metals

- GS metals
- . **nonferrous metals**
- RT chemical elements
- conductors
- ∞ metallurgy

nonflammable materials

- RT asbestos
- fireproofing
- ∞ inorganic materials
- Kevlar (trademark)
- ∞ materials
- oxides
- refractory materials

nongray atmospheres

- RT ∞ atmospheres
- black body radiation
- emissivity
- gray gas
- planetary atmospheres

nongray gas

- GS gases
- . **nongray gas**
- RT ∞ atmospheres
- black body radiation
- emissivity
- heat transfer
- spectral emission
- thermal radiation
- thermodynamics

nonholonomic equations

- GS analysis (mathematics)
- . complex variables
- . . **nonholonomic equations**
- RT analytic functions
- ∞ equations

nonhomogeneity

- USE **inhomogeneity**

nonintrusive measurement
(added September 1992)

- UF *non-intrusive measurement*
- RT flow measurement
- laser doppler velocimeters
- ∞ measurement
- nondestructive tests
- optical measurement
- pressure sensitive paints
- temperature measurement
- temperature sensitive paints

non-intrusive measurement

- USE **nonintrusive measurement**

nonisentropicity

- GS isentropic processes

- . **nonisentropicity**
- RT entropy
- ∞ processes

nonisothermal processes

- DEF In thermodynamics, compression or expansion of substances at nonuniform temperatures.
- RT energy transfer
- heat transfer
- nonadiabatic conditions
- pressure effects
- ∞ processes
- temperature gradients
- thermodynamics

nonisotropic plates

- USE **anisotropic plates**

nonisotropy

- USE **anisotropy**

nonlifting vehicles

- USE **ballistic vehicles**

nonlinear equations

- GS algebra
- . **nonlinear equations**
- . . cubic equations
- . . Duffing differential equation
- . . Monge-Ampere equation
- . . nonlinear evolution equations
- . . quadratic equations
- . . quartic equations
- analysis (mathematics)
- real variables
- . . **nonlinear equations**
- . . . cubic equations
- . . . Duffing differential equation
- . . . Monge-Ampere equation
- . . . nonlinear evolution equations
- . . . quadratic equations
- . . . quartic equations
- RT Born-Infeld theory
- differential equations
- ∞ equations
- field theory (algebra)
- integral equations
- polynomials
- roots of equations

nonlinear evolution equations

- GS algebra
- . nonlinear equations
- . . **nonlinear evolution equations**
- analysis (mathematics)
- real variables
- . . nonlinear equations
- . . . **nonlinear evolution equations**
- RT difference equations
- ∞ equations

nonlinear feedback

- GS feedback
- . **nonlinear feedback**
- RT feedback amplifiers
- feedback control
- negative feedback
- positive feedback
- sensory feedback
- transfer functions

nonlinear filters

- RT electric filters
- electromagnetic wave filters
- ∞ filters
- linear filters

nonlinear optics

- DEF Study of the interaction of radiation with matter in which certain variables describing the response of the matter are not proportional to variables describing the radiation.
- RT birefringence
- chromophores
- electromagnetic radiation
- electro-optical effect
- four-wave mixing
- geometrical optics
- gradient index optics

- optical bistability
- ∞ optics
- quantum dots
- quantum optics
- quantum wires
- Raman spectra
- Sagnac effect

nonlinear programming

- DEF An optimization problem in which any or all of the following are nonlinear in the variables: (A) the objective functions, (B) the defining relationships among the variables, the plant description, (C) the constraints.
- GS optimization
- . mathematical programming
- . . **nonlinear programming**
- research
- . **nonlinear programming**
- RT ∞ applications of mathematics
- constraints
- formalism
- linear programming
- operations research
- ∞ programming

nonlinear systems

- SN (DYNAMIC SYSTEMS HAVING NONLINEAR RESPONSES)
- RT attractors (mathematics)
- chaos
- control equipment
- distributed parameter systems
- dynamic programming
- dynamical systems
- linear systems
- strange attractors
- ∞ systems
- tracking problem
- uncertain systems

nonlinearity

- UF *quasilinearity*
- RT differential equations
- functions (mathematics)
- linearity
- magnetic amplifiers
- variability
- Volterra equations

nonNewtonian flow

- DEF The rate of flow of a material that is not proportional to the degree of force applied.
- GS fluid flow
- . **nonNewtonian flow**
- RT liquid flow
- steady flow
- thixotropy
- unsteady flow
- viscoelasticity
- viscoplasticity

nonNewtonian fluids

- DEF Fluids that exhibit a viscosity which varies with changing shear stress or shear rate.
- RT colloids
- ∞ fluids
- gelatins
- gels
- newton
- Newton Theory
- Newtonian fluids
- rheology
- viscoelasticity
- viscoplasticity
- viscous fluids

nonohmic effect

- RT barrier layers
- contact resistance
- ∞ effects
- space charge

nonoscillatory action

- GS oscillations
- . **nonoscillatory action**
- RT oscillation dampers
- oscillators

nonparametric statistics

vibration damping

nonparametric statistics

GS statistical analysis

. **nonparametric statistics**

RT ∞ statistics

nonpoint sources

DEF Undetermined or general areas from which pollutants, contaminants, and/or other unwanted materials or wastes enter the environment.

RT contaminants
contamination
diffusion
environments
gases
liquids
particles
∞ points
poisons
pollution
public health
radioactive wastes
∞ sources
toxicology
wastes

nonpolar gases

GS gases

. **nonpolar gases**

RT molecular gases
rare gases

nonreflection

USE **energy absorption**

nonrelativistic electrons

USE **electrons**

nonrelativistic mechanics

RT Newton Theory
relativity

nonresonance

RT microwave resonance
transmission lines
traveling waves

nonrigidity

USE **flexibility**

nonspherical optics

USE **aspheric optics**

nonstabilized oscillation

GS oscillations
. **nonstabilized oscillation**
RT oscillation dampers
oscillators
pilot induced oscillation
stable oscillations
vibration damping

nonsynchronization

RT deviation
incoherence
∞ interference
nonuniformity

nonthermal emission

USE **nonthermal radiation**

nonthermal radiation

UF *nonthermal emission*
GS electromagnetic radiation
. **nonthermal radiation**
. . cyclotron radiation
. . . ion cyclotron radiation
. . . synchrotron radiation
RT galactic radiation
magnetic fields
nonequilibrium radiation
∞ radiation
radio waves
thermal radiation

nonuniform flow

GS fluid flow

. **nonuniform flow**

RT flow characteristics

gas flow
turbulent flow
uniform flow
unsteady flow

nonuniform magnetic fields

GS magnetic fields

. **nonuniform magnetic fields**

RT diffraction radiation
lines of force
magnetic anomalies
magnetic mirrors

nonuniform plasmas

GS particles

. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **nonuniform plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **nonuniform plasmas**

RT Kelvin-Helmholtz instability
low density research
magnetohydrodynamic stability
nonequilibrium plasmas
plasma composition
plasma oscillations
plasma waves
rarefied plasmas

nonuniformity

RT flexibility
inhomogeneity
irregularities
nonsynchronization
oscillations
turbulence

nonviscous flow

USE **inviscid flow**

noon

DEF The instant at which a time reference is over the upper branch of the reference meridian.

RT daytime
zenith

Nord 262 aircraft

USE **MH-262 aircraft**

Nord 1500 aircraft

UF *Griffon aircraft*
GS jet aircraft
. **Nord 1500 aircraft**
monoplanes
. **Nord 1500 aircraft**
Nord aircraft
. **Nord 1500 aircraft**
research vehicles
. research aircraft
. . **Nord 1500 aircraft**
supersonic aircraft
. **Nord 1500 aircraft**
RT ∞ aircraft

Nord aircraft

GS **Nord aircraft**
. C-160 aircraft
. MH-262 aircraft
. Nord 1500 aircraft
RT ∞ aircraft

norepinephrine

DEF Precursor of epinephrine that is secreted by the adrenal medulla and is a widespread central and autonomic neurotransmitter. Norepinephrine is the principal transmitter of most postganglionic sympathetic fibers and of the diffuse projection system in the brain arising from the locus ceruleus. It is also found in plants and is used pharmacologically as a sympathomimetic.

GS drugs
. stimulants
. . **norepinephrine**
organic compounds
. amines
. . catecholamine

. . . **norepinephrine**
RT dopamine
neurotransmitters

norleucine

GS acids

. amino acids
. . leucine
. . . **norleucine**
organic compounds
. amino acids
. . leucine
. . . **norleucine**

normal density functions

UF *Gaussian distributions*
normal distributions
GS functions (mathematics)
. probability density functions
. . **normal density functions**
statistical analysis
. probability density functions
. . **normal density functions**
RT continuity (mathematics)
discrete functions
histograms

normal distributions

USE **normal density functions**

normal force distribution

USE **force distribution**

normal shock waves

GS elastic waves
. shock waves
. . **normal shock waves**
RT longitudinal waves
magnetohydrodynamic waves
oblique shock waves
plane waves
shock layers

normality

RT asymptotic properties
average
mean
median (statistics)
norms
statistical tests

normalized difference vegetation index

(*added June 2001*)

DEF A transformation of satellite-based measurements computed as the ratio of reflectance in the red and near-infrared portions of the spectrum. Reflectance in the red region decreases with increasing chlorophyll content of the plant canopy, while reflectance in the infrared increases with increasing wet plant biomass. The index value represents greenness, density, and vigor of vegetation.

UF *NDVI (remote sensing)*

GS ratios
. indexes (ratios)
. . vegetative index
. . . **normalized difference**
vegetation index

RT crop vigor
image classification
remote sensing
satellite imagery
vegetation

∞ normalizing

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT normalizing (heat treatment)
normalizing (statistics)
regularity

normalizing (heat treatment)

GS heat treatment
. **normalizing (heat treatment)**
RT annealing
hardening (materials)
laser annealing
∞ normalizing

- tempering
- normalizing (statistics)**
 RT evaluation
 ∞ normalizing
 quality control
 ratings
 renormalization group methods
- norms**
 GS naming
 . **norms**
 RT average
 ethics
 median (statistics)
 normality
 psychometrics
 value
- North America**
 GS continents
 . **North America**
 RT Appalachian Mountains (North America)
 Canada
 Central America
 Lower California (Mexico)
 Mexico
 tundra
 United States
 Williston Basin (North America)
- North American aircraft**
 GS **North American aircraft**
 . A-2 aircraft
 . A-5 aircraft
 . B-1 aircraft
 . B-70 aircraft
 . F-86 aircraft
 . F-100 aircraft
 . OV-10 aircraft
 . P-51 aircraft
 . T-2 aircraft
 . T-28 aircraft
 . T-39 aircraft
 . X-15 aircraft
 RT ∞ aircraft
- North Atlantic Treaty Organization (NATO)**
 GS organizations
 . **North Atlantic Treaty Organization (NATO)**
 RT European Union
 international cooperation
- North Carolina**
 GS nations
 . United States
 . . **North Carolina**
 RT Cape Hatteras (NC)
 Great Smoky Mountains (NC-TN)
 Outer Banks (NC)
 Sand Hills Region (GA-NC-SC)
- North Dakota**
 GS nations
 . United States
 . . **North Dakota**
 RT Missouri River (US)
 Williston Basin (North America)
- North Korea**
 UF *Democratic Peoples Republic of Korea*
 GS nations
 . **North Korea**
 RT Asia
 ∞ Korea
 South Korea
- North Polar Spur (astronomy)**
 DEF One of the largest sources of diffuse radio emission outside the galactic plane. The Spur, a ridge of enhanced emission, may be the remnant of the shells of supernovae which exploded over 100,000 years ago.
 GS electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . galactic radio waves
- . . . **North Polar Spur (astronomy)**
 extraterrestrial radiation
 . extraterrestrial radio waves
 . . galactic radio waves
 . . . **North Polar Spur (astronomy)**
 . galactic radiation
 . . galactic radio waves
 . . . **North Polar Spur (astronomy)**
 RT nebulae
 supernova remnants
 x ray spectra
- North Sea**
 GS seas
 . **North Sea**
 RT English Channel
- North Vietnam*
 USE **Vietnam**
- Northern Hemisphere**
 GS **Northern Hemisphere**
 . Arctic regions
 . . subarctic regions
 RT ∞ hemispheres
 northern sky
 Southern Hemisphere
- Northern Ireland**
(added November 1989)
 GS nations
 . United Kingdom
 . . **Northern Ireland**
 RT Europe
- northern sky**
 DEF That part of the sky visible from the northern hemisphere.
 RT astronomical catalogs
 astronomical coordinates
 astronomical observatories
 Northern Hemisphere
 sky surveys (astronomy)
 Southern sky
- Northrop aircraft**
 GS **Northrop aircraft**
 . A-9 aircraft
 . F-5 aircraft
 . F-18 aircraft
 . F-20 aircraft
 . F-89 aircraft
 . T-38 aircraft
 . X-21 aircraft
 . X-21A aircraft
 RT ∞ aircraft
- Northwest Territories**
 GS nations
 . Canada
 . . **Northwest Territories**
- Norton County achondrite**
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . achondrites
 **Norton County achondrite**
- Norway**
 GS nations
 . **Norway**
 RT Europe
 fiords
 Norwegian space program
 Scandinavia
- Norwegian space program**
(added August 1990)
 GS programs
 . space programs
 . . European space programs
 . . . **Norwegian space program**
 RT Norway
- ∞ **nose**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT nose (anatomy)
- noses (forebodies)
- nose (anatomy)**
 GS anatomy
 . face (anatomy)
 . . **nose (anatomy)**
 . respiratory system
 . . **nose (anatomy)**
 RT head (anatomy)
 ∞ nose
 paranasal sinuses
 sinuses
- nose caps*
 USE **nose cones**
- nose cones**
 DEF The cone shaped leading ends of rocket vehicles, consisting (a) of chambers in which satellites, instruments, animals, plants, or auxiliary equipment may be carried, and (b) of outer surfaces built to withstand high temperatures generated by aerodynamic heating. Used for nose caps.
 UF *nose caps*
 GS cones
 . **nose cones**
 . . ablative nose cones
 . . rocket nose cones
 forebodies
 . noses (forebodies)
 . . **nose cones**
 . . . ablative nose cones
 . . . rocket nose cones
 RT ablative materials
 aeroshells
 blunt bodies
 ∞ caps
 circular cones
 half cones
 missile components
 ogives
 reentry shielding
 reentry vehicles
 spacecraft components
 spacecraft shielding
 spherical caps
 warheads
- nose fins**
 GS fins
 . **nose fins**
 RT control surfaces
 finned bodies
 noses (forebodies)
 vanes
- nose inlets**
 GS intake systems
 . **nose inlets**
 RT air intakes
 annular ducts
 bypass ratio
 ducted bodies
 ducts
 hypersonic inlets
 inlet airframe configurations
 nacelles
 noses (forebodies)
 scoops
 side inlets
 supersonic inlets
 ∞ water intakes
- nose tips**
 DEF The foremost, sharp points of bombs, rockets, missiles, and other symmetrical bodies.
 GS tips
 . **nose tips**
 RT aerodynamic configurations
 airfoil profiles
 noses (forebodies)
- nose wheels**
 GS wheels
 . vehicle wheels
 . . **nose wheels**
 RT brakes (for arresting motion)

noses (forebodies)

landing gear

noses (forebodies)

- GS forebodies
 - . noses (forebodies)
 - . . nose cones
 - . . . ablative nose cones
 - . . . rocket nose cones
- RT aircraft structures
- ∞ nose
 - nose fins
 - nose inlets
 - nose tips

Nostoc

- GS plants (botany)
 - . algae
 - . . blue green algae
 - . . . **Nostoc**
 - . . thermophilic plants
 - . . blue green algae
 - . . . **Nostoc**

notation

USE coding

notch sensitivity

- GS mechanical properties
 - . toughness
 - . . **notch sensitivity**
- sensitivity
 - . **notch sensitivity**
- RT Charpy impact test
 - fatigue (materials)
 - impact strength
 - impact tests

notch strength

- GS mechanical properties
 - . **notch strength**
- RT brittleness
 - ductility
 - fatigue tests
 - impact tests
- ∞ strength
 - stress concentration
 - stress intensity factors

notch tests

- UF *notched metals*
- GS **notch tests**
 - . Charpy impact test
- RT brittleness
 - crack opening displacement
 - drop tests
 - fatigue tests
 - hardness
 - impact tests
 - stress concentration
- ∞ tests

notched metals

USE **notch tests**

notches

- RT crack opening displacement
 - passageways
 - V grooves

Nova computers

DEF A series of minicomputers built by Data General.

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . minicomputers
 - **Nova computers**

Nova Laser System

DEF Laser fusion system utilizing large neodymium glass lasers for irradiating DT pellets.

- GS stimulated emission devices
 - . lasers
 - . . high power lasers
 - . . . **Nova Laser System**
- RT laser fusion
 - laser outputs
 - Shiva laser system

∞ systems

Nova launch vehicles

- GS launch vehicles
 - . **Nova launch vehicles**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **Nova launch vehicles**
- RT F-1 rocket engine
 - J-2 engine
 - liquid propellant rocket engines
 - M-1 engine
- ∞ vehicles

Nova satellites

- DEF A second generation Navy navigation satellite which replaces the transit satellites.
- GS artificial satellites
 - . navigation satellites
 - . . **Nova satellites**
- RT Discos (satellite attitude control)
 - Transit navigation system

Nova Scotia

- GS nations
 - . Canada
 - . . **Nova Scotia**

novae

- GS celestial bodies
 - . stars
 - . . variable stars
 - . . . **novae**
 - dwarf novae
 - Hercules nova
- RT cataclysmic variables
 - shock waves
 - stellar mass
 - stellar mass ejection
 - supernovae
 - symbiotic stars

novocain

- GS drugs
 - . anesthetics
 - . . **novocain**

nowcasting

DEF A self contained short period meteorological forecast for the immediate future covering a period of up to six hours.

- GS meteorology
 - . weather forecasting
 - . . **nowcasting**
 - predictions
 - . forecasting
 - . . weather forecasting
 - . . . **nowcasting**
- RT aviation meteorology
 - hindcasting

noxious materials

USE **contaminants**

Nozomi Mars Orbiter

(added August 1998)

DEF A Japanese Mars mission spacecraft designed to study the Martian upper atmosphere and its interaction with the solar wind, and to develop technologies for use in future planetary missions. Specifically, instruments on the spacecraft enable the measurement of the structure, composition and dynamics of the ionosphere; aeronomy effects of the solar wind; the escape of atmospheric constituents; the intrinsic magnetic field; and dust in the upper atmosphere and in-orbit around Mars.

- UF *Planet-B spacecraft*
- GS interplanetary spacecraft
 - . Mars probes
 - . . **Nozomi Mars Orbiter**
 - Japanese spacecraft
 - . **Nozomi Mars Orbiter**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Nozomi Mars Orbiter**
- RT aeronomy
 - Deimos
 - Phobos

planetary atmospheres
solar planetary interactions

nozzle coefficient

USE **nozzle flow**

nozzle design

- RT aerospike engines
- ∞ design
 - engine design
 - ∞ nozzles

nozzle efficiency

DEF The efficiency with which a nozzle converts potential energy into kinetic energy, commonly expressed as the ratio of the actual change in kinetic energy to the ideal change at the given pressure ratio.

- GS efficiency
 - . **nozzle efficiency**
- RT ∞ nozzles
 - power efficiency
 - propulsive efficiency
 - thermodynamic efficiency

nozzle flow

- UF *nozzle coefficient*
- GS fluid flow
 - . internal flow
 - . . **nozzle flow**
- RT aerothermochemistry
 - annular flow
 - choked flow
 - corner flow
 - discharge coefficient
 - exhaust gases
 - exhaust nozzles
 - fissionable materials
 - flow geometry
 - flow noise
 - fluid injection
 - injectors
 - jet flow
 - outlet flow
 - pneumatic probes
 - screech tones
 - supersonic jet flow
 - transonic flow

nozzle geometry

- GS geometry
 - . **nozzle geometry**
- RT coaxial nozzles
 - conical nozzles
 - convergent nozzles
 - convergent-divergent nozzles
 - discharge coefficient
 - divergent nozzles
 - mass flow factors
- ∞ nozzles
 - pipe nozzles
 - plug nozzles
 - shrouded nozzles
 - spike nozzles
 - throats

nozzle inserts

- GS inserts
 - . **nozzle inserts**
- RT ablative materials
 - chokes
 - conical nozzles
 - convergent-divergent nozzles
 - exhaust nozzles
- ∞ nozzles
 - rocket nozzles
 - throats

nozzle thrust coefficients

- GS coefficients
 - . **nozzle thrust coefficients**
- RT discharge coefficient
 - flow coefficients
 - influence coefficient
 - thrust
 - thrust vector control

nozzle walls

- GS walls
 - . **nozzle walls**

RT conical nozzles
 convergent nozzles
 divergent nozzles
 jet amplifiers
 ∞ nozzles
 refractory materials
 shrouded nozzles
 throats

nozzleless rocket engines
 GS engines
 . rocket engines
 . . **nozzleless rocket engines**
 RT rocket nozzles

∞ **nozzles**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT acoustic nozzles
 annular nozzles
 atomizers
 blowers
 chokes
 chokes (restrictions)
 coaxial nozzles
 conical nozzles
 convergent nozzles
 convergent-divergent nozzles
 ∞ diffusers
 divergent nozzles
 dual thrust nozzles
 exhaust nozzles
 flow measurement
 funnels
 hypersonic nozzles
 injectors
 inlet nozzles
 magnetic nozzles
 nozzle design
 nozzle efficiency
 nozzle geometry
 nozzle inserts
 nozzle walls
 orifices
 outlets
 pipe nozzles
 plug nozzles
 rocket nozzles
 shrouded nozzles
 sonic nozzles
 spike nozzles
 spray nozzles
 sprayers
 supersonic nozzles
 transonic nozzles
 turbines
 vents
 wind tunnel nozzles

n-p junctions
 USE **p-n junctions**

n-p-n junctions
 GS semiconductor junctions
 . **n-p-n junctions**
 RT bipolar transistors

NRX reactors
 GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . **NRX reactors**
 . nuclear research and test reactors
 . . **NRX reactors**
 RT KIWI reactors
 nuclear engine for rocket vehicles

NTS
 USE **navigation technology satellites**

n-type semiconductors
 GS semiconductors (materials)
 . **n-type semiconductors**
 RT electrons
 Schottky diodes
 semiconductor junctions

Suhl effect

nu factor
 RT Poisson ratio

nuclear astrophysics
(added July 1988)
 GS astrophysics
 . **nuclear astrophysics**
 nuclear physics
 . **nuclear astrophysics**
 RT cosmology
 nuclear particles
 stellar physics

nuclear auxiliary power units
 GS auxiliary power sources
 . **nuclear auxiliary power units**
 . . SNAP
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . . SNAP 1
 . . . SNAP 3
 . . . SNAP 7
 . . . SNAP 9A
 . . . SNAP 11
 . . . SNAP 13
 . . . SNAP 15
 . . . SNAP 17
 . . . SNAP 19
 . . . SNAP 21
 . . . SNAP 23
 . . . SNAP 27
 . . . SNAP 29
 . . . SNAP 50
 . . space power reactors
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors
 nuclear electric power generation
 . **nuclear auxiliary power units**
 . . SNAP
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . . SNAP 1
 . . . SNAP 3
 . . . SNAP 7
 . . . SNAP 9A
 . . . SNAP 11
 . . . SNAP 13
 . . . SNAP 15
 . . . SNAP 17
 . . . SNAP 19
 . . . SNAP 21
 . . . SNAP 23
 . . . SNAP 27
 . . . SNAP 29
 . . . SNAP 50
 . . . space power reactors
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors
 RT ∞ power supplies
 radioisotope batteries
 spacecraft power supplies
 thermoelectric generators
 thermoelectric power generation

nuclear binding energy
 GS binding energy
 . **nuclear binding energy**
 RT activation energy
 ∞ energy
 gravitational binding energy

ionization potentials

nuclear bulge (galaxies)
 USE **galactic bulge**

nuclear capture
 GS nuclear reactions
 . nuclear interactions
 . . **nuclear capture**
 . . . electron capture
 particle interactions
 . elementary particle interactions
 . . **nuclear capture**
 . . . electron capture
 . nuclear interactions
 . . **nuclear capture**
 . . . electron capture
 RT activation energy
 capture effect
 electron transitions
 energy levels
 ∞ interactions
 irradiation
 spin
 transition probabilities

nuclear chemistry
 RT atomic structure
 ∞ chemistry
 isomers
 ∞ nuclear energy
 physical chemistry
 plasma chemistry
 quantum chemistry
 radiochemistry

nuclear deformation
 GS deformation
 . **nuclear deformation**

nuclear devices
 DEF Devices whose explosive potency is derived from nuclear fission of atoms of fissionable material with the consequent conversion of part of their mass into energy.
 GS explosive devices
 . **nuclear devices**
 RT ∞ devices
 fission weapons
 thermonuclear explosions
 warheads

nuclear electric power generation
 UF *nuclear power generation*
 GS **nuclear electric power generation**
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . . SNAP 1
 . . . SNAP 3
 . . . SNAP 7
 . . . SNAP 9A
 . . . SNAP 11
 . . . SNAP 13
 . . . SNAP 15
 . . . SNAP 17
 . . . SNAP 19
 . . . SNAP 21
 . . . SNAP 23
 . . . SNAP 27
 . . . SNAP 29
 . . . SNAP 50
 . . . space power reactors
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors
 . nuclear power plants
 . . Enrico Fermi atomic power plant
 . . Hallam Nuclear Power Facility
 . . ML-1 nuclear power plant
 . nuclear power reactors
 . . KIWI reactors

nuclear electric propulsion

- . . . KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . . Pathfinder nuclear reactor
- . . plutonium recycle test reactor
- . . space power reactors
- . . . fission electric cells
- SNAP 2
- SNAP 4
- SNAP 8
- SNAP 10A
- SNAP 50
- . . . space power unit reactors
- . . Tory 2 reactor
- . . Tory 2-A reactor
- . . Tory 2-C reactor
- . thermonuclear power generation
- RT electric generators
- ∞ nuclear energy

nuclear electric propulsion

- GS propulsion
- . nuclear propulsion
- . . **nuclear electric propulsion**
- RT electric propulsion
- electrothermal engines
- fusion propulsion
- ion propulsion
- marine propulsion
- plasma propulsion
- spacecraft propulsion

nuclear emulsions

DEF Very thick photographic emulsions used in the study of cosmic rays and other energetic particles. The paths of the particles through the thick emulsions are recorded in three dimensions.

- GS mixtures
- . dispersions
- . . emulsions
- . . . photographic emulsions
- **nuclear emulsions**
- . solutions
- . . photographic emulsions
- . . . **nuclear emulsions**

- RT dosimeters
- radiation counters
- radiation measuring instruments

∞ nuclear energy

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF All forms of energy released in the course of a nuclear fission or a nuclear transformation.

- UF *atomic energy*
- RT annular core pulse reactors
- atomic theory
- chemical energy
- energy policy
- energy storage
- molecular energy levels
- nuclear chemistry
- nuclear electric power generation
- nuclear fission
- nuclear fuels
- nuclear fusion
- nuclear heat
- nuclear physics
- nuclear propulsion
- nuclear reactors
- nuclear research
- nuclear warfare
- nuclear weapons
- nucleonics
- spent fuels

nuclear engine for rocket vehicles

- UF *NERVA (engine)*
- GS engines
- . rocket engines
- . . **nuclear engine for rocket vehicles**
- RT booster rocket engines
- KIWI reactors
- NRX reactors
- Phoebus nuclear reactor
- Rover project

- sustainer rocket engines
- ∞ vehicles
- water cooled reactors

nuclear explosion effect

- RT ∞ effects
- fallout
- radiation effects
- radiation hazards

nuclear explosions

- UF *atomic explosions*
- GS explosions
- . **nuclear explosions**
- . . thermonuclear explosions
- RT aerial explosions
- artificial radiation belts
- civil defense
- cratering
- fallout
- ∞ fireballs
- Fishbowl Operation
- high energy interactions
- radiation hazards
- underground explosions
- underwater explosions
- Vela satellites

nuclear fission

- GS nuclear reactions
- . **nuclear fission**
- . . chain reactions (nuclear physics)
- RT critical experiments
- critical mass
- decay
- fissile fuels
- fission products
- fusion reactors
- fusion-fission hybrid reactors
- high energy interactions
- neutron flux density
- ∞ nuclear energy
- radioactive decay
- radioactive materials
- subcritical mass

nuclear fuel burnup

- GS combustion
- . fuel combustion
- . . **nuclear fuel burnup**
- RT critical mass
- reactor physics
- reactor technology

nuclear fuel elements

- UF *fuel elements (nuclear reactors)*
- RT annular core pulse reactors
- ∞ elements
- fuels
- plutonium alloys
- reactor cores
- reactor materials
- uranium alloys
- uranium carbides

nuclear fuel reprocessing

DEF Periodic chemical, physical, and metallurgical treatment of materials used as fuel elements in nuclear reactors to recover and purify residual fissionable and fertile materials.

- GS reclamation
- . materials recovery
- . . **nuclear fuel reprocessing**
- RT nuclear fuels
- ∞ processing
- ∞ recovery
- recycling
- spent fuels

nuclear fuels

DEF Fissionable materials of reasonable long life, used or usable in producing energy in a nuclear reactor. Used for reactor fuels.

- UF *reactor fuels*
- GS fuels
- . **nuclear fuels**
- . . ceramic nuclear fuels
- . . fissile fuels
- . . fissionium
- . . spent fuels

- RT annular core pulse reactors
- deuterium
- energy policy
- fission
- fissionable materials
- fuel capsules
- fuel production
- inertial fusion (reactor)
- mixed oxides
- neutron sources
- ∞ nuclear energy
- nuclear fuel reprocessing
- pellets
- plutonium
- plutonium alloys
- plutonium compounds
- reactor cores
- reactor materials
- reactor startup tests
- sol-gel processes
- thorium
- thorium alloys
- thorium compounds
- tritium
- uranium
- uranium 233
- uranium 235
- uranium 238
- uranium alloys
- uranium carbides
- uranium compounds
- uranium oxides

nuclear fusion

- UF *nucleosynthesis*
- GS nuclear reactions
- . thermonuclear reactions
- . . **nuclear fusion**
- . . . controlled fusion
- RT collisional plasmas
- degenerate matter
- dense plasmas
- deuteron irradiation
- ∞ fusion
- fusion propulsion
- fusion reactors
- fusion weapons
- fusion-fission hybrid reactors
- high energy interactions
- irradiation
- magnetic mirrors
- mirror fusion
- ∞ nuclear energy
- plasma focus
- railgun accelerators
- star formation
- stellar interiors
- stellar physics
- ∞ synthesis
- tokamak devices

nuclear gyroscopes

- GS gyroscopes
- . **nuclear gyroscopes**

nuclear heat

- GS heat
- . **nuclear heat**
- RT ∞ nuclear energy

nuclear interactions

- GS nuclear reactions
- . **nuclear interactions**
- . . nuclear capture
- . . . electron capture
- . . . spin-orbit interactions
- . . . electron capture
- . . weak interactions (field theory)
- particle interactions
- . **nuclear interactions**
- . . nuclear capture
- . . . electron capture
- . . . spin-orbit interactions
- . . . electron capture
- . . weak interactions (field theory)
- RT collision parameters
- elementary particles
- high energy interactions
- ∞ interactions

strong interactions (field theory)

nuclear isobars

- RT chemical elements
- ∞ isobars
- isotopes
- nuclei (nuclear physics)
- nuclides

nuclear lightbulb engines

- GS engines
 - . rocket engines
 - . nuclear rocket engines
 - . . . **nuclear lightbulb engines**
- RT gaseous fission reactors

nuclear magnetic resonance

- UF *knight shift*
- NMR*
- GS resonance
 - . magnetic resonance
 - . . **nuclear magnetic resonance**
 - . . . proton magnetic resonance
 - . . . proton resonance
- RT magnetic signals
 - magnetometers
 - molecular structure
 - paramagnetic resonance
 - particle spin
 - Plancks constant
 - spin resonance
 - spin-lattice relaxation

nuclear medicine

- DEF That branch of medicine dealing with the effect of radiation such as x rays, gamma rays, and energetic particles on the body and with the prevention and cure of physiological injuries resulting from such radiation. Used for radiation medicine.
- UF *radiation medicine*
- GS medical science
 - . **nuclear medicine**
 - . . radiobiology
- RT antiradiation drugs
 - health physics
- ∞ radiation
 - radiopathology

nuclear meteorology

- GS meteorology
 - . **nuclear meteorology**
- RT fallout

nuclear models

- GS models
 - . **nuclear models**
- RT atomic structure
 - energy levels
 - molecular structure
 - quark parton model

nuclear particles

- GS particles
 - . **nuclear particles**
 - . . antiparticles
 - . . . antineutrinos
 - . . . antinucleons
 - . . . antiprotons
 - . . positrons
 - . . beta particles
 - . . bosons
 - . . . alpha particles
 - . . . Higgs bosons
 - . . . mesons
 - eta-mesons
 - hyperons
 - xi hyperons
 - kaons
 - meson resonance
 - X mesons
 - muons
 - omega-mesons
 - pions
 - vector mesons
 - rho-mesons
 - sigma-mesons
 - . . . photons
 - . . . xi hyperons
 - . . nucleons

- . . photoelectrons
- RT corpuscular radiation
- cosmic rays
- elementary particles
- fission products
- gamma ray bursts
- neutron cross sections
- neutron distribution
- neutron scattering
- nuclear astrophysics
- nucleon potential
- nucleon-nucleon scattering
- particle accelerators
- particle tracks
- photoneutrons
- pi-electrons
- positron annihilation
- proton resonance
- protons

nuclear physics

- GS **nuclear physics**
 - . nuclear astrophysics
 - . reactor physics
- RT atomic structure
 - current algebra
 - electromagnetic absorption
 - field theory (physics)
 - health physics
- ∞ nuclear energy
- nucleonics
- parity
- particle spin
- ∞ physics
 - quantum theory
- ∞ science
 - theoretical physics

nuclear potential

- GS potential energy
 - . **nuclear potential**
- RT nucleon potential

nuclear power generation

USE **nuclear electric power generation**

nuclear power plants

- GS electric power plants
 - . **nuclear power plants**
 - . . Enrico Fermi atomic power plant
 - . . Hallam Nuclear Power Facility
 - . . ML-1 nuclear power plant
 - nuclear electric power generation
 - . **nuclear power plants**
 - . . Enrico Fermi atomic power plant
 - . . Hallam Nuclear Power Facility
 - . . ML-1 nuclear power plant
- RT plasma core reactors

nuclear power reactors

- GS nuclear electric power generation
 - . **nuclear power reactors**
 - . . KIWI reactors
 - . . . KIWI B reactors
 - KIWI B-1 Reactor
 - KIWI B-4 Reactor
 - . . Pathfinder nuclear reactor
 - . . plutonium recycle test reactor
 - . . space power reactors
 - . . . fission electric cells
 - SNAP 2
 - SNAP 4
 - SNAP 8
 - SNAP 10A
 - SNAP 50
 - . . . space power unit reactors
 - . . Tory 2 reactor
 - . . Tory 2-A reactor
 - . . Tory 2-C reactor
 - nuclear reactors
 - . **nuclear power reactors**
 - . . KIWI reactors
 - . . . KIWI B reactors
 - KIWI B-1 Reactor
 - KIWI B-4 Reactor
 - . . Pathfinder nuclear reactor
 - . . plutonium recycle test reactor
 - . . space power reactors
 - . . . fission electric cells
 - SNAP 2

- SNAP 4
- SNAP 8
- SNAP 10A
- SNAP 50
- . . . space power unit reactors
- . . Tory 2 reactor
- . . Tory 2-A reactor
- . . Tory 2-C reactor
- RT boiling water reactors
 - breeder reactors
 - fast nuclear reactors
 - fast oxide reactors
 - high temperature gas cooled reactors
 - liquid metal fast breeder reactors
 - power reactors
 - pressurized water reactors
 - SNAP
 - sodium graphite reactors

nuclear powered ships

- GS surface vehicles
 - . **nuclear powered ships**
 - . . Savannah nuclear ship
 - water vehicles
 - . ships
 - . . **nuclear powered ships**
 - . . . Savannah nuclear ship
- RT aircraft carriers
 - cargo ships
 - navy
 - submarines

nuclear propelled aircraft

- RT ∞ aircraft
 - ∞ military aircraft
 - research aircraft

nuclear propulsion

- UF *chemonuclear propulsion*
- thermonuclear propulsion*
- GS propulsion
 - . **nuclear propulsion**
 - . . fusion propulsion
 - . . nuclear electric propulsion
- RT aircraft engines
 - gaseous fission reactors
 - high temperature nuclear reactors
 - high temperature propellants
 - magnetic nozzles
 - marine propulsion
 - matter-antimatter propulsion
 - mercury ion engines
 - NEW MOONS project
- ∞ nuclear energy
 - Rover project
 - Savannah nuclear ship
 - spacecraft propulsion
 - trident submarine
 - underwater propulsion

nuclear pumped lasers

- DEF Lasers in which the excitation is supplied by a nuclear reactor as a high flux source or by the kinetic energy of the fission fragments only.
- GS stimulated emission devices
 - . lasers
 - . . **nuclear pumped lasers**
- RT optical pumping
 - optical resonance

nuclear pumping

- DEF Laser-like pumping produced by electrons generated in nuclear reactions or, in general, by beams of charged particles.
- RT electron pumping
 - energy transfer
 - fission products
 - gas lasers
 - lasers
 - optical pumping
 - population inversion
- ∞ pumping
 - stimulated emission
 - stimulated emission devices

nuclear quadrupole resonance

- GS resonance
 - . **nuclear quadrupole resonance**
- RT energy levels

nuclear radiation

quadrupoles

nuclear radiation

DEF Corpuscular emissions, such as alpha and beta particles, or electromagnetic radiation, such as gamma rays, originating in the nucleus of the atom.

GS nuclear radiation

- . beta particles
- . fast neutrons
- . gamma ray beams
- . gamma rays
- . . gamma ray bursts
- . neutron beams
- . photoneutrons
- . post-blast nuclear radiation
- . spallation
- . thermal neutrons

RT

- alpha particles
- bremsstrahlung
- Cerenkov radiation
- corpuscular radiation
- electromagnetic radiation
- electron pumping
- electron radiation
- electrons
- elementary particles
- emission spectra
- fission products
- gamma ray absorption
- health physics
- high energy interactions
- ionizing radiation
- irradiation
- neutrons
- particle production
- photons
- ∞ radiation
- radiation effects
- radiation hazards
- radioactive contaminants
- radioactive decay
- radioactive materials
- radioactivity
- radiobiology
- radiochemistry
- Vela satellites

nuclear radiation spectroscopy

GS spectroscopy

- . **nuclear radiation spectroscopy**

RT

- mass spectroscopy
- spectroscopic analysis
- vacuum spectroscopy

nuclear ramjet engines

GS engines

- . rocket engines
- . . **nuclear ramjet engines**

RT

- Pluto reactors

∞ rockets

- supersonic low altitude missile

nuclear reactions

UF *neutron transmutation*

GS nuclear reactions

- . nuclear fission
- . . chain reactions (nuclear physics)
- . nuclear interactions
- . . nuclear capture
- . . . electron capture
- . . spin-orbit interactions
- . . . electron capture
- . . weak interactions (field theory)
- . nuclear scattering
- . . neutron scattering
- . . resonance scattering
- . nuclear transformations
- . . transmutation
- . photonuclear reactions
- . proton scattering
- . proton-proton reactions
- . radioactive decay
- . . alpha decay
- . . neutron emission
- . spallation
- . thermonuclear reactions
- . . nuclear fusion
- . . . controlled fusion

RT

- Bragg curve

- Compton effect
- critical experiments
- critical mass
- electron scattering
- emission
- half life
- high energy interactions
- inhour equation
- ∞ interactions
- internal conversion
- pair production
- particle interactions
- particle production
- photoneutrons
- poisoning (reaction inhibition)
- pomerons
- radiation absorption
- radiogenic materials
- ∞ reaction
- reaction kinetics
- reactivity
- solar neutrinos
- strong interactions (field theory)
- subcritical mass

nuclear reactor control

RT confinement

- ∞ control

- control rods

- ∞ reaction control

- reactor safety

nuclear reactors

DEF Apparatus in which nuclear fission may be sustained in a self supporting chain reaction.

GS nuclear reactors

- . annular core pulse reactors
- . Astron thermonuclear reactor
- . breeder reactors
- . . Experimental Breeder Reactor 1
- . . Experimental Breeder Reactor 2
- . . light water breeder reactors
- . . liquid metal fast breeder reactors
- . . engineering test reactors
- . . fast nuclear reactors
- . . Experimental Breeder Reactor 1
- . . Experimental Breeder Reactor 2
- . . fast oxide reactors
- . . fast test reactors
- . . gas cooled fast reactors
- . . liquid metal fast breeder reactors
- . fusion reactors
- . . heliotrons
- . . spheromaks
- . . stellarators
- . fusion-fission hybrid reactors
- . gas cooled reactors
- . . experimental gas cooled reactors
- . . gas cooled fast reactors
- . . high temperature nuclear reactors
- . . high temperature gas cooled reactors
- . . KIWI reactors
- . . . KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- KIWI B-4 Reactor
- Tory 2 reactor
- Tory 2-A reactor
- Tory 2-C reactor
- . . gaseous fission reactors
- . Hanford reactors
- . high flux isotope reactors
- . liquid cooled reactors
- . . liquid metal cooled reactors
- . . . advanced sodium cooled reactor
- . . . Experimental Breeder Reactor 1
- . . . Experimental Breeder Reactor 2
- . . . Lithium Cooled Reactor Experiment
- . . . Los Alamos Molten Plutonium Reactor
- . . . military compact reactors
- . . . sodium graphite reactors
- . . . sodium reactor experiment
- . . organic cooled reactors
- . . . experimental organic cooled reactors
- . . water cooled reactors
- . . . boiling water reactors
- . . . experimental boiling water reactors
- . . . Halden Boiling Water Reactor
- . . . Los Alamos Water Boiler Reactor
- . . . Pathfinder nuclear reactor
- . . . Spert reactors
- . . heavy water reactors
- . . . heavy water components test reactors
- . . . plutonium recycle test reactor
- . . . zero power reactor 2
- . . light water reactors
- . . . NRX reactors
- . . Plum Brook Reactor
- . . pressurized water reactors
- . . . spectral shift control reactor
- . . swimming pool reactors
- . . . zero power reactors
- . . . zero power reactor 2
- . . . zero power reactor 3
- . . . zero power reactor 6
- . . . zero power reactor 9
- . molten salt nuclear reactors
- . nuclear power reactors
- . . KIWI reactors
- . . . KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . . Pathfinder nuclear reactor
- . . plutonium recycle test reactor
- . . space power reactors
- . . . fission electric cells
- . . . SNAP 2
- SNAP 4
- SNAP 8
- SNAP 10A
- SNAP 50
- . . . space power unit reactors
- . . . Tory 2 reactor
- . . . Tory 2-A reactor
- . . . Tory 2-C reactor
- . . nuclear research and test reactors
- . . advanced test reactors
- . . experimental boiling water reactors
- . . Experimental Breeder Reactor 1
- . . Experimental Breeder Reactor 2
- . . experimental gas cooled reactors
- . . experimental organic cooled reactors
- . . Health Physics Research Reactor
- . . heavy water components test reactors
- . . HERO Reactor
- . . high temperature nuclear reactors
- . . . high temperature gas cooled reactors
- . . Janus Reactor
- . . KIWI reactors
- . . . KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . . Livermore Pool Type Reactor
- . . Los Alamos Molten Plutonium Reactor
- . . military compact reactors
- . . NRX reactors
- . . Plum Brook Reactor
- . . plutonium recycle test reactor
- . . sodium reactor experiment
- . . Spert reactors
- . . . Tory 2 reactor
- . . . Tory 2-A reactor
- . . . Tory 2-C reactor
- . . Tower Shielding Reactor 2
- . . zero power reactor 2
- . . zero power reactor 3
- . . zero power reactor 6
- . . zero power reactor 9
- . . organic moderated reactors
- . . experimental organic cooled reactors
- . . pebble bed reactors
- . . Phoebus nuclear reactor
- . . plasma core reactors
- . . Pluto reactors
- . . thermal reactors
- . . tokamak devices
- . . Joint European Torus

- . water moderated reactors
- . . experimental boiling water reactors
- . . heavy water components test reactors
- RT . . plutonium recycle test reactor
- closed cycles
- control rods
- coolants
- fissile fuels
- high flux beam reactors
- inhour equation
- loss of coolant
- moderators
- ∞ nuclear energy
- ∞ piles
- radiation shielding
- reactor cores
- reactor design
- reactor materials
- reactor physics
- reactor safety
- reactor startup tests
- reactor technology
- ∞ reactors
- Rover project
- thermal neutrons
- thermal pollution
- nuclear relaxation**
- RT relaxation (mechanics)
- nuclear research**
- GS research
- . **nuclear research**
- RT high energy interactions
- laboratories
- ∞ nuclear energy
- plasma core reactors
- radiochemistry
- nuclear research and test reactors**
- DEF A class of nuclear reactors used to do research into nuclear physics, reactor materials and design, and nuclear medicine.
- UF *materials testing reactors*
- nuclear test reactors*
- physical constants testing reactor*
- GS nuclear reactors
- . **nuclear research and test reactors**
- . . advanced test reactors
- . . experimental boiling water reactors
- . . Experimental Breeder Reactor 1
- . . Experimental Breeder Reactor 2
- . . experimental gas cooled reactors
- . . experimental organic cooled reactors
- . . Health Physics Research Reactor
- . . heavy water components test reactors
- . . HERO Reactor
- . . high temperature nuclear reactors
- . . . high temperature gas cooled reactors
- . . Janus Reactor
- . . KIWI reactors
- . . . KIWI B reactors
- KIWI B-1 Reactor
- KIWI B-4 Reactor
- . . Livermore Pool Type Reactor
- . . Los Alamos Molten Plutonium Reactor
- . . military compact reactors
- . . NRX reactors
- . . Plum Brook Reactor
- . . plutonium recycle test reactor
- . . sodium reactor experiment
- . . Spert reactors
- . . Tory 2 reactor
- . . Tory 2-A reactor
- . . Tory 2-C reactor
- . . Tower Shielding Reactor 2
- . . zero power reactor 2
- . . zero power reactor 3
- . . zero power reactor 6
- . . zero power reactor 9
- RT boiling water reactors
- neutron sources
- reactor design
- reactor technology
- ∞ reactors
- Transient Reactor Test Facility
- nuclear rocket engines**
- DEF Rocket engines in which nuclear reactors are used as power sources or as sources of thermal energy. Used for thermionic reactors.
- UF *thermionic reactors*
- GS engines
- . rocket engines
- . . **nuclear rocket engines**
- . . . nuclear lightbulb engines
- RT booster rocket engines
- fusion propulsion
- ion engines
- magnetic nozzles
- mercury ion engines
- Phoebus nuclear reactor
- Pluto reactors
- restartable rocket engines
- ∞ rockets
- sustainer rocket engines
- nuclear scattering**
- SN (SCATTERING CAUSED BY NUCLEUS AND NOT BY ORBITAL ELECTRONS)
- GS nuclear reactions
- . **nuclear scattering**
- . . neutron scattering
- . . resonance scattering
- scattering
- . **nuclear scattering**
- . . neutron scattering
- . . resonance scattering
- RT angular distribution
- backscattering
- coherent scattering
- elastic scattering
- electron scattering
- forward scattering
- incoherent scattering
- inelastic scattering
- Mandelstam representation
- nuclear shielding*
- USE **radiation shielding**
- nuclear spin**
- GS spin
- . particle spin
- . . **nuclear spin**
- RT electron spin
- energy levels
- Kondo effect
- magnetic resonance
- Overhauser effect
- quantum numbers
- quantum theory
- yrast state
- nuclear structure**
- RT energy levels
- even-even nuclei
- odd-odd nuclei
- nuclear test reactors*
- USE **nuclear research and test reactors**
- nuclear transformations**
- GS nuclear reactions
- . **nuclear transformations**
- . . transmutation
- nuclear vulnerability**
- DEF The resistance of structures or materials to nuclear radiation or explosions.
- GS vulnerability
- . **nuclear vulnerability**
- RT penetration
- radiation effects
- thermonuclear explosions
- nuclear warfare**
- GS warfare
- . **nuclear warfare**
- RT civil defense
- hardening (systems)
- ∞ nuclear energy
- nuclear warheads**
- GS weapons
- . warheads
- . . **nuclear warheads**
- nuclear wastes*
- USE **radioactive wastes**
- nuclear weapons**
- GS weapons
- . **nuclear weapons**
- . . fission weapons
- . . fusion weapons
- RT bombs (ordnance)
- explosives
- missiles
- ∞ nuclear energy
- projectiles
- ∞ rockets
- space weapons
- torpedoes
- warheads
- weapon systems
- weapons delivery
- nuclease**
- GS biopolymers
- . proteins
- . . enzymes
- . . . **nuclease**
- organic compounds
- . proteins
- . . enzymes
- . . . **nuclease**
- nucleate boiling**
- GS phase transformations
- . vaporizing
- . . boiling
- . . . **nucleate boiling**
- Leidenfrost phenomenon
- RT film boiling
- heat transfer
- heat transfer coefficients
- nucleation
- nucleation**
- GS **nucleation**
- . cloud seeding
- RT accumulations
- Aitken nuclei
- atomic clusters
- condensation nuclei
- condensing
- crystal growth
- crystallization
- drop size
- ∞ formation
- grain formation
- heat treatment
- ice nuclei
- initiation
- inoculation
- jet condensers
- metal clusters
- molecular clusters
- nucleate boiling
- ∞ nuclei
- recrystallization
- supercooling
- ∞ **nuclei**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT active galactic nuclei
- Aitken nuclei
- charged particles
- chromosomes
- condensation nuclei
- ice nuclei
- nucleation
- nuclei (cytology)
- nuclei (nuclear physics)
- nucleogenesis
- odd-odd nuclei
- nuclei (cytology)**
- GS organelles
- . **nuclei (cytology)**
- RT cells (biology)
- cytology
- cytoplasm

nuclei (nuclear physics)

genetics
∞ nuclei

nuclei (nuclear physics)

DEF The positively charged cores of atoms with which are associated practically the whole mass of each atom but only a minute part of its volume.

GS particles
. charged particles
. energetic particles
. . . **nuclei (nuclear physics)**

. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons

. corpuscular radiation
. energetic particles
. . . **nuclei (nuclear physics)**

. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons

RT atoms
corpuscular radiation
cosmic rays
elementary particles
ions
isotopes
neutrons
nuclear isobars
∞ nuclei
nucleons
∞ physics
protons
yrast state

nucleic acid denaturation

USE **biopolymer denaturation**

nucleic acids

GS acids
. **nucleic acids**
. . deoxyribonucleic acid
. . complementary DNA
. . ribonucleic acids
biopolymers
. **nucleic acids**
. . deoxyribonucleic acid
. . complementary DNA
. . ribonucleic acids
organic compounds
. **nucleic acids**
. . deoxyribonucleic acid
. . complementary DNA
. . ribonucleic acids

RT biopolymer denaturation
guanosines
proteins
uridylic acid

nucleogenesis

RT genetics
mutations
∞ nuclei

nucleon potential

RT neutrons
nuclear particles
nuclear potential
∞ potential
protons
∞ radiation

nucleonics

RT ∞ electronics
∞ nuclear energy
nuclear physics
technologies

nucleon-nucleon interactions

GS particle interactions

. elementary particle interactions
. . **nucleon-nucleon interactions**

RT charged particles
∞ interactions

nucleon-nucleon scattering

GS scattering
. **nucleon-nucleon scattering**
RT nuclear particles
particle collisions
Pomeranchuk theorem

nucleons

DEF In the classification of subatomic particles according to mass, the second heaviest type of particles; their mass is intermediate between that of the meson and the hyperon.

GS particles
. elementary particles
. . **nucleons**
. nuclear particles
. . **nucleons**
RT alpha particles
antinucleons
baryons
charged particles
fast neutrons
hyperons
neutrons
nuclei (nuclear physics)
protons
vector dominance model

nucleophiles

GS electron attachment
. **nucleophiles**

nucleosides

GS organic compounds
. carbohydrates
. . glucosides
. . . **nucleosides**
. . . . adenines
. . . . guanosines
RT ribose
thymidine

nucleosynthesis

USE **nuclear fusion**

nucleotides

GS organic compounds
. **nucleotides**
. . adenines
. . adenosines
. . . adenosine diphosphate
. . . adenosine monophosphate
. . . adenosine triphosphate
. . . cyclic AMP
. . . oligonucleotides
. . polynucleotides
. . pyridine nucleotides
. . uridylic acid
RT biopolymers
proteins

nuclides

DEF Individual atoms of a given atomic number Z and mass number A.

GS chemical elements
. **nuclides**
. . isotopes
. . . aluminum isotopes
. . . . aluminum 26
. . . . aluminum 27
. . . antimony isotopes
. . . argon isotopes
. . . arsenic isotopes
. . . barium isotopes
. . . beryllium isotopes
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
. . . bismuth isotopes
. . . boron isotopes
. . . . boron 10
. . . bromine isotopes
. . . cadmium isotopes
. . . calcium isotopes
. . . carbon isotopes
. . . . carbon 12
. . . . carbon 13
. . . . carbon 14
. . . cerium isotopes
. . . . cerium 137
. . . . cerium 144
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . . cesium vapor
. . . chromium isotopes
. . . cobalt isotopes
. . . . cobalt 58
. . . . cobalt 60
. . . dysprosium isotopes
. . . erbium isotopes
. . . europium isotopes
. . . fluorine isotopes
. . . gadolinium isotopes
. . . gallium isotopes
. . . germanium isotopes
. . . gold isotopes
. . . . gold 198
. . . hafnium isotopes
. . . helium isotopes
. . . holmium isotopes
. . . hydrogen isotopes
. . . . deuterium
. . . . hydrogen 4
. . . . metallic hydrogen
. . . . tritium
. . . iodine isotopes
. . . . iodine 125
. . . . iodine 131
. . . . iodine 132
. . . iridium isotopes
. . . iron isotopes
. . . . iron 57
. . . . iron 58
. . . . iron 59
. . . krypton isotopes
. . . . krypton 85
. . . lanthanum isotopes
. . . lead isotopes
. . . lithium isotopes
. . . lutetium
. . . . lutetium isotopes
. . . magnesium isotopes
. . . manganese isotopes
. . . mercury isotopes
. . . molybdenum isotopes
. . . neodymium isotopes
. . . neon isotopes
. . . nickel isotopes
. . . niobium isotopes
. . . . niobium 95
. . . nitrogen isotopes
. . . . nitrogen 15
. . . . nitrogen 16
. . . nobelium isotopes
. . . osmium isotopes
. . . oxygen isotopes
. . . . oxygen 17
. . . . oxygen 18
. . . palladium isotopes
. . . phosphorus isotopes
. . . . phosphorus 32
. . . platinum isotopes
. . . polonium isotopes
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
. . . praseodymium isotopes
. . . promethium isotopes
. . . protactinium isotopes
. . . radioactive isotopes
. . . . astatine isotopes
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
. . . . carbon 14
. . . . cerium 137
. . . . cerium 144

- . . . cesium 134
- . . . cesium 137
- . . . cesium 144
- . . . cobalt 58
- . . . cobalt 60
- . . . copper isotopes
- . . . gold 198
- . . . indium isotopes
- . . . iodine 125
- . . . iodine 131
- . . . iodine 132
- . . . iron 59
- . . . krypton 85
- . . . niobium 95
- . . . nitrogen 16
- . . . phosphorus 32
- . . . polonium 208
- . . . polonium 209
- . . . polonium 210
- . . . potassium 38
- . . . potassium 40
- . . . rubidium 86
- . . . sodium 22
- . . . sodium 24
- . . . strontium 85
- . . . strontium 88
- . . . strontium 89
- . . . strontium 90
- . . . transuranium elements
 - americium
 - americium isotopes
 - americium 241
 - berkelium
 - californium
 - californium isotopes
 - curium
 - curium isotopes
 - curium 242
 - curium 244
 - einsteinium
 - fermium
 - lawrencium
 - mendelevium
 - neptunium
 - neptunium isotopes
 - nobelium
 - plutonium
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
 - sergenium
 - tritium
 - uranium 232
 - uranium 233
 - uranium 238
 - xenon 133
 - xenon 135
 - zirconium 95
- . . . radium isotopes
- . . . radium 226
- . . . radon isotopes
- . . . rhenium isotopes
- . . . rhodium isotopes
- . . . rubidium isotopes
- . . . rubidium 86
- . . . ruthenium isotopes
- . . . samarium isotopes
- . . . scandium isotopes
- . . . selenium isotopes
- . . . silicon isotopes
- . . . silver isotopes
- . . . sodium isotopes
- . . . sodium 22
- . . . sodium 24
- . . . strontium isotopes
- . . . strontium 85
- . . . strontium 87
- . . . strontium 89
- . . . strontium 90
- . . . sulfur isotopes
- . . . tantalum isotopes
- . . . technetium isotopes
- . . . tellurium
- . . . tellurium isotopes
- . . . terbium isotopes
- . . . thallium isotopes

- . . . thorium isotopes
- . . . thulium isotopes
- . . . tin isotopes
- . . . titanium isotopes
- . . . tungsten isotopes
- . . . uranium isotopes
- uranium 232
- uranium 233
- uranium 234
- uranium 235
- uranium 238
- . . . vanadium isotopes
- . . . xenon isotopes
- xenon 129
- xenon 133
- xenon 135
- . . . ytterbium isotopes
- . . . yttrium isotopes
- . . . zinc isotopes
- . . . zirconium isotopes
- zirconium 95

RT isotopic enrichment
nuclear isobars
particle mass

null hypothesis

GS hypotheses
. **null hypothesis**

RT confidence limits
degrees of freedom
significance
statistical tests

null zones

GS regions
. **null zones**

RT diffraction patterns
field theory (physics)
∞ force
interferometry
radiation distribution
speckle interferometry
very long base interferometry

number theory

GS **number theory**
. addition theorem
. arithmetic
. double precision arithmetic
. fixed point arithmetic
. floating point arithmetic
. congruences
. diophantine equation
. dividing (mathematics)
. exponents
. induction (mathematics)
. integers
. multiplication
. subtraction

RT addition
combinatorial analysis
decimals
digits
∞ division
enumeration
Fibonacci numbers
functions (mathematics)
∞ induction
infinity
∞ mathematics
∞ numbers
quaternions
subgroups
∞ theories
uniqueness theorem

∞ **numbers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT alphanumeric characters
Biot number
complex numbers
coordination number
counting
Damkohler number
decimals
digits
dimensionless numbers
double precision arithmetic

Fibonacci numbers
integers
number theory
quantum numbers
random numbers
real numbers

numerical analysis

DEF Study of approximation methods using arithmetic techniques for the solution of mathematical problems.

GS analysis (mathematics)
. **numerical analysis**
. . approximation
. . Born approximation
. . Born-Oppenheimer approximation
. . Chebyshev approximation
. . Eddington approximation
. . essentially non-oscillatory schemes
. . finite difference theory
. . . finite difference time domain method
. . finite element method
. . Hartree approximation
. . least squares method
. . mean square values
. . Milne method
. . multigrid methods
. . Newton methods
. . . Newton-Raphson method
. . boundary element method
. . discretization (mathematics)
. . numerical differentiation
. . Oseen approximation
. . Pade approximation
. . particle in cell technique
. . Pohlhausen method
. . predictor-corrector methods
. . Rayleigh-Ritz method
. . relaxation method (mathematics)
. . Reynolds averaging
. . Ritz averaging method
. . Schwartz method
. . Sommerfeld approximation
. . TVD schemes
. . upwind schemes (mathematics)
. . vortex in cell technique
. . Trefftz method
. . computational mechanics
. . meshfree methods
. . boundary integral method
. . computational astrophysics
. . computational chemistry
. . computational electromagnetics
. . computational fluid dynamics
. . difference equations
. . error analysis
. . finite volume method
. . Godunov method
. . flux difference splitting
. . flux vector splitting
. . Glimm method
. . Graeff calculus
. . interpolation
. . iteration
. . conjugate gradient method
. . iterative solution
. . Newton methods
. . . Newton-Raphson method
. . predictor-corrector methods
. . Monte Carlo method
. . nomographs
. . numerical integration
. . Runge-Kutta method
. . computational aeroacoustics
. . direct numerical simulation
. . space-time CE/SE method
. . truncation errors

RT adjoints
algorithms
alternating direction implicit methods
∞ analyzing
∞ applications of mathematics
asymptotes
computational grids
computer programming
Crank-Nicholson method
differential equations

numerical aperture

ill-conditioned problems (mathematics)
ill-posed problems (mathematics)
isoparametric finite elements
linear programming
mathematical tables
∞ mathematics
method of moments
significance
spatial marching
time marching
trajectory analysis

numerical aperture

(added January 1995)

DEF The sine of the vertex angle of the largest cone of meridional rays that can enter or leave an optical system or element, multiplied by the refractive index of the medium in which the vertex of the cone is located. Generally measured with respect to an object or image point, and will vary as that point is moved.

GS openings
. apertures
. . . **numerical aperture**
RT fiber optics
geometrical optics
lenses
optical coupling
optical fibers
optical properties
resolution

numerical control

UF *computerized control*
GS automatic control
. **numerical control**
RT ∞ automation
∞ computer programs
∞ control
control systems design
digital command systems
digital techniques
electric control
interactive control
machine tools
production engineering
sequential control
standardization

numerical data bases

GS data bases
. **numerical data bases**
RT information retrieval
on-line systems

numerical differentiation

DEF Approximate estimation of a derivative of a function by numerical techniques.

GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **numerical differentiation**
. real variables
. . . **numerical differentiation**

RT algorithms
computer techniques
differential calculus
differential equations
estimating
functions (mathematics)
∞ theories

numerical flow visualization

GS flow visualization
. **numerical flow visualization**
information analysis
. scientific visualization
. . . **numerical flow visualization**
RT computational fluid dynamics
computerized simulation
flow distribution
hydraulic analogies

numerical integration

UF *Cowell method*
GS analysis (mathematics)
. numerical analysis
. . **numerical integration**
. . . Runge-Kutta method

. real variables
. . measure and integration
. . . **numerical integration**
. . . . Runge-Kutta method
RT differential equations
digital integrators
integral calculus

numerical stability

GS stability
. **numerical stability**
RT approximation
backward differencing
difference equations
differential equations
ill-conditioned problems (mathematics)
ill-posed problems (mathematics)
strange attractors

numerical weather forecasting

GS meteorology
. weather forecasting
. . **numerical weather forecasting**
predictions
. forecasting
. . weather forecasting
. . . **numerical weather forecasting**
RT Atmospheric General Circulation
Models
atmospheric models
aviation meteorology
computerized simulation
long range weather forecasting
mathematical models
statistical weather forecasting

nunataks

GS landforms
. islands
. . **nunataks**
RT Arctic regions
rocks
sea ice

Nusselt number

DEF A number expressing the ratio of convective to conductive heat transfer between a solid boundary and a moving fluid, defined as h/k where h is the heat transfer coefficient, l is the characteristic length, and k is the thermal conductivity of the fluid. (Named after Wilhelm Nusselt, German engineer.)

GS dimensionless numbers
. **Nusselt number**
ratios
. **Nusselt number**
RT Brinkman number
convective heat transfer
heat transfer
Prandtl number
Schmidt number

nutaton

DEF The oscillation of the axis of any rotating body, as a gyroscope rotor. Specifically, in astronomy, irregularities in the precessional motion of the equinoxes because of varying positions of the moon and, to a lesser extent, of other celestial bodies with respect to the ecliptic. Used for nutational oscillation.

UF *nutational oscillation*
GS **nutaton**
. Chandler wobble
RT actuation
coning motion
displacement
∞ dynamics
Earth orientation
kinematics
libration
librational motion
∞ motion
perturbation
polar wandering (geology)
precession
rotation

vibration

nutaton dampers

RT control moment gyroscopes
∞ dampers
oscillation dampers
spacecraft stability

nutational oscillation

USE **nutaton**

∞ nutrients

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aquaculture
caloric requirements
carbohydrates
eutrophication
fats
fatty acids
fishes
life support systems
lipid metabolism
lipids
minerals
nutrition
nutritional requirements
proteins
trace elements
vitamins

nutrition

RT biochemistry
broths
caloric requirements
diets
∞ food
metabolism
nitrogen metabolism
∞ nutrients
nutritional requirements
space flight feeding

nutritional requirements

GS **nutritional requirements**
. caloric requirements
RT atrophy
∞ nutrients
nutrition
space flight feeding
synthetic food

nuts (fasteners)

GS fasteners
. **nuts (fasteners)**
RT anchors (fasteners)
bolts
holders
screws
threads

nuts (fruits)

RT angiosperms
orchards
seeds

Nylon (trademark)

GS fibers
. synthetic fibers
. . **Nylon (trademark)**
plastics
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. **Nylon (trademark)**
resins
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. **Nylon (trademark)**
RT polymeric films
∞ polymers

nylon resins

USE **polyamide resins**

Nyquist diagram

GS diagrams

. **Nyquist diagram**

- RT control stability
- transfer functions

Nyquist frequencies

- GS frequencies
- . **Nyquist frequencies**

- RT linear receivers

nystagmus

DEF An involuntary oscillation of the eye-balls, especially occurring as a result of eye fixations and stimulations of the inner ear during rotation of the body.

- GS eye movements

. **nystagmus**

- . . vestibular nystagmus
- RT electronystagmography
- eye (anatomy)

O

O ring seals

- GS seals (stoppers)
 - . **O ring seals**
- RT gaskets
 - glands (seals)
 - hermetic seals
 - labyrinth seals
 - ∞ rings
 - Space Shuttle Boosters

O stars

- GS celestial bodies
 - . stars
 - . . . early stars
 - . . . hot stars
 - **O stars**
- RT blue stars
 - Population I stars
 - Wolf-Rayet stars

Oak Ridge isochronous cyclotron

- UF *ORIC cyclotron*
- GS particle accelerators
 - . cyclotrons
 - . . **Oak Ridge isochronous cyclotron**

OAO

- UF *Orbiting Astronomical Observatory S-18 satellite*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **OAO**
 - OAO 1
 - OAO 2
 - OAO 3
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **OAO**
 - OAO 1
 - OAO 2
 - OAO 3
- RT Agena B rocket vehicle
 - Atlas launch vehicles
 - HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - manned orbital telescopes

OAO 1

- UF *OAO-A*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . OAO
 - **OAO 1**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OAO
 - **OAO 1**
- RT Atlas Centaur launch vehicle

OAO 2

- UF *OAO-A2*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . OAO
 - **OAO 2**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OAO
 - **OAO 2**
- RT Atlas Centaur launch vehicle

OAO 3

- UF *Copernicus spacecraft OAO-C*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . OAO
 - **OAO 3**
 - observatories

- . astronomical observatories
- . . astronomical satellites
- . . . OAO
- **OAO 3**
- RT Atlas Centaur launch vehicle

OAO-A

- USE **OAO 1**

OAO-A2

- USE **OAO 2**

OAO-C

- USE **OAO 3**

oases

- RT aquifers
 - arid lands
 - desertification
 - deserts
 - potable water
 - springs (water)
 - vegetation
 - wells

oats

- GS farm crops
 - . grains (food)
 - . . **oats**
 - plants (botany)
 - . **oats**
- RT agriculture
 - botany
 - crop growth
 - crop vigor
 - curing
 - Earth resources
 - ∞ food
 - grasses
 - irrigation
 - seeds

Oberon

- DEF A satellite of Uranus orbiting at a mean distance of 587,000 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . Uranus satellites
 - . . . **Oberon**
- RT Uranus (planet)

obesity

- RT body fluids
 - body measurement (biology)
 - body size (biology)
 - body volume (biology)
 - body weight
 - metabolism

object programs

- GS computer programs
 - . **object programs**

object-oriented programming

- (added October 1991)*
- DEF The use of a programming language consisting of a sequence of commands directed at objects.
- GS computer programming
 - . **object-oriented programming**
- RT Ada (programming language)
 - C++ (programming language)
 - Java (programming language)
 - software development tools
 - software engineering

oblate spheroids

- DEF Ellipsoids of revolution, the shorter axis of which is the axis of revolution.
- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . spheroids
 - **oblate spheroids**
- RT ellipticity
 - fineness ratio
 - flattening
 - geodesy
 - geoids

- prolate spheroids
- shapes
- solar oblateness

oblique coordinates

- DEF Magnitudes defining a point relative to two intersecting nonperpendicular lines, called axes.
- GS coordinates
 - . **oblique coordinates**
- RT Cartesian coordinates

oblique shock waves

- DEF Shock waves attached to the bow and tail of an aerodynamic vehicle moving faster than the speed of sound. The sides of the oblique shock waves form the Mach cone.
- GS elastic waves
 - . shock waves
 - . . **oblique shock waves**
- RT magneto hydrodynamic waves
 - normal shock waves
 - shock layers
 - supersonic compressors

oblique wings

- GS airfoils
 - . wings
 - . . **oblique wings**
- RT aerodynamic configurations
 - aircraft parts
 - aircraft structures
 - drone aircraft
 - pilotless aircraft
 - remotely piloted vehicles
 - wing planforms

obliqueness

- DEF The state of being neither perpendicular nor horizontal.
- RT angles (geometry)
 - incident radiation

obscuration

- USE **occultation**

observability (systems)

- DEF The property of a system for which observations of the output variables always is sufficient to determine the initial values of all state variables.
- RT boundary value problems
 - control theory
 - dependent variables
 - feedback control
 - independent variables
 - observation
 - parameter identification
 - state vectors
 - system identification
 - ∞ systems
 - systems analysis
 - systems engineering

observation

- GS **observation**
 - . Earth observations (from space)
 - . . satellite observation
 - . . radio observation
 - . . sky surveys (astronomy)
 - . . space observations (from Earth)
 - . . visual observation
- RT counting
 - data acquisition
 - detection
 - evaluation
 - examination
 - forest fire detection
 - NOESS
 - observability (systems)
 - ∞ performance
 - reconnaissance
 - surveillance

observation aircraft

- GS **observation aircraft**
 - . Cessna L-19 aircraft
 - . OH-4 helicopter
 - . OH-5 helicopter

- . OH-6 helicopter
- . OV-1 aircraft
- . OV-10 aircraft
- RT ∞ aircraft
 - antisubmarine warfare aircraft
 - arc clouds
 - balloons
 - flying platforms
 - gliders
 - HS-801 aircraft
 - light aircraft
 - light helicopters
 - ∞ military aircraft
 - reconnaissance aircraft
 - utility aircraft
 - weather reconnaissance aircraft

observation scheduling
(added November 2002)

DEF The development of chronologies and observational plans for remote-sensing satellites, astronomical and planetary observatories, and other observational platforms.

GS scheduling

- . **observation scheduling**

RT astronomical observatories

- Earth observations (from space)
- mission planning
- remote sensing
- space observations (from Earth)

observatories

GS **observatories**

- . astronomical observatories
- . . . astronomical satellites
- . . . Astronomical Netherlands Satellite
- . . . Gamma Ray Observatory
- . . . Ginga satellite
- . . . HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - HEAO 4
- . . . Hubble Space Telescope
- . . . Infrared Astronomy Satellite
- . . . Infrared Space Observatory (ISO)
- . . . IUE
- . . . Large Deployable Reflector
- . . . Magellan ultraviolet astronomy satellite
- . . . OAO
 - OAO 1
 - OAO 2
 - OAO 3
- . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
- . . . Quasat
- . . . SAS
 - Explorer 53 satellite
 - SAS-1
 - SAS-2
 - SAS-3
- . . . Constellation-X
- . . . Fermi Gamma-ray Space Telescope
- . . . James Webb Space Telescope
- . . . LISA (observatory)
- . . . Space Infrared Telescope Facility
- . . . Spartan satellites
- . . . Submillimeter Wave Astronomy Satellite
- . . . Swift observatory
- . . . Tenma satellite
- . . . X Ray Astrophysics Facility
- . . . XMM-Newton telescope
- . . . Astroplane
- . . . ROSAT mission
- . . . SOFIA (airborne observatory)
- . . . solar observatories

- . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
- . . . Pinhole Occulter Facility
- . . . STEREO (observatory)
- . . . European Southern Observatory
- . . . LIGO (observatory)
- . . . geophysical observatories
- . . . OGO
 - EGO
 - OGO-3
 - OGO-5
 - OGO-A
- . . . POGO
 - OGO-4
 - OGO-6
 - OGO-C
- . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
- . . . Glory Mission satellite
- . . . Jodrell Bank Observatory
- . . . Kuiper Airborne Observatory
- . . . lunar observatories

RT artificial satellites

obsidian

GS rocks

- . igneous rocks
- . . **obsidian**
- . . . moldavite

RT glass

- minerals
- powder (particles)
- pumice
- silicon dioxide
- soils

obsidian glass

GS glass

- . **obsidian glass**

obstacle avoidance

DEF The use of sensors utilizing laser triangulation as means of preventing collisions, especially in the operation of roving vehicles on planetary surfaces.

RT aircraft maneuvers

- evasive actions
- tactics
- terrain following
- vulnerability

obstacles

USE **barriers**

obstructing

USE **blocking**

occipital lobes

GS anatomy

- . nervous system
- . . central nervous system
- . . . brain
- cerebrum
- **occipital lobes**

occlusion

DEF Specifically, the trapping of undissolved gas in a solid during solidification.

RT degassing

- gas-metal interactions
- gas-solid interfaces

solidification

occultation

DEF The disappearance of a body behind another body of larger apparent size. Used for obscuration.

UF *obscuration*GS **occultation**

. lunar occultation

. . solar eclipses

. radio occultation

. stellar occultation

RT ∞ conjunction

eclipses

extinguishing

Pinhole Occulter Facility

∞ transit

occupation

RT industrial safety

personnel

work

occupational diseases

GS diseases

. **occupational diseases**

RT

anemias

carbon monoxide poisoning

cataracts

emphysema

hazards

health physics

lead poisoning

leukemias

operational hazards

public health

pulmonary lesions

radiation hazards

toxic hazards

tumors

occurrences

RT events

ocean bottom

RT beds (geology)

continental shelves

core sampling

cratons

deep water

geology

marine chemistry

mid-ocean ridges

mud

oceanography

sea floor spreading

seamounts

sediments

sludge

submarine hydrothermal vents

underwater resources

ocean color scanner

DEF A multispectral scanning radiometer which is geared to observe ocean features such as chlorophyll, sediments, and topography in the invisible and thermal ranges of radiation.

GS scanners

. **ocean color scanner**

. . Coastal Zone Color Scanner

. . Sea-viewing Wide Field-of-view

Sensor

RT

chlorophylls

coastal water

colorimetry

multispectral band scanners

ocean data acquisitions systems

oceanographic parameters

oceanography

photomapping

remote sensors

water color

ocean currents

GS circulation

. water circulation

. . water currents

. . . **ocean currents**

. . . . coastal currents

. . . . el Nino

ocean data acquisitions systems

. . . . Gulf Stream
 Lomonosov current
 RT core sampling
 ∞ currents
 fluid flow
 frontal waves
 gyres
 hydrography
 Kelvin waves
 littoral drift
 littoral transport
 ocean dynamics
 oceanography
 oceans
 pressure ice
 salinity
 Spitsbergen (Norway)
 thermohaline circulation
 tidal waves
 tide powered generators
 tide powered machines
 tidepower
 tides
 TOPEX
 upwelling water
 waterwave energy conversion
 waterwave powered machines

ocean data acquisitions systems
 UF *ocean data platforms*
ocean data stations
 ODAS
 RT Argos system
 automatic weather stations
 buoys
 Coastal Zone Color Scanner
 ∞ data
 data acquisition
 ground stations
 instrument packages
 meteorological parameters
 ocean color scanner
 oceanographic parameters
 ships
 transoceanic systems
 underwater research laboratories
 weather stations

ocean data platforms
 USE **ocean data acquisitions systems**

ocean data stations
 USE **ocean data acquisitions systems**

ocean dynamics
 DEF The study of the controlling forces in different ocean phenomena.
 RT air water interactions
 dynamic characteristics
 ∞ dynamics
 fluid dynamics
 hydrodynamics
 ocean currents
 ocean models
 ocean surface
 oceanography
 QuikSCAT satellite
 thermohaline circulation
 water waves

ocean floor spreading
 USE **sea floor spreading**

ocean models
 GS models
 . **ocean models**
 RT air water interactions
 atmospheric models
 climate models
 dynamic models
 marine environments
 mathematical models
 ocean dynamics
 oceanography
 Sargasso Sea
 sea roughness
 sea states

ocean surface
 RT Earth surface

fluid flow
 hydrography
 ocean dynamics
 oceanographic parameters
 oceanography
 polynyas
 Sargasso Sea
 sea level
 sea roughness
 sea states
 sea surface temperature
 sea truth
 sea water
 Sea-viewing Wide Field-of-view Sensor
 storm surges
 ∞ surfaces
 tidal waves
 tide powered generators
 tide powered machines
 tidepower
 tides
 TOPEX
 waterwave energy conversion
 waterwave powered machines

ocean temperature
 DEF Surface or subsurface temperature of an entire or specific region of an ocean.
 GS oceanographic parameters
 . **ocean temperature**
 . . sea surface temperature
 temperature
 . water temperature
 . . **ocean temperature**
 . . . sea surface temperature

RT el Nino
 oceanography
 oceans
 offshore energy sources
 sea states
 sea truth
 sea water
 seas
 solar sea power plants
 surface temperature
 temperature distribution
 temperature gradients
 thermal pollution
 thermohaline circulation

ocean thermal energy conversion
 GS energy conversion
 . **ocean thermal energy conversion**
 RT ∞ conversion
 ∞ energy sources
 geothermal energy conversion
 geothermal technology
 renewable energy
 solar sea power plants
 temperature

oceanographic parameters
 GS **oceanographic parameters**
 . ocean temperature
 . . sea surface temperature

RT Atmospheric & Oceanographic Inform Sys
 Coastal Zone Color Scanner
 hindcasting
 integrated global ocean station systems
 meteorological parameters
 ocean color scanner
 ocean data acquisitions systems
 ocean surface
 salinity
 sea states

oceanography
 DEF The science that deals with the study and exploration of seas and oceans.
 RT artificial harbors
 Atmospheric & Oceanographic Inform Sys
 bathymeters
 bay ice
 breakwaters
 coastal currents
 Coastal Zone Color Scanner

core sampling
 deep scattering layers
 deep water
 deepwater terminals
 Earth & Ocean Physics Applications Program
 Earth planetary structure
 Earth resources
 Earth sciences
 environmental monitoring
 EROS (satellites)
 estuaries
 fiords
 frontal waves
 GARP Atlantic Tropical Experiment
 geography
 geology
 geophysics
 gyres
 harbors
 hydroclimatology
 hydrography
 hydrology
 ice floes
 ice mapping
 isthmuses
 Landsat satellites
 marine biology
 marine environments
 marine meteorology
 marine resources
 marine technology
 marshlands
 meteorology
 mid-ocean ridges
 ocean bottom
 ocean color scanner
 ocean currents
 ocean dynamics
 ocean models
 ocean surface
 ocean temperature
 oceans
 offshore docking
 offshore platforms
 oil slicks
 pelagic zone
 ∞ physical sciences
 red tide
 reefs
 Sargasso Sea
 ∞ science
 sea grasses
 sea ice
 sea level
 sea roughness
 sea states
 sea surface temperature
 sea water
 seas
 SEASAT 1
 SEASAT program
 SEASAT satellites
 SEASAT-B satellite
 seaweeds
 shallow water
 shipyards
 shoals
 shorelines
 storm surges
 submarine hydrothermal vents
 tanker terminals
 thermoclines
 tidal waves
 tide powered generators
 tidepower
 tides
 TOPEX
 topography
 underwater research laboratories
 underwater resources
 water circulation
 water currents
 waterfowl
 waterwave energy
 waterwave energy conversion
 wetlands

oceans
 DEF The continuous salt water bodies that

surround the continents and fill the Earth's great depressions.

- GS **oceans**
 - . Antarctic Ocean
 - . Arctic Ocean
 - . Atlantic Ocean
 - . extraterrestrial oceans
 - . Indian Ocean
 - . Pacific Ocean
- RT
 - coastal currents
 - coastal water
 - coasts
 - deep water
 - Earth hydrosphere
 - geography
 - keys (islands)
 - marine resources
 - nearshore water
 - ocean currents
 - ocean temperature
 - oceanography
 - seas
 - seaweeds
 - shallow water
 - shoals
 - shorelines
 - sounds (topographic features)
 - thermal pollution
 - tidal flats
 - tide powered generators
 - water color
 - water depth
 - water resources
 - waterwave energy conversion

Octahedral Research Satellites
 USE **Environmental Research Satellites**

octahedrite
 USE **anatase**

- octahedrons**
 - GS geometry
 - . Euclidean geometry
 - . polyhedrons
 - . . . **octahedrons**

- ∞ **octane**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT antiknock additives
 - octanes

octane number
 RT gasoline

- octanes**
 - SN (ACYCLIC HYDROCARBONS)
 - GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkanes
 - **octanes**
 - RT antiknock additives
 - ∞ octane

- octaves**
 - DEF The intervals between two frequencies having the ratio 1:2.
 - GS range (extremes)
 - . frequency ranges
 - . . **octaves**
 - RT acoustics
 - music

- octets**
 - GS valence
 - . **octets**
 - RT atomic structure
 - chemical bonds

octoates
 GS esters

. **octoates**

octol (explosive)
 GS explosives
 . **octol (explosive)**

- octopuses**
 - GS animals
 - . invertebrates
 - . . mollusks
 - . . . cephalopods
 - **octopuses**

ocular circulation
 GS circulation

- . blood circulation
- . . **ocular circulation**

- oculogavic illusions**
 - GS psychological effects
 - . illusions
 - . . **oculogavic illusions**
 - RT gravireceptors
 - otolith organs
 - vertical perception

- oculometers**
 - GS measuring instruments
 - . optical measuring instruments
 - . . **oculometers**
 - optical equipment
 - . optical measuring instruments
 - . . **oculometers**
 - RT eye movements
 - ∞ instruments
 - optical tracking

- oculomotor nerves**
 - GS anatomy
 - . nervous system
 - . . nerves
 - . . . **oculomotor nerves**
 - . sense organs
 - . . eye (anatomy)
 - . . . **oculomotor nerves**
 - RT vision

ODAS
 USE **ocean data acquisitions systems**

- odd-even nuclei**
 - GS particles
 - . charged particles
 - . . energetic particles
 - . . . nuclei (nuclear physics)
 - **odd-even nuclei**
 - . corpuscular radiation
 - . . energetic particles
 - . . . nuclei (nuclear physics)
 - **odd-even nuclei**
 - RT even-even nuclei
 - odd-odd nuclei

- odd-odd nuclei**
 - GS particles
 - . charged particles
 - . . energetic particles
 - . . . nuclei (nuclear physics)
 - **odd-odd nuclei**
 - . corpuscular radiation
 - . . energetic particles
 - . . . nuclei (nuclear physics)
 - **odd-odd nuclei**
 - RT even-even nuclei
 - nuclear structure
 - ∞ nuclei
 - odd-even nuclei

Odessa meteorite
 GS celestial bodies

- . meteorites
- . . iron meteorites
- . . . **Odessa meteorite**

odors
 RT air pollution

combustion products
 exhaust gases
 gases

offgassing
 DEF The relative high mass loss characteristic of many nonmetallic materials upon initial vacuum exposure.
 RT degassing
 vacuum
 vacuum effects

office automation
 RT ∞ automation
 man machine systems
 word processing

Office of Space & Terrestrial Applicable Payloads
 USE **OSTA-1 payload**
OSTA-2 payload
OSTA-3 payload

off-on control
 DEF Flicker control, especially as applied to rockets. Used for bang-bang control.
 UF *bang-bang control*
 GS automatic control
 . **off-on control**
 RT ∞ control
 control equipment
 control theory
 proportional control
 servocontrol
 solenoid valves

offshore docking
 GS maneuvers
 . docking
 . . **offshore docking**
 RT artificial harbors
 cargo ships
 deepwater terminals
 marine technology
 marine transportation
 oceanography
 ship terminals
 tanker ships
 tanker terminals
 ∞ tankers
 terminal facilities
 transportation

offshore energy sources
 RT crude oil
 deepwater terminals
 drilling
 energy technology
 marine technology
 ocean temperature
 oil exploration
 oil fields
 sea breeze
 seepage

offshore platforms
 RT artificial harbors
 cargo ships
 deepwater terminals
 marine technology
 oceanography
 ∞ platforms
 tanker ships
 tanker terminals
 ∞ tankers
 terminal facilities
 transportation

offshore reactor sites
 GS sites
 . **offshore reactor sites**
 RT reactor design
 reactor safety
 reactor technology

ogee shape

remote regions

OFT
USE **Space Transportation System flights**

OFT 1
USE **Space Transportation System 1 flight**

OFT 2
USE **Space Transportation System 2 flight**

OFT 3
USE **Space Transportation System 3 flight**

OFT 4
USE **Space Transportation System 4 flight**

ogee shape
GS shapes
 . **ogee shape**
RT variable sweep wings

ogee wings
USE **variable sweep wings**

ogives
DEF Bodies of revolution formed by rotating a circular arc about an axis that intersects the arc; the shape of these bodies; also noses of projectiles or the like so shaped.
RT bodies of revolution
 ellipsoids
 fairings
 nose cones
 spheres
 streamlined bodies
 symmetrical bodies

OGO
UF *Orbiting Geophysical Observatory*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 . . . EGO
 . . . OGO-3
 . . . OGO-5
 . . . OGO-A
 . . . POGO
 OGO-4
 OGO-6
 OGO-C
 observatories
 . geophysical observatories
 . . . **OGO**
 . . . EGO
 . . . OGO-3
 . . . OGO-5
 . . . OGO-A
 . . . POGO
 OGO-4
 OGO-6
 OGO-C
RT Gamma Ray Observatory

OGO-3
UF *OGO-B*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 . . . **OGO-3**
 observatories
 . geophysical observatories
 . . . **OGO**
 . . . **OGO-3**
RT Thor Agena launch vehicle

OGO-4
UF *OGO-D*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 POGO
 **OGO-4**
 observatories
 . geophysical observatories
 . . . **OGO**

. . . POGO
. . . . **OGO-4**
RT geodesy

OGO-5
UF *OGO-E*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 **OGO-5**
 observatories
 . geophysical observatories
 . . . **OGO**
 **OGO-5**
RT geodesy

OGO-6
UF *OGO-F*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 POGO
 **OGO-6**
 observatories
 . geophysical observatories
 . . . **OGO**
 POGO
 **OGO-6**

OGO-A
UF *S-49 satellite*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 **OGO-A**
 observatories
 . geophysical observatories
 . . . **OGO**
 **OGO-A**
RT Atlas Agena launch vehicles

OGO-B
USE **OGO-3**

OGO-C
UF *S-50 satellite*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 POGO
 **OGO-C**
 observatories
 . geophysical observatories
 . . . **OGO**
 POGO
 **OGO-C**

OGO-D
USE **OGO-4**

OGO-E
USE **OGO-5**

OGO-F
USE **OGO-6**

OH-4 helicopter
UF *HO-4 helicopter*
GS Bell aircraft
 . **OH-4 helicopter**
 light aircraft
 . light helicopters
 . . . **OH-4 helicopter**
 observation aircraft
 . **OH-4 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 light helicopters
 **OH-4 helicopter**
 military helicopters
 **OH-4 helicopter**

OH-5 helicopter
UF *FH-1100 helicopter*
HO-5 helicopter
GS Fairchild-Hiller aircraft
 . **OH-5 helicopter**
 Hiller aircraft
 . **OH-5 helicopter**

light aircraft
 . light helicopters
 . . . **OH-5 helicopter**
 observation aircraft
 . **OH-5 helicopter**
 passenger aircraft
 . **OH-5 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 light helicopters
 **OH-5 helicopter**
 military helicopters
 **OH-5 helicopter**
RT rigid rotor helicopters

OH-6 helicopter
UF *HO-6 helicopter*
LOH helicopter
GS Hughes aircraft
 . **OH-6 helicopter**
 light aircraft
 . light helicopters
 . . . **OH-6 helicopter**
 observation aircraft
 . **OH-6 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 light helicopters
 **OH-6 helicopter**
 military helicopters
 **OH-6 helicopter**

OH-13 helicopter
UF *H-13 helicopter*
Sioux helicopter
UH-13 helicopter
GS Bell aircraft
 . **OH-13 helicopter**
 light aircraft
 . **OH-13 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 military helicopters
 **OH-13 helicopter**

OH-23 helicopter
UF *H-23 helicopter*
Raven helicopter
UH-12 helicopter
GS Fairchild-Hiller aircraft
 . **OH-23 helicopter**
 light aircraft
 . **OH-23 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 military helicopters
 **OH-23 helicopter**

OH-58 helicopter
GS light aircraft
 . light helicopters
 . . . **OH-58 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 light helicopters
 **OH-58 helicopter**
 military helicopters
 **OH-58 helicopter**

Ohio
GS nations
 . United States
 . . . **Ohio**
RT Ohio River (US)
 Wabash River Basin (IL-IN-OH)

Ohio River (US)
GS rivers
 . **Ohio River (US)**
RT Illinois
 Indiana
 Kentucky
 Ohio
 Pennsylvania

- West Virginia
- ohmic dissipation**
 UF *Joule heating*
 GS dissipation
 . **ohmic dissipation**
 RT Joule-Thomson effect
 levitation melting
 losses
- ohmmeters**
 DEF Direct-reading instruments for measuring electrical resistance. They are provided with a scale, usually graduated in either ohms, megohms, or both. If the scale is graduated in megohms, the instrument is usually called a megohmmeter.
 GS measuring instruments
 . **ohmmeters**
 RT electrical conductivity meters
 electrical impedance
 electrical measurement
 electrical resistance
 resistance thermometers
 transconductance
 Wheatstone bridges
- Ohms law**
 DEF The current in an electric circuit is inversely proportional to the resistance of the circuit and is directly proportional to the electromotive force in the circuit. Ohm's law applies, strictly speaking, only to linear constant-current circuits.
 GS circuits
 . **Ohms law**
 laws
 . **Ohms law**
 RT ∞ conductivity
 electric current
 electrical resistance
 electricity
 electromotive forces
 transconductance
 volt-ampere characteristics
- Ohzora satellite*
 USE **EXOS-C satellite**
- oil additives**
 GS additives
 . **oil additives**
- oil exploration**
 GS exploration
 . **oil exploration**
 RT crude oil
 drilling
 energy policy
 geology
 natural gas exploration
 offshore energy sources
 tar sands
 underwater resources
- oil fields**
 DEF Surface boundary of an area from which petroleum is obtained; may correspond to an oil pool or may be circumscribed by political or legal limits.
 GS resources
 . Earth resources
 . . **oil fields**
 RT crude oil
 drilling
 methane
 natural gas
 offshore energy sources
 oils
 tar sands
- oil pollution**
 GS pollution
 . environment pollution
 . . water pollution
 . . . **oil pollution**
 RT coastal ecology
 environmental cleanup
- wetlands
- oil recovery**
 RT energy technology
 reclamation
 ∞ recovery
 reuse
- oil slicks**
 UF *slicks*
 RT dumping
 environment pollution
 environmental cleanup
 oceanography
 pollution
 spilling
 water pollution
- oils**
 GS **oils**
 . castor oil
 . crude oil
 . fuel oils
 . lubricating oils
 . mineral oils
 . shale oil
 RT energy policy
 fats
 fuels
 greases
 hydraulic fluids
 kerogen
 lipid metabolism
 lubricants
 oil fields
 petroleum products
 pitch (material)
 retort processing
 tar sands
- Okazaki-Levy-Rudenko comet**
 (added May 1991)
 GS celestial bodies
 . comets
 . . **Okazaki-Levy-Rudenko comet**
- Okhansk meteorite**
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . chondrites
 **Okhansk meteorite**
 RT iron meteorites
- Oklahoma**
 GS nations
 . United States
 . . **Oklahoma**
 RT Lake Texoma (OK-TX)
- olefins*
 USE **alkenes**
- oleic acid**
 GS acids
 . carboxylic acids
 . . fatty acids
 . . . **oleic acid**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . **oleic acid**
- olfactory perception**
 UF *smell*
 GS perception
 . sensory perception
 . . **olfactory perception**
 RT chemoreceptors
 sense organs
- oligomers**
 (added January 1990)
 GS **oligomers**
 . dimers
 . trimers
 RT monomers
 polymer chemistry
 polymerization
- ∞ polymers
- oligonucleotides**
 (added August 2004)
 DEF Polymers made up of a few (2-20) nucleotides. In molecular genetics, they refer to a short sequence synthesized to match a region where a mutation is known to occur, and then used as a probe.
 GS biopolymers
 . **oligonucleotides**
 organic compounds
 . nucleotides
 . . **oligonucleotides**
 RT adenosines
 polymerase chain reaction
 ∞ polymers
- olivine**
 GS minerals
 . **olivine**
 . . forsterite
 RT dunite
 igneous rocks
 monticellite
 peridotite
 regolith
 rocks
 soils
- Oman**
 GS nations
 . **Oman**
- OMCVD (vapor deposition)*
 USE **metalorganic chemical vapor deposition**
- OME*
 USE **Orbit Maneuvering Engine (Space Shuttle)**
- Omega Navigation System**
 DEF A very long distance navigation system operating at approximately 10 kHz (kilohertz), in which hyperbolic lines of position are determined by measurement of the difference in travel time of continuous wave signals from two transmitters separated by 5000 nmi (nautical miles) to 6000 nmi (9000 km {kilometers} to 11000 km) or in which changes in distances from the transmitters are measured by counting RF (radio frequency) wavelengths in the space of lanes as the vehicle moves from a known position, the lanes being counted by phase comparison with a stable oscillator aboard the vehicle.
 GS navigation
 . **Omega Navigation System**
 RT air navigation
 ∞ systems
- omega-mesons**
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **omega-mesons**
 . . fermions
 . . . baryons
 **omega-mesons**
 . . hadrons
 . . . baryons
 **omega-mesons**
 . . . mesons
 **omega-mesons**
 . . nuclear particles
 . . bosons
 . . . mesons
 **omega-mesons**
 RT charged particles
 eta-mesons
- omegatrons**
 GS particle accelerators
 . cyclotrons
 . . **omegatrons**
- Omicron Ceti star**
 UF *Mira Ceti star*
 GS celestial bodies

omnidirectional antennas

- . stars
- . . . giant stars
- **Omicron Ceti star**
- . . . late stars
- cool stars
- Mira variables
- **Omicron Ceti star**
- . . . variable stars
- Mira variables
- **Omicron Ceti star**

omnidirectional antennas

GS antennas

- . **omnidirectional antennas**
- . . monopole antennas
- . . . whip antennas
- . . . turnstile antennas

RT dipole antennas
directional antennas
microwave antennas
radio antennas

omnidirectional radio ranges

GS navigation aids

- . beacons
- . . radio beacons
- . . . **omnidirectional radio ranges**
- self calibrating omnirange
- radio equipment
- . radio transmitters
- . . radio beacons
- . . . **omnidirectional radio ranges**
- self calibrating omnirange
- transmitters
- . radio transmitters
- . . radio beacons
- . . . **omnidirectional radio ranges**
- self calibrating omnirange

RT distance measuring equipment
radio navigation
solar compasses

Omnipol HC-3 helicopter
USE **HC-3 helicopter**

Omnipol L-29 aircraft
USE **L-29 jet trainer**

Omnipol Z-37 aircraft
USE **Z-37 aircraft**

omnirange navigation
USE **VHF omnirange navigation**

onboard computers
USE **airborne/spaceborne computers**

onboard data processing

DEF Processing of acquired data aboard an aircraft, satellite, etc., rather than transmission to ground stations for processing.

GS data processing

- . **onboard data processing**

RT airborne/spaceborne computers

∞ data

- flight management systems
- image processing
- microprocessors
- real time operation
- signal processing

onboard equipment

GS **onboard equipment**

- . airborne equipment
- . . airborne/spaceborne computers
- . . Light Airborne Multipurpose System
- . . . TERCOM
- . . . airborne lasers
- . . . aircraft equipment
- . . . bombing equipment
- . . . ejection seats
- flying ejection seats
- TERCOM
- . . . spacecraft equipment
- . . . spacecraft electronic equipment

RT airborne surveillance radar

∞ aircraft

- bubble technique
- crew procedures (preflight)

∞ equipment

- flight instruments
- flight operations
- flight safety
- heating equipment
- life support systems
- lighting equipment
- radar equipment
- radio equipment
- spacecraft instruments
- stowage (onboard equipment)
- survival equipment
- telecommunication

∞ test equipment

- training devices

oncogenes

(added July 2002)

DEF Genes that have the potential of turning any normal cell into one that is cancerous.

UF *cancer genes*
transforming genes

GS genes

- . **oncogenes**

RT cancer
gene expression
mutations

one dimensional flow

GS fluid flow

- . **one dimensional flow**

RT annular flow
axial flow
core flow
flow geometry
Hugoniot equation of state
three dimensional flow
two dimensional flow

one-phase flow
USE **single-phase flow**

anisotropy
USE **anisotropy**

on-line programming

GS computer programming

- . **on-line programming**

on-line systems

DEF Systems where the input data enters the computer directly from the point of origin and/or in which output data is transmitted directly to where it is used.

RT client server systems
computer programs
computer techniques
data management
data processing
information retrieval
information systems
integrated library systems
numerical data bases

∞ systems

- web services
- websites

Onsager phenomenological coefficient

GS coefficients

- . **Onsager phenomenological coefficient**

RT flux density
plasmas (physics)
statistical mechanics
variational principles

Onsager relationship

RT ∞ equilibrium
irreversible processes
thermodynamics

Ontario

GS nations

- . Canada
- . . **Ontario**

ontogenesis
USE **ontogeny**

ontogeny

UF *ontogenesis*

RT biogeny
evolution (development)
growth
neurophysiology

oocytes
USE **gametocytes**

Oort cloud

DEF A region of millions of comets between 30,000 and 100,000 A.U. from the sun. Comets are perturbed out of the Oort cloud by passing stars and fall into the inner solar system. The Oort cloud was named after the Dutch astronomer, Jan Hendrik Oort.

RT ∞ clouds

- comet nuclei
- comets
- Hale-Bopp comet
- Kuiper belt
- Nemesis (star)
- solar system
- trans-Neptunian objects

opacifiers

GS additives

- . **opacifiers**

RT ∞ agents
fillers

opacity

DEF Of an optical path, the reciprocal of transmission.

GS electromagnetic properties

- . optical properties
- . . **opacity**

RT absorptance
absorptivity
acoustics
atmospheric optics
attenuation coefficients
clarity
density (mass/volume)
electromagnetic absorption
haze
Kramers-Kronig formula
light (visible radiation)
light transmission
refractivity
translucence
transmission efficiency
transmissivity
transparence
turbidity
underwater optics
visibility

opalescence

RT iridescence
optical properties

open channel flow

GS fluid flow

- . internal flow
- . . channel flow
- . . . **open channel flow**
- . . liquid flow
- . . . **open channel flow**

RT cavity flow
laminar flow
meanders
pipe flow
turbulent flow
water flow

open circuit voltage

DEF The steady state or equilibrium potential of an electrode in absence of external current flow to or from the electrode.

GS potential energy

- . electric potential
- . . **open circuit voltage**

RT bias
capacitance
electrical properties
electrical resistivity
electromotive forces
energy conversion efficiency
overvoltage

∞ potential

power gain
short circuit currents
solar cells
static electricity
volt-ampere characteristics

open clusters

GS celestial bodies
. star clusters
. . . **open clusters**
. . . Pleiades cluster
. . . Praesepe star clusters
RT Population I stars

OPEN Project

DEF A former NASA project now absorbed by the International Solar Terrestrial Physics Project. It proposed a simultaneous study of plasmas in the Earth's magnetosphere and neighborhood using the following four instrumented spacecraft: interplanetary physics laboratory (IPL), geomagnetic tail laboratory (GTL), polar plasma laboratory (PPL), and equatorial magnetosphere laboratory (EML). Used for Origin of Plasmas in Earth Neighborhood.

UF *Origin of Plasmas in Earth Neighborhood*

GS programs
. NASA programs
. . . NASA space programs
. . . **OPEN Project**
. projects
. . . **OPEN Project**
. space programs
. . . NASA space programs
. . . **OPEN Project**

RT Earth atmosphere
Earth magnetosphere
plasma diagnostics
plasma physics
plasmasphere
satellite-borne instruments
space plasmas

open source licensing (computers)

(added April 2002)

DEF An arrangement between a software developer and the public that enables public access to a computer program's source code for the purpose of facilitating continued and efficient software development.

GS licensing
. **open source licensing (computers)**

RT computer programming
intellectual property
operating systems (computers)
software engineering
source programs

openings

UF *cut-outs*
GS **openings**
. apertures
. . . irises (mechanical apertures)
. . . numerical aperture
. . . synthetic apertures
. ports (openings)
. slits
RT annular ducts
cavities
cracks
curtains
doors
duct geometry
ducts
egress
exhaust nozzles
exhaust systems
gaps
gates (openings)
ingress (spacecraft passageway)
inlet nozzles
intake systems
orifices
outlets
passageways
perforated plates
pipe nozzles
slots

vents
windows (apertures)

operating costs

DEF The price for operating a system exclusive of the cost of the system itself.

GS costs
. **operating costs**
RT airline operations
economic analysis
energy policy
maintenance
production costs
systems analysis

operating systems (computers)

DEF Computer programs for expediting, controlling and/or recording computer use by other programs. Used for executive systems (computers).

UF *executive systems (computers)*
GS computer programs
. computer systems programs
. . . **operating systems (computers)**
. . . disk operating system (DOS)
. . . UNIX (operating system)
RT assembler routines
compilers
computer information security
computer systems design
input/output routines
MIMD (computers)
open source licensing (computers)
∞ routines
SIMD (computers)
∞ systems
windows (computer programs)

operating temperature

GS temperature
. **operating temperature**
RT ambient temperature
combustion temperature
high temperature superconductors
room temperature
wall temperature

operational amplifiers

GS amplifiers
. **operational amplifiers**
RT amplifier design
analog circuits
analog computers
differential amplifiers
feedback amplifiers
linear integrated circuits
transistor amplifiers

operational calculus

RT ∞ applications of mathematics
calculus
calculus of variations
differential equations
Fourier analysis
integral calculus
linear equations

operational hazards

GS hazards
. **operational hazards**
RT air piracy
aircraft hazards
cumulative damage
flight hazards
meteoroid hazards
noise (sound)
occupational diseases
radiation hazards

operational problems

RT airline operations
∞ operations
∞ problems
systems engineering

∞ operations

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air drop operations
air traffic control

airline operations
chemical engineering
chemical reactions
clinical medicine
deployment
Fishbowl Operation
loading operations
mechanization
mission planning
operational problems
operations research
orifices
preflight operations
premature operation
production engineering
programs
projects
rescue operations
sequencing
strategy
surgery
systems engineering

operations research

GS optimization
. **operations research**
RT ∞ applications of mathematics
computer systems simulation
computerized simulation
constraints
control systems design
critical path method
decision theory
Delphi method (forecasting)
dynamic programming
experiment design
forecasting
functions (mathematics)
game theory
group technology (manufacturing)
information theory
Lagrange multipliers
linear prediction
linear programming
management
management methods
management planning
mathematical models
mathematical programming
matrix management
minima
minimax technique
mission planning
multidisciplinary research
nonlinear programming
∞ operations
∞ paths
pattern method (forecasting)
probability theory
probe method (forecasting)
profile method (forecasting)
project planning
quality control
queueing theory
rand project
Rayleigh distribution
research and development
research management
risk
saddle points (game theory)
sequencing
simulation
statistical analysis
stochastic processes
strategy
∞ synthesis
synthesis (chemistry)
systems analysis
systems engineering
systems management
systems simulation
traveling salesman problem
urban development
war games

operator performance

GS human performance
. **operator performance**
RT astronaut performance

operators

computer systems performance
mental performance
∞ performance
pilot performance
psychomotor performance
situational awareness

∞ operators

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT operators (mathematics)
operators (personnel)
reactor cores

operators (mathematics)

UF *differential operators*
Fredholm operators
GS **operators (mathematics)**
. Bergman operator
. linear operators
RT functions (mathematics)
integral transformations
Laplace transformation
matrix theory
∞ operators
perturbation theory
S matrix theory

operators (personnel)

GS personnel
. **operators (personnel)**
. . . pilots (personnel)
. . . aircraft pilots
. . . test pilots
RT ∞ operators

Ophiuchi clouds

DEF Dense concentrations of interstellar gas near the stars Rho Ophiuchi and Zeta Ophiuchi.
RT cloud physics
∞ clouds
interstellar gas
interstellar matter
nebulae

ophthalmodynamometry

RT blood pressure
eye (anatomy)
vision

ophthalmology

GS medical science
. **ophthalmology**
RT electrophysiology
eye (anatomy)
eye diseases
eye examinations
miosis
vestibular nystagmus

Opik theory

RT nebulae
Orion constellation
Orion nebula
supernovae
∞ theories

optical absorption

USE **electromagnetic absorption**
light transmission

optical activity

DEF Ability to rotate the plane of vibration of polarized light to the right or left.
RT biochemistry
carbohydrates
chromophores
∞ optics
organic chemistry
polarimetry
polarized light
stereochemistry

optical amplifiers

USE **light amplifiers**

optical bistability

DEF A property of certain materials in which a nonlinear response is exhibited when under

the influence of an external driving coherent light, thereby allowing these materials to behave like optical switches.

GS electromagnetic properties
. optical properties
. . **optical bistability**
RT four-wave mixing
hysteresis
integrated optics
light transmission
nonlinear optics
optical data storage materials
optical equipment
optical measuring instruments
optical memory (data storage)
optical switching
optical waveguides
switching circuits

optical coatings

(added June 2005)
DEF Coatings applied to the surface of an optical element.
GS coatings
. **optical coatings**
. . birefringent coatings
RT antireflection coatings
coating
electromagnetic scattering
glass
lenses
light scattering
metal coatings
mirrors
optical equipment
optical materials
protective coatings
telescopes

optical communication

UF *laser communication*
light communication
optical signals
GS telecommunication
. communication
. . **optical communication**
. . . free-space optical communication
RT dye lasers
ground-air-ground communication
high power lasers
interplanetary communication
lasers
lunar communication
optical fibers
∞ optics
polarization modulation
quantum communication
satellite communication
space communication
spacecraft communication
tunable lasers
visual signals
wireless communication

optical computers

DEF Computers which use light rather than electricity for all or part of their operation. They perform multiple tasks in parallel as opposed to electronic computers which would perform those tasks sequentially. Such increased processing capability makes them suited for aerospace problems which involve systems that have a large number of degrees of freedom, i.e., large space structures, pattern recognition activity, and robotics.
GS data processing equipment
. computers
. . **optical computers**
RT coherent light
computer design
electro-optics
free-space optical interconnects
optical data processing
optical equipment
optical interconnects
optical memory (data storage)

optical control

(added September 1993)
DEF The control of light sensitive devices

by means optical radiation.

RT automatic control
cascade control
∞ control
control equipment
controllers
electric control
electronic control
electro-optics
feedback control
optical equipment
remote control

optical correction procedure

GS correction
. **optical correction procedure**
procedures
. **optical correction procedure**
RT adaptive optics
adjusting
anisoplanatism
errors
honeycomb mirrors
instrument errors
lens design
∞ optics
photographic measurement
photographs
position errors
seeing (astronomy)
segmented mirrors
self focusing

optical correlators

(added March 1990)
GS correlators
. **optical correlators**
RT image correlators
optical data processing

optical countermeasures

DEF Equipment for exploiting the vulnerability of laser guided weapon systems.
GS countermeasures
. **optical countermeasures**
RT air defense
antimissile defense
deception
electronic countermeasures
military technology
missile defense
optical radar
∞ optics
space surveillance (spaceborne)
stealth technology

optical coupling

GS coupling
. electromagnetic coupling
. . **optical coupling**
RT couples
cross coupling
cross polarization
laser arrays
laser mode locking
light transmission
microwave coupling
numerical aperture
∞ optics
phase locked systems
polarization (waves)

optical data processing

GS data processing
. **optical data processing**
RT character recognition
∞ data
data acquisition
data processing equipment
gray scale
image classification
image processing
lasers
light modulators
light valves
. optical computers
optical correlators
optical disks
optical relay systems
∞ optics

- photonics
 - ∞ processing
 - readers
 - scanners
 - tomography
- optical data storage materials**
 - GS optical materials
 - . **optical data storage materials**
 - RT ∞ data
 - data recording
 - data storage
 - laser applications
 - optical bistability
 - optical memory (data storage)
 - ∞ optics
 - photographic film
 - video disks
- optical density**
 - DEF The image intensity or density in terms of, or measured by, a reflectance densitometer.
 - RT ∞ density
 - microdensitometers
 - ∞ optics
 - translucence
 - transmittance
 - transparence
 - turbidity
 - underwater optics
- optical depolarization**
 - RT light (visible radiation)
 - ∞ optics
 - polarized light
- optical depth*
 - USE **optical thickness**
- optical disks**
 - UF *compact disk read-only memory devices*
 - GS computer components
 - . computer storage devices
 - . . **optical disks**
 - RT CD-ROM
 - data storage
 - laser applications
 - optical data processing
 - optical equipment
 - optical memory (data storage)
 - video disks
- optical emission*
 - USE **light emission**
- optical emission spectroscopy**
 - GS spectroscopy
 - . **optical emission spectroscopy**
 - . . laser spectroscopy
 - . . . optogalvanic spectroscopy
 - RT auroral spectroscopy
 - electron spectroscopy
 - emission spectra
 - light (visible radiation)
 - ∞ optics
- optical equipment**
 - GS **optical equipment**
 - . binoculars
 - . cameras
 - . . Baker-Nunn camera
 - . . ballistic cameras
 - . . CCD cameras
 - . . Delft camera
 - . . diffraction limited cameras
 - . . faint object camera
 - . . high speed cameras
 - . . . framing cameras
 - . . digital cameras
 - . . I2S cameras
 - . . Lallemand cameras
 - . . multispectral band cameras
 - . . panoramic cameras
 - . . pinhole cameras
 - . . Schmidt cameras
 - . . streak cameras
 - . . television cameras
 - . collimators
 - . endoscopes
 - . eyepieces
 - . heliometers
 - . . pyroheliometers
 - . . image converters
 - . . . telescopes
 - . . image tubes
 - . . . thermicons
 - . laser doppler velocimeters
 - . optical gyroscopes
 - . optical measuring instruments
 - . . cathetometers
 - . . diffractometers
 - . . Ebert spectrometers
 - . . ellipsometers
 - . . etalons
 - . . geodimeters
 - . . haploscopes
 - . . infrared spectrometers
 - . . . filter wheel infrared spectrometers
 - . . light scattering meters
 - . . microdensitometers
 - . . nephelometers
 - . . oculometers
 - . . optical pyrometers
 - . . optical range finders
 - . . . laser range finders
 - . . photogoniometers
 - . . photometers
 - . . . electrophotometers
 - . . . ultraviolet spectrometers
 - high dispersion spectrographs
 - Total Ozone Mapping Spectrometer
 - . . quantum well infrared photodetectors
 - . . . ultraviolet spectrophotometers
 - . . polarimeters
 - . . reflectometers
 - . . . microwave reflectometers
 - . . refractometers
 - . . sextants
 - . . spectrophotometers
 - . . . infrared spectrophotometers
 - . . . ultraviolet spectrophotometers
 - . . transits
 - . . . theodolites
 - cinetheodolites
 - . . transmissometers
 - . optical microscopes
 - . optical scanners
 - . . flying spot scanners
 - . . multispectral band scanners
 - . . thematic mappers (LANDSAT)
 - . periscopes
 - . . photographic rectifiers
 - . . polariscopes
 - . . Senarmont polariscopes
 - . prisms
 - . . scatter plates (optics)
 - . spectroheliographs
 - . stroboscopes
 - . . wide angle lenses
 - RT absorption spectroscopy
 - acoustic microscopes
 - circumsolar telescopes
 - densitometers
 - Fabry-Perot spectrometers
 - geometrical optics
 - horizon scanners
 - infrared interferometers
 - infrared scanners
 - interferometers
 - lenses
 - look angles (electronics)
 - Mach-Zehnder interferometers
 - microchannels
 - microscopes
 - mirrors
 - monochromators
 - optical bistability
 - optical coatings
 - optical computers
 - optical control
 - optical disks
 - ∞ optics
 - optogalvanic spectroscopy
 - photographic equipment
 - radio telescopes
 - reflecting telescopes
 - refracting telescopes
 - reticles
 - Scanner project
 - scanners
 - spectrometers
 - telescopes
 - tripods
 - video equipment
 - optical fibers**
 - GS fibers
 - . **optical fibers**
 - . . scintillating fibers
 - optical materials
 - . **optical fibers**
 - . . scintillating fibers
 - waveguides
 - . optical waveguides
 - . . **optical fibers**
 - . . . scintillating fibers
 - RT Bragg gratings
 - communication cables
 - fiber lasers
 - fiber optics
 - fly by light control
 - glass fibers
 - numerical aperture
 - optical communication
 - plastic fibers
 - transmission lines
 - optical filters**
 - GS electromagnetic wave filters
 - . **optical filters**
 - . . birefringent filters
 - . . infrared filters
 - . . ultraviolet filters
 - RT adaptive filters
 - apodization
 - bandpass filters
 - bandstop filters
 - Bragg gratings
 - diaphragms (mechanics)
 - didymium
 - electric filters
 - filtergrams
 - ∞ filters
 - ∞ gratings
 - gratings (spectra)
 - high pass filters
 - lenses
 - low pass filters
 - optical relay systems
 - ∞ optics
 - photographic equipment
 - photographic film
 - Rowland circles
 - sunglasses
 - transmission
 - tunable filters
 - optical flow (image analysis)**
 - (added May 1993)
 - RT computer vision
 - image analysis
 - image processing
 - ∞ optics
 - scene analysis
 - three dimensional motion
 - optical generators*
 - USE **laser cavities**
 - optical gyroscopes**
 - GS gyroscopes
 - . **optical gyroscopes**
 - optical equipment
 - . **optical gyroscopes**
 - RT laser gyroscopes
 - ∞ optics
 - Sagnac effect
 - optical heterodyning**
 - GS heterodyning
 - . **optical heterodyning**
 - RT Doppler effect
 - light modulation

optical illusion

- ∞ optics
- optical illusion**
 - GS psychological effects
 - . illusions
 - . . . **optical illusion**
 - . . . elevator illusion
 - RT moon illusion
- ∞ optics

optical images
USE **images**

optical interconnects
(added June 1998)
GS **optical interconnects**

- . free-space optical interconnects

- RT connectors
- electric connectors
- integrated optics
- optical computers
- optical switching
- optoelectronic devices
- photonics

optical maser modulation
USE **light modulation**

optical masers
USE **lasers**

optical materials
(added September 1988)
GS **optical materials**

- . glass fibers
- . optical data storage materials
- . optical fibers
- . . . scintillating fibers

- RT aspheric optics
- chromophores
- glass
- infrared windows
- lenses
- ∞ materials
- materials selection
- mirrors
- optical coatings
- windows (apertures)

optical measurement
SN (MEASUREMENTS OF OPTICAL PROPERTIES, QUANTITIES OR CONDITIONS)

GS **optical measurement**

- . colorimetry
- . optometry
- . photometry
- . . . astronomical photometry
- . . . stellar spectrophotometry
- . . . electrophotometry
- . . . infrared photometry
- . . . spectrophotometry
- . . . stellar spectrophotometry
- . . . telephotometry
- . . . ultraviolet photometry
- . . . visual photometry
- . polarimetry
- . . . astronomical polarimetry

- RT chemical analysis
- collimators
- densitometers
- diffractometers
- electro-optical photography
- ellipsometry
- emissivity
- etalons
- Faraday effect
- gamma ray spectrometers
- geodimeters
- geometrical optics
- grazing incidence
- in situ measurement
- infrared interferometers
- interferometers
- light (visible radiation)
- ∞ measurement
- microdensitometers
- modulation transfer function
- nephelometers
- nonintrusive measurement
- ∞ optics

- phase contrast
- photographic measurement
- photometers
- photothermal deflection spectroscopy
- polarimeters
- pressure sensitive paints
- ray tracing
- reflectance
- reflectometers
- refractometers
- Ronchi test
- spectral signatures
- spectrometers
- spectrophotometers
- stroboscopes

optical measuring instruments
SN (INSTRUMENTS UTILIZING OPTICAL PRINCIPLES FOR MEASUREMENT)

UF *optical sensors*

GS measuring instruments

- . **optical measuring instruments**
- . . cathetometers
- . . diffractometers
- . . Ebert spectrometers
- . . ellipsometers
- . . etalons
- . . geodimeters
- . . haploscopes
- . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . light scattering meters
- . . microdensitometers
- . . nephelometers
- . . oculometers
- . . optical pyrometers
- . . optical range finders
- . . . laser range finders
- . . photogoniometers
- . . photometers
- . . . electrophotometers
- . . . ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . . . quantum well infrared photodetectors
- . . . ultraviolet spectrophotometers
- . . polarimeters
- . . reflectometers
- . . . microwave reflectometers
- . . refractometers
- . . sextants
- . . spectrophotometers
- . . . infrared spectrophotometers
- . . . ultraviolet spectrophotometers
- . . transits
- . . . theodolites
- cinetheodolites
- . . . transmissometers

- optical equipment
- . **optical measuring instruments**
- . . cathetometers
- . . diffractometers
- . . Ebert spectrometers
- . . ellipsometers
- . . etalons
- . . geodimeters
- . . haploscopes
- . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . light scattering meters
- . . microdensitometers
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- . . . microwave reflectometers
- . . refractometers
- . . sextants
- . . spectrophotometers
- . . . infrared spectrophotometers
- . . . ultraviolet spectrophotometers
- . . transits
- . . . theodolites
- cinetheodolites
- . . transmissometers

RT absorption spectroscopy

- cinespectrographs
- colorimetry
- densitometers
- Fabry-Perot spectrometers
- faint object camera
- goniometers
- guidance sensors
- infrared interferometers
- interferometers
- laser doppler velocimeters
- Mach-Zehnder interferometers
- microscopes
- Miros system
- monochromators
- multispectral tracking telescopes
- optical bistability

- ∞ optics
- optogalvanic spectroscopy
- periscopes
- polarimetry
- polariscopes
- radiation measuring instruments
- reflecting telescopes
- refracting telescopes
- self focusing
- Senarmont polariscopes
- solar instruments
- telephotometry
- telescopes

optical memory (data storage)
GS memory (computers)

- . **optical memory (data storage)**

- RT associative memory
- CD-ROM
- coherent light
- computer storage devices
- ∞ data
- holography
- lasers
- optical bistability
- optical computers
- optical data storage materials
- optical disks
- ∞ optics
- video disks

optical MEMS
(added December 2005)
USE **microoptoelectromechanical systems**

optical methods
USE **optics**

optical microscopes
GS microscopes

- . **optical microscopes**
- optical equipment
- . **optical microscopes**

- RT electron microscopes
- ∞ optics

optical modulation
USE **light modulation**

optical paths
DEF Lines of sight or the paths followed by rays of light through optical systems.- RT diffraction paths
- geometrical optics
- holographic optical elements
- multipath transmission
- ∞ optics
- ∞ paths
- phase contrast
- photon beams
- Sagnac effect
- underwater optics

- Voigt effect
- wave dispersion
- optical polarization**
 - RT circular polarization
 - linear polarization
 - optical properties
 - ∞ optics
 - ∞ polarization
 - polarization modulation
 - polarized light
 - polarizers
 - polarography
- optical properties**
 - SN (INCLUDES PROPERTIES AND EFFECTS OF VISIBLE, INFRARED AND ULTRAVIOLET ELECTROMAGNETIC WAVES)
 - GS electromagnetic properties
 - . **optical properties**
 - . . . absorptance
 - . . . absorptivity
 - . . . birefringence
 - . . . Kerr electrooptical effect
 - . . . brightness
 - . . . sky brightness
 - . . . brightness distribution
 - . . . color
 - . . . iridescence
 - . . . stellar color
 - . . . water color
 - . . . dichroism
 - . . . luminosity
 - . . . stellar luminosity
 - . . . opacity
 - . . . optical bistability
 - . . . optical reflection
 - . . . phosphorescence
 - . . . photoconductivity
 - . . . photoviscoelasticity
 - . . . radiance
 - . . . reflectance
 - . . . bidirectional reflectance
 - . . . spectral reflectance
 - . . . refractivity
 - . . . photorefractivity
 - . . . stigmatism
 - . . . translucence
 - . . . transmissivity
 - . . . transmittance
 - . . . transparency
 - . . . turbidity
 - RT acousto-optics
 - albedo
 - birefringent filters
 - clarity
 - coefficients
 - coherent radiation
 - cross polarization
 - darkness
 - diffraction
 - electrical properties
 - electromagnetic absorption
 - emittance
 - excitons
 - Faraday effect
 - geometrical optics
 - glare
 - glass
 - gradient index optics
 - haze
 - infrared absorption
 - isotropy
 - Kerr magneto-optical effect
 - light (visible radiation)
 - light transmission
 - lumens
 - luminance
 - lunar albedo
 - metallic glasses
 - numerical aperture
 - opalescence
 - optical polarization
 - ∞ optics
 - ∞ orientation
 - photoelectricity
 - photons
 - phototropism
 - physical optics
 - ∞ physical properties
 - polarization (waves)
 - ∞ properties
 - ∞ solid state physics
 - surface properties
 - thermochromic materials
 - thermodynamic properties
 - visibility
 - wave dispersion
- optical pumping**
 - GS **optical pumping**
 - . laser pumping
 - RT electron pumping
 - electron-hole drops
 - excimer lasers
 - fiber lasers
 - gamma ray lasers
 - glass lasers
 - HCN lasers
 - krypton fluoride lasers
 - laser cooling
 - laser propulsion
 - lasers
 - maser pumping
 - metal vapor lasers
 - neodymium lasers
 - nuclear pumped lasers
 - nuclear pumping
 - ∞ optics
 - pulse repetition rate
 - ∞ pumping
 - rare gas-halide lasers
 - solar-pumped lasers
 - stimulated emission
 - stimulated emission devices
- optical pyrometers**
 - DEF Devices for measuring the temperature of an incandescent radiating body by comparing its brightness for a selected wavelength interval within the visible spectrum with that of a standard source; a monochromatic radiation pyrometer.
 - GS measuring instruments
 - . optical measuring instruments
 - . . **optical pyrometers**
 - . temperature measuring instruments
 - . . **optical pyrometers**
 - optical equipment
 - . optical measuring instruments
 - . . **optical pyrometers**
 - RT ∞ optics
 - radiation pyrometers
- optical radar**
 - UF *laser radar*
 - lidar*
 - GS radar
 - . **optical radar**
 - . . differential absorption lidar
 - RT infrared radar
 - laser altimeters
 - laser applications
 - optical countermeasures
 - ∞ optics
 - over-the-horizon radar
 - radar detection
- optical range finders**
 - GS measuring instruments
 - . distance measuring equipment
 - . . range finders
 - . . . **optical range finders**
 - laser range finders
 - . optical measuring instruments
 - . . **optical range finders**
 - . . . laser range finders
 - optical equipment
 - . optical measuring instruments
 - . . **optical range finders**
 - . . . laser range finders
 - RT lunar ranging
 - ∞ optics
- optical reflection**
 - GS electromagnetic properties
 - . optical properties
 - . . **optical reflection**
 - reflection
 - ∞ **optical reflection**
 - antireflection coatings
 - electromagnetic absorption
 - geometrical optics
 - incident radiation
 - infrared reflection
 - light transmission
 - ∞ optics
 - reflectance
 - reflected waves
 - spread reflection
- optical relay systems**
 - DEF Systems using photocouplers in which the output device is a light sensitive switch that provides the same on and off operations as the contacts of a relay.
 - RT electro-optics
 - imaging techniques
 - laser applications
 - optical data processing
 - optical filters
 - optical resonators
 - optical switching
 - ∞ optics
 - pattern recognition
 - ∞ systems
- optical resonance**
 - GS emission
 - . light emission
 - . . luminescence
 - . . . **optical resonance**
 - resonance
 - . **optical resonance**
 - nuclear pumped lasers
 - RT nuclear pumped lasers
 - ∞ optics
 - plasma radiation
 - plasma spectra
 - resonance lines
 - spectrum analysis
- optical resonators**
 - GS resonators
 - . **optical resonators**
 - RT field mode theory
 - laser modes
 - laser outputs
 - lasers
 - light modulation
 - mirrors
 - optical relay systems
 - ∞ optics
- optical satellite tracking program**
 - RT ∞ optics
 - satellite tracking
- optical scanners**
 - DEF A light source and phototube combined as a single unit for scanning moving strips of paper or other materials in photoelectric side-register control systems.
 - GS optical equipment
 - . **optical scanners**
 - . . flying spot scanners
 - . . multispectral band scanners
 - . . . thematic mappers (LANDSAT)
 - scanners
 - . **optical scanners**
 - . . flying spot scanners
 - . . multispectral band scanners
 - . . . thematic mappers (LANDSAT)
 - RT character recognition
 - data acquisition
 - monitors
 - ∞ optics
 - photon beams
 - readers
 - television cameras
- optical sensors*
- USE **optical measuring instruments**
- optical signals*
- USE **optical communication**
- optical slant range**
 - DEF The horizontal distance in a homogeneous atmosphere for which the attenuation is

optical switching

the same as that actually encountered along the true oblique path.

- GS distance
- . **optical slant range**
- RT ∞ optics
- radar range

optical spectrum

- USE **light (visible radiation) spectra**

optical switching

- UF *electro-optical switching*
- optoelectronic switching*
- photonic switching*
- GS switching
- . **optical switching**
- RT acousto-optics
- asynchronous transfer mode
- electro-optics
- free-space optical interconnects
- integrated optics
- light modulation
- magneto-optics
- optical bistability
- optical interconnects
- optical relay systems
- optoelectronic devices
- photonics
- semiconductor lasers
- switching circuits

optical thickness

DEF A measure of the cumulative attenuation of electromagnetic radiation in transit through a medium. In calculations of the transfer of radiant energy, the mass of a given absorbing or emitting material lying in a vertical column of unit cross sectional area and extending between two specific levels. Used for optical depth.

- UF *optical depth*
- RT antireflection coatings
- Fermat principle
- ∞ optics
- refractivity
- thickness

optical tracking

- UF *visual tracking*
- GS tracking (position)
- . **optical tracking**
- RT ballistic cameras
- boresight error
- boresights
- compensatory tracking
- Global Tracking Network
- infrared tracking
- minitrack system
- multiple target tracking
- multispectral tracking telescopes
- oculometers
- ∞ optics
- photographic tracking
- range and range rate tracking
- space detection and tracking system
- spacecraft tracking
- STDN (network)
- visual observation

optical transfer function

- UF *OTF*
- GS functions (mathematics)
- . transfer functions
- . . **optical transfer function**
- RT adaptive optics
- cost analysis
- figure of merit
- imaging techniques
- modulation transfer function
- ∞ optics
- ∞ performance
- spaceborne telescopes
- system effectiveness
- systems analysis
- systems engineering
- telescopes

optical transition

- RT electron transitions
- emission spectra

- Franck-Condon principle
- lasing
- luminescence
- ∞ optics

optical waveguides

DEF Any device or component that guides optical energy.

- GS waveguides
- . **optical waveguides**
- . . optical fibers
- . . . scintillating fibers
- RT corrugated waveguides
- dielectric waveguides
- integrated optics
- laser outputs
- light beams
- light transmission
- optical bistability
- ∞ optics
- photonics
- photorefractivity
- waveguide lasers

∞ optics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Branch of physical science concerned with the transmission, generation, manipulation, and detection of electromagnetic radiation in the wavelength range from vacuum ultraviolet to the far infrared.

- UF *optical methods*
- RT acousto-optics
- adaptive optics
- angular resolution
- aspheric optics
- asphericity
- astigmatism
- atmospheric optics
- atom optics
- Cassegrain optics
- caustics (optics)
- chromophores
- crystal optics
- defocusing
- diffraction patterns
- diffraction propagation
- diffraction optics
- electron optics
- electro-optical effect
- electro-optical photography
- electro-optics
- fiber optics
- foci
- Fresnel lenses
- geometrical optics
- gradient index optics
- Huygens principle
- images
- imaging techniques
- integrated optics
- ion optics
- laser cavities
- lasers
- lens design
- lenses
- light (visible radiation)
- light amplifiers
- light emission
- light modulation
- magneto-optics
- mirrors
- nonlinear optics
- optical activity
- optical communication
- optical correction procedure
- optical countermeasures
- optical coupling
- optical data processing
- optical data storage materials
- optical density
- optical depolarization
- optical emission spectroscopy
- optical equipment
- optical filters
- optical flow (image analysis)
- optical gyroscopes
- optical heterodyning

- optical illusion
- optical measurement
- optical measuring instruments
- optical memory (data storage)
- optical microscopes
- optical paths
- optical polarization
- optical properties
- optical pumping
- optical pyrometers
- optical radar
- optical range finders
- optical reflection
- optical relay systems
- optical resonance
- optical resonators
- optical satellite tracking program
- optical scanners
- optical slant range
- optical thickness
- optical tracking
- optical transfer function
- optical transition
- optical waveguides
- parallax
- photics
- photoelastic analysis
- physical optics
- prefocusing
- quantum optics
- reflection
- resolution
- scatter plates (optics)
- ∞ science
- Snells law
- spectroscopy
- squeezed states (quantum theory)
- Starlab
- underwater optics
- x ray optics

optimal control

- UF *optimum control*
- GS automatic control
- . **optimal control**
- . . H-2 control
- . . H-infinity control
- . . linear quadratic Gaussian control
- . . time optimal control
- optimization
- . **optimal control**
- . . H-2 control
- . . H-infinity control
- . . linear quadratic Gaussian control
- . . time optimal control
- RT adaptive control
- ∞ control
- control systems design
- control theory
- differential games
- feedback control
- feedforward control
- genetic algorithms
- inventory controls
- Kalman-Schmidt filtering
- linear quadratic regulator
- model reference adaptive control
- multivariable control
- parameter identification
- pursuit-evasion games
- tracking problem
- trajectory control
- zero sum games

optimization

DEF The procedure used in the design of a system to maximize or minimize some performance index. May entail the selection of a component, a principle of operation, or a technique.

- UF *minimization*
- reduction (mathematics)*
- GS **optimization**
- . flight optimization
- . genetic algorithms
- . linear quadratic regulator
- . . linear quadratic Gaussian control
- . mathematical programming
- . . dynamic programming

- . . linear programming
- . . nonlinear programming
- . . quadratic programming
- . multidisciplinary design optimization
- . operations research
- . optimal control
 - . . H-2 control
 - . . H-infinity control
 - . . linear quadratic Gaussian control
 - . . time optimal control
- . design optimization
- . simplex method
- . trajectory optimization
- . shape optimization

RT ∞ applications of mathematics
backpropagation (artificial intelligence)
Bellman theory
Bolza problems
constraints
correlation

∞ design
design analysis
differential calculus
efficiency
extremum values
games
gradients
greedy algorithms
Hessian matrices
Kalman filters
Kalman-Schmidt filtering
Lagrange multipliers
least squares method
maxima
minima
parameter identification
penalty function
planning
pontryagin principle
quality control
range (extremes)

∞ reduction
scheduling
sensitivity analysis
simulated annealing
static models
steepest descent method
stopping
system identification
Taguchi methods
trajectory control
Wiener filtering

optimum control

USE **optimal control**

optimum thrust programming

USE **thrust programming**

options

RT alternatives
contracts
selection
site selection
subcontracts

optoelectronic devices

DEF Electronic devices combining optic and electric ports.

GS **optoelectronic devices**

- . light emitting diodes
- . photodiodes
- . phototransistors

RT electro-optics
fiber optics
free-space optical interconnects
integrated circuits
integrated optics
microoptoelectromechanical systems
optical interconnects
optical switching
photonics

optoelectronic switching

USE **optical switching**

optogalvanic spectroscopy

DEF A method of obtaining absorption spectra of atomic and molecular species in flames and electrical discharges by measuring

voltage and current changes upon laser irradiation.

GS spectroscopy

- . absorption spectroscopy
- . . **optogalvanic spectroscopy**
- . optical emission spectroscopy
- . . laser spectroscopy
- . . . **optogalvanic spectroscopy**

utilization

- . laser applications
- . . laser spectroscopy
- . . . **optogalvanic spectroscopy**

RT flame spectroscopy
Fraunhofer lines
gas spectroscopy
infrared spectroscopy
molecular spectroscopy
optical equipment
optical measuring instruments
Raman spectroscopy
ultraviolet spectroscopy
volt-ampere characteristics

optometry

GS optical measurement

- . **optometry**

RT anastigmatism
blindness
eye (anatomy)
haplosopes

∞ measurement
medical science
vision

oral hygiene

GS hygiene

- . **oral hygiene**

RT cleanliness
dentistry
health
public health
teeth
tooth diseases

oratory

USE **public speaking**

ORBIS

UF *orbiting radio beacon ionospheric sounder*

GS artificial satellites

- . scientific satellites
- . . **ORBIS**
- . . . ORBIS CAL satellite

RT ionospheric propagation
ionospheric sounding
radio beacons

ORBIS CAL satellite

GS artificial satellites

- . gravity gradient satellites
- . . **ORBIS CAL satellite**
- . scientific satellites
- . . ORBIS
- . . . **ORBIS CAL satellite**

RT ionospheric propagation
ionospheric sounding
radio beacons

orbit calculation

UF *satellite orbit calculation*

GS computation

- . **orbit calculation**
- . . minimum variance orbit determination
- . . orbital position estimation

orbit determination

- . **orbit calculation**
- . . minimum variance orbit determination
- . . orbital position estimation

RT flight mechanics
Goddard Trajectory Determination System
orbital elements
orbital mechanics
orbital resonances (celestial mechanics)

quadratures

orbit decay

RT aerodynamic drag
atmospheric entry
flight mechanics
orbital mechanics
satellite lifetime
spacecraft breakup

orbit determination

(added December 1998)

GS **orbit determination**

- . airborne range and orbit determination
- . orbit calculation
- . . minimum variance orbit determination
- . . orbital position estimation

RT Global Positioning System
position errors
satellite tracking
space navigation
spacecraft control
spacecraft position indicators

orbit equations

USE **orbital mechanics**

orbit insertion

(added January 1991)

DEF The process by which a spacecraft enters into a desired orbit around a celestial body.

GS insertion

- . **orbit insertion**

RT ascent trajectories
orbital maneuvers
orbital mechanics
payload delivery (STS)
satellite orbits
spacecraft launching
spacecraft maneuvers
spacecraft orbits
transfer orbits

Orbit Maneuvering Engine (Space Shuttle)

UF *OME*

GS engines

- . rocket engines
- . . microrocket engines
- . . . **Orbit Maneuvering Engine (Space Shuttle)**

RT Aeromaneuvering Orbit to Orbit Shuttle
orbital maneuvers
space shuttles

orbit perturbation

UF *evection*

GS perturbation

- . **orbit perturbation**
- . . satellite perturbation

RT drift rate
long term effects
lunar effects
orbital elements
orbital mechanics
orbital resonances (celestial mechanics)
perturbation theory
Schach effect
vinti theory

orbit spectrum utilization

DEF Telecommunication techniques in spectrum conservation for reducing user costs.

RT communication satellites
frequency assignment
radio relay systems
satellite orbits
systems engineering
television systems

orbit transfer vehicles

DEF Concept of propulsive (velocity producing) rockets or stages for use with crew transfer modules, manned sortie modules, or other payloads. Used for OTV.

orbital assembly

UF *OTV*
GS **orbit transfer vehicles**
. Aeromaneuvering Orbit to Orbit Shuttle
RT Inertial Upper Stage
orbital maneuvering vehicles
orbital servicing
payload delivery (STS)
payload deployment & retrieval system
payload retrieval (STS)
space shuttles
space transportation
space tugs
∞ spacecraft
∞ vehicles

orbital assembly

UF *construction in space*
spacecraft orbital assembly
GS assembling
. **orbital assembly**
RT Crew Equipment Translation Aid (ISS)
expandable structures
inflatable spacecraft
self erecting devices
space erectable structures
Space Operations Center (NASA)
Space Station Mobile Servicing System
space station modules
space station structures
spacecraft modules
spacecraft structures

orbital breakup

USE **spacecraft breakup**

orbital elements

DEF A set of seven parameters defining the orbit of a body attracted by a central, inverse square force.

RT apsides
∞ elements
orbit calculation
orbit perturbation
orbits
perihelions
perturbation theory

Orbital Flight Test 1 (shuttle)

USE **Space Transportation System 1 flight**

Orbital Flight Test 2 (shuttle)

USE **Space Transportation System 2 flight**

Orbital Flight Test 3 (shuttle)

USE **Space Transportation System 3 flight**

Orbital Flight Test 4 (shuttle)

USE **Space Transportation System 4 flight**

orbital flight tests (shuttle)

USE **Space Transportation System flights**

orbital launching

SN (LAUNCHING FROM AN ORBIT--EXCLUDES LAUNCHING INTO ORBIT FROM GROUND)
GS launching
. rocket launching
. . **orbital launching**
RT interplanetary trajectories
lunar launch
payload delivery (STS)
spacecraft launching
transfer orbits

orbital lifetime

DEF The predicted lifetime of a satellite in orbit, usually based on such criteria as solar flux density, atmospheric density, the lessening of the eccentricity of elliptical orbits, or the gravitational effects of the sun or the moon.

RT attitude control

Earth orbits

orbital maneuvering vehicles

RT orbit transfer vehicles
orbital servicing
power modules (STS)
remotely piloted vehicles
∞ spacecraft

orbital maneuvers

GS maneuvers
. **orbital maneuvers**
. . orbital rendezvous
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT formation flying
orbit insertion
Orbit Maneuvering Engine (Space Shuttle)
space navigation
space shuttles

orbital mechanics

UF *orbit equations*
GS mechanics (physics)
. classical mechanics
. . space mechanics
. . . **orbital mechanics**
. . . . Kepler laws
. . . . minimum variance orbit determination
RT Aeromaneuvering Orbit to Orbit Shuttle
apsides
astrodynamics
celestial mechanics
circular orbits
drift rate
Earth orbital rendezvous
Earth orbits
Earth-Mars trajectories
Earth-Mercury trajectories
Earth-Moon system
elliptical orbits
equatorial orbits
flight mechanics
flight optimization
Goddard Trajectory Determination System
Hansen lunar theory
Hill lunar theory
Hill method
interplanetary trajectories
interplanetary transfer orbits
Lagrangian equilibrium points
lunar orbital rendezvous
lunar orbits
many body problem
moon-Earth trajectories
orbit calculation
orbit decay
orbit insertion
orbit perturbation
orbital resonances (celestial mechanics)
orbits
parking orbits
perturbation
planetary landing
Poynting-Robertson effect
quadratures
rendezvous
rendezvous trajectories
retrograde orbits
round trip trajectories
satellite orbits
satellite perturbation
space navigation
spacecraft orbits
stationkeeping
swingby technique
thrust programming
trajectory analysis
transearth injection
transfer orbits
translunar injection
twenty-four hour orbits

two body problem

orbital motion

USE **orbits**

orbital position estimation

GS computation
. orbit calculation
. . **orbital position estimation**
estimating
. **orbital position estimation**
orbit determination
. orbit calculation
. . **orbital position estimation**
RT celestial sphere
Goddard Trajectory Determination System
navigation
∞ orientation
position (location)
position errors
∞ range
satellite orbits
spacecraft orbits
spacecraft position indicators
state estimation

orbital rendezvous

UF *satellite rendezvous*
GS maneuvers
. orbital maneuvers
. . **orbital rendezvous**
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
rendezvous
. space rendezvous
. . **orbital rendezvous**
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT Atlas launch vehicles
autonomous docking
multiple docking adapters
payload retrieval (STS)
rendezvous guidance
rendezvous spacecraft
rendezvous trajectories
spacecraft docking
spacecraft trajectories
tethering

orbital resonances (celestial mechanics)

DEF Systems of two or more satellites (including planets) that orbit the same primary and whose orbital mean motions are in a ratio of small whole numbers.

GS resonance

. **orbital resonances (celestial mechanics)**

RT astrodynamics
celestial mechanics
gravitational effects
libration
librational motion
orbit calculation
orbit perturbation
orbital mechanics
oscillations
planetary orbits
planetary systems
satellite orbits
solar orbits

orbital servicing

DEF The replenishing of propellants, pressurants, coolants, and the replacement of modules and experiments, during some phase of a spacecraft flight to extend the mission and lifetime, or change the payloads.

UF *satellite repair*

RT Columbus space station
large space structures
man tended free flyers
manned maneuvering units
orbit transfer vehicles
orbital maneuvering vehicles
payload transfer
Space Operations Center (NASA)
space platforms
Space Shuttle payloads
Space Station Freedom

space stations
 space transportation system
 space tugs
 telerobotics

orbital shots

RT ∞ shot
 spacecraft launching

orbital simulators

USE **space simulators**

orbital space tests

RT CRRES (satellite)
 environmental tests
 large space structures
 space mechanics
 space stations
 structural analysis
 ∞ tests

Orbital Test Satellite (ESA)

USE **OTS (ESA)**

orbital transfer

USE **transfer orbits**

orbital velocity

DEF The average velocity at which an Earth satellite or other orbiting body travel around its primary. The velocity of such a body at any given point in its orbit, i.e., orbital velocity at the apogee is less than at the perigee.

GS rates (per time)
 . **orbital velocity**
 velocity

. **orbital velocity**

RT angular velocity
 escape velocity

∞ hypervelocity
 velocity errors

orbital workers

GS personnel
 . flying personnel
 . . astronauts
 . . . **orbital workers**
 RT astronaut locomotion
 extravehicular activity
 space maintenance
 space tools
 work capacity

orbital workshops

GS artificial satellites
 . **orbital workshops**
 . . Saturn workshops
 . . . Saturn 1 workshop
 . . . Saturn 5 workshop
 . . Skylab 1
 . . Skylab 2
 . . Skylab 3
 . . Skylab 4
 manned spacecraft
 . **orbital workshops**
 . . Saturn workshops
 . . . Saturn 1 workshop
 . . . Saturn 5 workshop
 . . Skylab 1
 . . Skylab 2
 . . Skylab 3
 . . Skylab 4
 RT Apollo extension system
 containerless melts
 manned orbital laboratories
 Skylab program
 space laboratories
 space processing
 space stations

orbitals

GS **orbitals**
 . electron orbitals
 . molecular orbitals
 . Slater orbitals
 RT Jahn-Teller effect
 orbits

Schwarzschild metric

Orbiting Astronomical Observatory
 USE **OAQ**

orbiting dipoles

GS electric charge
 . electric dipoles
 . . **orbiting dipoles**
 RT communication equipment
 ∞ dipoles

Orbiting Frog Otolith

GS artificial satellites
 . biosatellites
 . . **Orbiting Frog Otolith**
 spaceborne experiments
 . **Orbiting Frog Otolith**
 RT biological effects
 biometrics
 biotelemetry
 instrument packages
 international cooperation
 Italian space program
 otolith organs

Orbiting Geophysical Observatory
 USE **OGO**

orbiting lunar stations

GS artificial satellites
 . lunar satellites
 . . **orbiting lunar stations**
 . space stations
 . . **orbiting lunar stations**
 lunar spacecraft
 . lunar satellites
 . . **orbiting lunar stations**
 stations
 . space stations
 . . **orbiting lunar stations**
 RT lunar bases
 ∞ spacecraft

orbiting radio beacon ionospheric sounder
 USE **ORIBIS**

Orbiting Solar Observatory
 USE **OSO**

orbitrons

RT electron clouds
 electron tubes
 ionization gages
 space charge
 vacuum gages

orbits

DEF The paths of bodies or particles under the influence of a gravitational or other force. Used for orbital motion and periodic orbits.

UF *orbital motion*
periodic orbits
 GS **orbits**
 . circular orbits
 . . stationary orbits
 . Earth orbits
 . . geosynchronous orbits
 . . low Earth orbits
 . . twenty-four hour orbits
 . eccentric orbits
 . elliptical orbits
 . . transfer orbits
 . . . interplanetary transfer orbits
 . equatorial orbits
 . . stationary orbits
 . lunar orbits
 . planetary orbits
 . retrograde orbits
 . solar orbits
 . spacecraft orbits
 . . satellite orbits
 . . . geosynchronous orbits
 . . . parking orbits
 . . . stationary orbits
 . . . twenty-four hour orbits
 . . transfer orbits
 . . . interplanetary transfer orbits
 . polar orbits
 . stellar orbits

. Trojan orbits
 RT airborne range and orbit
 determination
 apexes
 aphelions
 apogees
 artificial satellites
 astrodynamics
 celestial bodies
 celestial mechanics
 ∞ conjunction
 Earth-Venus trajectories
 ephemerides
 flight optimization
 flight paths
 four body problem
 ground tracks
 ∞ inclination
 interplanetary flight
 lunar flight
 many body problem
 ∞ motion
 orbital elements
 orbital mechanics
 orbitals
 ∞ paths
 perigees
 perihelions
 quadratures
 Roche limit
 satellite ground tracks
 Schwarzschild metric
 space flight
 space navigation
 spacecraft guidance
 stationkeeping
 suborbital flight
 three body problem
 trajectories
 two body problem

orchards

RT agriculture
 blight
 citrus trees
 crop growth
 crop vigor
 ∞ crops
 curing
 farm crops
 ∞ food
 frost damage
 fruits
 irrigation
 nuts (fruits)
 plants (botany)
 rural land use
 silviculture
 trees (plants)

order-disorder transformations

RT antiphase boundaries
 atomic structure
 cluster variation method
 crystal defects
 crystal lattices
 crystal structure
 crystallography
 holes (electron deficiencies)
 metallography
 microstructure
 molecular structure
 phase transformations
 solid solutions
 ∞ transformations

ordnance

RT air to surface missiles
 ammunition
 armor
 ballistics
 explosives
 ground support equipment
 pyrotechnics
 tanks (combat vehicles)
 trajectories
 warfare
 weapon systems

Oregon

weapons

Oregon

GS nations

. United States

. . **Oregon**

RT

Cascade Range (CA-OR-WA)

Columbia River Basin (ID-OR-WA)

ores

USE **minerals**

organ culturing

(added August 2004)

DEF The growth of animal organs in vitro.

GS

culture techniques

. **organ culturing**

RT

cell culturing

clone cells

culture media

cultured cells

microbiology

tissue culturing

tissue engineering

organ weight

GS weight (mass)

. **organ weight**

organelles

GS **organelles**

. chloroplasts

. endoplasmic reticulum

. . sarcoplasmic reticulum

. lysosomes

. mitochondria

. nuclei (cytology)

. plastids

. ribosomes

RT

cells (biology)

cytology

cytoplasm

organic aluminum compounds

GS aluminum compounds

. **organic aluminum compounds**

organometallic compounds

. **organic aluminum compounds**

RT

∞ chemical compounds

∞ metal compounds

organic boron compounds

GS boron compounds

. **organic boron compounds**

organic compounds

. **organic boron compounds**

RT

∞ chemical compounds

organic charge transfer salts

DEF Organic compounds exhibiting temperature-dependent electrical, magnetic, and heat transfer properties.

GS organic compounds

. **organic charge transfer salts**

RT

charge transfer devices

organic superconductors

∞ salts

semiconductors (materials)

organic chemistry

DEF The study of the composition, properties, structure, and reactions of carbon-based compounds, specifically hydrocarbons and their derivatives, and normally excluding carbon oxides, metallic carbonates, carbides, and carbon-sulfur and carbon-nitrogen compounds.

RT biochemistry

∞ chemistry

cracking (chemical engineering)

cyclic compounds

Diels-Alder reactions

histochemical analysis

methoxy systems

optical activity

physicochemistry

organic compounds

GS **organic compounds**

. acetyl compounds

. . acetylacetone

. . acetylsalicylic acid

. . amino acids

. . alanine

. . . phenylalanine

. . aspartic acid

. . cysteine

. . dopa

. . folic acid

. . glutamic acid

. . glutamine

. . glycine

. . hippuric acid

. . histidine

. . leucine

. . . norleucine

. . lysine

. . melanoidin

. . methionine

. . thyroxine

. . tryptophan

. . tyrosine

. . carbohydrates

. . citric acid

. . glucosides

. . . nucleosides

. . . . adenines

. . . . guanosines

. . polysaccharides

. . cellulose

. . . . Fortisan (trademark)

. . chitin

. . dextrans

. . glycogens

. . starches

. . sugars

. . dextrans

. . inositols

. . lactose

. . mannitol

. . monosaccharides

. . sucrose

. . . . hexoses

. galactose

. glucose

. pentose

. ribose

. xylose

. . carboxylic acids

. . acrylic acid

. . alanine

. . . phenylalanine

. . aspartic acid

. . citric acid

. . dicarboxylic acids

. . fatty acids

. . . acetic acid

. . . . ethylenediaminetetraacetic acids

. iodoacetic acid

. acetylsalicylic acid

. . benzilic acid

. . benzoic acid

. . lipoic acid

. . oleic acid

. . palmitic acid

. . propionic acid

. . sebacic acid

. . valeric acid

. . abscisic acid

. . folic acid

. . formhydroxamic acid

. . formic acid

. . Hexogenes (trademark)

. . lactic acid

. . lysine

. . nicotinic acid

. . oxalic acid

. . oxamic acids

. . tryptophan

. . choline

. . coenzymes

. . adenosine diphosphate

. . adenosine triphosphate

. . cyclic AMP

. . glutathione

. . thiamine

. . cyclic compounds

. . cyclic hydrocarbons

. . anthracene

. . benzene

. . . chlorobenzenes

. . . colchicine

. . . cyclobutane

. . . cyclohexane

. . . cyclopropane

. . . durene

. . . indene

. . . menthol

. . . naphthalene

. . . naphthenes

. . . polycyclic aromatic hydrocarbons

. . . heterocyclic compounds

. . . acriflavine

. . . adenosines

. . . . adenosine diphosphate

. . . . adenosine monophosphate

. . . . adenosine triphosphate

. . . . cyclic AMP

. . . alkaloids

. . . . atropine

. . . . betaines

. . . . caffeine

. . . . colchicine

. . . . ergotamine

. . . . hyosine

. . . . lysergine

. . . . morphine

. . . . nicotinamide

. . . . nicotine

. . . . pilocarpine

. . . . reserpine

. . . . strychnine

. . . . troyl compounds

. . . anisole

. . . ascorbic acid

. . . azines

. . . . cyanurates

. . . . cyanuric acid

. . . . meclizine

. . . . methylene blue

. . . . phenothiazines

. . . azoles

. . . . acetazolamide

. . . . oxazole

. . . . pyrroles

. carbazoles

. . . . azulene

. . . bioflavonoids

. . . biotin

. . . carnitine

. . . cyanocobalamin

. . . cytidylic acid

. . . dimenhydrinate

. . . endrin

. . . ethylene oxide

. . . folic acid

. . . furans

. . . . tetrahydrofuran

. . . guanethidine

. . . HMX

. . . nicotinic acid

. . . phthalocyanin

. . . phyloquinone

. . . piperidine

. . . promethazine

. . . purines

. . . . adenines

. . . . xanthines

. caffeine

. guanines

. uric acid

. . . pyridines

. . . pyridoxine

. . . pyrimidines

. . . . alloxan

. . . . thymidine

. . . . thymine

. . . . uracil

. . . indoles

. . . RDX

. . . retinene

. . . riboflavin

. . . tetracyclines

. . . tetrazoles

. . . thiamine

. . . . thiazine (trademark)

. . . thiophenes

. . . tocopherol

. . . trimethadione

. tryptamines
 tryptophan
 melatonin
 serotonin
 . . . imidazoles
 . . rhodamine
 . diethyl compounds
 . diethyl ether
 . diethyl hydrogen phosphite (DEHP)
 . dimethyl compounds
 . dimethylhydrazines
 . fluorine organic compounds
 . . fluoroamines
 . . . nitrofluoroamines
 . . . trifluoroamine oxide
 . . fluorocarbons
 . . fluorohydrocarbons
 . . . carbon tetrafluoride
 . . . chlorofluoromethane
 . . . polytetrafluoroethylene
 teflon (trademark)
 . . . fluoropolymers
 . . . polytetrafluoroethylene
 teflon (trademark)
 . . . KEL-F
 . . polyvinyl fluoride
 . . perfluoroalkane
 . . perfluoroguanidine
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkanes
 butanes
 cetane
 ethane
 heptanes
 methane
 nitropropane
 nonanes
 octanes
 paraffins
 ceresin
 pentanes
 neopentane
 propane
 . . . alkenes
 butenes
 ethylene
 vinylidene
 hexenes
 propylene
 trienes
 . . . alkynes
 acetylene
 oxyacetylene
 . . . dienes
 butadiene
 heptadiene
 hexadiene
 polybutadiene
 . . . carotenoids
 . . . carotene
 . . cubane
 . . cyanoacetylene
 . . cyclic hydrocarbons
 . . . anthracene
 . . . benzene
 . . . chlorobenzenes
 . . . colchicine
 . . . cyclobutane
 . . . cyclohexane
 . . . cyclopropane
 . . . durene
 . . . indene
 . . . menthol
 . . . naphthalene
 . . . naphthenes
 . . . polycyclic aromatic hydrocarbons
 . . diphenyl compounds
 . . . diphenyl hydantoin
 . . fluorohydrocarbons
 . . . carbon tetrafluoride
 . . . chlorofluoromethane
 . . . polytetrafluoroethylene
 teflon (trademark)
 . . . mesitylene
 . . . methylene
 . . . methylidyne
 . . . natural gas
 . . . liquefied natural gas
 . . phenanthrene
 . . pyrenes
 . . quinoxalines
 . . stilbene
 . . toluene
 . . triphenyls
 . . xylene
 . . kerogen
 . lead organic compounds
 . . lead acetates
 . . lipids
 . . . calciferol
 . . . castor oil
 . . . fats
 . . . lipoproteins
 . . . phylloquinone
 . . . retinene
 . . . steroids
 cholesterol
 corticosteroids
 aldosterone
 hydroxycorticosteroid
 cortisone
 glucocorticoids
 estrogens
 prostaglandins
 . . . tocopherol
 . . nucleic acids
 . . . deoxyribonucleic acid
 . . . complementary DNA
 . . . ribonucleic acids
 . . . nucleotides
 . . . adenines
 . . . adenosines
 adenosine diphosphate
 adenosine monophosphate
 adenosine triphosphate
 cyclic AMP
 . . . oligonucleotides
 . . . polynucleotides
 . . . pyridine nucleotides
 . . . uridylic acid
 . organic boron compounds
 . . organic charge transfer salts
 . organic germanium compounds
 . organic liquids
 . organic lithium compounds
 . organic peroxides
 . organic phosphorus compounds
 . . phosphazene
 . . phosphene
 . . phosphonitriles
 . . uridylic acid
 . organic silicon compounds
 . . triphenyl silicon
 . organic sulfur compounds
 . organic tin compounds
 . . pentanone
 . peptides
 . . polypeptides
 . . . angiotensins
 . . . glutathione
 . . . hypertensin
 . . . vasopressins
 . polynuclear organic compounds
 . propargyl groups
 . proteins
 . . albumins
 . . aspartates
 . . calmodulin
 . . elastin
 . . enzymes
 . . . aldolase
 . . . amidase
 . . . carbonic anhydrase
 . . . catalase
 . . . cholinesterase
 . . . cytochromes
 . . . dehydrogenases
 . . . hexokinase
 . . . lysozyme
 . . . nuclease
 . . . oxidase
 . . . papain
 . . . pepsin
 . . . phosphatases
 . . . protease
 . . . renin
 . . . thrombin
 . . . trypsin
 . . fibrin
 . . globulins
 . . . fibrinogen
 . . . gamma globulin
 . . . hemoglobin
 . . . carboxyhemoglobin
 . . . oxyhemoglobin
 . . keratins
 . . lipoproteins
 . . luminescent proteins
 . . melanin
 . . myoglobin
 . . myosins
 . . osteocalcin
 . . phytochrome
 . . proteinoids
 . . prothrombin
 . . protoproteins
 . . tumor suppressor proteins
 . nitriles
 . quinoline
 . quinones
 . volatile organic compounds
 . . acetonitrile
 . . acrylonitriles
 . . . polyacrylonitrile
 . . malononitrile
 . . phosphonitriles
 . . succinonitrile
 . ethylene compounds
 . . chloroethylene
 . . . trichloroethylene
 . . ethoxy ethylene
 . . ethylene dihydrazine
 . . ethylenediamine
 . . ethylenediaminetetraacetic acids
 . . succinonitrile
 . amines
 . . aminophylline
 . . amphetamines
 . . . methamphetamine
 . . aniline
 . . catecholamine
 . . . epinephrine
 . . . norepinephrine
 . . . cysteamine
 . . diamines
 . . . ethylenediamine
 . . . guanidines
 guanethidine
 triaminoguanidinium azide
 . . difluorourea
 . . dimenhydrinate
 . . dimethylhydrazines
 . . diphenyl hydantoin
 . . ergotamine
 . . fluoroamines
 . . . nitrofluoroamines
 . . . trifluoroamine oxide
 . . gallamine triethiodide
 . . hexamethylenetetramine
 . . histidine
 . . hydroxylamine sulfate
 . . hyoscine
 . . mecamlamine
 . . melamine
 . . methylene diamine
 . . monoethanolamine (MEA)
 . . nitroamines
 . . nitrosamine
 . . promethazine
 . . tetrafluorohydrazine
 . . tetryl
 . . thiuronium
 . . trinitramine
 . . tryptamines
 . . . melatonin
 . . . serotonin
 . . . acetylcholine
 RT alcohols
 aldehydes
 ∞ aliphatic compounds
 alkyl compounds
 ∞ aromatic compounds
 ∞ chemical compounds
 chemical evolution
 esters
 ethers

organic coolants

- hydroxyl compounds
- metabolites
- methoxy systems
- methyl compounds
- nitroso compounds
- organic superconductors
- organic wastes (fuel conversion)
- organometallic compounds
- ∞ salts

organic coolants

- GS coolants
- . **organic coolants**

organic cooled reactors

- UF *orgel reactor*
- GS nuclear reactors
- . liquid cooled reactors
- . . **organic cooled reactors**
- . . . experimental organic cooled reactors
- RT reactor design
- reactor technology

organic fluorine compounds

- USE **fluorine organic compounds**

organic germanium compounds

- GS germanium compounds
- . **organic germanium compounds**
- organic compounds
- . **organic germanium compounds**
- organometallic compounds
- . **organic germanium compounds**
- RT ∞ chemical compounds
- ∞ metal compounds

organic lasers

- GS stimulated emission devices
- . lasers
- . . **organic lasers**
- . . . dye lasers
- RT carbon dioxide lasers
- carbon lasers
- chemical lasers
- gas lasers
- infrared lasers
- liquid lasers

organic liquids

- GS liquids
- . **organic liquids**
- organic compounds
- . **organic liquids**
- RT pyruvates
- xanthic acids

organic lithium compounds

- GS lithium compounds
- . **organic lithium compounds**
- organic compounds
- . **organic lithium compounds**
- organometallic compounds
- . **organic lithium compounds**
- RT ∞ chemical compounds
- ∞ metal compounds

organic materials

- GS **organic materials**
- . peat
- RT biodegradability
- carbonaceous materials
- cork (materials)
- cotton fibers
- elastomers
- linen
- ∞ materials
- molds
- paper (material)
- phase change materials
- plastics
- ∞ polymers
- rosin
- rubber
- silk
- thermochromatic materials
- wood

wool

organic moderated reactors

- GS nuclear reactors
- . **organic moderated reactors**
- . . experimental organic cooled reactors

organic nitrates

- GS esters
- . **organic nitrates**
- . . cellulose nitrate
- . . nitroforms
- . . . hydrazine nitroform
- . . nitroglycerin
- . . PETN
- nitrogen compounds
- . nitrates
- . . **organic nitrates**
- . . . cellulose nitrate
- . . . nitroforms
- hydrazine nitroform
- . . . nitroglycerin
- . . . PETN

organic peroxides

- DEF Organic compounds containing radical groups combined with oxides in which two atoms of oxygen are linked together, e.g., diethyl peroxide.
- GS chalcogenides
- . oxides
- . . anhydrides
- . . . peroxides
- **organic peroxides**
- organic compounds
- . **organic peroxides**
- RT air pollution
- hydrocarbons
- inorganic peroxides

organic phosphorus compounds

- GS organic compounds
- . **organic phosphorus compounds**
- . . phosphazene
- . . phosphene
- . . phosphonitriles
- . . uridylic acid
- phosphorus compounds
- . **organic phosphorus compounds**
- . . phosphazene
- . . phosphene
- . . phosphonitriles
- . . uridylic acid
- RT ∞ chemical compounds

organic semiconductors

- GS semiconductors (materials)
- . **organic semiconductors**
- RT ∞ chemical compounds
- conducting polymers
- conductors
- organic superconductors
- semiconductor devices

organic silicon compounds

- GS organic compounds
- . **organic silicon compounds**
- . . triphenyl silicon
- silicon compounds
- . **organic silicon compounds**
- . . triphenyl silicon
- RT ∞ chemical compounds

organic solids

- DEF Solid materials composed of organic materials.
- GS solids
- . **organic solids**
- RT astronomical spectroscopy
- cosmic dust
- dissolved organic matter
- planetary atmospheres

organic sulfur compounds

- GS organic compounds
- . **organic sulfur compounds**
- sulfur compounds
- . **organic sulfur compounds**

RT ∞ chemical compounds

organic superconductors

- (added May 1991)
- GS conductors
- . superconductors (materials)
- . . **organic superconductors**
- RT organic charge transfer salts
- organic compounds
- organic semiconductors

organic tin compounds

- GS organic compounds
- . **organic tin compounds**
- organometallic compounds
- . **organic tin compounds**
- tin compounds
- . **organic tin compounds**
- RT ∞ chemical compounds
- ∞ metal compounds

organic wastes (fuel conversion)

- RT ∞ conversion
- energy conversion
- garbage
- human wastes
- metabolic wastes
- organic compounds
- residues
- sewage
- sludge
- wastes

organisms

- RT animals
- biomass
- carbon cycle
- deep scattering layers
- plants (botany)

organizations

- UF *associations*
- GS **organizations**
- . European Space Agency
- . federations
- . . bureaus (organizations)
- . ISRO
- . North Atlantic Treaty Organization (NATO)
- . World Meteorological Organization
- RT teams
- United Nations

organizing

- RT personnel
- unionization

organometallic compounds

- UF *metalloorganic compounds*
- GS **organometallic compounds**
- . chlorophylls
- . ferrocenes
- . . alkylferrocene
- . hemoglobin
- . . carboxyhemoglobin
- . . oxyhemoglobin
- . organic aluminum compounds
- . organic germanium compounds
- . organic lithium compounds
- . organic tin compounds
- . porphines
- RT alkoxides
- chelates
- ∞ chemical compounds
- ∞ metal compounds
- metalloids
- metalloorganic chemical vapor deposition
- organic compounds
- synthetic metals
- tetrabutyls

organometallic polymers

- UF *metalloxiloxane polymers*
- metalloxane polymers*
- RT dendrimers
- polycarbosilanes
- ∞ polymers

polysilanes

organometallic vapor deposition

USE **metalorganic chemical vapor deposition**

organs

SN (FOR SPECIFIC ORGANS, ORGAN SUBSTRUCTURES AND ORGAN SYSTEMS SEE ANATOMY)

GS **organs**

. viscera
RT anatomy
cells (biology)
circulatory system
digestive system
gastrointestinal system
genitourinary system
glands (anatomy)
respiratory system
sense organs
tissue engineering
tissues (biology)

OR-gates

USE **gates (circuits)**

orgel reactor

USE **organic cooled reactors**

Orgueil meteorite

GS celestial bodies
. meteorites
. . . stony meteorites
. . . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . **Orgueil meteorite**
. . . . chondrites
. . . . carbonaceous chondrites
. . . . **Orgueil meteorite**

ORIC cyclotron

USE **Oak Ridge isochronous cyclotron**

∞ orientation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT alignment
attitude (inclination)
azimuth
bearing (direction)
Bragg angle
collimation
crystallography
directivity
education
fiber orientation
field strength
horizontal orientation
instrument orientation
isotropy
optical properties
orbital position estimation
ply orientation
polarization (spin alignment)
polarization (waves)
position (location)
positioning
sound localization
vertical orientation
vertical perception
visual perception

orifice flow

GS fluid flow
. **orifice flow**

RT choked flow
critical flow

∞ flow
gas flow
grazing flow
laminar flow
liquid flow
multiphase flow
orifices
pipe flow
pressure gradients
single-phase flow
steady flow
steam flow

subcritical flow
supercritical flow
turbulent flow
unsteady flow

orifices

RT annular ducts
apertures
cavities
chokes (fuel systems)
chokes (restrictions)
ducts
flow measurement
flowmeters
gaps
injectors
∞ nozzles
openings
∞ operations
orifice flow
ports (openings)
spray nozzles
throats
Venturi tubes

Origin of Plasmas in Earth Neighborhood

USE **OPEN Project**

∞ origins

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT causes
coordinates
derivation
graphs (charts)
meteorite parent bodies
petrogenesis

Orion (radio interferometry network)

DEF An operational radio interferometry observational network.

GS networks
. **Orion (radio interferometry network)**

RT radio interferometers
radio receivers
tracking networks

Orion aircraft

USE **P-3 aircraft**

Orion constellation

GS constellations
. **Orion constellation**
RT Opik theory
Orion nebula
Sigma Orionis

Orion crew vehicle

(added November 2006)

USE **Crew Exploration Vehicle**

Orion nebula

DEF An H 11 region about 500 pc distant and barely visible to the naked eye in the center of Orion's sword.

GS celestial bodies
. nebulae
. . . **Orion nebula**
hydrogen clouds
. **Orion nebula**

RT astrophysics
Cassiopeia A
Crab nebula
galaxies
Gum nebula
interstellar gas
interstellar matter
irregular galaxies
Magellanic clouds
Milky Way Galaxy
Opik theory
Orion constellation
planetary nebulae
stellar coronas
supernovae

Orionid meteoroids

GS celestial bodies
. meteoroid showers

. . . **Orionid meteoroids**

. meteoroids

. . . **Orionid meteoroids**

RT Aquarid meteoroids

Orlicz space

RT set theory

ornithopter aircraft

USE **research aircraft**

Ornstein-Uhlenbeck process

RT ∞ processes

orographic clouds

USE **cap clouds**

orography

GS geography
. **orography**
geology
. **orography**
RT cones (volcanoes)
geomorphology
isostasy
Mars volcanoes
mountains
peaks (landforms)
volcanoes
volcanology

orreries

USE **astronomical models**

Orr-Sommerfeld equations

RT ∞ equations
flow distortion
flow stability
flow theory
quantum mechanics
velocity distribution

orthicons

GS electron tubes
. camera tubes
. . . **orthicons**
. . . image orthicons
RT image intensifiers
photocathodes
television cameras
television equipment

ortho hydrogen

GS gases
. **ortho hydrogen**
RT hydrogen

ortho para conversion

GS isomerization
. **ortho para conversion**
RT ∞ conversion
para hydrogen

orthogonal functions

GS analysis (mathematics)
. complex variables
. . . **orthogonal functions**
. . . Walsh function
functions (mathematics)
. **orthogonal functions**
. . . Walsh function
RT Bessel functions
exponential functions
function space
Hankel functions
hyperbolic functions
Laguerre functions
Legendre functions
linear transformations
Mathieu function
orthogonality
orthonormal functions
quality control

orthogonal multiplexing theory

RT pulse communication
signal transmission
∞ theories
wave interaction

orthogonality

wavelength division multiplexing

orthogonality

- UF *Kronecker product*
- GS moments
 - . distribution moments
 - . . **orthogonality**
 - statistical analysis
 - . variance (statistics)
 - . . multivariate statistical analysis
 - . . . **orthogonality**
- RT covariance
 - experiment design
 - factor analysis
 - orthogonal functions
 - quality control

orthography

- RT handwriting
 - intelligibility
 - languages
 - linguistics
 - semantics
 - syntax
 - words (language)

orthonormal functions

- GS functions (mathematics)
 - . **orthonormal functions**
- RT orthogonal functions
 - wavelet analysis

orthopedics

- GS medical science
 - . **orthopedics**

orthophotography

- GS imagery
 - . photography
 - . . **orthophotography**
- RT aerial photography
 - color photography
 - mapping

orthostatic tolerance

- RT bed rest
 - blood pressure
 - fluid shifts (biology)
 - head down tilt
 - head up tilt
 - human tolerances
 - lower body negative pressure
 - posture
 - tilt-table test
 - tolerances (physiology)

orthotropic cylinders

- RT ∞ cylinders
 - cylindrical bodies
 - cylindrical shells
 - rocket engine cases

orthotropic plates

- GS structural members
 - . plates (structural members)
 - . . **orthotropic plates**

orthotropic shells

- GS shells (structural forms)
 - . **orthotropic shells**
- RT cylindrical shells
 - metal shells
 - reinforced shells
 - shell stability
 - thin walled shells

orthotropism

- RT plates (structural members)

oscillating cylinders

- RT ∞ cylinders
 - cylindrical bodies
 - cylindrical shells
 - oscillations
 - vibration

oscillating flow

- GS fluid flow
 - . unsteady flow
 - . . **oscillating flow**
- RT buffeting

compressibility effects
flow distortion
nonequilibrium flow
small perturbation flow
Strouhal number
surface tension driven convection

oscillation dampers

- RT ∞ absorbers
 - ∞ dampers
 - Maxwell bodies
 - nonoscillatory action
 - nonstabilized oscillation
 - nutation dampers
 - springs (elastic)
 - vibration isolators

oscillations

DEF Fluctuations or vibrations on each side of a mean value or position. One oscillation is half an oscillatory cycle, consisting of a fluctuation or vibration in one direction; half a vibration. The variation, usually with time, of the magnitude of a quantity with respect to a specified reference when the magnitude is alternately greater and smaller than the reference. Used for phugoid oscillations.

- UF *phugoid oscillations*
- GS **oscillations**
 - . airfoil oscillations
 - . . wing oscillations
 - . . . wing rock
 - . electron oscillations
 - . harmonic oscillation
 - . hydrofoil oscillations
 - . molecular oscillations
 - . nonoscillatory action
 - . nonstabilized oscillation
 - . plasma oscillations
 - . pressure oscillations
 - . self oscillation
 - . Southern Oscillation
 - . stable oscillations
 - . stellar oscillations
 - . . solar oscillations
 - . transient oscillations
 - . transverse oscillation
 - . . H waves
 - . Madden-Julian Oscillation
 - . quasi-biennial oscillation
 - . undamped oscillations

- RT amplitudes
 - Brunt-Vaisala frequency
 - crystal oscillators
 - damping
 - feedback
 - ∞ motion
 - nonuniformity
 - orbital resonances (celestial mechanics)
 - oscillating cylinders
 - oscillators
 - pendulums
 - periodic variations
 - perturbation
 - resonance
 - resonant vibration
 - ∞ rhythm
 - spacecraft motion
 - springs (elastic)
 - syntony
 - traveling wave tubes
 - vibration
 - vibration tests

oscillator strengths

DEF A quantum mechanical analog of the number of dispersion electrons having a given natural frequency in an atom, used in an equation for the absorption coefficient of a spectral line.

- RT absorption spectra
 - absorptivity
 - electron oscillations
 - electron transitions
 - line spectra
 - molecular oscillations
 - molecular oscillators
 - oscillators

spectral line width

oscillators

DEF Nonrotating devices for producing alternating current.

- UF *wave oscillators*
- GS **oscillators**
 - . autodynes
 - . crystal oscillators
 - . . piezoelectric crystals
 - . harmonic oscillators
 - . mechanical oscillators
 - . . pendulums
 - . . . gyroscopic pendulums
 - . microwave oscillators
 - . . magnetrons
 - . . . nigotrons
 - . molecular oscillators
 - . relaxation oscillators
 - . . phantastrons
 - . synchronized oscillators
 - . vacuum tube oscillators
 - . voltage controlled oscillators
- RT amplifiers
 - automatic frequency control
 - cavity resonators
 - circuits
 - electron tubes
 - feedback
 - feedback amplifiers
 - flip-flops
 - frequency pulling
 - frequency stability
 - frequency synthesizers
 - harmonic generators
 - inverters
 - microwave tubes
 - ∞ motion
 - multivibrators
 - negative feedback
 - nonoscillatory action
 - nonstabilized oscillation
 - oscillations
 - oscillator strengths
 - parametrons
 - periodic variations
 - perturbation
 - positive feedback
 - resonant frequencies
 - resonators
 - self excitation
 - semiconductor devices
 - signal generators
 - solid state devices
 - subharmonic generators
 - superconducting cavity resonators
 - transformers
 - vibration

oscillograms

USE **oscillographs**

oscillographs

- UF *oscillograms*
- GS measuring instruments
 - . **oscillographs**
 - recording instruments
 - . **oscillographs**
- RT Barkhausen effect
 - electrical measurement
 - oscilloscopes
 - time measurement

oscilloscopes

DEF Instruments for producing visual representations of oscillations or changes in an electric current.

- RT cathode ray tubes
 - electronic equipment tests
 - flying spot scanners
 - frequency analyzers
 - oscillographs
 - sweep circuits
 - sweep frequency
 - synchrosopes

- video equipment
- osculations*
- USE **double cusps**
- Oseen approximation**
- GS analysis (mathematics)
 - . numerical analysis
 - . . . approximation
 - . . . **Oseen approximation**
- RT incompressible fluids
 - Navier-Stokes equation
 - Roshko prediction
 - Stokes flow
 - viscous fluids
- osmium**
- GS chemical elements
 - . **osmium**
 - . . osmium isotopes
 - metals
 - . refractory metals
 - . . **osmium**
 - . . . osmium isotopes
 - . transition metals
 - . . **osmium**
 - . . . osmium isotopes
 - refractory materials
 - . refractory metals
 - . . **osmium**
 - . . . osmium isotopes
- osmium alloys**
- GS alloys
 - . heat resistant alloys
 - . . refractory metal alloys
 - . . . **osmium alloys**
 - refractory materials
 - . refractory metal alloys
 - . . **osmium alloys**
- osmium compounds**
- RT ∞ chemical compounds
 - ∞ Group 8 compounds
 - ∞ metal compounds
- osmium isotopes**
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **osmium isotopes**
 - . osmium
 - . . **osmium isotopes**
 - metals
 - . refractory metals
 - . . osmium
 - . . . **osmium isotopes**
 - . transition metals
 - . . osmium
 - . . . **osmium isotopes**
 - refractory materials
 - . refractory metals
 - . . osmium
 - . . . **osmium isotopes**
- osmometers**
- GS measuring instruments
 - . pressure gages
 - . . **osmometers**
- osmosis**
- UF *hypertonia*
- osmotic pressure*
- GS **osmosis**
 - . reverse osmosis
- RT cell membranes (biology)
 - demineralizing
 - desalinization
 - diaphragms (mechanics)
 - diffusion
 - extraction
 - homeostasis
 - isotonicity
 - membranes
 - permeating
 - pressure
 - ∞ separation
- water balance
- osmotic pressure*
- USE **osmosis**
- OSO**
- UF *Orbiting Solar Observatory*
- GS artificial satellites
 - . geophysical satellites
 - . . **OSO**
 - . . . AOSO
 - . . . OSO-1
 - . . . OSO-2
 - . . . OSO-3
 - . . . OSO-4
 - . . . OSO-5
 - . . . OSO-6
 - . . . OSO-7
 - . . . OSO-8
 - . . . OSO-C
 - . scientific satellites
 - . . astronomical satellites
 - . . . **OSO**
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **OSO**
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - . . solar observatories
 - . . . **OSO**
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - . geophysical observatories
 - . . **OSO**
 - . . . AOSO
 - . . . OSO-1
 - . . . OSO-2
 - . . . OSO-3
 - . . . OSO-4
 - . . . OSO-5
 - . . . OSO-6
 - . . . OSO-7
 - . . . OSO-8
 - . . . OSO-C
- RT sun
 - Thor Delta launch vehicle
- OSO-1**
- UF *OSO-A*
- GS *S-16 satellite*
 - artificial satellites
 - . geophysical satellites
 - . . OSO
 - . . . **OSO-1**
 - . scientific satellites
 - . . astronomical satellites
 - . . . OSO
 - **OSO-1**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OSO
 - **OSO-1**
- OSO-2**
- UF *OSO-B*
- GS *S-17 satellite*
 - artificial satellites
 - . geophysical satellites
 - . . OSO
 - . . . **OSO-2**
 - . scientific satellites
 - . . astronomical satellites
 - . . . OSO
 - **OSO-2**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OSO
 - **OSO-2**
 - . solar observatories
 - . . OSO
 - . . . **OSO-2**
 - . geophysical observatories
 - . . OSO
 - . . . **OSO-2**
 - RT Delta launch vehicle
- OSO-3**
- UF *OSO-E*
- GS artificial satellites
 - . geophysical satellites
 - . . OSO
 - . . . **OSO-3**
 - . scientific satellites
 - . . astronomical satellites
 - . . . OSO
 - **OSO-3**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OSO
 - **OSO-3**
 - . solar observatories
 - . . OSO
 - . . . **OSO-3**
 - . geophysical observatories
 - . . OSO
 - . . . **OSO-3**
- OSO-4**
- UF *OSO-D*
- GS artificial satellites
 - . geophysical satellites
 - . . OSO
 - . . . **OSO-4**
 - . scientific satellites
 - . . astronomical satellites
 - . . . OSO
 - **OSO-4**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OSO
 - **OSO-4**
 - . solar observatories
 - . . OSO
 - . . . **OSO-4**
 - . geophysical observatories
 - . . OSO
 - . . . **OSO-4**
 - RT Delta launch vehicle
- OSO-5**
- UF *OSO-F*
- GS artificial satellites
 - . geophysical satellites
 - . . OSO
 - . . . **OSO-5**
 - . scientific satellites
 - . . astronomical satellites
 - . . . OSO
 - **OSO-5**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OSO
 - **OSO-5**

. . . OSO
 . . . **OSO-5**
 . . solar observatories
 . . . OSO
 . . . **OSO-5**
 . geophysical observatories
 . . OSO
 . . . **OSO-5**

OSO-6
 UF *OSO-G*
 GS artificial satellites
 . geophysical satellites
 . . OSO
 . . . **OSO-6**
 . scientific satellites
 . . astronomical satellites
 . . . OSO
 **OSO-6**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . OSO
 **OSO-6**
 . . solar observatories
 . . . OSO
 **OSO-6**
 . geophysical observatories
 . . OSO
 . . . **OSO-6**

OSO-7
 UF *OSO-H*
 GS artificial satellites
 . geophysical satellites
 . . OSO
 . . . **OSO-7**
 . scientific satellites
 . . astronomical satellites
 . . . OSO
 **OSO-7**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . OSO
 **OSO-7**
 . . solar observatories
 . . . OSO
 **OSO-7**
 . geophysical observatories
 . . OSO
 . . . **OSO-7**

RT dual spin spacecraft

OSO-8
 DEF One of a series of NASA orbiting solar observatories developed mainly for solar research. Used for OSO-J.
 UF *OSO-J*
 GS artificial satellites
 . geophysical satellites
 . . OSO
 . . . **OSO-8**
 . scientific satellites
 . . astronomical satellites
 . . . OSO
 **OSO-8**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . OSO
 **OSO-8**
 . . solar observatories
 . . . OSO
 **OSO-8**
 . geophysical observatories
 . . OSO
 . . . **OSO-8**

OSO-A
 USE **OSO-1**

OSO-B
 USE **OSO-2**

OSO-C
 UF *S-57 satellite*
 GS artificial satellites
 . geophysical satellites
 . . OSO

. . . **OSO-C**
 . scientific satellites
 . . astronomical satellites
 . . . OSO
 **OSO-C**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . OSO
 **OSO-C**
 . . solar observatories
 . . . OSO
 **OSO-C**
 . geophysical observatories
 . . OSO
 . . . **OSO-C**

RT Delta launch vehicle

OSO-D

USE **OSO-4**

OSO-E

USE **OSO-3**

OSO-F

USE **OSO-5**

OSO-G

USE **OSO-6**

OSO-H

USE **OSO-7**

OSO-J

USE **OSO-8**

Osprey aircraft

USE **V-22 aircraft**

Osprey missile

GS missiles
 . **Osprey missile**
 RT J-85 engine

OSS-1 payload

DEF Experiment package flown aboard the Space Shuttle STS-3 in 1982 which was sponsored by the NASA Office of Space Sciences from which the acronym is derived.

GS payloads
 . Space Shuttle payloads
 . . **OSS-1 payload**

RT exploration
 Get Away Specials (STS)
 investigation
 NASA programs
 space transportation system
 spaceborne experiments

OSTA-1 payload

SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
 DEF Spaceborne experiments flown aboard the Space Shuttle STS-2 in 1981 which was sponsored by the NASA Office of Space & Terrestrial Applications from which the acronym is derived. Used for Office of Space & Terrestrial Applic Payloads.

UF *Office of Space & Terrestrial Applic Payloads*

GS payloads
 . Space Shuttle payloads
 . . **OSTA-1 payload**
 RT space transportation system
 spaceborne experiments

OSTA-2 payload

SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
 UF *Office of Space & Terrestrial Applic Payloads*

GS payloads
 . **OSTA-2 payload**
 RT space transportation system
 Spacelab

OSTA-3 payload

SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
 DEF Spaceborne systems flown aboard the Space Shuttle STS-17, sponsored by the NASA Office of Space & Terrestrial Applications from

which the acronym is derived. The systems included the feature identification and location experiment-1 (FILE-1), the measurement of atmospheric pollution from satellite (MAPS), the imaging camera-B, and the large format camera/attitude reference system (LFC/ARS). Used for Office of Space & Terrestrial Applic Payloads.

UF *Office of Space & Terrestrial Applic Payloads*

GS payloads
 . Space Shuttle payloads
 . . **OSTA-3 payload**

RT remote sensing
 space transportation system
 spaceborne experiments
 spacecraft equipment

osteoblasts

(added June 2001)

DEF Bone-forming cells that secrete an extracellular matrix. Hydroxyapatite crystals are then deposited into the matrix to form bone.

GS cells (biology)
 . **osteoblasts**
 RT bone demineralization
 bone mineral content
 bones
 cytotogenesis
 fibroblasts
 osteocalcin
 osteogenesis
 osteoporosis

osteocalcin

(added August 2004)

DEF Vitamin K-dependent calcium-binding protein synthesized by osteoblasts and found primarily in bone.

GS biopolymers
 . proteins
 . . **osteocalcin**
 organic compounds
 . proteins
 . . **osteocalcin**
 RT bone demineralization
 bone mineral content
 bones
 calcification
 calcium
 osteoblasts
 phyloquinone

osteogenesis

(added August 2004)

DEF The process of bone formation. Histogenesis of bone including ossification.

UF *bone formation*
 GS cytotogenesis
 . **osteogenesis**
 RT bone demineralization
 bone marrow
 bone mineral content
 bones
 osteoblasts
 tissues (biology)

osteoporosis

DEF A medical condition whose chief symptom is the loss of internal bone mass.

GS diseases
 . **osteoporosis**
 RT bone demineralization
 bone mineral content
 bones
 calcium metabolism
 metabolism
 osteoblasts

Ostwald coarsening

USE **Ostwald ripening**

Ostwald ripening

(added March 1994)

UF *Ostwald coarsening*
 RT coarseness
 crystallization
 grain size
 microstructure
 phase transformations

precipitation (chemistry)
 solid solutions
 solidification

OT-2
 USE **ESSA 2 satellite**

OT-3
 USE **ESSA 1 satellite**

OTF
 USE **optical transfer function**

otolaryngology
 GS medical science
 . **otolaryngology**
 RT ear

otolith organs
 DEF Structures of the inner ear (utricle and saccule) which respond to linear acceleration and tilting.
 GS anatomy
 . sense organs
 . . ear
 . . . labyrinth
 **otolith organs**
 . . gravireceptors
 . . . **otolith organs**
 receptors (physiology)
 . gravireceptors
 . . **otolith organs**
 RT oculogravic illusions
 Orbiting Frog Otolith
 semicircular canals
 vertical perception

otology
 GS medical science
 . **otology**
 RT ear

OTS (ESA)
 UF *Orbital Test Satellite (ESA)*
 GS artificial satellites
 . ESA satellites
 . . **OTS (ESA)**
 ESA spacecraft
 . ESA satellites
 . . **OTS (ESA)**
 RT European Communications Satellite
 European space programs

Otto cycle
 GS cycles
 . thermodynamic cycles
 . . **Otto cycle**
 RT Rankine cycle

OTV
 USE **orbit transfer vehicles**

outcrops
 RT folds (geology)
 formations
 geology

Outer Banks (NC)
 GS landforms
 . barriers (landforms)
 . . **Outer Banks (NC)**
 RT Atlantic Ocean
 islands
 North Carolina

outer planet missions
 USE **Grand Tours**

outer planet spacecraft
 USE **outer planets explorers**

outer planets explorers
 UF *outer planet spacecraft*
planetary explorer
 RT Delta launch vehicle
 Explorer satellites
 flyby missions
 Grand Tours
 interplanetary flight
 Mars probes
 ∞ spacecraft

TOPS (spacecraft)
 Venus probes

outer radiation belt
 GS particles
 . charged particles
 . . magnetically trapped particles
 . . . radiation belts
 **outer radiation belt**
 . corpuscular radiation
 . . radiation belts
 . . . **outer radiation belt**
 . trapped particles
 . . magnetically trapped particles
 . . . radiation belts
 **outer radiation belt**
 RT artificial radiation belts
 inner radiation belt
 proton belts
 ∞ radiation

outer space treaty
 GS policies
 . foreign policy
 . . international relations
 . . . international cooperation
 **outer space treaty**
 RT conventions
 international law
 research and development
 resource allocation
 space law

outgassing
 DEF The evolution of gas from a material in a vacuum.
 RT degassing
 desorption
 evolution (liberation)
 gas evolution
 purging
 residual gas
 transpiration
 vacuum
 vacuum pumps

outlet flow
 GS fluid flow
 . **outlet flow**
 RT cascade flow
 channel flow
 ∞ flow
 flow characteristics
 nozzle flow

outlets
 GS **outlets**
 . vents
 RT apertures
 cavities
 ∞ discharge
 doors
 ducts
 egress
 exhaust nozzles
 exhaust systems
 gates (openings)
 ∞ nozzles
 openings
 output
 pipe nozzles
 plugs
 ports (openings)
 ∞ terminals

outlets (geology)
 USE **estuaries**

outliers (landforms)
 DEF Areas or groups of rocks surrounded by rocks of older age. Used for klippen.
 UF *klippen*
 GS landforms
 . **outliers (landforms)**
 RT formations
 rocks
 soil erosion

outliers (statistics)
 DEF In sets of data values so far removed

from other values in the distribution that their presence cannot be attributed to the random combination of change causes.
 RT mathematical models
 probability theory
 statistical analysis
 statistical distributions
 statistical tests

output
 DEF The yield or product of an activity furnished by man, machine, or system. Used for dummy loads.
 UF *dummy loads*
 GS **output**
 . cardiac output
 . . heart minute volume
 . . stroke volume
 . laser outputs
 . maser outputs
 RT ∞ capacity
 catchers
 computer systems performance
 delivery
 efflux
 input
 outlets
 ∞ performance
 power conditioning
 printouts
 ∞ production
 products
 readout
 supplying
 tracking problem
 transfer functions
 transmission
 yield

OV-1 aircraft
 UF *AO-1 aircraft*
Grumman OV-1C aircraft
Mohawk aircraft
 GS Grumman aircraft
 . **OV-1 aircraft**
 jet aircraft
 . turboprop aircraft
 . . **OV-1 aircraft**
 monoplanes
 . **OV-1 aircraft**
 observation aircraft
 . **OV-1 aircraft**
 RT ∞ aircraft

OV-1 satellites
 GS artificial satellites
 . scientific satellites
 . . **OV-1 satellites**
 RT gravity gradient satellites
 spin stabilization

OV-2 satellites
 GS artificial satellites
 . scientific satellites
 . . **OV-2 satellites**
 RT gravity gradient satellites
 spin stabilization

OV-3 satellites
 GS artificial satellites
 . scientific satellites
 . . **OV-3 satellites**
 RT gravity gradient satellites
 spin stabilization

OV-4 satellites
 GS artificial satellites
 . scientific satellites
 . . **OV-4 satellites**
 RT gravity gradient satellites
 spin stabilization

OV-5 satellites
 GS artificial satellites
 . scientific satellites
 . . **OV-5 satellites**
 RT gravity gradient satellites

OV-10 aircraft

spin stabilization

OV-10 aircraft

UF *NA-300 aircraft*
GS attack aircraft
. COIN aircraft
. . . **OV-10 aircraft**
jet aircraft
. turboprop aircraft
. . . **OV-10 aircraft**
monoplanes
. **OV-10 aircraft**
North American aircraft
. **OV-10 aircraft**
observation aircraft
. **OV-10 aircraft**
RT ∞ aircraft

ovaries

GS anatomy
. genitourinary system
. . . reproductive systems
. . . . sex glands
. . . . gonads
. **ovaries**
. . . . glands (anatomy)
. . . . endocrine glands
. . . . gonads
. **ovaries**
. . . . sex glands
. . . . gonads
. **ovaries**
RT eggs
menstruation

ovens

GS heating equipment
. **ovens**
RT baking
dry heat
furnaces
waste energy utilization

overcast

USE **cloud cover**

overcompression

USE **overconsolidation**

overconsolidation

UF *overcompression*
RT consolidation
foundations

Overhauser effect

DEF In atomic physics, a radio frequency field applied to a substance in an external magnetic field, whose nuclei have spin 1/2 and which has unpaired electrons at the electron spin resonance frequency. This results in polarization of the nuclei as great as if the nuclei had the much larger electron magnetic moment.

RT ∞ effects
magnetic resonance
nuclear spin
∞ polarization
resonance

overpressure

DEF (1) The pressure resulting from the blast wave of an explosion. It is referred to as positive when it exceeds atmospheric pressure and negative during the passage of the wave when resulting pressures are less than atmospheric pressure. (2) The transient pressure, usually expressed in pounds per square inch, exceeding existing atmospheric pressure manifested in the blast wave from an explosion. During some period of the passage of the wave past a point, the overpressure is negative.

GS pressure
. **overpressure**
RT blast loads
dynamic pressure

over-the-horizon radar

GS radar
. search radar
. . . **over-the-horizon radar**
RT early warning systems

moving target indicators
optical radar
radar detection
radar range

overtones

USE **harmonics**

overvoltage

RT circuit protection
decomposition
electric potential
Geiger counters
open circuit voltage
polarization (charge separation)
surges

oxalates

GS **oxalates**
. cobalt oxalates
RT oxalic acid
∞ oxygen compounds

oxalic acid

GS acids
. carboxylic acids
. . . **oxalic acid**
organic compounds
. carboxylic acids
. . . **oxalic acid**
RT oxalates

oxamic acids

GS acids
. carboxylic acids
. . . **oxamic acids**
nitrogen compounds
. amides
. . . **oxamic acids**
organic compounds
. carboxylic acids
. . . **oxamic acids**

oxazole

DEF Compounds that contain a five-membered heterocyclic ring containing one nitrogen and one oxygen atom.

GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . azoles
. **oxazole**

oxetane polymers

(added August 1994)
RT alkenes
binders (materials)
carbonyl compounds
monomers
photochemical reactions
∞ polymers
propellants

oxidase

GS acids
. **oxidase**
biopolymers
. proteins
. . . enzymes
. . . . **oxidase**
organic compounds
. proteins
. . . enzymes
. . . . **oxidase**
RT dehydrogenases

oxidation

DEF A reaction in which electrons are removed from a reactant. Sometimes, more specifically the combination of a reactant with oxygen.

GS chemical reactions
. **oxidation**
. . . electrochemical oxidation
. . . photooxidation
. . . rusting
RT association reactions
charring
chemical attack
combustion

combustion chemistry
corrosion
degradation
dehydrogenation
dopa
electron transfer
epoxidation
erosive burning
fuel combustion
hot corrosion
hydrocarbon combustion
metal combustion
oxidizers
oxygenation
passivity
reduction (chemistry)
roasting
thermal resistance
turbulent combustion

oxidation resistance

GS corrosion resistance
. **oxidation resistance**
RT passivity
∞ resistance
rusting
siliconizing
thermal resistance

oxidation-reduction reactions

DEF An oxidizing chemical change, where an element's positive valence is increased (electron loss), accompanied by a simultaneous reduction of an associated element (electron gain).

GS chemical reactions
. **oxidation-reduction reactions**
RT electrochemistry
reduction (chemistry)

oxide dispersion strengthening

(added February 1994)

GS dispersion strengthening
. **oxide dispersion strengthening**
RT alloys
hardening (materials)
heat resistant alloys

oxide films

RT cathodic coatings
∞ films
metal oxides
metal surfaces
surface layers
thin films

oxides

GS chalcogenides
. **oxides**
. . . alkoxides
. . . anhydrides
. . . peroxides
. . . . inorganic peroxides
. hydrogen peroxide
. . . . organic peroxides
. . . . potassium peroxides
. . . . sodium peroxides
. . . boron oxides
. . . brucite
. . . carbon monoxide
. . . carbon suboxides
. . . chlorine oxides
. . . dioxides
. . . carbon dioxide
. . . flint
. . . hydrogen peroxide
. . . silicon dioxide
. . . . quartz
. coesite
. stishovite
. . . sulfur dioxides
. . . germanium oxides
. . . heavy water
. . . indium oxides
. . . metal oxides
. . . . alkaline earth oxides
. barium oxides
. beryllium oxides
. alexandrite
. . . . calcium oxides

. akermanite
 magnesium oxides
 akermanite
 periclase
 aluminum oxides
 alexandrite
 sapphire
 bismuth oxides
 cerium oxides
 cesium oxides
 chromium oxides
 cobalt oxides
 copper oxides
 gallium oxides
 hafnium oxides
 iron oxides
 hematite
 ilmenite
 magnetite
 lanthanum oxides
 lead oxides
 lithium oxides
 manganese oxides
 Hopcalite (trademark)
 mercury oxides
 mixed oxides
 BSCCO superconductors
 YBCO superconductors
 molybdenum oxides
 nickel oxides
 niobium oxides
 platinum oxides
 plutonium oxides
 potassium oxides
 scandium oxides
 silver oxides
 sodium peroxides
 strontium oxides
 tantalum oxides
 thorium oxides
 tin oxides
 titanium oxides
 anatase
 ilmenite
 rutile
 tungsten oxides
 scheelite
 uranium oxides
 vanadium oxides
 yttrium oxides
 zinc oxides
 zirconium oxides
 yttria-stabilized zirconia
 nitrogen oxides
 nitric oxide
 nitrogen dioxide
 nitrogen tetroxide
 nitrous oxides
 phosphorus oxides
 pyroxenes
 enstatite
 selenium oxides
 silicon oxides
 muscovite
 nephelite
 silicon dioxide
 quartz
 coesite
 stishovite
 spodumene
 sulfur oxides
 sulfur dioxides
 RT anodic coatings
 cathodic coatings
 ethylene oxide
 euxenite
 insulation
 metal coatings
 niobates
 nonflammable materials
 ∞ oxygen compounds
 solid oxide fuel cells
 water

oxidizers

DEF Specifically, substances (not necessarily containing oxygen) that support the combustion of a fuel or propellant.

GS **oxidizers**

. . . high energy oxidizers
 . . . liquid oxidizers
 . . . liquid oxygen
 . . . photochemical oxidants
 . . . rocket oxidizers
 . . . FLOX
 . . . TAGN
 RT ∞ agents
 air pollution
 fluorine
 fuels
 nitramine propellants
 oxidation

oximetry

RT biochemical oxygen demand
 blood
 hyperoxia
 hypoxia
 oxygen consumption

oxosilanes

USE **polysilanes**

oxyacetylene

GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkyne
 **oxyacetylene**
 RT acetylene
 detonable gas mixtures
 ∞ oxygen compounds

oxyalkylation

USE **alkylation**

oxyfluorides

GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . **oxyfluorides**
 . . . halides
 . . . fluorides
 **oxyfluorides**
 RT ∞ oxygen compounds

oxygen

GS chemical elements
 . **oxygen**
 . . liquid oxygen
 . . oxygen isotopes
 . . . oxygen 17
 . . . oxygen 18
 gases
 . **oxygen**
 . . liquid oxygen
 . . oxygen isotopes
 . . . oxygen 17
 . . . oxygen 18
 RT Chlorella
 high pressure oxygen
 oxygen atoms
 oxygen ions
 oxygen plasma
 ozone
 reaction bonding
 Schumann-Runge bands
 sialon

oxygen 17

DEF An isotope of oxygen.
 GS chemical elements
 . nuclides
 . . isotopes
 . . . oxygen isotopes
 **oxygen 17**
 . . . oxygen
 . . . oxygen isotopes
 **oxygen 17**
 gases
 . oxygen
 . . oxygen isotopes
 . . . **oxygen 17**
 . . . oxygen
 . . . oxygen isotopes
 **oxygen 17**

oxygen 18

GS chemical elements
 . nuclides
 . . isotopes
 . . . oxygen isotopes

oxygen 18

. oxygen
 . . oxygen isotopes
 . . . **oxygen 18**
 gases
 . oxygen
 . . oxygen isotopes
 . . . **oxygen 18**

oxygen afterglow

GS afterglows
 . **oxygen afterglow**

oxygen analyzers

UF *oxygen detectors*
 GS measuring instruments
 . **oxygen analyzers**
 RT gas analysis

oxygen atoms

GS atoms
 . **oxygen atoms**
 RT oxygen

oxygen breathing

RT ∞ breathing

∞ oxygen compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT acids
 aluminates
 arsenates
 borates
 bromates
 carbohydrates
 carbon suboxides
 carbonates
 ∞ chemical compounds
 chlorates
 chromates
 germanium oxides
 niobates
 oxalates
 oxides
 oxyacetylene
 oxyfluorides
 oxygen fluorides
 ozonates
 ozone fluoride
 ozonides
 stannates

oxygen consumption

GS consumption
 . **oxygen consumption**
 RT biochemical oxygen demand
 hyperoxia
 hypoxia
 metabolism
 oximetry

oxygen deficiency

USE **hypoxia**

oxygen detectors

USE **oxygen analyzers**

oxygen fluorides

GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . **oxygen fluorides**
 . . . halides
 . . . fluorides
 **oxygen fluorides**
 RT ∞ oxygen compounds

oxygen ions

GS ions
 . **oxygen ions**
 RT free radicals
 negative ions
 oxygen

oxygen isotopes

GS chemical elements
 . nuclides
 . . isotopes
 . . . **oxygen isotopes**

oxygen masks

- oxygen 17
- oxygen 18
- . oxygen
- . . **oxygen isotopes**
- . . . oxygen 17
- . . . oxygen 18
- gases
- . oxygen
- . . **oxygen isotopes**
- . . . oxygen 17
- . . . oxygen 18

oxygen masks

- GS breathing apparatus
- . **oxygen masks**
- masks
- . **oxygen masks**
- oxygen supply equipment
- . **oxygen masks**
- RT high altitude breathing
- life support systems
- portable life support systems

oxygen metabolism

- GS metabolism
- . **oxygen metabolism**
- RT hydrogen metabolism
- respiration

oxygen plasma

- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **oxygen plasma**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **oxygen plasma**
- RT argon plasma
- helium plasma
- hydrogen plasma
- oxygen

oxygen production

- RT closed ecological systems
- gas exchange
- in situ resource utilization

oxygen recombination

- GS chemical reactions
- . atomic recombination
- . . **oxygen recombination**
- recombination reactions
- . atomic recombination
- . . **oxygen recombination**
- RT ionization

oxygen regulators

- GS control equipment
- . regulators
- . . **oxygen regulators**
- RT flow regulators
- pressure regulators

oxygen spectra

- GS spectra
- . **oxygen spectra**
- RT airglow
- Herzberg bands
- molecular spectra
- solar spectra

oxygen supply equipment

- UF *oxygen systems*
- GS **oxygen supply equipment**
- . oxygen masks
- RT AEPS
- air conditioning equipment
- breathing apparatus
- cabin atmospheres
- compressed air
- controlled atmospheres
- emergency life sustaining systems
- life support systems

- pressurized cabins
- survival equipment

oxygen systems

USE **oxygen supply equipment**

oxygen tension

- GS pressure
- . partial pressure
- . . **oxygen tension**
- . . . hypoxemia

oxygen toxicity

USE **hyperoxia**

oxygenation

- GS chemical reactions
- . **oxygenation**
- RT aeration
- dissolved gases
- oxidation

oxygen-hydrocarbon rocket engines

(added May 1989)

- UF *liquid oxygen hydrocarbon rocket engines*
- LOX-hydrocarbon rocket engines*
- GS engines
- . rocket engines
- . . liquid propellant rocket engines
- . . . **oxygen-hydrocarbon rocket engines**
- RT booster rocket engines
- liquid oxygen
- reusable rocket engines
- spacecraft propulsion

oxyhalides

- GS halogen compounds
- . halides
- . . **oxyhalides**

oxyhemoglobin

- GS biopolymers
- . proteins
- . . hemoglobin
- . . . **oxyhemoglobin**
- organic compounds
- . proteins
- . . hemoglobin
- . . . **oxyhemoglobin**
- organometallic compounds
- . hemoglobin
- . . **oxyhemoglobin**
- RT erythrocytes

oxynitrides

- DEF Base for a broad field of nitrogen ceramics utilizing silicon, aluminum, and other elements to produce high temperature refractory materials.
- GS nitrogen compounds
- . nitrides
- . . **oxynitrides**
- RT ∞ chemical compounds
- ∞ Group 5A compounds

ozonates

- RT ∞ oxygen compounds
- ozone

ozone

- DEF A very active form of oxygen that may be produced by the corona, arcing, or ultra-violet rays.
- GS gases
- . **ozone**
- RT Halogen Occultation Experiment
- oxygen
- ozonates
- ozone fluoride
- ozonides
- ozonometry
- photochemical oxidants
- quasi-biennial oscillation

- SAGE satellite
- Solar Mesosphere Explorer
- volatile organic compounds

ozone depletion

(added December 1991)

- UF *ozone holes*
- GS depletion
- . **ozone depletion**
- RT air pollution
- Antarctic regions
- Arctic regions
- atmospheric composition
- chlorofluorocarbons
- chlorofluoromethane
- ozonometry
- ozonosphere
- Total Ozone Mapping Spectrometer

ozone fluoride

- GS halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **ozone fluoride**
- . halides
- . . fluorides
- . . . **ozone fluoride**
- RT ∞ oxygen compounds
- ozone

ozone holes

USE **ozone depletion**

ozone layer

USE **ozonosphere**

ozonesondes

(added July 2005)

- DEF Instruments which measure atmospheric ozone profiles.
- GS measuring instruments
- . meteorological instruments
- . . **ozonesondes**
- . sondes
- . . **ozonesondes**
- RT air sampling
- balloon sounding
- balloon-borne instruments
- ozonometry

ozonides

- RT ∞ oxygen compounds
- ozone

ozonometry

- GS chemical tests
- . chemical analysis
- . . gas analysis
- . . . **ozonometry**
- RT ozone
- ozone depletion
- ozonesondes
- Total Ozone Mapping Spectrometer

ozonosphere

- DEF The general stratum of the upper atmosphere in which there is an appreciable ozone concentration and in which ozone plays an important part in the radiation balance of the atmosphere. This region lies roughly between 10 and 50 kilometers, with maximum ozone concentration at about 20 to 25 kilometers. Used for ozone layer.
- UF *ozone layer*
- GS Earth atmosphere
- . middle atmosphere
- . . stratosphere
- . . . **ozonosphere**
- RT chemosphere
- chlorofluorocarbons
- homosphere
- ozone depletion
- Umkehr effect
- upper atmosphere

P

P band

- SN (225 TO 390 MHz)
- GS frequencies
 - . radio frequencies
 - . microwave frequencies
 - . . . **P band**
 - . ultrahigh frequencies
 - . . . **P band**
 - . very high frequencies
 - . . . **P band**

P waves

- GS elastic waves
 - . **P waves**
- RT compressible fluids
 - compression waves
 - crustal fractures
 - dilatational waves
- S waves
 - seismic waves
 - surface waves

P-1 engine

- GS engines
 - . rocket engines
 - . booster rocket engines
 - . . . **P-1 engine**
 - . solid propellant rocket engines
 - . . . **P-1 engine**

P-3 aircraft

- UF *Orion aircraft*
 - P3V aircraft*
- GS antisubmarine warfare aircraft
 - . **P-3 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . . **P-3 aircraft**
 - Lockheed aircraft
 - . **P-3 aircraft**
 - monoplanes
 - . **P-3 aircraft**
- RT ∞ aircraft
 - turboprop engines

P3V aircraft

- USE **P-3 aircraft**

P-51 aircraft

- UF *Mustang aircraft*
- GS attack aircraft
 - . fighter aircraft
 - . . . **P-51 aircraft**
 - monoplanes
 - . **P-51 aircraft**
 - North American aircraft
 - . **P-51 aircraft**
 - single engine aircraft
 - . **P-51 aircraft**
- RT ∞ aircraft

P78-2 satellite

- USE **SCATHA satellite**

P-84 aircraft

- USE **jet provost aircraft**

P-160 aircraft

- UF *ME P-160 aircraft*
 - Messerschmitt ME P-160 aircraft*
- GS commercial aircraft
 - . **P-160 aircraft**
 - passenger aircraft
 - . **P-160 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . . **P-160 aircraft**
- RT ∞ aircraft

P-166 aircraft

- UF *Piaggio P-166 aircraft*
- GS monoplanes
 - . **P-166 aircraft**
 - passenger aircraft
 - . **P-166 aircraft**
 - Piaggio aircraft
 - . **P-166 aircraft**
 - transport aircraft
 - . cargo aircraft

. . . P-166 aircraft

- RT ∞ aircraft

P-308 aircraft

- UF *ME P-308 aircraft*
 - Messerschmitt ME P-308 aircraft*
- GS attack aircraft
 - . **P-308 aircraft**
 - jet aircraft
 - . **P-308 aircraft**
 - monoplanes
 - . **P-308 aircraft**
- RT ∞ aircraft

P-531 helicopter

- UF *Scout helicopter*
 - Westland P-531 helicopter*
- GS V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **P-531 helicopter**
 - Westland aircraft
 - . **P-531 helicopter**
- RT antisubmarine warfare aircraft
 - passenger aircraft

P-1127 aircraft

- UF *Hawker P-1127 aircraft*
 - Kestrel aircraft*
 - VZ-12 aircraft*
 - XV-6A aircraft*
- GS attack aircraft
 - . fighter aircraft
 - . . **P-1127 aircraft**
 - Hawker Siddeley aircraft
 - . **P-1127 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **P-1127 aircraft**
 - monoplanes
 - . **P-1127 aircraft**
 - single engine aircraft
 - . **P-1127 aircraft**
 - V/STOL aircraft
 - . **P-1127 aircraft**
- RT ∞ aircraft
 - Bristol-Siddeley BS 53 engine
 - Harrier aircraft
 - turbofan engines

P-1154 aircraft

- UF *Hawker P-1154 aircraft*
- GS attack aircraft
 - . fighter aircraft
 - . . **P-1154 aircraft**
 - Hawker Siddeley aircraft
 - . **P-1154 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **P-1154 aircraft**
 - monoplanes
 - . **P-1154 aircraft**
 - single engine aircraft
 - . **P-1154 aircraft**
 - supersonic aircraft
 - . **P-1154 aircraft**
 - V/STOL aircraft
 - . **P-1154 aircraft**
- RT ∞ aircraft
 - turbofan engines

P.A.C.M. telemetry

- SN (PULSE AMPLITUDE CODE MODULATION)
- GS telecommunication
 - . telemetry
 - . . **P.A.C.M.** telemetry
 - transmission
 - . signal transmission
 - . . telemetry
 - . . . **P.A.C.M.** telemetry
- RT amplitude modulation
 - communication equipment
 - differential pulse code modulation
 - modulation
 - pulse amplitude modulation

pulse code modulation

PA-34 Seneca aircraft

- UF *Seneca aircraft*
- GS light aircraft
 - . Piper aircraft
 - . . . **PA-34 Seneca aircraft**
- RT ∞ aircraft
 - ATLIT project
 - GAW-1 airfoil
 - General Dynamics aircraft

PACE

- USE **Physics and Chemistry Experiment in Space**

Pacific islands

- GS landforms
 - . islands
 - . . **Pacific islands**
 - . . . Guam
 - . . . Japan
 - . . . Johnston Island
 - . . . Kurile Islands
 - . . . New Guinea (island)
 - . . . New Zealand
 - . . . Philippines
 - . . . Samoa

Pacific Northwest (US)

- GS regions
 - . **Pacific Northwest (US)**
- RT Canada
 - United States

Pacific Ocean

- GS oceans
 - . **Pacific Ocean**
- RT Bering Sea
 - coastal ranges (CA)
 - el Nino
 - Gulf of Alaska
 - Gulf of California (Mexico)
 - Indonesia
 - mid-ocean ridges
 - Monterey Bay (CA)
 - San Francisco Bay (CA)
 - Sea of Okhotsk
 - Southern California

packages

DEF Any assemblies or apparatus, complete in themselves or practically so, identifiable as units and readily available for use or installation.

- GS **packages**
 - . instrument packages
 - . . Apollo Lunar Surface Experiments Package
 - . . EASEP
 - . . EREP
- RT bags
 - boxes (containers)
 - bundles
 - cartridges
 - cases (containers)
 - ∞ containers
 - ∞ instruments
 - packaging

packaging

DEF (1) The technique of preparing goods for distribution; (2) The design criteria, processes, and procedures used to protect materials from deterioration and damage from the time manufacturing is completed until use or disposal; (3) The processes and procedures used to protect an item in a unit package.

- GS **packaging**
 - . electronic packaging
- RT ∞ containers
 - corrosion prevention
 - encapsulating
 - enclosure
 - hauling
 - hoppers
 - inhibitors
 - marking
 - materials handling

packet switching

- packages
- ∞ packing
- preserving
- sealers
- spiral wrapping
- ∞ storage
- transportation
- vermiculite
- weatherproofing
- ∞ wrap

packet switching

DEF Switching circuit system for multiple access time division data transmission.

GS switching

- . **packet switching**

RT asynchronous transfer mode

- beam switching
- communication networks
- data transmission
- interruption
- microwave switching
- multiple access
- network control
- packet transmission
- packets (communication)
- protocol (computers)
- radio transmission
- sequencing
- signal transmission
- switching circuits
- switching theory
- telecommunication
- time division multiple access

packet transmission

DEF Transmission of bursts of digital data.

GS telecommunication

- . **packet transmission**
- . . Aloha system
- transmission
- . signal transmission
- . . data transmission
- . . . **packet transmission**
- Aloha system

RT asynchronous transfer mode

- automatic repeat request
- carrier sense multiple access
- channel capacity
- message processing
- packet switching
- packets (communication)
- satellite communication
- spacecraft communication
- transmission efficiency

packets (communication)

DEF Digital data messages which are almost always preceded by headers (containing address information and other control characters) and followed by control characters which signify the end of a message.

UF *bursts (communication)*

RT Aloha system

- communication networks
- data transmission
- packet switching
- packet transmission
- transmission efficiency
- wave packets
- wide area networks

∞ packing

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT packaging

- packing density
- packings (seals)
- sealing

packing density

GS density (number/volume)

. **packing density**

RT Bravais crystals

- crystal structure
- crystals

∞ packing

void ratio

packings (seals)

GS seals (stoppers)

- . **packings (seals)**

RT bearings

- glands (seals)
- labyrinth seals

∞ packing

- pumps
- sealers
- sealing
- shafts (machine elements)
- valves

∞ pad

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT cushions

- foundations
- launching pads

paddles

RT folding structures

- mixers
- solar generators
- turbomachine blades

Pade approximation

GS analysis (mathematics)

- . calculus
- . . series (mathematics)
- . . . **Pade approximation**
- . numerical analysis
- . . approximation
- . . . **Pade approximation**
- . real variables
- . . series (mathematics)
- . . . **Pade approximation**

PAGEOS satellite

GS artificial satellites

- . geodetic satellites
- . . **PAGEOS satellite**
- . passive satellites
- . . **PAGEOS satellite**

RT Explorer 29 satellite

- Explorer 36 satellite
- GEOS 1 satellite
- GEOS 2 satellite
- GEOS 3 satellite

PAH

USE **polycyclic aromatic hydrocarbons**

pain

GS perception

- . sensory perception
- . . **pain**

RT analgesia

pain sensitivity

GS perception

- . sensory perception
- . . **pain sensitivity**
- sensitivity
- . **pain sensitivity**

paint removal

(added August 1995)

UF *paint stripping*

GS removal

. **paint removal**

RT abrasives

- cleaning
- solvents

∞ stripping

- surface treatment

paint stripping

USE **paint removal**

paints

GS coatings

- . **paints**
- . . pressure sensitive paints
- . . temperature sensitive paints

RT fillers

- finishes
- metal coatings

- pigments
- primers (coatings)
- protective coatings
- rubber coatings
- sealers
- sprayed coatings
- turpentine
- varnishes

pair production

GS particle production

- . **pair production**

RT electromagnetic absorption

- electron emission
- electron photon cascades
- electron-positron pairs
- emission
- high energy interactions
- nuclear reactions
- photoproduction
- positron annihilation
- positrons

Pakistan

GS nations

- . **Pakistan**

RT Asia

- Bangladesh
- Himalayas
- Pakistan space program

Pakistan space program

(added November 1989)

GS programs

- . space programs
- . . **Pakistan space program**

RT Pakistan

Palapa 2 satellite

UF *Palapa B satellite*

GS artificial satellites

- . communication satellites
- . . Palapa satellites
- . . . **Palapa 2 satellite**

RT Indonesian space program

- international cooperation

Palapa B satellite

USE **Palapa 2 satellite**

Palapa satellites

DEF Satellites launched by the US for the Indonesian government for their domestic communications network.

GS artificial satellites

- . communication satellites
- . . **Palapa satellites**
- . . . Palapa 2 satellite

RT Indonesian space program

- international cooperation

paleobiology

DEF The study of life and organisms that existed in the geologic past.

RT archaeobacteria

∞ biology

- Cretaceous-Tertiary boundary
- fossils
- geochemistry
- geochronology
- paleontology

paleoclimatology

DEF The study of climates in the geologic past, involving fossil, glacial, isotropic, or other data.

GS climatology

- . **paleoclimatology**

RT climate

- climate change
- paleontology
- primitive Earth atmosphere

paleomagnetism

UF *archaeomagnetism*

GS magnetic fields

- . **paleomagnetism**
- magnetic properties
- . **paleomagnetism**

RT archaeology

- cones (volcanoes)
continental drift
geology
geomagnetism
geophysics
magnetostratigraphy
Mars volcanoes
remanence
rocks
volcanoes
volcanology
- paleontology**
RT archaeobacteria
Cambrian Period
Cenozoic Era
Cretaceous Period
Cretaceous-Tertiary boundary formations
fossils
geochemistry
geochronology
geological surveys
geology
histories
Mesozoic Era
paleobiology
paleoclimatology
Paleozoic Era
Precambrian period
protobiology
stratigraphy
Tertiary Period
- Paleozoic Era**
(added June 1989)
DEF An era of geologic time, from the end of the Precambrian Period to the beginning of the Mesozoic Era, or about 570 to about 225 million years ago.
GS **Paleozoic Era**
. Cambrian Period
RT geochronology
Mesozoic Era
paleontology
Precambrian period
- palladium**
GS chemical elements
. **palladium**
metals
. transition metals
. . **palladium**
RT palladium isotopes
- palladium alloys**
GS alloys
. **palladium alloys**
- palladium compounds**
RT ∞ chemical compounds
metals
transition metals
- palladium isotopes**
GS chemical elements
. nuclides
. . isotopes
. . . **palladium isotopes**
RT palladium
- Palmar sweat index**
RT perspiration
stress (physiology)
stress (psychology)
- Palmgren-Miner rule**
UF *Miner rule*
GS rules
. **Palmgren-Miner rule**
RT fatigue life
- palmitic acid**
GS acids
. carboxylic acids
. . fatty acids
. . . **palmitic acid**
organic compounds
. carboxylic acids
. . fatty acids
- . . . **palmitic acid**
RT fats
- Palo Verde Valley (CA)**
GS valleys
. **Palo Verde Valley (CA)**
RT California
deserts
- PAM (modulation)**
USE **pulse amplitude modulation**
- pampas**
DEF A vast treeless grassy plain of temperate regions, especially as used in Argentina and adjacent parts of Uruguay. It is comparable to the prairies of North America, the steppes of the Eurasia, and the veld of South Africa.
GS land
. plains
. . **pampas**
landforms
. plains
. . **pampas**
- PAN (polyacrylonitrile)**
USE **polyacrylonitrile**
- Panama**
GS nations
. **Panama**
RT canals
Central America
- Panama Canal Zone**
GS regions
. **Panama Canal Zone**
RT Caribbean Sea
Central America
United States
- pancreas**
GS anatomy
. digestive system
. . **pancreas**
. glands (anatomy)
. . endocrine glands
. . . **pancreas**
RT diabetes mellitus
gastrointestinal system
trypsin
- Pandora**
(added July 1995)
DEF A natural satellite of Saturn, orbiting at a mean distance of 141,700 kilometers.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Pandora**
RT Saturn (planet)
- panel flutter**
GS vibration
. structural vibration
. . flutter
. . . **panel flutter**
. . self induced vibration
. . . **panel flutter**
RT aerodynamic noise
aeroelasticity
bending vibration
- panel method (fluid dynamics)**
DEF Technique for analyzing and predicting the properties and characteristics of fluid flow; sometimes called the finite element method.
GS procedures
. **panel method (fluid dynamics)**
RT Bernoulli theorem
boundary layers
computational fluid dynamics
finite element method
∞ flow
flow theory
fluid dynamics
flux vector splitting
gas-solid interactions
∞ methodology
turbulence
- vortex lattice method
- panels**
SN (EXCLUDES GROUPS OF PEOPLE)
GS **panels**
. curved panels
. rectangular panels
. wing panels
RT baffles
ceilings (architecture)
∞ construction materials
dividers
flat plates
∞ plates
∞ sheets
shielding
thin plates
walls
- panic**
RT emotional factors
emotions
fear
human behavior
- panoramic cameras**
GS optical equipment
. cameras
. . **panoramic cameras**
photographic equipment
. cameras
. . **panoramic cameras**
RT camera shutters
focusing
lenses
photography
wide angle lenses
- panoramic scanning**
GS scanning
. **panoramic scanning**
RT conical scanning
frequency scanning
multispectral band scanners
radar scanning
scanners
searching
surveillance
- panspermia**
DEF The theory that holds that reproductive bodies of living organisms exist throughout the universe and develop wherever the environment is favorable.
RT abiogenesis
aerospace environments
bacteria
biological evolution
exobiology
extraterrestrial life
fungi
- PANT program**
DEF The passive nosetip technology (PANT) program is an investigation of flow phenomena over reentry vehicle nosetips by the Air Force. Used for ablative nosetips and passive nosetip technology.
UF *ablated nosetips*
passive nosetip technology
GS programs
. **PANT program**
- Pantar chondrites**
GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . **Pantar chondrites**
- Panther aircraft**
USE **F-9 aircraft**
- papain**
GS biopolymers
. proteins
. . enzymes
. . . **papain**
organic compounds
. proteins

paper (material)

. . enzymes

. . . **papain**

RT pepsin

paper (material)

DEF Felted or matted sheets of cellulose fibers, formed on a fine wire screen from a dilute water suspension, and bonded together as the water is removed and the sheet is dried.

RT boards (paper)
Kraft process (woodpulp)
∞ materials
organic materials
webs (sheets)
wood

paper chromatography

GS chemical tests
. chemical analysis
. . chromatography
. . . **paper chromatography**
RT gas chromatography
liquid chromatography

papers

GS documents
. **papers**
RT boards (paper)
conferences
fibers
∞ films
laminates
literature
Presidential reports
privacy reports
∞ sheets
webs (sheets)

papillae

RT protuberances

Papua New Guinea

GS nations
. **Papua New Guinea**
RT Asia
Australia
New Guinea (island)

para hydrogen

GS gases
. **para hydrogen**
RT hydrogen
ortho para conversion

parabolas

DEF Open curves where all points of which are equidistant from a fixed point called the focus, and a straight line. The limiting case occurs when the point is on the line, in which case the parabola becomes a straight line.

GS geometry
. Euclidean geometry
. . analytic geometry
. . . conics
. . . . **parabolas**

parabolic antennas

GS antennas
. directional antennas
. . reflector antennas
. . . **parabolic antennas**
RT antenna design
Cassegrain antennas
horn antennas
microwave antennas
radar antennas
radar equipment
radar reflectors

parabolic bodies

DEF Surfaces of revolution generated by revolving sections of parabolas about their major axis. Used for paraboloids.

UF *paraboloids*
GS symmetrical bodies
. bodies of revolution

. . **parabolic bodies**

parabolic differential equations

GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **parabolic differential equations**
RT ∞ equations

parabolic flight

RT ascent trajectories
ballistic trajectories
climbing flight
coasting flight
descent trajectories
∞ flight
midcourse trajectories
missile trajectories
suborbital flight trajectories
weightlessness
weightlessness simulation

parabolic reflectors

DEF Reflecting surfaces having the cross section along the axis in the shape of a parabola. Parallel rays striking the reflector are brought to a focus at a point, or if the source of the rays is placed at the focus, the reflected rays are parallel. Used for dishes.

UF *dishes*
GS reflectors
. **parabolic reflectors**
. . paraboloid mirrors
RT microwave antennas
radar reflectors
reflector antennas
Schwarzschild antennas
solar reflectors

parabolic velocity

USE **escape velocity**

paraboloid mirrors

GS mirrors
. **paraboloid mirrors**
reflectors
. parabolic reflectors
. . **paraboloid mirrors**
RT reflecting telescopes
solar reflectors

paraboloids

USE **parabolic bodies**

parachute descent

UF *parachuting*
GS descent
. **parachute descent**
RT bailout
ejection
ejection training
escape (abandonment)
free fall
Mars Pathfinder
parachutes

parachute fabrics

GS fabrics
. **parachute fabrics**
RT Fortisan (trademark)
gores
netting (materials/structures)
parachutes

parachutes

DEF A device used, or intended to be used to retard the fall of a body or object through the air.

GS **parachutes**
. drag chutes
. parafoils
. recovery parachutes
. ribbon parachutes
. rotochutes
RT aerodynamic brakes
air drop operations
airdrops

ballutes
brakes (for arresting motion)
folding structures
parachute descent
parachute fabrics
paracone
parawings
towed bodies
whirl towers

parachuting

USE **parachute descent**

parachuting injury

GS injuries
. **parachuting injury**

paracone

DEF A system for recovering men and objects from great distances above the Earth's surface and landing them safely onto the Earth.

RT escape capsules
escape systems
parachutes

paradoxes

GS philosophy
. **paradoxes**
RT knowledge
∞ logic
relativity

paraffins

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **paraffins**
. ceresin
RT hydrocarbon fuels
kerosene
shale oil

parafoils

(added July 1994)
GS parachutes
. **parafoils**
RT aerodynamic brakes
airdrops
bailout
free fall
paragliders

paragliders

GS gliders
. **paragliders**
. . inflatable gliders
RT folding structures
hypersonic gliders
parafoils
parawings
∞ subsonic aircraft

Paraguay

GS nations
. **Paraguay**
RT South America

parallax

DEF The difference in the apparent direction or position of an object when viewed from different points expressed as an angle.

GS **parallax**
. solar parallax
. stellar parallax
RT astrometry
companion stars
∞ optics

parallel computers

GS data processing equipment
. computers
. . digital computers
. . . **parallel computers**
. . . . massively parallel processors
. Connection Machine
. MIMD (computers)
. SIMD (computers)

- RT hypercube multiprocessors
- parallel flow**
 GS fluid flow
 . **parallel flow**
 . . pipe flow
 . . three dimensional flow
 . . . Karman-Bodewadt flow
 . . . secondary flow
 RT flow geometry
 flow velocity
 laminar flow
 steady flow
- parallel plates**
 RT capacitors
 ∞ channels
 flat plates
 metal plates
 ∞ plates
 thin plates
 waveguides
- parallel processing (computers)**
 DEF The concurrent or simultaneous execution of more than one program, or the handling of input for more than one operation at the same time.
 GS data processing
 . **parallel processing (computers)**
 RT associative processing (computers)
 computational electromagnetics
 concurrent processing
 Connection Machine
 distributed memory
 hypercube multiprocessors
 Illiac 3 computer
 Illiac 4 computer
 interprocessor communication
 massively parallel processors
 MIMD (computers)
 response time (computers)
 SIMD (computers)
 sorting algorithms
 supercomputers
 systolic arrays
 transputers
 vector processing (computers)
- parallel programming**
 GS computer programming
 . **parallel programming**
 RT multiprocessing (computers)
 pipelining (computers)
- parallel strip lines*
 USE **microstrip transmission lines**
- parallelepipeds**
 GS geometry
 . Euclidean geometry
 . . polyhedrons
 . . . **parallelepipeds**
- parallelograms**
 GS geometry
 . Euclidean geometry
 . . polygons
 . . . tetragons
 **parallelograms**
 rhomboids
- paralysis**
 GS diseases
 . **paralysis**
 . injuries
 . **paralysis**
 RT disabilities
 tremors
- paramagnetic amplifiers*
 USE **masers**
- paramagnetic resonance**
 GS resonance
 . magnetic resonance
 . . **paramagnetic resonance**
 . . . electron paramagnetic resonance
 RT absorption spectra
 ferromagnetic resonance
- nuclear magnetic resonance
 paramagnetism
- paramagnetism**
 GS magnetic properties
 . **paramagnetism**
 RT antiferromagnetism
 Curie-Weiss law
 diamagnetism
 paramagnetic resonance
- paramecia**
 GS animals
 . protozoa
 . . **paramecia**
 . microorganisms
 . protozoa
 . . **paramecia**
- parameter identification**
 DEF The estimation of the unknown parameters of models of physical plants or processes from their dynamic response.
 GS estimating
 . **parameter identification**
 identifying
 . **parameter identification**
 parameterization
 . **parameter identification**
 RT complex systems
 control systems design
 dynamic response
 estimates
 frequency domain analysis
 genetic algorithms
 independent variables
 least squares method
 mathematical models
 maximum likelihood estimates
 observability (systems)
 optimal control
 optimization
 prediction analysis techniques
 probability theory
 sensitivity analysis
 statistical analysis
 steepest descent method
 system identification
 systems analysis
 systems engineering
 Taguchi methods
 time domain analysis
- parameterization**
 GS **parameterization**
 . parameter identification
 RT algorithms
 ∞ applications of mathematics
 dependent variables
 derivation
 dimensional analysis
 ∞ estimators
 formalism
 formulations
 mathematical models
 scale effect
 semiempirical equations
 sensitivity analysis
 system identification
 units of measurement
- parameters*
 USE **independent variables**
- parametric amplifiers**
 DEF Inverting parametric devices used to amplify a signal without frequency translation from input to output. Used for parametric oscillators and reactance amplifiers.
 UF *parametric oscillators*
reactance amplifiers
 GS amplifiers
 . **parametric amplifiers**
 RT frequency converters
 LC circuits
 magnetostatic amplifiers
 microwave amplifiers
 negative resistance devices
 power amplifiers
- semiconductor devices
- parametric diodes**
 GS electronic equipment
 . diodes
 . . semiconductor diodes
 . . . **parametric diodes**
 . solid state devices
 . . semiconductor devices
 . . . **parametric diodes**
 RT varactor diodes
- parametric frequency converters**
 GS frequency converters
 . **parametric frequency converters**
 RT ∞ converters
 phase modulation
 up-converters
- parametric oscillators*
 USE **parametric amplifiers**
- parametrons**
 RT computer storage devices
 magnetic cores
 magnetic storage
 oscillators
 phase lock demodulators
 thin films
- paranasal sinuses**
 GS anatomy
 . respiratory system
 . . **paranasal sinuses**
 sinuses
 . **paranasal sinuses**
 RT nose (anatomy)
- paraplasts**
 GS plasters
 . **paraplasts**
 RT resins
- parapsychology*
 USE **extrasensory perception**
- parasites**
 GS **parasites**
 . trypanosome
 RT animals
 blight
 infestation
- parasitic antennas*
 USE **parasitic elements (antennas)**
- parasitic diseases**
 GS diseases
 . infectious diseases
 . . **parasitic diseases**
 RT airborne infection
 amoeba
 blight
 rust fungi
 trypanosome
- parasitic elements (antennas)**
 (added July 1993)
 UF *parasitic antennas*
parasitic reflectors
passive elements
 GS antenna components
 . **parasitic elements (antennas)**
 . . directors (antenna elements)
 antennas
 . **parasitic elements (antennas)**
 . . directors (antenna elements)
 RT antenna design
 antenna radiation patterns
 dipole antennas
 directional antennas
 log periodic antennas
 radio receivers
 reflectors
 Yagi antennas
- parasitic reflectors*
 USE **parasitic elements (antennas)**
- parathyroid gland**
 GS anatomy

parawings

. glands (anatomy)
. . . endocrine glands
. . . **parathyroid gland**
RT calcium metabolism

parawings

GS airfoils
. wings
. . flexible wings
. . . **parawings**
RT air drop operations
folding structures
hang gliders
parachutes
paragliders

parenteral functions

RT ∞ functions

parents

RT adults
children
human beings

parity

DEF A symmetry property of a wave function.

RT BCH codes
coding
conservation
correction
CP violation
equivalence
error detection codes
information theory
nuclear physics
particle spin
quantum numbers
quantum theory
strangeness
vector currents

∞ parking

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT parking orbits
ramps (structures)

parking orbits

GS orbits
. spacecraft orbits
. . satellite orbits
. . . **parking orbits**
RT Earth orbits
Earth-Moon trajectories
flight optimization
interplanetary trajectories
low Earth orbits
lunar orbits
lunar trajectories
orbital mechanics
∞ parking
planetary orbits
thrust programming
transfer orbits

Parkinson disease

GS diseases
. **Parkinson disease**
RT tremors

parks

GS land
. **parks**
. . national parks
. . . Yellowstone National Park (ID-MT-WY)
RT recreation
regional planning
urban development
urban planning

parotid gland

USE **salivary glands**

parsing algorithms

DEF Computer routines for the syntactic and/or semantic analysis and restructuring of natural language instructions or data for internal processing.

GS mathematical logic
. algorithms
. . **parsing algorithms**

RT compilers
computer techniques
grammars
natural language processing
semantics
subroutines
syntax

partial differential equations

GS analysis (mathematics)
. real variables
. . differential equations
. . . **partial differential equations**
. . . . biharmonic equations
. . . . Burger equation
. . . . Cauchy-Riemann equations
. . . . elliptic differential equations
. . . . Monge-Ampere equation
. . . . Euler-Cauchy equations
. . . . Frowcs Williams-Hawkings equation
. . . . Fokker-Planck equation
. . . . Gauss equation
. . . . Helmholtz vorticity equation
. . . . Liouville equations
. . . . parabolic differential equations
. . . . Poisson equation
. . . . vlasov equations

RT alternating direction implicit methods
Boltzmann-Vlasov equation

∞ equations

Euler-Bernoulli beams
functional integration
kinetic equations
Laplace equation
meshfree methods
method of characteristics
Neumann problem
reaction-diffusion equations
Trefftz method
wave equations

partial pressure

DEF The pressure exerted by a designated component or components of a gaseous mixture.

GS pressure
. **partial pressure**
. . oxygen tension
. . . hypoxemia

RT Dalton law
gas pressure
Henry law
internal pressure
Raoult law
residual gas
∞ tension
vapor pressure

particle acceleration

GS rates (per time)
. acceleration (physics)
. . **particle acceleration**
RT ∞ acceleration
electromagnetic acceleration
magnetic fields
plasma acceleration
racetracks (particle accelerators)
wave-particle interactions

particle accelerator targets

GS targets
. **particle accelerator targets**
RT ∞ accelerators
target thickness

particle accelerators

DEF Specifically, devices for imparting large kinetic energy to charged particles, such as electrons, protons, deuterons, and helium ions.

GS **particle accelerators**
. cyclic accelerators
. . betatrons
. . synchrocyclotrons
. . synchrotrons
. . . bevatron

. . . storage rings (particle accelerators)
. cyclotrons
. . geocyclotrons
. . microtrons
. . Oak Ridge isochronous cyclotron
. . omegatrons
. . synchrocyclotrons
. electron accelerators
. . betatrons
. ion accelerators
. linear accelerators
. Nimrod accelerator
. superconducting super collider
. synchrophasotrons
. Van de Graaff accelerators

RT ∞ accelerators
beam splitters
electron guns
elementary particles
ion sources
kaon production
neutron sources
nuclear particles
racetracks (particle accelerators)
railgun accelerators
SEPAC (payload)

particle beams

GS beams (radiation)
. **particle beams**
. . atomic beams
. . electron beams
. . . relativistic electron beams
. . ion beams
. . neutral beams
. . . molecular beams
. . . neutron beams
. . neutrino beams
. . pion beams
. . proton beams

RT beam splitters
electron acceleration
electron bombardment
flux (rate)
ion stripping
magnetic sails
phonon beams

particle charging

RT charged particles

particle collisions

GS collisions
. **particle collisions**
RT atomic collisions
atomic excitations
BGK model
dense plasmas
Faddeev equations
ionic collisions
kinetics
mean free path
molecular collisions
molecular excitation
nucleon-nucleon scattering
scattering

particle counters

USE **radiation counters**

particle decay

(added May 1994)
SN (LIMITED TO THE DECAY OF ELEMENTARY PARTICLES; EXCLUDES NUCLEAR DECAY)
GS decay
. **particle decay**
. . neutron decay
RT CP violation
elementary particle interactions
fermions
hadrons
radioactive decay

particle density (concentration)

GS density (number/volume)
. **particle density (concentration)**
. . electron density (concentration)
. . . carrier density (solid state)
. . . electron density profiles

. . . ionospheric electron density
 . . . magnetospheric electron density
 . . . electron distribution
 . . . electron density profiles
 . . . ion density (concentration)
 . . . ionospheric ion density
 . . . magnetospheric ion density
 magnetospheric proton density
 proton density (concentration)
 magnetospheric proton density
 . . . plasma density
 RT atmospheric density
 ESRO 4 satellite
 ion stripping
 ionospheric composition
 space density
 spatial distribution

particle detectors

USE **radiation counters**

particle diffusion

GS diffusion
 . **particle diffusion**
 . . . electron diffusion
 . . . ionic diffusion
 RT atomic beams
 Boltzmann transport equation
 diffusion coefficient
 diffusion length
 drop size
 flux (rate)
 gaseous self-diffusion
 molecular diffusion
 muon spin rotation
 self diffusion (solid state)
 thermophoresis

particle emission

GS emission
 . **particle emission**
 . . . electron emission
 . . . field emission
 . . . photoelectric emission
 . . . secondary emission
 . . . ion emission
 . . . neutron emission
 . . . thermionic emission
 RT exhaust emission
 expulsion
 self sustained emission
 stimulated emission

particle energy

GS **particle energy**
 . . . electron energy
 . . . electron states
 . . . proton energy
 RT ∞ energy
 internal energy
 kinetic energy
 monochromatization
 ∞ particle intensity

particle flux

USE **flux (rate)**

particle flux density

SN (LIMITED TO PARTICLE EMISSION OR
 DETECTION RATE PER UNIT AREA)
 GS rates (per time)
 . flux density
 . . . radiant flux density
 **particle flux density**
 electron flux density
 neutron flux density
 proton flux density
 RT Helios satellites
 ∞ particle intensity
 radiancy
 radiation counters
 radiation pressure
 solar constant
 solar flux density

particle image displacement velocimetry

USE **particle image velocimetry**

particle image velocimetry

(added June 1993)

UF *particle image displacement*

velocimetry

PIDV (velocimetry)

PIV (velocimetry)

GS mechanical measurement

. flow measurement

. . **particle image velocimetry**

. velocity measurement

. . **particle image velocimetry**

RT flow distribution

flow velocity

flow visualization

imaging techniques

laser doppler velocimeters

photographic measurement

photographic recording

two phase flow

particle in cell technique

GS analysis (mathematics)

. numerical analysis

. . approximation

. . . **particle in cell technique**

RT ∞ cells

crystal lattices

flow equations

meshfree methods

∞ methodology

vortex in cell technique

∞ **particle intensity**

SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)

RT particle energy

particle flux density

particle interactions

GS **particle interactions**

. elementary particle interactions

. . electroweak interactions (field
 theory)

. . . high energy interactions

. . . . strong interactions (field theory)

. . . meson-meson interactions

. . . meson-nucleon interactions

. . . nuclear capture

. . . . electron capture

. . . nucleon-nucleon interactions

. . . weak energy interactions

. . . . weak interactions (field theory)

. . . proton-antiproton interactions

. . ion atom interactions

. . molecular interactions

. . . molecular collisions

. . . nuclear interactions

. . . . nuclear capture

. electron capture

. . . spin-orbit interactions

. . . . electron capture

. . . weak interactions (field theory)

. . plasma-particle interactions

. . wave-particle interactions

RT Bragg curve

charm (particle physics)

chemical reactions

collision parameters

electron phonon interactions

electron scattering

Feynman diagrams

flavor (particle physics)

∞ interactions

neutral currents

nuclear reactions

photonuclear reactions

photophoresis

quantum chromodynamics

particle laden jets

DEF Fluid, mainly issuing from a nozzle,
 that are turbulent and contain dispersed par-
 ticles.

RT fuel flow

jet flow

particles

turbulent flow

particle mass

GS mass

. **particle mass**

. . . electron mass

RT gravitinos

magnetic rigidity

nuclides

particle motion

RT diffraction radiation

electrophoresis

falling

lattice vibrations

magnetic rigidity

mean free path

∞ motion

neutral sheets

photophoresis

recoilings

relativistic velocity

settling

thermophoresis

transverse momentum

particle precipitation

DEF The precipitation of particles other than
 electrons and protons.

GS **particle precipitation**

. electron precipitation

. proton precipitation

RT atomic structure

charged particles

∞ precipitation

particle production

GS **particle production**

. kaon production

. pair production

. photoproduction

RT comminution

corpuscular radiation

high energy interactions

nuclear radiation

nuclear reactions

particles

radioactivity

spallation

particle size distribution

GS size distribution

. **particle size distribution**

RT dimensions

drop size

fineness

finest

fractions

grain size

particles

particulates

precipitation particle measurement

size determination

size separation

solids flow

thermophoresis

particle spin

GS spin

. **particle spin**

. . . electron spin

. . . isotopic spin

. . . nuclear spin

RT angular momentum

Ising model

muon spin rotation

nuclear magnetic resonance

nuclear physics

parity

quenching (atomic physics)

spin resonance

particle telescopes

UF *electron telescopes*

GEP telescopes

Goddard experiment package

telescope

proton telescopes

GS measuring instruments

. counters

. . . radiation counters

. . . . **particle telescopes**

. . . radiation measuring instruments

. . . radiation counters

. . . **particle telescopes**

particle theory

- telescopes
 - . **particle telescopes**
- RT anticoincidence detectors
- Geiger counters
- satellite-borne instruments
- scintillation counters
- particle theory**
- RT body kinematics
- charm (particle physics)
- collision parameters
- electroweak model
- flavor (particle physics)
- grand unified theory
- Higgs bosons
- ∞ interactions
- many body problem
- plasma-particle interactions
- quark models
- standard model (particle physics)
- string theory
- supergravity
- supersymmetry
- ∞ theories
- unified field theory
- weak energy interactions
- particle tracks**
- RT chemical analysis
- core sampling
- cosmic rays
- fossils
- geochronology
- lunar rocks
- meteoroids
- nuclear particles
- radiation effects
- stratigraphy
- trace elements
- ∞ tracks
- particle trajectories**
- GS trajectories
 - . **particle trajectories**
 - . . . electron trajectories
- RT bubble chambers
- charged particles
- electron optics
- ionizing radiation
- ∞ motion
- ∞ paths
- racetracks (particle accelerators)
- ∞ tracks
- particles**
- DEF Elementary subatomic particles such as protons, electrons or neutrons. Very small pieces of matter. In celestial mechanics, hypothetical entities which respond to gravitational forces but which exert no appreciable gravitational force on other bodies, thus simplifying orbital computations.
- GS **particles**
 - . aerosols
 - . . fog
 - . charged particles
 - . . antiprotons
 - . . energetic particles
 - . . . electrons
 - conduction electrons
 - free electrons
 - high energy electrons
 - relativistic electron beams
 - hot electrons
 - N electrons
 - negatrons
 - photoelectrons
 - pi-electrons
 - polarons
 - solar electrons
 - . . . nuclei (nuclear physics)
 - alpha particles
 - deuterons
 - even-even nuclei
 - heavy nuclei
 - hypernuclei
 - odd-even nuclei
 - odd-odd nuclei
 - tritons
 - plasmas (physics)
- . . . argon plasma
- . . . beta particles
- . . . boundary layer plasmas
- . . . cold plasmas
- . . . collisional plasmas
- strongly coupled plasmas
- collisionless plasmas
- cosmic plasma
- . . . cylindrical plasmas
- . . . dense plasmas
- plasma focus
- strongly coupled plasmas
- electron plasma
- electron-positron plasmas
- elliptical plasmas
- helium plasma
- high temperature plasmas
- hydrogen plasma
- deuterium plasma
- laser plasmas
- metallic plasmas
- cesium plasma
- uranium plasmas
- microplasmas
- nitrogen plasma
- nonequilibrium plasmas
- nonuniform plasmas
- oxygen plasma
- rarefied plasmas
- relativistic plasmas
- rotating plasmas
- semiconductor plasmas
- space plasmas
- solar wind
- stellar winds
- stellar winds
- dusty plasmas
- spherical plasmas
- thermal plasmas
- toroidal plasmas
- . . . primary cosmic rays
- . . . solar cosmic rays
- . . . radiation belts
- . . . artificial radiation belts
- . . . inner radiation belt
- . . . outer radiation belt
- . . . proton belts
- . . . solar corpuscular radiation
- . . . solar electrons
- . . . solar neutrinos
- . . . solar neutrons
- . . . solar protons
- . . . drops (liquids)
- . . . raindrops
- . . . dust
- . . . cosmic dust
- . . . interplanetary dust
- meteoroid dust clouds
- zodiacal dust
- lunar dust
- terrestrial dust belt
- . . . elementary particles
- . . . antiparticles
- . . . antineutrinos
- . . . antinucleons
- . . . antiprotons
- . . . positrons
- . . . beta particles
- . . . bosons
- alpha particles
- Higgs bosons
- mesons
- eta-mesons
- hyperons
- xi hyperons
- kaons
- meson resonance
- X mesons
- muons
- omega-mesons
- pions
- vector mesons
- rho-mesons
- sigma-mesons
- photons
- xi hyperons
- deuterons
- electron-positron pairs
- . . . fermions
- . . . baryons
- . . . hyperons

- xi hyperons
 - omega-mesons
 - rho-mesons
 - sigma-mesons
 - eta-mesons
 - leptons
 - antineutrinos
 - electrons
 - conduction electrons
 - free electrons
 - high energy electrons
 - relativistic electron beams
 - hot electrons
 - N electrons
 - negatrons
 - photoelectrons
 - pi-electrons
 - polarons
 - solar electrons
 - muons
 - neutrinos
 - solar neutrinos
 - positrons
 - meson resonance
 - X mesons
 - neutrons
 - cold neutrons
 - fast neutrons
 - photoneutrons
 - solar neutrons
 - thermal neutrons
 - protons
 - recoil protons
 - solar protons
 - hadrons
 - baryons
 - hyperons
 - xi hyperons
 - omega-mesons
 - rho-mesons
 - sigma-mesons
 - mesons
 - eta-mesons
 - hyperons
 - xi hyperons
 - kaons
 - meson resonance
 - X mesons
 - muons
 - omega-mesons
 - pions
 - vector mesons
 - rho-mesons
 - sigma-mesons
 - hypothetical particles
 - magnetic monopoles
 - nucleons
 - gluons
 - gravitinos
 - gravitons
 - partons
 - quarks
 - tachyons
 - weakly interacting massive particles
 - flakes
 - metal particles
 - metal powder
 - platinum black
 - powdered aluminum
 - sintered aluminum powder
 - microparticles
 - mist
 - neutral particles
 - gravitinos
 - neutrons
 - cold neutrons
 - fast neutrons
 - photoneutrons
 - solar neutrons
 - thermal neutrons
 - nuclear particles
 - antiparticles
 - antineutrinos
 - antinucleons
 - antiprotons
 - positrons
 - beta particles
 - bosons
 - alpha particles
 - Higgs bosons
 - mesons
 - eta-mesons
 - hyperons
 - xi hyperons
 - kaons
 - meson resonance
 - X mesons
 - muons
 - omega-mesons
 - pions
 - vector mesons
 - rho-mesons
 - sigma-mesons
 - photons
 - xi hyperons
 - nucleons
 - photoelectrons
 - particulates
 - soot
 - pollen
 - powder (particles)
 - fines
 - metal powder
 - platinum black
 - powdered aluminum
 - sintered aluminum powder
 - relativistic particles
 - relativistic electron beams
 - trapped particles
 - magnetically trapped particles
 - radiation belts
 - artificial radiation belts
 - inner radiation belt
 - outer radiation belt
 - proton belts
 - nanoparticles
- RT air pollution
chemical clouds
- ∞ clouds
colloids
deuteron irradiation
dirt
dispersions
gas atomization
- ∞ grains
granular materials
grit
ion stripping
ions
neutral beams
neutron beams
nodules
nonpoint sources
particle laden jets
particle production
particle size distribution
positron annihilation
precipitation particle measurement
proton precipitation
smoke
- particulate filters*
USE **fluid filters**
- particulate reinforced composites**
(added January 1992)
GS composite materials
... **particulate reinforced composites**
- RT metal matrix composites
metal particles
microparticles
nanocomposites
particulates
reinforcing materials
- particulate sampling**
GS sampling
... **particulate sampling**
- RT assaying
chemical analysis
concentration (composition)
identifying
particulates
- particulates**
GS particles
... **particulates**
... soot
- RT aerosols
air pollution
air quality
air sampling
atmospheric composition
combustion products
contaminants
dispersions
dust
exhaust gases
fly ash
grain formation
particle size distribution
particulate reinforced composites
particulate sampling
pollution control
pollution monitoring
smog
smoke
solid suspensions
- ∞ **partitions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT curtains
partitions (mathematics)
partitions (structures)
septum
- partitions (mathematics)**
GS analysis (mathematics)
... combinatorial analysis
... **partitions (mathematics)**
- RT combinations (mathematics)
equivalence
∞ partitions
permutations
Voronoi diagrams
- partitions (structures)**
RT bulkheads
curtains
∞ partitions
thin walls
walls
- partons**
GS particles
... charged particles
... **partons**
... elementary particles
... hypothetical particles
... **partons**
- RT hadrons
leptons
quark parton model
quarks
- parts*
USE **components**
- PAS**
UF *perigee-apogee satellites*
GS artificial satellites
... **PAS**
- RT elliptical orbits
twenty-four hour orbits
- Pascal (programming language)**
DEF High order computer programming language developed by Niklaus Wirth originally as an educational tool to foster structured programming.
GS languages
... programming languages
... **Pascal (programming language)**
- RT compilers
computer programming
- Paschen series**
GS spectra
... radiation spectra
... electromagnetic spectra
... line spectra
... **Paschen series**
- RT absorption spectra
atomic spectra
electron transitions
emission spectra
H lines

Pasiphae

hydrogen

Pasiphae

(added January 1996)

DEF A natural satellite of Jupiter orbiting at a mean distance of 23,500,000 kilometers.

GS celestial bodies
 . natural satellites
 . . . Jupiter satellites
 . . . **Pasiphae**

RT Jupiter (planet)

passageways

DEF A pass-through between non-adjacent modules or spaces.

GS **passageways**

. straits
 . . . Torres Strait
 . transfer tunnels

RT approach
cavities
corridors
gaps
notches
openings
∞ paths
roads
∞ tunnels
underground structures
vestibules

passenger aircraft

UF *executive aircraft*

GS **passenger aircraft**

. BAC 111 aircraft
 . BO-105 helicopter
 . Boeing 707 aircraft
 . Boeing 720 aircraft
 . Boeing 727 aircraft
 . Boeing 737 aircraft
 . Boeing 747 aircraft
 . Boeing 757 aircraft
 . Boeing 767 aircraft
 . Boeing 777 aircraft
 . Boeing 2707 aircraft
 . Breguet 941 aircraft
 . C-33 aircraft
 . C-35 aircraft
 . C-46 aircraft
 . Cessna 172 aircraft
 . Cessna 205 aircraft
 . Cessna 210 aircraft
 . Cessna 402B aircraft
 . CH-3 helicopter
 . CH-46 helicopter
 . CH-47 helicopter
 . CH-54 helicopter
 . Comet 4 aircraft
 . commuter aircraft
 . . . ATR-72 aircraft
 . CV-340 aircraft
 . CV-440 aircraft
 . CV-880 aircraft
 . CV-990 aircraft
 . DC 8 aircraft
 . DC 10 aircraft
 . DH 121 aircraft
 . DH 125 aircraft
 . DO-27 aircraft
 . DO-28 aircraft
 . DO-328 aircraft
 . Electra aircraft
 . European Airbus
 . . . A-300 aircraft
 . . . A-310 aircraft
 . . . A-320 aircraft
 . . . A-330 aircraft
 . . . A-340 aircraft
 . . . A-380 aircraft
 . Boeing 717 aircraft
 . F-27 aircraft
 . F-28 helicopter
 . F-28 transport aircraft
 . G-1 aircraft
 . G-222 aircraft
 . H-19 helicopter
 . H-53 helicopter
 . H-56 helicopter
 . HFB-320 aircraft
 . HS-748 aircraft

. IL-62 aircraft
 . IL-76 aircraft
 . IL-86 aircraft
 . IL-96 aircraft
 . Jetstream aircraft
 . L-1011 aircraft
 . L-2000 aircraft
 . MD 11 aircraft
 . MD 80 aircraft
 . Mystere 20 aircraft
 . Mystere 50 aircraft
 . OH-5 helicopter
 . P-160 aircraft
 . P-166 aircraft
 . SE-210 aircraft
 . T-39 aircraft
 . TU-104 aircraft
 . TU-124 aircraft
 . TU-134 aircraft
 . TU-144 aircraft
 . TU-204 aircraft
 . U-10 aircraft
 . VC-10 aircraft
 . Viscount aircraft
 . Yak 40 aircraft
 . YS-11 aircraft

RT air transportation

∞ aircraft

AN-22 aircraft
AN-24 aircraft
C-121 aircraft
cargo aircraft
civil aviation
commercial aircraft
DC 7 aircraft
E-2 aircraft
general aviation aircraft
ground effect machines
HC-3 helicopter
jet aircraft
light aircraft
light transport aircraft
∞ low wing aircraft
Mercurie aircraft
MH-262 aircraft
∞ military aircraft
P-531 helicopter
PD-808 aircraft
rotary wing aircraft
Saab 105 aircraft
SC-7 aircraft
short haul aircraft
∞ subsonic aircraft
supersonic aircraft
supersonic transports
transport aircraft
TU-154 aircraft
turbofan aircraft
turboprop aircraft
V/STOL aircraft
very large transport aircraft
water takeoff and landing aircraft

passengers

RT airline operations
automated guideway transit vehicles
automated mixed traffic vehicles
automated transit vehicles
payloads
rapid transit systems
riding quality
transportation

passes

USE **gaps (geology)**

passivation

USE **passivity**

passive elements

USE **parasitic elements (antennas)**

passive L-band radiometers

GS measuring instruments
 . radiation measuring instruments
 . . . actinometers
 . . . radiometers
 **passive L-band radiometers**
RT microwave frequencies

ultrahigh frequencies

passive nosetip technology

USE **PANT program**

passive satellites

UF *reflector satellites*
GS artificial satellites
 . **passive satellites**
 . . . Beacon satellites
 Beacon Explorer A
 Explorer 22 satellite
 . . . Echo satellites
 Echo 1 satellite
 Echo 2 satellite
 . . . LAGEOS (satellite)
 . . . PAGEOS satellite
RT active satellites
communication satellites
Echo project
geodetic satellites
navigation satellites
satellite laser ranging
synchronous satellites

passivity

UF *passivation*
RT anodizing
chemical attack
chemical properties
coatings
corrosion
corrosion prevention
corrosion resistance
deactivation
electrolysis
∞ inhibition
inhibitors
oxidation
oxidation resistance
rusting
siliconizing

paste (consistency)

DEF Mixtures with characteristic soft or plastic consistencies.

RT mixtures

pastes

DEF Adhesive compositions having a characteristic plastic-type consistency, that is, high order of yield values, such as that of pastes prepared by heating a mixture of starch and water and subsequently cooling the hydrolyzed product.

GS adhesives

. **pastes**
RT glues
plasters

pasteurizing

GS heating
 . **pasteurizing**
RT purification
sterilization

patch antennas

(added June 1997)

GS antennas
 . **patch antennas**
RT antenna arrays
antenna design
microstrip antennas
microwave antennas

patch tests

SN (CONDITIONS FOR ASSESSING FINITE ELEMENT METHOD CONVERGENCE AND STABILITY PROPERTIES)
RT convergence
finite element method
hydraulic fluids
structural analysis
∞ tests

patent applications

RT copyrights
inventions
licensing
patents
product development

- technology utilization
- patent policy**
 - GS policies
 - . **patent policy**
 - RT intellectual property
 - inventions
 - patents
 - product development
 - regulations
 - rules
- patents**
 - GS intellectual property
 - . **patents**
 - RT claiming
 - grants
 - inventions
 - patent applications
 - patent policy
- path planning*
 - USE **trajectory planning**
- Pathfinder nuclear reactor**
 - GS nuclear electric power generation
 - . nuclear power reactors
 - . . **Pathfinder nuclear reactor**
 - nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . boiling water reactors
 - **Pathfinder nuclear reactor**
 - . nuclear power reactors
 - . . **Pathfinder nuclear reactor**
- pathogenesis**
 - RT cholera
 - diseases
 - pathogens
- pathogens**
 - DEF Disease-producing agents, usually referring to living organisms.
 - RT bacteria
 - Clostridium botulinum
 - pathogenesis
- pathological cell death*
 - (added October 2000)
 - USE **necrosis**
- pathological effects**
 - GS **pathological effects**
 - . necrosis
 - RT biological effects
 - carbon monoxide poisoning
 - cholera
 - diseases
 - ∞ effects
 - physiological responses
 - stress (biology)
- pathology**
 - GS medical science
 - . **pathology**
 - . . human pathology
 - RT animal models
 - autopsies
 - diagnosis
 - dissection
 - hemorrhages
 - necrosis
 - radiation therapy
 - veterinary medicine
- ∞ **paths**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *courses*
 - lanes*
 - RT critical path method
 - diffraction paths
 - duality principle
 - flight paths
 - ground tracks
 - mean free path
 - meteor trails
 - multipath transmission
 - network analysis
- operations research
- optical paths
- orbits
- particle trajectories
- passageways
- PERT
- routes
- sound transmission
- thermodynamics
- trajectories
- patients**
 - RT human beings
 - human pathology
 - therapy
- Patriot missile**
 - DEF Surface to air, anti-aircraft missile.
 - GS missiles
 - . surface to air missiles
 - . . **Patriot missile**
 - RT missile configurations
 - ∞ rockets
 - weapons
- patrols**
 - RT reconnaissance
- pattern distribution*
 - USE **distribution (property)**
- pattern method (forecasting)**
 - GS management methods
 - . **pattern method (forecasting)**
 - predictions
 - . forecasting
 - . . technological forecasting
 - . . . **pattern method (forecasting)**
 - RT Delphi method (forecasting)
 - estimating
 - ∞ methodology
 - operations research
 - planning
 - probe method (forecasting)
 - technology assessment
- pattern recognition**
 - DEF The identification of shapes, forms and configurations by automatic means.
 - UF *automatic pattern recognition*
 - feature extraction*
 - GS recognition
 - . **pattern recognition**
 - . . character recognition
 - . . graphology
 - RT change detection
 - clumps
 - cluster analysis
 - computer vision
 - context
 - edge detection
 - Feature Identification and Location
 - Exper
 - gray scale
 - image analysis
 - image classification
 - multisensor applications
 - optical relay systems
 - principal components analysis
 - readers
 - repetition
- pattern registration**
 - RT comparison
 - image contrast
 - image correlators
 - image motion compensation
 - image reconstruction
 - image resolution
 - imaging techniques
 - magnetic signatures
 - matching
- ∞ **patterns**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT diffraction patterns
 - distribution (property)
 - drainage patterns
 - kurtosis
- molds
- photomasks
- prototypes
- radiation distribution
- regularity
- resins
- speckle patterns
- synthetic arrays
- templates
- test pattern generators
- Widmanstätten structure
- Patterson map**
 - GS charts
 - . graphs (charts)
 - . . **Patterson map**
 - RT crystal lattices
 - crystal structure
 - lattice parameters
- Pauli exclusion principle**
 - GS mechanics (physics)
 - . quantum mechanics
 - . . **Pauli exclusion principle**
 - wave functions
 - . **Pauli exclusion principle**
 - RT atomic structure
 - exclusion
 - fermions
- pavements**
 - RT asphalt
 - coatings
 - concretes
 - foundations
 - highways
 - roads
 - runways
 - streets
- payload assist module**
 - DEF Rocket vehicle with a spinning solid-propellant motor to attain injection velocity to place payload into intended orbits from the parking orbits of the STS.
 - GS modules
 - . **payload assist module**
 - rocket vehicles
 - . **payload assist module**
 - RT instrument packages
 - payloads
 - Space Shuttle payloads
 - space transportation system
 - spaceborne experiments
- payload control**
 - DEF Execution of events involved in operating the payload and supporting systems.
 - RT ∞ control
 - payloads
 - sounding rockets
 - space shuttles
- payload delivery (STS)**
 - DEF The transport of payloads via the Space Transportation System including ground to Earth orbit delivery by the Space Shuttle and orbit to orbit delivery via orbit transfer vehicles.
 - GS delivery
 - . **payload delivery (STS)**
 - RT Advanced Launch System (STS)
 - electric power supplies
 - Multi-Purpose Logistics Modules
 - orbit insertion
 - orbit transfer vehicles
 - orbital launching
 - payloads
 - power modules (STS)
 - solar arrays
 - space transportation system
- payload deployment & retrieval system**
 - DEF System of mechanical and control devices, with associated data systems, for payload handling in space.
 - RT manipulators
 - NASA programs
 - orbit transfer vehicles
 - payloads
 - remote handling

payload integration

remote manipulator system
space shuttles
Space Station Mobile Servicing System
∞ systems

payload integration
RT mission planning
payload integration plan
payloads
Space Shuttle payloads

payload integration plan
DEF Procedures providing for compatibility of spaceborne experiments with the carrier spacecraft (e.g., shuttle orbiter).
RT payload integration payloads
∞ plans
Space Shuttle orbiters
Space Shuttle payloads
space transportation system
spaceborne experiments

payload mass ratio
GS ratios
. mass ratios
. . **payload mass ratio**
RT multistage rocket vehicles
piggyback systems
pressure ratio
propellant mass ratio

payload retrieval (STS)
GS retrieval
. **payload retrieval (STS)**
RT orbit transfer vehicles
orbital rendezvous
payload transfer
remote manipulator system
space shuttles
space transportation system
stationkeeping

payload stations
SN (THE POSITION OR MOUNTING PLACE FOR A PAYLOAD ONBOARD A ROCKET VEHICLE, SPACECRAFT, OR SPACE STATION; EXCLUDES ORBITAL STATIONS AND CREW WORKSTATIONS)
DEF The locations in the Space Shuttles' flight decks and cargo bay at which payloads are mounted.
GS stations
. **payload stations**
RT payloads
space transportation

payload transfer
DEF The in-space movement of payloads from point to point.
RT orbital servicing
payload retrieval (STS)
space maintenance

payloads
DEF Originally, the revenue producing portions of an aircraft's load, e.g., passengers, cargo, and mail. By extension, that which an aircraft, rocket, or spacecraft carries over and above which is necessary for the operation of the vehicle for its flight.
GS **payloads**
. EXPOS (Spacelab payload)
. OSTA-2 payload
. SEPAC (payload)
. sortie systems
. Space Shuttle payloads
. . Advanced Technology Laboratory
. . Astro missions (STS)
. . Atmospheric General Circulation Experiment
. . Earth radiation budget experiment
. . Earth Viewing Applications Laboratory
. . electromagnetic environment experiment
. . Get Away Specials (STS)
. . Halogen Occultation Experiment
. . OSS-1 payload
. . OSTA-1 payload

. . OSTA-3 payload
. . Physics and Chemistry Experiment in Space
. . plasma interaction experiment
. . Spacelab
. . X Ray Astrophysics Facility
. . space station payloads
. . Spacelab payloads
. . AMPS (satellite payload)
. . Atmospheric Cloud Physics Lab (Spacelab)
. . Atmospheric General Circulation Experiment
. . geophysical fluid flow cells
. . Solar Cell Calibration Facility

RT aircraft performance
aircraft specifications
annular suspension and pointing system
Apollo Lunar Surface Experiments Package
asteroid capture
EASEP
German Infrared Laboratory instrument packages
LIRTS (telescope)
∞ loading
loads (forces)
passengers
payload assist module
payload control
payload delivery (STS)
payload deployment & retrieval system
payload integration
payload integration plan
payload stations
piggyback systems
Space Processing Applications
Rocket
space transportation
space tugs
spaceborne experiments
warheads
∞ weight
weight (mass)

PBB
USE **polybrominated biphenyls**

PBRE (reactors)
USE **pebble bed reactors**

PCB
USE **polychlorinated biphenyls**

PCM (materials)
USE **phase change materials**

PCM (modulation)
USE **pulse code modulation**

PCM telemetry
GS telecommunication
. telemetry
. . **PCM telemetry**
transmission
. signal transmission
. . telemetry
. . . **PCM telemetry**
RT differential pulse code modulation
pulse code modulation

PD-808 aircraft
UF *Douglas PD-808 aircraft*
Piaggio-Douglas PD-808 aircraft
GS jet aircraft
. **PD-808 aircraft**
light aircraft
. **PD-808 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **PD-808 aircraft**
monoplanes
. **PD-808 aircraft**
Piaggio aircraft
. **PD-808 aircraft**
RT ∞ aircraft

passenger aircraft

PDE (engines)
(added March 2001)
USE **pulse detonation engines**

PDM (modulation)
USE **pulse duration modulation**

PDP 7 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 7 computer**
RT PDP 9 computer

PDP 8 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 8 computer**

PDP 9 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 9 computer**
RT PDP 7 computer

PDP 10 computer
UF *System 10 computer*
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 10 computer**

PDP 11 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 11 computer**

PDP 11/20 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 11/20 computer**

PDP 11/40 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 11/40 computer**

PDP 11/45 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 11/45 computer**

PDP 11/50 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 11/50 computer**

PDP 11/70 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 11/70 computer**

PDP 12 computer
GS data processing equipment
. computers
. . digital computers
. . . PDP computers
. . . . **PDP 12 computer**

PDP 15 computer
GS data processing equipment

- . computers
- .. digital computers
- ... **PDP 15 computer**
- PDP computers**
- GS data processing equipment
 - . computers
 - .. digital computers
 - ... **PDP computers**
 - PDP 7 computer
 - PDP 8 computer
 - PDP 9 computer
 - PDP 10 computer
 - PDP 11 computer
 - PDP 11/20 computer
 - PDP 11/40 computer
 - PDP 11/45 computer
 - PDP 11/50 computer
 - PDP 11/70 computer
 - PDP 12 computer
- PDRE (engines)*
(added March 2001)
- USE **pulse detonation engines**
- PDS (spectroscopy)*
(added November 1998)
- USE **photothermal deflection spectroscopy**
- PDWE (engines)*
(added March 2001)
- USE **pulse detonation engines**
- Peacekeeper missile*
- USE **MX missile**
- peacetime**
- RT electronic warfare
- histories
- international cooperation
- international law
- warfare
- ∞ **peaks**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT apexes
- extremum values
- maxima
- mountains
- plateaus
- peaks (landforms)**
- UF *pinnacles*
- GS landforms
 - . **peaks (landforms)**
 - .. Pike's Peak (CO)
- RT mountains
- orography
- topography
- pearlite**
- DEF An aggregate in steel of ferrite and cementite.
- RT cementite
- ferrites
- iron alloys
- microstructure
- steels
- Pearson distributions**
- GS functions (mathematics)
 - . probability density functions
 - .. **Pearson distributions**
 - statistical analysis
 - . probability density functions
 - .. **Pearson distributions**
 - statistical distributions
 - . **Pearson distributions**
- peat**
- DEF Dark brown or black residuum produced from the partial decomposition and disintegration of mosses, hedges, trees, and other plants that grow in marshes and other wet places.
- GS carbonaceous materials
 - . **peat**
 - fuels
- . chemical fuels
- .. hydrocarbon fuels
- ... fossil fuels
- **peat**
- organic materials
- . **peat**
- resources
- . Earth resources
- . fossil fuels
- ... **peat**
- RT coal
- sediments
- pebble bed reactors**
- UF *PBRE (reactors)*
- GS nuclear reactors
 - . **pebble bed reactors**
- RT reactor design
- reactor technology
- Peclet number**
- DEF A nondimensional number arising in problems of heat transfer in fluids.
- GS dimensionless numbers
 - . **Peclet number**
 - ratios
 - . **Peclet number**
- RT advection
- heat transfer
- Prandtl number
- Reynolds number
- thermal diffusion
- peculiar galaxies**
(added November 1988)
- GS celestial bodies
 - . galaxies
 - .. **peculiar galaxies**
- RT elliptical galaxies
- galactic structure
- spiral galaxies
- peculiar stars**
- DEF Stars with spectra that cannot be conveniently fitted into any of the standard spectral classifications. They are denoted by a "p" after their spectral type.
- GS celestial bodies
 - . stars
 - .. **peculiar stars**
 - ... shell stars
 - ... Sigma Orionis
 - ... symbiotic stars
- RT A stars
- B stars
- hot stars
- magnetic stars
- stellar spectra
- stellar spectrophotometry
- stellar structure
- pedals**
- RT levers
- manual control
- Pedersen currents**
(added December 2001)
- DEF Ionic currents flowing parallel to ionospheric conductive electric fields.
- GS electric current
 - . ionospheric currents
 - .. **Pedersen currents**
 - electricity
 - . atmospheric electricity
 - .. ionospheric currents
 - ... **Pedersen currents**
 - ion currents
 - . **Pedersen currents**
- RT auroral zones
- Birkeland currents
- electric fields
- field aligned currents
- Hall effect
- pediments*
- USE **piedmonts**
- pediplains*
- USE **piedmonts**
- pedology*
- USE **soil science**
- PEEK**
- DEF A class of semicrystalline polymers called polyethylene ethers for use as molding compounds and for use as composite matrix materials. Used for polyetheretherketones.
- UF *polyetheretherketones*
- GS plastics
 - . synthetic resins
 - .. polyether resins
 - ... **PEEK**
 - .. thermoplastic resins
 - ... **PEEK**
 - resins
 - . synthetic resins
 - .. polyether resins
 - ... **PEEK**
 - .. thermoplastic resins
 - ... **PEEK**
- RT carbon fiber reinforced plastics
- ethers
- ketones
- polymer matrix composites
- resin matrix composites
- peeling**
- RT adhesion
- cutting
- debonding (materials)
- delaminating
- flaking
- mechanical properties
- shedding
- ∞ stripping
- peening**
- GS metal finishing
 - . **peening**
 - .. shot peening
- RT cold working
- hardening (materials)
- metal working
- work hardening
- Pegasus air-launched booster**
(added May 1990)
- GS launch vehicles
 - . **Pegasus air-launched booster**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. **Pegasus air-launched booster**
- RT air launching
- B-52 aircraft
- X-43 vehicle
- Pegasus computer**
- GS data processing equipment
 - . computers
 - .. **Pegasus computer**
- Pegasus engine*
- USE **Bristol-Siddeley BS 53 engine**
- Pegasus satellites**
- GS artificial satellites
 - . **Pegasus satellites**
- RT Saturn project
- pelagic zone**
- GS regions
 - . **pelagic zone**
- RT oceanography
- pellets**
- RT briquets
- fuel capsules
- granular materials
- nuclear fuels

pellicle

∞ shot

pellicle

RT thin films

pelomyxa

GS animals
. protozoa
. . . amoeba
. . . . **pelomyxa**
microorganisms
. protozoa
. . . amoeba
. . . . **pelomyxa**

Peltier effects

DEF The effects which result in the production or absorption of heat at the junction of two metals on the passage of an electrical current.

RT ∞ effects
Seebeck effect
temperature effects
thermocouples
thermoelectric cooling
thermoelectricity
thermophysical properties

pelvis

GS anatomy
. musculoskeletal system
. . . bones
. . . . **pelvis**
RT girdles

penalties

GS law (jurisprudence)
. public law
. . . **penalties**
RT air law
disciplining
judgments
legal liability
liabilities
prohibition
regulations

penalty function

DEF In mathematics, a function used in treating maxima and minima problems subject to restraints.

GS functions (mathematics)
. **penalty function**
RT constraints
∞ functions
maxima
minima
optimization

pencil beams

GS beams (radiation)
. **pencil beams**
RT antenna design
antenna radiation patterns
radar beams

pendulous gyroscopes

USE **gyroscopic pendulums**

pendulums

GS oscillators
. mechanical oscillators
. . . **pendulums**
. . . . gyroscopic pendulums
RT accelerometers
gravitation
momentum
oscillations
timing devices

penetrants

RT ∞ agents
preservatives
retardants

penetrating particles

USE **corpuscular radiation**

penetration

DEF The depths to which one material extends into or penetrates another.

RT diffusion

drilling
fragmentation
hydrodynamic ram effect
impact
nuclear vulnerability
percolation
perforating
permeability
permeating
piercing
∞ saturation
seepage
terminal ballistics
terrain following
vulnerability

penetration ballistics

USE **terminal ballistics**

penetrometers

DEF Simple devices for measuring the penetrating power of a beam of x rays or other penetrating radiation by comparing transmission through various absorbers.

GS measuring instruments
. **penetrometers**
RT lunar soil

penicillin

GS drugs
. antibiotics
. . . **penicillin**

Peninsular Ranges (CA)

GS landforms
. mountains
. . . **Peninsular Ranges (CA)**
RT California

peninsulas

DEF Elongated bodies or stretches of land nearly surrounded by water and connected with a larger land area, usually by a neck or an isthmus. The term is derived from the Latin 'paeninsula' "almost island."

GS landforms
. **peninsulas**
. . . Delmarva Peninsula (DE-MD-VA)
RT isthmuses
land
water

Penning discharge

DEF A direct current discharge where electrons are forced to oscillate between two opposed cathodes and are restrained from going to the surrounding anode by the presence of a magnetic field.

GS electric current
. electric discharges
. . . **Penning discharge**
RT electrodeless discharges
gas ionization
ion motion
plasma generators

Penning effect

DEF An increase in the effective ionization rate of a gas due to the presence of a small number of foreign metastable atoms.

RT ∞ effects
gas ionization
laser cooling
metastable atoms

Penning gages

GS measuring instruments
. pressure gages
. . . vacuum gages
. . . . ionization gages
. . . . **Penning gages**
vacuum apparatus
. vacuum gages
. . . ionization gages
. . . **Penning gages**

Pennsylvania

GS nations
. United States
. . . **Pennsylvania**

RT Allegheny Plateau (US)
Delaware Bay (US)
Delaware River Basin (US)
Ohio River (US)
Susquehanna River Basin
(MD-NY-PA)

∞ pens

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *styluses*
RT enclosures
recording instruments

pentaboranes

GS boron compounds
. boron hydrides
. . . boranes
. . . . **pentaboranes**
hydrogen compounds
. hydrides
. . . boron hydrides
. . . . boranes
. **pentaboranes**

pentachlorides

USE **chlorides**

pentacerythritol tetranitrate

USE **PETN**

pentanes

GS organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . . alkanes
. **pentanes**
. neopentane

pentanone

GS ketones
. **pentanone**
organic compounds
. **pentanone**
RT acetone
acetylacetone

pentobarbital

RT drugs
narcotics
sedatives

pentobarbital sodium

GS drugs
. **pentobarbital sodium**
. . . reserpine
RT Nembutal (trademark)

pentodes

RT electron tubes
semiconductor devices
tetrodes
transistors
vacuum tubes

pentolite

GS explosives
. **pentolite**
propellants
. **pentolite**

pentose

GS organic compounds
. carbohydrates
. . . sugars
. . . . monosaccharides
. **pentose**
. ribose
. xylose

penumbras

GS shadows
. **penumbras**
RT eclipses
umbras

PEOLE satellites

GS artificial satellites
. French satellites
. . . **PEOLE satellites**

- RT geophysical satellites
- Peoples Democratic Republic of Germany*
USE **East Germany**
- peppers**
RT ∞ food
- pepsin**
GS biopolymers
. proteins
. . enzymes
. . . **pepsin**
organic compounds
. proteins
. . enzymes
. . . **pepsin**
RT papain
- peptides**
GS organic compounds
. **peptides**
. . polypeptides
. . . angiotensins
. . . glutathione
. . . hypertensin
. . vasopressins
RT amino acids
aspartic acid
proteins
- percentage*
USE **ratios**
- perception**
GS **perception**
. binaural hearing
. motion perception
. sensory perception
. . auditory perception
. . consciousness
. . extrasensory perception
. . kinesthesia
. . olfactory perception
. . pain
. . pain sensitivity
. . proprioception
. . . autokinesis
. . taste
. . touch
. . . tactile discrimination
. . vertical perception
. . vibration perception
. . visual perception
. . . critical flicker fusion
. . . space perception
. . . . autokinesis
. . . visual discrimination
. gravity perception
. sound localization
RT acuity
adaptation
artificial intelligence
character recognition
cognition
color
contrast
electrocutaneous communication
frequency response
identifying
illusions
images
information processing (biology)
 ∞ interpretation
knowledge
legibility
monocular vision
perceptual time constant
reading
resolution
retinal adaptation
sensitivity
sensory deprivation
sensory feedback
situational awareness
symbols
thresholds (perception)
visibility
- vision
- perceptrons*
USE **self organizing systems**
- perceptual errors**
DEF Deviations from accuracy in the perception of objects, shapes, colors, weights, etc., through the use of the senses.
RT display devices
visual perception
visual stimuli
- perceptual time constant**
GS constants
. time constant
. . **perceptual time constant**
RT perception
reaction time
sense organs
sensorimotor performance
velocity
- perchlorates**
GS halogen compounds
. chlorine compounds
. . **perchlorates**
. . . aluminum perchlorates
. . . ammonium perchlorates
. . . hydrazine perchlorates
. . . hydrogen perchlorate
. . . hydroxylammonium perchlorates
. . . lithium perchlorates
. . . magnesium perchlorates
. . . nitronium perchlorate
. . . potassium perchlorates
RT chlorates
perchloric acid
- perchloric acid**
GS acids
. **perchloric acid**
RT perchlorates
- perchloryl fluorides**
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **perchloryl fluorides**
. halides
. . fluorides
. . . **perchloryl fluorides**
- percolation**
RT beds (process engineering)
concentrating
diffusion
extraction
filtration
interstices
leaching
lysimeters
penetration
permeability
permeating
seepage
 ∞ separation
voids
- Percus method**
RT flow equations
integral equations
 ∞ methodology
- percussion**
RT detonation
impact
physical examinations
primers (explosives)
- perfect gas*
USE **ideal gas**
- perfectly matched layers**
(added July 1998)
DEF In the area of computational electromagnetism, an absorbing boundary condition used for terminating infinite domain calculations in the finite-difference time-domain (FDTD) or finite element methods. The approach has also been extended to the analysis of some problems in acoustics.
UF **PML (electromagnetism)**
conditions
GS . boundary conditions
. . **perfectly matched layers**
RT computational electromagnetics
computational grids
electromagnetic absorption
electromagnetic scattering
finite difference theory
finite element method
Maxwell equation
- perfluoro compounds**
GS **perfluoro compounds**
. perfluoroalkane
. perfluoroguanidine
- perfluoroalkane**
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . difluoro compounds
. . . . **perfluoroalkane**
. . . fluorine organic compounds
. . . . **perfluoroalkane**
organic compounds
. fluorine organic compounds
. . **perfluoroalkane**
perfluoro compounds
. **perfluoroalkane**
- perfluoroguanidine**
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . **perfluoroguanidine**
organic compounds
. fluorine organic compounds
. . **perfluoroguanidine**
perfluoro compounds
. **perfluoroguanidine**
guanidines
- perforated plates**
GS structural members
. plates (structural members)
. . **perforated plates**
RT anisotropic plates
cavities
hole geometry (mechanics)
holes (mechanics)
openings
 ∞ perforation
porous boundary layer control
stress concentration
- perforated shells**
GS shells (structural forms)
. **perforated shells**
RT arches
cavities
enclosures
fairings
hole distribution (mechanics)
hole geometry (mechanics)
holes (mechanics)
housings
hulls (structures)
membrane structures
nacelles
 ∞ perforation
pressure vessel design
rocket engine cases
shell theory
stress concentration
- perforating**
RT burnthrough (failure)
cutting
drilling
formations
fracturing
gas injection
injection
metal cutting
metal working
penetration

perforation

∞ perforation
piercing
water injection

∞ perforation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cavities
holes (mechanics)
perforated plates
perforated shells
perforating
piercing

∞ performance

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aircraft performance
astronaut performance
comfort
complexity
computer systems performance
consistency
efficiency
effort
environments
evaluation
examination
fatigue (biology)
figure of merit
flight characteristics
human factors engineering
human performance
long term effects
mental performance
modulation transfer function
observation
operator performance
optical transfer function
output
performance tests
pilot performance
postflight analysis
propulsion system performance
quality
ratings
reliability
spacecraft performance
standards
task complexity
training evaluation

performance prediction

GS predictions
. **performance prediction**
RT evaluation
management
prediction analysis techniques
reliability
reliability analysis
reliability engineering
trend analysis

performance tests

SN (APPLY ONLY TO OPERATING EQUIPMENT)
RT accelerated life tests
acceptability
certification
checkout
computer systems performance
field tests
hardware-in-the-loop simulation
inspection
∞ performance
space vehicle checkout program
specifications
standards
∞ tests

perfusion

USE **diffusion**

periclase

GS chalcogenides
. oxides
. . . metal oxides
. . . . alkaline earth oxides
. magnesium oxides
. **periclase**

magnesium compounds
. magnesium oxides
. . **periclase**

peridotite

UF *kimberlite*
GS rocks
. igneous rocks
. . **peridotite**
RT chromites
dunite
olivine
regolith
soils

perigee-apogee satellites

USE **PAS**

perigees

DEF Those orbital points nearest the Earth when the Earth is the center of attraction.
GS apsides
. **perigees**
RT apogees
Earth orbits
elliptical orbits
orbits
perilunes

perihelions

DEF Those points in solar orbits which are nearest the sun.
GS apsides
. **perihelions**
RT aphelions
elliptical orbits
orbital elements
orbits
solar orbits

perilunes

GS apsides
. **perilunes**
RT lunar orbits
lunar satellites
perigees

period doubling

DEF The bifurcation of a nonlinear system to two stable periodic cycles on its route to chaotic turbulence.
GS branching (mathematics)
. **period doubling**
RT chaos
periodic functions
transition flow
turbulence
turbulent flow

period equations

USE **periodic functions**

periodic functions

UF *period equations*
GS analysis (mathematics)
. real variables
. . **periodic functions**
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
functions (mathematics)
. transcendental functions
. . **periodic functions**
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
RT Floquet theorem
Fourier analysis
period doubling

periodic orbits

USE **orbits**

periodic processes

USE **cycles**

periodic variations

UF *periodicity*
GS variations

. **periodic variations**
. . alternations
. . annual variations
. . diurnal variations
. . intraseasonal variations
. . nocturnal variations
. . secular variations
. . . Madden-Julian Oscillation
. . quasi-biennial oscillation
RT autocorrelation
cataclysmic variables
climatology
cycles
dendrochronology
el Nino
extrapolation
Fourier analysis
long term effects
oscillations
oscillators
polar wandering (geology)
regularity
∞ rhythm
semiregular variable stars
Southern Oscillation
trends
variability
variable stars

periodicals

UF *journals (documents)*
GS documents
. **periodicals**
RT ∞ journals
records

periodicity

USE **periodic variations**

periodicity (biology)

USE **rhythm (biology)**

peripheral circulation

GS circulation
. blood circulation
. . **peripheral circulation**

peripheral equipment (computers)

SN (EXCLUDES COMPUTER-CONTROLLED EQUIPMENT)
DEF Equipment that works in conjunction with a computer but is not part of the computer itself. Card or paper-tape readers or punches, magnetic tape handlers, or line printers are among items of peripheral equipment.
UF *auxiliary equipment (computers)*
GS computer components
. **peripheral equipment (computers)**
. . printers (data processing)
. . remote consoles
data processing equipment
. **peripheral equipment (computers)**
. . printers (data processing)
. . remote consoles
RT analog to digital converters
computer storage devices
computer systems design
data processing
digital to analog converters
∞ equipment
magnetic disks
magnetic tapes
modems
plotters

peripheral jet flow

GS fluid flow
. jet flow
. . **peripheral jet flow**
RT downwash
ground effect (aerodynamics)
ground effect machines
lift augmentation

peripheral nervous system

GS anatomy
. nervous system
. . **peripheral nervous system**
RT neuromuscular transmission

∞ systems

peripheral vision

- GS vision
 - . **peripheral vision**
- RT space perception
 - visual acuity
 - visual fields

peripheries

USE **boundaries**

periscopes

DEF Optical instruments which displace the line of sight parallel to itself to permit a view which may otherwise be obstructed.

- GS optical equipment
 - . **periscopes**
- RT binoculars
 - eyepieces
 - optical measuring instruments
 - telescopes
 - viewing

peritoneum

- GS anatomy
 - . **peritoneum**
 - membranes
 - . **peritoneum**
- RT abdomen
 - epithelium
 - tissues (biology)
 - viscera

permafrost

DEF Any soil, subsoil or other surficial deposit, or even bedrock, occurring in arctic or subarctic regions at a variable depth beneath the Earth's surface in which a temperature below freezing has existed continuously for a long time. Used for frozen soils.

- UF *frozen soils*
- GS soils
 - . **permafrost**
- RT auefs (ice)
 - Earth cryosphere
 - planetary cryospheres
 - polar regions

Permalloys (trademark)

- GS alloys
 - . **Permalloys (trademark)**
 - magnetic materials
 - ferromagnetic materials
 - . . . **Permalloys (trademark)**
- RT iron alloys
 - magnets
 - molybdenum alloys
 - nickel alloys
 - permanent magnets

permanent magnets

- GS magnets
 - . **permanent magnets**
- RT ferrimagnets
 - ferromagnetic materials
 - magnetic materials
 - Permalloys (trademark)

permanganates

- GS manganese compounds
 - . **permanganates**
- RT manganese ions

permeability

SN (EXCLUDES MAGNETIC PERMEABILITY)
 DEF Of a magnetic material, the ratio of the magnetic induction to the magnetic field intensity in the same region. The ability to permit penetrations or passage. In this sense the term is applied particularly to substances which permit penetration or passage of fluids.

- GS **permeability**
 - . dielectric permeability
- RT aquifers
 - density (mass/volume)
 - diffusion
 - diffusivity
 - drainage
 - formations

- infiltration
- interstices
- leaching
- leakage
- mechanical properties
- penetration
- percolation
- permeating
- ∞ physical properties
- porosity
- ∞ resistance
- seepage
- surface properties
- void ratio
- voids
- wettability

permeating

- RT ∞ absorption
 - desorption
 - dialysis
 - diffusion
 - dispersing
 - impregnating
 - osmosis
 - penetration
 - percolation
 - permeability
 - porosity
 - reverse osmosis
- ∞ saturation
- sorption
- transpiration

permissivity

- RT compatibility
 - psychological factors

permittivity

- UF *dielectric constant*
- GS electrical properties
 - . dielectric properties
 - . . . **permittivity**
- RT dielectric loss
 - electric fields
 - field strength

permutations

- GS analysis (mathematics)
 - . combinatorial analysis
 - . . . **permutations**
- RT ∞ combination
 - combinations (mathematics)
 - partitions (mathematics)
 - set theory

perovskites

DEF Minerals with a close-packed lattice and the general formula ABX₃ where A and B are metals and X is a nonmetal, usually O.

- GS calcium compounds
 - . **perovskites**
 - minerals
 - . **perovskites**
 - titanium compounds
 - titanates
 - . . . **perovskites**

peroxides

- GS chalcogenides
 - . oxides
 - . . . anhydrides
 - . . . **peroxides**
 - inorganic peroxides
 - hydrogen peroxide
 - organic peroxides
 - potassium peroxides
 - sodium peroxides
- RT dioxides

Perseid meteoroids

- GS celestial bodies
 - . meteoroid showers
 - . . **Perseid meteoroids**
 - . meteoroids
 - . . **Perseid meteoroids**

Pershing missile

- GS missiles
 - . ballistic missiles

- . . **Pershing missile**
- . surface to surface missiles
- . . **Pershing missile**
- RT multistage rocket vehicles
 - solid propellant rocket engines

Persian Gulf

- GS gulfs
 - . **Persian Gulf**
- RT inlets (topography)

personal computers

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . microcomputers
 - **personal computers**
 - IBM personal computers
 - Macintosh personal computers
- RT computer techniques
 - VSAT (network)

personality

- RT depersonalization
 - personnel selection

personality tests

- RT intelligence tests
 - psychological tests
 - psychometrics
 - qualifications
 - ∞ tests

personnel

- GS **personnel**
 - . air traffic controllers (personnel)
 - . crews
 - . . flight crews
 - . . . spacecrews
 - . enemy personnel
 - . engineers
 - . flying personnel
 - . . . astronauts
 - . . . orbital workers
 - . . . cosmonauts
 - . flight crews
 - . . . spacecrews
 - . . . pilots (personnel)
 - . . . aircraft pilots
 - test pilots
 - . . . ground crews
 - . instructors
 - . medical personnel
 - . . flight nurses
 - . . physicians
 - . . surgeons
 - . . . flight surgeons
 - . navigators
 - . operators (personnel)
 - . . pilots (personnel)
 - . . . aircraft pilots
 - test pilots
 - . military personnel
 - . police
 - . programmers
 - . scientists
- RT ∞ complement
 - consulting
 - crew experiment stations
 - crew observation stations
 - crew workstations
 - depersonalization
 - deployment
 - employee relations
 - ∞ estimators
 - helmet mounted displays
 - human resources
 - incentives
 - inhabitants
 - manpower
 - occupation
 - organizing
 - position (title)
 - qualifications
 - research management
 - resources
 - retirement
 - retraining
 - services
 - unionization

personnel development

wage surveys

personnel development

RT ∞ development
employee relations
human resources
management
resources
training analysis

personnel management

GS management
. industrial management
. . **personnel management**
RT employee relations
human relations
human resources
leadership
management planning

personnel propulsion systems

USE **self maneuvering units**

personnel selection

GS selection
. **personnel selection**
. . pilot selection
RT aptitude
employment
intelligence tests
labor
personality
physical examinations
physiological tests

personnel subsystems

RT industries

Perspex (trademark)

GS plastics
. **Perspex (trademark)**

perspiration

UF *sweating*
RT body fluids
body temperature
evaporation
excretion
feces
heat acclimatization
humidity
Palmar sweat index
skin (anatomy)
sweat
transpiration

PERT

UF *program evaluation review technique*
RT commerce
contract management
critical path method
GERT
management analysis
management methods
management planning
∞ paths
program trend line analysis
project management

perturbation

DEF Any departure introduced into an assumed steady state of a system, or a small departure from a nominal path such as a desired trajectory. Usually used as equivalent to small perturbation. Specifically, a disturbance in the regular motion of a celestial body, the result of a force additional to that which causes the regular motion, specifically a gravitational force.

GS **perturbation**
. orbit perturbation
. . satellite perturbation

RT ∞ disturbances
four body problem
geodesy
gravitational instability
long term effects
many body problem
nutations
orbital mechanics
oscillations

oscillators
radiation pressure
Schach effect
three body problem
two body problem
variations

perturbation theory

UF *disturbance theory*
GS **perturbation theory**
. vinti theory
RT Boussinesq approximation
celestial mechanics
disturbing functions
Hansen lunar theory
Hartree approximation
Hill lunar theory
Hill method
many body problem
operators (mathematics)
orbit perturbation
orbital elements
quantum theory
strange attractors
Taylor instability
∞ theories
von Zeipel method
wave functions
Wentzel-Kramer-Brillouin method
Yang-Mills fields
Yang-Mills theory

Peru

GS nations
. **Peru**
RT South America

perveance

DEF The quotient of the space-charge-limited cathode current by the three-halves power of the anode voltage in a diode. Note: Perveance is the constant G appearing in the Child-Langmuir-Schottky equation.

GS ratios
. **perveance**
RT Child-Langmuir law
space charge
thermionic diodes
vacuum tubes
work functions

pesticides

GS poisons
. **pesticides**
. . insecticides
. . . Carbamates (tradename)
. . . . urethanes
. . . DDT
. . . dieldrin
. . . phenothiazines
RT crop dusting
environmental chemistry
toxicology

petals

RT plants (botany)

petechia

GS hemorrhages
. **petechia**
RT skin (anatomy)

PETN

UF *pentaerythritol tetranitrate*
GS esters
. organic nitrates
. . **PETN**
nitrogen compounds
. nitrates
. . organic nitrates
. . . **PETN**
RT explosives

Petrel sounding rocket

GS rocket vehicles
. sounding rockets
. . **Petrel sounding rocket**

RT ∞ rockets

Petri nets

DEF Abstract, formal models of the information flow in systems with discrete sequential or parallel events. The major use has been the modeling of hardware systems and software concepts of computers.

GS models
. mathematical models
. . **Petri nets**
networks
. **Petri nets**
RT consecutive events
dynamic models
graphs (charts)
information theory
∞ nets
sequencing
trees (mathematics)

petrogenesis

(added August 1997)

DEF Branch of petrology dealing with the origin and formation of rocks, particularly igneous rocks.

UF *petrogeny*
GS geology
. petrology
. . **petrogenesis**
RT geochronology
igneous rocks
magma
meteorite parent bodies
mineralogy
∞ origins
petrography
volcanology

petrogeny

(added August 1997)

USE **petrogenesis**

petrography

GS geology
. petrology
. . **petrography**
RT inliers (landforms)
petrogenesis
rocks
sedimentary rocks
siderophile elements

petroleum

USE **crude oil**

petroleum products

DEF Materials derived from petroleum, natural gas, and asphalt deposits. Includes gasolines, diesel and heating fuels, lubricants, waxes, greases, petroleum coke, petrochemicals, and sulfur.

GS products
. **petroleum products**
. . asphalt
. . diesel fuels
. . gasoline
. . tars
RT butanes
crude oil
greases
kerogen
lubricants
lubricating oils
methane
natural gas
oils
plastics
polynuclear organic compounds

petrology

DEF That branch of geology dealing with the origin, occurrence, structure, and history of rocks, especially igneous and metamorphic rocks.

GS geology
. **petrology**
. . lithology
. . petrogenesis
. . petrography

RT cones (volcanoes)
 formations
 geochemistry
 geological surveys
 geophysics
 impact melts
 inliers (landforms)
 Mars volcanoes
 mineralogy
 rocks
 stratigraphy
 volcanoes
 volcanology

Pfaff equation

GS analysis (mathematics)
 . **Pfaff equation**
 RT differential equations
 ∞ equations
 thermodynamics

PFM (modulation)

USE **pulse frequency modulation**

pH

RT acid base equilibrium
 acid rain
 acidity
 acidosis
 alkalinity
 alkalosis
 bases (chemical)
 buffers (chemistry)
 hydrogen ions

pH factor

RT acid base equilibrium
 acidosis
 alkalosis
 hydrogen ions
 ion concentration
 soil sampling

Phaethon (hypothetical planet)
 (added June 1998)

USE **hypothetical planets**

phantastrons

GS circuits
 . delay circuits
 . . **phantastrons**
 oscillators
 . relaxation oscillators
 . . **phantastrons**
 RT feedback amplifiers

Phantom aircraft

USE **F-4 aircraft**

pharmacology

GS medical science
 . **pharmacology**
 . . psychopharmacology
 RT anesthesiology
 antiradiation drugs
 bioavailability
 bioprocessing
 cyclic AMP
 drugs
 ∞ medicine
 motion sickness drugs
 vasoconstrictor drugs
 veterinary medicine

pharynx

GS anatomy
 . respiratory system
 . . **pharynx**

phase angle

USE **phase shift**

phase change materials

DEF Materials undergoing solid/liquid phase transformations and whose latent heat of fusion properties are used to store and deliver thermal energy, usually solar energy. Used for PCM (materials).

UF *PCM (materials)*
 RT ceresin
 condensing

fusion (melting)
 heat of fusion
 heat storage
 heat transfer
 liquid-solid interfaces
 ∞ materials
 melting
 organic materials
 phase transformations
 solar energy conversion
 solar heating
 sublimation
 Trombe walls
 waxes
 working fluids

phase coherence

RT ∞ coherence
 coherence coefficient
 coherent light
 four-wave mixing
 wave fronts

phase conjugation

DEF Technique for the removal of phase distortions during propagation of laser beams through the atmosphere.

GS conjugation
 . **phase conjugation**
 . . four-wave mixing

phase contrast

GS contrast
 . **phase contrast**
 RT diffraction patterns
 electron microscopy
 microscopy
 optical measurement
 optical paths
 scanning electron microscopy
 transmission electron microscopy

phase control

RT circuit protection
 ∞ control
 phase locked systems
 transformers

phase demodulators

GS demodulators
 . **phase demodulators**
 RT Bragg cells
 modems

phase detectors

DEF Devices that continuously compare the phase of two signals and provide an output proportional to their difference in phase.

GS circuits
 . **phase detectors**
 . . synchrosopes
 RT ∞ detectors
 phase locked systems
 signal detection
 synchronism

phase deviation

DEF The peak difference between the instantaneous phase of the modulated wave and the carrier frequency.

RT amplitudes
 modulated continuous radiation
 signal analysis

phase diagrams

UF *constitutional diagrams*
equilibrium diagrams
eutectic diagrams
 GS diagrams
 . **phase diagrams**
 RT alloys
 binary systems (materials)
 cluster variation method
 critical temperature
 eutectics
 heat of fusion
 heat treatment
 intermetallics
 liquid phases
 liquids

liquidus
 melting points
 phase separation (materials)
 phase stability (materials)
 solid phases
 solid solutions
 solid suspensions
 solubility
 stoichiometry
 transition points
 transition temperature
 vapor phases

phase error

GS errors
 . **phase error**
 RT anisoplanatism
 circuit protection
 error signals

phase lock demodulators

GS demodulators
 . **phase lock demodulators**
 RT correlation detection
 parametrons

phase locked systems

RT feedback frequency modulation
 optical coupling
 phase control
 phase detectors
 synchronized oscillators
 ∞ systems
 tracking filters

phase matching

DEF A way of maximizing the coupling between two systems used in second harmonic generation which happens mostly in crystals.

RT crystal optics
 crystals
 frequency multipliers
 harmonic generations
 laser outputs
 lasers

phase modulation

DEF Angle modulation in which the angle of a sine wave carrier is caused to depart from the carrier angle by an amount proportional to the instantaneous value of the modulation wave. Combinations of phase and frequency modulation are commonly referred to as frequency modulation.

GS coding
 . signal encoding
 . . **phase modulation**
 . . . FM/PM (modulation)
 . . . phase shift keying
 binary phase shift keying
 quadrature phase shift keying
 modulation
 . **phase modulation**
 . . FM/PM (modulation)
 . . phase shift keying
 . . . binary phase shift keying
 quadrature phase shift keying
 RT amplitude modulation
 Bragg cells
 deformable mirrors
 demodulation
 demodulators
 frequency modulation
 modems
 modulators
 parametric frequency converters
 pulse modulation
 push-pull amplifiers
 trellis coding

phase response

USE **frequency response**
phase shift

phase rule

GS rules
 . **phase rule**
 RT chemical equilibrium
 degrees of freedom

phase separation (materials)

∞ Gibbs equations

phase separation (materials)

(added December 1988)

- RT binary systems (materials)
 - liquid phases
 - miscibility gap
 - phase diagrams
 - phase stability (materials)
 - phase transformations
- ∞ separation
 - solid phases
 - solubility

phase shift

DEF The phase difference of two periodically recurring phenomena of the same frequency, expressed in angular measure. The angle between the lines connecting a celestial body and the sun and a celestial body and the Earth. Used for phase angle and phase response.

- UF *phase angle*
phase response

GS phase shift

- . Sagnac effect
- RT angles (geometry)
- equalizers (circuits)
- microwave switching

∞ phases
∞ shift

phase shift circuits

- GS circuits
 - . **phase shift circuits**
 - . . . circulators (phase shift circuits)
- RT delay circuits
- duplex operation
- gyrators

phase shift keying

DEF The form of phase modulation in which the modulating function shifts the instantaneous phase of the modulated wave among predetermined discrete values.

- GS coding
 - . signal encoding
 - . . . phase modulation
 - . . . **phase shift keying**
 - binary phase shift keying
 - quadrature phase shift keying
- keying
 - . **phase shift keying**
 - . . . binary phase shift keying
 - . . . quadrature phase shift keying
 - modulation
 - . phase modulation
 - . . **phase shift keying**
 - . . . binary phase shift keying
 - . . . quadrature phase shift keying
- RT cochannel interference
- information theory
- quadrature amplitude modulation
- Rayleigh fading
- trellis coding

phase stability (materials)

(added July 1991)

- GS stability
 - . **phase stability (materials)**
- RT crystallization
- phase diagrams
- phase separation (materials)
- phase transformations
- ∞ phases
- stabilization

phase switching interferometers

- GS measuring instruments
 - . interferometers
 - . . **phase switching interferometers**
- RT radio astronomy
- radio telescopes

phase transformations

- GS **phase transformations**
 - . freezing
 - . . vibrational freezing
 - . . zone melting
 - . liquefaction

- . . coal liquefaction
- . martensitic transformation
- . melting
 - . . arc melting
 - . . fusion (melting)
 - . . levitation melting
 - . . vacuum melting
 - . . zone melting
- . vaporizing
 - . . boiling
 - . . . film boiling
 - . . . nucleate boiling
 - Leidenfrost phenomenon
 - . . evaporation
 - . . . evapotranspiration
 - . . . propellant evaporation
 - . . . transpiration
 - . . flashing (vaporizing)
 - . . prevaporization
 - . . sublimation

- RT cluster variation method
- cold hardening
- condensing
- critical temperature
- crystallization
- directional solidification (crystals)
- electron-hole drops
- ferroelasticity
- heat of fusion
- Ising model
- Laves phases
- martensite
- melt spinning
- metamorphism (geology)
- mushy zones
- neel temperature
- order-disorder transformations
- Ostwald ripening
- phase change materials
- phase separation (materials)
- phase stability (materials)
- ∞ phases
 - shape memory alloys
 - solidification
 - solids
 - syntectic alloys
- ∞ transformations
- ∞ transition
 - transition pressure
 - transition temperature

phase velocity

DEF Of a traveling plane wave at a single frequency, the velocity of an equiphase surface along the wave normal.

- GS rates (per time)
 - . **phase velocity**
 - velocity
 - . **phase velocity**
- RT electromagnetic radiation
- group velocity
- Landau damping
- propagation velocity
- quantum mechanics
- traveling waves
- wave fronts
- wave propagation

phased arrays

- GS arrays
 - . **phased arrays**
- RT antenna arrays
- laser arrays
- linear arrays
- monopulse antennas
- seismographs
- steerable antennas

∞ phases

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cycles
 - liquid phases
 - lunar phases
 - phase shift
 - phase stability (materials)
 - phase transformations
 - solid phases
 - terminator lines

vapor phases

phase-space integral

- GS analysis (mathematics)
 - . **phase-space integral**
- RT classical mechanics
- Euclidean geometry
- hyperspaces
- state vectors

phenacetin

USE **acetanilide**

phenanthrene

- GS organic compounds
 - . hydrocarbons
 - . . **phenanthrene**
- RT anthracene
- dyes
- isomers

phenobarbital

- RT drugs
 - narcotics
 - sedatives

phenol formaldehyde

- RT formaldehyde
- phenolic resins
- resins

phenolic epoxy resins

- GS plastics
 - . synthetic resins
 - . . thermosetting resins
 - . . . epoxy resins
 - **phenolic epoxy resins**
 - . . . phenolic resins
 - **phenolic epoxy resins**
 - . . . resins
 - . synthetic resins
 - . . thermosetting resins
 - . . . epoxy resins
 - **phenolic epoxy resins**
 - . . . phenolic resins
 - **phenolic epoxy resins**
- RT adhesives
- amines
- crosslinking

phenolic resins

- GS plastics
 - . synthetic resins
 - . . thermosetting resins
 - . . . **phenolic resins**
 - micarta
 - phenolic epoxy resins
- resins
 - . synthetic resins
 - . . thermosetting resins
 - . . . **phenolic resins**
 - micarta
 - phenolic epoxy resins
- RT carbon-phenolic composites
- phenol formaldehyde

phenology

DEF A branch of science dealing with the relations between climate and periodic biological phenomena.

- RT activity cycles (biology)
- biometeorology
- climatology
- coastal ecology
- ecology
- migration
- molting
- phenomenology
- rhythm (biology)
- zeitgebers

phenols

- GS hydroxyl compounds
 - . alcohols
 - . . **phenols**
 - . . . bisphenols
 - . . . cresols
 - . . . phloroglucinol
 - . . . thymol

RT thiols

phenomenology
 RT case histories
 experimentation
 medical phenomena
 mesoscale phenomena
 phenology

phenothiazines
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . azines
 **phenothiazines**
 poisons
 . pesticides
 . . insecticides
 . . . **phenothiazines**
 pyrazines
 . azines
 . . **phenothiazines**

phenotype
(added August 2004)
 DEF The outward appearance of the individual. It is the product of interactions between genes, and between the genotype and the environment.
 RT cloning (biology)
 gene expression
 genes
 genetic engineering
 genetically modified plants

phenylalanine
 GS acids
 . amino acids
 . . alanine
 . . . **phenylalanine**
 . carboxylic acids
 . . alanine
 . . . **phenylalanine**
 organic compounds
 . amino acids
 . . alanine
 . . . **phenylalanine**
 . carboxylic acids
 . . alanine
 . . . **phenylalanine**

phenyls
 GS **phenyls**
 . polybrominated biphenyls
 . polychlorinated biphenyls
 . polyphenyls
 . . tetraphenyls
 . . triphenyls
 . terphenyls
 RT phosphene
 propargyl groups

Philco 2000 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . **Philco 2000 computer**

Philippines
 GS landforms
 . islands
 . . Pacific islands
 . . . **Philippines**
 nations
 . **Philippines**

Philips ionization gages
 GS measuring instruments
 . pressure gages
 . . vacuum gages
 . . . ionization gages
 **Philips ionization gages**
 vacuum apparatus
 . vacuum gages
 . . ionization gages
 . . . **Philips ionization gages**
 RT pressure measurement

philosophy
 GS **philosophy**

. . paradoxes
 RT knowledge
 literature
 ∞ logic
 mathematical logic

phloroglucinol
 GS hydroxyl compounds
 . alcohols
 . . phenols
 . . . **phloroglucinol**
 RT chemical indicators
 resins

phobias
 GS **phobias**
 . fear
 . . fear of flying
 RT anxiety
 emotional factors

Phobos
 DEF A satellite of Mars orbiting at a mean distance of 9,400 kilometers.
 GS celestial bodies
 . natural satellites
 . . Mars satellites
 . . . **Phobos**
 RT Deimos
 Mars (planet)
 Nozomi Mars Orbiter
 Phobos spacecraft

Phobos spacecraft
(added August 1998)
 DEF Two Soviet spacecraft (Phobos 1 and 2, both launched in July 1988) designed to study the plasma environment in the Martian vicinity, the surface and atmosphere of Mars, and the surface composition of the Martian satellite Phobos. Other mission objectives included the study of the interplanetary environment and solar observations.
 GS interplanetary spacecraft
 . Mars probes
 . . **Phobos spacecraft**
 Soviet spacecraft
 . **Phobos spacecraft**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Phobos spacecraft**
 RT Mars atmosphere
 Mars environment
 Phobos

Phoebe
 DEF A satellite of Saturn orbiting at a mean distance of 12,960,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . Saturn satellites
 . . . **Phoebe**
 RT Saturn (planet)

Phoebus nuclear reactor
 GS nuclear reactors
 . **Phoebus nuclear reactor**
 RT KIWI reactors
 nuclear engine for rocket vehicles
 nuclear rocket engines

Phoenix (AZ)
 GS cities
 . **Phoenix (AZ)**
 RT Arizona

Phoenix Mars Lander
(added December 2007)
 DEF A robotic spacecraft launched under the Mars Scout Program to land in the planet's water-ice-rich northern polar region. Instruments aboard the lander were developed to search for environments suitable for microbial life on Mars and research the history of water there. The lander mission was headed by the Lunar and Planetary Laboratory at the University of Arizona and was the first scientist led mission to Mars.
 GS interplanetary spacecraft
 . Mars probes

. . **Phoenix Mars Lander**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Phoenix Mars Lander**
 RT extraterrestrial life
 extraterrestrial water
 Mars missions
 Mars surface

Phoenix quadrangle (AZ)
 GS landforms
 . **Phoenix quadrangle (AZ)**
 RT Arizona
 geodetic surveys
 mapping

Phoenix sounding rocket
 GS rocket vehicles
 . multistage rocket vehicles
 . . **Phoenix sounding rocket**
 . sounding rockets
 . . **Phoenix sounding rocket**
 RT solid propellant rocket engines

phonemes
 GS speech
 . **phonemes**
 RT languages
 linguistics
 phonemics
 phonetics
 psycholinguistics
 speech recognition
 words (language)

phonemics
 GS linguistics
 . **phonemics**
 RT intelligibility
 languages
 phonemes
 phonetics
 psycholinguistics
 speech
 speech defects
 speech recognition
 words (language)

phonetics
 GS linguistics
 . **phonetics**
 speech
 . **phonetics**
 RT acoustics
 intelligibility
 languages
 phonemes
 phonemics
 speech defects
 speech recognition
 verbal communication
 words (language)

phonoarteriography
 RT arteries
 blood circulation
 phonocardiography

phonocardiograms
 USE **phonocardiography**

phonocardiography
 UF *phonocardiograms*
vibrocardiography
 GS bioengineering
 . biometrics
 . . cardiography
 . . . **phonocardiography**
 echocardiography
 RT ballistocardiography
 electrocardiography
 heart
 heart diseases
 phonoarteriography
 vectorcardiography

phonon beams
 GS beams (radiation)
 . **phonon beams**

phonons

elastic waves
. phonons
. . **phonon beams**
electromagnetic radiation
. thermal radiation
. . **phonon beams**
elementary excitations
. phonons
. . **phonon beams**
RT corpuscular radiation
particle beams
photon beams
Umklapp process

phonons

GS elastic waves
. **phonons**
. . phonon beams
elementary excitations
. **phonons**
. . phonon beams
RT crystal structure
lattice vibrations
plasmons
polarons
sound waves
Umklapp process

phoria

GS diseases
. eye diseases
. . **phoria**

phosgene

GS gases
. **phosgene**
halogen compounds
. chlorine compounds
. . chlorides
. . . **phosgene**
. halides
. . chlorides
. . . **phosgene**
poisons
. **phosgene**
RT ∞ chemical compounds

phosphatases

(added August 2004)
DEF A group of hydrolases which catalyze the hydrolysis of monophosphoric esters and the transfer of phosphate groups.
GS biopolymers
. proteins
. . enzymes
. . . **phosphatases**
organic compounds
. proteins
. . enzymes
. . . **phosphatases**
RT catalytic activity
enzymology
esters
hydrolysis
phosphates

phosphates

GS phosphorus compounds
. **phosphates**
. . adenines
. . adenosine triphosphate
. . ammonium phosphates
. . calcium phosphates
. . cyclic AMP
. . diphosphates
. . . adenosine diphosphate
. . . adenosine monophosphate
. . indium phosphates
. . monazite sands
. . phosphene
. . polynucleotides
. . potassium phosphates
. . pyridine nucleotides
. . uridylic acid
RT creep
phosphatases
phosphoric acid

Skydrol (trademark)

phosphazene

DEF A ring or chain polymer that contains alternating phosphorus and nitrogen atoms, with two substituents on each phosphorus atom.
GS organic compounds
. organic phosphorus compounds
. . **phosphazene**
phosphorus compounds
. organic phosphorus compounds
. . **phosphazene**
RT nitrogen compounds
phosphines
phosphonitriles
polymer chemistry

phosphene

GS organic compounds
. organic phosphorus compounds
. . **phosphene**
phosphorus compounds
. organic phosphorus compounds
. . **phosphene**
. phosphates
. . **phosphene**
RT luminosity
phenyls
retina
vision

phosphides

GS phosphorus compounds
. **phosphides**
. . boron phosphides
. . gallium phosphides
. . indium phosphides
. . manganese phosphides
. . schreibersite

phosphines

GS hydrogen compounds
. hydrides
. . **phosphines**
phosphorus compounds
. **phosphines**
RT phosphazene

phosphonitriles

GS nitrogen compounds
. nitriles
. . **phosphonitriles**
organic compounds
. nitriles
. . **phosphonitriles**
. organic phosphorus compounds
. . **phosphonitriles**
phosphorus compounds
. organic phosphorus compounds
. . **phosphonitriles**
RT phosphazene

phosphonium compounds

GS phosphorus compounds
. **phosphonium compounds**
RT ∞ chemical compounds

phosphorescence

DEF Emission of light which continues after the exciting mechanism has ceased.
GS electromagnetic properties
. optical properties
. . **phosphorescence**
emission
. light emission
. . luminescence
. . . fluorescence
. . . . **phosphorescence**
RT afterglows
bioluminescence
chemiluminescence
phosphors
plasma radiation
scintillation
trapping

phosphoric acid

GS acids
. **phosphoric acid**
phosphorus compounds

. **phosphoric acid**
RT phosphates

phosphoric acid fuel cells

DEF Long life fuel cells for the low to medium wattage range which use phosphoric acid as an electrolyte.
GS electric generators
. direct power generators
. . fuel cells
. . . **phosphoric acid fuel cells**
electrochemical cells
. fuel cells
. . **phosphoric acid fuel cells**
RT biochemical fuel cells
electrolytic cells
energy technology
hydrogen oxygen fuel cells
regenerative fuel cells
total energy systems

phosphors

DEF Phosphorescent substances such as zinc sulfide, which emit light when excited by radiation, as on the scope of a cathode ray tube.
GS **phosphors**
. radiophosphors
RT fluorescence
image intensifiers
laser induced fluorescence
mercury lamps
phosphorescence
photographic film

phosphorus

GS chemical elements
. **phosphorus**
. . phosphorus isotopes
. . . phosphorus 32

phosphorus 32

GS chemical elements
. nuclides
. . isotopes
. . . phosphorus isotopes
. . . . **phosphorus 32**
. . . . radioactive isotopes
. . . . **phosphorus 32**
. phosphorus
. . phosphorus isotopes
. . . **phosphorus 32**

phosphorus compounds

GS **phosphorus compounds**
. diethyl hydrogen phosphite (DEHP)
. organic phosphorus compounds
. . phosphazene
. . phosphene
. . phosphonitriles
. . uridylic acid
. phosphates
. . adenines
. . adenosine triphosphate
. . ammonium phosphates
. . calcium phosphates
. . cyclic AMP
. . diphosphates
. . . adenosine diphosphate
. . . adenosine monophosphate
. . indium phosphates
. . monazite sands
. . phosphene
. . polynucleotides
. . potassium phosphates
. . pyridine nucleotides
. . uridylic acid
. phosphides
. . boron phosphides
. . gallium phosphides
. . indium phosphides
. . manganese phosphides
. . schreibersite
. phosphines
. . phosphonium compounds
. . phosphoric acid
. . phosphorus oxides
. . phosphorus polymers
RT ∞ chemical compounds

∞ Group 5A compounds

phosphorus isotopes
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **phosphorus isotopes**
 phosphorus 32
 . phosphorus
 . . **phosphorus isotopes**
 . . . phosphorus 32

phosphorus metabolism
 GS metabolism
 . **phosphorus metabolism**

phosphorus oxides
 GS chalcogenides
 . oxides
 . . **phosphorus oxides**
 phosphorus compounds
 . **phosphorus oxides**

phosphorus polymers
 GS phosphorus compounds
 . **phosphorus polymers**
 RT ∞ polymers

phosphorylation
 GS chemical reactions
 . **phosphorylation**

photics
 RT light (visible radiation)
 ∞ optics

photo reconnaissance spacecraft
 GS military spacecraft
 . reconnaissance spacecraft
 . . **photo reconnaissance spacecraft**
 RT ∞ spacecraft

photoabsorption
 GS energy absorption
 . radiation absorption
 . . electromagnetic absorption
 . . . **photoabsorption**
 RT ∞ absorption
 photoexcitation

photoacoustic microscopy
 GS microscopy
 . **photoacoustic microscopy**
 RT acoustic microscopes
 acousto-optics
 ceramics
 nondestructive tests
 photoacoustic spectroscopy

photoacoustic spectroscopy
 DEF An optical technique for investigating solid and semisolid materials, in which the sample is placed in a closed chamber filled with a gas and illuminated with monochromatic radiation of any desired wavelength, and with intensity modulated at some acoustic frequency. Absorption of radiation results in a periodic heat flow from the sample, which generates sound detectable with a sensitive microphone.
 GS spectroscopy
 . **photoacoustic spectroscopy**
 RT absorption spectra
 absorptivity
 acousto-optics
 laser applications
 laser spectroscopy
 photoacoustic microscopy
 photothermal deflection spectroscopy

photocathodes
 DEF Electrodes used for obtaining a photoelectric emission when irradiated. Used for photoelectric cathodes.
 UF *photoelectric cathodes*
 GS electrodes
 . cathodes
 . . tube cathodes
 . . . **photocathodes**
 RT dark current
 electrode materials

image converters
 image intensifiers
 image orthicons
 light amplifiers
 microchannels
 orthicons
 photoelectric cells
 photoelectric emission
 photoelectric materials
 photomultiplier tubes

photocells
 USE **photoelectric cells**

photochemical oxidants
 DEF Any of the chemicals which enter into oxidation reactions in the presence of light or other radiant energy.
 GS oxidizers
 . **photochemical oxidants**
 RT air pollution
 atmospheric chemistry
 nitrogen oxides
 ozone
 photooxidation

photochemical reactions
 DEF Chemical reactions which involve either the absorption or emission of radiation. Used for photochemistry and photoreduction.
 UF *photochemistry*
photoreduction
 GS chemical reactions
 . **photochemical reactions**
 . . photochromism
 . . photodecomposition
 . . photolysis
 . . photooxidation
 . . photosynthesis
 . . radiolysis
 RT association reactions
 atmospheric chemistry
 charge transfer
 cycloaddition
 oxetane polymers
 sodalite
 volatile organic compounds

photochemistry
 USE **photochemical reactions**

photochromism
 GS chemical reactions
 . photochemical reactions
 . . **photochromism**
 RT color photography
 sodalite

photoclinometry
 USE **photogrammetry**

photoconductive cells
 DEF Photoelectric cells whose electrical resistance varies with the amount of illumination falling upon the sensitive area of the cell.
 GS photoelectric cells
 . **photoconductive cells**
 RT ∞ cells
 photovoltaic cells

photoconductivity
 DEF The conductivity increase exhibited by some nonmetallic materials, resulting from the free carriers generated when photon energy is absorbed in electronic transitions. The rate at which free carriers are generated, the mobility of the carriers, and the length of time they persist in conducting states (their lifetime) are some of the factors that determine the amount of conductivity change. Used for photoresistivity.
 UF *photoresistivity*
 GS electrical properties
 . electrical resistivity
 . . **photoconductivity**
 electromagnetic properties
 . optical properties
 . . **photoconductivity**
 photoelectricity
 . photoelectric effect
 . . **photoconductivity**

transport properties
 . electrical resistivity
 . . **photoconductivity**
 RT ∞ conductivity
 mercury cadmium tellurides
 photoconductors
 square wells

photoconductors
 UF *photoresistors*
 GS conductors
 . **photoconductors**
 semiconductors (materials)
 . **photoconductors**
 RT mercury cadmium tellurides
 photoconductivity
 photodiodes
 photoelectric cells
 photoelectric materials
 photometers
 phototransistors
 resistors
 tunnel junctions

photocurrents
 USE **electric current**
photoelectric emission

photodecomposition
 GS chemical reactions
 . photochemical reactions
 . . **photodecomposition**
 decomposition
 . **photodecomposition**
 radiation chemistry
 . **photodecomposition**
 RT electromagnetic absorption
 photodetachment
 photolysis

photodetachment
 RT photodecomposition
 photoionization

photodetectors
 USE **photometers**

photodiodes
 DEF Diodes designed to produce photocurrent by absorbing light. Photodiodes are used for the conversion of optical power to electrical power.
 GS electronic equipment
 . diodes
 . . semiconductor diodes
 . . . **photodiodes**
 . solid state devices
 . . semiconductor devices
 . . . **photodiodes**
 optoelectronic devices
 . **photodiodes**
 RT dark current
 focal plane devices
 ion implantation
 lasers
 mercury cadmium tellurides
 MSM (semiconductors)
 photoconductors
 photoelectric cells
 photoelectric materials
 phototransistors
 phototubes
 pushbroom sensor modes
 SIS (semiconductors)
 solar cells
 x ray detectors

photodissociation
 DEF The dissociation (splitting) of a molecule by the absorption of a photon. The resulting components may be ionized in the process (photoionization).
 GS decomposition
 . **photodissociation**
 dissociation
 . **photodissociation**
 radiation chemistry
 . **photodissociation**
 RT electromagnetic absorption
 photoexcitation

photoelastic analysis

photolysis

photoelastic analysis

UF *photoelastic stress measurement*
RT fringe multiplication
Moire effects
∞ optics
photographic measurement
∞ polarization
polarization (waves)
stress analysis
stress measurement
temperature inversions

photoelastic materials

RT ∞ materials
photoelasticity

photoelastic stress measurement

USE **photoelastic analysis**

photoelasticity

GS electromagnetic properties
. **photoelasticity**
. . . photoviscoelasticity
mechanical properties
. elastic properties
. . . **photoelasticity**
. . . photoviscoelasticity
RT birefringence
dichroism
photoelastic materials
polarized light
prisms
refraction
stress analysis

photoelectric cathodes

USE **photocathodes**

photoelectric cells

DEF Transducers which convert electromagnetic radiation in the infrared, visible, and ultraviolet regions into electrical quantities such as voltage, current, or resistance. Used for photocells.

UF *photocells*

GS **photoelectric cells**

. photoconductive cells
. photovoltaic cells
. . solar cells
. . . vertical junction solar cells

RT ∞ cells

dark current
direct power generators
∞ electric cells
electrochemical cells
electrode materials
energy absorption films
photocathodes
photoconductors
photodiodes
photometers
photomultiplier tubes
phototransistors
phototubes
solar generators
transducers

photoelectric effect

DEF The emission of an electron from a surface as the surface absorbs a photon of electromagnetic radiation. Electrons so emitted are termed photoelectrons.

GS photoelectricity
. **photoelectric effect**
. . photoconductivity
. . photoelectric emission
. . photoionization
. . photovoltaic effect

RT ∞ effects

photoelectrons

photoelectric emission

DEF The emission of electrons from atoms or molecules. Used for photocurrents, photoemission, and photoemissivity.

UF *photocurrents*
photoemission
photoemissivity

GS emission

. particle emission
. . electron emission
. . . **photoelectric emission**
photoelectricity
. photoelectric effect
. . **photoelectric emission**
RT electrical properties
external surface currents
negative electron affinity
photocathodes
photoexcitation
photoionization
photopack
photovoltages
photovoltaic effect
stimulated emission
work functions

photoelectric generators

GS electric generators
. direct power generators
. . **photoelectric generators**
. . . photovoltaic cells
. . . . solar cells
. . . . vertical junction solar cells
RT ∞ generators
photoelectrochemical devices
solar energy conversion
solar generators
thermoelectric generators

photoelectric materials

UF *photoemitters*
RT electrode materials
electron emission
∞ materials
photocathodes
photoconductors
photodiodes
photoelectricity
photoelectrons
phototransistors
phototubes
photovoltaic cells

photoelectric photometers

USE **electrophotometers**

photoelectricity

UF *photoelectronics*
photosensors
GS **photoelectricity**
. photoelectric effect
. . photoconductivity
. . photoelectric emission
. . photoionization
. . photovoltaic effect
RT Compton effect
electrical properties
electricity
optical properties
photoelectric materials
photoelectrons
photovoltages

photoelectrochemical devices

DEF Electrochemical devices powered by light or other incident radiation to produce electricity and/or chemical fuels (e.g., hydrogen).

RT ∞ devices
electrochemical cells
electrode materials
energy technology
photoelectric generators
photoelectrochemistry
photon beams
solar energy conversion

photoelectrochemistry

DEF The study of the interaction between impinging light energy and the electropotential of the chemical changes in the electrode, electrolytic solution, or a photosensitive membrane.

GS electrochemistry
. **photoelectrochemistry**
RT ∞ chemistry

photoelectrochemical devices

photoelectromagnetic detectors

USE **photoelectromagnetic effects**
radiation measuring instruments

photoelectromagnetic effects

UF *photoelectromagnetic detectors*
RT ∞ effects
excitons
intermetallics

photoelectron spectroscopy

GS spectroscopy
. **photoelectron spectroscopy**
RT electron emission
spectroscopic analysis

photoelectronics

USE **electronics**
photoelectricity

photoelectrons

DEF Electrons which have been ejected from their parent atoms by interaction between those atoms and high energy photons.

GS particles
. charged particles
. . energetic particles
. . . electrons
. . . . **photoelectrons**
. . . . corpuscular radiation
. . . . energetic particles
. . . . electrons
. **photoelectrons**
. elementary particles
. fermions
. leptons
. electrons
. **photoelectrons**
. nuclear particles
. **photoelectrons**
RT electron emission
photoelectric effect
photoelectric materials
photoelectricity
photoionization
photomagnetic effects
photoneutrons
photonuclear reactions
photovoltaic effect

photoemission

USE **photoelectric emission**

photoemissivity

USE **emissivity**
photoelectric emission

photoemitters

USE **photoelectric materials**

photoengraving

RT micromachining
photomechanical effect
printing

photoexcitation

(added December 1992)

GS excitation
. **photoexcitation**
potential energy
. electric potential
. . quantum wells
. . . **photoexcitation**
RT fluorescence
molecular excitation
photoabsorption
photodissociation
photoelectric emission
photoionization
photoluminescence

photogeology

GS geology
. **photogeology**
RT aerial photography
Earth Resources Survey aircraft
geological surveys
geomorphology
ice mapping

natural gas exploration
 photogrammetry
 photomapping
 reconnaissance
 thematic mapping

photogoniometers
 GS measuring instruments
 . goniometers
 . . **photogoniometers**
 . optical measuring instruments
 . . **photogoniometers**
 optical equipment
 . optical measuring instruments
 . . **photogoniometers**
 RT angles (geometry)
 diffractometers
 etalons
 interferometers
 monochromators
 spectrometers

photogrammetry
 DEF The art or science of obtaining reliable measurements by means of photography. Used for photoclinometry.
 UF *photoclinometry*
 GS photographic measurement
 . **photogrammetry**
 RT aerial photography
 digital cameras
 mapping
 photogeology
 photoreconnaissance
 projectors
 relief maps
 stereophotography
 surveys
 terrain analysis

photograph interpretation
 USE **photointerpretation**

photographic developers
 UF *developers (photography)*
 RT ∞ development
 photographs
 photography

photographic emulsions
 DEF The light-sensitive coatings on photographic film consisting usually of silver halide.
 GS mixtures
 . dispersions
 . . emulsions
 . . . **photographic emulsions**
 . . . nuclear emulsions
 . solutions
 . . **photographic emulsions**
 . . nuclear emulsions
 RT photography
 photosensitivity

photographic equipment
 GS **photographic equipment**
 . cameras
 . . Baker-Nunn camera
 . . ballistic cameras
 . . CCD cameras
 . . Delft camera
 . . diffraction limited cameras
 . . faint object camera
 . . high speed cameras
 . . . framing cameras
 . . digital cameras
 . . I2S cameras
 . . Lallemand cameras
 . . multispectral band cameras
 . . panoramic cameras
 . . pinhole cameras
 . . Schmidt cameras
 . . streak cameras
 . . television cameras
 . photographic processing equipment
 . photographic rectifiers
 RT ∞ equipment
 lenses
 optical equipment
 optical filters
 photography

photometers
 projectors

photographic film
 GS **photographic film**
 . microfilms
 RT ∞ films
 magazines (supply chambers)
 optical data storage materials
 optical filters
 phosphors
 photographs
 photography
 polymeric films
 Sabatier reaction

photographic measurement
 GS **photographic measurement**
 . photogrammetry
 RT dosimeters
 ∞ measurement
 optical correction procedure
 optical measurement
 particle image velocimetry
 photoelastic analysis
 photography
 photointerpretation
 photometry
 photoreconnaissance
 spectrometers

photographic plates
 RT glass
 photographic processing
 photographs
 photography
 ∞ plates

photographic processing
 RT darkrooms
 photographic plates
 photographs
 photography
 printing
 ∞ processing

photographic processing equipment
 GS photographic equipment
 . **photographic processing equipment**
 RT darkrooms
 photography
 reproduction (copying)

photographic recording
 GS recording
 . **photographic recording**
 RT data recording
 high speed photography
 hologrammetry
 intermittency hypothesis
 particle image velocimetry
 photographs
 photography
 recording instruments

photographic rectifiers
 GS optical equipment
 . **photographic rectifiers**
 photographic equipment
 . **photographic rectifiers**
 RT ∞ condensers
 photography

photographic tracking
 GS tracking (position)
 . **photographic tracking**
 RT cinetheodolites
 optical tracking
 photography
 satellite tracking
 space detection and tracking system

photographs
 GS **photographs**
 . cloud photographs
 . lunar photographs
 . Mars photographs
 . microphotographs
 . motion pictures

. photomicrographs
 RT display devices
 images
 mosaics
 optical correction procedure
 photographic developers
 photographic film
 photographic plates
 photographic processing
 photographic recording
 photography
 pixels
 representations
 spatial filtering
 video tapes
 visual aids
 xerography

photography
 DEF A process for recording visual images by exposing a light-sensitive substance to radiation such as visible light, infrared radiation, or x-rays.
 GS imagery
 . **photography**
 . . aerial photography
 . . all sky photography
 . . astronomical photography
 . . autoradiography
 . . black and white photography
 . . chronophotography
 . . cinematography
 . . cloud photography
 . . color photography
 . . electron photography
 . . electro-optical photography
 . . fractography
 . . frame photography
 . . high speed photography
 . . holography
 . . . acoustical holography
 . . . microwave holography
 . . . speckle holography
 . . . white light holography
 . . infrared imagery
 . . lunar photography
 . . metric photography
 . . microwave photography
 . . multispectral photography
 . . . infrared photography
 color infrared photography
 . . . radar photography
 . . orthophotography
 . . photomicrography
 . . rocket-borne photography
 . . shadowgraph photography
 . . Schlieren photography
 . . spaceborne photography
 . . . satellite-borne photography
 . . spectrophotography
 . . stereoscopy
 . . stereophotography
 . . streak photography
 . . ultraviolet photography
 . . ultraviolet photometry
 . . underwater photography
 . . urography
 RT brightness distribution
 brightness temperature
 cameras
 CCD cameras
 cloud photographs
 darkrooms
 Earth observations (from space)
 Earth resources
 evaporography
 exposure
 graphic arts
 HS-801 aircraft
 ice mapping
 imaging techniques
 lunar photographs
 mapping
 Mars photographs
 microphotographs
 multispectral band cameras
 multispectral band scanners
 panoramic cameras
 photographic developers

photointerpretation

photographic emulsions
photographic equipment
photographic film
photographic measurement
photographic plates
photographic processing
photographic processing equipment
photographic recording
photographic rectifiers
photographic tracking
photographs
photointerpretation
photolithography
photomapping
photomaps
photomasks
photomechanical effect
photoreconnaissance
pinhole cameras
pixels
projectors
radiography
rapid ballistics identification
reproduction (copying)
timber inventory
video tapes
wave front reconstruction
xerography

photointerpretation

UF *photograph interpretation*
RT aerial photography
∞ analyzing
change detection
ground truth
∞ interpretation
photographic measurement
photography
photomapping
photoreconnaissance
sea truth
spatial filtering

photoionization

DEF The ionization of an atom or molecule by the collision of a high energy photon with the particle.
GS emission
. **photoionization**
ionization
. **photoionization**
photoelectricity
. photoelectric effect
. . **photoionization**
RT atmospheric ionization
auroral ionization
auroral irradiation
electron emission
gas ionization
laser induced fluorescence
photodetachment
photoelectric emission
photoelectrons
photoexcitation

photolithography

DEF The process of making a printing plate by exposing a design photographically on a sensitized emulsion and removing unwanted portions chemically.
GS printing
. lithography
. . **photolithography**
RT microelectronics
micromodules
photography
photoresists

photoluminescence

DEF Luminescence produced by the absorption of radiant flux, distinguished from ordinary reflection by a time delay and usually, an upward shift in a wavelength.
GS emission
. light emission
. . luminescence
. . . **photoluminescence**
. . . . triboluminescence
. . . . x ray fluorescence
RT blue shift

fluorescence
laser induced fluorescence
photoexcitation
photoluminescent bands
photorefractivity
porous silicon

photoluminescent bands

GS spectra
. spectral bands
. . **photoluminescent bands**
RT absorption spectra
∞ bands
emission spectra
photoluminescence
triboluminescence

photolysis

GS chemical reactions
. photochemical reactions
. . **photolysis**
decomposition
. **photolysis**
radiation chemistry
. **photolysis**
RT cracking (chemical engineering)
electrolysis
photodecomposition
photodissociation
radiolysis

photomagnetic effects

RT deuterons
∞ effects
gamma rays
photoelectrons
spin decoupling

photomapping

GS mapping
. **photomapping**
RT aerial photography
Coastal Zone Color Scanner
color photography
DMSP satellites
Earth resources
geodesy
geology
gnomonic projection
hologrammetry
ice mapping
maps
ocean color scanner
photogeology
photography
photointerpretation
rocket-borne photography
satellite-borne photography
soil mapping
spaceborne photography
thematic mapping
thermal mapping
topography

photomaps

GS maps
. **photomaps**
RT aerial photography
photography
relief maps
satellite-borne photography
spaceborne photography
thematic mapping

photomasks

DEF In the production of integrated circuit devices, repeated arrays of microphotographs of the circuit patterns on glass substrates used to form successive patterns on single wafers often of submicrometer sizes.
RT arrays
circuit diagrams
integrated circuits
masking
microelectronics
micromachining
microphotographs
∞ patterns
photography
photoresists

printed circuits
solid state devices
substrates
wafers

photomechanical effect

RT ∞ effects
lithography
micromachining
photoengraving
photography
printing

photometers

DEF Instruments for measuring the intensity of light or the relative intensity of a pair of lights. Used for microphotometers and photodetectors.
UF *microphotometers*
photodetectors
GS measuring instruments
. optical measuring instruments
. . **photometers**
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . quantum well infrared photodetectors
. . . ultraviolet spectrophotometers
. radiation measuring instruments
. . **photometers**
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . quantum well infrared photodetectors
. . . ultraviolet spectrophotometers
optical equipment
. optical measuring instruments
. . **photometers**
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . quantum well infrared photodetectors
RT bolometers
densitometers
electrophotometry
ellipsometers
horizon scanners
infrared spectrophotometers
microdensitometers
nephelometers
optical measurement
photoconductors
photoelectric cells
photographic equipment
photometry
phototransistors
polarimeters
pyranometers
radiometers
reflectometers
spectrometers
spectrophotometers
telephotometry
transmissometers
ultraviolet detectors
x ray detectors

photometry
DEF The study of the measurement of the intensity of light.
GS optical measurement
. **photometry**
. . astronomical photometry
. . . stellar spectrophotometry
. . . electrophotometry
. . . infrared photometry
. . . spectrophotometry
. . . stellar spectrophotometry
. . telephotometry
. . ultraviolet photometry
. . visual photometry

- RT chemical analysis
 - colorimetry
 - illuminating
 - ∞ illumination
 - light (visible radiation)
 - luminance
 - photographic measurement
 - photometers
 - polarimetry
 - reflectance
 - spectroscopy
 - transmittance
- photomicrographs**
 - GS photographs
 - . **photomicrographs**
 - RT photomicrography
- photomicrography**
 - UF *micrography*
 - GS imagery
 - . photography
 - . . **photomicrography**
 - RT black and white photography
 - electron microscopes
 - metallography
 - microscopes
 - microscopy
 - microstructure
 - photomicrographs
- photomultiplier tubes**
 - DEF Phototubes with one or more dynodes between its photocathode and output electrode. Used for electron multipliers and multiplier phototubes.
 - UF *electron multipliers*
 - multiplier phototubes*
 - GS amplifiers
 - . current amplifiers
 - . . **photomultiplier tubes**
 - . . . frequency modulation
 - photomultipliers
 - electron tubes
 - . cold cathode tubes
 - . . phototubes
 - . . . **photomultiplier tubes**
 - frequency modulation
 - photomultipliers
 - RT cathodes
 - channel multipliers
 - dynodes
 - electrodes
 - microchannel plates
 - microwave tubes
 - multipactor discharges
 - multipliers
 - photocathodes
 - photoelectric cells
 - scintillating fibers
 - scintillation counters
 - secondary emission
- photon absorptiometry**
 - GS density measurement
 - . **photon absorptiometry**
 - RT absorption spectra
 - densitometers
 - electromagnetic absorption
 - energy absorption
 - gamma ray absorptiometry
 - gamma ray absorption
 - multiphoton absorption
 - radiation absorption
- photon beams**
 - GS beams (radiation)
 - . **photon beams**
 - electromagnetic radiation
 - . **photon beams**
 - RT beam waveguides
 - gamma ray beams
 - incident radiation
 - laser outputs
 - light beams
 - optical paths
 - optical scanners
 - phonon beams
 - photoelectrochemical devices
 - photonic propulsion
- photons
 - reflected waves
 - refracted waves
 - thermal blooming
- photon density**
 - GS rates (per time)
 - . flux density
 - . . **photon density**
 - RT squeezed states (quantum theory)
- photon-electron interaction**
 - RT elastic scattering
 - electron scattering
 - elementary particle interactions
 - ∞ interactions
 - Umklapp process
- photoneutrons**
 - GS nuclear radiation
 - . **photoneutrons**
 - particles
 - . elementary particles
 - . . fermions
 - . . . neutrons
 - **photoneutrons**
 - . neutral particles
 - . . neutrons
 - . . . **photoneutrons**
 - RT baryons
 - nuclear particles
 - nuclear reactions
 - photoelectrons
 - photoneutrons
 - vector dominance model
- photonic propulsion**
 - GS propulsion
 - . low thrust propulsion
 - . . **photonic propulsion**
 - . . . laser propulsion
 - . . . spacecraft propulsion
 - . . **photonic propulsion**
 - . . . laser propulsion
 - RT electromagnetic propulsion
 - photon beams
- photonic switching*
 - USE **optical switching**
- photonics**
 - RT electro-optics
 - fiber optics
 - free-space optical interconnects
 - lasers
 - light emitting diodes
 - optical data processing
 - optical interconnects
 - optical switching
 - optical waveguides
 - optoelectronic devices
 - photons
- photons**
 - DEF According to the quantum theory of radiation, the elementary quantities of radiant energy. They are regarded as discrete quantities having a momentum equal to $h\nu/c$, where h is the Planck constant, ν is the frequency of the radiation, and c is the speed of light in a vacuum. Photons are never at rest, have no electric charges and no magnetic moments, but they have spin moments. The energy of a photon (the unit quantum of energy) is equal to $h\nu$.
 - GS particles
 - . elementary particles
 - . . bosons
 - . . . **photons**
 - . nuclear particles
 - . . bosons
 - . . . **photons**
 - RT annihilation reactions
 - cosmic rays
 - electromagnetic radiation
 - gamma rays
 - light (visible radiation)
 - nuclear radiation
 - optical properties
 - photon beams
 - photonics
- photoneutrons
 - photonuclear reactions
 - photoproduction
 - Plancks constant
 - quantum theory
 - ∞ radiation
 - rotons
- photoneutrons**
 - GS nuclear reactions
 - . **photoneutrons**
 - RT electromagnetic interactions
 - light (visible radiation)
 - particle interactions
 - photoelectrons
 - photoneutrons
 - photons
 - photoproduction
- photooxidation**
 - GS chemical reactions
 - . oxidation
 - . . **photooxidation**
 - . photochemical reactions
 - . . **photooxidation**
 - RT association reactions
 - photochemical oxidants
- photopeak**
 - RT amplitude distribution analysis
 - photoelectric emission
 - pulse amplitude
 - scintillation counters
- photoperiod**
 - (added August 2004)
 - DEF The time of daily exposure that an organism receives from daylight or artificial light. It is believed the photoperiodic responses may affect the control of energy balance and thermoregulation.
 - GS cycles
 - . **photoperiod**
 - exposure
 - . **photoperiod**
 - RT activity cycles (biology)
 - circadian rhythms
 - diurnal variations
 - light (visible radiation)
 - melatonin
- photophilic plants**
 - GS plants (botany)
 - . **photophilic plants**
 - RT light (visible radiation)
 - photosensitivity
- photophoresis**
 - DEF Production of unidirectional motion in a collection of very fine particles, suspended in a gas or falling in a vacuum, by a powerful beam of light.
 - RT aerosols
 - light (visible radiation)
 - particle interactions
 - particle motion
 - radiation pressure
- photoplasticity**
 - GS mechanical properties
 - . plastic properties
 - . . **photoplasticity**
- photopolymers**
 - (added July 1995)
 - DEF Polymers created by photochemical processes.
 - RT diffractive optics
 - display devices
 - holography
 - photoresists
 - ∞ polymers
- photoproduction**
 - GS electromagnetic interactions
 - . **photoproduction**
 - particle production
 - . **photoproduction**
 - RT electromagnetic absorption
 - pair production
 - photons

photoreceptors

photonuclear reactions
radioactive decay
vector dominance model

photoreceptors

GS anatomy
. sense organs
. . . **photoreceptors**
receptors (physiology)
. **photoreceptors**
RT eye (anatomy)
photosensitivity
retina
sensitometry
visual pigments
Young-Helmholtz theory

photoreconnaissance

GS reconnaissance
. **photoreconnaissance**
RT aerial reconnaissance
Airborne Integrated Reconnaissance System
black and white photography
DMSP satellites
Earth Resources Survey aircraft
ground truth
HS-801 aircraft
photogrammetry
photographic measurement
photography
photointerpretation
spectral reconnaissance

photoreduction

USE **photochemical reactions**

photorefractivity

(added May 1995)
GS electromagnetic properties
. optical properties
. . . refractivity
. . . **photorefractivity**
reactivity
. **photorefractivity**
RT crystal optics
gratings (spectra)
optical waveguides
photoluminescence

photoresistivity

USE **photoconductivity**

photoresistors

USE **photoconductors**

photoresists

(added June 2000)

DEF Photosensitive substances that are either rendered soluble or insoluble to chemical etchants when exposed to light, and are used in transferring circuit patterns in the production of integrated circuits.

RT etching
integrated circuits
microelectronics
photolithography
photomasks
photopolymers
photosensitivity

photosensitivity

DEF The property of a material whereby its chemical makeup is altered by exposure to light.

GS sensitivity
. **photosensitivity**
. . . light adaptation
. . . phototropism
RT light (visible radiation)
photographic emulsions
photophilic plants
photoreceptors
photoresists
sensitometry
thresholds (perception)

visual pigments

photosensors

USE **photoelectricity**
radiation measuring instruments

photosphere

DEF The intensely bright portion of the sun visible to the unaided eye.

GS **photosphere**
. solar granulation
RT chromosphere
faculae
solar atmosphere
solar physics
spicules
starspots
stellar activity
sun
sunspots

photostresses

GS stresses
. **photostresses**

photosynthesis

DEF A process operating in green plants in which carbohydrates are formed under the influence of light with chlorophyll serving as a catalyst.

GS chemical reactions
. photochemical reactions
. . . **photosynthesis**
RT algae
carbohydrates
Chlorella
chlorophylls
chloroplasts
crop growth
photosynthetically active radiation
phytochrome
plant physiology
respiration

photosynthetically active radiation

(added January 2002)

DEF Incident natural or artificial radiation of wavelengths that can be used by plants for photosynthesis.

GS electromagnetic radiation
. **photosynthetically active radiation**
RT crop growth
insolation
irradiance
leaf area index
photosynthesis
 ∞ radiation
solar radiation
vegetation growth

photothermal conversion

DEF Conversion into thermal energy from optical radiation by a photoabsorptive or photo-selective material.

GS energy conversion
. solar energy conversion
. . . **photothermal conversion**
. . . thermophotovoltaic conversion
RT ∞ conversion
energy absorption films
energy conversion efficiency
energy technology
selectivity
solar collectors
solar dynamic power systems
solar energy absorbers
solar reflectors
solar thermal electric power plants
spectral sensitivity
thermal energy
thermodynamics

photothermal deflection spectroscopy

(added November 1998)

UF *PDS (spectroscopy)*

GS spectroscopy
. **photothermal deflection spectroscopy**

RT optical measurement

photoacoustic spectroscopy
thermal diffusivity
thermal lensing

photothermotropism

USE **anisotropy**
phototropism
temperature effects

phototransistors

GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . . transistors
. . . . **phototransistors**
optoelectronic devices
. **phototransistors**
RT junction transistors
photoconductors
photodiodes
photoelectric cells
photoelectric materials
photometers
phototubes

phototropism

UF *photothermotropism*
GS sensitivity
. photosensitivity
. . . **phototropism**
RT color
crop vigor
plant physiology
plants (botany)

phototubes

GS electron tubes
. cold cathode tubes
. . . **phototubes**
. . . photomultiplier tubes
. . . . frequency modulation
photomultipliers
RT cathodes
dark current
electrodes
flying spot scanners
gas discharge tubes
microwave tubes
photodiodes
photoelectric cells
photoelectric materials
phototransistors

photoviscoelasticity

GS electromagnetic properties
. optical properties
. . . **photoviscoelasticity**
photoelasticity
. . . **photoviscoelasticity**
mechanical properties
. elastic properties
. . . photoelasticity
. . . . **photoviscoelasticity**
. . . viscoelasticity
. . . . **photoviscoelasticity**

photovoltages

GS potential energy
. electric potential
. . . **photovoltages**
RT photoelectric emission
photoelectricity
photovoltaic effect
threshold voltage

photovoltaic cells

DEF Photoelectric detectors capable of directly generating an electric current in response to irradiation.

GS electric generators
. direct power generators
. . . photoelectric generators
. . . . **photovoltaic cells**
. . . . solar cells
. vertical junction solar cells
electronic equipment
. solid state devices
. . . semiconductor devices
. . . . **photovoltaic cells**

. . . . solar cells
 vertical junction solar cells
 photoelectric cells
 . **photovoltaic cells**
 . . solar cells
 . . . vertical junction solar cells
 RT amorphous silicon
 ∞ cells
 electrochemical cells
 photoconductive cells
 photoelectric materials
 short circuit currents
 SIS (semiconductors)
 solar generators

photovoltaic conversion
 GS energy conversion
 . solar energy conversion
 . . **photovoltaic conversion**
 . . . thermophotovoltaic conversion
 RT ∞ conversion
 photovoltaic effect
 solar arrays
 solar cells

photovoltaic effect
 DEF The production of a voltage difference across a pn junction resulting from the absorption of photon energy. The voltage difference is caused by the internal drift of holes and electrons.
 GS electrical properties
 . **photovoltaic effect**
 photoelectricity
 . photoelectric effect
 . . **photovoltaic effect**
 RT ∞ effects
 photoelectric emission
 photoelectrons
 photovoltages
 photovoltaic conversion
 threshold voltage

phreatophytes
 GS plants (botany)
 . **phreatophytes**
 RT trees (plants)

phthalates
 GS esters
 . **phthalates**

phthalimides
 (added August 2004)
 DEF The imide of phthalic acids.
 GS nitrogen compounds
 . imides
 . . **phthalimides**
 RT amides

phthalocyanin
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **phthalocyanin**
 RT pigments

phugoid oscillations
 USE **oscillations**
pitch (inclination)

phylloquinone
 UF *vitamin K*
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **phylloquinone**
 . lipids
 . . **phylloquinone**
 vitamins
 . **phylloquinone**
 RT osteocalcin

physical chemistry
 DEF The application of the laws, principles, and techniques of physics to the study of chemical properties, transformations, and reactions.
 GS **physical chemistry**
 . cryochemistry
 . quantum chemistry

RT aerothermochemistry
 atmospheric chemistry
 chemical analysis
 ∞ chemistry
 computational chemistry
 molecular dynamics
 nuclear chemistry
 ∞ physics
 thermochemistry
 thermodynamics

physical constants testing reactor
 USE **nuclear research and test reactors**
water cooled reactors

physical endurance
 USE **physical fitness**

physical examinations
 RT flight fitness
 mobile quarantine facility
 percussion
 personnel selection

physical exercise
 UF *exercise*
gymnastics
 GS **physical exercise**
 . hyperkinesia
 RT angina pectoris
 athletes
 atrophy
 exercise physiology
 fatigue (biology)
 hypokinesia
 physical fitness
 running
 swimming
 treadmills
 walking

physical factors
 GS physiological factors
 . **physical factors**
 RT ∞ physics
 work

physical fitness
 UF *physical endurance*
 fitness
 GS **physical fitness**
 RT athletes
 competition
 exercise physiology
 flight fitness
 physical exercise
 physiological tests
 posture
 sports medicine
 swimming
 treadmills
 work capacity

physical optics
 RT crystal optics
 fiber optics
 geometrical optics
 gradient index optics
 optical properties
 ∞ optics
 quantum optics
 quantum theory
 ∞ theories

∞ **physical properties**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT acoustic properties
 adsorptivity
 Bragg angle
 buoyancy
 chemical properties
 color
 density (mass/volume)
 diffusivity
 durability
 eddy currents
 elastic properties
 electrical properties
 electromagnetic properties

fusibility
 ∞ high resistance
 hygroscopicity
 hysteresis
 impedance
 internal friction
 isotropy
 magnetic dipoles
 magnetic properties
 mechanical properties
 optical properties
 permeability
 polymorphism
 propellant properties
 ∞ properties
 surface properties
 thermal expansion
 thermodynamic properties
 thixotropy
 transmissivity
 transport properties
 virtual properties
 viscosity

∞ **physical sciences**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT astronomy
 ∞ chemistry
 geology
 life sciences
 ∞ metallurgy
 meteorology
 mineralogy
 oceanography
 ∞ physics
 ∞ science

physical work
 UF *exertion*
 GS work
 . **physical work**
 RT effort
 horsepower
 tasks
 treadmills
 work capacity
 workloads (psychophysiology)

physicians
 GS personnel
 . medical personnel
 . . **physicians**
 RT stethoscopes

∞ **physics**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT astrophysics
 atmospheric physics
 atomic physics
 biophysics
 branching (physics)
 charm (particle physics)
 cloud physics
 combustion
 combustion physics
 condensed matter physics
 degenerate matter
 electrophysics
 field theory (physics)
 flavor (particle physics)
 geophysics
 health physics
 Health Physics Research Reactor
 kinetics
 low temperature physics
 magnetomechanics (physics)
 matter (physics)
 ∞ molecular physics
 neutron physics
 nuclear physics
 nuclei (nuclear physics)
 physical chemistry
 physical factors
 ∞ physical sciences
 plasma physics
 plasmas (physics)
 polymer physics

Physics and Chemistry Experiment in Space

- psychophysics
- quenching (atomic physics)
- radio physics
- reactor physics
- reentry physics
- rigid rotors (plasma physics)
- ∞ science
- selection rules (nuclear physics)
- solar physics
- ∞ solid state physics
- strange attractors
- theoretical physics

Physics and Chemistry Experiment in Space

DEF A group of Space Shuttle payloads consisting of various space experiments. Used for PACE.

UF *PACE*

GS experimentation

- . **Physics and Chemistry Experiment in Space**

- . payloads

- . . Space Shuttle payloads

- . . . **Physics and Chemistry Experiment in Space**

- . . . spaceborne experiments

- . . . **Physics and Chemistry Experiment in Space**

RT ∞ chemistry

- . space flight

physiochemistry

GS biochemistry

- . **physiochemistry**

RT bioavailability

- ∞ chemistry

- . exercise physiology

- . molecular biology

- . organic chemistry

- . physiology

- . psychotropic drugs

- ∞ science

physiography

USE **geomorphology**

physiologic availability

(added August 2001)

USE **bioavailability**

physiological acceleration

DEF The acceleration experienced by a human or an animal test subject in an accelerating vehicle.

GS rates (per time)

- . **physiological acceleration**

RT ∞ acceleration

- . acceleration (physics)

- . acceleration stresses (physiology)

- . deceleration

- . gravitational physiology

- . impact acceleration

physiological defenses

GS **physiological defenses**

- . immunity

RT acquired immunodeficiency syndrome

- . antibodies

- . antigens

- . biocompatibility

- ∞ defense

- . immune systems

- . inocular

- . interferon

physiological effects

GS **physiological effects**

- . physiological responses

- . . hemodynamic responses

- . . . apoptosis

RT biological effects

- . bone demineralization

- . cholera

- . comfort

- . diving (underwater)

- ∞ effects

- . electrolyte metabolism

- . environmental engineering

- . environments

- . exercise physiology

- . fluid shifts (biology)

- . geotopism

- . gonads

- . gravitational physiology

- . head down tilt

- . heat acclimatization

- . heat stroke

- . hematopoiesis

- . hematopoietic system

- . human reactions

- . noise pollution

- . radiation effects

- . reaction time

- . relative biological effectiveness (RBE)

- . shock (physiology)

- . space adaptation syndrome

- . sports medicine

physiological factors

GS **physiological factors**

- . physical factors

RT astronaut performance

- . chemical defense

- . chemical warfare

- . flight stress (biology)

- . noise pollution

- . sex factor

physiological responses

GS physiological effects

- . **physiological responses**

- . . hemodynamic responses

- . . . responses

- . . **physiological responses**

- . . . hemodynamic responses

RT baroreflexes

- . desynchronization (biology)

- . evoked response (psychophysiology)

- . gravitational physiology

- . head up tilt

- . pathological effects

- . tilt-table test

- . zeitgebers

physiological telemetry

USE **biotelemetry**

physiological tests

GS **physiological tests**

- . body sway test

- . carboxyhemoglobin test

- . ear pressure test

- . electronystagmography

- . tilt-table test

- . vestibular tests

- . Weber test

RT cardiac output

- . cardiography

- . certification

- . environmental index

- . environmental tests

- . mobile quarantine facility

- . personnel selection

- . physical fitness

- . pilot selection

- . psychomotor performance

- . sensorimotor performance

- . stroke volume

- . Taylor manifest anxiety scale

- ∞ tests

- . treadmills

- . urinalysis

physiology

DEF The science that treats of the functions of living organisms or their parts, as distinguished from morphology or anatomy.

GS **physiology**

- . electrophysiology

- . exercise physiology

- . gravitational physiology

- . neuropsychology

- . plant physiology

- . psychophysiology

- . respiratory physiology

- . underwater physiology

RT aging (biology)

- . blood circulation

- . bone demineralization

- . catabolism

- . cytotogenesis

- . differentiation (biology)

- . digesting

- . heart function

- . hemodynamics

- . homeostasis

- . menstruation

- . metabolism

- . mitosis

- . narcosis

- . physiochemistry

- . regeneration (physiology)

- . regularity

- . respiration

- ∞ science

- . shock (physiology)

- . stress (physiology)

- . thermoregulation

- . tolerances (physiology)

phytochrome

(added August 2004)

DEF A blue-green biliprotein widely used in the plant kingdom.

GS biopolymers

- . proteins

- . . **phytochrome**

- . organic compounds

- . . proteins

- . . . **phytochrome**

- . pigments

- . . **phytochrome**

RT

- . photosynthesis

- . plant physiology

- . plants (botany)

- . vegetation growth

phytoplankton

DEF The aggregate of passively floating or drifting plant organisms in aquatic ecosystems.

GS

- . plankton

- . . **phytoplankton**

- . plants (botany)

- . . aquatic plants

- . . . **phytoplankton**

RT

- . algae

- . dissolved organic matter

- . marine biology

- . Sea-viewing Wide Field-of-view

- . . Sensor

- . water pollution

- . zooplankton

phytotrons

DEF Apparatus for the growth of plants under a variety of controlled environmental conditions. Used for germinators and growth chambers.

UF

- . *germinators*

- . *growth chambers*

RT

- . germination

- . greenhouses

- . growth

- . plants (botany)

Piaggio aircraft

GS **Piaggio aircraft**

- . P-166 aircraft

- . PD-808 aircraft

RT ∞ aircraft

Piaggio P-166 aircraft

USE **P-166 aircraft**

Piaggio-Douglas PD-808 aircraft

USE **PD-808 aircraft**

Piasecki aircraft

GS **Piasecki aircraft**

- . VZ-8 aircraft

RT ∞ aircraft

pickling (metallurgy)

DEF Preferential removal of oxide or mill scale from the surface of a metal by immersion usually in an acidic or alkaline solution.

GS

- . cleaning

- . . chemical cleaning

- . . . **pickling (metallurgy)**

RT descaling
metal films
metal finishing
scale (corrosion)

pickoffs
USE **sensors**

pickups
USE **sensors**

picosecond pulses
GS pulses
. **picosecond pulses**
RT amplitudes
electromagnetic missiles
electromagnetic pulses
laser outputs
pulse rate
pulsed radiation
time signals

picrates
GS nitrogen compounds
. nitro compounds
. . . **picrates**
. . . ammonium picrates

picture elements
USE **pixels**

picture tubes
UF *kinescopes*
GS electron tubes
. vacuum tubes
. . . cathode ray tubes
. . . **picture tubes**
video equipment
. **picture tubes**
RT display devices
flying spot scanners
raster scanning
television equipment

PIDV (velocimetry)
USE **particle image velocimetry**

piedmonts
UF *pediments*
pediplains
GS landforms
. terraces (landforms)
. . . plateaus
. . . **piedmonts**
. . . Central Piedmont (US)
RT coastal plains
mountains

pi-electrons
GS particles
. charged particles
. . . energetic particles
. . . electrons
. . . . **pi-electrons**
. corpuscular radiation
. . . energetic particles
. . . electrons
. . . . **pi-electrons**
. elementary particles
. . . fermions
. . . leptons
. . . . electrons
. **pi-electrons**
RT molecular electronics
nuclear particles

piercing
UF *puncturing*
RT cutting
drilling
extruding
forging
metal working
penetration
perforating
∞ perforation
spark machining

vulnerability

piers
USE **wharves**

piezoactuators
(added January 2001)
USE **piezoelectric actuators**

piezoelectric actuators
(added January 2001)
DEF Any actuator that uses the piezoelectric effect as a basis for its function.
UF *piezoactuators*
GS actuators
. **piezoelectric actuators**
electromechanical devices
. **piezoelectric actuators**
RT active control
microelectromechanical systems
piezoelectric motors
piezoelectric transducers
smart materials
smart structures
ultrasonic wave transducers
vibration damping

piezoelectric ceramics
DEF Ceramic material with piezoelectric properties similar to those of some natural crystals.
GS ceramics
. **piezoelectric ceramics**
RT lead zirconate titanates
smart materials

piezoelectric crystals
GS crystals
. crystal oscillators
. . . **piezoelectric crystals**
oscillators
. crystal oscillators
. . . **piezoelectric crystals**
RT microsionics
piezoresistive transducers
quartz transducers
single crystals

piezoelectric gages
GS measuring instruments
. pressure gages
. . . **piezoelectric gages**
transducers
. piezoelectric transducers
. . . **piezoelectric gages**
. piezoresistive transducers
. . . **piezoelectric gages**
RT pressure sensors
strain gages

piezoelectric motors
(added January 2001)
DEF Any motor that uses the piezoelectric effect to produce its mechanical output.
UF *piezomotors*
GS electromechanical devices
. electric motors
. . . **piezoelectric motors**
motors
. electric motors
. . . **piezoelectric motors**
RT microelectromechanical systems
micromotors
piezoelectric actuators
piezoelectric transducers
ultrasonic wave transducers

piezoelectric transducers
DEF Transducers that depend for their operation on the interaction between electric charge and the deformation of certain materials having piezoelectric properties. Note: Some crystals and specially processed ceramics have piezoelectric properties.
GS transducers
. **piezoelectric transducers**
. . . piezoelectric gages
RT interdigital transducers
piezoelectric actuators
piezoelectric motors

praetersonic devices
ultrasonic cleaning

piezoelectricity
DEF The property exhibited by some asymmetrical crystalline materials which when subjected to strain in suitable directions develop polarization proportional to the strain.
GS electrical properties
. **piezoelectricity**
mechanical properties
. **piezoelectricity**
RT crystal oscillators
elastic properties
electricity
electrostriction
piezoresistive transducers
pyroelectricity

piezometers
GS measuring instruments
. pressure gages
. . . **piezometers**
RT seepage

piezomotors
(added January 2001)
USE **piezoelectric motors**

piezoresistive transducers
GS transducers
. **piezoresistive transducers**
. . . piezoelectric gages
RT piezoelectric crystals
piezoelectricity

pigeons
GS animals
. vertebrates
. . . birds
. . . **pigeons**

piggyback systems
RT air launching
multistage rocket vehicles
payload mass ratio
payloads
Saenger space transportation system
∞ systems

pigments
GS **pigments**
. carotene
. carotenoids
. chlorophylls
. cytochromes
. melanin
. phytochrome
. visual pigments
RT additives
albinism
anatase
chromophores
dopa
fillers
inks
myoglobin
paints
phthalocyanin
plastids
rutile
skin (anatomy)

pigs (swine)
USE **swine**

Pike's Peak (CO)
GS landforms
. peaks (landforms)
. . . **Pike's Peak (CO)**
RT Colorado
mountains

pile foundations
GS foundations
. **pile foundations**

piles

- RT ∞ piles
- ∞ **piles**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT nuclear reactors
- pile foundations

pilocarpine

- GS bases (chemical)
 - . alkaloids
 - . . **pilocarpine**
- nitrogen compounds
 - . alkaloids
 - . . **pilocarpine**
- organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . alkaloids
 - **pilocarpine**

pilot error

- UF *flight technical error*
- GS errors
 - . **pilot error**
- RT aircraft accidents
 - collisions
 - crash landing
 - crashes
 - human factors engineering
 - human performance
 - midair collisions
 - pilot induced oscillation

pilot induced oscillation

DEF Oscillations of a flying aircraft caused by transients and system changeovers, by pilot overreaction upon such transients, or by misleading pilot cues or excessive pilot gain in modern high-gain, high order aircraft control systems.

- RT aerodynamic stability
 - aircraft control
 - aircraft stability
 - control stability
 - high gain
 - longitudinal control
 - man machine systems
 - nonstabilized oscillation
 - pilot error
 - pilot performance
 - self induced vibration
 - stable oscillations
 - transient oscillations

pilot landing aid television system

- USE **PLAT system**

pilot opinion ratings

- (added August 1999)
- USE **pilot ratings**

pilot performance

- GS human performance
 - . **pilot performance**
 - . . blackout prevention
- RT aircraft performance
 - astronaut performance
 - flight fatigue
 - intravehicular activity
 - man operated propulsion systems
 - operator performance
- ∞ performance
 - pilot induced oscillation
 - psychomotor performance
 - sensorimotor performance
 - situational awareness

pilot plants

- RT industrial plants
 - models
 - product development
 - prototypes

pilot ratings

- (added August 1999)
- DEF Subjective assessment of the handling and stability characteristics of an aircraft or other flight vehicle.
- UF *pilot opinion ratings*

- GS flight characteristics
 - . **pilot ratings**
 - . . Cooper-Harper ratings
 - ratings
 - . **pilot ratings**
 - . . Cooper-Harper ratings
- RT aircraft performance
 - assessments
 - controllability
 - helicopter performance

pilot selection

- GS selection
 - . personnel selection
 - . . **pilot selection**
- RT physiological tests
 - psychological tests

pilot support systems

- (added October 1997)
- SN (LIMITED TO ADVANCED FLIGHT VEHICLE SYSTEMS FOR INTEGRATING, INTERPRETING, AND PRESENTING FLIGHT OR MISSION RELATED INFORMATION)
 - cockpit assistant systems
 - Pilot's Associate*
- GS information systems
 - . **pilot support systems**
 - support systems
 - . **pilot support systems**
- RT artificial intelligence
 - automatic pilots
 - avionics
 - cockpits
 - decision support systems
 - expert systems
 - flight management systems
 - human-computer interface
 - knowledge based systems
 - man machine systems
 - situational awareness

pilot training

- GS education
 - . flight training
 - . . **pilot training**
- RT astronaut training
 - aviation psychology
 - ejection injuries
 - ejection training
 - flight simulators
 - space flight training
 - training simulators

piloted centrifuges

- USE **human centrifuges**

pilotless aircraft

- SN (AIR VEHICLES USING REMOTE OR AUTONOMOUS CONTROL)
- UF *Darkstar unmanned aerial vehicle*
 - unmanned aerial vehicles*
- GS **pilotless aircraft**
 - . drone aircraft
 - . . target drone aircraft
 - . . . Firebee 2 target drone aircraft
 - . . . Jindivik target aircraft
 - . . X-45 aircraft
- RT ∞ aircraft
 - balloons
 - drone vehicles
 - light aircraft
- ∞ military aircraft
 - oblique wings
 - planetary aerial vehicles
 - reconnaissance aircraft
 - remotely piloted vehicles
 - unmanned aircraft systems

∞ **pilots**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aircraft pilots
 - automatic pilots
 - pilots (personnel)
 - test pilots

pilots (personnel)

- GS personnel
 - . flying personnel

- . . **pilots (personnel)**
- . . . aircraft pilots
- test pilots
- . operators (personnel)
- . . **pilots (personnel)**
- . . . aircraft pilots
- test pilots
- RT astronauts
 - cosmonauts
 - crews
 - flight crews
- ∞ pilots

Pilot's Associate

(added October 1997)

- USE **pilot support systems**

p-i-n diodes

- USE **diodes**
- p-i-n junctions**

p-i-n junctions

- UF *p-i-n diodes*
- GS semiconductor junctions
 - . **p-i-n junctions**
- RT diodes
 - ∞ junctions
 - solar cells

pinch effect

DEF The result of an electromechanical force that constricts, and sometimes momentarily ruptures, a molten conductor carrying current at a high density. The self contradiction of a plasma column carrying large currents due to the interaction of this current with its own magnetic field.

- GS **pinch effect**
 - . plasma pinch
 - . . screw pinch
 - . . theta pinch
 - . . zeta pinch
 - . reverse field pinch
- RT cylindrical plasmas
 - ∞ effects
 - magnetic fields
 - magnetohydrodynamics
 - plasma compression
 - plasma control
 - relativistic plasmas
 - stellarators
 - thermonuclear power generation
 - thermonuclear reactions
 - zeta thermonuclear reactor

pineal gland

- GS anatomy
 - . glands (anatomy)
 - . . endocrine glands
 - . . . **pineal gland**
 - . nervous system
 - . . central nervous system
 - . . . brain
 - diencephalon
 - **pineal gland**
- RT melatonin

pinhole cameras

DEF Cameras which have no lenses, but consist essentially of a darkened box with a small hole in one side, so that an inverted image of outside objects is projected on the opposite side where it is recorded on photographic film.

- GS optical equipment
 - . cameras
 - . . **pinhole cameras**
 - . photographic equipment
 - . cameras
 - . . **pinhole cameras**
- RT apertures
 - photography
 - Pinhole Occulter Facility
 - pinholes

Pinhole Occulter Facility

- GS observatories
 - . astronomical observatories
 - . . solar observatories
 - . . . **Pinhole Occulter Facility**
- RT occultation

Pioneer Venus 2 night probe

probe, Pioneer Venus 2 North probe, Pioneer Venus 2 sounder probe, and Pioneer Venus 2 transporter bus.

- GS interplanetary spacecraft
 - . Pioneer space probes
 - . . . **Pioneer Venus 2 entry probes**
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . Pioneer Venus spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . **Pioneer Venus 2 entry probes**
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . Venus probes
 - . . Pioneer Venus 2 spacecraft
 - . . . **Pioneer Venus 2 entry probes**
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . unmanned spacecraft
 - . Pioneer Venus spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . **Pioneer Venus 2 entry probes**
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . space probes
 - . . Pioneer space probes
 - . . . **Pioneer Venus 2 entry probes**
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . Venus probes
 - . . Pioneer Venus 2 spacecraft
 - . . . **Pioneer Venus 2 entry probes**
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . probe
- RT ∞ probes

Pioneer Venus 2 Multiprobe spacecraft

USE **Pioneer Venus 2 spacecraft**

Pioneer Venus 2 night probe

- GS interplanetary spacecraft
 - . Pioneer space probes
 - . . Pioneer Venus 2 entry probes
 - . . . **Pioneer Venus 2 night probe**
 - . Pioneer Venus spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - **Pioneer Venus 2 night probe**
 - . Venus probes
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - **Pioneer Venus 2 night probe**
 - . unmanned spacecraft
 - . Pioneer Venus spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - **Pioneer Venus 2 night probe**
 - . space probes
 - . . Pioneer space probes
 - . . . Pioneer Venus 2 entry probes
 - **Pioneer Venus 2 night probe**
 - . Venus probes
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - **Pioneer Venus 2 night probe**
- RT ∞ probes

Pioneer Venus 2 sounder probe

- GS interplanetary spacecraft
 - . Pioneer space probes
 - . . Pioneer Venus 2 entry probes
 - . . . **Pioneer Venus 2 sounder probe**
 - . Pioneer Venus spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - **Pioneer Venus 2 sounder probe**
 - . Venus probes
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - **Pioneer Venus 2 sounder probe**
 - . unmanned spacecraft
 - . Pioneer Venus spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - **Pioneer Venus 2 sounder probe**
 - . space probes

- . . Pioneer space probes
- . . . Pioneer Venus 2 entry probes
- **Pioneer Venus 2 sounder probe**
- . . Venus probes
- . . . Pioneer Venus 2 spacecraft
- Pioneer Venus 2 entry probes
- **Pioneer Venus 2 sounder probe**

Pioneer Venus 2 spacecraft

DEF This multiprobe spacecraft, launched on its Venus mission in August 1978, comprises a Transporter Bus, a sounder probe, and three identical probes (North, night, and day) which separately investigated and photographed the atmosphere, clouds and related phenomena. The multiprobe spacecraft traveled about 354 million kilometers. It entered Venus atmosphere on December 9, 1978 and all probes transmitted data. Used for Pioneer Venus 2 Multiprobe spacecraft.

UF *Pioneer Venus 2 Multiprobe spacecraft*

- GS interplanetary spacecraft
 - . Pioneer Venus spacecraft
 - . . **Pioneer Venus 2 spacecraft**
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . . Pioneer Venus 2 transporter bus
 - . Venus probes
 - . . **Pioneer Venus 2 spacecraft**
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . . Pioneer Venus 2 transporter bus
 - . unmanned spacecraft
 - . Pioneer Venus spacecraft
 - . . **Pioneer Venus 2 spacecraft**
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . . Pioneer Venus 2 transporter bus
 - . space probes
 - . . Venus probes
 - . . . **Pioneer Venus 2 spacecraft**
 - Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - Pioneer Venus 2 transporter bus
 - . RT Pioneer space probes
 - . ∞ probes
 - . ∞ spacecraft

Pioneer Venus 2 transporter bus

- GS interplanetary spacecraft
 - . Pioneer Venus spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . **Pioneer Venus 2 transporter bus**
 - . Venus probes
 - . . Pioneer Venus 2 spacecraft
 - . . . **Pioneer Venus 2 transporter bus**
 - . unmanned spacecraft
 - . Pioneer Venus spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . **Pioneer Venus 2 transporter bus**
 - . space probes
 - . . Venus probes
 - . . . Pioneer Venus 2 spacecraft
 - **Pioneer Venus 2 transporter bus**
- RT ∞ probes

Pioneer Venus Orbiter

USE **Pioneer Venus 1 spacecraft**

Pioneer Venus spacecraft

- UF *Pioneer 12 space probe*
- GS interplanetary spacecraft
 - . **Pioneer Venus spacecraft**
 - . . Pioneer Venus 1 spacecraft
 - . . . Pioneer Venus 2 spacecraft
 - Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe

- . . . Pioneer Venus 2 transporter bus
- . unmanned spacecraft
- . **Pioneer Venus spacecraft**
- . . Pioneer Venus 1 spacecraft
- . . . Pioneer Venus 2 spacecraft
- Pioneer Venus 2 entry probes
- Pioneer Venus 2 night probe
- Pioneer Venus 2 sounder probe
- . . . Pioneer Venus 2 transporter bus
- . RT Pioneer space probes
- . ∞ probes
- . space probes

pions

- GS particles
 - . elementary particles
 - . . bosons
 - . . . mesons
 - **pions**
 - hadrons
 - . . . mesons
 - **pions**
 - . . . nuclear particles
 - . . bosons
 - . . . mesons
 - **pions**
- RT baryons
 - . charged particles
 - . kaons

pipe flow

- UF *Kirchhoff-Helmholtz flow*
- GS fluid flow
 - . gas flow
 - . . **pipe flow**
 - . . internal flow
 - . . . **pipe flow**
 - . . . parallel flow
 - . . . **pipe flow**
- RT cavity flow
 - . channel flow
 - . choked flow
 - . critical flow
 - . flow noise
 - . laminar flow
 - . liquid flow
 - . mass flow
 - . multiphase flow
 - . open channel flow
 - . orifice flow
 - . pipes (tubes)
 - . pressure gradients
 - . single-phase flow
 - . steady flow
 - . steam flow
 - . subcritical flow
 - . supercritical flow
 - . turbulent flow
 - . uniform flow
 - . unsteady flow
 - . water flow
 - . water hammer
 - . water pressure

pipe nozzles

- RT exhaust systems
 - . inlet nozzles
 - . intake systems
 - . nozzle geometry
- ∞ nozzles
 - . openings
 - . outlets
 - . tanks (containers)

pipelines

- GS **pipelines**
 - . sewers
- RT crossings
 - . ∞ lines
 - . materials handling
 - . pipes (tubes)
 - . pumps
 - . siphons
 - . steam flow
 - . ∞ storage
 - . storage tanks
 - . transportation
 - . waste disposal

water hammer

pipelining (computers)

DEF Processing techniques for improving the capability of computer systems by modeling, sequencing control, resource allocation, etc.

- GS data processing
 - . **pipelining (computers)**
- RT associative processing (computers)
 - data processing equipment
 - multiprocessing (computers)
 - multiprogramming
 - parallel programming
 - RISC processors
 - time sharing
 - vector processing (computers)

Piper aircraft

- GS light aircraft
 - . **Piper aircraft**
 - . . PA-34 Seneca aircraft
- RT ∞ aircraft
 - general aviation aircraft

piperidine

- GS bases (chemical)
 - . **piperidine**
 - organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **piperidine**
- RT pyridines

pipes (tubes)

- UF *tubing*
- GS **pipes (tubes)**
 - . gas pipes
 - . U bends
- RT ∞ casing
 - circular tubes
 - ducts
 - fluid flow
- ∞ headers
 - hoses
- ∞ hydraulics
 - internal flow
 - manifolds
 - pipe flow
 - pipelines
 - risers
 - siphons
 - syringes
- ∞ tubes

pipettes

- RT burettes
 - glassware
 - laboratory equipment

Pirani gages

- GS measuring instruments
 - . pressure gages
 - . . vacuum gages
 - . . . **Pirani gages**
- vacuum apparatus
 - . vacuum gages
 - . . **Pirani gages**
- RT hot-wire flowmeters
 - ionization gages
 - Knudsen gages
 - Mcleod gages
 - pressure measurement

piston engines

DEF Engines, especially internal combustion engines, in which a piston or pistons moving back and forth work upon a crankshaft or other device to create rotational movement. Used for reciprocating engines.

- UF *reciprocating engines*
- GS engines
 - . **piston engines**
 - . . diesel engines
 - . . free-piston engines
 - . . Stirling engines
- RT aircraft engines
 - automobile engines
 - external combustion engines
 - fuel injection

internal combustion engines

- pistons
- reciprocation
- rotary engines
- Wankel engines

piston theory

- RT compressing
 - fluid dynamics
- pistons
- ∞ theories

pistons

- GS **pistons**
 - . magnetic pistons
- RT combustion chambers
 - engine parts
 - free-piston engines
 - internal combustion engines
 - piston engines
 - piston theory
 - plungers
 - reciprocation

PIT (rocket engines)

(added April 2001)

USE **pulsed inductive thrusters**

∞ pitch

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *tone*
- RT frequencies
 - pitch (inclination)
 - pitch (material)

pitch (inclination)

DEF Of a vehicle, an angular displacement about an axis parallel to the lateral axis of the vehicle. Used for damping in pitch, phugoid oscillations, and pitch angles.

- UF *damping in pitch*
- phugoid oscillations*
- pitch angles*

GS attitude (inclination)

. **pitch (inclination)**

- RT angles (geometry)
 - heaving
 - longitudinal control
 - longitudinal stability

∞ motion

∞ pitch

roll

rotation

slopes

stability augmentation

variable pitch propellers

yaw

pitch (material)

DEF The residues from the destructive distillation of tars.

- RT asphalt

oils

∞ pitch

tars

pitch angles

USE **pitch (inclination)**

pitch attitude control

USE **longitudinal control**

pitching moments

- GS moments
 - . stability derivatives
 - . . **pitching moments**
- RT aerodynamic coefficients
 - longitudinal stability
 - moments of inertia
 - rolling moments
 - torque
 - yawing moments

pitot tubes

DEF Open ended tubes or tube arrangements which, when pointed upstream, may be used to measure the stagnation pressure of the fluid for subsonic flow; or the stagnation pressure behind the tube's normal shock wave for

supersonic flow. (Pronounced pee-toe. After Henri Pitot, 1695-1771, French scientist.) Used for Preston tubes.

- UF *Preston tubes*
- RT flow measurement
 - flowmeters
 - pressure measurement
 - protuberances
 - speed indicators
 - static pressure
- ∞ tubes
 - velocity measurement
 - Venturi tubes

∞ pits

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT pits (excavations)
 - pitting

pits (excavations)

- RT boreholes
 - excavation
 - mines (excavations)
- ∞ pits
 - sumps

pitting

- RT chemical attack
 - chipping
 - corrosion
 - corrosion resistance
 - corrosion tests
 - degradation
 - erosion
 - erosive burning
 - etching
 - hot corrosion
 - metal-water reactions
- ∞ pits
 - scoring

pituitary gland

- UF *hypophysis*
 - GS anatomy
 - . glands (anatomy)
 - . . endocrine glands
 - . . . **pituitary gland**
 - RT brain
 - hypothalamus
 - vasopressins
- pituitary hormones**
- UF *growth hormone*
 - GS secretions
 - . endocrine secretions
 - . . hormones
 - . . . **pituitary hormones**
 - adrenocorticotropin (ACTH)
 - vasopressins

PIV (velocimetry)

USE **particle image velocimetry**

pivoted wing aircraft

USE **tilt wing aircraft**

pivots

DEF The paths followed by a point in a diameter of a circle as the circle rolls along in a straight line. Used for trochoids.

- UF *trochoids*
- RT bearings
 - gimbals
 - hinges
 - pintles
 - shafts (machine elements)
 - supports
 - swivels

PIX

USE **plasma interaction experiment**

pixels

DEF Shortened term for 'picture elements.' They are image resolution elements in vidicon-type detectors. Used for picture elements.

- UF *picture elements*
- RT aerial photography
 - electrophotometry

imaging techniques
 photographs
 photography
 remote sensing
 satellite imagery
 spectral mixture analysis
 vidicons

PL/1

GS languages
 . programming languages
 . . **PL/1**
 RT Cobol
 compilers
 computer programming
 FORTRAN
 machine oriented languages

plages (faculae)

USE **faculae**

plagioclase

(added August 2004)

DEF A family of feldspar minerals with formulas ranging from pure sodium aluminum silicate (albite) to pure calcium aluminum silicate (anorthite).

GS aluminum compounds
 . aluminum silicates
 . . feldspars
 . . . **plagioclase**
 minerals
 . feldspars
 . . **plagioclase**
 silicon compounds
 . silicates
 . . aluminum silicates
 . . . feldspars
 **plagioclase**
 RT aluminum oxides
 calcium silicates
 sodium silicates

plains

DEF Any flat areas, large or small, at a low elevation; specifically, extensive regions of comparatively smooth and level or gently undulating land, having few or no prominent surface irregularities. Plains sometime have a considerable slope, and usually at a low elevation with reference to surrounding areas. Plains may be either forested or bare of trees, and may be formed by deposition or by erosion.

GS land
 . **plains**
 . . coastal plains
 . . flood plains
 . . Llanos Orientales (Colombia)
 . . pampas
 . . playas
 . . tundra
 landforms
 . **plains**
 . . coastal plains
 . . flood plains
 . . Llanos Orientales (Colombia)
 . . pampas
 . . playas
 . . tundra
 RT farmlands
 flats (landforms)
 geography
 grasslands
 Great Plains Corridor (North America)
 plateaus
 steppes
 topography
 wilderness

plan position indicators

DEF Display devices on which target blips are shown in plan position, thus forming a map-like display, with radial distance from the center representing range and with the angle of the radius vector representing azimuth angle. Used for PPI (position indicators).

UF *PPI (position indicators)*
 GS display devices
 . position indicators
 . . **plan position indicators**

. radarscopes
 . . **plan position indicators**
 measuring instruments
 . indicating instruments
 . . position indicators
 . . . **plan position indicators**
 radar equipment
 . radarscopes
 . . **plan position indicators**

planar structures

RT flat layers
 flat plates
 flat surfaces
 flatness
 ∞ structures
 surface properties

Plancks constant

GS constants
 . **Plancks constant**
 RT black body radiation
 de Broglie wavelengths
 electromagnetic radiation
 nuclear magnetic resonance
 photons
 quantum theory
 thermal radiation
 Wentzel-Kramer-Brillouin method

plane strain

DEF A deformation of a body in which the displacement of all points in the body are parallel to a given plane, and the displacement values are not dependent on the distance perpendicular to the plane.

RT crack propagation
 elastic deformation
 fracture mechanics
 plane stress
 plastic deformation
 stress intensity factors
 stress-strain relationships

plane stress

GS stresses
 . **plane stress**
 RT loads (forces)
 plane strain
 stress concentration

plane waves

GS longitudinal waves
 . **plane waves**
 RT beams (radiation)
 cylindrical waves
 elastic waves
 evanescent waves
 normal shock waves
 ∞ radiation
 shock waves
 solitary waves
 sound waves
 spatial filtering
 spherical waves
 transverse waves
 traveling waves
 ∞ waves

planet detection

(added January 2003)

DEF Detection of extrasolar planets using any of a number of direct and indirect observation techniques including astrometry, transit photometry, Doppler spectroscopy, and ground and space-based interferometry.

UF *exoplanet detection*
extrasolar planet detection
 GS detection
 . **planet detection**
 RT astrometry
 astronomical interferometry
 astronomical photometry
 extrasolar planets
 planetary systems

planet ephemerides

GS ephemerides
 . **planet ephemerides**
 RT geocentric coordinates

planets

planet origins

USE **planetary evolution**

planet X

(added June 1998)

USE **hypothetical planets**

planetariums

RT astronomical models
 display devices

planetary aerial vehicles

(added November 2006)

DEF Aircraft capable of flight in planetary and satellite atmospheres, and configured to support surface and atmospheric exploration missions.

UF *planetary aircraft*
 RT ∞ aircraft
 pilotless aircraft
 space exploration

planetary aircraft

(added November 2006)

USE **planetary aerial vehicles**

planetary atmospheres

SN (EXCLUDES EARTH ATMOSPHERE)
 GS environments
 . extraterrestrial environments
 . . planetary environments
 . . . **planetary atmospheres**
 helium hydrogen atmospheres
 Jupiter atmosphere
 Mars atmosphere
 Mercury atmosphere
 Neptune atmosphere
 planetary ionospheres
 Pluto atmosphere
 Saturn atmosphere
 Uranus atmosphere
 Venus atmosphere
 Venus clouds

RT ∞ absorption
 ∞ atmospheres
 atmospheric attenuation
 atmospheric composition
 atmospheric density
 atmospheric energy sources
 atmospheric temperature
 Earth analogs
 Earth atmosphere
 ionopause
 lunar atmosphere
 nongray atmospheres
 Nozomi Mars Orbiter
 organic solids
 planetary meteorology
 planetary rings
 primitive Earth atmosphere
 radiative transfer
 radio occultation
 satellite atmospheres
 Saturn rings
 solar planetary interactions
 terraforming

planetary bases

GS space bases
 . **planetary bases**
 . . Mars bases
 RT extraterrestrial resources
 in situ resource utilization
 space exploration
 stations

planetary boundary layer

DEF The layer of the atmosphere from the Earth's surface to the geostrophic wind level, including the surface boundary layer and the Ekman layer.

GS boundary layers
 . **planetary boundary layer**
 RT atmospheric boundary layer
 core-mantle boundary

planetary composition

GS composition (property)

- . **planetary composition**
- RT Earth planetary structure
 - extraterrestrial water
 - gas giant planets
 - Jupiter rings
 - Saturn rings
 - siderophile elements
 - space exploration
 - structural properties (geology)
- planetary cores**
 - DEF The centers of planets.
 - GS cores
 - . **planetary cores**
 - . . Earth core
 - RT core-mantle boundary
 - lunar core
 - planets
 - stellar cores
- planetary craters**
 - DEF Collective term for craters on any of the planetary surfaces.
 - GS craters
 - . **planetary craters**
 - . . Mars craters
 - RT Earth (planet)
 - impact damage
 - Mars (planet)
 - Mars surface
 - Mercury (planet)
 - Mercury surface
 - meteorite craters
 - planetary geology
 - planets
 - Venus (planet)
 - Venus surface
- planetary crusts**
 - DEF The outermost layers of planets. The planetary crusts are on top of the mantle and are modified by various processes of weathering, sedimentation, metamorphosis, volcanism, and bombardment by meteorites.
 - GS crusts
 - . **planetary crusts**
 - . . Earth crust
 - RT lunar crust
 - planetary geology
 - planetary mantles
- planetary cryospheres**
 - (added June 1996)
 - RT ∞ cryospheres
 - ice environments
 - Mars (planet)
 - permafrost
 - planetary meteorology
 - polar caps
- planetary entry*
 - USE **atmospheric entry**
- planetary environments**
 - SN (EXCLUDES EARTH)
 - GS environments
 - . extraterrestrial environments
 - . . **planetary environments**
 - . . . Mars environment
 - Mars atmosphere
 - planetary atmospheres
 - helium hydrogen atmospheres
 - Jupiter atmosphere
 - Mars atmosphere
 - Mercury atmosphere
 - Neptune atmosphere
 - planetary ionospheres
 - Pluto atmosphere
 - Saturn atmosphere
 - Uranus atmosphere
 - Venus atmosphere
 - Venus clouds
 - planetary magnetospheres
 - planetary magnetotails
 - RT aerospace environments
 - bioastronautics
 - ∞ cryospheres
 - exobiology
 - life support systems
 - long duration space flight
- lunar environment
- planets
- protoplanets
- terraforming
- terrestrial planets
- thermal environments
- planetary evolution**
 - UF *planet origins*
 - GS evolution (development)
 - . **planetary evolution**
 - RT cosmology
 - planetary geology
 - protoplanetary disks
 - protoplanets
 - solar nebula
 - solar system evolution
 - stellar evolution
- planetary exploration*
 - USE **space exploration**
- planetary explorer*
 - USE **outer planets explorers**
- planetary geology**
 - DEF Study or science of a planet, its history, and its life as recorded in the rocks. Includes the study of the surface features, the geometry of rock formations, weathering and erosion, and sedimentation.
 - GS geology
 - . **planetary geology**
 - . . Mars volcanoes
 - RT Earth analogs
 - lunar geology
 - Mars Express
 - Mars Pathfinder
 - MESSENGER (spacecraft)
 - planetary craters
 - planetary crusts
 - planetary evolution
 - planetary structure
 - planetary surfaces
 - planetology
 - planets
 - remote sensing
 - solar system
 - space exploration
- planetary gravitation**
 - GS gravitation
 - . **planetary gravitation**
 - RT escape velocity
 - lunar gravitation
- planetary ionospheres**
 - SN (EXCLUDES EARTH IONOSPHERE)
 - GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . planetary atmospheres
 - **planetary ionospheres**
 - RT ∞ atmospheres
 - ∞ ionospheres
 - Jupiter atmosphere
 - magnetosphere-ionosphere coupling
 - Mars atmosphere
 - Neptune atmosphere
 - Saturn atmosphere
 - Uranus atmosphere
 - Venus atmosphere
- planetary landing**
 - SN (EXCLUDES LANDING ON THE PLANET EARTH)
 - GS landing
 - . spacecraft landing
 - . . **planetary landing**
 - . . . Mars landing
 - RT crash landing
 - glide landings
 - hard landing
 - horizontal spacecraft landing
 - interplanetary flight
 - lunar landing
 - orbital mechanics
 - roving vehicles
 - soft landing
- water landing
- planetary limb**
 - DEF In astronomy, the circular outer edge of a planet.
 - GS **planetary limb**
 - . Earth limb
 - RT ∞ limbs
 - lunar limb
 - solar limb
- planetary magnetic fields**
 - GS magnetic fields
 - . **planetary magnetic fields**
 - RT geomagnetic tail
 - geomagnetism
 - MESSENGER (spacecraft)
 - planetary magnetospheres
 - planetary magnetotails
 - polar cusps
 - solar planetary interactions
- planetary magnetospheres**
 - SN (EXCLUDES EARTH MAGNETOSPHERE)
 - GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . **planetary magnetospheres**
 - planetary magnetotails
 - RT Earth magnetosphere
 - ∞ magnetospheres
 - planetary magnetic fields
 - solar planetary interactions
- planetary magnetotails**
 - (added March 1990)
 - SN (EXCLUDES EARTH'S MAGNETOTAIL; FOR EARTH USE 'GEOMAGNETIC TAIL')
 - DEF The portion of the magnetosphere extending from a planet in the direction away from the sun for a variable distance of the order of 1,000 planet radii.
 - GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . planetary magnetospheres
 - **planetary magnetotails**
 - RT exosphere
 - geomagnetic tail
 - magnetopause
 - ∞ magnetotails
 - planetary magnetic fields
 - solar planetary interactions
 - solar wind
- planetary mantles**
 - GS **planetary mantles**
 - . Earth mantle
 - RT core-mantle boundary
 - crusts
 - lithosphere
 - lunar mantle
 - planetary crusts
- planetary mapping**
 - GS mapping
 - . **planetary mapping**
 - RT astrography
 - ground penetrating radar
 - Heat Capacity Mapping Mission
 - Mars Reconnaissance Orbiter
 - thermal mapping
- planetary mass**
 - GS mass
 - . **planetary mass**
 - RT protoplanets
- planetary meteorology**
 - GS meteorology
 - . **planetary meteorology**
 - RT atmospheric circulation
 - atmospheric physics
 - Jupiter atmosphere
 - Mars atmosphere
 - Mercury atmosphere
 - planetary atmospheres
 - planetary cryospheres
 - planetology
 - planets

planetary nebulae

Venus atmosphere

planetary motion

USE **solar orbits**

planetary nebulae

GS celestial bodies
. nebulae
. . **planetary nebulae**
RT Orion nebula

planetary oceans

(added June 2001)

USE **extraterrestrial oceans**

planetary orbits

GS orbits
. **planetary orbits**
RT Amor asteroid
Apollo asteroids
Charon
circular orbits
Earth orbits
elliptical orbits
equatorial orbits
hypothetical planets
interplanetary trajectories
orbital resonances (celestial mechanics)
parking orbits
polar orbits
retrograde orbits
satellite orbits
spacecraft orbits
swingby technique
transfer orbits
twenty-four hour orbits
Viking orbiter spacecraft

planetary protection

(added August 2001)

DEF Technological and legal measures taken to prevent biological cross-contamination between Earth and other planets as a result of solar system exploration missions. Also includes safeguards imposed on the handling, distribution, and analysis of material samples returned to Earth.

GS protection
. **planetary protection**
. . planetary quarantine
RT contamination
decontamination
environment protection
exobiology
extraterrestrial life
Mars sample return missions
space law
spacecraft sterilization

planetary quakes

RT earthquakes
geodynamics
moonquakes
seismic waves
shock waves

planetary quarantine

GS protection
. planetary protection
. . **planetary quarantine**
RT spacecraft sterilization

planetary radiation

SN (EXCLUDES TERRESTRIAL RADIATION)
GS electromagnetic radiation
. **planetary radiation**
extraterrestrial radiation
. **planetary radiation**
RT albedo
decimeter waves
infrared radiation
light (visible radiation)
∞ radiation
radio waves
Saturn atmosphere
terrestrial radiation
thermal radiation

VLF emission recorders

planetary rings

GS celestial bodies
. **planetary rings**
. . Jupiter rings
. . Saturn rings
. . Uranus rings
RT dusty plasmas
moonlets
planetary atmospheres
planets
∞ rings

planetary rotation

GS gyration
. rotation
. . **planetary rotation**
RT astrophysics
planetology
rotating bodies
stellar rotation

planetary satellites

USE **natural satellites**

planetary space flight

USE **interplanetary flight**

planetary spacecraft

USE **interplanetary spacecraft**

planetary structure

RT asthenosphere
chemical composition
Earth planetary structure
Jupiter rings
lunar mantle
planetary geology
planetology
Uranus rings

planetary surfaces

GS **planetary surfaces**
. Mars surface
. Mercury surface
. Venus surface
RT Earth surface
extraterrestrial oceans
Jupiter red spot
Mars roving vehicles
Marsokhod Mars roving vehicles
planetary geology
roving vehicles
Saturn rings
surface properties
∞ surfaces
topography

planetary systems

DEF Systems consisting of a star and the planets and other objects in orbit around it.

GS **planetary systems**
. solar system
RT extrasolar planets
orbital resonances (celestial mechanics)
planet detection
solar system evolution
∞ systems

planetary temperature

GS temperature
. **planetary temperature**
RT atmospheric temperature
Saturn rings

planetary waves

DEF Waves on uniform currents in two-dimensional nondivergent fluid systems rotating with varying angular speeds about the local vertical (beta plane). These waves represent a special case of barotropic disturbance, conserving absolute vorticity. As applied to atmospheric flow, the planetary waves takes into account the variability of the Coriolis parameter while assuming the motion to be two-dimensional. Used for long waves (meteorology) and Rossby waves.

UF *long waves (meteorology)*
Rossby waves

GS barotropism
. **planetary waves**
internal waves
. **planetary waves**
tropospheric waves
. **planetary waves**
RT atmospheric circulation
barotropic flow
Coriolis effect
fluid flow
gravity waves
Kelvin waves
Rossby regimes
rotating fluids
rotating liquids
vortices
∞ waves
zonal flow (meteorology)

Planet-B spacecraft

(added August 1998)

USE **Nozomi Mars Orbiter**

planetesimals

USE **protoplanets**

planetocentric coordinates

GS coordinates
. **planetocentric coordinates**
. . geocentric coordinates
RT astronomical coordinates
celestial reference systems
spherical coordinates

planetology

RT Jupiter rings
planetary geology
planetary meteorology
planetary rotation
planetary structure
Saturn rings
terrestrial planets
trans-Neptunian objects

planets

DEF Celestial bodies of the solar system, revolving around the sun in nearly circular orbits, or similar bodies revolving around stars. The larger of such bodies are sometimes called principal planets to distinguish them from asteroids, planetoids, or minor planets, which are comparatively small. The larger planets are accompanied by satellites such as the moon. Inferior planets have orbits smaller than that of the Earth; superior planets have orbits larger than that of the Earth. The four planets nearest the sun are called inner planets; the others, outer planets. The four largest planets are called major planets. The four planets commonly used for celestial observations are called navigational planets. The word planet is of Greek origin, meaning, literally, wanderer, applied because the planets appear to move relative to the stars.

GS celestial bodies
. **planets**
. . extrasolar planets
. . gas giant planets
. . . Jupiter (planet)
. . . Neptune (planet)
. . . Saturn (planet)
. . . Uranus (planet)
. . terrestrial planets
. . . Earth (planet)
. . . Mars (planet)
. . . Mercury (planet)
. . . Venus (planet)
. . hypothetical planets
RT celestial mechanics
Chiron
ecliptic
Jupiter red spot
natural satellites
planet ephemerides
planetary cores
planetary craters
planetary environments
planetary geology
planetary meteorology
planetary rings
Pluto (planet)

protoplanetary disks
 protoplanets
 Saturn rings
 solar system
 solar system evolution
 sun

planforms

GS **planforms**
 . caret wings
 . rectangular planforms
 . . rectangular panels
 . . rectangular plates
 . . rectangular wings
 . sweptback tail surfaces
 . trapezoidal tail surfaces
 . wing planforms
 . . channel wings
 . . infinite span wings
 . . swept forward wings
 . . . trapezoidal wings
 . . sweptback wings
 . . . arrow wings
 . . . delta wings
 . . . trapezoidal wings
 . . variable sweep wings
 RT ∞ bodies
 ∞ cross sections
 geometry
 ∞ profiles
 shapes
 ∞ surface geometry

planigraphy

USE **tomography**

planing

SN (EXCLUDES MOTION INVOLVING DYNAMIC SUPPORTING FORCES)
 GS cutting
 . **planing**
 RT grinding (material removal)
 machining
 metal cutting
 milling (machining)
 slicing
 smoothing

planispheres

GS maps
 . astronomical maps
 . . **planispheres**
 RT astronomical coordinates
 celestial sphere
 constellations
 polar coordinates

plankton

DEF The aggregate of passively floating or drifting plant and animal organisms which provide the major source of sustenance for animal life in the aquatic ecosystem. Used for plankton bloom.

UF *plankton bloom*
 GS **plankton**
 . phytoplankton
 . zooplankton
 RT algae
 animals
 plants (botany)
 red tide
 thermal pollution

plankton bloom

USE **plankton**

planning

GS **planning**
 . airport planning
 . management planning
 . . production planning
 . . project planning
 . mission planning
 . regional planning
 . . urban planning
 . task planning (robotics)
 . trajectory planning
 RT budgeting
 critical path method
 Delphi method (forecasting)

∞ design
 forecasting
 ∞ missions
 optimization
 pattern method (forecasting)
 probe method (forecasting)
 production engineering
 profile method (forecasting)
 progress
 sequencing
 slicing
 Starsite program
 training analysis
 urban development

planotrons

UF *amplitrans (trademark)*
 GS amplifiers
 . microwave amplifiers
 . . **planotrons**
 electron tubes
 . vacuum tubes
 . . microwave tubes
 . . . **planotrons**
 microwave equipment
 . microwave amplifiers
 . . **planotrons**
 microwave tubes
 . . **planotrons**
 RT camera tubes
 electric arcs
 magnetrons

∞ **plans**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT drawings
 flight plans
 layouts
 mission planning
 payload integration plan
 urban development

plant design

SN (EXCLUDES BIOLOGICAL PLANTS)
 DEF Encompasses all design consideration of physical plants, i.e., airports, industrial plants, test facilities, etc. Structural is just one aspect of this design. SN (excludes biological plants)
 RT architecture
 ∞ design
 structural design

plant diseases

UF *diseased vegetation*
 GS **plant diseases**
 . blight
 RT agriculture
 crop growth
 crop identification
 crop vigor
 diseases
 fungi
 plant physiology
 plant stress
 plants (botany)
 rust fungi

plant growth regulators

(added August 2004)

DEF A substance which affects the growth and other functions of a plant. These include the hormones auxins, gibberellins, and cytokinins, which are produced naturally in plants, as well as ethylene.

GS **plant growth regulators**
 . abscisic acid
 . auxins
 RT ethylene
 indoleacetic acids
 plant physiology
 plants (botany)

plant physiology

(added August 2004)

DEF Physiological functions characteristic of plants.

GS physiology
 . **plant physiology**
 RT abscisic acid

auxins
 germination
 gravitropism
 leaves
 photosynthesis
 phototropism
 phytochrome
 plant diseases
 plant growth regulators
 plant roots
 plant stress
 plants (botany)
 respiration
 seedlings (botany)
 transpiration
 vegetation growth

plant roots

RT auxins
 bulbs
 plant physiology
 plants (botany)
 ∞ roots
 seedlings (botany)
 vegetation growth

plant stress

DEF Stimulus or a series of stimuli of such magnitude as to disrupt the growth and/or survival of plants.

GS stress (biology)
 . **plant stress**
 RT aerial photography
 agriculture
 crop growth
 crop vigor
 Earth Resources Program
 plant diseases
 plant physiology
 remote sensing
 soil moisture
 spectral reflectance
 vegetation growth

plantar tissues

GS tissues (biology)
 . **plantar tissues**

planting

RT agriculture
 ∞ crops
 cultivation
 farm crops
 farmlands
 fertilizers
 plants (botany)
 plowing
 plows
 seeds
 silviculture
 soils
 tractors
 vegetables

plants (botany)

UF *flora*
 GS **plants (botany)**
 . alfalfa
 . algae
 . . blue green algae
 . . . anabaena
 . . . Microcystis
 . . . Nostoc
 . . Chlorella
 . . Dunaliella
 . . porphyra
 . . scenedesmus
 . aquatic plants
 . . phytoplankton
 . barley
 . brush (botany)
 . . chaparral
 . Bryophytes
 . corn
 . cotton
 . fungi
 . . Aspergillus
 . . Coccomyces
 . . gibberellins
 . . neurospora

plasma acceleration

. . rhizopus
. . rust fungi
. . saccharomyces
. . yeast
. grasses
. hay
. . reeds (plants)
. . sea grasses
. . sorghum
. guayule
. leguminous plants
. . soybeans
. lichens
. millet
. oats
. photophilic plants
. phreatophytes
. potatoes
. rice
. saprophytes
. spinach
. sugar beets
. sugar cane
. sunflowers
. thermophilic plants
. . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
. tobacco
. tradescantia
. tragacanth
. trees (plants)
. . citrus trees
. . conifers
. . deciduous trees
. genetically modified plants
. seedlings (botany)
RT abscisic acid
agriculture
angiosperms
animals
auxins
biochemical oxygen demand
biogeochemistry
biomass
blight
botany
canopies (vegetation)
carbon cycle
chlorophylls
cortexes (botany)
crop growth
crop vigor
defoliant
defoliation
Earth resources
environments
farm crops
foliage
food chain
forests
frost damage
geobotany
geotropism
gravitropism
greenhouses
halophiles
herbicides
heterotrophs
hydroponics
infestation
lacunas
leaves
microorganisms
microspores
mitra
orchards
organisms
petals
phototropism
phytochrome
phytotrons
plankton
plant diseases
plant growth regulators
plant physiology
plant roots
planting

plastids
plowing
pollen
rain forests
seeds
spores
stems
utricle
vegetation
viability
vineyards
wood

plants (industries)

USE **industrial plants**

plasma acceleration

UF *magnetohydrodynamic acceleration*

GS rates (per time)

. acceleration (physics)

. . **plasma acceleration**

RT ∞ acceleration

magnetic nozzles

particle acceleration

plasmas (physics)

wave propagation

wave-particle interactions

plasma accelerators

GS **plasma accelerators**

. alpha plasma devices

. coaxial plasma accelerators

. Cyclops plasma accelerator

RT ∞ accelerators

electromagnetic acceleration

ion injection

magnetic annular arc

magnetohydrodynamic generators

magnetoplasmadynamic thrusters

plasmas (physics)

plasma antennas

DEF An air plasma made by ionizing the atmosphere which acts as the conducting element of an RF antenna.

GS antennas

. **plasma antennas**

RT antenna design

antenna radiation patterns

plasma cylinders

satellite communication

spacecraft communication

plasma arc cutting

DEF Use of plasma torches for cutting hard materials at extremely high temperatures.

RT metal cutting

metal working

plasma arc welding

plasma torches

plasmas (physics)

plasma arc spraying

USE **arc spraying**

plasma arc welding

GS welding

. fusion welding

. . electric welding

. . . arc welding

. . . . **plasma arc welding**

RT plasma arc cutting

plasma torches

plasmas (physics)

plasma arcs

USE **plasma jets**

plasma bubbles

DEF Pockets of very low electron density in the equatorial F region of the ionosphere in which the plasma density is lower than the ambient density.

RT F region

plasma density

plasma chemistry

RT ∞ chemistry

nuclear chemistry

plasmas (physics)

plasma chromatography

USE **ion mobility spectroscopy**

plasma clouds

DEF Specifically, a mass of ionized gas flowing out of the sun.

GS particles

. charged particles

. . **plasma clouds**

. . . magnetic clouds

RT chemical clouds

∞ clouds

cosmic plasma

dusty plasmas

Earth magnetosphere

geomagnetic hollow

hydrogen clouds

interplanetary medium

ion sheaths

plasmopause

plasmas (physics)

plasma composition

GS composition (property)

. **plasma composition**

RT atom concentration

dusty plasmas

gas composition

ion motion

ionospheric composition

nonequilibrium plasmas

nonuniform plasmas

plasmas (physics)

Thomas-Fermi model

uranium plasmas

plasma compression

DEF Decrease in volume and consequent increase in density of a plasma usually by the application of an intense magnetic field.

GS compressing

. **plasma compression**

RT

controlled fusion

dense plasmas

inertial fusion (reactor)

magnetic effects

magnetic field configurations

pinch effect

plasma focus

plasma pressure

plasmas (physics)

strongly coupled plasmas

theta pinch

tokamak devices

zeta pinch

plasma conductivity

GS electrical properties

. electrical resistivity

. . **plasma conductivity**

transport properties

. electrical resistivity

. . **plasma conductivity**

RT collisional plasmas

∞ conductivity

ionospheric conductivity

magnetohydrodynamic stability

plasmas (physics)

strongly coupled plasmas

plasma confinement

USE **plasma control**

plasma control

UF *plasma confinement*

RT ballooning modes

beta factor

bumpy toruses

confinement

∞ control

crossed field guns

crossed fields

divertors (fusion reactors)

electron-ion recombination

elliptical plasmas

helical inducers

helical windings

heliotrons

limiters (fusion reactors)
 magnetic annular arc
 magnetic compression
 magnetic field configurations
 magnetic mirrors
 magnetically trapped particles
 mirror fusion
 pinch effect
 plasmas (physics)
 reverse field pinch
 rigid rotors (plasma physics)
 screw pinch
 spheromaks
 stellarators
 tandem mirrors
 thermal barriers (plasma control)
 tokamak devices
 toroidal plasmas
 transformers
 TRAP program
 trapped magnetic fields
 zeta pinch

plasma cooling
 DEF Temperature control of plasmas in controlled fusion operations.
 GS cooling
 . **plasma cooling**
 RT controlled fusion
 magnetohydrodynamic stability
 plasmas (physics)
 temperature control

plasma core reactors
 DEF Nuclear reactors utilizing fissionable plasmas (such as uranium fluoride) for the fuel.
 GS nuclear reactors
 . **plasma core reactors**
 RT critical mass
 nuclear power plants
 nuclear research
 plasmas (physics)
 radioactive wastes
 reactor cores
 ∞ reactors
 reflectors
 waste disposal

plasma currents
 DEF Electric currents induced in plasmas by injection of fast ion beams or some other means.
 GS electric current
 . **plasma currents**
 RT beam currents
 controlled fusion
 eddy currents
 electric discharges
 electrical resistivity
 field aligned currents
 high current
 ionospheric currents
 line current
 low currents
 magnetohydrodynamics
 plasma-particle interactions
 plasmas (physics)
 ring currents
 spheromaks
 toroidal plasmas

plasma cylinders
 GS **plasma cylinders**
 . cylindrical plasmas
 RT ∞ cylinders
 cylindrical bodies
 cylindrical shells
 plasma antennas
 plasmaguides
 plasmas (physics)

plasma decay
 GS decay
 . **plasma decay**
 RT afterglows
 electromagnetic wave transmission
 helium afterglow
 magnetohydrodynamic stability

plasmas (physics)

plasma density
 GS density (number/volume)
 . particle density (concentration)
 . . **plasma density**
 RT atmospheric density
 atom concentration
 cavitons
 collisional plasmas
 electron density (concentration)
 electron-hole drops
 ion density (concentration)
 magnetoplasma dynamics
 magnetospheric electron density
 magnetospheric ion density
 magnetospheric proton density
 plasma bubbles
 plasma drift
 plasma pressure
 plasmas (physics)
 proton density (concentration)
 space density
 space plasmas
 strongly coupled plasmas

plasma diagnostics
 RT Fabry-Perot interferometers
 laser-induced breakdown spectroscopy
 microwave interferometers
 OPEN Project
 plasmas (physics)
 resonance probes
 space plasmas

plasma diffusion
 UF *plasma dispersion*
 GS diffusion
 . **plasma diffusion**
 RT ambipolar diffusion
 colloidal generators
 diffusion waves
 electron diffusion
 gaseous self-diffusion
 ion motion
 ionic diffusion
 plasmas (physics)

plasma diodes
 GS electronic equipment
 . diodes
 . . **plasma diodes**
 RT cesium diodes
 plasmas (physics)

plasma discharges
 USE **plasma jets**

plasma dispersion
 USE **plasma diffusion**

plasma display devices
 DEF Digital matrix flat panel devices in which small gas discharge plasma cells are used as light emitting sources.
 GS display devices
 . **plasma display devices**
 RT ∞ devices
 gas ionization
 glow discharges
 light sources
 plasmas (physics)

plasma drift
 DEF Movement in the ionosphere of ion and plasma concentration by electric field variations in the upper atmosphere.
 RT magnetohydrodynamic stability
 plasma density
 plasma waves
 plasmas (physics)

plasma dynamics
 UF *snowplow effect*
 RT ∞ dynamics
 hydrodynamic equations
 Langmuir turbulence
 magnetohydrodynamics
 meshfree methods

plasmas (physics)

plasma electrodes
 GS electrodes
 . **plasma electrodes**
 RT hot-wire flowmeters
 plasmaguides
 plasmatrons
 zeta pinch

plasma engines
 DEF Reaction engines using magnetically accelerated plasma as a propellant. Plasma engines are types of electrical engines.
 UF *electromagnetic rocket engines*
 GS engines
 . rocket engines
 . . electric rocket engines
 . . . **plasma engines**
 magnetoplasma dynamic thrusters
 pulsed inductive thrusters
 pulsed plasma thrusters
 two stage plasma engines
 VASIMR (propulsion system)
 RT arc jet engines
 coaxial plasma accelerators
 electrothermal engines
 Hall thrusters
 high temperature propellants
 ion engines
 magnetic nozzles
 mercury ion engines
 plasma power sources
 plasmas (physics)
 pulsed jet engines
 resistojet engines
 RIT engines

plasma equilibrium
 DEF Condition of plasma in which the constituent particles or fluid elements are unaccelerated or collectively at rest in steady flow.
 RT ballooning modes
 beta factor
 confinement
 electron-hole drops
 ∞ equilibrium
 equilibrium flow
 magnetic mirrors
 magnetohydrodynamic stability
 plasmas (physics)
 strongly coupled plasmas

plasma etching
 DEF Removal of material by use of a focused plasma beam.
 GS etching
 . **plasma etching**
 RT plasmas (physics)
 sputtering

plasma flow
 USE **magnetohydrodynamic flow**

plasma flux measurement
 RT interferometry
 magnetohydrodynamic flow
 microwave plasma probes
 plasmas (physics)
 rotating plasmas
 speckle interferometry

plasma focus
 DEF A highly compressed plasma.
 GS foci
 . **plasma focus**
 particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 dense plasmas
 **plasma focus**
 corpuscular radiation
 energetic particles
 plasmas (physics)
 dense plasmas
 **plasma focus**
 RT nuclear fusion
 plasma compression

plasma frequencies

strongly coupled plasmas
zeta pinch

plasma frequencies

GS frequencies
. **plasma frequencies**
RT electron density (concentration)
electrostatic probes
free electrons
plasmas (physics)
plasmions

plasma generation

USE **plasma generators**

plasma generators

SN (EXCLUDES MAGNETOHYDRODYNAMIC OR THERMONUCLEAR GENERATORS OF ELECTRIC POWER)
DEF Machines, such as electric arc chambers, that will generate very high heat fluxes to convert neutral gases into plasmas. Devices which use the interaction of plasmas and electrical field to generate currents. Used for plasma generation.
UF *plasma generation*
GS **plasma generators**
. plasma guns
. plasmatrons
. . duoplasmatrons
. Scylla
. tokamak devices
. . Joint European Torus
RT arc chambers
arc generators
closed cycles
colloidal generators
electric arcs
exploding wires
∞ generators
Hall generators
high temperature research
ion injection
ion sources
magnetohydrodynamic generators
Penning discharge
plasmas (physics)
pulse generators
thermal plasmas
thermonuclear power generation
wind tunnel drives

plasma guns

GS plasma generators
. **plasma guns**
RT coaxial plasma accelerators
crossed field guns
electron guns
∞ guns
magnetic lenses
plasmas (physics)
plasmatrons

plasma heating

GS heating
. **plasma heating**
. . electron cyclotron heating
RT arc heating
beam injection
beta factor
bumpy toruses
electron cyclotron resonance
energy transfer
gas heating
induction heating
ionospheric heating
kinetic heating
Langmuir turbulence
magnetic pumping
magnetohydrodynamic shear heating
plasma temperature
plasmas (physics)
radio frequency heating
relativistic electron beams
shock heating

VASIMR (propulsion system)

plasma instability

USE **magnetohydrodynamic stability**

plasma interaction experiment

DEF A NASA Lewis experiment, the first of which was launched piggyback with Landsat 3 in 1978 to study the charged particle space plasma environment and its effect on spacecraft surfaces operating at high voltages. The experiment lasted several hours as planned. The second was launched piggyback with Iras in 1983. Used for PIX.

UF *PIX*

GS payloads

. Space Shuttle payloads

. . **plasma interaction experiment**

spaceborne experiments

. **plasma interaction experiment**

RT ∞ interactions

Landsat 3

plasmas (physics)

space density

SPHINX

plasma interactions

GS **plasma interactions**

. plasma-electromagnetic interaction

. . laser plasma interactions

. plasma-particle interactions

RT ∞ interactions

plasmas (physics)

solar planetary interactions

space plasmas

wave interaction

wave-particle interactions

Weibel instability

plasma jet synthesis

RT chemical reactions

plasmas (physics)

∞ synthesis

plasma jet wind tunnels

UF *hydrodynamic tunnels*

GS test facilities

. wind tunnels

. . hypersonic wind tunnels

. . . **plasma jet wind tunnels**

. . hypervelocity wind tunnels

. . . **plasma jet wind tunnels**

RT plasmas (physics)

plasma jets

UF *plasma arcs*

GS *plasma discharges*

particles

. charged particles

. . **plasma jets**

. . . radio jets (astronomy)

RT ∞ arcs

crossed field guns

drop transfer

electron beams

electron bombardment

fluid jets

ion injection

∞ jets

low density wind tunnels

magnetic lenses

plasma torches

plasmas (physics)

plasmatrons

pulse diffraction

relativistic electron beams

relativistic plasmas

toroidal discharge

vapor jets

plasma layers

GS particles

. charged particles

. . **plasma layers**

. . . plasma sheaths

RT atmospheric stratification

∞ layers

plasmas (physics)

space plasmas

∞ transition layers

plasma lifetime

GS life (durability)

. **plasma lifetime**

RT magnetohydrodynamic stability
plasmas (physics)

plasma loss

RT limiters (fusion reactors)

losses

magnetohydrodynamic stability

plasmas (physics)

plasma oscillations

UF *ion oscillation*

plasma perturbation

GS oscillations

. **plasma oscillations**

RT electron oscillations

ion acoustic waves

Langmuir turbulence

nonuniform plasmas

plasmopause

plasmas (physics)

plasmions

plasma perturbation

USE **plasma oscillations**

plasma physics

DEF The study of the nature and properties of highly ionized gases (comprised of ions and free electrons).

UF *plasma theory*

GS rigid rotors (plasma physics)

. **plasma physics**

RT alpha plasma devices

BBGKY hierarchy

beta factor

boundary layer plasmas

cavitons

controlled fusion

electron runaway (plasma physics)

grand unified theory

Hall accelerators

instantons

Larmor radius

Liouville equations

magnetic field configurations

magnetohydrodynamics

magnetohydrostatics

negative ions

neutral sheets

OPEN Project

∞ physics

plasmopause

plasmas (physics)

radiation trapping

∞ science

semiconductor plasmas

space plasmas

theoretical physics

thermodynamics

tokamak devices

unified field theory

uranium plasmas

plasma pinch

GS pinch effect

. **plasma pinch**

. . screw pinch

. . theta pinch

. . zeta pinch

RT magnetohydrodynamic stability

plasmas (physics)

Q devices

plasma potentials

GS potential energy

. **plasma potentials**

RT Debye-Huckel theory

magnetohydrodynamic stability

nonequilibrium plasmas

plasmas (physics)

∞ potential

plasma power sources

RT electric propulsion

∞ energy sources

plasma engines
 plasmas (physics)
 ∞ power supplies
 thermionic converters

plasma pressure
 GS pressure
 . **plasma pressure**
 RT plasma compression
 plasma density
 plasmas (physics)

plasma probes
 GS measuring instruments
 . **plasma probes**
 . . electrostatic probes
 RT ion sheaths
 plasmaguides
 plasmas (physics)
 radio frequency impedance probes

plasma propulsion
 GS propulsion
 . electric propulsion
 . . **plasma propulsion**
 . low thrust propulsion
 . . **plasma propulsion**
 . spacecraft propulsion
 . . **plasma propulsion**
 RT duoplasmatrons
 electromagnetic propulsion
 electrostatic propulsion
 fusion propulsion
 gaseous fission reactors
 ion propulsion
 magnetic annular arc
 magnetic nozzles
 magnetic sails
 magnetohydrodynamics
 magnetoplasmadynamic thrusters
 magnetoplasmadynamics
 nuclear electric propulsion
 plasmas (physics)
 plasmatrons
 pulsed inductive thrusters
 pulsed plasma thrusters
 VASIMR (propulsion system)

plasma pumping
 DEF Application of radiation of appropriate frequencies to plasma, to increase the population of atoms or molecules in the higher energy states.
 RT gas injection
 molecular pumps
 plasmas (physics)
 ∞ pumping

plasma radiation
 RT electron radiation
 fluorescence
 glow discharges
 ion cyclotron radiation
 laser induced fluorescence
 luminescence
 nonequilibrium plasmas
 optical resonance
 phosphorescence
 plasmas (physics)
 polarized radiation
 ∞ radiation
 relativistic plasmas

plasma renin activity
 USE **immunoassay**

plasma resonance
 GS resonance
 . **plasma resonance**
 RT cavitons
 cyclotron resonance
 electromagnetic interactions
 electron cyclotron resonance
 plasmas (physics)
 resonance lines

resonance probes

plasma rings
 USE **toroidal plasmas**

plasma sheaths
 DEF The boundary layers of charged particles between plasmas and their surrounding walls, electrodes, or other plasmas. Envelopes of ionized gases that surround bodies moving through an atmosphere at hypersonic velocities.
 GS particles
 . charged particles
 . . plasma layers
 . . . **plasma sheaths**
 sheaths
 . **plasma sheaths**
 RT blackout (propagation)
 boundary layer plasmas
 ion sheaths
 magnetohydrodynamic shear heating
 magnetosheath
 metallic plasmas
 missiles
 nonequilibrium plasmas
 plasmas (physics)
 reentry communication
 reentry effects
 reentry physics
 system generated electromagnetic pulses
 uncontrolled reentry (spacecraft)

plasma slabs
 GS particles
 . charged particles
 . . **plasma slabs**
 RT magnetohydrodynamic stability
 plasmas (physics)

plasma sound waves
 USE **magnetohydrodynamic waves**
plasma waves

plasma spectra
 GS spectra
 . **plasma spectra**
 RT emission spectra
 energy spectra
 optical resonance
 plasmas (physics)
 radiation spectra

plasma spraying
 GS spraying
 . **plasma spraying**
 RT coating
 coatings
 flame spraying
 HVOF thermal spraying
 metal matrix composites
 plasmas (physics)
 sprayed coatings

plasma stability
 USE **magnetohydrodynamic stability**

plasma temperature
 GS temperature
 . **plasma temperature**
 RT ion temperature
 magnetohydrodynamic stability
 plasma heating
 plasmas (physics)
 thermal plasmas

plasma theory
 USE **plasma physics**

plasma torches
 DEF Burners which attain 50,000 degrees C temperatures by the use of plasma gas injected into an electric arc. Plasma torches are used for welding, spraying molten metal, and cutting hard rock or hard metals.
 GS torches
 . **plasma torches**
 RT plasma arc cutting
 plasma arc welding
 plasma jets

plasmas (physics)

plasma turbulence
 GS turbulence
 . magnetohydrodynamic turbulence
 . . **plasma turbulence**
 . . . Langmuir turbulence
 RT magnetohydrodynamic flow
 magnetohydrodynamic simulation
 magnetohydrodynamic stability
 plasmas (physics)

plasma waves
 UF *plasma sound waves*
 GS elastic waves
 . magnetohydrodynamic waves
 . . **plasma waves**
 . . . electrostatic waves
 RT collisional plasmas
 diffusion waves
 electroacoustic waves
 electron plasma
 ion acoustic waves
 ion cyclotron radiation
 ionic waves
 Landau damping
 Langmuir turbulence
 magnetoacoustic waves
 magnetoelastic waves
 nonuniform plasmas
 plasma drift
 plasmas (physics)
 Polar/GGS spacecraft
 shock waves
 space plasmas
 wave packets
 wave-particle interactions

plasmadynamic lasers
 DEF Stimulated emission devices in which the lasing gas flow has been replaced with a lasing plasma flow of atoms or ions.
 GS stimulated emission devices
 . lasers
 . . **plasmadynamic lasers**
 RT coherent light
 gasdynamic lasers
 laser applications
 plasmas (physics)

plasma-electromagnetic interaction
 GS electromagnetic interactions
 . **plasma-electromagnetic interaction**
 . . laser plasma interactions
 plasma interactions
 . **plasma-electromagnetic interaction**
 . . laser plasma interactions
 RT electromagnetic coupling
 ∞ interactions
 plasmas (physics)
 space plasmas
 wave-particle interactions

plasmaguides
 GS waveguides
 . **plasmaguides**
 RT beam waveguides
 Earth-ionosphere waveguide
 electromagnetic wave transmission
 microwave plasma probes
 plasma cylinders
 plasma electrodes
 plasma probes
 plasmas (physics)
 wave propagation

plasma-particle interactions
 GS particle interactions
 . **plasma-particle interactions**
 plasma interactions
 . **plasma-particle interactions**
 RT beam injection
 beam plasma amplifiers
 charge exchange
 dusty plasmas
 electron phonon interactions
 electron plasma
 ∞ interactions

plasmopause

particle theory
plasma currents
plasmas (physics)
relativistic electron beams
relativistic plasmas
SPHINX
wave-particle interactions

plasmopause

SN (LIMITED TO EARTH'S ATMOSPHERE)
RT cosmic plasma
Earth magnetosphere
ionopause
plasma clouds
plasma oscillations
plasma physics
plasmas (physics)
solar wind

plasmas (physics)

SN (LIMITED TO COMPLETELY IONIZED MATTER; FOR PARTIALLY IONIZED GASES SEE IONIZED GASES)
DEF Electrically conductive gases comprised of neutral particles, ionized particles, and free electrons but which, taken as a whole, are electrically neutral. Plasmas are further characterized by relatively large intermolecular distances, large amounts of energy stored in the internal energy levels of the particles, and the presence of plasma sheaths at all boundaries of the plasma. Plasmas are sometimes referred to as a fourth state of matter. Used for electrostatic plasma, ionized plasma, magnetoionic plasma, magnetoplasmas, and plasmoids.

UF *electrostatic plasma*
ionized plasmas
magnetoionic plasma
magnetoplasmas
plasmoids

GS

particles
. charged particles
. energetic particles
. . . **plasmas (physics)**
. . . . argon plasma
. . . . beta particles
. . . . boundary layer plasmas
. . . . cold plasmas
. . . . collisional plasmas
. strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. plasma focus
. strongly coupled plasmas
. . . . electron plasma
. . . . electron-positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. cesium plasma
. uranium plasmas
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas
. solar wind
. stellar winds
. . . . dusty plasmas
. . . . spherical plasmas
. . . . thermal plasmas
. . . . toroidal plasmas
. . . . corpuscular radiation
. energetic particles
. . . **plasmas (physics)**
. . . . argon plasma
. . . . beta particles
. . . . boundary layer plasmas
. . . . cold plasmas

. . . . collisional plasmas
. strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. plasma focus
. strongly coupled plasmas
. . . . electron plasma
. . . . electron-positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. cesium plasma
. uranium plasmas
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas
. solar wind
. stellar winds
. . . . dusty plasmas
. . . . spherical plasmas
. . . . thermal plasmas
. . . . toroidal plasmas
RT alpha plasma devices
beam plasma amplifiers
blackout (propagation)
chemical elements
combustion physics
core flow
Cyclops plasma accelerator
Debye length
deuteron irradiation
deuterons
duoplasmatrons
electric arcs
electron energy
gases
high temperature fluids
ionized gases
ions
Kelvin-Helmholtz instability
Landau factor
laser fusion
laser plasma interactions
light ions
Liouville equations
low density research
magnetic compression
magnetohydrodynamic flow
magnetohydrodynamic stability
magnetohydrodynamics
magnetoionics
microwave plasma probes
neutral gases
 ∞ physics
plasma acceleration
plasma accelerators
plasma arc cutting
plasma arc welding
plasma chemistry
plasma clouds
plasma composition
plasma compression
plasma conductivity
plasma control
plasma cooling
plasma core reactors
plasma currents
plasma cylinders
plasma decay
plasma density
plasma diagnostics
plasma diffusion
plasma diodes
plasma display devices
plasma drift

plasma dynamics
plasma engines
plasma equilibrium
plasma etching
plasma flux measurement
plasma frequencies
plasma generators
plasma guns
plasma heating
plasma interaction experiment
plasma interactions
plasma jet synthesis
plasma jet wind tunnels
plasma jets
plasma layers
plasma lifetime
plasma loss
plasma oscillations
plasma physics
plasma pinch
plasma potentials
plasma power sources
plasma pressure
plasma probes
plasma propulsion
plasma pumping
plasma radiation
plasma resonance
plasma sheaths
plasma slabs
plasma spectra
plasma spraying
plasma temperature
plasma torches
plasma turbulence
plasma waves
plasmadynamic lasers
plasma-electromagnetic interaction
plasmaguides
plasma-particle interactions
plasmopause
plasmosphere
plasmatoms
radiation belts
rarefied gas dynamics
Scylla
solar physics
space charge
SPHINX
stellar magnetic fields
tearing modes (plasmas)
thermal dissociation
thermodynamics
thermonuclear reactions
two stage plasma engines

plasmas-in-space payload

USE **AMPS (satellite payload)**

plasmosphere

DEF Envelope of highly ionized gases surrounding the Earth or another planet.

RT atmospheric ionization
chemosphere
Earth atmosphere
Earth magnetosphere
IMAGE satellite
OPEN Project
plasmas (physics)
upper atmosphere

plasmatoms

GS ion sources
. **plasmatoms**
. . duoplasmatrons
plasma generators
. **plasmatoms**
. . duoplasmatrons
RT plasma electrodes
plasma guns
plasma jets
plasma propulsion
plasmas (physics)

plasmids

(added February 2002)

DEF Self-replicating circular molecules of DNA that are found in a variety of bacterial, archaeal, fungal, algal and plant species.

RT cloning (biology)

- deoxyribonucleic acid
- gene therapy
- genetic engineering
- plasmoids*
- USE **plasmas (physics)**
- plasmolysis**
- RT cells (biology)
- cytology
- dehydration
- plasmons**
- SN (EXCLUDES ORGANIC CYTOPLASMIC CONDITIONS)
- GS electromagnetic radiation
- . **plasmons**
- elementary excitations
- . **plasmons**
- polaritons
- . **plasmons**
- RT electron gas
- excitons
- magnetohydrodynamic stability
- magnons
- phonons
- plasma frequencies
- plasma oscillations
- polarons
- surface plasmon resonance
- plasters**
- GS **plasters**
- . gypsum
- . paraplaster
- RT casts
- grout
- molding materials
- mortars (material)
- pastes
- plastic aircraft structures**
- GS aircraft structures
- . **plastic aircraft structures**
- RT aircraft construction materials
- aircraft survivability
- boron-epoxy composites
- glass fiber reinforced plastics
- plastics
- plastic anisotropy**
- GS anisotropy
- . **plastic anisotropy**
- . . elastic anisotropy
- RT viscoplasticity
- plastic bodies**
- RT beams (supports)
- ∞ bodies
- cylindrical bodies
- elastic bodies
- elastic plates
- elastoplasticity
- plastic properties
- plastic shells
- rigid structures
- plastic coatings**
- GS coatings
- . **plastic coatings**
- RT antiradar coatings
- encapsulating
- polymeric films
- protective coatings
- sprayed coatings
- plastic deformation**
- UF *Luder bands*
- plastic yielding*
- strain softening*
- GS deformation
- . **plastic deformation**
- RT ∞ bands
- bending
- Bordoni peaks
- creep properties
- creep tests
- ductile-brittle transition
- elastic deformation
- elongation
- friction stir welding
- J integral
- kink bands
- plane strain
- Saint Venant principle
- shear creep
- ∞ slip
- strain distribution
- stress propagation
- stress relaxation
- stress-strain relationships
- stretching
- structural strain
- superplastic forming
- superplasticity
- temperature inversions
- tensile creep
- tensile deformation
- thermomechanical treatment
- warpage
- work softening
- yield strength
- plastic fibers**
- (added June 1995)
- GS fibers
- . **plastic fibers**
- RT fiber optics
- glass fibers
- optical fibers
- plastic properties
- plastics
- waveguides
- plastic films*
- USE **polymeric films**
- plastic flow**
- GS fluid flow
- . **plastic flow**
- . . Tresca flow
- RT creep properties
- ∞ flow
- internal friction
- rheology
- shear flow
- steady state creep
- stress relaxation
- superplasticity
- viscoelasticity
- viscoplasticity
- plastic memory**
- RT shape memory alloys
- stress relaxation
- plastic plates**
- SN (STRUCTURAL PLATES EXHIBITING PLASTIC PROPERTIES)
- GS structural members
- . plates (structural members)
- . . **plastic plates**
- RT elastic plates
- elastoplasticity
- reinforced plates
- plastic propellants**
- GS propellants
- . solid propellants
- . . **plastic propellants**
- RT chemical fuels
- composite propellants
- explosives
- gelled propellants
- HTPB propellants
- monopropellants
- plasticizers
- polybutadiene tetranitramine
- pyrotechnics
- plastic properties**
- DEF The tendency of a loaded body to assume a deformed state other than its original state when the load is removed. Used for plasticity.
- UF *plasticity*
- GS mechanical properties
- . **plastic properties**
- . . elastoplasticity
- . . photoplasticity
- . . superplasticity
- . . thermoplasticity
- . . viscoplasticity
- . . yield point
- RT cohesion
- cold flow tests
- ductility
- elastic properties
- fatigue (materials)
- flexibility
- hardness
- influence coefficient
- method of characteristics
- plastic bodies
- plastic fibers
- ∞ properties
- rheology
- semisolids
- stress relaxation
- stress tensors
- structural stability
- plastic shells**
- GS shells (structural forms)
- . **plastic shells**
- RT cylindrical shells
- elastic shells
- elastoplasticity
- plastic bodies
- reinforced shells
- shell stability
- plastic tapes**
- RT adhesives
- magnetic tapes
- ∞ tapes
- plastic yielding*
- USE **plastic deformation**
- plasticity*
- USE **plastic properties**
- plasticizers**
- UF *casting solvents*
- elasticizers*
- GS additives
- . **plasticizers**
- RT case bonded propellants
- coatings
- Domino propellants
- esters
- plastic propellants
- propellant additives
- Skydrol (trademark)
- solid propellants
- solid rocket binders
- surfactants
- triacetin
- plastics**
- DEF Materials that contain as an essential ingredient one or more organic polymeric substances of large molecular weight, are solid in their finished state, and at some stage in their manufacture or processing into finished articles can be shaped by flow.
- GS **plastics**
- . Delrin (trademark)
- . Perspex (trademark)
- . polybutadiene
- . polyethylenes
- . . polyethylene terephthalate
- . polyisobutylene
- . polypropylene
- . polystyrene
- . . styrofoam (trademark)
- . polytetrafluoroethylene
- . . teflon (trademark)
- . polyvinyl alcohol
- . polyvinyl chloride
- . polyvinyl fluoride
- . reinforced plastics
- . . carbon fiber reinforced plastics
- . . carbon-phenolic composites
- . . glass fiber reinforced plastics
- . . micarta
- . synthetic resins
- . . addition resins
- . . . acrylic resins
- . . . vinyl copolymers

plastids

- . . polyester resins
- . . polyether resins
- . . . PEEK
- . . . polymethyl methacrylate
- . . thermoplastic resins
- . . . PEEK
- . . . quinoxalines
- . . . thermoplastic films
- . . thermosetting resins
- . . . epoxy resins
- phenolic epoxy resins
- . . . furan resins
- polyamide resins
- Kevlar (trademark)
- Nylon (trademark)
- . . phenolic resins
- micarta
- phenolic epoxy resins

RT acrylonitriles
aramid fibers
boron reinforced materials

∞ construction materials
elastomers
fluoropolymers
furans
injection molding
ion exchange resins
Kapton (trademark)

∞ materials science
molding materials
organic materials
petroleum products
plastic aircraft structures
plastic fibers

∞ polymers
sheet molding compounds
tetrahydrofuran
thioplastics

plastids

(added August 2004)

DEF Self-replicating cytoplasmic organelles of plant and algal cells that contain pigments and may synthesize and accumulate various substances. Plastids are used in phylogenetic studies.

GS organelles
. **plastids**

RT algae
cells (biology)
cytology
cytoplasm
pigments
plants (botany)

plastisols

DEF A suspension of a finely divided polymer in a plasticizer.

GS mixtures
. dispersions
. . **plastisols**
. . . smoke

RT colloids
composite propellants
double base propellants
resins

PLAT system

UF *pilot landing aid television system*

GS communication equipment
. **PLAT system**
telecommunication
. **PLAT system**
television systems
. **PLAT system**

RT landing aids
∞ systems

plate (metal)

USE **metal plates**

plate theory

RT flat plates
Mindlin plates
structural analysis

∞ theories
Treffitz method

plateaus

DEF Broadly, and comparatively flat areas

of great extent and elevation; specifically, extensive land regions considerably elevated (more than 150-300 meters in altitude) above the adjacent country or above sea level. They are commonly limited on at least one side by an abrupt descent, have a flat or nearly smooth surface but are often dissected by deep valleys and surmounted by high hills or high mountains, and have a large part of their total surface at or near the summit level. Plateaus are usually higher and have more noticeable relief than plains (they often represent elevated plains), and are usually higher and more extensive than mesas. They may be tectonic, residual, or volcanic in origin.

GS landforms
. terraces (landforms)
. . **plateaus**
. . . Allegheny Plateau (US)
. . . Colorado Plateau (US)
. . . Great Basin (US)
. . . mesas
. . . . buttes
. . . piedmonts
. . . . Central Piedmont (US)

RT apexes
erosion
highlands

∞ peaks
plains
stratigraphy

platelets

RT blood cell count
blood coagulation
blood groups
histology
thromboplastin

platens

RT ∞ plates
presses

∞ pressing
punches
rams (presses)
rollers
tools

∞ plates

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT corrugating
disks (shapes)
flat plates
metal coatings
metal plates
microchannel plates
panels
parallel plates
photographic plates
platens
plates (structural members)
plating
rectangular plates
scatter plates (optics)
thick plates
thin plates
trays

plates (structural members)

GS structural members
. **plates (structural members)**
. . anisotropic plates
. . annular plates
. . cantilever plates
. . circular plates
. . corrugated plates
. . elastic plates
. . end plates
. . flat plates
. . girder webs
. . metal plates
. . . boiler plate
. . Mindlin plates
. . orthotropic plates
. . perforated plates
. . plastic plates
. . porous plates
. . rectangular plates

. . reinforced plates
. . thick plates
. . thin plates

RT clamped structures
girders
metal sheets
orthotropism

∞ plates
Reissner theory
slabs

plates (tectonics)

DEF Rigid divisions of the outer surface of the Earth (lithosphere) which moves over a weaker layer (asthenosphere). The plates are about 100 km thick, and the continents, which are 40 km thick, rest on the plates and moves with them.

RT Earth crust
Earth mantle
Earth planetary structure
earthquakes
geological faults
geophysics
lithosphere
neotectonics
sea floor spreading
structural properties (geology)
subduction (geology)
tectonics

∞ platforms

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT Automatic Universal Orbiting Stations
data collection platforms
flight mechanics
floors
flying platforms
guidance (motion)
inertial platforms
landforms
launching pads
offshore platforms
slabs
solettas
space platforms
space stations
stabilized platforms
supports
synchronous platforms

plating

GS **plating**
. electroplating
. flame plating
. ion plating
. nickel plate

RT anodic stripping
cathodic coatings
cladding
deposition
deposits
electrodeposition
electroless deposition
finishes
laminates
metal coatings
metal finishing
metallizing

∞ plates
protective coatings
substrates
thin films

platinum

GS chemical elements
. **platinum**
. . platinum isotopes
metals
. transition metals
. . **platinum**
. . . platinum isotopes

RT platinum black

platinum alloys

GS alloys
. **platinum alloys**

RT iridium alloys

- rhodium alloys
- platinum black**
 GS particles
 . metal particles
 . . metal powder
 . . . **platinum black**
 . powder (particles)
 . . metal powder
 . . . **platinum black**
 RT catalysts
 platinum
- platinum compounds**
 GS **platinum compounds**
 . platinum oxides
 RT ∞ chemical compounds
 ∞ Group 8 compounds
 ∞ metal compounds
- platinum isotopes**
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **platinum isotopes**
 . platinum
 . . **platinum isotopes**
 metals
 . transition metals
 . . platinum
 . . . **platinum isotopes**
- platinum oxides**
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **platinum oxides**
 platinum compounds
 . **platinum oxides**
- playas**
 GS land
 . plains
 . . **playas**
 landforms
 . plains
 . . **playas**
 RT deserts
 lakes
- playbacks**
 RT magnetic tapes
 ∞ recorders
 recording
 records
 ∞ tapes
 video disks
- PLC effect*
(added August 1997)
 USE **Portevin-le Chatelier effect**
- Pleiades cluster**
 GS celestial bodies
 . star clusters
 . . open clusters
 . . . **Pleiades cluster**
 RT ∞ clusters
 Taurus constellation
- Pleistocene epoch**
(added May 2001)
 DEF Geologic epoch of the Quaternary period extending from about two million years ago to about 10,000 years ago and covering the last ice age.
 GS Cenozoic Era
 . Quaternary period
 . . **Pleistocene epoch**
 RT geochronology
 Holocene epoch
- plenum chambers**
 RT air intakes
 ∞ chambers
 ducts
 exhaust systems
 fuel systems
 intake systems
 manifolds
- ∞ water intakes
- plethysmography**
 GS bioengineering
 . biometrics
 . . **plethysmography**
 . . . electroplethysmography
- pleurae**
 GS anatomy
 . **pleurae**
 membranes
 . **pleurae**
 RT lungs
 respiratory system
- pleurotin**
 GS drugs
 . antibiotics
 . . **pleurotin**
 RT staphylococcus
- plexiglass (trademark)*
 USE **polymethyl methacrylate**
- plies*
 USE **layers**
- ∞ **plots**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT charts
 display devices
 plotters
 plotting
 sites
- plotters**
 UF *plotting instruments*
 GS recording instruments
 . **plotters**
 . . x-y plotters
 RT computer graphics
 digital to analog converters
 display devices
 navigation aids
 peripheral equipment (computers)
 ∞ plots
 plotting
 position indicators
 printers
 remote consoles
- plotting**
 RT analog to digital converters
 display devices
 navigation
 ∞ plots
 plotters
 printing
 recording
- plotting instruments*
 USE **plotters**
- plowed fields*
 USE **farmlands**
- plowing**
 GS cultivation
 . **plowing**
 RT agriculture
 farm crops
 farmlands
 grasslands
 planting
 plants (botany)
 plows
 sod
 tractors
- plows**
 RT agriculture
 mixers
 planting
- plowing
- PLSS*
 USE **portable life support systems**
- plug nozzles**
 GS exhaust nozzles
 . **plug nozzles**
 RT aerospike engines
 annular nozzles
 conical nozzles
 nozzle geometry
 ∞ nozzles
 rocket nozzles
 spike nozzles
- plugging**
 UF *clogging*
 RT agglomeration
 blocking
 caulking
 closing
 closures
 constrictions
 fouling
 plugs
 sealing
 seals (stoppers)
- plugs**
 SN (EXCLUDES SPARKPLUGS OR ELECTRICAL CONNECTORS)
 GS seals (stoppers)
 . **plugs**
 RT blocking
 closures
 labyrinth seals
 outlets
 plugging
 stopping
- Plum Brook Reactor**
 GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . **Plum Brook Reactor**
 . nuclear research and test reactors
 . . **Plum Brook Reactor**
- plumage**
 RT birds
- plumbane*
 USE **lead compounds**
metal hydrides
- plumes**
 GS **plumes**
 . rocket exhaust
 RT chimneys
 condensates
 pollution transport
 shock waves
- plungers**
 RT mixers
 pistons
 rams (presses)
 rams (pumps)
- Pluto (planet)**
 GS celestial bodies
 . dwarf planets
 . . **Pluto (planet)**
 . trans-Neptunian objects
 . . **Pluto (planet)**
 RT Charon
 Hydra
 New Horizons mission
 Nix
 planets
 Pluto atmosphere
- Pluto atmosphere**
 GS environments
 . extraterrestrial environments
 . . planetary environments
 . . . planetary atmospheres
 . . . **Pluto atmosphere**

Pluto reactors

RT Pluto (planet)

Pluto reactors

GS nuclear reactors
. **Pluto reactors**

RT nuclear ramjet engines
nuclear rocket engines
supersonic low altitude missile

Pluto satellites

(added July 1995)

GS celestial bodies
. natural satellites
. **Pluto satellites**
. . . Charon
. . . Hydra
. . . Nix

plutonium

GS chemical elements
. actinide series
. transuranium elements
. . . **plutonium**
. . . . plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
. nuclides
. isotopes
. . . radioactive isotopes
. . . . transuranium elements
. **plutonium**
. plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
metals
. actinide series
. transuranium elements
. . . **plutonium**
. . . . plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
RT fissionable materials
nuclear fuels

plutonium 238

GS chemical elements
. actinide series
. transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 238**
. nuclides
. isotopes
. . . radioactive isotopes
. . . . transuranium elements
. plutonium
. plutonium isotopes
. **plutonium 238**
metals
. actinide series
. transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 238**

plutonium 239

GS chemical elements
. actinide series
. transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 239**
. nuclides
. isotopes
. . . radioactive isotopes
. . . . transuranium elements
. plutonium
. plutonium isotopes
. **plutonium 239**
metals
. actinide series

. . transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 239**

plutonium 240

GS chemical elements
. actinide series
. transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 240**
. nuclides
. isotopes
. . . radioactive isotopes
. . . . transuranium elements
. plutonium
. plutonium isotopes
. **plutonium 240**
metals
. actinide series
. transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 240**

plutonium 241

GS chemical elements
. actinide series
. transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 241**
. nuclides
. isotopes
. . . radioactive isotopes
. . . . transuranium elements
. plutonium
. plutonium isotopes
. **plutonium 241**
metals
. actinide series
. transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 241**

plutonium 244

GS chemical elements
. actinide series
. transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 244**
. nuclides
. isotopes
. . . radioactive isotopes
. . . . transuranium elements
. plutonium
. plutonium isotopes
. **plutonium 244**
metals
. actinide series
. transuranium elements
. . . plutonium
. . . . plutonium isotopes
. **plutonium 244**

plutonium alloys

GS alloys
. **plutonium alloys**
RT nuclear fuel elements
nuclear fuels

plutonium carbides

USE **plutonium compounds**

plutonium compounds

UF *plutonium carbides*
GS actinide series compounds
. **plutonium compounds**
. . plutonium fluorides
. . plutonium oxides
RT ceramic nuclear fuels
 ∞ chemical compounds
 ∞ metal compounds
nuclear fuels

plutonium fluorides

GS actinide series compounds

. plutonium compounds
. . **plutonium fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **plutonium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **plutonium fluorides**
. metal halides
. . metal fluorides
. . . **plutonium fluorides**

plutonium isotopes

GS chemical elements
. actinide series
. transuranium elements
. . plutonium
. . . **plutonium isotopes**
. . . . plutonium 238
. . . . plutonium 239
. . . . plutonium 240
. . . . plutonium 241
. . . . plutonium 244
. nuclides
. isotopes
. . radioactive isotopes
. . . transuranium elements
. . . . plutonium
. **plutonium isotopes**
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
metals
. actinide series
. transuranium elements
. . plutonium
. . . **plutonium isotopes**
. . . . plutonium 238
. . . . plutonium 239
. . . . plutonium 240
. . . . plutonium 241
. . . . plutonium 244

plutonium oxides

GS actinide series compounds
plutonium compounds
. **plutonium oxides**
chalcogenides
. oxides
. metal oxides
. . **plutonium oxides**
RT ceramic nuclear fuels
mixed oxides

plutonium recycle test reactor

UF *PRTR (reactor)*
GS nuclear electric power generation
. nuclear power reactors
. . **plutonium recycle test reactor**
nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . heavy water reactors
. . . . **plutonium recycle test reactor**
. nuclear power reactors
. . **plutonium recycle test reactor**
nuclear research and test reactors
. **plutonium recycle test reactor**
. water moderated reactors
. . **plutonium recycle test reactor**

pluviographs

USE **rain gages**
recording instruments

ply orientation

DEF The arrangement of bonded layers comprising laminated materials to obtain optimal strength or other characteristics.
RT alignment
composite materials
interlayers
laminates
 ∞ layers
multilayer insulation

- ∞ orientation
 - plywood
 - positioning
 - sandwich structures
 - stacking sequence (composite materials)
 - substrates
- plywood**
- GS composite materials
 - . plywood
 - composite structures
 - . laminates
 - . . plywood
 - wood
 - . plywood
 - RT ply orientation
 - trees (plants)
 - wooden structures
- PML (electromagnetism)*
(added July 1998)
- USE **perfectly matched layers**
- p-n junctions**
- UF *n-p junctions*
 - GS semiconductor junctions
 - . p-n junctions
 - RT ∞ junctions
 - SIS (semiconductors)
- pneumatic circuits**
- GS circuits
 - . pneumatic circuits
 - pneumatic equipment
 - . pneumatic circuits
 - RT fluidics
 - valves
- pneumatic control**
- UF *pneumatic reset*
 - RT automatic control
 - automatic control valves
 - compressed gas
 - ∞ control
 - control equipment
 - control valves
 - controllers
 - electronic control
 - engine control
 - fluid power
 - fluidics
 - hydraulic control
 - remote control
- pneumatic equipment**
- GS **pneumatic equipment**
 - . gas valves
 - . pneumatic circuits
 - . pneumatic probes
 - RT air bag restraint devices
 - compressed air
 - cushions
 - ∞ equipment
 - fluid amplifiers
 - fluid power
 - fluid switching elements
 - fluidics
 - gas generators
 - Golay detector cells
 - inflatable structures
 - servocontrol
 - servomechanisms
 - shock absorbers
 - ∞ systems
 - valves
- pneumatic probes**
- GS measuring instruments
 - . temperature measuring instruments
 - . . pneumatic probes
 - pneumatic equipment
 - . pneumatic probes
 - RT flow measurement
 - high temperature gases
 - mass flow rate
 - nozzle flow
- pressure measurement
- pneumatic reset*
- USE **pneumatic control**
- pneumatics**
- DEF The branch of physics dealing with the mechanical properties of gases with particular emphasis on gas statics in closed systems.
- GS mechanics (physics)
 - . fluid mechanics
 - . . pneumatics
 - RT flow theory
 - fluid power
 - fluidics
 - gases
 - ∞ hydraulics
- pneumographs*
- USE **pneumography**
- pneumography**
- UF *pneumographs*
 - RT biotelemetry
 - lungs
 - ∞ measurement
 - radiography
- pneumonia**
- GS diseases
 - . respiratory diseases
 - . . pneumonia
 - RT acquired immunodeficiency syndrome
 - bacterial diseases
 - congestion
 - viral diseases
- pneumothorax**
- RT diseases
 - lungs
 - medical science
- pnictides*
- USE **Group 5A compounds**
- p-n-p junctions**
- GS semiconductor junctions
 - . p-n-p junctions
 - RT ∞ junctions
- p-n-p-n junctions**
- GS semiconductor junctions
 - . p-n-p-n junctions
 - RT ∞ junctions
 - latch-up
 - thyristors
- Pockels effect*
- USE **birefringence**
- pocket mice**
- GS animals
 - . vertebrates
 - . . mammals
 - . . . rodents
 - mice
 - pocket mice
 - RT rats
- Pods (external stores)**
- GS external stores
 - . pods (external stores)
 - RT cowlings
 - external store separation
 - fuel tanks
 - nacelles
 - wing-fuselage stores
- POGO**
- UF *Polar Orbit Geophysical Observatory*
 - GS artificial satellites
 - . geophysical satellites
 - . . OGO
 - . . . POGO
 - OGO-4
 - OGO-6
 - OGO-C
 - observatories
 - . geophysical observatories
 - . . OGO
 - . . . POGO
- ... OGO-4
- ... OGO-6
- ... OGO-C
- RT Agena B rocket vehicle
- EGO
- POGO effects**
- GS vibration
 - . POGO effects
 - vibration effects
 - . POGO effects
 - RT ∞ effects
 - longitudinal stability
- Pohlhausen method**
- UF *Pohlhausen solution*
 - GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . Pohlhausen method
 - RT laminar boundary layer
 - ∞ methodology
 - velocity distribution
 - viscous flow
- Pohlhausen solution*
- USE **Pohlhausen method**
- poikilothermia**
- UF *cold blooded animals*
 - GS animals
 - . poikilothermia
 - RT amphibia
 - body temperature
 - fishes
 - invertebrates
 - reptiles
- Poincare problem**
- RT ∞ problems
- Poincare spheres**
- GS symmetrical bodies
 - . bodies of revolution
 - . . spheres
 - . . . Poincare spheres
 - RT geometry
- point defects**
- GS defects
 - . crystal defects
 - . . point defects
 - . . . vacancies (crystal defects)
 - Frenkel defects
 - antisite defects
 - RT crystal dislocations
 - impurities
 - surface defects
- point impact**
- GS impact
 - . point impact
 - RT electron impact
 - hypervelocity impact
 - ion impact
 - proton impact
- point matching method (mathematics)*
- USE **boundary value problems**
- point sources**
- GS radiation sources
 - . point sources
 - RT diffuse radiation
 - ∞ energy sources
 - Huygens principle
 - light sources
 - spherical waves
- point spread functions**
- DEF Mathematical functions involved in image processing.
- GS functions (mathematics)
 - . point spread functions
 - RT image processing
- point to point communication**
- GS communicating
 - . point to point communication
 - . . NASCOM network
 - RT radio communication

pointing control systems

telecommunication
Westar satellites
wideband communication

pointers
USE **dials**

pointing control systems

GS **pointing control systems**
. annular suspension and pointing system

RT ∞ control
entry guidance (STS)
flight control
guidance (motion)
space flight
spacecraft control
∞ systems

∞ **points**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT nonpoint sources
points (mathematics)
position (location)

points (mathematics)

GS geometry
. Euclidean geometry
. . . **points (mathematics)**
. . . fixed points (mathematics)
. . . inflection points

RT foci
loci
naked singularities

∞ points
reciprocal theorems
singularity (mathematics)

Poiseuille flow

USE **laminar flow**

∞ **poisoning**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT benzene poisoning
beryllium poisoning
carbon monoxide poisoning
carbon tetrachloride poisoning
curare
hydrocarbon poisoning
intoxication
lead poisoning
narcosis
poisoning (reaction inhibition)
toxic diseases
toxic hazards

poisoning (reaction inhibition)

RT control rods
neutron absorbers
nuclear reactions

∞ poisoning
radioactive wastes

poisoning (toxicology)

USE **toxic diseases**

poisons

GS **poisons**
. curare
. endotoxins
. pesticides
. insecticides
. . . Carbamates (tradenam)
. . . . urethanes
. . . DDT
. . . dieldrin
. . . phenothiazines
. phosgene
. strychnine

RT environment effects
environment pollution
environmental surveys
hazardous materials
nonpoint sources
pollution

toxicity

Poisson density functions

UF *Poisson process*

GS functions (mathematics)
. **Poisson density functions**
statistical analysis
. **Poisson density functions**

RT continuity (mathematics)
discrete functions
exponential functions
sorting algorithms

Poisson equation

GS analysis (mathematics)
. real variables
. . . differential equations
. . . partial differential equations
. . . . **Poisson equation**

RT classical mechanics
electrostatics

∞ equations
isentropes
Laplace equation
vortex in cell technique

Poisson process

USE **Poisson density functions**
stochastic processes

Poisson ratio

GS mechanical properties
. **Poisson ratio**
ratios

RT Airy function
compressive strength
elastic properties
fiber strength
modulus of elasticity
nu factor
stress-strain diagrams
tensile strength

Polaire satellite

USE **D-2 satellites**

Poland

GS nations
. **Poland**

RT Central Europe
Europe

polar auroras

USE **auroras**

polar cap absorption

GS energy absorption
. radiation absorption
. . . electromagnetic absorption
. . . . **polar cap absorption**
. thermal absorption
. . **polar cap absorption**

RT ∞ absorption

polar caps

RT Antarctic regions
Arctic regions

∞ caps
Earth (planet)
Earth cryosphere
ice
Mars (planet)
planetary cryospheres

polar coordinates

DEF In a plane, a system of curvilinear coordinates in which a point is located by its distance r from the origin (or pole) and by the angle θ which a line (radius vector) joining the given point and the origin makes a fixed reference line, called the polar axis. In three dimensions, short for space polar coordinates.

GS coordinates
. **polar coordinates**

RT astronomical coordinates
planispheres
Smith chart

spherical coordinates

polar cusps

RT aeronomy

∞ cusps
Earth magnetosphere
geomagnetic latitude
geomagnetic tail
geomagnetism
geophysics
interplanetary space
lines of force
magnetic field configurations
magnetic fields
magnetopause
planetary magnetic fields
polar regions
Polar/GGS spacecraft
space plasmas

polar gases

GS gases
. molecular gases
. . . **polar gases**

RT carbon dioxide lasers
gas composition
gas discharges
gas dynamics
gas lasers
gas masers
polarization (charge separation)

polar ionosphere beacon

USE **Beacon satellites**

polar meteorology

GS meteorology
. **polar meteorology**

RT aerology
climatology
hydrology
ice reporting

polar navigation

GS navigation
. **polar navigation**

RT air navigation
celestial navigation
dead reckoning
digital navigation
inertial navigation
loran

Polar Orbit Geophysical Observatory

USE **POGO**

polar orbits

GS orbits
. **polar orbits**

RT circular orbits
Earth orbits
elliptical orbits
equatorial orbits
low Earth orbits
lunar orbits
lunar satellites
planetary orbits
space station polar platforms
TIROS satellites
twenty-four hour orbits

Polar Plasma Laboratory

(added January 2001)

USE **Polar/GGS spacecraft**

polar platforms (space stations)

USE **space station polar platforms**

polar radio blackout

GS electromagnetic interference
. radio frequency interference
. . . blackout (propagation)
. . . . **polar radio blackout**

RT auroral zones
ionospheric propagation

polar regions

UF *high latitudes*

GS regions
. **polar regions**
. . . Antarctic regions

. . . McMurdo sound
 . . . Ross ice shelf
 . . . Arctic regions
 . . . subarctic regions
 RT auroral zones
 climatology
 geography
 permafrost
 polar cusps
 polynyas
 temperate regions
 timberline

polar substorms

GS magnetic disturbances
 . magnetic storms
 . . **polar substorms**
 storms
 . magnetic storms
 . . **polar substorms**

polar wandering (geology)

DEF Migration during geologic time of the Earth's poles of rotation and magnetic poles. Also known as polar migration. Used for Chandler motion.

UF *Chandler motion*
 RT Chandler wobble
 Earth axis
 ∞ Earth motion
 Earth orientation
 geodesy
 nutation
 periodic variations
 precession

Polar/GGS spacecraft
(added January 2001)

DEF One of two NASA spacecraft in the Global Geospace Science (GGS) initiative and part of the International Solar Terrestrial Physics (ISTP) program. Polar (Polar Plasma Laboratory) measures solar wind entry, ionospheric output, and the depositions of energy into the neutral atmosphere at high latitudes. Imaging instruments make possible the measurement of visible, ultraviolet, and X-ray spectra of the polar caps. The spacecraft was launched in February 1996.

UF *Polar Plasma Laboratory*
 GS artificial satellites
 . geophysical satellites
 . . **Polar/GGS spacecraft**
 . scientific satellites
 . . **Polar/GGS spacecraft**

RT auroras
 Earth ionosphere
 Earth magnetosphere
 geomagnetism
 plasma waves
 polar cusps
 solar terrestrial interactions
 solar wind
 space plasmas
 space weather
 Wind/GGS spacecraft

polarimeters

DEF Instruments for determining the degree of polarization of electromagnetic radiation, specifically the polarization of light. Used for spectropolarimeters.

UF *spectropolarimeters*
 GS measuring instruments
 . optical measuring instruments
 . . **polarimeters**
 optical equipment
 . optical measuring instruments
 . . **polarimeters**

RT astronomical polarimetry
 chemical analysis
 ellipsometers
 optical measurement
 photometers
 polarimetry
 polariscopes
 polarizers
 polarography

Solar Maximum Mission

polarimetry

GS optical measurement
 . **polarimetry**
 . . astronomical polarimetry

RT optical activity
 optical measuring instruments
 photometry
 polarimeters
 polarization (waves)

Polaris A1 missile

GS missiles
 . ballistic missiles
 . . intermediate range ballistic missiles
 . . . polaris missiles
 **Polaris A1 missile**
 . surface to surface missiles
 . . fleet ballistic missiles
 . . . **Polaris A1 missile**
 . . intermediate range ballistic missiles
 . . . polaris missiles
 **Polaris A1 missile**

Polaris A2 missile

GS missiles
 . ballistic missiles
 . . intermediate range ballistic missiles
 . . . polaris missiles
 **Polaris A2 missile**
 . surface to surface missiles
 . . fleet ballistic missiles
 . . . **Polaris A2 missile**
 . . intermediate range ballistic missiles
 . . . polaris missiles
 **Polaris A2 missile**

Polaris A3 missile

GS missiles
 . ballistic missiles
 . . intermediate range ballistic missiles
 . . . polaris missiles
 **Polaris A3 missile**
 . surface to surface missiles
 . . fleet ballistic missiles
 . . . **Polaris A3 missile**
 . . intermediate range ballistic missiles
 . . . polaris missiles
 **Polaris A3 missile**

polaris missiles

GS missiles
 . ballistic missiles
 . . intermediate range ballistic missiles
 . . . **polaris missiles**
 Polaris A1 missile
 Polaris A2 missile
 Polaris A3 missile
 . surface to surface missiles
 . . intermediate range ballistic missiles
 . . . **polaris missiles**
 Polaris A1 missile
 Polaris A2 missile
 Polaris A3 missile

RT multistage rocket vehicles
 solid propellant rocket engines
 XM-33 engine

Polaris submarines

USE **guided missile submarines**

polariscopes

DEF Instruments for detecting polarized radiation and investigating its properties.

GS measuring instruments
 . **polariscopes**
 . . Senarmont polariscopes
 optical equipment
 . **polariscopes**
 . . Senarmont polariscopes

RT optical measuring instruments
 polarimeters
 polarization (waves)
 polarizers

polaritons

GS **polaritons**

. plasmons

polarity

DEF The sign of the electric discharge associated with a given object, as an electrode or an ion.

RT ∞ dipoles
 electric charge
 electric fields
 magnetic fields
 magnetic poles
 polarization (charge separation)
 polarization (spin alignment)
 quadrupoles

∞ **polarization**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

DEF The state of electromagnetic radiation when transverse vibrations take place in some regular manner, e.g., all in one plane, in a circle, in an ellipse, or in some other definite curve. With respect to particles in an electric field, the displacement of the charge centers within a particle in response to the electric force acting thereon. The response of the molecules of a paramagnetic medium (such as iron) when subjected to a magnetic field.

RT antiferroelectricity
 bipolarity
 linear polarization
 magnetization
 optical polarization
 Overhauser effect
 photoelastic analysis
 polarization (charge separation)
 polarization (spin alignment)
 polarization (waves)
 polarized radiation

polarization (charge separation)

UF *charge separation*

GS **polarization (charge separation)**
 . dielectric polarization
 . electrolytic polarization

RT charge distribution
 charge transfer
 deactivation
 depolarization
 electrets
 electric charge
 electric moments
 electrode film barriers
 electromigration
 Hall effect
 ionospheric drift
 magnetization
 overvoltage
 polar gases
 polarity
 ∞ polarization
 pyroelectricity
 ∞ separation
 Tafel law

polarization (spin alignment)

RT alignment
 anisotropy
 deactivation
 magnetic properties
 magnetization
 ∞ orientation
 polarity
 ∞ polarization
 rotation
 spin tests

polarization (waves)

UF *polarization charts*

GS **polarization (waves)**
 . circular polarization
 . cross polarization
 . elliptical polarization
 . linear polarization

RT anisotropic media
 anisotropy
 beamforming
 birefringence
 BL Lacertae objects

polarization characteristics

collimation
 electromagnetic properties
 Faraday effect
 Kerr electrooptical effect
 Kerr magneto-optical effect
 magneto-optics
 monochromatization
 optical coupling
 optical properties
 ∞ orientation
 photoelastic analysis
 polarimetry
 polariscopes
 ∞ polarization
 polarization modulation
 polarized electromagnetic radiation
 polarizers
 polarons
 refractivity
 rotation

polarization characteristics
 GS magnetic properties
 . **polarization characteristics**
 RT Brewster angle
 ∞ characteristics
 polarized radiation
 zwitterions

polarization charts
 USE **graphs (charts)**
polarization (waves)

polarization modulation
(added March 1995)
 GS modulation
 . **polarization modulation**
 RT light modulation
 optical communication
 optical polarization
 polarization (waves)
 polarized electromagnetic radiation

polarized elastic waves
 GS elastic waves
 . **polarized elastic waves**
 polarized radiation
 . **polarized elastic waves**
 RT S waves
 seismic waves
 sound waves

polarized electromagnetic radiation
 GS electromagnetic radiation
 . **polarized electromagnetic radiation**
 . . polarized light
 . . synchrotron radiation
 polarized radiation
 . **polarized electromagnetic radiation**
 . . polarized light
 . . synchrotron radiation
 RT cross polarization
 extraterrestrial radiation
 Faraday effect
 infrared radiation
 Kerr cells
 light (visible radiation)
 linear polarization
 Lyman alpha radiation
 Lyman beta radiation
 magneto-optics
 monochromatic radiation
 polarization (waves)
 polarization modulation
 polarizers
 ∞ radiation
 radiative transfer
 radio waves
 stellar radiation
 ultraviolet radiation

polarized light
 GS electromagnetic radiation
 . light (visible radiation)
 . . **polarized light**
 . polarized electromagnetic radiation
 . . **polarized light**
 polarized radiation

. polarized electromagnetic radiation
 . . **polarized light**
 RT ellipsometry
 gegenschein
 Kerr magneto-optical effect
 monochromatic radiation
 optical activity
 optical depolarization
 optical polarization
 photoelasticity
 zodiacal light

polarized radiation
 GS **polarized radiation**
 . polarized elastic waves
 . polarized electromagnetic radiation
 . . polarized light
 . . synchrotron radiation
 RT caustics (optics)
 elastic waves
 electromagnetic radiation
 extraterrestrial radiation
 linear polarization
 plasma radiation
 ∞ polarization
 polarization characteristics
 ∞ radiation
 ∞ rays

polarizers
 DEF Devices for polarizing radiant energy.
 RT Kerr cells
 light (visible radiation)
 optical polarization
 polarimeters
 polariscopes
 polarization (waves)
 polarized electromagnetic radiation

polarographs
 USE **polarography**

polarography
 UF *polarographs*
 GS electrical measurement
 . **polarography**
 RT chemical analysis
 optical polarization
 polarimeters
 quantitative analysis

polarons
 GS elementary excitations
 . **polarons**
 particles
 . charged particles
 . . energetic particles
 . . . electrons
 **polarons**
 . corpuscular radiation
 . . energetic particles
 . . . electrons
 **polarons**
 . elementary particles
 . . fermions
 . . . leptons
 electrons
 **polarons**
 RT conduction bands
 cross polarization
 electron phonon interactions
 ionic crystals
 phonons
 plasmons
 polarization (waves)

∞ **poles**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ∞ dipoles
 magnetic dipoles
 magnetic poles
 monopoles
 poles (supports)
 Regge poles

poles (supports)
 RT electric power transmission

∞ poles

police
 GS personnel
 . **police**
 RT communities
 crime
 military personnel
 regulations
 security
 social factors
 violence

policies
 GS **policies**
 . energy policy
 . foreign policy
 . . international relations
 . . . international cooperation
 outer space treaty
 . patent policy
 . procurement policy
 RT copyrights
 governments
 licensing
 prohibition
 regulations
 rules

poliomyelitis
 GS diseases
 . infectious diseases
 . . viral diseases
 . . . **poliomyelitis**

Polish TS-11 aircraft
 USE **TS-11 aircraft**

polished metals
 USE **metal polishing**

polishing
 GS **polishing**
 . metal polishing
 . . electropolishing
 . vibratory polishing
 RT abrasion
 cleaning
 finishes
 grinding (material removal)
 metallography
 smoothing
 surface finishing
 ultrasonic cleaning

politics
 RT air law
 communities
 culture (social sciences)
 governments
 international cooperation
 international law
 law (jurisprudence)
 nations
 regimes
 sociology
 sovereignty
 United Nations
 voting
 warfare

pollen
 GS particles
 . **pollen**
 RT aerobiology
 air pollution
 dust
 plants (botany)

pollutants
 USE **contaminants**

pollution
 GS **pollution**
 . environment pollution
 . . air pollution
 . . . global air pollution
 . . . indoor air pollution
 . . soil pollution
 . . water pollution

- . . . oil pollution
- . . . noise pollution
- . . . thermal pollution
- RT clean fuels
- contaminants
- contamination
- debris
- decontamination
- dissipation
- elimination
- endangered species
- energy policy
- environment effects
- environment protection
- environmental quality
- environmental surveys
- human wastes
- metabolic wastes
- Microcystis
- microorganisms
- nonpoint sources
- oil slicks
- poisons
- prevention
- public health
- purity
- quality
- radioactive wastes
- smoke abatement
- solid wastes
- toxicology
- waste disposal
- wastes
- water
- water reclamation
- water treatment
- pollution control**
 - GS environmental control
 - . **pollution control**
 - RT air quality
 - biochemical oxygen demand
 - ∞ control
 - dewatering
 - environmental cleanup
 - environmental surveys
 - flue gases
 - fly ash
 - particulates
- pollution monitoring**
 - RT air pollution
 - air quality
 - ambience
 - environment pollution
 - global air pollution
 - ground stations
 - in situ measurement
 - monitors
 - particulates
 - soil pollution
 - warning systems
 - water pollution
 - water sampling
- pollution transport**
 - DEF Dispersing or diffusion of atmospheric or water pollutants. Used for atmospheric loading.
 - UF *atmospheric loading*
 - GS environmental transport
 - . **pollution transport**
 - RT aerosols
 - air pollution
 - atmospheric circulation
 - atmospheric diffusion
 - combustion products
 - dispersing
 - environment pollution
 - exhaust emission
 - exhaust gases
 - gas transport
 - gaseous diffusion
 - global air pollution
 - plumes
 - thermal pollution
 - trace contaminants
 - transport properties
 - transport theory
 - water circulation
- water pollution
- poloidal flux**
 - DEF Plasma confinement concept with multipole magnetic fields.
 - RT magnetic field configurations
 - tokamak devices
 - toroidal plasmas
- polonium**
 - GS chemical elements
 - . metalloids
 - . . **polonium**
 - . . . polonium isotopes
 - polonium 208
 - polonium 209
 - polonium 210
 - RT metals
- polonium 208**
 - GS chemical elements
 - . metalloids
 - . . polonium
 - . . . polonium isotopes
 - **polonium 208**
 - nuclides
 - isotopes
 - polonium isotopes
 - **polonium 208**
 - radioactive isotopes
 - **polonium 208**
 - RT metals
- polonium 209**
 - GS chemical elements
 - . metalloids
 - . . polonium
 - . . . polonium isotopes
 - **polonium 209**
 - nuclides
 - isotopes
 - polonium isotopes
 - **polonium 209**
 - radioactive isotopes
 - **polonium 209**
 - RT metals
- polonium 210**
 - GS chemical elements
 - . metalloids
 - . . polonium
 - . . . polonium isotopes
 - **polonium 210**
 - nuclides
 - isotopes
 - polonium isotopes
 - **polonium 210**
 - radioactive isotopes
 - **polonium 210**
 - RT metals
- polonium compounds**
 - RT ∞ chemical compounds
 - ∞ Group 6A compounds
- polonium isotopes**
 - GS chemical elements
 - . metalloids
 - . . polonium
 - . . . **polonium isotopes**
 - polonium 208
 - polonium 209
 - polonium 210
 - nuclides
 - isotopes
 - **polonium isotopes**
 - polonium 208
 - polonium 209
 - polonium 210
 - RT metals
- polyacetylene**
 - DEF An aliphatic organic polymer that has high semiconductor properties which can be enhanced by doping.
 - RT conducting polymers
- semiconductors (materials)
- polyacrylates*
- USE **acrylic resins**
- polyacrylonitrile**
 - (added January 1990)
 - UF *PAN (polyacrylonitrile)*
 - GS nitrogen compounds
 - . nitriles
 - . . acrylonitriles
 - . . . **polyacrylonitrile**
 - . . . nitrogen polymers
 - . . . **polyacrylonitrile**
 - organic compounds
 - . nitriles
 - . . acrylonitriles
 - . . . **polyacrylonitrile**
 - RT acrylic resins
 - carbon fibers
 - ∞ polymers
 - synthetic fibers
- polyamide resins**
 - UF *nylon resins*
 - GS plastics
 - . synthetic resins
 - . . thermosetting resins
 - . . . furan resins
 - **polyamide resins**
 - Kevlar (trademark)
 - Nylon (trademark)
 - resins
 - . synthetic resins
 - . . thermosetting resins
 - . . . furan resins
 - **polyamide resins**
 - Kevlar (trademark)
 - Nylon (trademark)
 - RT aramid fiber composites
 - aramid fibers
- polyatomic gases**
 - GS gases
 - . molecular gases
 - . . **polyatomic gases**
 - . . . diatomic gases
- polyatomic molecules**
 - GS molecules
 - . **polyatomic molecules**
 - . . diatomic molecules
 - . . . triatomic molecules
 - RT atoms
 - buckminsterfullerene
 - chemical bonds
 - ∞ chemical compounds
 - fullerenes
 - ions
 - molecular structure
 - molecular weight
 - positive ions
- polybenzimidazole**
 - GS nitrogen compounds
 - . nitrogen polymers
 - . . **polybenzimidazole**
 - RT synthetic fibers
- polyblends*
- USE **polymer blends**
- polybrominated biphenyls**
 - DEF A group of 209 chemicals whose toxicity varies and includes principally one fire retardant called firemaster. Used for PBB.
 - UF *PBB*
 - GS phenyls
 - . **polybrominated biphenyls**
 - toxins and antitoxins
 - . **polybrominated biphenyls**
 - RT bromine compounds
 - flame retardants
 - polychlorinated biphenyls
- polybutadiene**
 - GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . dienes

polybutadiene tetranitramine

. . . . **polybutadiene**
plastics
RT addition resins
block copolymers
butadiene
HTPB propellants
synthetic rubbers

polybutadiene tetranitramine
GS nitrogen compounds
. nitro compounds
. . . **polybutadiene tetranitramine**
. nitrogen polymers
. . . **polybutadiene tetranitramine**
RT plastic propellants

polycarbonates
GS carbon compounds
. carbonates
. . . **polycarbonates**
. . . Lexan (trademark)
esters
. **polycarbonates**
. . . Lexan (trademark)
RT polycarbosilanes
∞ polymers

polycarbosilanes
(added July 1991)
GS silicon polymers
. polysilanes
. . . **polycarbosilanes**
RT ceramic fibers
organometallic polymers
polycarbonates
silanes
silicon carbides

polychlorinated biphenyls
UF PCB
GS phenyls
. **polychlorinated biphenyls**
RT polybrominated biphenyls

polycrystals
GS crystals
. **polycrystals**
RT bicrystals
crystal structure
single crystals

polycyclic aromatic hydrocarbons
(added November 1994)
UF PAH
GS organic compounds
. cyclic compounds
. . . cyclic hydrocarbons
. . . **polycyclic aromatic hydrocarbons**
. hydrocarbons
. . . cyclic hydrocarbons
. . . **polycyclic aromatic hydrocarbons**
RT ∞ aromatic compounds
combustion products
cosmic dust
diffuse interstellar bands
interstellar matter

polycythemia
RT hemoglobin
hemolysis
hemorrhages
spleen

polyester resins
GS plastics
. synthetic resins
. . . **polyester resins**
resins
. synthetic resins
. . . **polyester resins**
RT Dacron (trademark)
thermosetting resins

polyesters
DEF Polymers in which the repeated structural unit in the chain is of the ester type.
GS esters

. **polyesters**
RT ∞ polymers
synthetic fibers

polyether resins
GS plastics
. synthetic resins
. . . **polyether resins**
. . . PEEK
. . . polymethyl methacrylate resins
. synthetic resins
. . . **polyether resins**
. . . PEEK
. . . polymethyl methacrylate
RT vulcanized elastomers

polyetheretherketones
USE PEEK

polyethylene terephthalate
GS esters
. **polyethylene terephthalate**
plastics
. polyethylenes
. . . **polyethylene terephthalate**
terephthalate
. **polyethylene terephthalate**
RT addition resins
Mylar (trademark)
∞ polymers

polyethylenes
GS plastics
. **polyethylenes**
. . . polyethylene terephthalate
RT addition resins
ethylene
synthetic resins
thermoplastic resins

polygonization
RT crystal defects
crystal growth
recrystallization

polygons
GS geometry
. Euclidean geometry
. . . **polygons**
. . . hexagons
. . . tetragons
. . . . parallelograms
. . . . rhomboids
. . . . rectangles
. . . . squares (mathematics)
. . . . trapezoids
. . . triangles
RT polytopes

polyhedrons
GS geometry
. Euclidean geometry
. . . **polyhedrons**
. . . cubes (mathematics)
. . . icosahedrons
. . . octahedrons
. . . parallelepipeds
. . . pyramids
. . . rhombohedrons
. . . tetrahedrons
RT buckminsterfullerene
fullerenes
polytopes

polyimide resins
GS resins
. **polyimide resins**
RT bismaleimide
polyimides
resin matrix composites

polyimides
GS nitrogen compounds
. amides
. . . **polyimides**
. . . bismaleimide
. . . Kapton (trademark)

RT polyimide resins

polyisobutylene
GS plastics
. **polyisobutylene**
RT addition resins
synthetic rubbers

polyisoprenes
RT ∞ polymers
rubber
synthetic rubbers

polymer alloys
USE **polymer blends**

polymer blends
(added November 1992)
UF *polyblends*
polymer alloys
GS mixtures
. **polymer blends**
RT copolymers
polymer physics
∞ polymers
thermoplastic resins

polymer chemistry
RT biopolymer denaturation
∞ chemistry
glass transition temperature
oligomers
phosphazene
polymer physics
∞ polymers
polywater

polymer matrix composites
DEF Materials consisting of reinforcing fibers, filaments, and/or whiskers embedded in polymeric bonding matrices for increased mechanical and physical properties.
GS composite materials
. **polymer matrix composites**
. . . epoxy matrix composites
. . . boron-epoxy composites
. . . graphite-epoxy composites
. . . graphite-polyimide composites
. . . reinforced plastics
. . . carbon fiber reinforced plastics
. . . carbon-phenolic composites
. . . glass fiber reinforced plastics
. . . micarta
RT aramid fiber composites
bismaleimide
boron fibers
∞ construction materials
fiber composites
hybrid composites
laminates
∞ materials
∞ matrices
matrix materials
nanocomposites
PEEK
∞ polymers
pultrusion
resin film infusion
resin matrix composites
resin transfer molding
sheet molding compounds

polymer physics
RT glass transition temperature
∞ physics
polymer blends
polymer chemistry
∞ polymers
polywater
∞ science

polymerase chain reaction
(added August 2004)
DEF In vitro methods for producing large amounts of specific DNA or RNA fragments of defined length and sequence from small amounts of short oligonucleotide flanking sequences (primers). The essential steps include thermal denaturation of the double-stranded target molecule, annealing of the primers to their

complementary sequences, and extension of the annealed primers by enzymatic synthesis with DNA polymerase.

- GS in vitro methods and tests
 - . **polymerase chain reaction**
- RT biochemistry
 - deoxyribonucleic acid
 - genetic engineering
 - oligonucleotides

polymeric films

- UF *plastic films*
- GS **polymeric films**
 - . Kapton (trademark)
 - . Mylar (trademark)
- RT casting
 - conducting polymers
 - fibers
- ∞ films
 - Langmuir-Blodgett films
 - Nylon (trademark)
 - photographic film
 - plastic coatings
 - polypyrroles
- ∞ sheets

polymerization

DEF A chemical reaction in which the molecules of monomers are linked together to form polymers.

- GS synthesis (chemistry)
 - . **polymerization**
 - . . copolymerization
 - . . dimerization
- RT chemical reactions
 - coupled modes
 - cycloaddition
 - depolymerization
 - electrochemical synthesis
 - oligomers
 - quinoxalines
 - refining
- ∞ setting
 - Ziegler catalyst
 - zwitterions

∞ **polymers**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT biopolymers
 - block copolymers
 - cellophane
 - conducting polymers
 - coordination polymers
 - copolymerization
 - copolymers
 - dendrimers
 - elastomers
 - electroactive polymers
 - ferroelectric materials
 - fluoropolymers
 - formica
 - glycidyl azide polymer
 - high polymers
 - Kapton (trademark)
 - KEL-F
 - Lexan (trademark)
 - lignin
 - macromolecules
 - methyl polysiloxanes
 - micarta
 - monomers
 - Mylar (trademark)
 - nitrogen polymers
 - Nylon (trademark)
 - oligomers
 - oligonucleotides
 - organic materials
 - organometallic polymers
 - oxetane polymers
 - phosphorus polymers
 - photopolymers
 - plastics
 - polyacrylonitrile
 - polycarbonates
 - polyesters
 - polyethylene terephthalate
 - polyisoprenes
 - polymer blends

- polymer chemistry
- polymer matrix composites
- polymer physics
- polyquinoxalines
- polysilanes
- polysiloxanes
- polytetrafluoroethylene
- polyurethane foam
- polyvinyl fluoride
- prepolymers
- Pyrrones (trademark)
- silicon polymers
- silicones
- siloxanes
- solithanes
- styrofoam (trademark)
- synthetic resins
- teflon (trademark)
- vinyl copolymers
- vinyl polymers

polymethyl methacrylate

- UF *lucite (trademark)*
- GS *plexiglass (trademark)*
 - plastics
 - . synthetic resins
 - . . polyether resins
 - . . . **polymethyl methacrylate**
 - resins
 - . synthetic resins
 - . . polyether resins
 - . . . **polymethyl methacrylate**
 - vinyl polymers
 - . **polymethyl methacrylate**

polymorphism

- GS morphology
 - . **polymorphism**
- RT allotropy
 - crystal lattices
 - crystal structure
- ∞ physical properties

polynomials

- GS algebra
 - . **polynomials**
 - . . binomials
 - . . dyadics
 - . . Hermitian polynomial
- RT coefficients
 - cubic equations
 - eigenvalues
 - eigenvectors
- ∞ equations
 - linear equations
 - nonlinear equations
 - quadratic equations
 - roots of equations
 - shape functions

polynuclear organic compounds

- DEF Hydrocarbon molecules with two or more nuclei and with or without oxygen, nitrogen, or other elements.
- GS organic compounds
 - . **polynuclear organic compounds**
- RT air pollution
 - ∞ chemical compounds
 - petroleum products
 - purification

polynucleotides

- DEF Linear sequences of esters of nucleotides and phosphoric acid.
- GS organic compounds
 - . nucleotides
 - . . **polynucleotides**
 - phosphorus compounds
 - . phosphates
 - . . **polynucleotides**
- RT biopolymers
 - proteins
 - ribonucleic acids

polynyas

- (added July 2001)
- DEF Large areas of open water surrounded by sea ice.
- UF *ice clearings*
- GS clearings (openings)

- . **polynyas**
- RT air sea ice interactions
 - Antarctic regions
 - Arctic Ocean
 - ocean surface
 - polar regions
 - sea ice
 - surface water

polyorganosiloxanes

USE **polysiloxanes**

Polyot satellites

- GS artificial satellites
 - . **Polyot satellites**

polypeptides

DEF In organic chemistry, chains of amino acids linked by peptide bonds but with lower molecular weights than proteins; obtained by synthesis or by partial hydrolysis of proteins.

- GS organic compounds
 - . peptides
 - . . **polypeptides**
 - . . . angiotensins
 - . . . glutathione
 - . . . hypertensin
- RT amino acids
 - biopolymers
 - proteins

polyphenyl ether

- GS ethers
 - . **polyphenyl ether**

polyphenyls

- GS phenyls
 - . **polyphenyls**
 - . . tetraphenyls
 - . . triphenyls

polypropylene

- GS plastics
 - . **polypropylene**
- RT addition resins
 - synthetic resins

polypyrroles

- (added August 1994)
- UF *PPY*
- RT conducting polymers
 - electrode materials
 - polymeric films
 - pyrroles

polyquinoxalines

- RT ∞ chemical compounds
- ∞ polymers

polysaccharides

- GS biopolymers
 - . **polysaccharides**
 - . . cellulose
 - . . . Fortisan (trademark)
 - . . chitin
 - . . dextrans
 - . . glycogens
 - . . starches
 - organic compounds
 - . carbohydrates
 - . . **polysaccharides**
 - . . . cellulose
 - Fortisan (trademark)
 - . . . chitin
 - . . . dextrans
 - . . . glycogens
 - . . . starches
- RT gums (substances)

polysilanes

- (added July 1991)
- UF *oxosilanes*
- GS silicon polymers
 - . **polysilanes**
 - . . polycarbosilanes
- RT organometallic polymers
 - ∞ polymers
 - silanes

polysiloxanes

(added July 1991)

polyslips

UF *polyorganosiloxanes*
GS silicon polymers
. silicones
. . . **polysiloxanes**
. . . methyl polysiloxanes
RT ∞ polymers
silicon compounds
siloxanes

polyslips

RT ∞ slip

polystation doppler tracking system

GS networks
. tracking networks
. . . **polystation doppler tracking system**
stations
. ground stations
. . . **polystation doppler tracking system**
. tracking stations
. . . **polystation doppler tracking system**
tracking (position)
. **polystation doppler tracking system**
RT Doppler radar
missile tracking
pulse radar
radar networks
satellite doppler positioning
space detection and tracking system
spacecraft tracking
∞ systems

polystyrene

GS plastics
. **polystyrene**
. . . styrofoam (trademark)
styrenes
. **polystyrene**
. . . styrofoam (trademark)
vinyl polymers
. **polystyrene**
. . . styrofoam (trademark)
RT addition resins
block copolymers
Santowax (trademark)
synthetic resins
thermoplastic resins

polysulfides

GS chalcogenides
. sulfides
. . . inorganic sulfides
. . . . **polysulfides**
sulfur compounds
. sulfides
. . . inorganic sulfides
. . . . **polysulfides**
RT composite propellants

polytetrafluoroethylene

GS halogen compounds
. fluorine compounds
. . . fluoro compounds
. . . difluoro compounds
. . . . **polytetrafluoroethylene**
. teflon (trademark)
. . . fluorine organic compounds
. . . fluorohydrocarbons
. **polytetrafluoroethylene**
. teflon (trademark)
. . . fluoropolymers
. **polytetrafluoroethylene**
. teflon (trademark)
organic compounds
. fluorine organic compounds
. fluorohydrocarbons
. . . **polytetrafluoroethylene**
. . . . teflon (trademark)
. . . fluoropolymers
. . . . **polytetrafluoroethylene**
. teflon (trademark)
. hydrocarbons
. fluorohydrocarbons
. . . **polytetrafluoroethylene**
. . . . teflon (trademark)
plastics

. **polytetrafluoroethylene**
. . teflon (trademark)
RT ∞ polymers
synthetic resins

polytopes

RT analytic geometry
Euclidean geometry
hyperplanes
polygons
polyhedrons

polytropic processes

RT adiabatic conditions
∞ isobars
thermodynamics

polyurethane foam

RT foams
low density materials
∞ polymers
soils
sponges (materials)

polyurethane resins

GS resins
. **polyurethane resins**
RT composite propellants

polyvinyl alcohol

GS hydroxyl compounds
. alcohols
. . . **polyvinyl alcohol**
plastics
. **polyvinyl alcohol**
vinyl polymers
. **polyvinyl alcohol**
RT addition resins
synthetic resins

polyvinyl chloride

UF *Geon (trademark)*
GS plastics
. **polyvinyl chloride**
vinyl polymers
. **polyvinyl chloride**
RT addition resins
chlorides
synthetic resins
tetrahydrofuran

polyvinyl fluoride

DEF DuPont's Tedlar, unplasticized PVF films with outstanding resistance to ultraviolet radiation. Used for Tedlar (trademark).
UF *Tedlar (trademark)*
GS halogen compounds
. fluorine compounds
. . . fluorides
. . . . **polyvinyl fluoride**
. . . fluoro compounds
. . . fluorine organic compounds
. . . . fluoropolymers
. **polyvinyl fluoride**
. . . halides
. . . fluorides
. . . . **polyvinyl fluoride**
organic compounds
. fluorine organic compounds
. fluoropolymers
. . . **polyvinyl fluoride**
plastics
. **polyvinyl fluoride**
vinyl polymers
. **polyvinyl fluoride**
RT ∞ polymers

polyvinylidene

(added December 1997)
USE vinylidene

polywater

GS water
. **polywater**
RT atomic structure
chemical bonds
molecular structure
polymer chemistry

polymer physics

Pomeranchuk theorem

GS theorems
. **Pomeranchuk theorem**
RT antiparticles
deuterons
diffraction patterns
eikonal equation
elastic scattering
electrons
elementary particles
field theory (physics)
Fredholm equations
Glauber theory
high energy interactions
kaons
mesons
nucleon-nucleon scattering
pomeron
Regge poles
scattering cross sections

pomeron

RT nuclear reactions
Pomeranchuk theorem
proton-proton reactions
Regge poles
scattering
scattering cross sections

ponderomotive forces

GS electromotive forces
. **ponderomotive forces**
RT electrostatics
∞ force
Lorentz force
relativistic plasmas
relativity

ponds

DEF Natural bodies of standing fresh water occupying small surface depressions, usually smaller than lakes and larger than pools.
RT aquifers
Great Salt Lake (UT)
irrigation
lagoons
lakes
limnology
liquid wastes
reservoirs
solar ponds (heat storage)
surface water
waste disposal
water resources
watersheds
windpowered pumps

Pontiac (MI)

GS cities
. **Pontiac (MI)**
RT Michigan

pontryagin principle

RT calculus of variations
maximum principle
optimization
reaction time

Population I stars

(added May 2002)
DEF Young stars formed from matter of previous generations of stars (Population II stars), and having significant amounts of heavier elements. They are particularly concentrated in the interstellar dust of the arms of spiral galaxies.

GS celestial bodies
. stars
. . . **Population I stars**
RT B stars
interstellar matter
irregular galaxies
O stars
open clusters
Population II stars

Population II stars

(added May 2002)

DEF Old, low-metallicity stars up to 15 billion years in age found in globular clusters, elliptical galaxies, and the bulges and halos of spiral galaxies.

- GS celestial bodies
 - . stars
 - . . **Population II stars**
- RT elliptical galaxies
 - galactic halos
 - globular clusters
 - horizontal branch stars
 - Population I stars

Population III stars

- (added July 1999)
- UF *primordial stars*
- GS celestial bodies
 - . stars
 - . . **Population III stars**
- RT cosmology
 - dark matter
 - relic radiation
 - stellar evolution
 - supermassive stars

population inversion

- GS inversions
 - . **population inversion**
- RT electron pumping
 - energy levels
 - molecular relaxation
 - nitrogen lasers
 - nuclear pumping
 - populations
 - stimulated emission

population theory

- RT populations
 - probability theory
- ∞ theories

populations

- RT adults
 - biomass
 - discriminant analysis (statistics)
 - geographic distribution
 - population inversion
 - population theory
 - predators
- ∞ statistics

porcelain

- GS ceramics
 - . **porcelain**
 - refractory materials
 - . **porcelain**
- RT ceramic coatings
 - enamels
 - glass
 - glazes
 - silicon dioxide
 - vitreous materials
 - vitrification

pores

USE **porosity**

porosity

DEF The volume fraction of voids contained in a solid, often expressed as a percent.

- UF *pores*
- GS **porosity**
 - . microporosity
- RT aquifers
 - buoyancy
 - compressibility
 - defects
- ∞ density
 - density (mass/volume)
 - formations
 - gas injection
 - hole distribution (mechanics)
 - hygral properties
 - impregnating
 - infiltration
 - interstices
 - leakage
 - moisture resistance
 - permeability
 - permeating

- pinholes
- porous boundary layer control
- porous materials
- porous plates
- porous silicon
 - ∞ properties
 - sintering
 - textures
 - void ratio
 - voids
 - wettability

porous airfoils

USE **porous boundary layer control**

porous boundary layer control

- UF *porous airfoils*
- GS boundary layer control
 - . **porous boundary layer control**
- RT ∞ control
 - convective flow
 - Ekman layer
 - free convection
 - holes (mechanics)
 - mass transfer
 - perforated plates
 - porosity
 - wings

porous materials

- GS **porous materials**
 - . porous silicon
- RT aerogels
 - brittle materials
- ∞ cells
 - honeycomb structures
 - interstices
 - low density materials
- ∞ materials
 - metal powder
 - porosity
 - powder metallurgy
 - sands
 - soils
 - sponges (materials)
 - xerogels

porous plates

- GS structural members
 - . plates (structural members)
 - . . **porous plates**
- RT low density materials
 - porosity

porous silicon

- (added September 1995)
- GS chemical elements
 - . metalloids
 - . . silicon
 - . . . **porous silicon**
 - porous materials
 - . **porous silicon**
- RT cathodoluminescence
 - conduction bands
 - electroluminescence
 - light sources
 - photoluminescence
 - porosity

porous walls

- GS walls
 - . **porous walls**
- RT ∞ diffusers

porphines

- GS organometallic compounds
 - . **porphines**
- RT chlorophylls
 - hemoglobin

porphyra

- GS plants (botany)
 - . algae
 - . . **porphyra**

porphyrins

- GS **porphyrins**
 - . chlorophylls

RT hemoglobin

porpoises

- GS animals
 - . vertebrates
 - . . mammals
 - . . . marine mammals
 - **porpoises**

portable equipment

- RT ∞ equipment
 - lixiscopes
 - logistics
 - mobility
 - stowage (onboard equipment)

portable life support systems

- UF *PLSS*
- GS support systems
 - . life support systems
 - . . **portable life support systems**
 - . . . AEPS
 - . . . IMLSS
- RT argon-oxygen atmospheres
 - biopaks
 - breathing apparatus
 - emergency life sustaining systems
 - helium-oxygen atmospheres
 - oxygen masks
 - pressure suits
- ∞ systems

Portevin-le Chatelier effect

- (added August 1997)
- DEF A discontinuous yielding in crystalline solids characterized by a serrated or step-like deformation curve.
- UF *PLC effect*
- RT crystal dislocations
 - deformation
- ∞ effects
 - strain rate
 - stress-strain diagrams
 - stress-strain relationships

∞ **ports**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT airports
 - deepwater terminals
 - drydocks
 - harbors
 - ports (openings)
 - shipyards
 - wharves

ports (openings)

- GS openings
 - . **ports (openings)**
- RT apertures
 - cavities
 - ducts
 - exhaust systems
 - orifices
 - outlets
- ∞ ports
 - vents
- ∞ windows
 - windows (apertures)

Portugal

- GS nations
 - . **Portugal**
 - . . Azores
- RT Europe
 - Portuguese space program

Portuguese space program

- (added August 1990)
- GS programs
 - . space programs
 - . . European space programs
 - . . . **Portuguese space program**
- RT Portugal

Poseidon missiles

- GS missiles
 - . ballistic missiles
 - . . **Poseidon missiles**
 - . surface to surface missiles

Poseidon satellite

. . . fleet ballistic missiles
. . . **Poseidon missiles**
RT ballistic missile submarines
guided missile submarines
sea launching

Poseidon satellite
GS artificial satellites
. French satellites
. . **Poseidon satellite**
RT TOPEX

∞ **position**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT attitude (inclination)
position (location)
position (title)

position (location)

UF *localization*
location
GS **position (location)**
. solar position
RT altitude
astrolabes
azimuth
bearing (direction)
collating
collocation
coordinates
detection
distance
ephemerides
exposure
∞ fixing
geometry
latitude
longitude
misalignment
navigation
orbital position estimation
∞ orientation
∞ points
∞ position
position errors
position sensing
positioning
radar beacons
sites
sound ranging
spatial distribution
spherical coordinates
stations
surveys
tracking (position)

position (title)

RT employee relations
evaluation
∞ grade
personnel
∞ position
ratings

position errors

GS errors
. **position errors**
. . boresight error
RT astrolabes
error signals
navigation
optical correction procedure
orbit determination
orbital position estimation
position (location)
positioning
velocity errors

position indicators

GS display devices
. **position indicators**
. . plan position indicators
. . radio direction finders
. . spacecraft position indicators
measuring instruments
. indicating instruments
. . **position indicators**
. . . plan position indicators
. . . radio direction finders

. . . spacecraft position indicators
RT aircraft instruments
altimeters
beacons
distance measuring equipment
flight instruments
Global Positioning System
head-up displays
navigation aids
navigation instruments
plotters
position sensing
range finders
rocket-borne instruments
sextants
solar compasses
sound localization

position sensing

RT computer vision
electro-optics
position (location)
position indicators
robotics

positioning

GS **positioning**
. formation flying
. satellite doppler positioning
. stationkeeping
RT adjusting
alignment
ambiguity
collating
collocation
displacement
distributing
∞ distribution
exposure
fitting
∞ fixing
Global Positioning System
GLONASS
instrument orientation
∞ joining
latitude measurement
longitude measurement
look angles (electronics)
navigation
∞ orientation
ply orientation
position (location)
position errors
radio navigation
relocation
∞ setting
spacing

positioning devices (machinery)

GS **positioning devices (machinery)**
. booms (equipment)
. cams
. jigs
RT ∞ devices
holders
jacks (lifts)
∞ machinery
slewing

positive feedback

DEF Feedback which results in increasing the amplification. Used for regenerative feedback.
UF *regenerative feedback*
GS feedback
. **positive feedback**
RT amplification
feedback amplifiers
multivibrators
nonlinear feedback
oscillators
regeneration (engineering)
self oscillation
transfer functions

positive ions

DEF Group of atoms which has acquired a positive electric charge by the loss of one or more electrons.
GS ions

. **positive ions**
. . cations
. . . formyl ions
. . . vanadyl radical
. . hydronium ions
RT atoms
hydrogen ions
ion density (concentration)
ionic mobility
ionospheric ion density
magnetospheric ion density
metal ions
molecular ions
monatomic molecules
polyatomic molecules
protons
trivalent ions
valence

positron annihilation

UF *electron-positron annihilation*
GS annihilation reactions
. **positron annihilation**
RT antiparticles
electron-positron pairs
elementary particles
matter-antimatter propulsion
nuclear particles
pair production
particles

positronium

RT atoms
excitons

positrons

DEF Subatomic particles which are identical to electrons in atomic mass, theoretical rest mass, and energy, but opposite in sign.
GS antimatter
. antiparticles
. . **positrons**
particles
. charged particles
. . **positrons**
. elementary particles
. . antiparticles
. . . **positrons**
. . fermions
. . leptons
. . . **positrons**
. nuclear particles
. . antiparticles
. . . **positrons**
RT electron-positron pairs
electron-positron plasmas
pair production

post boost propulsion system

RT ascent trajectories
propulsion
propulsion system configurations
rocket engines
spacecraft propulsion
∞ systems
trajectory control

postamplifiers

GS amplifiers
. **postamplifiers**
RT preamplifiers

post-blast nuclear radiation

GS nuclear radiation
. **post-blast nuclear radiation**
RT fallout
half life
radiant flux density
∞ radiation
radiation effects
radioactive decay
radioactivity
Vela satellites

posterior sections

RT anatomy
dorsal sections

postflight analysis

RT ∞ analyzing

- ∞ performance
- postmission analysis (spacecraft)
- postlaunch reports**
 - DEF Memoranda issued following spacecraft launchings to report launch data, the launch vehicle performance, orbital elements (expected and measured), and current status.
 - GS documents
 - . **postlaunch reports**
 - reports
 - . **postlaunch reports**
 - RT prelaunch summaries
 - spacecraft launching
 - spacecraft performance summaries
- postmission analysis (spacecraft)**
 - DEF A broader term than postflight analysis which deals with the scientific aspects of a mission.
 - RT flight tests
 - postflight analysis
- postulates*
 - USE **axioms**
- posture**
 - GS **posture**
 - . head down tilt
 - . head up tilt
 - RT human body
 - orthostatic tolerance
 - physical fitness
- potable liquids**
 - GS liquids
 - . **potable liquids**
 - . beverages
 - . . . wines
 - . . . potable water
 - RT purity
- potable water**
 - GS liquids
 - . potable liquids
 - . . **potable water**
 - water
 - . **potable water**
 - RT cold water
 - conservation
 - consumables (spacecrew supplies)
 - drought
 - fresh water
 - ground water
 - limnology
 - Modular Integrated Utility System
 - oases
 - purification
 - sanitation
 - springs (water)
 - water management
 - water resources
 - water tables
 - water treatment
- potassium**
 - GS chemical elements
 - . alkali metals
 - . . **potassium**
 - . . . liquid potassium
 - . . . potassium isotopes
 - potassium 38
 - potassium 39
 - potassium 40
 - metals
 - . alkali metals
 - . . **potassium**
 - . . . liquid potassium
 - . . . potassium isotopes
 - potassium 38
 - potassium 39
 - potassium 40
 - RT electrolyte metabolism
 - creep
- potassium 38**
 - GS chemical elements
 - . alkali metals
 - . . potassium
- . . . potassium isotopes
 - **potassium 38**
 - nuclides
 - isotopes
 - potassium isotopes
 - **potassium 38**
 - radioactive isotopes
 - **potassium 38**
 - metals
 - alkali metals
 - potassium
 - potassium isotopes
 - **potassium 38**
- potassium 39**
 - GS chemical elements
 - . alkali metals
 - . . potassium
 - . . . potassium isotopes
 - **potassium 39**
 - nuclides
 - isotopes
 - potassium isotopes
 - **potassium 39**
 - metals
 - alkali metals
 - potassium
 - potassium isotopes
 - **potassium 39**
 - potassium 40**
 - GS chemical elements
 - . alkali metals
 - . . potassium
 - . . . potassium isotopes
 - **potassium 40**
 - nuclides
 - isotopes
 - potassium isotopes
 - **potassium 40**
 - radioactive isotopes
 - **potassium 40**
 - metals
 - alkali metals
 - potassium
 - potassium isotopes
 - **potassium 40**
 - potassium alloys**
 - GS alloys
 - . **potassium alloys**
 - potassium bromides**
 - GS halogen compounds
 - . bromine compounds
 - . . bromides
 - . . . **potassium bromides**
 - . . . halides
 - bromides
 - **potassium bromides**
 - metal halides
 - **potassium bromides**
 - . . . potassium bromides
 - metal halides
 - **potassium bromides**
 - potassium compounds
 - . **potassium bromides**
 - potassium channels (biology)*
 - (added August 2002)
 - USE **ion channels (biology)**
 - potassium chlorides**
 - GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **potassium chlorides**
 - . . . halides
 - chlorides
 - **potassium chlorides**
 - metal halides
 - **potassium chlorides**
 - . . . potassium chlorides
 - potassium compounds
 - **potassium chlorides**
 - potassium chromates**
 - GS chromium compounds
 - . chromates
 - . . **potassium chromates**
 - potassium compounds
 - . **potassium chromates**
 - . **potassium chromates**
 - potassium compounds**
 - GS **potassium compounds**
 - . alum
 - . nepheline
 - . potassium bromides
 - . potassium chlorides
 - . potassium chromates
 - . potassium hydrides
 - . potassium hydroxides
 - . potassium iodides
 - . potassium nitrates
 - . potassium oxides
 - . potassium perchlorates
 - . potassium peroxides
 - . potassium phosphates
 - . potassium silicates
 - RT ∞ alkali metal compounds
 - ∞ chemical compounds
 - ∞ metal compounds
 - potassium hydrides**
 - GS hydrogen compounds
 - . hydrides
 - . . metal hydrides
 - . . . **potassium hydrides**
 - potassium compounds
 - . **potassium hydrides**
 - potassium hydroxides**
 - GS bases (chemical)
 - . alkalies
 - . . **potassium hydroxides**
 - hydroxides
 - . **potassium hydroxides**
 - potassium compounds
 - . **potassium hydroxides**
 - potassium iodides**
 - GS halogen compounds
 - . halides
 - . . metal halides
 - . . . alkali halides
 - **potassium iodides**
 - . . . iodine compounds
 - iodides
 - **potassium iodides**
 - potassium compounds
 - . **potassium iodides**
 - potassium isotopes**
 - GS chemical elements
 - . alkali metals
 - . . potassium
 - . . . **potassium isotopes**
 - potassium 38
 - potassium 39
 - potassium 40
 - . . . nuclides
 - isotopes
 - **potassium isotopes**
 - potassium 38
 - potassium 39
 - potassium 40
 - metals
 - alkali metals
 - potassium
 - **potassium isotopes**
 - potassium 38
 - potassium 39
 - potassium 40
 - potassium nitrates**
 - GS nitrogen compounds
 - . nitrates
 - . . inorganic nitrates
 - . . . **potassium nitrates**
 - potassium compounds
 - . **potassium nitrates**
 - potassium oxides**
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **potassium oxides**
 - potassium compounds
 - . **potassium oxides**

potassium perchlorates

. potassium oxides

potassium perchlorates

- GS halogen compounds
 - . chlorine compounds
 - . . perchlorates
 - . . . **potassium perchlorates**
- potassium compounds
 - . **potassium perchlorates**
- RT explosives
 - solid rocket propellants

potassium peroxides

- GS chalcogenides
 - . oxides
 - . . anhydrides
 - . . . peroxides
 - **potassium peroxides**
- potassium compounds
 - . **potassium peroxides**

potassium phosphates

- GS phosphorus compounds
 - . phosphates
 - . . **potassium phosphates**
- potassium compounds
 - . **potassium phosphates**

potassium silicates

- GS potassium compounds
 - . **potassium silicates**
- silicon compounds
 - . silicates
 - . . **potassium silicates**
- RT minerals

potatoes

- GS farm crops
 - . **potatoes**
- plants (botany)
 - . **potatoes**
- vegetables
 - . **potatoes**
- RT ∞ food

∞ potential

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Coulomb potential
 - electric potential
 - geopotential
 - ionization potentials
 - Klein-Dunham potential
 - myoelectric potentials
 - nucleon potential
 - open circuit voltage
 - plasma potentials
 - potential energy
 - potential fields
 - potential theory
 - Yukawa potential

potential energy

DEF Energy possessed by a body by virtue of its position in a gravity field in contrast with kinetic energy, that possessed by virtue of its motion.

- GS **potential energy**
 - . electric potential
 - . . bioelectric potential
 - . . contact potentials
 - . . Coulomb potential
 - . . high voltages
 - . . Lienard potential
 - . . low voltage
 - . . open circuit voltage
 - . . photovoltages
 - . . quantum wells
 - . . . photoexcitation
 - . . spike potentials
 - . . threshold voltage
 - . geopotential height
 - . ionization potentials
 - . nuclear potential
 - . plasma potentials
- RT chemical energy
 - electric energy storage
 - embedded atom method
- ∞ energy
 - energy storage

- Froude number
- geopotential
- internal energy
- kinetic energy
- Lagrangian function
- Morse potential
- ∞ potential

potential fields

- RT field theory (physics)
- ∞ potential

potential flow

- UF *irrotational flow*
- GS fluid flow
 - . **potential flow**
 - . . equipotentials
- RT Cartan space
 - heat transmission
 - inviscid flow
 - vorticity

potential gradients

DEF In general, the local space rate of change of any potential, as the gravitational potential gradient or the velocity potential gradient.

- GS gradients
 - . **potential gradients**
- RT pressure gradients
 - spark gaps
 - temperature gradients

potential theory

- RT differential equations
 - Jacobi integral
 - Lennard-Jones potential
- ∞ potential
 - stream functions (fluids)
- ∞ theories

∞ potentiometers

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Instruments for measuring differences in electric potential by balancing the unknown voltage against a variable known voltage. If the balancing is accomplished automatically, the instrument is called a self-balancing potentiometer. A variable electric resistor.
- RT potentiometers (instruments)
 - potentiometers (resistors)

potentiometers (instruments)

- GS measuring instruments
 - . **potentiometers (instruments)**
- RT bolometers
 - electric potential
 - electrical measurement
 - electrometers
- ∞ potentiometers
 - thermocouple pyrometers
 - thermocouples
 - voltmeters

potentiometers (resistors)

- GS attenuators
 - . resistors
 - . . **potentiometers (resistors)**
- RT ∞ potentiometers

potentiometric analysis

- UF *potentiometry*
- GS chemical tests
 - . chemical analysis
 - . . **potentiometric analysis**

potentiometry

- USE **potentiometric analysis**

Potez aircraft

- RT ∞ aircraft

Potomac River Valley (MD-VA-WV)

- GS valleys
 - . **Potomac River Valley (MD-VA-WV)**
- RT District of Columbia
 - Maryland
 - Virginia

West Virginia

potting compounds

- RT ∞ compounds
 - encapsulating
 - insulation

pouring

- RT casting
 - castings

powder (particles)

DEF An aggregate of discrete particles that are usually within the size range 1 to 1,000 mm.

- GS particles
 - . **powder (particles)**
 - . . fines
 - . . metal powder
 - . . . platinum black
 - . . . powdered aluminum
 - . . . sintered aluminum powder
- RT compressibility
 - crop dusting
 - dust
 - explosives
 - flakes
 - flour (food)
 - granular materials
 - obsidian
 - pumice
 - size separation

powder metallurgy

DEF The art of producing metal powders and of the utilization of metal powders for the production of massive materials and shaped objects.

- RT alloying
 - alloys
 - autoclaving
 - cermets
 - combustion synthesis
 - comminution
 - compacting
 - composite materials
 - electrodeposition
 - liquid phase sintering
 - low density materials
 - metal matrix composites
 - metal particles
 - metal powder
- ∞ metallurgy
 - mixed crystals
 - porous materials
 - preforms
 - reaction bonding
 - sintered aluminum powder
 - sintering
 - vacuum melting

powdered aluminum

- GS particles
 - . metal particles
 - . . metal powder
 - . . . **powdered aluminum**
 - . . . sintered aluminum powder
 - . powder (particles)
 - . . metal powder
 - . . . **powdered aluminum**
 - . . . sintered aluminum powder
- RT aluminum
 - lithium aluminum hydrides

powdered metals

- USE **metal powder**

∞ power

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT electric generators
 - fluid power
 - flux (rate)
 - flux density
 - horsepower
 - resolution
 - thrust

power amplifiers

- GS amplifiers
 - . **power amplifiers**

- RT amplidyne
 - cyclotron resonance devices
 - feedback amplifiers
 - magnetic amplifiers
 - parametric amplifiers
 - push-pull amplifiers
 - transistor amplifiers
 - traveling wave amplifiers
- power beaming**
(added November 1989)
- UF *beamed power*
 - GS **power beaming**
 - . laser power beaming
 - . microwave power beaming
 - . satellite power transmission
 - RT energy conversion
 - laser propulsion
 - microwave transmission
 - ∞ power transmission
 - solar power satellites
 - spacecraft power supplies
- power conditioning**
- UF *power processing systems*
 - RT ∞ conditioning
 - electric current
 - electric generators
 - electric potential
 - energy conversion
 - energy conversion efficiency
 - output
 - satellite solar energy conversion
 - satellite solar power stations
- power converters**
- RT ∞ converters
 - torque converters
- power density (electromagnetic)*
- USE **radiant flux density**
- power efficiency**
- GS efficiency
 - . **power efficiency**
 - RT combustion efficiency
 - compressor efficiency
 - exergy
 - horsepower
 - nozzle efficiency
 - power factor controllers
 - ∞ power loss
 - propeller efficiency
 - propulsion system performance
 - propulsive efficiency
 - thermodynamic efficiency
 - transmission efficiency
- power factor controllers**
- DEF A solid state electronic device that reduces excess energy waste in AC induction motors by providing only the amount of voltage required to satisfy a given load.
- GS controllers
 - . **power factor controllers**
 - RT current regulators
 - electric motors
 - energy conservation
 - energy conversion efficiency
 - induction motors
 - power efficiency
 - voltage regulators
- power gain**
- DEF The ratio of the power that a transducer delivers to a specified load, under specified operating conditions, to the power absorbed by its input circuit. Of an antenna, in a given direction, 4 pi times the ratio of the radiation intensity in that direction to the total power delivered to the antenna.
- GS amplification
 - . **power gain**
 - RT CATT devices
 - high gain
- open circuit voltage
- power generators*
- USE **electric generators**
- power law bodies**
(added May 1995)
- GS symmetrical bodies
 - . axisymmetric bodies
 - . . **power law bodies**
 - . bodies of revolution
 - . . **power law bodies**
 - RT blunt bodies
 - slender bodies
- power limited spacecraft**
- RT ∞ spacecraft
- power limiters**
- RT attenuators
 - clamping circuits
 - clipper circuits
 - limiter circuits
- power lines**
- GS transmission lines
 - . **power lines**
 - RT bus conductors
 - ∞ cables
 - coaxial cables
 - electric power transmission
 - electric wire
 - submarine cables
 - superconducting power transmission
 - underground transmission lines
- ∞ **power loss**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT energy dissipation
 - power efficiency
- power modules (STS)**
- DEF Modules for providing power for payloads for STS and mission dependent equipment.
- GS modules
 - . **power modules (STS)**
 - RT orbital maneuvering vehicles
 - payload delivery (STS)
 - solar arrays
 - space transportation system
 - spacecraft power supplies
- ∞ **power plants**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT cogeneration
 - electric power plants
 - engines
 - Enrico Fermi atomic power plant
 - geothermal energy utilization
 - Hallam Nuclear Power Facility
 - hydroelectric power stations
 - hydroelectricity
 - ML-1 nuclear power plant
 - solar sea power plants
 - solar thermal electric power plants
- power processing systems*
- USE **power conditioning**
- power reactors**
- RT nuclear power reactors
 - ∞ reactors
 - saturable reactors
- power series**
- GS analysis (mathematics)
 - . calculus
 - . . series (mathematics)
 - . . . **power series**
 - Taylor series
 - Maclaurin series
 - . real variables
 - . . series (mathematics)
 - . . . **power series**
 - Taylor series
 - Maclaurin series
 - RT analytic functions
- Bessel functions
- power spectra**
- GS spectra
 - . **power spectra**
 - . . cepstra
 - RT acoustics
 - cepstral analysis
 - energy spectra
 - flux density
 - loudness
 - maximum entropy method
- ∞ **power supplies**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT aircraft engines
 - aircraft power supplies
 - auxiliary power sources
 - electric batteries
 - electric generators
 - electric power supplies
 - electron sources
 - energy requirements
 - heat sources
 - lead acid batteries
 - line current
 - lithium sulfur batteries
 - nuclear auxiliary power units
 - plasma power sources
 - propellants
 - rectifiers
 - solar generators
 - spacecraft power supplies
 - voltage converters (AC to AC)
 - voltage converters (DC to DC)
- power supply circuits**
- GS circuits
 - . **power supply circuits**
 - RT current regulators
 - rectifiers
 - transformers
 - voltage converters (DC to DC)
 - voltage regulators
- ∞ **power transmission**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT bus conductors
 - electric outlets
 - electric power transmission
 - electrical engineering
 - electrification
 - hydroelectric power stations
 - mechanical drives
 - power beaming
 - windmills (windpowered machines)
- power transmission (lasers)*
- USE **laser power beaming**
- power transmission (microwave)*
- USE **microwave power beaming**
- powered lift aircraft**
- RT ∞ aircraft
 - externally blown flaps
 - short takeoff aircraft
 - STOVL aircraft
 - vertical takeoff aircraft
- powered models**
- SN (LIMITED TO TEST FACILITIES)
 - DEF Models that can be tested in complete force equilibrium, including propulsion.
 - GS models
 - . wind tunnel models
 - . . **powered models**
 - RT aircraft models
 - dynamic models
- Poynting theorem**
- GS theorems
 - . **Poynting theorem**
 - RT ∞ electric power
 - electromagnetic radiation
 - energy transfer
 - Maxwell equation

Poynting-Robertson effect

vector analysis

Poynting-Robertson effect

DEF The gradual decrease in orbital velocity of a small particle such as a micrometeorite in orbit about the sun due to the absorption and remission of radiant energy by the particle.

RT ∞ effects
micrometeoroids
orbital mechanics
radiation effects
zodiacal dust
zodiacal light

PPI (position indicators)

USE **plan position indicators**

PPM (modulation)

USE **pulse position modulation**

PPT (rocket engines)

(added April 2001)

USE **pulsed plasma thrusters**

PPY

USE **polypyrrroles**

practices

USE **procedures**

Praesepe star clusters

GS celestial bodies
. star clusters
. . open clusters
. . . **Praesepe star clusters**
. stars
. . **Praesepe star clusters**
RT ∞ clusters

praetersonic devices

RT microwave frequencies
piezoelectric transducers
thin films
ultrahigh frequencies

prairies

USE **grasslands**

Prandtl number

DEF A dimensionless number representing the ratio of momentum transport to heat transport in a flow. (After Ludwig Prantl, 1875-1953, German scientist).

GS dimensionless numbers
. **Prandtl number**
ratios
. **Prandtl number**
RT forced convection
Grashof number
heat transfer
inviscid flow
momentum transfer
Nusselt number
Peclet number
Reynolds number
Schmidt number
thermodynamic properties
viscous flow

Prandtl-Meyer expansion

GS expansion
. **Prandtl-Meyer expansion**
RT Blasius equation
Falkner-Skan equation
flow deflection
laminar flow
method of characteristics
Newton pressure law
supersonic flow
two dimensional flow

praseodymium

GS chemical elements
. rare earth elements
. . **praseodymium**
. . . praseodymium isotopes
metals
. rare earth elements
. . **praseodymium**
. . . praseodymium isotopes
RT didymium

praseodymium compounds

praseodymium 144

USE **praseodymium isotopes**

praseodymium compounds

(added August 1990)
GS rare earth compounds
. **praseodymium compounds**
RT ∞ chemical compounds
∞ metal compounds
praseodymium

praseodymium isotopes

UF *praseodymium 144*
GS chemical elements
. nuclides
. . isotopes
. . . **praseodymium isotopes**
. rare earth elements
. . praseodymium
. . . **praseodymium isotopes**
metals
. rare earth elements
. . praseodymium
. . . **praseodymium isotopes**

preamplifiers

DEF Amplifiers, the primary function of which is to raise the output of a low level source to an intermediate level so that the signal may be further processed without appreciable degradation in the signal-to-noise ratio. In radar amplifiers separated from the remainder of the receiver and located so as to provide the shortest possible input circuit path from the antenna so as to avoid deterioration of the signal-to-noise ratio. Used for preselectors.

UF *preselectors*
GS amplifiers
. **preamplifiers**
RT intermediate frequency amplifiers
low noise
mixing circuits
postamplifiers
signal detection
signal detectors
signal reception
transistor amplifiers
voltage amplifiers

preburners

GS pressure vessels
. **preburners**
RT pumps
turbine pumps

Precambrian period

RT Baltic Shield (Europe)
Cambrian Period
Canadian Shield
geology
paleontology
Paleozoic Era

precautions

USE **accident prevention**

precession

DEF Change in the direction of the axis of rotation of a spinning body, as a gyro, when acted upon by a torque.

GS gyration
. **precession**
. . Larmor precession
. . proton precession
. . quenching (atomic physics)
RT coning motion
Earth orientation
gyroscopes
gyroscopic stability
Larmor radius
libration
muon spin rotation
nutation
polar wandering (geology)
retrograde orbits
rotation

vortex precession

precious metals

USE **noble metals**

precipitates

SN (EXCLUDES METEOROLOGICAL PRECIPITATES)
RT alloys
grain boundaries
microstructure
precipitation (chemistry)
precipitation hardening
reaction products

∞ **precipitation**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERM LISTED BELOW)
RT drop size
electron precipitation
falling
hydrometallurgy
materials recovery
particle precipitation
precipitation (chemistry)
precipitation (meteorology)
proton precipitation

precipitation (chemistry)

DEF The separation of a new phase from solid or liquid solution, usually with changing conditions of temperature or pressure or both.

RT agglomeration
cementation
∞ chemistry
coagulation
colloiding
concentrating
crystallization
deposition
dissolving
filtration
flocculating
hydrometallurgy
materials recovery
Ostwald ripening
precipitates
∞ precipitation
precipitators
∞ saturation
saturation (chemistry)
∞ separation
settling
solubility
supersaturation
unsaturation (chemistry)

precipitation (meteorology)

DEF The precipitation of water from the atmosphere in the form of hail, mist, rain, sleet, and snow. Deposits of dew, fog, and frost are excluded.

GS **precipitation (meteorology)**
. graupel
. hail
. rain
. . acid rain
. snow
. snow cover
RT Alpine meteorology
anvil clouds
atmospheric moisture
CALIPSO (Pathfinder satellite)
cap clouds
cirrocumulus clouds
cirrostratus clouds
climatology
cloud physics
cloud seeding
clouds (meteorology)
CloudSat
cumulonimbus clouds
cyclones
dew
drainage patterns
drought
flood damage
flood predictions
floods
fog

- fog dispersal
- hailstorms
- humidity
- hydrological cycle
- hydrology
- hydrology models
- hydrometeorology
- hydrometeors
- International Hydrological Decade
- meteorological parameters
- meteorology
- mist
- monsoons
- nephanalysis
- nimbostratus clouds
- ∞ precipitation
- precipitation measurement
- rainmaking
- rainstorms
- ∞ saturation
- snowstorms
- storm damage
- storm enhancement
- storm suppression
- storms
- storms (meteorology)
- water
- water resources
- watersheds
- weather
- weather forecasting
- precipitation hardening**
- UF *age hardening*
- dispersion precipitation hardening*
- strain aging*
- GS hardening (materials)
- . **precipitation hardening**
- . . maraging
- RT cold hardening
- eutectic composites
- heat treatment
- precipitates
- solid solutions
- strain hardening
- supersaturation
- time temperature parameter
- precipitation measurement**
- (added June 2003)
- DEF Techniques and processes used to measure the amount and type of precipitation.
- RT ∞ measurement
- meteorological instruments
- meteorological radar
- meteorological satellites
- precipitation (meteorology)
- rain
- rain gages
- snow
- precipitation particle measurement**
- GS size determination
- . **precipitation particle measurement**
- RT drop size
- meteorological radar
- particle size distribution
- particles
- precipitators**
- GS separators
- . **precipitators**
- . . electrostatic precipitators
- RT air filters
- concentrators
- dust collectors
- precipitation (chemistry)
- thickeners (equipment)
- precision**
- DEF The quality of being exactly or sharply defined or stated. A measure of the precision of a representation is the number of distinguishable alternatives from which it was selected, which is sometimes indicated by the number of significant digits it contains. Used for exactness.
- UF *exactness*
- RT accuracy
- allowances
- confidence limits
- consistency
- definition
- dynamic characteristics
- errors
- geometric dilution of precision
- high resolution
- hysteresis
- quality
- quality control
- reliability
- resolution
- schedules
- sensitivity
- ∞ sharpness
- tolerances (mechanics)
- truncation errors
- validity
- precision guided projectiles**
- DEF Missiles guided by precise laser radiation.
- GS missiles
- . **precision guided projectiles**
- projectiles
- . **precision guided projectiles**
- weapons
- . guns (ordnance)
- . . artillery
- . . . **precision guided projectiles**
- . warheads
- . . **precision guided projectiles**
- RT ∞ bombs
- terminal ballistics
- preconditioning**
- GS preparation
- . **preconditioning**
- RT ∞ conditioning
- precooling**
- GS cooling
- . **precooling**
- RT regenerative cooling
- predators**
- RT animals
- ecology
- ecosystems
- populations
- predicate calculus**
- (added September 1993)
- GS mathematical logic
- . **predicate calculus**
- RT artificial intelligence
- ∞ logic
- theorem proving
- predicate logic**
- (added September 1993)
- RT artificial intelligence
- linguistics
- ∞ logic
- programming languages
- semantics
- prediction analysis techniques**
- GS scheduling
- . **prediction analysis techniques**
- RT ∞ analyzing
- parameter identification
- performance prediction
- system identification
- trend analysis
- prediction recording**
- GS recording
- . **prediction recording**
- RT predictions
- predictions**
- UF *predictors*
- GS **predictions**
- . flood predictions
- . impact prediction
- . linear prediction
- . noise prediction
- . . noise prediction (aircraft)
- . forecasting
- . performance prediction
- . Roshko prediction
- . . technological forecasting
- . . . Delphi method (forecasting)
- . . . pattern method (forecasting)
- . . . probe method (forecasting)
- . . . profile method (forecasting)
- . . weather forecasting
- . . . long range weather forecasting
- . . . nowcasting
- . . . numerical weather forecasting
- . . . statistical weather forecasting
- . hindcasting
- RT catastrophe theory
- confidence limits
- contingency
- estimates
- maximum likelihood estimates
- mission planning
- prediction recording
- ∞ projection
- risk
- risk assessment
- schedules
- predictor-corrector methods**
- GS analysis (mathematics)
- . numerical analysis
- . approximation
- . . . **predictor-corrector methods**
- . iteration
- . . . **predictor-corrector methods**
- RT differential equations
- iterative solution
- predictors*
- USE **predictions**
- preempting**
- RT claiming
- prevention
- prefiring tests**
- GS engine tests
- . **prefiring tests**
- RT captive tests
- checkout
- ground tests
- preflight analysis
- prelaunch tests
- rocket engine design
- space vehicle checkout program
- static tests
- test firing
- test stands
- ∞ tests
- preflight analysis**
- RT ∞ analyzing
- prefiring tests
- systems analysis
- ∞ tests
- trajectory analysis
- weight analysis
- preflight operations**
- GS **preflight operations**
- . aircraft runup
- . countdown
- RT crew procedures (preflight)
- flight operations
- ground tests
- ∞ operations
- prelaunch tests
- refueling
- prefocusing**
- GS focusing
- . **prefocusing**
- RT ∞ optics
- preforms**
- RT blanks
- composite materials
- molds
- powder metallurgy
- resin film infusion

pregnancy

resin transfer molding

pregnancy

RT birth

preheaters

USE **heating equipment**

preheating

USE **heating**

pre-Imbrian period

DEF One of four stratigraphic classifications adopted for displaying (on maps) the geological ages of major features on the moon.

RT lunar composition
lunar craters
lunar evolution
lunar geology
lunar rocks

preimpregnation

RT filament winding
pultrusion

prejudices

RT economics
irrationality
management
∞ properties
psychology

prelaunch problems

RT countdown
∞ problems
reliability
spacecraft reliability

prelaunch summaries

DEF Summaries prior to launch of the preparations and parameters of the mission.

GS summaries
. **prelaunch summaries**
RT mission planning
postlaunch reports
spacecraft launching

prelaunch tests

GS ground tests
. **prelaunch tests**
. . static firing
RT captive tests
cold flow tests
countdown
crew procedures (preflight)
engine tests
launching
missile tests
prefiring tests
preflight operations
spacecraft maintenance
static tests
test firing
test stands
∞ tests

preloading

USE **prestressing**

pre-main sequence stars

DEF Stars in which nuclear reactions that take place in its core have not yet occurred.

GS celestial bodies
. stars
. . protostars
. . . **pre-main sequence stars**
. . . . T Tauri stars
RT main sequence stars
star formation
stellar evolution

premature operation

RT ∞ operations
preparation

premixed flames

GS flames
. **premixed flames**
RT carburetors
flame propagation
gas mixtures

mixing
premixing
reacting flow
turbulent combustion
turbulent flames

premixing

DEF The mixing of ingredients prior to a specified action (mixing of fuel and air prior to ignition in combustion, for example).

GS mixing
. **premixing**
RT fuel-air ratio
fuels
gas mixtures
homogenizing
ignition
jet mixing flow
premixed flames
spraying

preparation

GS **preparation**
. preconditioning
. pretreatment
. . prestressing
. prewhirling
. prewhitening
RT assembling
premature operation
∞ priming

prepolymers

DEF Polymers of degrees of polymerization between that of the monomer or monomers, and the final polymer.

GS **prepolymers**
. dimers
. trimers
RT monomers
∞ polymers

prepregs

DEF The reinforcing materials containing or combined with the full complement or resin before molding operations in the production of composite materials.

RT composite materials
epoxy resins
functionally gradient materials
laminates
resin matrix composites

preprocessing

RT data processing
data reduction
image processing

presbyopia

RT vision

preselectors

USE **preamplifiers**

presentation

RT information

preservatives

RT additives
∞ agents
anticoagulants
antioxidants
neutralizers
penetrants
preserving
retardants
stabilizers (agents)

preserving

GS food processing
. **preserving**
RT biopaks
∞ containers
corrosion prevention
coverings
curing
degradation
dehydrated food
∞ food
freeze drying

freezing
frozen foods
impregnating
irradiation
packaging
preservatives
radiation effects
refrigerating
∞ storage
weatherproofing

Presidential reports

DEF Formal reports originated by the President or his office.

GS documents
. **Presidential reports**
reports
. **Presidential reports**
RT congressional reports
papers
records

presintering

USE **sintering**

presses

GS **presses**
. rams (presses)
RT compacting
hammers
machine tools
platens
∞ pressing
pressing (forming)
punches
tools

∞ pressing

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cold pressing
compacting
compressing
hot isostatic pressing
hot pressing
platens
presses
pressing (forming)

pressing (forming)

GS forming techniques
. **pressing (forming)**
. . blanking (cutting)
. . coining
. . hot pressing
. . stamping
. . . hot isostatic pressing
RT cold pressing
compacting
extruding
forging
metal working
molds
presses
∞ pressing
pultrusion
sizing (shaping)
upsetting

pressoreceptor reflexes

(added March 2001)
USE **baroreflexes**

pressoreceptors

(added March 2001)
USE **baroreceptors**

pressors

USE **vasoconstrictor drugs**

pressure

DEF Force or load per unit area. Used for surface pressure.

UF *surface pressure*
GS **pressure**
. atmospheric pressure
. base pressure
. blood pressure
. . diastolic pressure
. . hypertension

- . . hypotension
- . . lower body negative pressure
- . . systolic pressure
- . critical pressure
- . densification
- . differential pressure
- . dynamic pressure
- . fluid pressure
- . . water pressure
- . gas pressure
- . geopressure
- . high pressure
- . inlet pressure
- . internal pressure
- . intracranial pressure
- . intraocular pressure
- . isostatic pressure
- . low pressure
- . . high altitude pressure
- . middle ear pressure
- . overpressure
- . partial pressure
- . . oxygen tension
- . . . hypoxemia
- . plasma pressure
- . radiation pressure
- . . electron pressure
- . . lumens
- . . luminous intensity
- . . . illuminance
- . . . luminance
- . . sound pressure
- . stagnation pressure
- . static pressure
- . . hydrostatic pressure
- . supercritical pressures
- . thrust chamber pressure
- . transient pressures
- . transition pressure
- . vacuum
- . . high vacuum
- . . low vacuum
- . . ultrahigh vacuum
- . vapor pressure
- . wall pressure
- . wind pressure
- RT baroreceptors
- blast loads
- center of pressure
- compressing
- ear pressure test
- elastic waves
- environments
- ∞ force
- fuel tank pressurization
- Gibbs-Helmholtz equations
- head (fluid mechanics)
- high pressure oxygen
- impact
- isobars (pressure)
- loads (forces)
- Newton pressure law
- osmosis
- pressure breathing
- pressure broadening
- pressure chambers
- pressure distribution
- pressure drag
- ∞ pressure drop
- pressure effects
- pressure gages
- pressure gradients
- pressure heads
- pressure ice
- pressure measurement
- pressure modulator radiometers
- pressure oscillations
- pressure pulses
- pressure ratio
- pressure recorders
- pressure recovery
- pressure reduction
- pressure sensors
- pressure suits
- pressure vessel design
- pressure vessels
- pressure welding
- pressurized cabins
- pressurized water reactors
- pressurizing
- temperature inversions
- vacuum chambers
- weight (mass)
- pressure breathing**
- DEF The breathing of oxygen or a suitable mixture of gases at a pressure higher than the surrounding pressure.
- GS respiration
- . **pressure breathing**
- RT emergency breathing techniques
- liquid breathing
- pressure
- stress (physiology)
- pressure broadening**
- RT line spectra
- pressure
- spectroscopy
- pressure cabins*
- USE **pressurized cabins**
- pressure chambers**
- GS compartments
- . test chambers
- . . **pressure chambers**
- . . . hyperbaric chambers
- . . . vacuum chambers
- RT air locks
- ∞ chambers
- enclosures
- pressure
- pressurized cabins
- wind tunnel drives
- pressure dependence**
- DEF Study of how a rate constant changes with pressure.
- RT burning rate
- hydrostatic pressure
- reaction kinetics
- pressure distribution**
- UF *pressure fields*
- GS distribution (property)
- . **pressure distribution**
- RT aerodynamic coefficients
- aerodynamic loads
- aerodynamic stability
- center of pressure
- differential pressure
- ∞ distribution
- field theory (physics)
- influence coefficient
- internal pressure
- isobars (pressure)
- lift
- loading moments
- loads (forces)
- manometers
- mass distribution
- moment distribution
- Newton pressure law
- pressure
- ∞ pressure drop
- shock wave profiles
- spanwise blowing
- static loads
- structural design criteria
- Theodorsen transformation
- thrust distribution
- velocity distribution
- vertical distribution
- wall pressure
- pressure drag**
- GS dynamic characteristics
- . drag
- . . **pressure drag**
- . . . supersonic drag
- . . . wave drag
- interference drag
- RT aerodynamic drag
- friction drag
- pressure
- pressure drop**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT fluid power
- friction
- gas flow
- head flow
- inlet flow
- pressure
- pressure distribution
- pressure gradients
- pressure oscillations
- pressure reduction
- two phase flow
- pressure effects**
- RT beta factor
- compressibility effects
- ∞ effects
- jet blast effects
- loads (forces)
- nonisothermal processes
- pressure
- suction
- temperature effects
- temperature inversions
- transition pressure
- vacuum effects
- wind effects
- pressure fields*
- USE **pressure distribution**
- pressure gages**
- UF *bombs (pressure gages)*
- GS measuring instruments
- . **pressure gages**
- . . barometers
- . . manometers
- . . osmometers
- . . piezoelectric gages
- . . piezometers
- . . vacuum gages
- . . . ionization gages
- alphatrons
- Bayard-Alpert ionization gages
- Penning gages
- Philips ionization gages
- . . . Knudsen gages
- . . . McLeod gages
- . . Pirani gages
- RT ∞ bombs
- Bourdon tubes
- flowmeters
- hypsometers
- pressure
- shock measuring instruments
- strain gage accelerometers
- strain gage balances
- strain gages
- weight indicators
- pressure gradients**
- GS gradients
- . **pressure gradients**
- RT atmospheric pressure
- bathythermographs
- boundary layer thickness
- critical flow
- differential pressure
- fluid boundaries
- fluid flow
- friction factor
- geopressure
- hydrodynamics
- hydrostatics
- inlet pressure
- isobars (pressure)
- Knudsen flow
- liquid flow
- liquid-liquid interfaces
- liquid-vapor interfaces
- multiphase flow
- orifice flow
- pipe flow
- potential gradients
- pressure

pressure heads

- ∞ pressure drop
- Rankine-Hugoniot relation
- steady flow
- steam flow
- subcritical flow
- suction
- supercritical flow
- uniform flow
- unsteady flow
- Venturi tubes

pressure heads

- UF *head (pressure)*
- GS fluid flow
 - . head (fluid mechanics)
 - . . **pressure heads**
- RT center of pressure elevation
 - ∞ hydraulics
 - hydrodynamics
 - hydrostatic pressure
 - hydrostatics
 - liquid flow
 - pressure

pressure ice

- UF *pressure ridges*
- GS ice
 - . sea ice
 - . . **pressure ice**
- RT cold weather freezing ice formation low temperature ocean currents pressure tides wind (meteorology) winter

pressure measurement

- UF *tonometry*
- GS mechanical measurement
 - . **pressure measurement**
- RT barometers Bourdon tubes differential pressure flow measurement flowmeters ionization gages Knudsen gages manometers McLeod gages
 - ∞ measurement
 - noise meters
 - Philips ionization gages
 - Pirani gages
 - pitot tubes
 - pneumatic probes
 - pressure
 - pressure sensitive paints
 - vacuum
 - vacuum gages
 - velocity
 - velocity measurement
 - Venturi tubes
 - weight indicators
 - wind tunnel calibration
 - wind tunnel tests

pressure modulator radiometers

DEF A cell containing a known quantity of a gas is placed in the single optical path of the radiometer and subjected to cyclical pressure changes which alter the absorption lines in the infrared spectrum of the gas. A narrow band signal results from the different voltages at the detector at high and low cell pressures. A wide-band signal is generated by physically chopping a percentage of the input beam with a rotating chopper blade.

- GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . radiometers
 - **pressure modulator radiometers**
- RT infrared radiometers

pressure

pressure oscillations

- GS oscillations
 - . **pressure oscillations**
- RT acoustic frequencies combustion stability flame propagation pressure
 - ∞ pressure drop
 - Southern Oscillation
 - turbulent flow

pressure probes

USE **pressure sensors**

pressure pulses

- GS pulses
 - . **pressure pulses**
- RT blast loads flame propagation pressure shock waves

pressure ratio

DEF The relationship of a force to the deformation of a system whose deformation varies in some proportion to the force.

- GS ratios
 - . **pressure ratio**
- RT fuel-air ratio lift drag ratio mass ratios payload mass ratio pressure propellant mass ratio stress ratio thrust-weight ratio

pressure recorders

- GS recording instruments
 - . **pressure recorders**
- RT pressure

pressure recovery

- RT ∞ diffusers explosive decompression fluid amplifiers inlet pressure pressure
 - ∞ recovery

pressure reduction

- UF *bleed-off decompression deflating depressurization*
- GS **pressure reduction**
 - . explosive decompression
- RT ∞ bleeding compressing gas expansion inflating pressure
 - ∞ pressure drop
 - ∞ reduction

pressure regulators

- GS control equipment
 - . regulators
 - . . automatic control valves
 - . . . **pressure regulators**
 - valves
 - . automatic control valves
 - . . **pressure regulators**
- RT controllers flow regulators fuel tank pressurization oxygen regulators pressurizing relief valves

pressure ridges

USE **pressure ice**

pressure sensitive paints

(added March 2001)
DEF Luminescent paints used for the non-intrusive optical measurement of static and transient pressure fields. These paints are typically

organic luminophores or dyes dispersed in an oxygen permeable polymeric binder. The luminescence is induced by the excitation of the dye with an appropriate wavelength light. The emitted intensity or brightness of the paint is inversely proportional to the partial pressure of oxygen because the luminescence is quenched by oxygen.

- UF *PSP (paints)*
- GS coatings
 - . paints
 - . . **pressure sensitive paints**
- RT flow measurement flow visualization nonintrusive measurement optical measurement pressure measurement

pressure sensors

- UF *pressure probes*
- GS *pressure transducers* transducers
 - . **pressure sensors**
 - . . Bourdon tubes
- RT electroacoustic waves piezoelectric gages pressure quartz transducers
 - ∞ rakes
 - shock wave generators
 - transient pressures
 - transient response
 - ultrasonic wave transducers

pressure suits

DEF Garments designed to provide pressure upon the body so that the respiratory and circulatory functions may continue normally, or nearly so, under low pressure conditions, such as occur at high altitudes or in space without benefit of pressurized cabins.

- GS clothing
 - . protective clothing
 - . . **pressure suits**
 - . . . space suits
 - extravehicular mobility units
 - . suits
 - . . **pressure suits**
 - . . . space suits
 - extravehicular mobility units
- RT flight clothing helmets inflatable structures life support systems portable life support systems pressure safety devices

pressure switches

- GS control equipment
 - . **pressure switches**
 - switches
 - . **pressure switches**
- RT electric switches

pressure transducers

USE **pressure sensors**

pressure vessel design

- GS structural design
 - . **pressure vessel design**
- RT ∞ design perforated shells pressure shells (structural forms)

pressure vessels

- GS **pressure vessels**
 - . preburners
- RT accumulators autoclaves bells boilers bulbs burst tests
 - ∞ containers
 - domes (structural forms)
 - fuel tank pressurization
 - fuel tanks
 - hemisphere cylinder bodies

- isotenoid structures
- pressure
- propellant tanks
- reactor materials
- shallow shell equations
- spherical tanks
- storage tanks
- tanks (containers)
- ∞ vessels
- wall pressure
- wind tunnel walls
- pressure waves*
- USE **elastic waves**
- pressure welding**
- GS welding
 - . **pressure welding**
 - . . cold welding
 - . . diffusion welding
 - . . explosive welding
 - . . friction welding
 - . . . friction stir welding
 - . . ultrasonic welding
- RT arc welding
 - electric welding
 - flash welding
 - fusion welding
 - gas welding
 - pressure
 - spot welds
- pressurized cabins**
- UF *pressure cabins*
- GS compartments
 - . **pressurized cabins**
- RT aircraft compartments
 - cabin atmospheres
- ∞ cabins
 - cockpits
 - emergency life sustaining systems
 - environmental control
 - escape capsules
 - explosive decompression
 - life support systems
 - oxygen supply equipment
 - pressure
 - pressure chambers
 - spacecraft cabin atmospheres
 - spacecraft cabins
- pressurized water reactors**
- GS nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . **pressurized water reactors**
 - spectral shift control reactor
- RT nuclear power reactors
 - pressure
- pressurizing**
- GS **pressurizing**
 - . fuel tank pressurization
- RT accumulators
 - densification
 - expulsion
 - expulsion bladders
 - gas generators
 - gas injection
 - inflating
 - pressure
 - pressure regulators
 - stimulation
- Preston tubes*
- USE **pitot tubes**
- speed indicators**
- prestraining*
- USE **prestressing**
- prestressing**
- UF *preloading*
 - prestraining*
 - pretwisting*
- GS preparation
 - . pretreatment
 - . . **prestressing**
- RT elastic deformation
 - isotenoid structures
- stresses
- structural strain
- tensegrity structures
- pretests*
- USE **tests**
- pretreatment**
- GS preparation
 - . **pretreatment**
 - . . prestressing
- RT prevention
 - ∞ priming
- pretwisting*
- USE **prestressing**
- twisting**
- prevaporization**
- DEF The phase transformations of liquids to gases prior to some physical or chemical reaction.
 - GS phase transformations
 - . vaporizing
 - . . **prevaporization**
 - RT flashing (vaporizing)
 - gases
 - vapor phases
 - vapors
 - volatility
- prevention**
- GS **prevention**
 - . accident prevention
 - . corrosion prevention
 - . fire prevention
 - . ice prevention
 - . preventive maintenance
- RT blocking
 - etiology
- ∞ inhibition
 - pollution
 - preempting
 - pretreatment
 - protection
- ∞ reduction
- ∞ resistance
 - retarding
 - sabotage
 - safety
 - stopping
- preventive maintenance**
- (added June 2000)*
- GS maintenance
 - . **preventive maintenance**
 - prevention
 - . **preventive maintenance**
- RT aircraft maintenance
 - failure analysis
 - inspection
 - nondestructive tests
 - reliability analysis
- prewhirling**
- GS preparation
 - . **prewhirling**
- prewhitening**
- GS preparation
 - . **prewhitening**
- RT color
 - ∞ treatment
- Pribram meteorite**
- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . chondrites
 - **Pribram meteorite**
- RT bolides
 - meteor trails
- primary batteries**
- SN (NON-RECHARGEABLE BATTERIES)
- GS electric generators
 - . direct power generators
 - . . **primary batteries**
 - . . . alkaline batteries
 - . . . dry cells
 - magnesium cells
- nickel zinc batteries
- . . . metal air batteries
- zinc-oxygen batteries
- . . . sodium sulfur batteries
- . . . thermal batteries
- electrochemical cells
- electric batteries
- . **primary batteries**
- . . alkaline batteries
- . . dry cells
- . . . magnesium cells
- nickel zinc batteries
- . . . metal air batteries
- zinc-oxygen batteries
- . . . sodium sulfur batteries
- . . . thermal batteries
- RT charge efficiency
 - electrolytes
 - nonaqueous electrolytes
 - storage batteries
 - wet cells
- primary cosmic rays**
- UF *heavy cosmic ray primaries*
- GS extraterrestrial radiation
 - . **primary cosmic rays**
 - . . solar cosmic rays
 - ionizing radiation
 - . cosmic rays
 - . . **primary cosmic rays**
 - . . . solar cosmic rays
 - particles
 - . corpuscular radiation
 - . . **primary cosmic rays**
 - . . . solar cosmic rays
- RT cosmic ray albedo
 - heavy nuclei
 - secondary cosmic rays
- primates**
- GS animals
 - . vertebrates
 - . . mammals
 - . . . **primates**
 - apes
 - chimpanzees
 - baboons
 - human beings
 - monkeys
- ∞ **primers**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT engine primers
 - primers (coatings)
 - primers (explosives)
- primers (coatings)**
- DEF Coatings designed to enhance adhesion.
 - GS coatings
 - . protective coatings
 - . . **primers (coatings)**
 - RT dopes
 - fillers
 - finishes
 - lacquers
 - metal coatings
 - paints
 - ∞ primers
 - sprayed coatings
 - substrates
 - varnishes
- primers (explosives)**
- GS explosive devices
 - . initiators (explosives)
 - . . **primers (explosives)**
 - igniters
 - . initiators (explosives)
 - . . **primers (explosives)**
- RT caps (explosives)
 - detonation
 - detonators
 - exploding wires
 - percussion
- ∞ primers

priming

squibs

∞ priming

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT coating
coatings
initiation
preparation
pretreatment
starting

primitive Earth atmosphere

GS Earth atmosphere
. **primitive Earth atmosphere**

RT ∞ atmospheres
atmospheric composition
atmospheric electricity
atmospheric models
Earth planetary structure
free atmosphere
paleoclimatology
planetary atmospheres

primitive equations

DEF Eulerian equations of fluid motion in which the primary dependent variables are the fluid's velocity components. The equations govern a wide variety of fluid motions and form the basis of most hydrodynamical analysis.

RT atmospheric boundary layer
climatology
∞ equations
Euler equations of motion
fluid dynamics
∞ mathematics

primordial galaxies

(added May 2002)

USE **protogalaxies**

primordial stars

(added July 1999)

USE **Population III stars**

Prince Edward Island

GS landforms
. islands
. . **Prince Edward Island**
nations
. Canada
. . **Prince Edward Island**

Prince William Sound (AK)

GS sounds (topographic features)

. **Prince William Sound (AK)**

RT Alaska

Princeton sailwings

USE **sailwings**

principal components analysis

RT image processing
imaging techniques
Karhunen-Loeve expansion
pattern recognition
spectral mixture analysis

∞ principles

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT duality principle
∞ logic
∞ mathematics

printed circuits

GS circuits
. **printed circuits**
RT breadboard models
circuit boards
electronic packaging
hybrid circuits
integrated circuits
large scale integration
medium scale integration
miniature electronic equipment
miniaturization
photomasks
subminiaturization
thick films

transistor circuits

printed resistors

GS attenuators
. resistors
. . **printed resistors**
RT miniaturization

printers

GS **printers**
. printers (data processing)
. teleprinters
RT cathode ray tubes
data processing equipment
plotters
printing
projectors
typewriters

printers (data processing)

GS computer components
. peripheral equipment (computers)
. . **printers (data processing)**
data processing equipment
. peripheral equipment (computers)
. . **printers (data processing)**
printers
. **printers (data processing)**
RT automatic typewriters
computers
∞ data
display devices
printouts
readout
teleprinters

printing

GS **printing**
. lithography
. . photolithography
RT binding
contrast
document markup languages
electronic publishing
electronography
engraving
inks
legibility
photoengraving
photographic processing
photomechanical effect
plotting
printers
reading
reproduction (copying)
stencil processes

printouts

RT format
lists
output
printers (data processing)
readout
tables (data)

priorities

RT engineering management
project planning
research management
resource allocation
sequencing

Prirda module

(added August 1995)
GS modules
. space station modules
. . **Prirda module**
RT Mir space station
radar imagery
remote sensing
space station structures

prismatic bars

GS bars
. **prismatic bars**
RT prisms

prisms

DEF Transparent bodies with at least two polished plane faces inclined with respect to

each other, from which light is reflected or through which light is refracted. When light is refracted by a prism whose refractive index exceeds that of the surrounding medium, it is deviated or bent toward the thicker part of the prism.

GS optical equipment
. **prisms**
RT photoelasticity
prismatic bars
refraction

privacy

DEF Freedom from observation and/or intrusion. Applies to such things as communications, personal records, photographs.

RT computer information security
information
information dissemination
integrity
papers
recording
records
security

private aircraft

USE **general aviation aircraft**

probability

USE **probability theory**

probability density functions

GS functions (mathematics)
. **probability density functions**
. . normal density functions
. . Pearson distributions
. . Rayleigh distribution
. . Weibull density functions
statistical analysis
. **probability density functions**
. . normal density functions
. . Pearson distributions
. . Rayleigh distribution
. . Weibull density functions
RT binomial theorem
censored data (mathematics)
continuity (mathematics)
discrete functions
events
expectancy hypothesis
exponential functions
failure analysis
gas density
Mills ratio
quartiles

probability distribution functions

GS functions (mathematics)
. distribution functions
. . **probability distribution functions**
statistical analysis
. **probability distribution functions**
statistical distributions
. **probability distribution functions**
RT discrete functions
goodness of fit

probability theory

UF *probability*
statistical probability
RT ∞ applications of mathematics
belief networks
binomial theorem
Borel sets
combinatorial analysis
confidence
∞ conjunction
consecutive events
continuums
correlation
decision theory
distribution functions
Duffing differential equation
Einstein equations
ergodic process
error analysis
events
extremum values
forecasting
fuzzy systems

game theory
 goodness of fit
 ∞ indication
 infinity
 information theory
 iteration
 Kolmogorov-Smirnov test
 likelihood ratio
 martingales
 ∞ mathematics
 Maxwell-Boltzmann density function
 Minkowski space
 Monte Carlo method
 operations research
 outliers (statistics)
 parameter identification
 population theory
 quality control
 random errors
 random noise
 reliability
 sampling
 statistical analysis
 statistical distributions
 ∞ statistics
 Stieltjes integral
 stochastic processes
 subgroups
 system identification
 ∞ theories
 transition probabilities
 traveling salesman problem
 uncertain systems
 uniqueness theorem

probe method (forecasting)

GS management methods
 . **probe method (forecasting)**
 predictions
 . forecasting
 . . . technological forecasting
 . . . **probe method (forecasting)**
 RT Delphi method (forecasting)
 estimating
 ∞ methodology
 operations research
 pattern method (forecasting)
 planning
 profile method (forecasting)
 technology assessment

∞ **probes**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT Galileo probe
 gas detectors
 measuring instruments
 Pioneer 8 space probe
 Pioneer 9 space probe
 Pioneer 10 space probe
 Pioneer 11 space probe
 Pioneer Venus 1 spacecraft
 Pioneer Venus 2 entry probes
 Pioneer Venus 2 night probe
 Pioneer Venus 2 spacecraft
 Pioneer Venus 2 transporter bus
 Pioneer Venus spacecraft
 radio probing
 remote sensors
 sondes
 space probes
 transducers

problem solving

GS **problem solving**
 . alternating direction implicit methods
 . asymptotic methods
 . iterative solution
 . theorem proving
 RT approximation
 backward differencing
 computational grids
 Crank-Nicholson method
 decision making
 decision support systems
 Dining Philosophers Problem
 existence theorems
 group dynamics
 homotropy

Householder transformations
 ill-conditioned problems
 (mathematics)
 ill-posed problems (mathematics)
 iteration
 learning theory
 management
 maze learning
 ∞ methodology
 Newton methods
 simplex method
 ∞ solution

∞ **problems**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT Bolza problems
 boundary value problems
 Cauchy problem
 Chapman-Ferraro problem
 Dirichlet problem
 four body problem
 isoperimetric problem
 many body problem
 Mayer problem
 Neumann problem
 operational problems
 Poincare problem
 prelaunch problems
 three body problem
 tracking problem
 traveling salesman problem
 two body problem

procedures

DEF Detailed instructions for the performance of a process or function.
 UF *methods*
practices
 GS **procedures**
 . boundary integral method
 . crew procedures (inflight)
 . crew procedures (preflight)
 . finite element method
 . finite volume method
 . . . Godunov method
 . Glimm method
 . optical correction procedure
 . panel method (fluid dynamics)
 RT procurement policy
 systems analysis

proceedings

USE **conferences**
congressional reports

process control (industry)

DEF The ways and means by which continuous manufacturing and other industrial processes are monitored and maintained to create products of planned, uniform dimension and quality.
 RT component reliability
 ∞ control
 group technology (manufacturing)
 product development
 quality control
 sampling
 specifications

process heat

DEF Increase in enthalpy accompanying chemical reactions or phase transformations at constant pressure (heat of crystallization and heat of sublimation are examples).
 GS heat
 . **process heat**
 RT heat generation

∞ **processes**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT autoregressive processes
 isentropic processes
 jet membrane process
 Kraft process (woodpulp)
 nonisentropy
 nonisothermal processes
 Ornstein-Uhlenbeck process

product development
 quality control
 sol-gel processes
 space industrialization
 Umklapp process

∞ **processing**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT associative processing (computers)
 batch processing
 data processing
 food processing
 image processing
 manufacturing
 materials recovery
 message processing
 nuclear fuel reprocessing
 optical data processing
 photographic processing
 production engineering
 recycling
 refining
 retort processing
 settling
 signal processing
 ultrasonic processing
 wet spinning

processors (computers)

USE **central processing units**

procurement

GS **procurement**
 . government procurement
 . leasing
 RT contracts
 equipment specifications
 government/industry relations
 ∞ receiving
 services
 specifications
 subcontracts

procurement management

GS management
 . **procurement management**
 RT allocations
 budgeting
 ∞ budgets
 commercial off-the-shelf products
 commodities
 federal budgets
 financial management
 inventory management
 products
 services

procurement policy

GS policies
 . **procurement policy**
 RT decisions
 intellectual property
 management
 procedures
 regulations
 rules

product development

UF *engineering development*
 GS **product development**
 . weapons development
 RT aircraft design
 aircraft production
 amplifier design
 antenna design
 breadboard models
 commerce
 commercial off-the-shelf products
 commercialization
 computer design
 concurrent engineering
 consumers
 ∞ design
 ∞ development
 engine design
 functional design specifications
 helicopter design
 inventions
 lens design

production

- management
- market research
- marketing
- patent applications
- patent policy
- pilot plants
- process control (industry)
- ∞ processes
- ∞ production
- production engineering
- quality
- quality control
- rapid prototyping
- reactor design
- reliability
- satellite design
- solvent refined coal
- space industrialization
- spacecraft design
- standardization
- structural design

∞ production

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aircraft production
- food production (in space)
- fuel production
- output
- product development
- production engineering
- production planning
- reserves
- tools

production costs

DEF The process of fabrication, from raw materials through the finished products, including packaging and other prorated costs.

- GS costs
 - . production costs
 - . . aircraft production costs
- RT cost analysis
- cost estimates
- design to cost
- life cycle costs
- operating costs

production engineering

- UF *production methods*
- GS **production engineering**
 - . group technology (manufacturing)
 - . production planning
- RT aircraft production
- aircraft production costs
- ∞ capacity
- ∞ engineering
- human factors engineering
- laser applications
- management
- numerical control
- ∞ operations
- planning
- ∞ processing
- product development
- ∞ production
- productivity
- products
- scheduling
- standardization

production management

- GS management
 - . **production management**
- RT aircraft production costs
- employee relations
- estimates
- fabrication
- group technology (manufacturing)
- industrial management
- manufacturing
- quality control
- reliability
- resources
- safety management

total quality management

production methods

USE **production engineering**

production planning

- GS planning
 - . management planning
 - . . **production planning**
 - production engineering
 - . **production planning**
- RT ∞ production
- schedules

productivity

- RT aircraft production costs
- allowances
- efficiency
- matrix management
- morale
- production engineering
- reliability
- software reuse
- workstations

products

- GS **products**
 - . fission products
 - . gross national product
 - . petroleum products
 - . . asphalt
 - . . diesel fuels
 - . . gasoline
 - . . tars
 - . reaction products
 - . . combustion products
 - . . . soot
 - . reaction intermediates
 - . commercial off-the-shelf products
 - . data products
- RT by-products
- commodities
- manufacturing
- output
- procurement management
- production engineering
- quality control
- resource allocation
- services
- space industrialization

proficiency

USE **abilities**

profile method (forecasting)

- GS management methods
 - . **profile method (forecasting)**
 - predictions
 - . forecasting
 - . . technological forecasting
 - . . . **profile method (forecasting)**
- RT Delphi method (forecasting)
- estimating
- ∞ methodology
- operations research
- planning
- probe method (forecasting)
- technology assessment

∞ profiles

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT airfoil profiles
- angles (geometry)
- curvature
- delineation
- distribution (property)
- geometry
- gradients
- line shape
- platforms
- profilometers
- search profiles
- shapes
- shock wave profiles
- slopes
- streamlining
- topography

wind profiles

profilometers

- GS measuring instruments
- . **profilometers**
- RT ∞ profiles
- roughness
- shapes
- surface properties
- surface roughness

progeny

- RT children
- reproduction (biology)

prognosis

- RT diagnosis

Prognoz satellites

- GS artificial satellites
- . Soviet satellites
- . . **Prognoz satellites**

program evaluation review technique

USE **PERT**

program management

USE **project management**

program reliability (computers)

USE **software reliability**

program trend line analysis

- RT critical path method
- management planning
- PERT
- programs
- project management

program verification (computers)

- RT checkout
- computer programming
- file maintenance (computers)
- proving
- software development tools
- software reliability
- systems analysis
- ∞ tests

programmable logic devices

(added September 1992)

- GS reconfigurable hardware
- . **programmable logic devices**
- . . field-programmable gate arrays
- RT architecture (computers)
- computer systems design
- controllers
- logic circuits
- logic design

programmed cell death

(added October 2000)

USE **apoptosis**

programmed instruction

- GS education
- . **programmed instruction**
- . . computer assisted instruction
- RT compilers
- computer programming
- computer programs

programmers

- GS personnel
- . **programmers**
- RT coders
- computer programming
- file maintenance (computers)

∞ programming

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT computer programming
- dynamic programming
- file maintenance (computers)
- linear programming
- mathematical programming
- microprogramming
- multiprogramming
- nonlinear programming
- programming (scheduling)

- quadratic programming
- structured programming
- programming (scheduling)**
 - GS scheduling
 - . programming (scheduling)
 - . thrust programming
 - RT critical path method
 - ∞ programming
 - ∞ steps
- programming environments**
 - (added January 1993)
 - UF SEE (software engineering environments)
 - software engineering environments
 - RT computer programming
 - computer programs environments
 - software development tools
 - software engineering
- programming languages**
 - GS languages
 - . programming languages
 - . ALGOL
 - . APL (programming language)
 - . Assembly language
 - . autocoders
 - . COMPASS (programming language)
 - . MAP (programming language)
 - . BASIC (programming language)
 - . Cobol
 - . COGO (programming language)
 - . context free languages
 - . Forth (programming language)
 - . FORTRAN
 - . HAL/S (language)
 - . high level languages
 - . Ada (programming language)
 - . C (programming language)
 - . C++ (programming language)
 - . Java (programming language)
 - . LISP (programming language)
 - . machine oriented languages
 - . natural language (computers)
 - . Pascal (programming language)
 - . PL/1
 - . Prolog (programming language)
 - RT computer programming
 - formalism
 - predicate logic
 - structured programming
- programs**
 - GS programs
 - . Army-Navy instrumentation program
 - . Comsat program
 - . defense program
 - . Downrange Antimissile Measurement Program
 - . Global Atmospheric Research Program
 - . GARP Atlantic Tropical Experiment
 - . International Geosphere-Biosphere program
 - . lunar programs
 - . Apollo project
 - . Surveyor project
 - . NASA programs
 - . ACEE program
 - . Assess program
 - . ATLIT project
 - . DAST program
 - . NASA space programs
 - . . Apollo applications program
 - . . Apollo project
 - . . Bioastronautical Orbital Space System
 - . . Centaur project
 - . . Earth & Ocean Physics Applications Program
 - . . Earth Resources Program
 - . . . Earth Resources Survey Program
 - SEASAT program
 - . . . Echo project
 - . . . Galileo project
 - . . . Gemini project
 - . . . Helios Project
 - . . . Jupiter project
 - . . . Magellan project (NASA)
 - . . . Mariner program
 - Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
 - . . . Mars 69 project
 - . . . Mars 71 project
 - . . . Mercury project
 - . . . National Launch Vehicle Program
 - . . . NEW MOONS project
 - . . . Nike project
 - . . . Nimbus project
 - . . . OPEN Project
 - . . . Pioneer project
 - . . . Project SETI
 - . . . Radio Attenuation Measurement project
 - . . . rand project
 - . . . Ranger project
 - . . . Agena B Ranger Program
 - . . . CERES (experiment)
 - . . . Helios Project
 - . . . Jupiter project
 - . . . Magellan project (NASA)
 - . . . Mariner program
 - Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
 - . . . Mars 69 project
 - . . . Mars 71 project
 - . . . Mercury project
 - . . . National Launch Vehicle Program
 - . . . NEW MOONS project
 - . . . Nimbus project
 - . . . OPEN Project
 - . . . Pioneer project
 - . . . Success project
 - . . . Surface Meteorology and Solar Energy project
 - . . . Surface Radiation Budget project
 - . . . Surveyor project
 - . . . Synchronous Communications Satellite Proj
 - . . . Telstar project
 - . . . Themis project
 - . . . TIROS project
 - . . . Titan project
 - . . . Vanguard project
 - . . . Voyager project
 - . . . West Ford project
 - . . . radar target scatter site program
 - . . . space programs
 - . . . Argentine space program
 - . . . Australian space program
 - . . . Brazilian space program
 - . . . Canadian space program
 - . . . Alouette project
 - . . . Chinese space program
 - . . . European space programs
 - . . . Austrian space program
 - . . . Belgian space program
 - . . . Czechoslovakian space program
 - . . . Danish space program
 - . . . Finnish space program
 - . . . French space program
 - . . . German space program
 - . . . Greek space program
 - . . . Hungarian space program
 - . . . Icelandic space program
 - . . . Italian space program
 - . . . Luxembourg space program
 - . . . Netherlands space program
 - . . . Norwegian space program
 - . . . Portuguese space program
 - . . . Spanish space program
 - . . . Swedish space program
 - . . . Swiss space program
 - . . . Turkish space program
 - . . . UK space program
 - . . . geographic applications program
 - . . . Indian space program
 - . . . Indonesian space program
 - . . . Israeli space program
 - . . . Japanese space program
 - . . . Mexican space program
 - . . . NASA space programs
 - . . . Apollo applications program
 - . . . Apollo project
 - . . . Bioastronautical Orbital Space System
 - . . . Centaur project
 - . . . Earth & Ocean Physics Applications Program
 - . . . Earth Resources Program
 - Earth Resources Survey Program
 - SEASAT program
 - Echo project
 - Galileo project
 - Gemini project
 - Helios Project
 - Jupiter project
 - Magellan project (NASA)
 - Mariner program
 - Mariner Venus-Mercury 1973
 - Mariner-Mercury 1973
 - Mars 69 project
 - Mars 71 project
 - Mercury project
 - National Launch Vehicle Program
 - NEW MOONS project
 - Nimbus project
 - OPEN Project
 - Pioneer project

- . . . Project SETI
- . . . Ranger project
- Agena B Ranger Program
- . . . Constellation program
- . . . Mars Surveyor 98 Program
- . . . New Horizons mission
- . . . Rover project
- . . . SAIL project
- . . . Saturn project
- . . . Scout project
- . . . Skylab program
- . . . Starprobe mission
- . . . Surveyor project
- . . . Synchronous Communications Satellite Proj
- . . . Tektite project
- . . . TIROS project
- . . . Titan project
- . . . Vanguard project
- . . . Viking Mars program
- . . . Voyager project
- . . New Zealand space program
- . . Pakistan space program
- . . Russian Space Program
- . . Saudi Arabian space program
- . . U.S.S.R. space program
- . . Ukrainian space program
- . Starsite program
- . TRAP program
- . university program
- RT bureaus (organizations)
- Committee on Space Research
- computer program integrity
- computer programs
- Earth Resources Information System
- investigation
- mission planning
- ∞ missions
- ∞ operations
- program trend line analysis
- research and development
- ∞ research projects
- SEASAT 1
- SEASAT satellites
- SEASAT-B satellite
- Solar Maximum Mission
- Synchronous Earth Observatory satellite
- user manuals (computer programs)

progress

- RT economics
- management
- planning
- ∞ properties

progressions

- GS analysis (mathematics)
- . calculus
- . . series (mathematics)
- . . . **progressions**
- . real variables
- . . series (mathematics)
- . . . **progressions**

prohibition

- RT legal liability
- penalties
- policies
- regulations

project management

- UF *program management*
- GS management
- . **project management**
- RT commerce
- contract management
- critical path method
- GERT
- interfaces
- management planning
- management systems
- mission planning
- multidisciplinary research
- PERT
- program trend line analysis
- projects
- research and development
- ∞ research projects

weapon system management

project planning

- GS planning
- . management planning
- . . **project planning**
- RT allocations
- budgeting
- decisions
- estimates
- forecasting
- goals
- management
- matrix management
- ∞ missions
- NASA Interactive Planning System
- operations research
- priorities
- projects
- risk management

Project SETI

- DEF A program to search for extraterrestrial intelligence by means of radio communication. Used for Search for Extraterrestrial Intelligence and SETI.
- UF *Search for Extraterrestrial Intelligence SETI*
- GS programs
- . NASA programs
- . . NASA space programs
- . . . **Project SETI**
- . projects
- . . **Project SETI**
- . space programs
- . . NASA space programs
- . . . **Project SETI**
- RT extraterrestrial intelligence
- radio communication
- radio signals

projectile cratering

- UF *hypervelocity cratering*
- GS cratering
- . **projectile cratering**
- RT Deep Impact Mission
- ejecta
- hypervelocity impact
- hypervelocity projectiles
- meteorite craters
- meteoritic damage
- meteoroid hazards
- Tempel 1 comet

projectile penetration

USE **terminal ballistics**

projectiles

DEF Objects, especially missiles, fired, thrown, launched, or otherwise projected in any manner, such as bullets, guided rocket missiles, sounding rockets, or pilotless airplanes. Originally, objects, such as bullets or artillery shells, projected by applied external forces.

- GS **projectiles**
- . hypervelocity projectiles
- . precision guided projectiles
- . Sabot projectiles

- RT ammunition
- ballistics
- bombs (ordnance)
- cartridges
- finned bodies
- gunfire
- guns (ordnance)
- incendiary ammunition
- nuclear weapons
- pyrotechnics
- shaped charges
- shrapnel
- terminal ballistics
- terradyamics
- warheads
- weapons

∞ **projection**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Bonne projection
- descriptive geometry

- drawings
- forecasting
- gnomonic projection
- graphic arts
- illuminating
- magnification
- predictions
- projectors
- trends

projective geometry

- GS geometry
- . Euclidean geometry
- . . **projective geometry**
- . . . Mercator projection
- RT analytic geometry
- descriptive geometry
- gnomonic projection
- reciprocal theorems

projectors

- SN (LIGHT AND IMAGE)
- RT beacons
- illuminating
- luminaires
- motion pictures
- photogrammetry
- photographic equipment
- photography
- printers
- ∞ projection
- searchlights

projects

- GS programs
- . **projects**
- . . Advent Project
- . . AgRISTARS project
- . . Alouette project
- . . Apollo project
- . . Apollo Soyuz test project
- . . Argus project
- . . ASSET project
- . . ATLIT project
- . . BIOS project
- . . Bumblebee project
- . . Centaur project
- . . Defender project
- . . Earth & Ocean Physics Applications Program
- . . Echo project
- . . eclipse project
- . . Experimental Reflector Orbital Shot Proj
- . . FIRE (climatology)
- . . Galileo project
- . . Gemini project
- . . Geosari project
- . . Harvard Radio Meteor Project
- . . Helios Project
- . . ISCCP Project
- . . Jupiter project
- . . Magellan project (NASA)
- . . Mars 69 project
- . . Mars 71 project
- . . Mercury project
- . . NEW MOONS project
- . . Nike project
- . . Nimbus project
- . . OPEN Project
- . . Pioneer project
- . . Project SETI
- . . Radio Attenuation Measurement project
- . . rand project
- . . Ranger project
- . . . Agena B Ranger Program
- . . CERES (experiment)
- . . Next Generation Space Telescope project
- . . Rover project
- . . SAIL project
- . . Saturn project
- . . Scanner project
- . . Scout project
- . . Seafarer project
- . . SQUID project
- . . Submarine Integrated Control project
- . . Success project

- .. Surface Meteorology and Solar Energy project
 - .. Surface Radiation Budget project
 - .. Surveyor project
 - .. Synchronous Communications Satellite Proj
 - .. Telstar project
 - .. Themis project
 - .. TIROS project
 - .. Titan project
 - .. Vanguard project
 - .. Voyager project
 - .. West Ford project
 - RT bureaus (organizations)
 - contracts
 - estimating
 - ∞ missions
 - ∞ operations
 - project management
 - project planning
 - ∞ research projects
 - tasks
 - teams
- prokaryotes**
- GS cells (biology)
 - . **prokaryotes**
 - RT bacteria
 - biological evolution
 - cytology
 - eukaryotes
 - molecular biology
- prolate spheroids**
- DEF Ellipsoids of revolutions, the longer axis of which is the axis of revolution.
 - GS geometry
 - . Euclidean geometry
 - .. analytic geometry
 - ... spheroids
 - ... **prolate spheroids**
 - RT oblate spheroids
- prolateness**
- RT shapes
- Prolog (programming language)**
- GS languages
 - . programming languages
 - .. **Prolog (programming language)**
 - RT artificial intelligence
 - computer programming
 - expert systems
- prolongation**
- GS extensions
 - . **prolongation**
 - RT time
- promethazine**
- GS drugs
 - . antihistaminics
 - .. **promethazine**
 - organic compounds
 - . amines
 - .. **promethazine**
 - . cyclic compounds
 - .. heterocyclic compounds
 - ... **promethazine**
- Prometheus**
(added July 1995)
- DEF A natural satellite of Saturn, orbiting at a mean distance of 139,350 kilometers.
 - GS celestial bodies
 - . natural satellites
 - .. Saturn satellites
 - ... **Prometheus**
 - RT Saturn (planet)
- promethium**
- GS chemical elements
 - . rare earth elements
 - .. **promethium**
 - ... promethium isotopes
 - metals
 - . rare earth elements
 - .. **promethium**
- ... promethium isotopes
- promethium 146*
- USE **promethium isotopes**
- promethium isotopes**
- UF *promethium 146*
 - GS chemical elements
 - . nuclides
 - .. isotopes
 - ... **promethium isotopes**
 - . rare earth elements
 - .. promethium
 - ... **promethium isotopes**
 - metals
 - . rare earth elements
 - .. promethium
 - ... **promethium isotopes**
- prominences**
- GS **prominences**
 - . solar prominences
 - RT solar activity
- promotion**
- RT display devices
 - increasing
 - public relations
 - upgrading
- prone position**
- RT rest
 - sitting position
 - supine position
- Prony series**
- GS analysis (mathematics)
 - . calculus
 - .. series (mathematics)
 - ... **Prony series**
 - . real variables
 - .. series (mathematics)
 - ... **Prony series**
- proofs*
- USE **proving**
- ∞ **propagation**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF The spreading abroad or sending forward, as of radiant energy. Used for propagators.
 - UF *propagators*
 - RT acoustic propagation
 - attenuation
 - crack propagation
 - diffraction propagation
 - diffusion
 - electromagnetic radiation
 - flame propagation
 - propagation (extension)
 - self propagation
 - stress propagation
 - transequatorial propagation
 - transmission
 - wave propagation
- propagation (extension)**
- GS **propagation (extension)**
 - . crack propagation
 - . flame propagation
 - RT ∞ propagation
- propagation modes**
- GS modes
 - . **propagation modes**
 - .. whispering gallery modes
 - RT antipodes
 - circular waveguides
 - electromagnetic surface waves
 - evanescent waves
 - field mode theory
 - mode transformers
 - multimode resonators
 - propagation velocity
 - shock wave interaction
 - wave interaction
 - wave propagation
- waveguides
- propagation velocity**
- GS rates (per time)
 - . **propagation velocity**
 - velocity
 - . **propagation velocity**
 - RT electromagnetic radiation
 - group velocity
 - phase isotopy
 - propagation modes
 - wave propagation
- propagators*
- USE **propagation**
- propane**
- GS organic compounds
 - . hydrocarbons
 - .. aliphatic hydrocarbons
 - ... alkanes
 - ... **propane**
 - RT cyclopropane
 - hydrocarbon fuels
 - nitropropane
- propargyl groups**
- DEF Crosslinking agents for certain aromatic polyamides used as matrix resins in fiber composites.
 - GS organic compounds
 - . **propargyl groups**
 - RT ethers
 - getters
 - phenyls
- ∞ **propellant actuated devices**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT ejection seats
 - explosive devices
 - propellant actuated instruments
 - rocket engines
- propellant actuated instruments**
- RT actuators
 - controllers
 - ∞ instruments
 - measuring instruments
 - ∞ propellant actuated devices
- propellant additives**
- GS additives
 - . **propellant additives**
 - . . propellant binders
 - .. solid rocket binders
 - RT antiicing additives
 - antioxidants
 - catalysts
 - composite propellants
 - corrosion prevention
 - gelled propellants
 - inhibitors
 - plasticizers
 - storable propellants
- propellant binders**
- GS additives
 - . propellant additives
 - .. **propellant binders**
 - ... solid rocket binders
 - binders (materials)
 - . **propellant binders**
 - . . solid rocket binders
 - RT composite propellants
 - glycidyl azide polymer
 - rocket propellants
 - solid propellants
- propellant casting**
- GS castings
 - . **propellant casting**
 - forming techniques
 - . casting
 - .. **propellant casting**
- propellant chemistry**
- RT ∞ chemistry
 - solid propellant combustion

propellant combustion

thermochemistry

propellant combustion

- GS combustion
 - . **propellant combustion**
 - . . solid propellant combustion
 - . . . solid propellant ignition
- RT axial modes
- combustion efficiency
- combustion stability
- erosive burning
- fuel combustion
- hydrocarbon combustion
- ignition
- metal combustion
- reacting flow
- turbulent combustion
- velocity coupling

propellant consumption

- (added June 1995)
- GS consumption
 - . **propellant consumption**
- RT burning rate
- combustion efficiency
- fuel consumption
- propellant tanks
- rocket propellants
- solid propellant combustion

propellant decomposition

- GS decomposition
 - . **propellant decomposition**
- RT endothermic fuels
- fuel corrosion
- inhibitors
- monopropellants
- storable propellants

propellant evaporation

- GS phase transformations
 - . vaporizing
 - . . evaporation
 - . . . **propellant evaporation**
- RT evaporative cooling
- storable propellants

propellant explosions

- DEF Detonations of propellants as a result of motor malfunction.
- GS explosions
 - . chemical explosions
 - . . **propellant explosions**
- RT detonation
- implosions
- rocket engines

propellant grains

- RT burning rate
- ∞ grains
- solid propellants
- solid rocket propellants

propellant mass ratio

- GS ratios
 - . mass ratios
 - . . **propellant mass ratio**
- RT payload mass ratio
- pressure ratio
- propulsion system performance
- propulsive efficiency
- specific impulse
- stage separation

propellant oxidizers

- USE **rocket oxidizers**

propellant properties

- GS **propellant properties**
 - . propellant sensitivity
 - . propellant storability
- RT chemical properties
- elastic properties
- mechanical properties
- ∞ physical properties
- ∞ properties
- thermodynamic properties

propellant sensitivity

- GS propellant properties

. **propellant sensitivity**

- sensitivity
- . **propellant sensitivity**
- RT ignition temperature
- impact resistance
- shock resistance
- spontaneous combustion
- storable propellants

propellant sprays

- RT fuel injection
- fuel sprays
- liquid injection
- liquid rocket propellants
- sprayers

propellant storability

- GS propellant properties
 - . **propellant storability**
- RT fuel corrosion
- inhibitors
- storable propellants

propellant storage

- RT consumables (spacecraft)
- expulsion bladders
- fuel tank pressurization
- fuel tanks
- ground support equipment
- handling equipment
- missile storage
- rocket propellants
- space storage
- storable propellants
- ∞ storage
- underground storage

propellant tanks

- UF *rocket propellant tanks*
- Shuttle Superlightweight Tank*
- SLWT (propellant tank)*
- GS tanks (containers)
 - . **propellant tanks**
- RT cylindrical tanks
- expulsion bladders
- external tanks
- fluid filled shells
- fuel tank pressurization
- fuel tanks
- liquid filled shells
- liquid propellant rocket engines
- liquid sloshing
- pressure vessels
- propellant consumption
- spherical tanks
- storage tanks
- tank geometry
- ullage

propellant tests

- RT chemical compatibility
- cold flow tests
- corrosion tests
- engine tests
- fuel tests
- interior ballistics
- ∞ materials tests
- missile tests
- propulsive efficiency
- stability tests
- ∞ tests

propellant transfer

- GS fluid flow
 - . fuel flow
 - . . **propellant transfer**
- materials handling
- . **propellant transfer**
- RT fuel control
- fuel systems
- liquid sloshing
- refueling

propellants

- DEF Any agents used for consumption or combustion in rockets and from which the rockets derive their thrust, such as fuels, oxidizers, additives, catalysts, or any compounds or mixture of these; specifically, fuels, oxidants, or a combination or mixture of fuels and oxidants

used in propelling rockets. Propellants are commonly in either liquid or solid form.

GS propellants

- . colloidal propellants
- . double base propellants
- . . double base rocket propellants
- . gelled propellants
- . . gelled rocket propellants
- . gun propellants
- . high energy propellants
- . . Domino propellants
- . high temperature propellants
- . hybrid propellants
- . hydrazine nitroform
- . hydrogen azides
- . nitrasol explosives
- . pentolite
- . RDX
- . rocket propellants
- . . gaseous rocket propellants
- . . liquid rocket propellants
- . . . cryogenic rocket propellants
- . . . gelled rocket propellants
- . . . hypergolic rocket propellants
- . . . monopropellants
- . . . RP-1 rocket propellants
- . . . slurry propellants
- . . . slush hydrogen
- . . . aerazine
- . . nitramine propellants
- . . solid rocket propellants
- . . . double base rocket propellants
- . . . HMX
- . . . HTPB propellants
- . . . metal propellants
- . . TAGN
- . . TATB
- . solid propellants
- . . case bonded propellants
- . . composite propellants
- . . nitramine propellants
- . . plastic propellants
- . . solid rocket propellants
- . . . double base rocket propellants
- . . . HMX
- . . . HTPB propellants
- . . . metal propellants
- . storable propellants
- . tetryl
- RT ammunition
- ascent propulsion systems
- auxiliary propulsion
- ballistics
- burning rate
- cartridges
- chemical fuels
- ∞ energy sources
- explosives
- fuel tanks
- fuels
- fulminates
- guns (ordnance)
- incendiary ammunition
- oxetane polymers
- ∞ power supplies
- propulsion
- spacecraft power supplies
- spacecraft propulsion
- specific impulse
- torpedoes

propeller blades

- GS airfoils
 - . **propeller blades**
- RT blade tips
- ∞ blades
- fan blades
- feathering
- propellers
- prop-fan technology
- rotary wings
- synchronphasing

propeller drive

- GS mechanical drives
 - . **propeller drive**
 - . . helicopter propeller drive
- RT contrarotating propellers
- marine propulsion

- propellers
underwater propulsion
- propeller efficiency**
GS efficiency
. propulsive efficiency
. . . **propeller efficiency**
RT contrarotating propellers
power efficiency
propellers
prop-fan technology
- propeller fans**
GS propellers
. **propeller fans**
RT ducted fans
 ∞ fans
lift fans
prop-fan technology
- propeller noise**
(added July 1989)
GS elastic waves
. sound waves
. . . noise (sound)
. . . . aircraft noise
. **propeller noise**
. flow noise
. aerodynamic noise
. **propeller noise**
RT acoustic retrofitting
aeroacoustics
blade slap noise
engine noise
Flowcs Williams-Hawkings equation
mufflers
noise intensity
noise measurement
noise prediction (aircraft)
noise reduction
sound fields
sound transmission
- propeller slipstreams**
GS wakes
. aircraft wakes
. . . slipstreams
. . . . **propeller slipstreams**
. turbulent wakes
. . . slipstreams
. . . . **propeller slipstreams**
RT interference drag
- propellers**
GS **propellers**
. contrarotating propellers
. propeller fans
. shrouded propellers
. tilted propellers
. variable pitch propellers
RT actuator disks
feathering
propeller blades
propeller drive
propeller efficiency
ships
- proper motion**
(added July 2005)
DEF The motion of a celestial object perceived with respect to the celestial sphere.
GS motion
. **proper motion**
RT angular velocity
astrometry
astronomical coordinates
celestial reference systems
celestial sphere
stellar motions
- ∞ **properties**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *attributes*
RT acoustic properties
biodegradability
chemical properties
creep properties
dielectric properties
dynamic characteristics
- elastic properties
electrical properties
electromagnetic properties
hydrophobicity
hygral properties
macroscopic equations
magnetic properties
 ∞ materials science
mechanical properties
optical properties
 ∞ physical properties
plastic properties
porosity
prejudices
progress
propellant properties
proximity
recoverability
regularity
shear properties
structural properties (geology)
surface properties
tensile properties
thermochemical properties
thermodynamic properties
thermophysical properties
transport properties
turbidity
virtual properties
- propfan technology*
USE **prop-fan technology**
- prop-fan technology**
DEF Technology of a small diameter, highly loaded, many-bladed variable pitch advanced turbo-prop.
UF *propfan technology*
RT propeller blades
propeller efficiency
propeller fans
turbo-prop engines
- prophylaxis**
RT diseases
immunology
- propionic acid**
GS acids
. carboxylic acids
. . . fatty acids
. . . . **propionic acid**
organic compounds
. carboxylic acids
. . . fatty acids
. . . . **propionic acid**
- proportion**
RT distributing ratios
- proportional control**
DEF Control of an aircraft, rocket or spacecraft in which the control surface deflection is proportional to the movement of the remote controls.
GS automatic control
. **proportional control**
RT ∞ control
control equipment
feedback control
off-on control
proportional navigation
servocontrol
- proportional counters**
GS ionization chambers
. **proportional counters**
measuring instruments
. counters
. . . radiation counters
. . . . **proportional counters**
. radiation measuring instruments
. . . radiation counters
. . . . **proportional counters**
RT anticoincidence detectors
dosimeters
Geiger counters
- neutron counters
- proportional limit**
UF *elastic strength*
GS mechanical properties
. elastic properties
. . . **proportional limit**
range (extremes)
. **proportional limit**
RT critical loading
modulus of elasticity
stress-strain diagrams
- proportional navigation**
(added July 1998)
GS navigation
. **proportional navigation**
RT homing
interception
line of sight
missile control
proportional control
rendezvous guidance
terminal guidance
- proposals**
(added February 1992)
GS documents
. **proposals**
RT contracts
cost analysis
reports
research and development
- proprioception**
UF *kinesthesia*
GS perception
. sensory perception
. . . **proprioception**
. . . . autokinesis
RT gravity perception
kinesthesia
- proprioceptors**
GS anatomy
. sense organs
. . . **proprioceptors**
receptors (physiology)
. **proprioceptors**
RT baroreceptors
nervous system
sensitometry
- propulsion**
GS **propulsion**
. ascent propulsion systems
. auxiliary propulsion
. chemical propulsion
. . . hybrid propulsion
. descent propulsion systems
. electric propulsion
. . . electromagnetic propulsion
. . . . magnetic sails
. . . electrostatic propulsion
. . . . ion propulsion
. . . laser propulsion
. . . plasma propulsion
. . . solar electric propulsion
. jet propulsion
. low thrust propulsion
. . . electromagnetic propulsion
. . . . magnetic sails
. . . electrostatic propulsion
. . . . ion propulsion
. . . man operated propulsion systems
. . . photonic propulsion
. . . laser propulsion
. . . plasma propulsion
. . . solar propulsion
. . . . solar electric propulsion
. . . . solar thermal propulsion
. marine propulsion
. . . underwater propulsion
. . . . submarine propulsion
. nuclear propulsion
. . . fusion propulsion
. . . nuclear electric propulsion
. space station propulsion
. spacecraft propulsion
. . . electromagnetic propulsion

propulsion system configurations

- . . . magnetic sails
- . . . electrostatic propulsion
- . . . ion propulsion
- . . matter-antimatter propulsion
- . . negative matter propulsion
- . . photonic propulsion
- . . laser propulsion
- . . plasma propulsion
- . . solar propulsion
- . . . solar electric propulsion
- . . . solar thermal propulsion
- RT aeronautical engineering
 - ∞ aircraft
 - ∞ astronautics
 - ∞ drives
 - engines
 - exhaust gases
 - fuel tank pressurization
 - fuel tanks
 - high impulse
 - locomotion
 - mass drivers
 - missiles
 - post boost propulsion system
 - propellants
 - propulsive efficiency
 - pulling
 - pushing
 - rocket propellants
 - solar sails
 - space flight
 - Space Shuttle Main Engine
 - space tugs
 - thrust
- propulsion system configurations**
 - GS **propulsion system configurations**
 - . ascent propulsion systems
 - . descent propulsion systems
 - RT aerodynamic configurations
 - aerospike engines
 - aircraft configurations
 - auxiliary propulsion
 - ∞ configurations
 - convertible fan-shaft engines
 - laser propulsion
 - launch vehicle configurations
 - missile configurations
 - post boost propulsion system
 - space station propulsion
 - spacecraft configurations
 - ∞ systems
 - topping cycle engines
- propulsion system performance**
 - RT cold flow tests
 - combustion efficiency
 - ∞ performance
 - power efficiency
 - propellant mass ratio
 - propulsive efficiency
 - rocket thrust
 - solar thermal propulsion
 - specific impulse
 - ∞ systems
 - systems health monitoring
 - thermodynamic efficiency
 - total impulse
- propulsive efficiency**
 - DEF The efficiency with which energy available for propulsion is converted into thrust by a rocket engine.
 - GS efficiency
 - . **propulsive efficiency**
 - . . propeller efficiency
 - RT combustion efficiency
 - engine tests
 - laser propulsion
 - multistage rocket vehicles
 - nozzle efficiency
 - power efficiency
 - propellant mass ratio
 - propellant tests
 - propulsion
 - propulsion system performance
 - specific impulse
 - thermodynamic efficiency
 - thrust programming

- total impulse
- propyl compounds**
 - RT ∞ chemical compounds
- propyl nitrate**
 - GS alkyl compounds
 - . **propyl nitrate**
 - . esters
 - . nitrate esters
 - . **propyl nitrate**
 - . nitrogen compounds
 - . nitrate esters
 - . . **propyl nitrate**
- propylene**
 - GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkenes
 - . . . **propylene**
- propylene oxide**
 - GS epoxy compounds
 - . **propylene oxide**
- prospecting*
 - USE **exploration**
- prostaglandins**
 - GS organic compounds
 - . lipids
 - . . steroids
 - . . . **prostaglandins**
 - . secretions
 - . endocrine secretions
 - . . hormones
 - . . . **prostaglandins**
 - RT biosynthesis
 - prostate gland
- prostate gland**
 - GS anatomy
 - . genitourinary system
 - . . reproductive systems
 - . . . sex glands
 - **prostate gland**
 - . . glands (anatomy)
 - . . sex glands
 - . . . **prostate gland**
 - RT bladder
 - prostaglandins
- prosthetic devices**
 - GS medical equipment
 - . **prosthetic devices**
 - . . artificial ears
 - RT walking machines
- protactinium**
 - GS chemical elements
 - . **protactinium**
 - . . protactinium isotopes
 - . metals
 - . **protactinium**
 - . . protactinium isotopes
- protactinium 234*
 - USE **protactinium isotopes**
- protactinium compounds**
 - GS **protactinium compounds**
 - . protactinium fluorides
 - RT ∞ chemical compounds
 - ∞ metal compounds
- protactinium fluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **protactinium fluorides**
 - . . halides
 - . . fluorides
 - . . . metal fluorides
 - **protactinium fluorides**
 - . . metal halides
 - . . . metal fluorides
 - **protactinium fluorides**
 - . . . **protactinium fluorides**
 - protactinium compounds

- . **protactinium fluorides**
- protactinium isotopes**
 - UF *protactinium 234*
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **protactinium isotopes**
 - . protactinium
 - . . **protactinium isotopes**
 - . metals
 - . protactinium
 - . . **protactinium isotopes**
- protease**
 - GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **protease**
 - . organic compounds
 - . proteins
 - . . enzymes
 - . . . **protease**
- protection**
 - GS **protection**
 - . acceleration protection
 - . circuit protection
 - . corrosion prevention
 - . environment protection
 - . eye protection
 - . meteoroid protection
 - . radiation protection
 - . . radiation shielding
 - . . . solar radiation shielding
 - . planetary protection
 - . thermal protection
 - . . planetary quarantine
 - RT accident prevention
 - airport security
 - civil defense
 - coatings
 - countermeasures
 - flying ejection seats
 - hazards
 - housing
 - insulation
 - prevention
 - protectors
 - ∞ resistance
 - safety
 - safety devices
 - shielding
 - warning
 - warning systems
- protective clothing**
 - GS clothing
 - . **protective clothing**
 - . . helmets
 - . . pressure suits
 - . . . space suits
 - extravehicular mobility units
 - . . vapor barrier clothing
 - RT armor
 - chemical defense
 - coveralls
 - emergency life sustaining systems
 - flight clothing
 - gloves
 - goggles
 - masks
 - safety devices
 - shoes
- protective coatings**
 - UF *ceramal protective coatings*
 - sprayed protective coatings*
 - GS coatings
 - . **protective coatings**
 - . . anodic coatings
 - . . ceramic coatings
 - . . primers (coatings)
 - . . refractory coatings
 - RT alkyd resins
 - aluminides
 - anodizing
 - carbon nitrides
 - cladding
 - ∞ construction materials

- corrosion
desensitizing
electroplating
encapsulating
finishes
glass coatings
glazes
gold coatings
HVOF thermal spraying
inorganic coatings
lacquers
metal coatings
nickel coatings
optical coatings
paints
plastic coatings
plating
rubber coatings
sprayed coatings
surface finishing
transgranular corrosion
varnishes
waterproofing
zinc coatings
- protectors**
GS **protectors**
. ear protectors
RT bumpers
∞ containers
enclosures
fairings
housings
protection
safety devices
∞ screens
sheaths
shielding
- protein crystal growth**
(added March 1989)
GS growth
. crystal growth
. . . **protein crystal growth**
RT protein synthesis
proteins
space processing
- protein denaturation*
USE **biopolymer denaturation**
- protein metabolism**
GS metabolism
. **protein metabolism**
. . . lipid metabolism
RT glucocorticoids
protein synthesis
synthetic food
- protein synthesis**
DEF Process by which protein molecules are formed.
RT biological evolution
chemical evolution
protein crystal growth
protein metabolism
- proteinoids**
GS biopolymers
. proteins
. . . **proteinoids**
organic compounds
. proteins
. . . **proteinoids**
- proteins**
GS biopolymers
. **proteins**
. . . albumins
. . . aspartates
. . . calmodulin
. . . elastin
. . . enzymes
. . . aldolase
. . . amidase
. . . carbonic anhydrase
. . . catalase
. . . cholinesterase
. . . cytochromes
. . . dehydrogenases
. . . hexokinase
. . . lysozyme
. . . nuclease
. . . oxidase
. . . papain
. . . pepsin
. . . phosphatases
. . . protease
. . . renin
. . . thrombin
. . . trypsin
. . . fibrin
. . . globulins
. . . fibrinogen
. . . gamma globulin
. . . hemoglobin
. . . carboxyhemoglobin
. . . oxyhemoglobin
. . . keratins
. . . lipoproteins
. . . luminescent proteins
. . . melanin
. . . myoglobin
. . . myosins
. . . osteocalcin
. . . phytochrome
. . . proteinoids
. . . prothrombin
. . . protoproteins
. . . tumor suppressor proteins
RT adrenocorticotropin (ACTH)
alanine
biopolymer denaturation
collagens
cysteamine
cysteine
∞ food
macromolecules
nucleic acids
nucleotides
∞ nutrients
peptides
polynucleotides
polypeptides
protein crystal growth
- proteome
protoplasm
serums
synthetic food
- proteome**
(added September 2001)
DEF An organism's protein complement as coded for by its genome.
RT genome
molecular biology
proteins
- Proteus**
(added July 1995)
DEF A natural satellite of Neptune, orbiting at a mean distance of 117,600 kilometers.
GS celestial bodies
. natural satellites
. . . Neptune satellites
. . . **Proteus**
RT Neptune (planet)
- prothrombin**
GS biopolymers
. proteins
. . . **prothrombin**
organic compounds
. proteins
. . . **prothrombin**
RT thrombin
- protium*
USE **light water**
- protobiology**
RT abiogenesis
biological diversity
biological evolution
∞ biology
chemical evolution
paleontology
viruses
- protocol (computers)**
GS **protocol (computers)**
. carrier sense multiple access
. Ethernet
RT channels (data transmission)
communication networks
computer networks
computer security
data links
data processing
data transmission
interoperability
local area networks
networks
packet switching
World Wide Web
- protogalaxies**
(added May 2002)
DEF Clouds of hydrogen gas and dark matter hypothesized to give rise to galaxies.
UF *primordial galaxies*
GS celestial bodies
. galaxies
. . . **protogalaxies**
RT galactic clusters
galactic evolution
gravitational collapse
star formation
- Proton 1 satellite**
GS artificial satellites
. Soviet satellites
. . . Proton satellites
. . . **Proton 1 satellite**
- Proton 2 satellite**
GS artificial satellites
. Soviet satellites
. . . Proton satellites
. . . **Proton 2 satellite**
- Proton 3 satellite**
GS artificial satellites
. Soviet satellites
. . . Proton satellites

Proton 4 satellite

- . . . **Proton 3 satellite**
 - space commercialization
 - thermonuclear reactions
- Proton 4 satellite**
 - GS artificial satellites
 - . Soviet satellites
 - . . . Proton satellites
 - . . . **Proton 4 satellite**
- proton beams**
 - GS beams (radiation)
 - . particle beams
 - . . **proton beams**
 - RT neutron beams
- proton belts**
 - GS particles
 - . charged particles
 - . . magnetically trapped particles
 - . . . radiation belts
 - **proton belts**
 - corpuscular radiation
 - radiation belts
 - **proton belts**
 - trapped particles
 - magnetically trapped particles
 - radiation belts
 - **proton belts**
 - RT ∞ belts
 - inner radiation belt
 - outer radiation belt
- proton damage**
 - GS damage
 - . **proton damage**
- proton density (concentration)**
 - GS density (number/volume)
 - . particle density (concentration)
 - . . ion density (concentration)
 - . . . **proton density (concentration)**
 - magnetospheric proton density
 - RT atmospheric density
 - atom concentration
 - plasma density
 - space density
- proton energy**
 - GS particle energy
 - . **proton energy**
 - RT activation energy
 - electron energy
 - ∞ energy
 - kinetic energy
 - surface energy
- proton flux density**
 - SN (LIMITED TO PROTON EMISSION OR DETECTION RATE PER UNIT AREA)
 - GS rates (per time)
 - . flux density
 - . . radiant flux density
 - . . . particle flux density
 - **proton flux density**
 - RT irradiance
 - radiancy
 - radiation counters
 - solar flux density
- proton impact**
 - GS impact
 - . **proton impact**
 - RT electron impact
 - point impact
- proton irradiation**
 - GS irradiation
 - . ion irradiation
 - . . **proton irradiation**
 - RT deuteron irradiation
 - electron radiation
- Proton launch vehicle**
 - (added April 1995)
 - GS launch vehicles
 - . heavy lift launch vehicles
 - . . **Proton launch vehicle**
 - RT international cooperation
 - Russian Space Program
- proton magnetic resonance**
 - GS resonance
 - . magnetic resonance
 - . . nuclear magnetic resonance
 - . . . **proton magnetic resonance**
- proton masers**
 - GS stimulated emission devices
 - . masers
 - . . **proton masers**
 - RT magnetometers
- proton precession**
 - GS gyration
 - . precession
 - . . **proton precession**
 - RT free vibration
- proton precipitation**
 - GS particle precipitation
 - . **proton precipitation**
 - RT auroras
 - electron precipitation
 - particles
 - ∞ precipitation
 - radiation belts
 - trapped particles
 - upper atmosphere
- proton protuberances**
 - GS protuberances
 - . **proton protuberances**
- proton resonance**
 - GS resonance
 - . magnetic resonance
 - . . nuclear magnetic resonance
 - . . . **proton resonance**
 - RT nuclear particles
- Proton satellites**
 - GS artificial satellites
 - . Soviet satellites
 - . . **Proton satellites**
 - . . . Proton 1 satellite
 - . . . Proton 2 satellite
 - . . . Proton 3 satellite
 - . . . Proton 4 satellite
 - RT U.S.S.R. space program
- proton scattering**
 - GS nuclear reactions
 - . **proton scattering**
 - scattering
 - . **proton scattering**
 - RT ion scattering
- proton telescopes*
 - USE **particle telescopes**
- proton-antiproton interactions**
 - (added June 1999)
 - GS particle interactions
 - . elementary particle interactions
 - . . **proton-antiproton interactions**
 - RT annihilation reactions
 - antiprotons
 - high energy interactions
 - matter-antimatter propulsion
- proton-proton reactions**
 - DEF Thermonuclear reactions in which two protons collide at very high velocities and combine to form deuterons. The resultant deuterons may capture other protons to form tritium and the latter may undergo proton capture to form helium. The proton-proton reactions are now believed to be the principal sources of energy within the sun and other stars of its class. A temperature of 5 million degrees Kelvin and high hydrogen (proton) concentrations are required for these reactions to proceed at rates compatible with energy emission by such stars.
 - GS nuclear reactions
 - . **proton-proton reactions**
 - RT annihilation reactions
 - ∞ interactions
 - pomerons
- protons**
 - DEF Positively charged subatomic particles having a mass of 1.67252 times 10 to the minus 24 gram, slightly less than that of an electron.
 - GS particles
 - . charged particles
 - . . **protons**
 - . . . recoil protons
 - . . . solar protons
 - . . . elementary particles
 - . . . fermions
 - . . . **protons**
 - recoil protons
 - solar protons
 - RT alpha particles
 - antiprotons
 - baryons
 - cosmic rays
 - deuterons
 - flux density
 - hydrogen ions
 - ions
 - nuclear particles
 - nuclei (nuclear physics)
 - nucleon potential
 - nucleons
 - positive ions
 - radiation belts
 - radiation shielding
 - tritons
- protoplanetary disks**
 - (added March 2001)
 - DEF Circumstellar disks from which planetary systems are created during star formation.
 - RT accretion disks
 - planetary evolution
 - planets
 - protoplanets
 - solar system evolution
 - stellar envelopes
 - stellar evolution
- protoplanets**
 - DEF Transition objects formed during primordial cloud condensation into stellar systems (stars, planets, etc.) which form the nucleus of planetary accretion. Used for planetesimals.
 - UF *planetesimals*
 - GS celestial bodies
 - . **protoplanets**
 - RT cosmology
 - planetary environments
 - planetary evolution
 - planetary mass
 - planets
 - protoplanetary disks
 - solar nebula
 - solar orbits
 - solar system
 - stellar evolution
- protoplasm**
 - RT proteins
- protoplasts**
 - GS cells (biology)
 - . **protoplasts**
- protoproteins**
 - GS biopolymers
 - . proteins
 - . . **protoproteins**
 - organic compounds
 - . proteins
 - . . **protoproteins**
 - RT amino acids
- protosolar nebula*
 - (added June 2001)
 - USE **solar nebula**
- protostars**
 - GS celestial bodies
 - . stars
 - . . **protostars**
 - . . . pre-main sequence stars
 - T Tauri stars

RT brown dwarf stars
solar nebula
star formation
stellar evolution
stellar mass accretion

prototypes

DEF Preliminary type, form, or instance of systems that serve as models for later stages or for the final, completed version of the systems.
RT breadboard models
∞ patterns
pilot plants
rapid prototyping

protozoa

GS animals
. **protozoa**
. . amoeba
. . . pelomyxa
. . Flagellata
. . . Euglena
. . . trypanosome
. . paramecia
microorganisms
. **protozoa**
. . amoeba
. . . pelomyxa
. . Flagellata
. . . Euglena
. . . trypanosome
. . paramecia
RT microspores
spores

protractors

GS measuring instruments
. **protractors**
RT angles (geometry)

protuberances

SN (COMPONENTS MOUNTED EXTERNAL TO THE STRUCTURE)
GS **protuberances**
. proton protuberances
RT aerodynamic configurations
aerodynamic interference
aircraft antennas
aircraft parts
airframes
∞ blisters
cowlings
domes (structural forms)
external store separation
external stores
fairings
fuel tanks
housings
nacelles
papillae
pitot tubes
radomes
∞ ridges
shells (structural forms)
vortex alleviation
wing-fuselage stores
winglets

proustite

GS arsenic compounds
. arsenides
. . **proustite**
minerals
. **proustite**

Provider aircraft

USE **C-123 aircraft**

proving

UF *confirmation*
demonstration
proofs
validation
verification (proving)
GS **proving**
. theorem proving
RT acceptability
error detection codes
evaluation
examination

mathematical logic
∞ measurement
program verification (computers)
∞ tests

provisioning

RT consumables (spacecrew supplies)
∞ food
life support systems
space rations
stowage (onboard equipment)

proximity

RT distance
∞ properties
tightness

proximity effect (electricity)

DEF Redistribution of current in a conductor caused by the presence of another conductor.
GS electrical properties
. inductance
. . **proximity effect (electricity)**
electromagnetic properties
. inductance
. . **proximity effect (electricity)**
RT ∞ effects
electricity
superconductors (materials)
volt-ampere characteristics

PRTR (reactor)

USE **plutonium recycle test reactor**

prussic acid

USE **hydrocyanic acid**

pseudomonas

GS microorganisms
. bacteria
. . **pseudomonas**

pseudonoise

RT random noise

pseudopotentials

DEF Factors in an approximate method for calculation of energy bands in solids by the use of approximation which includes the many body effect.
RT impurities
melting
semiconductors (materials)

pseudorandom sequences

RT random numbers
∞ signals

PSP (paints)

(added March 2001)

USE **pressure sensitive paints**

psychiatry

GS medical science
. **psychiatry**
. . neuropsychiatry
. . social psychiatry
RT brain
military psychology
psychology
psychotherapy

psychoacoustics

GS acoustics
. **psychoacoustics**
psychology
. psychophysics
. . **psychoacoustics**
RT auditory perception
auditory signals
bells
bioacoustics
noise intensity
psychological effects
psychological factors

psycholinguistics

DEF Study of linguistic behavior such as conditioning by psychological factors including the speaker's and listener's culturally deter-

mined categories of expression and comprehension.

GS linguistics
. **psycholinguistics**
RT intelligibility
phonemes
phonemics
robots
semantics
syllables
syntax

psychological effects

GS **psychological effects**
. desynchronization (biology)
. illusions
. . hallucinations
. . moon illusion
. . oculogravic illusions
. . optical illusion
. . . elevator illusion
. jet lag
RT afterimages
aviation psychology
biological effects
boredom
comfort
confidence
disorientation
∞ effects
emotions
environmental engineering
environments
frustration
human factors engineering
human reactions
humidity
military psychology
moods
psychoacoustics
reaction time
space adaptation syndrome
space psychology
stress (biology)
stress (psychology)
Taylor manifest anxiety scale

psychological factors

RT astronaut performance
aviation psychology
emotional factors
flight stress (biology)
habits
moods
permissivity
psychoacoustics
psychosomatics
reward (psychology)
sex factor
space psychology
∞ stimuli
stress (psychology)

psychological indexes

USE **psychological tests**

psychological sets

GS psychology
. **psychological sets**

psychological tests

UF *psychological indexes*
GS **psychological tests**
. Rorschach tests
RT certification
environmental tests
intelligence tests
limen
military psychology
personality tests
pilot selection
psychometrics
ratios
Skinner boxes
Taylor manifest anxiety scale
∞ tests

psychology

DEF The science which studies the functions of the mind, such as sensation, perception,

psychometrics

memory, thought, and, more broadly the behavior of an organism in relation to its environment.

- GS **psychology**
 - . aviation psychology
 - . cognitive psychology
 - . military psychology
 - . psychological sets
 - . psychophysics
 - . . psychoacoustics
 - . space psychology
- RT biofeedback
- boredom
- brain
- cybernetics
- detachment
- diagnosis
- disorders
- disorientation
- emotional factors
- emotions
- extroversion
- frustration
- inspiration
- intellect
- introversion
- morale
- prejudices
- psychiatry
- psychometrics
- psychotherapy
- Rorschach tests
- stress (psychology)
- subliminal stimuli

psychometrics

- RT diagnosis
- education
- military psychology
- norms
- personality tests
- psychological tests
- psychology
- psychomotor performance
- psychophysics
- psychosomatics
- Skinner boxes

psychomotor performance

DEF Of or pertaining to muscular action ensuing directly from a mental process, as in the coordinated manipulation of aircraft or spacecraft controls.

- GS sensorimotor performance
 - . **psychomotor performance**
 - . . psychosomatics
- RT abilities
- biocontrol systems
- human performance
- human reactions
- mental performance
- operator performance
- physiological tests
- pilot performance
- psychometrics
- reaction time
- workloads (psychophysiology)

psychopharmacology

DEF The science that deals with the action of drugs on mental function.

- GS medical science
 - . pharmacology
 - . . **psychopharmacology**
- RT central nervous system
- central nervous system depressants
- central nervous system stimulants
- drugs
- life sciences
- medical science
- ∞ medicine
- nervous system
- psychotropic drugs

psychophysics

- GS psychology
 - . **psychophysics**
 - . . psychoacoustics
- RT ∞ physics
- psychometrics

∞ science

psychophysiology

- GS physiology
 - . **psychophysiology**
- RT evoked response (psychophysiology)
- information processing (biology)
- ∞ science
- workloads (psychophysiology)

psychoses

- GS **psychoses**
 - . psychotic depression
 - . schizophrenia
- RT detachment
- disorders
- fear
- irrationality
- neuroses

psychosomatics

- GS sensorimotor performance
 - . psychomotor performance
 - . . **psychosomatics**
- RT psychological factors
- psychometrics

psychotherapy

- GS therapy
 - . **psychotherapy**
- RT convulsions
- Gestalt theory
- health
- mental health
- neuropsychiatry
- psychiatry
- psychology
- psychotropic drugs

psychotic depression

- GS psychoses
 - . **psychotic depression**
- RT ∞ depression
- neurotic depression

psychotropic drugs

- GS drugs
 - . **psychotropic drugs**
 - . . marijuana
- RT central nervous system
- narcotics
- neurophysiology
- physiochemistry
- psychopharmacology
- psychotherapy
- sedatives

psychrometers

DEF Instruments for measuring humidity through the use of wet and dry bulb thermometers.

- GS measuring instruments
 - . moisture meters
 - . . hygrometers
 - . . . **psychrometers**
- RT atmospheric moisture
- chemical analysis
- humidity
- humidity measurement
- meteorological instruments

psychrophiles

- RT mesophiles
- microorganisms
- thermophiles

PTM (modulation)

USE **pulse modulation**

Ptolemaeus Crater

- GS craters
 - . lunar craters
 - . . **Ptolemaeus Crater**
- RT meteorite craters

p-type semiconductors

- GS semiconductors (materials)
 - . **p-type semiconductors**
- RT holes (electron deficiencies)
- indium aluminum arsenides

semiconductor junctions

public address systems

- RT ∞ systems
- warning systems

public health

- GS biophysics
 - . health physics
 - . . **public health**
- health
 - . health physics
 - . . **public health**
- RT hazardous material disposal (in space)
- hygiene
- medical services
- nonpoint sources
- occupational diseases
- oral hygiene
- pollution
- sanitation
- urban planning

public law

- GS law (jurisprudence)
 - . **public law**
 - . . liabilities
 - . . . legal liability
 - . . penalties
- RT air law
- insurance (contracts)

public relations

- RT ∞ cooperation
- improvement
- promotion
- upgrading

public speaking

- UF *oratory*
- RT lectures
- speech

publications

USE **documents**

Puck

(added July 1995)

DEF A natural satellite of Uranus, orbiting at a mean distance of 86,010 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Uranus satellites
 - . . . **Puck**
- RT Uranus (planet)

Puerto Rico

- GS landforms
 - . islands
 - . . West Indies
 - . . . **Puerto Rico**
- nations
- . United States
- . . **Puerto Rico**

pulleys

- RT ∞ belts
- blocks
- idlers
- rollers
- wheels
- winches

pulling

- RT ∞ drawing
- ∞ force
- propulsion
- traction

pulling (frequency stability)

USE **frequency pulling**

pulmonary circulation

- GS circulation
 - . blood circulation
 - . . **pulmonary circulation**
- RT alveoli
- artificial cardiac pacemaker
- blood pumps
- heart implantation

lungs
respiratory system

pulmonary functions
RT alveoli
∞ functions
lungs

pulmonary lesions
GS diseases
. **pulmonary lesions**
injuries
. lesions
. . . **pulmonary lesions**
RT lung morphology
lungs
occupational diseases
respiratory diseases

pulsar magnetospheres
(added July 1988)
GS stellar magnetospheres
. **pulsar magnetospheres**
RT magnetic fields
∞ magnetospheres
pulsars
stellar atmospheres
stellar magnetic fields

pulsars
GS celestial bodies
. radio sources (astronomy)
. . . radio stars
. . . **pulsars**
. stars
. . . neutron stars
. . . **pulsars**
. . . radio stars
. . . **pulsars**
RT degenerate matter
gamma ray sources (astronomy)
magnetars
pulsar magnetospheres
quasars
radiation sources
radio astronomy
radio bursts
starquakes
supernova remnants

pulsating flow
USE **unsteady flow**

pulse (cardiovascular)
USE **heart rate**

pulse amplitude
DEF A general term indicating the magnitude of a pulse. Used for pulse height.
UF *pulse height*
GS amplitudes
. **pulse amplitude**
waveforms
. **pulse amplitude**
RT amplitude distribution analysis
electric pulses
photopeak
pulsed radiation
sawtooth waveforms
square waves

pulse amplitude modulation
UF *PAM (modulation)*
GS coding
. signal encoding
. . . pulse modulation
. . . **pulse amplitude modulation**
modulation
. pulse modulation
. . . **pulse amplitude modulation**
RT modems
P.A.C.M. telemetry

pulse charging
DEF Rapid and efficient method for charging electric batteries.
RT battery chargers
electric batteries
electric charge

storage batteries

pulse code modulation
DEF Any modulation which involves a pulse code. Used for PCM (modulation).
UF *PCM (modulation)*
GS coding
. signal encoding
. . . pulse modulation
. . . **pulse code modulation**
. . . . delta modulation
. . . . differential pulse code modulation
modulation
. pulse modulation
. . . **pulse code modulation**
. . . delta modulation
. . . differential pulse code modulation
RT biternary code
decommutators
P.A.C.M. telemetry
PCM telemetry
unified S band

pulse communication
UF *digital communication*
GS telecommunication
. **pulse communication**
. . digital spacecraft television
RT bit error rate
communication networks
data transmission
delta modulation
differential pulse code modulation
digital television
electromagnetic missiles
electromagnetic pulses
frequency division multiplexing
modems
multiple access
multiplexing
orthogonal multiplexing theory
radio communication
radio transmission
satellite transmission
signal transmission
space communication
telegraph systems
telemetry
time division multiple access

pulse compression
DEF The coding and processing of a signal pulse of long time duration to one of short time duration and high range resolution, while maintaining the benefits of high pulse energy.
RT coding
compressing
radar

pulse detonation engines
(added March 2001)
DEF Rocket engines that operate by injecting fuel and oxidizer into long chambers and igniting the mixture with a spark plug or similar device. Quasi-steady thrust levels can be achieved by repeating this cycle at relatively high frequency and/or using more than one combustion chamber operating out of phase.
UF *PDE (engines)*
PDRE (engines)
PDWE (engines)
. *pulse detonation wave engines*
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **pulse detonation engines**
RT air breathing engines
detonation

pulse detonation wave engines
(added March 2001)
USE **pulse detonation engines**

pulse diffraction
GS diffraction
. **pulse diffraction**
RT holographic optical elements
plasma jets
pulsed radiation

wave propagation

pulse Doppler radar
DEF A pulse radar system which utilizes the Doppler effect for obtaining information about the target (not including simple resolution from fixed targets).
GS radar
. Doppler radar
. . . **pulse Doppler radar**
. . . monopulse radar
. . . Shuttle Imaging Radar
. pulse radar
. . . **pulse Doppler radar**
. . . monopulse radar
. . . Shuttle Imaging Radar
RT cancellation circuits
coherent radar

pulse duration
DEF The time interval between the first and last instances at which the instantaneous amplitude reaches a stated fraction of the peak pulse amplitude. Used for light duration and pulse width.
UF *light duration*
pulse width
GS waveforms
. **pulse duration**
RT electric pulses
laser outputs
maser outputs
pulse repetition rate
pulsed radiation
sawtooth waveforms
square waves
time signals
ultrashort pulsed lasers

pulse duration modulation
DEF A form of pulse time modulation in which the duration of a pulse is varied. Used for PDM (modulation), pulse width modulation, and PWM (modulation).
UF *PDM (modulation)*
pulse width modulation
PWM (modulation)
GS coding
. signal encoding
. . . pulse modulation
. . . pulse time modulation
. . . . **pulse duration modulation**
modulation
. pulse modulation
. . . pulse time modulation
. . . **pulse duration modulation**
RT modems

pulse frequency modulation
DEF A form of pulse time modulation in which the pulse repetition rate is the characteristic varied. Used for PFM (modulation).
UF *PFM (modulation)*
GS coding
. signal encoding
. . . frequency modulation
. . . . **pulse frequency modulation**
. . . pulse modulation
. . . . **pulse frequency modulation**
modulation
. frequency modulation
. . . **pulse frequency modulation**
. pulse modulation
. . . **pulse frequency modulation**
RT communication equipment
differential pulse code modulation
modems

pulse frequency modulation telemetry
GS telecommunication
. radio communication
. . . radio telemetry
. . . . **pulse frequency modulation**
telemetry
. telemetry
. . . radio telemetry
. . . . **pulse frequency modulation**
telemetry
transmission
. signal transmission

pulse generators

- . . . telemetry
- radio telemetry
- **pulse frequency modulation telemetry**
- RT communication equipment
- frequency modulation
- modulation
- pulse modulation
- radio transmission
- signal encoding

pulse generators

- RT compulsators
- electric pulses
- function generators
- ∞ generators
- Hartmann-Sprenger tubes
- impulse generators
- laser cavities
- lasers
- plasma generators
- pulse repetition rate
- pulsed radiation
- shock wave generators

pulse heating

- GS hardening (materials)
- . **pulse heating**
- heat treatment
- . annealing
- . . **pulse heating**
- heating
- . transient heating
- . . **pulse heating**
- RT laser heating
- simulated annealing

pulse height

USE **pulse amplitude**

pulse modulation

DEF Modulation of a carrier by a pulse train. Modulation of one or more characteristics of a pulse carrier.

- GS coding
- . signal encoding
- . . **pulse modulation**
- . . . pulse amplitude modulation
- . . . pulse code modulation
- delta modulation
- differential pulse code modulation
- . . . pulse frequency modulation
- . . . pulse time modulation
- pulse duration modulation
- pulse position modulation
- . **pulse modulation**
- . . pulse amplitude modulation
- . . pulse code modulation
- . . . delta modulation
- . . . differential pulse code modulation
- . . pulse frequency modulation
- . . pulse time modulation
- . . . pulse duration modulation
- . . . pulse position modulation
- RT amplitude modulation
- demodulation
- demodulators
- electric pulses
- electromagnetic missiles
- electromagnetic pulses
- frequency modulation
- light modulation
- modems
- modulators
- phase modulation
- pulse frequency modulation telemetry
- pulsed radiation
- radio telemetry
- time division multiplexing
- trigatrons

pulse position modulation

DEF A form of pulse time modulation in which the position in time of a pulse is varied. Also called pulse phase modulation. Used for PPM (modulation).

- UF *PPM (modulation)*
- GS coding

- . signal encoding
- . . pulse modulation
- . . . pulse time modulation
- **pulse position modulation**
- modulation
- . pulse modulation
- . . pulse time modulation
- . . . **pulse position modulation**
- RT modems

pulse radar

DEF A type of radar, designed to facilitate range measurement, in which the transmitted energy is emitted in periodic short pulses.

- GS radar
- . **pulse radar**
- . . pulse Doppler radar
- . . . monopulse radar
- . . . Shuttle Imaging Radar
- RT coherent radar
- continuous wave radar
- Doppler radar
- echo suppressors
- electromagnetic pulses
- meteorological radar
- multistatic radar
- polystation doppler tracking system
- search radar
- surveillance radar
- synchronizers
- tracking radar

pulse rate

- SN (FOR CARDIOVASCULAR PULSE, USE HEART RATE)
- UF *chronotrons*
- GS rates (per time)
- . **pulse rate**
- . . pulse repetition rate
- RT electric pulses
- picosecond pulses
- pulsed radiation

pulse recorders

USE **counters**

pulse repetition rate

- GS rates (per time)
- . pulse rate
- . . **pulse repetition rate**
- RT frequency response
- optical pumping
- pulse duration
- pulse generators
- pulsed lasers

pulse time modulation

DEF Modulation in which the values of instantaneous samples of the modulating wave are caused to modulate the time of occurrence of some characteristic of a pulse carrier. Used for PTM (modulation).

- UF *PTM (modulation)*
- GS coding
- . signal encoding
- . . pulse modulation
- . . . **pulse time modulation**
- pulse duration modulation
- pulse position modulation
- modulation
- . pulse modulation
- . . **pulse time modulation**
- . . . pulse duration modulation
- . . . pulse position modulation

pulse width

USE **pulse duration**

pulse width amplitude converters

- RT ∞ converters
- frequency converters

pulse width modulation

USE **pulse duration modulation**

pulsed arcjet engines

(added March 2001)

USE **pulsed jet engines**

pulsed inductive thrusters

(added April 2001)

DEF Electromagnetic propulsion devices that accelerate a plasma propellant by the JxB Lorentz force, and in which the driving current in the plasma is induced, rather than being introduced through electrodes.

- UF *PIT (rocket engines)*
- GS engines
- . rocket engines
- . . electric rocket engines
- . . . plasma engines
- **pulsed inductive thrusters**
- RT electromagnetic propulsion
- plasma propulsion
- spacecraft propulsion
- ∞ thrusters

pulsed jet engines

DEF Arcjet engines that produce thrust by ejecting a pulsed, high velocity plasma out of a conventional supersonic nozzle. The pulsed arcjet geometry consists of a narrow cylindrical chamber or capillary upstream of the nozzle convergent section. A power supply is used to charge the capacitors of a pulse-forming-network. The power supply ramps up the voltage on the capacitors until the breakdown voltage of the propellant between the electrodes is reached, at which point an arc discharge initiates in the capillary between the electrodes.

- UF *pulsed arcjet engines*
- GS engines
- . rocket engines
- . . electric rocket engines
- . . . electrothermal engines
- arc jet engines
- **pulsed jet engines**
- RT plasma engines
- resistojet engines

pulsed laser deposition

(added December 1992)

- GS deposition
- . laser deposition
- . . **pulsed laser deposition**
- utilization
- . laser applications
- . . laser deposition
- . . . **pulsed laser deposition**
- RT crystal growth
- epitaxy
- excimer lasers
- laser heating
- pulsed lasers
- superconducting films
- vapor deposition

pulsed lasers

- GS stimulated emission devices
- . lasers
- . . **pulsed lasers**
- . . . Q switched lasers
- . . . ultrashort pulsed lasers
- . . . ultraviolet lasers
- RT argon lasers
- carbon dioxide lasers
- gas lasers
- glass lasers
- inertial fusion (reactor)
- laser heating
- laser target interactions
- laser welding
- nitrogen lasers
- pulse repetition rate
- pulsed laser deposition
- ruby lasers
- semiconductor lasers
- TEA lasers
- tube lasers
- waveguide lasers

pulsed plasma thrusters

(added April 2001)

DEF Electromagnetic propulsion devices in which electrical power is used to ablate, ionize, and electromagnetically accelerate atoms and molecules from a block of solid propellant material.

- UF *PPT (rocket engines)*
- GS engines
- . rocket engines

. . electric rocket engines
 . . . plasma engines
 **pulsed plasma thrusters**
 RT electromagnetic propulsion
 plasma propulsion
 spacecraft propulsion
 ∞ thrusters
pulsed radiation
 GS **pulsed radiation**
 . electromagnetic pulses
 . . system generated electromagnetic pulses
 RT continuous radiation
 corpuscular radiation
 elastic waves
 electromagnetic radiation
 gamma ray lasers
 laser damage
 lasers
 picosecond pulses
 pulse amplitude
 pulse diffraction
 pulse duration
 pulse generators
 pulse modulation
 pulse rate
 ∞ radiation
 ∞ rays
pulsejet engines
 DEF Compressorless jet engines in which combustion takes place intermittently producing thrust by a series of explosions, commonly occurring at the approximate resonance frequency of the engine.
 GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **pulsejet engines**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **pulsejet engines**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **pulsejet engines**
 RT detonation
 firing (igniting)
 V-1 missile
pulses
 DEF Short-wave trains of mechanical vibration.
 GS **pulses**
 . electric pulses
 . electromagnetic pulses
 . . system generated electromagnetic pulses
 . geomagnetic pulsations
 . . geomagnetic micropulsations
 . micropulsations
 . . geomagnetic micropulsations
 . picosecond pulses
 . pressure pulses
 RT amplitudes
 intermittency
 solitary waves
pultrusion
 DEF Process of pulling continuous lengths of resin impregnated fiber through a shaped, heated die to produce lengths of reinforced plastic.
 GS forming techniques
 . extruding
 . . **pultrusion**
 RT casting
 composite structures
 dies
 epoxy matrix composites
 fiber composites
 glass fiber reinforced plastics
 hot working
 polymer matrix composites

preimpregnation
 pressing (forming)
 resin matrix composites
pulverizing
 USE **grinding (comminution)**
pumice
 DEF A light-colored, vesicular, glassy rock commonly having the composition of a rhyolite.
 GS rocks
 . igneous rocks
 . . **pumice**
 RT abrasives
 obsidian
 powder (particles)
 soils
pump impellers
 GS rotating bodies
 . rotors
 . . impellers
 . . . **pump impellers**
 RT centrifugal compressors
 centrifugal pumps
pump seals
 GS seals (stoppers)
 . **pump seals**
 RT gaskets
 ∞ glands
 glands (seals)
 hermetic seals
 labyrinth seals
 molecular pumps
 ∞ **pumping**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT blowing
 compressed air
 compressing
 cryopumping
 drainage
 electron pumping
 jet pumps
 laser pumping
 magnetic pumping
 maser pumping
 materials handling
 nuclear pumping
 optical pumping
 plasma pumping
 pumps
 purging
 windmills (windpowered machines)
 windpowered pumps
pumps
 SN (LIMITED TO PUMPS FOR MATERIALS--EXCLUDES HEAT PUMPS)
 UF *hydraulic pumps*
 GS **pumps**
 . axial flow pumps
 . . turbine pumps
 . blood pumps
 . centrifugal pumps
 . diffusion pumps
 . electromagnetic pumps
 . fuel pumps
 . jet pumps
 . rams (pumps)
 . vacuum pumps
 . . condensation pumps
 . . ion pumps
 . . molecular pumps
 . viscopumps
 . windpowered pumps
 RT bellows
 centrifugal compressors
 ejectors
 feed systems
 heat pumps
 hydraulic equipment
 impellers
 injectors
 lubrication systems
 materials handling
 packings (seals)
 pipelines

preburners
 ∞ pumping
 siphons
 stators
 turbomachinery
 vaneless diffusers
punched cards
 DEF Cards on which a pattern of holes or cuts is used to represent data.
 GS cards
 . **punched cards**
 RT computer storage devices
 data recorders
 data recording
 data storage
 readers
punched tapes
 DEF Tapes on which a pattern of holes or cuts is used to represent data.
 RT automatic typewriters
 computer storage devices
 data recording
 magnetic tapes
 readers
 ∞ tapes
punches
 RT dies
 machine tools
 molds
 platens
 presses
 stamping
puncturing
 USE **piercing**
pupa
 RT insects
 larvae
pupil size
 RT pupillometry
pupillometry
 RT biometrics
 dark adaptation
 light adaptation
 ∞ measurement
 pupil size
pupils
 GS anatomy
 . sense organs
 . . eye (anatomy)
 . . . **pupils**
 RT vision
purging
 RT circulation
 clearing
 decontamination
 degassing
 distillation
 evacuating (vacuum)
 flushing
 outgassing
 ∞ pumping
 purification
 relieving
 ∞ separation
 venting
purification
 UF *purifiers*
 GS **purification**
 . air purification
 RT aeration
 antiseptics
 beneficiation
 chemical sterilization
 cleaning
 crystallization
 decontamination
 demineralizing
 desalinization
 dissipation
 distillation

purines

elimination
elution
enrichment
flushing
getters
pasteurizing
polynuclear organic compounds
potable water
purging
purity
rectification
∞ reduction
reduction (chemistry)
refining
scavenging
∞ separation
sewage treatment
solvent extraction
spacecraft sterilization
sterilization
sublimation
ultrapure metals
upgrading
washing
water treatment
zone melting

purifiers

USE **purification**

purines

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **purines**
. . . . adenines
. . . . xanthines
. caffeine
. guanines
. uric acid

purity

RT clarity
concentration (composition)
contaminants
contamination
decontamination
dilution
fineness
pollution
potable liquids
purification
quality
trace contaminants
ultrapure metals
water pollution

purposes

RT goals

pursuit tracking

GS tracking (position)
. **pursuit tracking**
RT infrared tracking
pursuit-evasion games
radar tracking
satellite interceptors

pursuit-evasion games

(added October 1998)
GS games
. **pursuit-evasion games**
RT differential games
evasive actions
interception
optimal control
pursuit tracking
trajectory optimization
zero sum games

pushbroom sensor modes

DEF Spacecraft instrument arrangements in which large numbers of detectors comprising linear arrays are swept by the forward motion of the spacecraft to attain increased fidelity and high sensitivity in the data captured.

GS modes
. **pushbroom sensor modes**
RT arrays
electro-optics

image processing
linear arrays
photodiodes

pushing

RT ∞ force
propulsion

push-pull amplifiers

DEF Amplifiers in which there are two identical signal branch circuits so as to operate in phase opposition and with input and output connections each balanced to ground. Used for balanced amplifiers.

UF *balanced amplifiers*
GS amplifiers
. **push-pull amplifiers**
RT phase modulation
power amplifiers

PWM (modulation)

USE **pulse duration modulation**

pycnometers

RT density (mass/volume)

pylon mounting

RT aerodynamic configurations
aircraft structures
columns (supports)
rigid mounting
structural members
supports
wind tunnel models

pylons

GS supports
. **pylons**
RT columns (supports)
structural members
struts
towers

Pyramid Lake (NV)

GS lakes
. **Pyramid Lake (NV)**
RT Nevada
water management
water resources

pyramidal bodies

RT ∞ bodies
pyramids
reentry vehicles

pyramids

GS geometry
. Euclidean geometry
. . polyhedrons
. . . **pyramids**
RT frustums
pyramidal bodies

pyranometers

DEF Actinometers which measure the combined intensity of incoming direct solar radiation and diffuse sky radiation. The pyranometers consist of a recorder and a radiation sensing element which is mounted so that it views the entire sky. Sometimes called solarimeters.

GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . **pyranometers**
RT photometers
radiometers
sky radiation

pyrazines

DEF Compounds that contain a six-membered heterocyclic ring containing nitrogen atoms in the 1 and 4 positions.

GS **pyrazines**
. azines
. . cyanurates
. . cyanuric acid
. . meclizine
. . methylene blue

. . phenothiazines

Pyrenees Mountains (Europe)

GS landforms
. mountains
. . **Pyrenees Mountains (Europe)**
RT Andorra
France
Spain

pyrenes

GS organic compounds
. hydrocarbons
. . **pyrenes**

Pyrex (trademark)

USE **borosilicate glass**

pyridine nucleotides

GS organic compounds
. nucleotides
. . **pyridine nucleotides**
phosphorus compounds
. phosphates
. . **pyridine nucleotides**

pyridines

DEF Compounds that contain a six-membered heterocyclic ring containing one nitrogen atom.

GS bases (chemical)
. **pyridines**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **pyridines**
RT Karl Fischer reagent
piperidine
quinoline

pyridoxine

UF *vitamin B 6*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **pyridoxine**
vitamins
. **pyridoxine**

pyrimidines

DEF Compounds that contain a six-membered heterocyclic ring containing nitrogen atoms in the 1 and 3 positions.

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **pyrimidines**
. . . . alloxan
. . . . thymidine
. . . . thymine
. . . . uracil

pyrites

GS chalcogenides
. sulfides
. . **pyrites**
iron compounds
. **pyrites**
minerals
. **pyrites**
sulfur compounds
. sulfides
. . **pyrites**

Pyroceram (trademark)

GS ceramics
. **Pyroceram (trademark)**
glass
. **Pyroceram (trademark)**

pyroelectricity

GS electrical properties
. **pyroelectricity**
thermodynamic properties
. thermophysical properties
. . **pyroelectricity**
RT piezoelectricity
polarization (charge separation)

pyrogen

GS gases

. flammable gases
 . . **pyrogen**
 RT torches

pyrographalloy
 USE **composite materials**
pyrolytic graphite
refractory materials

pyroheliometers
 DEF Actinometers which measure the intensity of direct solar radiation, consisting of a radiation sensing element enclosed in a casing which is closed except for a small aperture, through which the direct solar rays enter, and a recorder unit. Used for heliometry.
 UF *heliometry*
 GS measuring instruments
 . heliometers
 . . **pyroheliometers**
 optical equipment
 . heliometers
 . . **pyroheliometers**
 telescopes
 . heliometers
 . . **pyroheliometers**

pyrohydrolysis
 DEF Decomposition by the action of heat and water vapor.
 GS chemical reactions
 . **pyrohydrolysis**
 RT pyrolysis

pyrolysis
 DEF Chemical decomposition by the action of heat.
 GS chemical reactions
 . cracking (chemical engineering)
 . . **pyrolysis**
 . thermal decomposition
 . . **pyrolysis**
 decomposition
 . cracking (chemical engineering)
 . . **pyrolysis**
 . thermal decomposition
 . . **pyrolysis**
 RT ablation
 endothermic reactions
 exothermic reactions
 pyrohydrolysis
 thermal absorption
 thermal degradation
 thermal instability
 thermogravimetry

pyrolytic graphite
 UF *pyrographalloy*
 GS carbonaceous materials
 . graphite
 . . **pyrolytic graphite**
 minerals
 . graphite
 . . **pyrolytic graphite**
 pyrolytic materials
 . **pyrolytic graphite**
 RT heat shielding

pyrolytic materials
 GS **pyrolytic materials**
 . pyrolytic graphite
 RT ablative materials

ceramics
 ∞ materials
 refractory coatings
 refractory materials

pyrometallurgy
 RT aerothermochemistry
 alloying
 chlorination
 ∞ converters
 heat balance
 metal working
 ∞ metallurgy
 refining
 sintering
 sublimation
 thermochemistry

pyrometers
 DEF Instruments that measure high temperature, e.g., of molten lavas, by electrical or optical means.
 GS measuring instruments
 . temperature measuring instruments
 . . **pyrometers**
 . . . radiation pyrometers
 . . . thermocouple pyrometers
 RT temperature measurement

pyrometry
 USE **temperature measurement**

pyrophoric materials
 RT explosives
 flammability
 hypergolic rocket propellants
 igniters
 ignition temperature
 ∞ materials
 metal combustion
 solid propellant ignition
 spontaneous combustion

pyrophyllite
 DEF A white, greenish, gray, or brown phyllosilicate mineral that resembles talc.
 GS aluminum compounds
 . aluminum silicates
 . . **pyrophyllite**
 minerals
 . **pyrophyllite**
 silicon compounds
 . silicates
 . . aluminum silicates
 . . . **pyrophyllite**
 RT aluminum oxides

pyrotechnics
 UF *fireworks*
 GS **pyrotechnics**
 . HMX
 RT ammunition
 bombs (ordnance)
 chemical fuels
 double base propellants
 explosives
 ∞ flares
 grenades
 illuminating
 incendiary ammunition
 initiators (explosives)
 ordnance

plastic propellants
 projectiles
 RDX
 ∞ rockets
 ∞ signals
 thermites

pyroxenes
 DEF A group of dark, rock-forming silicate minerals.
 GS chalcogenides
 . oxides
 . . **pyroxenes**
 . . . enstatite
 minerals
 . **pyroxenes**
 . . enstatite
 silicon compounds
 . silicates
 . . **pyroxenes**
 . . . enstatite
 RT eclogite
 igneous rocks
 regolith
 rocks
 soils

pyroxylin
 USE **cellulose nitrate**

pyrrhotite
 DEF A common reddish-brown to bronze hexagonal mineral.
 GS chalcogenides
 . sulfides
 . . **pyrrhotite**
 . . . troilite
 iron compounds
 . **pyrrhotite**
 . . troilite
 minerals
 . **pyrrhotite**
 . . troilite
 sulfur compounds
 . sulfides
 . . **pyrrhotite**
 . . . troilite

pyrroles
 DEF Compounds that contain a five-membered heterocyclic ring containing one nitrogen atom.
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . azoles
 **pyrroles**
 carbazoles
 RT indoles
 methoxy systems
 polypyrroles
 thiophenes

Pyrrones (trademark)
 GS nitrogen compounds
 . nitrogen polymers
 . . **Pyrrones (trademark)**
 RT ∞ polymers

pyruvates
 RT organic liquids

Q

Q devices

- RT magnetic mirrors
- plasma pinch
- zeta pinch

Q factors

- UF *high Q*
- quality factors*
- RT figure of merit
- resonant vibration
- spectral resolution
- tuning

Q switched lasers

DEF A device for producing very short (about 30 ns) intense laser pulses by enhancing the storage and dumping of electronic energy in and out of the lasing medium.

- GS stimulated emission devices
 - . lasers
 - . . pulsed lasers
 - . . . **Q switched lasers**
- RT argon lasers
- carbon dioxide lasers
- chemical lasers
- gas lasers
- ruby lasers
- semiconductor lasers
- solid state lasers

Q values (nuclear physics)

- GS value
 - . **Q values (nuclear physics)**
- RT fusion reactors
- storage rings (particle accelerators)
- thermonuclear reactions
- tokamak devices

QAM (modulation)

USE **quadrature amplitude modulation**

Qatar

- (added February 1989)
- GS nations
 - . **Qatar**
- RT Asia

QBO (climatology)

(added May 2001)

USE **quasi-biennial oscillation**

QCD

USE **quantum chromodynamics**

QH-50 helicopter

- UF *Dash helicopter*
- DSN helicopter*
- Gyrodyne DSN-3 helicopter*
- Gyrodyne military aircraft*
- GS Gyrodyne aircraft
 - . **QH-50 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **QH-50 helicopter**

QHE (electronics)

(added July 2000)

USE **quantum Hall effect**

QPSK

USE **quadrature phase shift keying**

QSO (radio sources)

USE **quasars**

Quadrantid meteoroids

- GS celestial bodies
 - . meteoroid showers
 - . . **Quadrantid meteoroids**
 - . meteoroids
 - . . **Quadrantid meteoroids**

quadrants

- GS geometry
 - . Euclidean geometry
 - . . analytic geometry

. . . quadrants

quadrature phase shift keying

USE **quadrature phase shift keying**

quadratic equations

- GS algebra
 - . nonlinear equations
 - . . **quadratic equations**
 - analysis (mathematics)
 - . real variables
 - . . nonlinear equations
 - . . . **quadratic equations**
 - field theory (algebra)
 - . **quadratic equations**
- RT ∞ equations
- polynomials

quadratic programming

- GS optimization
 - . mathematical programming
 - . . **quadratic programming**
 - research
 - . **quadratic programming**
- RT ∞ programming

quadrature amplitude modulation

(added August 1991)

DEF Amplitude modulation in which the signal is 90 degrees out of phase with the carrier which it modulates.

- UF *QAM (modulation)*
- GS coding
 - . signal encoding
 - . . amplitude modulation
 - . . . **quadrature amplitude modulation**
 - modulation
 - . amplitude modulation
 - . . **quadrature amplitude modulation**
- RT phase shift keying
- quadrature phase shift keying

quadrature approximation

USE **quadratures**

quadrature phase shift keying

(added May 1991)

- UF *QPSK*
- quadrature phase shift keying*
- GS coding
 - . signal encoding
 - . . phase modulation
 - . . . phase shift keying
 - **quadrature phase shift keying**
 - keying
 - . phase shift keying
 - . . **quadrature phase shift keying**
 - modulation
 - . phase modulation
 - . . phase shift keying
 - . . . **quadrature phase shift keying**
- RT binary phase shift keying
- quadrature amplitude modulation
- satellite transmission

quadratures

DEF Elongations of 90 deg., usually specified as east or west in accordance with the direction of the body from the sun. The moon is a quadrature at first and last quarters. The situation of two periodic quantities differing by a quarter of a cycle. Used for quadrature approximation.

- UF *quadrature approximation*
- RT circular orbits
- orbit calculation
- orbital mechanics
- orbits
- space mechanics

quadrupole lenses

USE **magnetic lenses**

quadrupole networks

- GS networks

. quadrupole networks

quadrupoles

DEF A linear accelerator having four longitudinal vanes in its resonating cavity, which are shaped to create RF electric fields that simultaneously accelerate, bunch, and focus the charged particle beam.

- RT ∞ dipoles
- nuclear quadrupole resonance
- polarity

quail missile

- GS decoys
 - . **quail missile**
 - missiles
 - . air to surface missiles
 - . . **quail missile**
- RT countermeasures
- turbojet engines

qualifications

- RT certification
- contractors
- education
- experience
- fitness
- personality tests
- personnel
- ∞ tests

qualitative analysis

DEF An analysis in which some or all of the components of a sample are identified.

- GS chemical tests
 - . chemical analysis
 - . . **qualitative analysis**
- RT analytical chemistry
- electrophotometry
- flame spectroscopy
- gas analysis
- inductively coupled plasma mass spectrometry
- mass spectrometers
- microanalysis
- neutron activation analysis
- quantitative analysis
- spectroscopic analysis

quality

- GS **quality**
 - . environmental quality
 - . . air quality
 - . . water quality
 - . riding quality
- RT accuracy
- adequacy
- appearance
- computer systems performance
- concentration (composition)
- consistency
- contaminants
- controllability
- durability
- evaluation
- figure of merit
- fineness
- flight characteristics
- ∞ grade
- impurities
- ∞ materials tests
- ∞ performance
- pollution
- precision
- product development
- purity
- reliability
- ∞ resistance
- specifications
- stability
- ∞ tests
- total quality management
- upgrading
- validity
- variability

quality control

DEF An aggregate of functions designed to insure adequate quality in manufactured prod-

ucts by initial critical study of engineering design, materials, processes, equipment, and workmanship followed by periodic inspection and analysis. Used for reliability control.

- UF *reliability control*
- GS **quality control**
 - . Taguchi methods
 - . total quality management
- RT accelerated life tests
 - acceptability
 - aircraft reliability
 - assurance
 - average
 - Bayes theorem
 - burn-in
 - certification
 - chemical tests
 - circuit reliability
 - component reliability
 - confidence
 - confidence limits
 - construction
- ∞ control
 - correlation
 - correlation coefficients
 - covariance
 - data sampling
 - degrees of freedom
 - electrical properties
 - electronic equipment tests
 - error detection codes
 - errors
 - estimates
 - estimating
 - experiment design
 - extrapolation
 - hypotheses
 - infrared inspection
 - inspection
 - least squares method
 - lessons learned
 - linear prediction
 - low temperature tests
 - Mann-Whitney-Wilcoxon U test
- ∞ materials tests
 - mean
 - median (statistics)
 - mode (statistics)
 - nondestructive tests
 - normalizing (statistics)
 - operations research
 - optimization
 - orthogonal functions
 - orthogonality
 - precision
 - probability theory
 - process control (industry)
- ∞ processes
 - product development
 - production management
 - products
 - random errors
 - random sampling
 - range (extremes)
 - regression analysis
 - regression coefficients
 - reliability
 - reliability engineering
 - sampling
 - scheduling
 - sequential analysis
 - spacecraft reliability
 - specifications
 - standard deviation
 - standardization
 - standards
 - static tests
 - statistical analysis
 - statistical correlation
 - statistical distributions
 - statistical tests
 - structural reliability
- ∞ systems
 - task complexity
 - tasks
- ∞ tests
 - tolerances (mechanics)
 - ultrasonic flaw detection
 - value engineering

variability
variance (statistics)
wear tests

quality factors
USE **Q factors**

quantiles
DEF The values that mark frequency distribution interval boundaries that are determined by arranging a set of N observations in order of magnitude and marking off equal parts (N/P) of the total population P.

- GS statistical analysis
 - . **quantiles**
- RT mathematical models
 - statistical distributions
- ∞ statistics
 - symmetry

quantitative analysis

- GS chemical tests
 - . chemical analysis
 - . . **quantitative analysis**
 - . . . Kjeldahl method
 - . . . Van Slyke method
- RT analytical chemistry
 - chromatography
 - electrophotometry
 - gas analysis
 - gravimetry
 - iodimetry
 - Karl Fischer reagent
 - microanalysis
 - neutron activation analysis
 - polarography
 - qualitative analysis
 - radiochemical separation
 - spectroscopic analysis
 - volumetric analysis

quantity
USE **amount**

quantization
USE **measurement**

quantizer
USE **counters**

quantum amplifiers

- GS amplifiers
 - . **quantum amplifiers**
- RT lasers
 - light amplifiers
 - two-wavelength lasers
 - ultrashort pulsed lasers
 - ultraviolet lasers

quantum cascade lasers
(added February 2003)

DEF Semiconductor injection lasers in which light is generated by electrons making optical transitions between subbands within one band of a semiconductor heterostructure; these subbands result from the quantization of this motion in coupled quantum wells.

- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **quantum cascade lasers**
 - . . solid state lasers
 - . . . **quantum cascade lasers**
 - stimulated emission devices
 - . lasers
 - . . injection lasers
 - . . . **quantum cascade lasers**
 - . . semiconductor lasers
 - . . . **quantum cascade lasers**
 - . . solid state lasers
 - . . . **quantum cascade lasers**
- RT heterojunctions
 - infrared lasers
 - quantum well lasers
 - quantum wells

quantum chemistry

- GS physical chemistry
 - . **quantum chemistry**

RT ∞ chemistry

- molecular orbitals
- nuclear chemistry
- quantum mechanics

quantum chromodynamics

DEF A gauge theory describing the interaction between quarks and gluons. Used for color (particle physics) and QCD.

- UF *color (particle physics)*
QCD
- GS field theory (physics)
 - . gauge theory
 - . . **quantum chromodynamics**
- RT ∞ dynamics
 - gluons
 - instantons
 - leptons
 - particle interactions
 - quantum mechanics
 - quark models
 - quarks
 - standard model (particle physics)
 - string theory
 - strong interactions (field theory)
- ∞ theories

quantum communication

(added March 2000)

DEF Any form of communication that depends on coherent quantum-mechanical effects (quantum interference or quantum entanglement) to transmit, protect or authenticate information, or to perform distributed computational tasks.

- GS telecommunication
 - . communication
 - . . **quantum communication**
- RT communication theory
 - optical communication
 - quantum computation

quantum computation

(added March 2000)

DEF Any form of information processing that depends on coherent quantum-mechanical effects (quantum interference or quantum entanglement) to perform computational tasks.

- UF *quantum computing*
- GS computation
 - . **quantum computation**
- RT quantum communication
 - quantum computers
 - quantum cryptography
 - quantum mechanics
 - Turing machines

quantum computers

(added March 2000)

DEF Devices capable of performing quantum computations. There are many proposals for the physical basis of quantum computers. The 0 and 1 of a quantum bit (i.e., qubit) could be the ground and excited states of an atom in a linear ion trap; the polarizations of photons interacting in an optical cavity; or the excess of one nuclear spin state over another in a liquid sample in an NMR machine.

- GS data processing equipment
 - . computers
 - . . **quantum computers**
- RT quantum computation

quantum computing

(added March 2000)

USE **quantum computation**

quantum counters

- GS measuring instruments
 - . counters
 - . . radiation counters
 - . . . **quantum counters**
 - . . radiation measuring instruments
 - . . radiation counters
 - . . . **quantum counters**
- RT squid (detectors)

quantum cryptography

(added March 2000)

DEF Any form of cryptography that depends

quantum dots

for its security on coherent quantum-mechanical effects (quantum interference or quantum entanglement).

- GS cryptography
 - . **quantum cryptography**
- RT computer information security
 - quantum computation

quantum dots

(added October 1997)

DEF Small (30 nm to 1 micron) metal or semiconductor structures that hold a discrete number of electrons; the number of electrons can be altered by modifying the electrostatic environment of the dot.

- GS nanostructures (devices)
 - . **quantum dots**
- RT electron tunneling
 - nanotechnology
 - nonlinear optics
 - quantum electronics
 - quantum wells
 - quantum wires
 - semiconductor devices
 - semiconductor lasers
 - single electron transistors

quantum efficiency

DEF A measure of the efficiency of conversion or utilization of light or some other form of energy.

- RT energy conversion efficiency
 - energy technology
 - heterojunction devices
 - laser outputs
 - solar cells
 - volt-ampere characteristics

quantum electrodynamics

- GS electrodynamics
 - . **quantum electrodynamics**
 - mechanics (physics)
 - . quantum mechanics
 - . . **quantum electrodynamics**
- RT electromagnetic fields
 - Feynman diagrams
 - field theory (physics)
 - Landau-Ginzburg equations
 - resonance fluorescence
 - self consistent fields

quantum electronics

DEF The area of physics dealing with the effects of quantum mechanics on the behavior of electrons in matter, and their interactions with photons. The field also encompasses the basic processes of laser operation where photons are interacting with electrons.

- RT coherent electromagnetic radiation
 - ∞ electronics
 - laser applications
 - lasers
 - nanofabrication
 - nanostructures (devices)
 - nanotechnology
 - nanowires
 - quantum dots
 - quantum Hall effect
 - quantum mechanics
 - quantum optics
 - quantum theory
 - quantum wires
 - resonant tunneling
 - resonant tunneling diodes
 - ∞ solid state physics
 - tunnel junctions

quantum generators

- USE **stimulated emission devices**

quantum Hall effect

(added July 2000)

DEF Phenomenon where the Hall resistance of a two-dimensional electron system at low temperature and high magnetic fields, becomes quantized as $h/(e^2)$, where h is Planck's constant, e is the electronic charge, and j is either an integer or a rational fraction.

- UF **QHE (electronics)**
- GS galvanomagnetic effects

- . Hall effect
- . . **quantum Hall effect**
- RT electron gas
 - Hall resistance
 - magnetic effects
 - quantum electronics
 - semiconductor devices
 - superlattices

quantum mechanics

- GS mechanics (physics)
 - . **quantum mechanics**
 - . . Pauli exclusion principle
 - . . quantum electrodynamics
- RT atomic interactions
 - Bethe-Salpeter equation
 - Born approximation
 - density functional theory
 - Dyson theory
 - electromagnetic interactions
 - energy distribution
 - Fermi-Dirac statistics
 - function space
 - group velocity
 - Hylleraas coordinates
 - light-cone expansion
 - Orr-Sommerfeld equations
 - phase velocity
 - quantum chemistry
 - quantum chromodynamics
 - quantum computation
 - quantum electronics
 - quantum optics
 - Racah coefficient
 - relativity
 - squeezed states (quantum theory)
 - statistical mechanics
 - strangeness
 - U spin space
 - wave packets
 - Wigner coefficient

quantum numbers

DEF A number assigned to one of the various values of a quantized quantity in its discrete range. The quantum numbers arise from the mathematics of the wave equations. When the quantity has a quantum, the quantum number is the number of such quanta. A state may be described by giving a sufficient set of compatible numbers. In the customary formulations, each quantum number is either an integer (which may be positive, negative, or zero) or an odd half-integer.

- RT angular momentum
 - electrons
 - energy levels
 - nuclear spin
- ∞ numbers
 - parity
 - selection rules (nuclear physics)

quantum optics

- RT atom optics
 - nonlinear optics
- ∞ optics
 - physical optics
 - quantum electronics
 - quantum mechanics
 - quantum theory

quantum statistics

- UF **Bose-Einstein statistics**
- RT bosons
 - Fermi-Dirac statistics
 - fermions
 - many body problem
 - ∞ statistics
 - superfluidity
 - Thomas-Fermi model

quantum theory

DEF The theory first stated by Max Planck (before the Physical Society of Berlin on December 14, 1900) that all electromagnetic radiation is emitted and absorbed in quanta, each of magnitude $h\nu$, h being the Planck constant and ν the frequency of the radiation. Used for Wightman theory.

- UF **Wightman theory**

- GS theoretical physics
 - . **quantum theory**
 - . . Bohr theory
- RT angular momentum
 - atomic theory
 - charm (particle physics)
 - de Broglie wavelengths
 - Dirac equation
 - electroweak model
 - elementary particles
 - emission
 - energy levels
 - field theory (physics)
 - flavor (particle physics)
 - forbidden transitions
 - ground state
 - Hamiltonian functions
 - Klein-Dunham potential
 - magnetic monopoles
 - Mandelstam representation
 - nuclear physics
 - nuclear spin
 - parity
 - perturbation theory
 - photons
 - physical optics
 - Planck's constant
 - quantum electronics
 - quantum optics
 - ∞ radiation
 - radiation laws
 - Schumann-Runge bands
 - squeezed states (quantum theory)
 - standard model (particle physics)
 - statistical distributions
 - statistical mechanics
 - string theory
 - supergravity
 - supersymmetry
 - ∞ theories
 - wave equations

quantum well infrared photodetectors

(added August 2007)

DEF Infrared photodetectors made from semiconductor materials which contain one or more quantum wells.

- UF **QWIP**
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . **quantum well infrared photodetectors**
 - measuring instruments
 - . optical measuring instruments
 - . photometers
 - . . . **quantum well infrared photodetectors**
 - radiation measuring instruments
 - . . actinometers
 - . . . radiometers
 - infrared detectors
 - **quantum well infrared photodetectors**
 - . infrared instruments
 - . . infrared detectors
 - . . . **quantum well infrared photodetectors**
 - . photometers
 - . . . **quantum well infrared photodetectors**
 - optical equipment
 - . optical measuring instruments
 - . photometers
 - . . . **quantum well infrared photodetectors**
 - RT focal plane devices
 - gallium arsenides
 - quantum wells
 - thermal mapping
 - thermography

quantum well lasers

(added September 1993)

- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **quantum well lasers**

- . . solid state lasers
- . . . **quantum well lasers**
- stimulated emission devices
- . lasers
- . . semiconductor lasers
- . . . **quantum well lasers**
- . . solid state lasers
- . . . **quantum well lasers**
- RT energy gaps (solid state)
- heterojunction devices
- indium gallium arsenides
- indium phosphides
- laser materials
- quantum cascade lasers
- quantum wells
- waveguide lasers
- quantum wells**
- DEF Effective potential wells created by a minimum in the conduction band or a maximum in the valence band that arises when a smaller band-gap semiconductor is sandwiched between a larger band-gap semiconductor.
- GS potential energy
 - . electric potential
 - . . **quantum wells**
 - . . . photoexcitation
- RT band structure of solids
- binding energy
- blue shift
- conduction bands
- conduction electrons
- energy bands
- energy gaps (solid state)
- gaps
- heterojunction devices
- heterojunctions
- quantum cascade lasers
- quantum dots
- quantum well infrared photodetectors
- quantum well lasers
- quantum wires
- resonant tunneling
- resonant tunneling diodes
- valence
- quantum wires**
- (added October 1997)
- GS nanostructures (devices)
 - . nanowires
 - . . **quantum wires**
- RT nanotechnology
- nonlinear optics
- quantum dots
- quantum electronics
- quantum wells
- semiconductor devices
- semiconductor lasers
- Quaoar**
- (added October 2002)
- DEF Kuiper Belt object about 1,250 km in diameter and about 43 Astronomical Units from the Sun.
- GS celestial bodies
 - . asteroids
 - . . **Quaoar**
 - . trans-Neptunian objects
 - . . **Quaoar**
- RT asteroid belts
- Kuiper belt
- solar system
- quark models**
- GS models
 - . **quark models**
 - . . quark parton model
- RT flavor (particle physics)
- particle theory
- quantum chromodynamics
- quarks
- standard model (particle physics)
- quark parton model**
- DEF A theoretical model which summarizes our understanding of how protons and neutrons are made up of the fundamental subparticles called quarks.
- GS models
 - . quark models
- . . **quark parton model**
- RT hadrons
- inelastic scattering
- leptons
- nuclear models
- partons
- quarks
- quarks**
- GS particles
 - . elementary particles
 - . . hypothetical particles
 - . . . **quarks**
- RT flavor (particle physics)
- gluons
- instantons
- partons
- quantum chromodynamics
- quark models
- quark parton model
- quarries*
- USE **mines (excavations)**
- quartic equations**
- GS algebra
 - . nonlinear equations
 - . . **quartic equations**
 - analysis (mathematics)
 - . real variables
 - . . nonlinear equations
 - . . . **quartic equations**
- RT ∞ equations
- quartiles**
- RT probability density functions
- statistical analysis
- statistical distributions
- quartz**
- DEF Crystalline silica, an important rock-forming mineral.
- GS chalcogenides
 - . oxides
 - . . dioxides
 - . . . silicon dioxide
 - **quartz**
 - coesite
 - stishovite
 - . . silicon oxides
 - . . . silicon dioxide
 - **quartz**
 - coesite
 - stishovite
 - minerals
 - . **quartz**
 - . . coesite
 - . . stishovite
 - silicon compounds
 - . silicon oxides
 - . . silicon dioxide
 - . . . **quartz**
 - coesite
 - stishovite
- RT abrasives
- felsite
- flint
- igneous rocks
- rocks
- sands
- soils
- quartz crystals**
- GS crystals
 - . **quartz crystals**
- RT frequency control
- frequency stability
- radio transmitters
- silicon dioxide
- quartz lamps**
- GS lighting equipment
 - . luminaires
 - . . **quartz lamps**
- quartz transducers**
- GS transducers
 - . **quartz transducers**
- RT piezoelectric crystals
- pressure sensors
- quartzite**
- GS rocks
 - . metamorphic rocks
 - . . **quartzite**
- quasars**
- UF *QSO (radio sources)*
- quasi-stellar radio sources*
- GS celestial bodies
 - . radio sources (astronomy)
 - . . **quasars**
- RT active galactic nuclei
- active galaxies
- blazars
- extragalactic radio sources
- galaxies
- gravitational collapse
- irregular galaxies
- pulsars
- radio astronomy
- radio bursts
- radio emission
- radio galaxies
- radio jets (astronomy)
- radio stars
- stars
- x ray spectra
- Quasar**
- SN (QUASAR SATELLITE)
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Quasar**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Quasar**
- RT European space programs
- NASA programs
- radio astronomy
- radio telescopes
- spaceborne astronomy
- very long base interferometry
- quasi-biennial oscillation**
- (added May 2001)
- DEF A natural, quasi-periodic (2-2.5 years) oscillation of the zonal (east-west) stratospheric winds over the equatorial region. The quasi-biennial oscillation (QBO) affects stratospheric temperatures and trace gases (including ozone) and influences the response of the stratosphere to volcanic eruptions.
- UF *QBO (climatology)*
- GS oscillations
 - . **quasi-biennial oscillation**
 - variations
 - . periodic variations
 - . . **quasi-biennial oscillation**
- RT annual variations
- atmospheric circulation
- atmospheric temperature
- climatology
- el Nino
- equatorial atmosphere
- ozone
- Southern Oscillation
- tropical meteorology
- zonal flow (meteorology)
- quasilinearity*
- USE **nonlinearity**
- quasi-particles*
- USE **elementary excitations**
- quasi-steady states**
- RT equilibrium flow
- fluid dynamics
- nonequilibrium flow
- steady flow
- steady state creep

quaternary alloys

uniform flow

quasi-stellar radio sources
USE **quasars**

quaternary alloys

GS alloys
. **quaternary alloys**
RT alloying

Quaternary period

(*added May 2001*)
DEF A period (sub-era) within the Cenozoic era, beginning about two million years ago and extending to the present. It is divided into two epochs--Holocene and Pleistocene.

GS Cenozoic Era
. **Quaternary period**
. . Holocene epoch
. . Pleistocene epoch
RT geochronology
Tertiary Period

quaternions

RT classical mechanics
number theory

Quebec

GS nations
. Canada
. . **Quebec**

quefrecencies

DEF In cepstral analysis, the frequency of periodic ripples in a spectra of a signal that contains echoes. Quefrecencies are expressed in cycles per hertz or in seconds.

GS frequencies
. acoustic frequencies
. . audio frequencies
. . . **quefrecencies**
RT cepstra

∞ quenching

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT extinguishing
quenching (atomic physics)
quenching (cooling)
rapid quenching (metallurgy)

quenching (atomic physics)

DEF Phenomena in which very strong electric fields cause the orbit of an electron or atom to precess rapidly so the average magnetic moment associated with its orbit angular momentum is reduced to zero.

GS gyration
. precession
. . **quenching (atomic physics)**
RT angular momentum
laser cooling

magnetic moments
particle spin
∞ physics
∞ quenching

quenching (cooling)

DEF Rapid cooling as in metallurgy. Used for flame quenching.

UF *flame quenching*
GS cooling
. **quenching (cooling)**
. . rapid quenching (metallurgy)

RT baths
combustion
dipping
extinguishing
hardening (materials)
heat treatment
microstructure
∞ quenching
submerging
supercooling
supersaturation
thermomechanical treatment
water immersion

query languages

DEF Command languages used to search and retrieve information.

GS languages
. command languages
. . **query languages**
RT human-computer interface
information retrieval

Questol aircraft

(*added December 1990*)
SN (EXPERIMENTAL STOL TRANSPORT RESEARCH AIRPLANE)
UF *experimental STOL transport rsch airplane*

GS research vehicles
. research aircraft
. . **Questol aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Questol aircraft**
RT ∞ aircraft
NASA programs

queueing theory

RT ARPA computer network
bunching
mathematical models
operations research
statistical analysis
stochastic processes
∞ theories

quiet engine program

GS programs
. NASA programs
. . **quiet engine program**

RT aircraft engines
engine noise
jet aircraft noise
jet engines
noise reduction

QuikSCAT satellite

(*added May 2003*)
DEF A remote sensing satellite designed to measure wind speed and direction over the global oceans and to monitor coastal zones and polar regions. Launched in June 1999.

GS artificial satellites
. scientific satellites
. . **QuikSCAT satellite**
RT ocean dynamics
scatterometers
wind measurement

quinoline

GS bases (chemical)
. **quinoline**
nitrogen compounds
. **quinoline**
organic compounds
. **quinoline**
RT alkaloids
drugs
pyridines

quinones

(*added November 1992*)
UF *benzoquinone chinone*
GS organic compounds
. **quinones**
RT ketones

quinoxalines

DEF A group of heterocyclic compounds consisting of a benzene ring condensed with a diazine ring.

GS organic compounds
. hydrocarbons
. . **quinoxalines**
plastics
. synthetic resins
. . thermoplastic resins
. . . **quinoxalines**
resins
. synthetic resins
. . thermoplastic resins
. . . **quinoxalines**
RT polymerization

quotients

RT dividing (mathematics)

QWIP

(*added August 2007*)
USE **quantum well infrared photodetectors**

R

R Coronae Borealis stars

- UF *RCB stars*
- GS celestial bodies
 - . stars
 - supergiant stars
 - **R Coronae Borealis stars**
 - variable stars
 - irregular variable stars
 - **R Coronae Borealis stars**
- RT carbon stars
 - . cool stars
 - . dust
 - . stellar envelopes
 - . stellar mass ejection

R5D aircraft

- USE **C-54 aircraft**

R7V aircraft

- USE **C-121 aircraft**

RA-28 engine

- GS engines
 - . air breathing engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - **RA-28 engine**
 - . internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - **RA-28 engine**
 - . turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - **RA-28 engine**

rabbits

- GS animals
 - . vertebrates
 - mammals
 - rodents
 - **rabbits**

Racah coefficient

- RT angular momentum
 - . coefficients
 - . coupling
 - . quantum mechanics
 - . transformations (mathematics)

race factors

- RT anthropology
 - . culture (social sciences)
 - . ethnic factors
 - . human beings
 - . human performance
 - . races (anthropology)
 - . social factors
 - . sociology
- ∞ variable

races (anthropology)

- RT American Indians
 - . anthropology
 - . culture (social sciences)
 - . human beings
 - . minorities
 - . race factors

racetracks (particle accelerators)

- RT ∞ accelerators
 - . electromagnets
 - . magnetic fields
 - . particle acceleration
 - . particle accelerators
 - . particle trajectories

∞ racks

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT racks (frames)
- . racks (gears)

racks (frames)

- RT ∞ racks
- ∞ shelves

- ∞ storage
- . supports

racks (gears)

- GS gears
 - **racks (gears)**
- RT ∞ racks
 - . translational motion

racon beacons

- USE **radar beacons**

radant

- GS antennas
 - . directional antennas
 - radar antennas
 - **radant**
- . radar equipment
 - radar antennas
 - **radant**
- RT radar filters
 - . radomes
 - . slot antennas
 - . waveguide antennas

radar

(added January 1991)
 DEF A method, system or technique of using beamed, reflected, and timed radio waves for detecting, locating, or tracking objects (such as rockets), for measuring altitude, etc., in any of various activities, such as air traffic control or guidance. The electronic equipment or apparatus used to generate, transmit, receive, and usually, to display radio scanning or locating waves, a radar set. Used for radio detection and ranging.

- UF *radio detection and ranging*

- GS **radar**
 - . airborne radar
 - airborne surveillance radar
 - . coherent radar
 - . continuous wave radar
 - . Doppler radar
 - multistatic radar
 - pulse Doppler radar
 - monopulse radar
 - Shuttle Imaging Radar
 - . ground penetrating radar
 - . imaging radar
 - Shuttle Imaging Radar
 - . incoherent scatter radar
 - EISCAT radar system (Europe)
 - . infrared radar
 - . landing radar
 - . meteorological radar
 - . moving target indicators
 - . multispectral radar
 - . optical radar
 - differential absorption lidar
 - . pulse radar
 - pulse Doppler radar
 - monopulse radar
 - Shuttle Imaging Radar
 - . radar measurement
 - . range and range rate tracking
 - . satellite-borne radar
 - . search radar
 - over-the-horizon radar
 - . secondary radar
 - . space based radar
 - Shuttle Imaging Radar
 - . surveillance radar
 - airborne surveillance radar
 - Cobra Dane (radar)
 - multistatic radar
 - . synthetic aperture radar
 - Shuttle Imaging Radar
 - side-looking radar
 - . tracking radar
 - Cobra Dane (radar)
 - TRADEX radar system
 - . Venus orbiting imaging radar (spacecraft)

- RT aircraft instruments
 - . cancellation circuits
 - . circumlunar communication
 - . collision avoidance

- . display devices
- . distance measuring equipment
- . electromagnetic radiation
- . flight instruments
- . instrument landing systems
- . lunar communication
- . microwave absorption
- . navigation instruments
- . night flights (aircraft)
- . pulse compression
- . radar detection
- . radar scatterometers

radar absorbers

- GS absorbers (materials)
 - **radar absorbers**
 - antiradar coatings
- RT countermeasures
 - . electromagnetic absorption
 - . microwave absorption
 - . stealth technology

radar altimeters

- USE **radio altimeters**

radar antennas

- GS antennas
 - . directional antennas
 - **radar antennas**
 - radant
 - . radar equipment
 - **radar antennas**
 - radant
- RT aircraft antennas
 - . diplexers
 - . dipole antennas
 - . doghouses (electronics)
 - . high resolution coverage antennas
 - . horn antennas
 - . lens antennas
 - . microwave antennas
 - . parabolic antennas
 - . radomes
 - . reflector antennas
 - . Schwarzschild antennas
 - . sidelobe reduction
 - . slot antennas
 - . steerable antennas

radar approach control

- UF *RAPCON (control)*
- GS approach control
 - **radar approach control**
 - . ground based control
 - air traffic control
 - **radar approach control**
 - . traffic control
 - air traffic control
 - **radar approach control**
- RT airborne radar approach
 - . aircraft guidance
 - . approach indicators
- ∞ control
 - . instrument landing systems
 - . landing aids
 - . landing instruments
 - . landing radar
 - . radarscopes
 - . surveillance radar

radar astronomy

DEF The study of celestial bodies within the solar system by means of radiation originating on Earth but reflected from the body under observation.

- GS astronomy
 - **radar astronomy**
- RT radio astronomy

radar attenuation

- GS attenuation
 - . wave attenuation
 - **radar attenuation**
- RT atmospheric attenuation
 - . electromagnetic absorption
 - . electromagnetic wave transmission
 - . radio attenuation
 - . sidelobe reduction
 - . signal transmission

radar beacons

transmission
wave propagation

radar beacons

DEF Beacons transmitting characteristic signals on radar frequency, permitting crafts to determine their bearings and sometimes the range of the beacons. Used for racon beacons.

UF *racon beacons*

GS navigation aids

. beacons

. . **radar beacons**

. . . discrete address beacon system

radar equipment

. **radar beacons**

. . discrete address beacon system

RT aircraft communication

compasses

position (location)

solar compasses

transponders

radar beams

GS beams (radiation)

. **radar beams**

RT beamforming

pencil beams

radar clutter maps

GS maps

. **radar clutter maps**

radar corner reflectors

UF *luneberg lenses*

GS radar equipment

. radar reflectors

. . **radar corner reflectors**

reflectors

. radar reflectors

. . **radar corner reflectors**

RT reflector antennas

retroreflectors

radar cross sections

DEF The ratios of power returned in a radar echo to power received by the target reflecting the signal.

RT angels (radar)

computational electromagnetics

∞ cross sections

low observable reentry vehicles

moving target indicators

stealth technology

radar data

RT ∞ data

microwave photography

video data

radar detection

GS detection

. **radar detection**

RT coherent radar

continuous wave radar

digital radar systems

Doppler radar

electronic countermeasures

electronic warfare

multistatic radar

optical radar

over-the-horizon radar

radar

radar target scatter site program

radarscopes

resolution cell

satellite-borne radar

search radar

signal detection

space-time adaptive processing

stealth technology

radar direction finders

USE **radio direction finders**

radar displays

USE **radarscopes**

radar echoes

UF *radar reflections*

GS echoes

. radar echoes

. . angels (radar)

. . clutter

. . lunar radar echoes

. . solar radar echoes

. . Venus radar echoes

RT airborne radar

auroral echoes

chaff

ghosts

glint

targets

radar equipment

GS **radar equipment**

. doghouses (electronics)

. radar antennas

. . radant

. radar beacons

. . discrete address beacon system

. radar filters

. radar receivers

. radar reflectors

. . radar corner reflectors

. radar transmitters

. radarscopes

. . plan position indicators

. retroreflectors

RT airborne equipment

airborne radar

airport surface detection equipment

automated radar terminal system

digital radar systems

diplexers

distance measuring equipment

Doppler radar

∞ equipment

jammers

look angles (electronics)

onboard equipment

parabolic antennas

radio equipment

radomes

range finders

servomechanisms

synthetic aperture radar

transponders

radar filters

GS electromagnetic wave filters

. electric filters

. . **radar filters**

radar equipment

. **radar filters**

RT ∞ filters

FIR filters

microwave filters

radant

radio filters

space-time adaptive processing

waveguide filters

radar geology

DEF The application of imaging radar to geologic problems.

GS geology

. **radar geology**

RT geological surveys

ground penetrating radar

Mars Reconnaissance Orbiter

Shuttle Imaging Radar

radar homing missiles

DEF Radar-following missiles designed to attack radar transmitters.

GS missiles

. **radar homing missiles**

RT military technology

missile control

missile systems

target recognition

radar imagery

GS imagery

. **radar imagery**

RT airborne radar

change detection

image analysis

imaging radar

imaging techniques

infrared radar
lunar equator
Magellan spacecraft (NASA)
Priroda module
radar maps
resolution cell
Shuttle Imaging Radar
side-looking radar
x ray imagery

radar maps

GS maps

. **radar maps**

RT airborne radar

digital elevation models

map matching guidance

meteorological charts

radar imagery

radar measurement

GS radar

. **radar measurement**

RT altimetry

differential absorption lidar

distance measuring equipment

∞ measurement

radio altimeters

rangefinding

satellite altimetry

radar navigation

GS navigation

. **radar navigation**

RT air navigation

air traffic control

aircraft guidance

all-weather air navigation

automatic flight control

celestial navigation

collision avoidance

dead reckoning

distance

distance measuring equipment

Doppler navigation

Doppler radar

Doppler-Fizeau effect

ground based control

inertial navigation

interplanetary navigation

map matching guidance

radarscopes

radio navigation

satellite navigation systems

space navigation

surface navigation

Tacan

radar networks

DEF A series of tracking stations each of which can individually or jointly track a target by utilizing an interchange of radar information. Used for multiradar tracking.

UF *multiradar tracking*

GS networks

. tracking networks

. . **radar networks**

RT Doppler radar

polystation doppler tracking system

tracking stations

radar observation

USE **radar tracking**

radar photography

GS imagery

. photography

. . multispectral photography

. . . **radar photography**

RT black and white photography

microwave photography

radarscopes

spectral reconnaissance

ultraviolet photography

radar range

DEF The distance from a radar to a target as measured by the radar. The maximum distance at which a radar set is effective in detecting targets.

GS distance

- . **radar range**
- RT continuous wave radar
optical slant range
over-the-horizon radar
radio range
- radar receivers**
- GS radar equipment
. **radar receivers**
receivers
- . **radar receivers**
- RT airborne radar
digital radar systems
electromagnetic noise
microwave sensors
radio receivers
repeaters
- radar reception**
- GS signal reception
. **radar reception**
- RT radio reception
∞ receiving
sidelobe reduction
- radar reflections*
- USE **radar echoes**
- radar reflectors**
- DEF Devices capable of or intended for reflecting radar signals.
- GS radar equipment
. **radar reflectors**
. . radar corner reflectors
reflectors
- . **radar reflectors**
. . radar corner reflectors
- RT parabolic antennas
parabolic reflectors
radio echoes
reflector antennas
sidelobe reduction
- radar resolution**
- GS resolution
. **radar resolution**
- RT angular resolution
display devices
high resolution coverage antennas
sidelobe reduction
spectral resolution
- radar scanning**
- DEF The action or process of moving or directing a searching radar beam.
- GS scanning
. **radar scanning**
- RT conical scanning
digital radar systems
frequency scanning
meteorological radar
multiple beam interval scanners
panoramic scanning
radio tracking
side-looking radar
surveillance
- radar scattering**
- GS scattering
. **radar scattering**
- RT EISCAT radar system (Europe)
incoherent scatter radar
incoherent scattering
radar target scatter site program
scatterometers
- radar signatures**
- GS signatures
. **radar signatures**
- RT Cobra Dane (radar)
detection
imagery
microwave signatures
signature analysis
stealth technology
target recognition
- radar target scatter site program**
- UF *RATSCAT program*
- GS programs
- . **radar target scatter site program**
targets
- . radar targets
. . **radar target scatter site program**
- RT radar detection
radar scattering
- radar targets**
- DEF Objects which reflect a sufficient amount of a radar signal to produce an echo signal on the radar screen.
- GS targets
. **radar targets**
. . radar target scatter site program
- RT airborne radar
digital radar systems
early warning systems
multiple target tracking
radial velocity
- radar tracking**
- UF *radar observation*
- GS tracking (position)
. **radar tracking**
- RT automated radar terminal system
Ballistic Missile Early Warning System
compensatory tracking
digital radar systems
Doppler radar
early warning systems
meteorological radar
monopulse radar
moving target indicators
multiple target tracking
pursuit tracking
radio tracking
range and range rate tracking
ranging
rawinsondes
search radar
slewing
spacecraft tracking
surveillance radar
threat evaluation
tracking radar
transponder control group
- radar transmission**
- GS transmission
. electromagnetic wave transmission
. . **radar transmission**
. signal transmission
. . **radar transmission**
- RT atmospheric attenuation
digital radar systems
EISCAT radar system (Europe)
electromagnetic pulses
radio transmission
radome materials
wave attenuation
wave propagation
- radar transmitters**
- GS radar equipment
. **radar transmitters**
transmitters
. **radar transmitters**
- Radarsat**
- DEF A civilian remote sensing satellite that will be polar orbiting and is jointly being developed by Canada and the United Kingdom with NASA providing the launch. In addition to a synthetic aperture radar, it may carry other instruments such as the Advanced Along Track Scanning Radiometer (AATSR) and the Advanced Radar Altimeter (ARA)/Ocean Wave Spectrometer (OWS). Launch is planned for 1994.
- GS Canadian spacecraft
. **Radarsat**
- RT Canadian space program
synthetic aperture radar
- radarscopes**
- DEF The cathode ray oscilloscopes used in radar sets, which display the received signal in such a manner as to indicate things such as range or bearing. Used for radar displays.
- UF *radar displays*
- GS display devices
. **radarscopes**
. . plan position indicators
radar equipment
. **radarscopes**
. . plan position indicators
- RT aircraft guidance
indicating instruments
microwave imagery
microwave photography
radar approach control
radar detection
radar navigation
radar photography
surveillance radar
- radial distribution**
- GS distribution (property)
. **radial distribution**
- RT Rayleigh distribution
star distribution
wind profiles
- radial drainage patterns*
- USE **drainage patterns**
- radial flow**
- GS fluid flow
. **radial flow**
- RT axial flow
centrifugal compressors
diffusion
flow geometry
gas flow
heat transmission
two dimensional flow
- radial velocity**
- DEF In radar, that vector component of the velocity of a moving target that is directed away from or toward the ground station.
- GS rates (per time)
. **radial velocity**
velocity
. **radial velocity**
- RT astronomical spectroscopy
blue shift
Doppler effect
radar targets
red shift
velocity measurement
- radiance**
- SN (DIRECTIONAL EMISSION RATE PER UNIT AREA OF RADIATION)
- DEF In radiometry, a measure of the intrinsic radiant intensity emitted by a radiator in a given direction. It is the irradiance (radiant flux density) produced by radiation from the source upon a unit surface area oriented normal to the line between source and receiver, divided by the solid angle subtended by the source at the receiving surface. It is assumed that the medium between the radiator and receiver is perfectly transparent; therefore radiance is independent of attenuation between source and receiver.
- GS electromagnetic properties
. optical properties
. . **radiance**
rates (per time)
. flux density
. . radiant flux density
. . . **radiance**
- RT black body radiation
brightness
emissivity
emittance
glare
incandescence
∞ intensity
irradiance
lumens
luminosity
neutron flux density
solar flux density
transmissometers
visibility

radiancy

radiancy

SN (EMISSION RATE PER UNIT AREA OF RADIATION)
DEF The rate of radiant energy emission from a unit area of a source in all the radial directions of the overspreading hemisphere.
GS rates (per time)
. flux density
. . . radiant flux density
. . . . **radiancy**
RT electron flux density
illuminance
luminous intensity
neutron flux density
particle flux density
proton flux density
solar flux density

radiant cooling

GS cooling
. **radiant cooling**
RT radiative heat transfer
surface cooling

radiant energy

USE **radiation**

radiant flux density

SN (DYNES/CM-SEC AS DISTINGUISHED FROM RADIATION PRESSURE--DYNES/SQ CM)
DEF The rate of radiant energy emission from a unit area of a source in all the radial directions of the overspreading hemisphere. Used for power density (electromagnetic), radiant intensity, and radiation intensity.
UF *power density (electromagnetic)*
radiant intensity
radiation intensity
GS rates (per time)
. flux density
. . . **radiant flux density**
. . . . irradiance
. illuminance
. solar constant
. . . . lumens
. . . . luminous intensity
. illuminance
. luminance
. . . . particle flux density
. electron flux density
. neutron flux density
. proton flux density
. . . . radiance
. . . . radiancy
. . . . solar flux density
. solar constant
RT BL Lacertae objects
brightness
brightness distribution
CERES (experiment)
dosimeters
emissivity
emittance
far fields
flux (rate)
gamma ray bursts
laser outputs
luminosity
maser outputs
mass to light ratios
post-blast nuclear radiation
∞ radiation
radiation counters
radiation pressure
radio spectra
scattering functions
solar reflectors
sound intensity
view effects

radiant heating

UF *radiation heating*
GS heating
. **radiant heating**
RT ∞ energy
gas heating
∞ radiation
radiative heat transfer
radiative transfer

solar heating

radiant intensity

USE **radiant flux density**

∞ radiation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The process by which energy is emitted or transferred in the form of photons or electromagnetic waves. Used for radiant energy and radiation emission.
UF *radiant energy*
radiation emission
RT alpha particles
antenna radiation patterns
artificial radiation belts
atmospheric radiation
background noise
background radiation
base heating
beams (radiation)
black body radiation
Cerenkov radiation
circumsolar radiation
coherent acoustic radiation
coherent electromagnetic radiation
coherent radiation
continuous radiation
corpuscular radiation
cosmic rays
cyclotron radiation
diffuse radiation
Earth radiation budget experiment
elastic waves
electromagnetic noise
electromagnetic radiation
electron radiation
emission
extraterrestrial radiation
extreme ultraviolet radiation
fallout
far infrared radiation
far ultraviolet radiation
flux (rate)
flux density
galactic radiation
gamma rays
geophysics
gravitational waves
harmonic radiation
heating
incident radiation
infrared radiation
inner radiation belt
interstellar radiation
ion cyclotron radiation
ionizing radiation
irradiation
Kirchhoff law of radiation
light (visible radiation)
long wave radiation
longitudinal waves
lunar radiation
Lyman alpha radiation
Lyman beta radiation
microwaves
modulated continuous radiation
monochromatic radiation
near infrared radiation
near ultraviolet radiation
nonthermal radiation
nuclear medicine
nuclear radiation
nucleon potential
outer radiation belt
photons
photosynthetically active radiation
plane waves
planetary radiation
plasma radiation
polarized electromagnetic radiation
polarized radiation
post-blast nuclear radiation
pulsed radiation
quantum theory
radiant flux density
radiant heating
radiation absorption

radiation belts
radiation chemistry
radiation counters
radiation damage
radiation detectors
radiation distribution
radiation dosage
radiation effects
radiation hardening
radiation hazards
radiation injuries
radiation laws
radiation measurement
radiation measuring instruments
Radiation Meteoroid spacecraft
radiation pressure
radiation protection
radiation pyrometers
radiation shielding
radiation sickness
radiation sources
radiation spectra
radiation therapy
radiation tolerance
radiation transport
radiation trapping
radiative transfer
radioactivity
radiology
reflected waves
relic radiation
resonance fluorescence
self absorption
short wave radiation
silicon radiation detectors
sky radiation
solar corpuscular radiation
solar radiation
Solar Radiation 1 satellite
Solar Radiation 3 satellite
solar radiation shielding
solar wind
sound waves
spectral emission
standing waves
stellar radiation
Stokes law of radiation
stratosphere radiation
synchrotron radiation
temperature effects
terrestrial radiation
thermal radiation
TRAP program
tropospheric radiation
ultrasonic radiation
ultraviolet radiation
Volterra equations
x ray sources

radiation absorption

GS energy absorption
. **radiation absorption**
. . . electromagnetic absorption
. . . . auroral absorption
. . . . gamma ray absorption
. . . . infrared absorption
. . . . microwave absorption
. . . . multiphoton absorption
. . . . photoabsorption
. . . . polar cap absorption
. . . . ultraviolet absorption
. . . . x ray absorption
. . molecular absorption
. . self absorption
RT ∞ absorption
absorption cross sections
atmospheric attenuation
gamma ray absorptiometry
Golay detector cells
gray gas
interstellar extinction
material absorption
neutron absorbers
nuclear reactions
photon absorptiometry
∞ radiation
radiation chemistry

stopping power

Radiation and Meteoroid satellite

- GS artificial satellites
 - . geophysical satellites
 - . . **Radiation and Meteoroid satellite**

radiation belts

DEF Envelopes of charged particles trapped in the magnetic field of a spatial body. Used for geomagnetically trapped particles and Van Allen radiation belts.

- UF *geomagnetically trapped particles*
Van Allen radiation belts

- GS particles
 - . charged particles
 - . . magnetically trapped particles

. . . radiation belts

- artificial radiation belts
- inner radiation belt
- outer radiation belt
- proton belts

. corpuscular radiation

. . radiation belts

- . . . artificial radiation belts
- . . . inner radiation belt
- . . . outer radiation belt
- . . . proton belts

. trapped particles

. . magnetically trapped particles

. . . radiation belts

- artificial radiation belts
- inner radiation belt
- outer radiation belt
- proton belts

- RT aerospace environments

∞ belts

cosmic rays

Earth atmosphere

Earth magnetosphere

electron density (concentration)

electron precipitation

electron trajectories

electrons

elementary particles

entrapment

exosphere

extraterrestrial radiation

ionizing radiation

ionospheric drift

magnetic fields

mirror point

plasmas (physics)

proton precipitation

protons

∞ radiation

solar radiation

trapping

upper atmosphere

radiation chemistry

DEF The branch of chemistry concerned with the chemical effects, including decomposition, of energetic radiation or particles of matter.

- GS **radiation chemistry**

. photodecomposition

. photodissociation

. photolysis

. radiolysis

- RT ∞ chemistry

electromagnetic radiation

∞ radiation

radiation absorption

radiation counters

DEF Instruments used for detecting or measuring moving subatomic particles by a counting process. Used for ionization counters, particle counters, and particle detectors.

- UF *ionization counters*

particle counters

particle detectors

- GS measuring instruments

. counters

. . radiation counters

. . . Cerenkov counters

. . . electron counters

. . . Geiger counters

. . . neutron counters

. . . neutron spectrometers

. . . particle telescopes

. . . proportional counters

. . . quantum counters

. . . scintillation counters

. . . spark chambers

. radiation measuring instruments

. . radiation counters

. . . Cerenkov counters

. . . electron counters

. . . Geiger counters

. . . neutron counters

. . . . neutron spectrometers

. . . particle telescopes

. . . proportional counters

. . . quantum counters

. . . scintillation counters

. . . spark chambers

- RT anticoincidence detectors

bubble chambers

channel multipliers

cloud chambers

coincidence circuits

dosimeters

electrostatic probes

fluence

gas discharge tubes

hodoscopes

ion traps (instrumentation)

ionization chambers

ionizing radiation

nuclear emulsions

particle flux density

proton flux density

radiant flux density

∞ radiation

scintillating fibers

spectrometers

radiation damage

- GS damage

. **radiation damage**

. . laser damage

radiation effects

. radiation damage

. . laser damage

- RT ionizing radiation

∞ radiation

single event upsets

radiation detectors

- GS measuring instruments

. radiation measuring instruments

. radiation detectors

. . dosimeters

. . . threshold detectors (dosimeters)

. . . Goly detector cells

. . . silicon radiation detectors

- RT ∞ detectors

Geiger counters

health physics

multi-anode microchannel arrays

∞ radiation

satellite-borne instruments

Vela satellites

radiation distribution

- UF *radiation fields*

- GS distribution (property)

. radiation distribution

. . antenna radiation patterns

. . . sidelobes

. . diffraction patterns

. . . Kossel pattern

. . . rainbows

- RT corpuscular radiation

elastic waves

electromagnetic radiation

field theory (physics)

flux density

null zones

∞ patterns

∞ radiation

vertical distribution

wave dispersion

radiation dosage

DEF The amount of radiation absorbed by a material, system, or tissue in a given amount of time; usually measured in units as roentgen. Used for radiation exposure.

- UF *radiation exposure*

- GS dosage

. radiation dosage

- RT biological effects

dosimeters

exposure

health physics

irradiation

∞ radiation

single event upsets

radiation effects

- GS **radiation effects**

. radiation damage

. . laser damage

. radiation injuries

. radiolysis

. single event upsets

- RT apoptosis

biological effects

blackout (propagation)

Bragg curve

CRRES (satellite)

damage

dosimeters

∞ effects

electron radiation

fallout

gamma rays

health physics

hematopoiesis

irradiation

mechanical properties

mutagenesis

neutrons

nuclear explosion effect

nuclear radiation

nuclear vulnerability

particle tracks

physiological effects

post-blast nuclear radiation

Poynting-Robertson effect

preserving

∞ radiation

radioactive contaminants

space based radar

sterilization effects

radiation emission

- USE **radiation**

radiation exposure

- USE **radiation dosage**

radiation fields

- USE **radiation distribution**

radiation hardening

- GS hardening (systems)

. radiation hardening

- RT antennas

electronic equipment

∞ radiation

radiation hazards

- GS hazards

. radiation hazards

- RT dermatitis

dosimeters

electromagnetic radiation

fallout

flux density

hazardous materials

hazardous wastes

health physics

ionizing radiation

laser damage

mutations

nuclear explosion effect

nuclear explosions

nuclear radiation

occupational diseases

operational hazards

∞ radiation

radioactive contaminants

radioactive materials

radioactive wastes

radioactivity

reactor safety

radiation injuries

space weather

radiation heating
USE **radiant heating**

radiation injuries
GS injuries
 . **radiation injuries**
 radiation effects
 . **radiation injuries**
RT burns (injuries)
 health physics
 ∞ radiation

radiation intensity
USE **radiant flux density**

radiation laws
GS laws
 . **radiation laws**
 . . . Kirchhoff law of radiation
 . . . Stefan-Boltzmann law
 . . . Stokes law of radiation
RT electromagnetic radiation
 quantum theory
 ∞ radiation

radiation measurement
RT dosage
 dosimeters
 irradiation
 ∞ measurement
 ∞ radiation
 sensitometry

radiation measuring instruments
UF *photoelectromagnetic detectors*
 photosensors
 radiation meters
GS measuring instruments
 . **radiation measuring instruments**
 . . . actinometers
 infrared spectrometers
 filter wheel infrared spectrometers
 pyranometers
 radiometers
 Dicke radiometers
 infrared detectors
 FLIR detectors
 infrared radiometers
 Advanced Very High Resolution Radiometer
 infrared scanners
 visible infrared spin scan radiometer
 quantum well infrared photodetectors
 microwave radiometers
 Advanced Microwave Sounding Unit
 passive L-band radiometers
 pressure modulator radiometers
 spectroradiometers
 MISR (radiometry)
 MODIS (radiometry)
 solar spectrometers
 spectroheliographs
 spectrophotometers
 infrared spectrophotometers
 ultraviolet spectrophotometers
 ultraviolet detectors
 ultraviolet spectrometers
 high dispersion spectrographs
 Total Ozone Mapping Spectrometer
 ultraviolet spectrophotometers
 x ray detectors
 . . . bolometers
 . . . Ebert spectrometers
 . . . electrostatic probes
 . . . Fabry-Perot spectrometers
 . . . hodoscopes
 . . . infrared instruments
 infrared detectors
 FLIR detectors
 infrared radiometers
 Advanced Very High Resolution Radiometer
 infrared scanners

. visible infrared spin scan radiometer
. quantum well infrared photodetectors
. infrared interferometers
. infrared spectrometers
. filter wheel infrared spectrometers
. infrared spectrophotometers
. photometers
. electrophotometers
. ultraviolet spectrometers
. high dispersion spectrographs
. Total Ozone Mapping Spectrometer
. quantum well infrared photodetectors
. ultraviolet spectrophotometers
. radiation counters
. Cerenkov counters
. electron counters
. Geiger counters
. neutron counters
. neutron spectrometers
. particle telescopes
. proportional counters
. quantum counters
. scintillation counters
. spark chambers
. radiation detectors
. dosimeters
. threshold detectors (dosimeters)
. Golay detector cells
. silicon radiation detectors
. riometers

RT ∞ detectors
 Earth radiation budget experiment
 health physics
 ionization chambers
 monitors
 nuclear emulsions
 optical measuring instruments
 ∞ radiation
 safety devices
 solar instruments
 Vela satellites
 view effects

radiation medicine
USE **nuclear medicine**

Radiation Meteoroid spacecraft
RT meteoroids
 ∞ radiation
 ∞ spacecraft
 spacecraft configurations

radiation meters
USE **radiation measuring instruments**

radiation noise
USE **electromagnetic noise**

radiation pressure
SN (DYNES/SQ CM AS DISTINGUISHED FROM RADIANT FLUX DENSITY--DYNES/CM-SEC)
DEF Pressure exerted upon any material body by electromagnetic radiation incident upon it.
GS pressure
 . **radiation pressure**
 . . electron pressure
 . . lumens
 . . luminous intensity
 . . illuminance
 . . luminance
 . . sound pressure
RT baroclinic waves
 Bessel-Bredichin theory
 comet tails
 corpuscular radiation
 elastic waves
 electromagnetic radiation
 Kohoutek comet
 particle flux density
 perturbation
 photophoresis
 radiant flux density
 ∞ radiation

solar flux density
solar radiation
solar wind
stellar winds

radiation protection
GS protection
 . **radiation protection**
 . . radiation shielding
 . . . solar radiation shielding
RT antiradiation drugs
 cysteamine
 health physics
 ∞ radiation
 synchrotron radiation
 thermal protection visors

radiation pyrometers
GS measuring instruments
 . temperature measuring instruments
 . . pyrometers
 . . . **radiation pyrometers**
RT bolometers
 circumsolar telescopes
 optical pyrometers
 ∞ radiation
 temperature measurement
 thermocouple pyrometers

radiation resistance
USE **radiation tolerance**

radiation shielding
UF *nuclear shielding*
GS protection
 . radiation protection
 . . **radiation shielding**
 . . . solar radiation shielding
 shielding
 . **radiation shielding**
 . . solar radiation shielding
RT absorbers (materials)
 attenuators
 Boral
 electromagnetic absorption
 electromagnetic shielding
 gamma rays
 ∞ insulated structures
 magnetic shielding
 neutron absorbers
 neutron flux density
 neutrons
 nuclear reactors
 protons
 ∞ radiation
 radio frequency shielding
 reactor materials
 reflectors
 safety devices
 space based radar
 spacecraft shielding
 stopping power
 Tower Shielding Reactor 2

radiation sickness
DEF A syndrome following intense acute exposure to ionizing radiation. It is characterized by nausea and vomiting a few hours after exposure. Further symptoms include bloody diarrhea, hemorrhage under the skin (and internally), epilation (hair falling out), and a decrease in blood cell level.
GS diseases
 . **radiation sickness**
RT antiradiation drugs
 dermatitis
 health physics
 ∞ radiation
 radiopathology

radiation sources
UF *coherent sources*
GS **radiation sources**
 . monochromators
 . neutron sources
 . point sources
RT corpuscular radiation
 duochromators
 electromagnetic radiation

- electron sources
 - extragalactic radio sources
 - ∞ generators
 - heat sources
 - interstellar masers
 - ion sources
 - light sources
 - pulsars
 - ∞ radiation
 - radio sources (astronomy)
 - radioactive materials
 - sound generators
 - ∞ sources
 - spectral counterparts (astronomy)
 - x ray stars
- radiation spectra**
- GS spectra
 - . **radiation spectra**
 - .. absorption spectra
 - ... Fraunhofer lines
 - ... Herzberg bands
 - ... telluric lines
 - .. electromagnetic spectra
 - ... gamma ray spectra
 - ... infrared spectra
 - ... line spectra
 - Balmer series
 - D lines
 - electronic spectra
 - Fraunhofer lines
 - H lines
 - H alpha line
 - H beta line
 - H gamma line
 - K lines
 - Lyman spectra
 - Paschen series
 - Rydberg series
 - telluric lines
 - ... radio spectra
 - microwave spectra
 - ... Raman spectra
 - ... stellar spectra
 - solar spectra
 - ... UVB spectra
 - ... ultraviolet spectra
 - ... vibrational spectra
 - ... visible spectrum
 - ... x ray spectra
 - .. emission spectra
 - RT astronomical spectroscopy
 - Cosmic Background Explorer satellite
 - energy spectra
 - mass spectra
 - noise spectra
 - plasma spectra
 - ∞ radiation
- radiation therapy**
- UF *radiotherapy*
 - GS therapy
 - . **radiation therapy**
 - RT cancer
 - medical science
 - pathology
 - ∞ radiation
- radiation tolerance**
- UF *radiation resistance*
 - radiosensitivity*
 - GS sensitivity
 - . **radiation tolerance**
 - tolerances (physiology)
 - . **radiation tolerance**
 - RT human tolerances
 - irradiation
 - ∞ radiation
 - ∞ resistance
 - tolerances (mechanics)
- radiation transport**
- DEF The study of radiation from emission to absorption.
 - RT exploding wires
 - ∞ radiation
 - radiative transfer
- transport properties
- radiation trapping**
- DEF Confinement of radiation with a magnetic field.
 - RT argon
 - Earth magnetosphere
 - excitation
 - metastable state
 - plasma physics
 - ∞ radiation
- radiative heat transfer**
- GS radiative transfer
 - . **radiative heat transfer**
 - transmission
 - . heat transmission
 - .. heat transfer
 - ... **radiative heat transfer**
 - RT concentrators
 - convective heat transfer
 - cooling fins
 - heat radiators
 - infrared reflection
 - near infrared radiation
 - radiant cooling
 - radiant heating
 - satellite temperature
 - spacecraft radiators
 - Stefan-Boltzmann law
 - surface cooling
 - thermohydraulics
 - Trombe walls
 - view effects
- radiative lifetime**
- RT decay
 - half life
- radiative recombination**
- GS recombination reactions
 - . electron recombination
 - .. **radiative recombination**
 - . electron-ion recombination
 - .. **radiative recombination**
 - RT airglow
 - atomic recombination
 - carrier injection
 - deionization
 - lightning
- radiative transfer**
- GS **radiative transfer**
 - . radiative heat transfer
 - RT atmospheric correction
 - cosmic rays
 - electromagnetic radiation
 - energy transfer
 - extraterrestrial radiation
 - galactic radiation
 - heat transfer
 - heat transmission
 - interstellar radiation
 - near infrared radiation
 - planetary atmospheres
 - polarized electromagnetic radiation
 - radiant heating
 - ∞ radiation
 - radiation transport
 - radio bursts
 - radio stars
 - solar radiation
 - stellar atmospheres
 - stellar radiation
 - Surface Meteorology and Solar Energy project
 - Surface Radiation Budget project
- ∞ radiators
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF Any sources of radiant energy, especially electromagnetic radiation. Devices that dissipate the heat from something as from water or oil, not necessarily by radiation only.
 - RT antennas
 - heat radiators
 - sound transducers
- thermosiphons
- radicals**
- GS **radicals**
 - . amino radical
 - . formyl ions
 - . free radicals
 - .. hydroxyl radicals
 - . methylidyne
 - . vanadyl radical
 - . vinyl radical
 - RT ∞ roots
- radii**
- UF *radius*
 - GS dimensions
 - . **radii**
 - .. Larmor radius
 - geometry
 - . Euclidean geometry
 - .. **radii**
 - ... Larmor radius
 - RT circles (geometry)
 - circumferences
 - diameters
 - lines (geometry)
 - radio frequencies
 - segments
- radio altimeters**
- DEF Devices that measure the altitude of a craft above the terrain by measuring the elapsed time between transmission of radio waves from the craft and the reception of the same waves reflected from the terrain. Used for radar altimeters.
 - UF *radar altimeters*
 - GS flight instruments
 - . **radio altimeters**
 - measuring instruments
 - . distance measuring equipment
 - .. altimeters
 - ... **radio altimeters**
 - RT aircraft instruments
 - automatic pilots
 - instrument landing systems
 - radar measurement
- radio antennas**
- GS antennas
 - . **radio antennas**
 - .. microwave antennas
 - ... horn antennas
 - ... lens antennas
 - ... rectennas
 - ... spacetennas
 - radio equipment
 - . **radio antennas**
 - .. microwave antennas
 - ... horn antennas
 - ... lens antennas
 - ... rectennas
 - ... spacetennas
 - RT aircraft antennas
 - backfire antennas
 - directional antennas
 - omnidirectional antennas
 - reception diversity
 - reflector antennas
 - rhombic antennas
 - satellite antennas
 - Schwarzschild antennas
 - two reflector antennas
 - whip antennas
- radio astronomy**
- DEF The study of celestial objects through observation of radiofrequency waves emitted or reflected by these objects. Specifically, the study of celestial objects by measurement of the radiation emitted by them in the radiofrequency range of the electromagnetic spectrum.
 - GS astronomy
 - . **radio astronomy**
 - RT astronomical interferometry
 - astronomical observatories
 - astronomical spectroscopy
 - brightness distribution
 - brightness temperature
 - coronal holes

Radio Astronomy Explorer satellite

- cosmic microwave background radiation
- extragalactic radio sources
- extraterrestrial radio waves
- gamma ray astronomy
- IUE
- linear polarization
- Maffei galaxies
- Michelson interferometers
- phase switching interferometers
- pulsars
- quasars
- Quasat
- radar astronomy
- radio jets (astronomy)
- SAS-1
- SAS-2
- SAS-3
- ∞ science
 - Sunyaev-Zeldovich effect
 - very high frequency radio equipment
 - Very Large Array (VLA)
 - very long base interferometry
 - Very Long Baseline Array (VLBA)

Radio Astronomy Explorer 2
USE **Explorer 49 satellite**

Radio Astronomy Explorer B
USE **Explorer 49 satellite**

Radio Astronomy Explorer satellite

- GS artificial satellites
 - . scientific satellites
 - . Explorer satellites
 - . . . **Radio Astronomy Explorer satellite**

radio attenuation

- UF *radio signal attenuation*
- GS attenuation
 - . wave attenuation
 - . . **radio attenuation**
- RT atmospheric attenuation
- electromagnetic absorption
- electromagnetic wave transmission
- ground effect (communications)
- radar attenuation
- signal transmission
- transhorizon radio propagation
- transmission
- wave propagation

Radio Attenuation Measurement project

- UF *RAM project*
- GS programs
 - . projects
 - . . **Radio Attenuation Measurement project**

radio auroras

- GS atmospheric radiation
 - . auroras
 - . . **radio auroras**
- RT ∞ disturbances
- ionospherics
- nightglow
- solar activity

radio beacons

DEF Transmitters together with their associated equipment, that emit signals enabling the determination, by means of suitable receiving equipment, of direction, distance, or position with respect to the beacon. Used for radio ranges.

- UF *radio ranges*
- GS navigation aids
 - . beacons
 - . . **radio beacons**
 - . . . omnidirectional radio ranges
 - . . . self calibrating omnirange
 - radio equipment
 - . radio transmitters
 - . . **radio beacons**
 - . . . omnidirectional radio ranges
 - . . . self calibrating omnirange
 - transmitters
 - . radio transmitters
 - . . **radio beacons**

- . . . omnidirectional radio ranges
- . . . self calibrating omnirange
- RT airport beacons
- Beacon Collision Avoidance System
- homing devices
- instrument landing systems
- landing aids
- ∞ markers
- night flights (aircraft)
- ORBIS
- ORBIS CAL satellite
- ranges (facilities)
- solar compasses

radio broadcasting

USE **broadcasting**

radio bursts

- GS bursts
 - . **radio bursts**
 - . . solar radio bursts
 - . . . type 2 bursts
 - . . . type 3 bursts
 - . . . type 4 bursts
 - . . . type 5 bursts
 - electromagnetic radiation
 - . radio waves
 - . . extraterrestrial radio waves
 - . . . **radio bursts**
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . radio emission
 - . . . **radio bursts**
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - emission
 - . radio emission
 - . . **radio bursts**
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - extraterrestrial radiation
 - . extraterrestrial radio waves
 - . . **radio bursts**
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
- RT ∞ disturbances
- pulsars
- quasars
- radiative transfer
- solar radio emission
- stellar radiation

radio communication

- GS telecommunication
 - . **radio communication**
 - . . radio relay systems
 - . . . code division multiple access
 - . . . time division multiple access
 - . . radio telegraphy
 - . . radio telemetry
 - . . . pulse frequency modulation
 - telemetry
- RT telephony
- access control
- aircraft communication
- blackout (propagation)
- broadcasting
- circumlunar communication
- code division multiplexing
- communication equipment
- communication networks
- Fleet Satellite Communication System
- frequency division multiple access
- frequency division multiplexing
- ground-air-ground communication
- interplanetary communication
- interstellar communication
- land mobile satellite service

- lunar communication
- Marisat 1 satellite
- Marisat satellites
- mobile communication systems
- MSAT
- NASCOM network
- point to point communication
- Project SETI
- pulse communication
- radiotelephones
- reentry communication
- satellite communication
- ship to shore communication
- space communication
- spacecraft communication
- telegraph systems
- telemetry
- television systems
- transoceanic communication
- underground communication
- vocoders
- voice communication

radio control

DEF Remote control of a pilotless airplane, rocket, or spacecraft by means of radio signals that activate controlling devices.

GS remote control

. **radio control**

RT aircraft control

automatic control

∞ control

- Deep Space Instrumentation Facility
- ground based control
- missile control
- spacecraft control

radio detection and ranging

USE **radar**

radio direction finders

DEF Radio receiving sets, together with associated equipment, used to determine the direction from which a radio signal is transmitted. Used for direction finders (radio) and radar direction finders.

UF *direction finders (radio)*

radar direction finders

GS display devices

. position indicators

. . **radio direction finders**

measuring instruments

. indicating instruments

. . position indicators

. . . **radio direction finders**

navigation aids

. beacons

. . **radio direction finders**

. navigation instruments

. . **radio direction finders**

RT aircraft equipment

compasses

direction finding

flight instruments

gyrocompasses

homing

homing devices

radiogoniometers

VHF omnirange navigation

radio echoes

UF *radio reflection*

GS echoes

. **radio echoes**

RT angels (radar)

auroral echoes

ghosts

Harvard Radio Meteor Project

infrared reflection

lunar echoes

radar reflectors

ultraviolet reflection

radio electronics

RT ∞ electronics

radio emission

- GS electromagnetic radiation
 - . radio waves
 - . . **radio emission**

- . . . CN emission
 - . . . hydroxyl emission
 - . . . radio bursts
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . . solar radio emission
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - emission
 - . **radio emission**
 - . . CN emission
 - . . hydroxyl emission
 - . . radio bursts
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . . solar radio emission
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - RT extragalactic radio sources
 - extraterrestrial radio waves
 - quasars
 - radio jets (astronomy)
- radio equipment**
- GS **radio equipment**
 - . radio antennas
 - . . microwave antennas
 - . . . horn antennas
 - . . . lens antennas
 - . . . rectennas
 - . . . spacetennas
 - . radio filters
 - . radio receivers
 - . . superheterodyne receivers
 - . . transmitter receivers
 - . . whistler recorders
 - . radio telescopes
 - . . kilometer wave orbiting telescope
 - . . Very Large Array (VLA)
 - . . Very Long Baseline Array (VLBA)
 - . radio transmitters
 - . . radio beacons
 - . . . omnidirectional radio ranges
 - self calibrating omnirange
 - . . radiometeorographs
 - . . radiosondes
 - . . . ionosondes
 - . . . rawinsondes
 - . . radiotelephones
 - . . sonobuoys
 - . . transmitter receivers
 - . reception diversity
 - . spacecraft antennas
 - . transponders
 - . very high frequency radio equipment
 - RT airborne equipment
 - antennas
 - broadcasting
 - communication equipment
 - crystal filters
 - cylindrical antennas
 - jammers
 - near fields
 - onboard equipment
 - radar equipment
- radio filters**
- GS electromagnetic wave filters
 - . electric filters
 - . . **radio filters**
 - radio equipment
 - . **radio filters**
 - RT crystal filters
 - ∞ filters
 - interference grating
 - microwave filters
 - radar filters
- tunable filters
- radio frequencies**
- DEF Frequencies at which coherent electromagnetic radiation of energy is useful for communications purposes.
 - GS frequencies
 - . **radio frequencies**
 - . . extremely low frequencies
 - . . high frequencies
 - . . intermediate frequencies
 - . . low frequencies
 - . . . very low frequencies
 - . . microwave frequencies
 - . . . C band
 - . . . extremely high frequencies
 - . . . P band
 - . . . superhigh frequencies
 - . . ultrahigh frequencies
 - . . . P band
 - . . . very high frequencies
 - . . . P band
 - RT audio frequencies
 - carrier frequencies
 - radii
- radio frequency discharge**
- GS electric current
 - . electric discharges
 - . . **radio frequency discharge**
 - RT electrodeless discharges
 - electron emission
 - ring discharge
- radio frequency heating**
- GS heating
 - . **radio frequency heating**
 - RT induction heating
 - plasma heating
 - VASIMR (propulsion system)
- radio frequency impedance probes**
- GS measuring instruments
 - . impedance probes
 - . . **radio frequency impedance probes**
 - RT impedance measurement
 - ion probes
 - microwave probes
 - plasma probes
- radio frequency interference**
- DEF Degradation of the reception of a wanted signal caused by radio frequency disturbance.
 - UF *radio interference*
 - GS electromagnetic interference
 - . **radio frequency interference**
 - . . blackout (propagation)
 - . . . polar radio blackout
 - . . chirp
 - . . . chirp signals
 - . . . electromagnetic noise
 - . . . atmospheric
 - ionospheric
 - dawn chorus
 - hiss
 - sudden enhancement of
 - atmospheric
 - whistlers
 - cosmic noise
 - ionospheric noise
 - whistlers
 - shot noise
 - white noise
 - thermal noise
 - . . . cochannel interference
 - . . ionospheric cross modulation
 - RT clutter
 - cross coupling
 - electromagnetic compatibility
 - electronic countermeasures
 - electronic warfare
 - extraterrestrial radio waves
 - ∞ interference
 - interference grating
 - interference immunity
 - jamming
 - noise generators
 - noise storms

signal fading

radio frequency ion thruster engines

USE **RIT engines**

radio frequency noise

USE **electromagnetic noise**

radio frequency radiation

USE **radio waves**

radio frequency shielding

 - GS shielding
 - . electromagnetic shielding
 - . . **radio frequency shielding**
 - RT radiation shielding
 - spacecraft shielding

radio galaxies

 - GS celestial bodies
 - . galaxies
 - . . active galaxies
 - . . . **radio galaxies**
 - . radio sources (astronomy)
 - . . extragalactic radio sources
 - . . . **radio galaxies**
 - RT active galactic nuclei
 - blazars
 - disk galaxies
 - Maffei galaxies
 - quasars

radio horizons

 - DEF Loci or points at which direct rays from a radio transmitter become tangential to the Earth's surface.
 - GS horizon
 - . **radio horizons**
 - RT horizon scanners

radio interference

USE **radio frequency interference**

radio interferometers

 - DEF Interferometers operating at radio frequencies. Radio interferometers are used in radio astronomy and in satellite tracking.
 - GS measuring instruments
 - . interferometers
 - . . **radio interferometers**
 - RT astrophysics
 - Orion (radio interferometry network)
 - very long base interferometry

radio jets (astronomy)

 - DEF Jets of energetic particles occurring in radio galaxies and quasars usually emitted from the nuclear (active) region of the extragalactic radio source.
 - GS celestial bodies
 - . radio sources (astronomy)
 - . . extragalactic radio sources
 - . . . **radio jets (astronomy)**
 - . particles
 - . . charged particles
 - . . plasma jets
 - . . . **radio jets (astronomy)**
 - RT astrophysics
 - energetic particles
 - extraterrestrial radiation
 - extraterrestrial radio waves
 - galactic nuclei
 - galactic radio waves
 - quasars
 - radio astronomy
 - radio emission

radio meteorology

 - GS meteorology
 - . **radio meteorology**
 - RT atmospheric
 - meteorological radar
 - radiosondes

radio meteors

 - DEF Meteors which have been detected by the reflection of radio signals from the meteor trails of relatively high ion density (ion columns).
 - GS celestial bodies
 - . meteoroids
 - . . **radio meteors**

radio navigation

RT atmospheric ionization
meteor trails

radio navigation
DEF Navigation based upon the reception of radio signals.
GS navigation
. **radio navigation**
. . . hyperbolic navigation
. . . . Decca navigation
. . . . LORAC navigation system
. . . . Ioran
. . . . Ioran C
. . . . Ioran D
. . . . Shoran
. . . Tacan
. . VHF omnirange navigation

RT air navigation
air traffic control
aircraft guidance
all-weather air navigation
astronavigation
automatic flight control
celestial navigation
collision avoidance
dead reckoning
distance measuring equipment
Doppler navigation
flight control
guidance (motion)
homing devices
inertial navigation
interplanetary navigation
navigation aids
omnidirectional radio ranges
positioning
radar navigation
satellite navigation systems
solar compasses
space navigation
surface navigation

radio observation
GS observation
. **radio observation**
RT space observations (from Earth)

radio occultation
GS occultation
. **radio occultation**
RT atmospheric composition
atmospheric pressure
atmospheric temperature
planetary atmospheres
space probes
spacecraft trajectories

radio physics
RT ∞ physics
∞ science
theoretical physics

radio probing
RT measuring instruments
∞ probes

radio propagation
USE **radio transmission**

radio range
SN (EXCLUDES RADIO BEACONS)
GS distance
. **radio range**
range (extremes)
. frequency ranges
. . **radio range**
RT radar range

radio ranges
USE **radio beacons**

radio receivers
GS communication equipment
. **radio receivers**
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
radio equipment
. **radio receivers**
. . superheterodyne receivers

. . transmitter receivers
. . whistler recorders
receivers
. **radio receivers**
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders

RT data links
directors (antenna elements)
electromagnetic noise
intermediate frequency amplifiers
loudspeakers
Orion (radio interferometry network)
parasitic elements (antennas)
radar receivers
reception diversity
television reception
transponders
tuners

radio reception
GS signal reception
. **radio reception**
RT homodyne reception
radar reception
∞ receiving
reception diversity
scatter propagation
television reception

radio reflection
USE **radio echoes**

radio relay systems
GS telecommunication
. radio communication
. . **radio relay systems**
. . . code division multiple access
. . . time division multiple access

RT communication equipment
communication satellites
data links
Defense Communications Satellite System
Earth terminal measurement system
Earth terminals
Global Tracking Network
Molniya satellites
MSAT
orbit spectrum utilization
∞ relay
∞ systems
TDR satellites

radio scattering
GS scattering
. **radio scattering**
. . microwave scattering

RT atmospheric diffusion
atmospheric scattering
scatter propagation
signal fading
signal transmission

radio signal attenuation
USE **radio attenuation**

radio signal propagation
USE **radio transmission**

radio signals
RT broadcasting
Project SETI
Rayleigh fading
signal distortion
signal mixing
∞ signals
transhorizon radio propagation
whistlers

radio sources (astronomy)
SN (LIMITED TO EXTRATERRESTRIAL RADIO SOURCES)
DEF Celestial objects that emit radio waves.
GS celestial bodies
. **radio sources (astronomy)**
. . Cassiopeia A
. . extragalactic radio sources
. . . radio galaxies
. . . radio jets (astronomy)
. . quasars

. . radio stars
. . . pulsars

RT BL Lacertae objects
blazars
CN emission
extraterrestrial radio waves
galactic nuclei
galaxies
gamma ray sources (astronomy)
hydroxyl emission
irregular galaxies
Maffei galaxies
Milky Way Galaxy
radiation sources
∞ sources
spectral counterparts (astronomy)

radio spectra
DEF Frequencies of electromagnetic radiation usable for radio communication.
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **radio spectra**
. . . . microwave spectra

RT carrier waves
electromagnetic noise
H I regions
radiant flux density

radio spectroscopy
GS spectroscopy
. **radio spectroscopy**
RT astronomical spectroscopy
ultraviolet spectra
ultraviolet spectroscopy
x ray spectroscopy

radio stars
GS celestial bodies
. radio sources (astronomy)
. . **radio stars**
. . . pulsars
. . stars
. . **radio stars**
. . . pulsars

RT quasars
radiative transfer
stellar radiation

radio telegraphy
GS telecommunication
. radio communication
. . **radio telegraphy**
RT communication equipment
keying
Morse code

radio telemetry
GS telecommunication
. radio communication
. . **radio telemetry**
. . . pulse frequency modulation
telemetry
telemetry
. . **radio telemetry**
. . . pulse frequency modulation
telemetry
transmission
. signal transmission
. . telemetry
. . . **radio telemetry**
. . . . pulse frequency modulation
telemetry

RT communication equipment
data transmission
extraterrestrial communication
ground support equipment
measuring instruments
pulse modulation
radiometeorographs
radiosondes
space communication
wireless communication

radio telescopes
DEF Devices for receiving, amplifying, and measuring the intensity of radio waves originating outside the Earth's atmosphere or reflected from a body outside the atmosphere.

- GS radio equipment
 . **radio telescopes**
 . . kilometer wave orbiting telescope
 . . Very Large Array (VLA)
 . . Very Long Baseline Array (VLBA) telescopes
 . **radio telescopes**
 . . kilometer wave orbiting telescope
 . . Very Large Array (VLA)
 . . Very Long Baseline Array (VLBA)
- RT antennas
 Jodrell Bank Observatory
 optical equipment
 phase switching interferometers
 Quasat
- radio tracking**
 GS tracking (position)
 . **radio tracking**
 . . wildlife radiolocation
- RT radar scanning
 radar tracking
 range and range rate tracking
 rangefinding
 rawinsondes
 spacecraft tracking
- radio transmission**
 DEF The transmission of signals by means of radiated electromagnetic waves other than light or heat waves. Used for radio propagation and radio signal propagation.
- UF *radio propagation*
radio signal propagation
- GS transmission
 . electromagnetic wave transmission
 . . **radio transmission**
 . . . double sideband transmission
 . . . ionospheric propagation
 ionospheric F-scatter propagation
 microwave transmission
 multipath transmission
 short wave radio transmission
 single sideband transmission
 spread spectrum transmission
 transequatorial propagation
 transhorizon radio propagation
 . signal transmission
 . . **radio transmission**
 . . . double sideband transmission
 . . . ionospheric propagation
 ionospheric F-scatter propagation
 microwave transmission
 multipath transmission
 short wave radio transmission
 single sideband transmission
 spread spectrum transmission
 transequatorial propagation
 transhorizon radio propagation
- RT antipodes
 atmospheric attenuation
 broadcasting
 code division multiplexing
 companding
 data transmission
 Earth-ionosphere waveguide
 F region
 frequency reuse
 frequency shift keying
 magnetoionics
 modulation
 multiplexing
 packet switching
 pulse communication
 pulse frequency modulation telemetry
 radar transmission
 radome materials
 satellite transmission
 scatter propagation
 Seafarer project
 Sommerfeld approximation
 Symphonie satellites
 Voice of America
 wave attenuation
 wave propagation
- radio transmitters**
 DEF Devices for producing radio-frequency power, for purposes of radio transmission.
- GS radio equipment
 . **radio transmitters**
 . . radio beacons
 . . . omnidirectional radio ranges
 self calibrating omnirange
 . . radiometeorographs
 . . radiosondes
 . . . ionosondes
 . . . rawinsondes
 . . radiotelephones
 . . sonobuoys
 . . transmitter receivers
 transmitters
 . **radio transmitters**
 . . radio beacons
 . . . omnidirectional radio ranges
 self calibrating omnirange
 . . radiometeorographs
 . . radiosondes
 . . . ionosondes
 . . . rawinsondes
 . . radiotelephones
 . . sonobuoys
 . . transmitter receivers
- RT multichannel communication
 quartz crystals
 television transmission
 transponders
 wildlife radiolocation
- radio wave refraction**
 GS refraction
 . atmospheric refraction
 . . **radio wave refraction**
- RT wave dispersion
- radio waves**
 DEF Waves produced by oscillation of an electric charge at a frequency useful for radio communication. Used for radio frequency radiation.
- UF *radio frequency radiation*
electromagnetic radiation
- GS electromagnetic radiation
 . **radio waves**
 . . decametric waves
 . . extraterrestrial radio waves
 . . . galactic radio waves
 North Polar Spur (astronomy)
 . . . radio bursts
 solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . . . cosmic microwave background radiation
 . . long wave radiation
 . . radio emission
 . . . CN emission
 . . . hydroxyl emission
 . . . radio bursts
 solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . . . solar radio emission
 solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . . . short wave radiation
 . . . microwaves
 centimeter waves
 cosmic microwave background radiation
 decimeter waves
 microwave emission
 millimeter waves
 submillimeter waves
 . . . sky waves
- . . . whistlers
- RT atmospherics
 coherent electromagnetic radiation
 electromagnetic noise
 electromagnetic surface waves
 extraterrestrial radiation
 far infrared radiation
 frequencies
 ground wave propagation
 monochromatic radiation
 multipath transmission
 nonthermal radiation
 planetary radiation
 polarized electromagnetic radiation
 scatter propagation
 solar radiation
 solitary waves
 thermal radiation
 transverse waves
 traveling waves
 tropospheric waves
- radioactive age determination**
 UF *radioactive dating*
 RT ∞ aging
 fossils
 geochronology
 half life
 ∞ measurement
 radiochemistry
 radiogenic materials
 time measurement
- radioactive contaminants**
 GS contaminants
 . **radioactive contaminants**
- RT atmospheric composition
 fallout
 nuclear radiation
 radiation effects
 radiation hazards
- radioactive dating*
 USE **radioactive age determination**
- ∞ **radioactive debris**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT debris
 fallout
 radioactive materials
 radioactive wastes
 radiogenic materials
- radioactive decay**
 DEF The spontaneous transformation of a nuclide into one or more nuclides accompanied by the release of radiation.
- GS decay
 . **radioactive decay**
 . . alpha decay
 . . neutron emission
 nuclear reactions
 . **radioactive decay**
 . . alpha decay
 . . neutron emission
- RT emission
 gamma ray beams
 gamma rays
 half life
 hypernuclei
 nuclear fission
 nuclear radiation
 particle decay
 photoproduction
 post-blast nuclear radiation
 radioactivity
 radiogenic materials
 thermonuclear reactions
 vector currents
- radioactive elements*
 USE **radioactive isotopes**
- radioactive isotopes**
 UF *radioactive elements*
radioactive nuclides
radionuclides
 GS chemical elements
 . nuclides

radioactive materials

. . isotopes
. . . **radioactive isotopes**
. . . . astatine isotopes
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
. . . . carbon 14
. . . . cerium 137
. . . . cerium 144
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . . . cobalt 58
. . . . cobalt 60
. . . . copper isotopes
. . . . gold 198
. . . . indium isotopes
. . . . iodine 125
. . . . iodine 131
. . . . iodine 132
. . . . iron 59
. . . . krypton 85
. . . . niobium 95
. . . . nitrogen 16
. . . . phosphorus 32
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
. . . . potassium 38
. . . . potassium 40
. . . . rubidium 86
. . . . sodium 22
. . . . sodium 24
. . . . strontium 85
. . . . strontium 88
. . . . strontium 89
. . . . strontium 90
. . . . transuranium elements
. americium
. americium isotopes
. americium 241
. berkelium
. californium
. californium isotopes
. curium
. curium isotopes
. curium 242
. curium 244
. einsteinium
. fermium
. lawrencium
. mendelevium
. neptunium
. neptunium isotopes
. nobelium
. plutonium
. plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
. sergenium
. tritium
. uranium 232
. uranium 233
. uranium 238
. xenon 133
. xenon 135
. zirconium 95
RT actinide series
arsenic isotopes
gold isotopes
isotope effect
isotopic labeling
radiocardiography
radioisotope batteries
radioisotope heat sources
radiophosphors
rhenium isotopes

radioactive materials

RT actinide series
fissile fuels
fission products
fissionable materials
ionizing radiation
isotopes
∞ materials

nuclear fission
nuclear radiation
radiation hazards
radiation sources
∞ radioactive debris
radioactivity
radiobiology
radiochemistry
uranium plasmas

radioactive nuclides

USE **radioactive isotopes**

radioactive wastes

UF *nuclear wastes*
GS wastes
. **radioactive wastes**
RT contamination
decommissioning
environment pollution
environment protection
environmental surveys
fission products
hazardous material disposal (in space)
nonpoint sources
plasma core reactors
poisoning (reaction inhibition)
pollution
radiation hazards
∞ radioactive debris
radiochemistry
radiogenic materials
soil pollution
solid wastes
waste disposal

radioactivity

DEF Spontaneous disintegration of atomic nuclei with emission of corpuscular or electromagnetic radiations. The number of spontaneous disintegrations per unit mass and per unit time of a given unstable (radioactive) element, usually measured in curies.

RT ∞ activity
alpha particles
emission
fallout
fission products
gamma rays
geochemistry
geophysics
half life
ionizing radiation
nuclear radiation
particle production
post-blast nuclear radiation
∞ radiation
radiation hazards
radioactive decay
radioactive materials
radiochemistry

radiobiology

DEF The study of the effects produced on living organisms by radiation.

GS medical science
. nuclear medicine
. . **radiobiology**
RT antiradiation drugs
∞ biology
biomagnetism
dosimeters
health physics
immunoassay
irradiation
∞ medicine
nuclear radiation
radioactive materials
radiochemistry
radioimmunoassay

radiocardiography

DEF The technique of recording an intravenously injected radioisotope in the heart chambers.

GS bioengineering
. biometrics
. . **radiocardiography**
RT cardiology

radioactive isotopes

radiochemical separation

GS radiochemistry
. **radiochemical separation**
RT chemical reactions
quantitative analysis
∞ separation

radiochemistry

UF *reactor chemistry*
GS **radiochemistry**
. radiochemical separation
RT chemical analysis
∞ chemistry
ionizing radiation
isotopic labeling
nuclear chemistry
nuclear radiation
nuclear research
radioactive age determination
radioactive materials
radioactive wastes
radioactivity
radiobiology

radiogenic materials

RT nuclear reactions
radioactive age determination
∞ radioactive debris
radioactive decay
radioactive wastes
transmutation

radiogoniometers

GS measuring instruments
. goniometers
. . **radiogoniometers**
RT radio direction finders

radiography

UF *cinelfluorography*
cineradiography
GS imagery
. **radiography**
. . angiography
. . autoradiography
. . neutron radiography
. . tomography
. . . computer aided tomography
. . . urography
RT Bragg angle
crystallography
∞ flash
irradiation
lixiscopes
∞ materials tests
metallography
nondestructive tests
photography
pneumography
radiology
x ray analysis
x ray apparatus
x ray astronomy
x ray diffraction
x ray fluorescence
x ray imagery
x ray inspection
x ray spectroscopy
x ray telescopes
x ray tubes
x rays

radioimmunoassay

DEF A medical diagnostic procedure for the components (hormones and immunoglobulins primarily) as well as pharmaceuticals in the blood. The RIA is based on the antigen antibody reactions.

GS immunoassay
. **radioimmunoassay**
RT antigens
assaying
biochemistry
immunology
radiobiology

radioisotope batteries

UF *atomic batteries*

- GS electric generators
 . direct power generators
 . . **radioisotope batteries**
 . . . SNAP 7
 . . . SNAP 9A
 . . . SNAP 11
 . . . SNAP 13
 . . . SNAP 15
 . . . SNAP 17
 . . . SNAP 19
 . . . SNAP 21
 . . . SNAP 23
 . . . SNAP 27
 . . . SNAP 29
- RT electric batteries
 fission electric cells
 nuclear auxiliary power units
 radioactive isotopes
 radioisotope heat sources
 thermionic converters
 thermoelectric generators
- radioisotope heat sources**
(added December 2002)
 DEF Heat sources comprised of encapsulated radioactive isotopes; often used as heat units in thermoelectric generators.
 UF *General Purpose Heat Sources GPHS (nucleonics)*
 GS heat sources
 . **radioisotope heat sources**
 RT radioactive isotopes
 radioisotope batteries
 thermoelectric power generation
- radiology**
 GS medical science
 . **radiology**
 RT aerospace medicine
 ∞ medicine
 ∞ radiation
 radiography
 x ray analysis
 x rays
- radiolysis**
 GS chemical reactions
 . photochemical reactions
 . . **radiolysis**
 decomposition
 . **radiolysis**
 dissociation
 . **radiolysis**
 radiation chemistry
 . **radiolysis**
 radiation effects
 . **radiolysis**
 RT photolysis
- radiometeorographs**
 GS measuring instruments
 . meteorological instruments
 . . **radiometeorographs**
 radio equipment
 . radio transmitters
 . . **radiometeorographs**
 recording instruments
 . **radiometeorographs**
 transmitters
 . radio transmitters
 . . **radiometeorographs**
 RT radio telemetry
 radiosondes
- radiometers**
 DEF Instruments for detecting and, usually, measuring radiant energy.
 GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . **radiometers**
 Dicke radiometers
 infrared detectors
 FLIR detectors
 infrared radiometers
 Advanced Very High Resolution Radiometer
 infrared scanners
 visible infrared spin scan radiometer
 quantum well infrared photodetectors
 microwave radiometers
 Advanced Microwave Sounding Unit
 passive L-band radiometers
 pressure modulator radiometers
 spectroradiometers
 MISR (radiometry)
 MODIS (radiometry)
- RT bolometers
 forest fire detection
 horizon scanners
 infrared photography
 infrared tracking
 Knudsen gages
 photometers
 pyranometers
 radiometric resolution
 spectrophotometers
 thermistors
 ultraviolet detectors
 x ray detectors
- radiometric correction**
 DEF An effort to correct the intensity range of an image. Used for radiometric rectification.
 UF *radiometric rectification*
 RT image enhancement
 infrared radiometers
 multispectral band scanners
 vegetative index
- radiometric rectification*
 USE **radiometric correction**
- radiometric resolution**
 DEF The sensitivity of the sensor to distinguish between gray levels.
 GS resolution
 . **radiometric resolution**
 RT multispectral band scanners
 radiometers
 remote sensors
 spectral resolution
- radionuclides*
 USE **radioactive isotopes**
- radiopathology**
 GS medical science
 . **radiopathology**
 RT antiradiation drugs
 nuclear medicine
 radiation sickness
- radiophosphors**
 GS phosphors
 . **radiophosphors**
 RT radioactive isotopes
- radioprotective agents*
 USE **antiradiation drugs**
- radiosensitivity*
 USE **radiation tolerance**
- radiosondes**
 DEF Instruments, usually balloonborne, for the simultaneous measurement and transmission of meteorological data while moving vertically through the atmosphere.
 GS measuring instruments
 . meteorological instruments
 . . **radiosondes**
 . . . ionosondes
 . . . rawinsondes
 . . . sondes
 . . . **radiosondes**
 ionosondes
 rawinsondes
 radio equipment
 . radio transmitters
 . . **radiosondes**
 . . . ionosondes
 . . . rawinsondes
 transmitters
 . radio transmitters
 . . **radiosondes**
 . . . ionosondes
- . . . rawinsondes
 RT Arcas rocket vehicles
 balloon sounding
 balloon-borne instruments
 dropsondes
 meteorological balloons
 radio meteorology
 radio telemetry
 radiometeorographs
 ROBIN balloons
 satellite sounding
 sounding rockets
- radiotelephones**
 GS radio equipment
 . radio transmitters
 . . **radiotelephones**
 receivers
 . **radiotelephones**
 telecommunication
 . **radiotelephones**
 telephones
 . **radiotelephones**
 transmitters
 . radio transmitters
 . . **radiotelephones**
 RT echo suppressors
 radio communication
 telephony
 voice communication
- radiotherapy*
 USE **radiation therapy**
- radium**
 GS chemical elements
 . actinide series
 . . **radium**
 . . . radium isotopes
 radium 226
 metals
 . actinide series
 . . **radium**
 . . . radium isotopes
 radium 226
- radium 226**
 GS chemical elements
 . actinide series
 . . radium
 . . . radium isotopes
 **radium 226**
 . nuclides
 . . isotopes
 . . . radium isotopes
 **radium 226**
 metals
 . actinide series
 . . radium
 . . . radium isotopes
 **radium 226**
- radium isotopes**
 GS chemical elements
 . actinide series
 . . radium
 . . . **radium isotopes**
 radium 226
 . nuclides
 . . isotopes
 . . . **radium isotopes**
 radium 226
 metals
 . actinide series
 . . radium
 . . . **radium isotopes**
 radium 226
- radius*
 USE **radii**
- radome materials**
 GS dielectrics
 . **radome materials**
 RT electromagnetic wave transmission
 ∞ materials
 radar transmission
 radio transmission
 radomes

radomes

transparence

radomes

DEF Dielectric housings for antennas.
(From RAdar DOME. Pronounced ray-domes.)

- GS housings
 - . **radomes**
 - shells (structural forms)
 - . domes (structural forms)
 - . . . **radomes**
- RT inflatable structures
 - protuberances
 - radant
 - radar antennas
 - radar equipment
 - radome materials

radon

- GS chemical elements
 - . rare gases
 - . . . **radon**
 - radon isotopes
 - gases
 - . rare gases
 - . . . **radon**
 - radon isotopes

radon isotopes

- UF *thoron*
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **radon isotopes**
 - . rare gases
 - . . radon
 - . . . **radon isotopes**
 - gases
 - . rare gases
 - . . radon
 - . . . **radon isotopes**

Raduga satellite

DEF A Soviet communications satellite in geostationary orbit for radio and TV transmission.

- GS artificial satellites
 - . communication satellites
 - . . . **Raduga satellite**
 - . Soviet satellites
 - . . **Raduga satellite**

RAE 1

USE **Explorer 49 satellite**

RAE 2

USE **Explorer 49 satellite**

RAE B

USE **Explorer 49 satellite**

RAE-1

USE **Explorer 38 satellite**

Raffaello Logistics Module (ISS)

(added April 2005)

USE **Multi-Purpose Logistics Modules**

rafts

- GS **rafts**
 - . life rafts
- RT floats
 - lifeboats
 - survival equipment

rail transportation

- UF *railroads*
- GS transportation
 - . **rail transportation**
- RT automated guideway transit vehicles
 - automated transit vehicles
 - locomotives
 - magnetic levitation vehicles
 - marine transportation
 - rails
 - rapid transit systems
 - surface vehicles
 - urban transportation

railgun accelerators

DEF Linear dc motors consisting of a pair of

rigid, field-producing rails, and a movable conducting armature.

- RT ∞ accelerators
 - hypervelocity guns
 - hypervelocity launchers
 - mass drivers
 - nuclear fusion
 - particle accelerators
 - spacecraft launching

railroad humping tests

- RT cargo
 - impact acceleration
 - materials handling
 - shock tests
- ∞ tests

railroads

USE **rail transportation**

rails

- RT rail transportation
 - rapid transit systems
 - surface vehicles

rain

- GS precipitation (meteorology)
 - . **rain**
 - . . acid rain
- RT aquifers
 - cloud seeding
 - condensation nuclei
 - flood predictions
 - hydrology
 - hydrology models
 - limnology
 - precipitation measurement
 - rainbows
 - raindrops
 - rainstorms
- ∞ showers
 - thunderstorms
 - TRMM satellite
 - watersheds

rain erosion

- DEF The wearing away of the land by rain.
- GS erosion
 - . **rain erosion**
- RT landslides
 - mud
 - sands
 - soil erosion

rain forests

- GS resources
 - . Earth resources
 - . . forests
 - . . . **rain forests**
- RT canopies (vegetation)
 - geobotany
 - plants (botany)
- ∞ showers
 - tropical regions
 - vegetation

rain gages

- UF *pluviographs*
- GS measuring instruments
 - . meteorological instruments
 - . . **rain gages**
- RT precipitation measurement

rain impact damage

- GS damage
 - . impact damage
 - . . **rain impact damage**
- RT arroyos
 - erosion
 - soil erosion
 - water erosion

rainbows

- GS distribution (property)
 - . radiation distribution
 - . . diffraction patterns
 - . . . **rainbows**
- RT halos
 - light transmission

rain

raindrops

- GS particles
 - . drops (liquids)
 - . . . **raindrops**
- RT drop size
 - falling spheres
 - rain
 - rainmaking

rainmaking

- GS weather modification
 - . **rainmaking**
- RT climatology
 - cloud seeding
 - precipitation (meteorology)
 - raindrops
 - water resources

rainstorms

- GS storms
 - . storms (meteorology)
 - . . . **rainstorms**
 - thunderstorms
- RT acid rain
 - flood control
 - flood predictions
 - hailstorms
 - precipitation (meteorology)
 - rain
- ∞ showers
 - storm damage
 - storm enhancement
 - storm suppression
 - tornadoes

∞ **rakes**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT pressure sensors
 - slopes

∞ **ram**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT antiradar coatings
 - rams (presses)
 - rams (pumps)

ram accelerators

(added July 1994)

- UF *ramjet-in-tube accelerators*
- RT ∞ accelerators
 - detonation waves
 - hypervelocity guns
 - hypervelocity launchers
 - ramjet engines

RAM B launch vehicle

- GS launch vehicles
 - . **RAM B launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **RAM B launch vehicle**
- RT solid propellant rocket engines
 - TX-354 engine

ram effect (hydrodynamics)

USE **hydrodynamic ram effect**

RAM project

USE **Radio Attenuation Measurement project**

Raman effect

USE **Raman spectra**

Raman lasers

- GS stimulated emission devices
 - . lasers
 - . . **Raman lasers**

Raman scattering

USE **Raman spectra**

Raman spectra

DEF Spectra of the modified frequencies resulting from inelastic scattering when matter is irradiated by a monochromatic beam of radiant

energy. Used for Raman effect and Raman scattering.

- UF *Raman effect*
- Raman scattering*
- GS molecular properties
 - . molecular spectra
 - . . **Raman spectra**
 - scattering
 - . wave scattering
 - . . electromagnetic scattering
 - . . . **Raman spectra**
 - spectra
 - . molecular spectra
 - . . **Raman spectra**
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **Raman spectra**
- RT absorption spectra
 - emission spectra
 - light (visible radiation)
 - line spectra
 - molecular rotation
 - nonlinear optics
 - vibrational spectra

Raman spectroscopy

- UF *coherent anti-Stokes Raman spectroscopy*
- GS spectroscopy
 - . molecular spectroscopy
 - . . **Raman spectroscopy**
- RT astronomical spectroscopy
 - infrared spectroscopy
 - laser-induced breakdown spectroscopy
 - line spectra
 - optogalvanic spectroscopy
 - Rayleigh scattering
 - spectroscopic analysis

ramjet engines

DEF Jet engines with no mechanical compressor consisting of specially shaped tubes or ducts open at both ends, the air necessary for combustion being shoved into the duct and compressed by the forward motion of the engine, where the air passes through a diffuser and is mixed with fuel and burned, the exhaust gases issuing in a jet from the rear opening. Ramjet engines cannot operate under static conditions. Often called ramjets. Used for athodyds.

- UF *athodyds*
- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - **ramjet engines**
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turboramjet engines
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - **ramjet engines**
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turboramjet engines
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - **ramjet engines**
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turboramjet engines
- RT dump combustors
 - hydrogen fuels
 - Meteor 1 rocket vehicle
 - Navaho missile
 - ram accelerators

rocket-based combined-cycle engines
 Saenger space transportation system
 supersonic low altitude missile
 turbojet engines

ramjet missiles

- GS missiles
 - . **ramjet missiles**
 - . . Navaho missile
 - . . . supersonic low altitude missile
- RT air to air missiles
 - antiaircraft missiles
 - supersonic combustion ramjet engines
 - surface to air missiles
 - surface to surface missiles

ramjet-in-tube accelerators

USE **ram accelerators**

ramp functions

- GS functions (mathematics)
 - . **ramp functions**
- RT dynamic response
 - frequency response

∞ **ramps**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ramp functions
- ramps (structures)

ramps (structures)

- RT bridges (structures)
 - crossings
 - highways
 - intake systems
 - intersections
- ∞ parking
- ∞ ramps
 - slopes
 - wheelchairs

rams (presses)

- GS presses
 - . **rams (presses)**
- RT hammers
 - platens
 - plungers
- ∞ ram

rams (pumps)

- GS pumps
 - . **rams (pumps)**
- RT plungers
 - ∞ ram
 - water hammer

Ramsauer effect

- RT ∞ effects
 - electron scattering
 - ∞ interference
 - negative resistance devices
 - rare gases
 - scattering cross sections

rand project

- GS programs
 - . projects
 - . . **rand project**
- RT operations research

random access

DEF The process of obtaining data from, or placing data into, storage when there is no sequential relation governing the access time to successive storage location.

- RT Aloha system
 - computer storage devices
 - input/output routines
 - random access memory
 - random processes
 - VSAT (network)

random access memory

- GS computer components

- . computer storage devices
- . . **random access memory**
- . . . core storage
- memory (computers)
- . **random access memory**
- . . core storage
- RT random access

random distributions

USE **statistical distributions**

random errors

- DEF Errors that are not systematic, are not erratic, and are not mistakes.
- GS errors
 - . **random errors**
- RT BCH codes
 - ∞ dispersion
 - probability theory
 - quality control
 - sampling
 - stochastic processes
 - systematic errors

random loads

- GS loads (forces)
 - . **random loads**
 - . . gust loads
- RT contact loads
 - dynamic loads
 - impact loads
 - static loads
 - structural design criteria
 - transient loads
 - variable amplitude loading

random noise

DEF Oscillations whose instantaneous amplitudes occur, as a function of time according to a normal (Gaussian) curve. Used for Gaussian noise.

- UF *Gaussian noise*
- GS **random noise**
 - . random signals
- RT background noise
 - channel noise
 - communication theory
 - electromagnetic noise
 - ∞ noise
 - noise (sound)
 - noise generators
 - noise spectra
 - probability theory
 - pseudonoise
 - signal to noise ratios
 - stochastic processes
 - white noise

random numbers

DEF Expressions formed by sets of digits selected from a sequence of digits in which each successive digit is equally likely to be any of the digits.

- RT mathematical tables
- ∞ numbers
- pseudorandom sequences

random positioning machines

(added July 2000)

USE **clinostats**

random processes

- GS stochastic processes
 - . **random processes**
 - . . random walk
- RT communication theory
 - information theory
 - intermittency
 - Markov processes
 - Monte Carlo method
 - random access
 - statistical analysis

random sampling

DEF The process of selecting units for a sample of size n in such a manner that all combinations of n units under consideration have an equal or ascertainable chance of being selected as the sample.

- GS sampling

random signals

. **random sampling**
RT quality control

random signals
GS random noise
. **random signals**
RT noise spectra
signal to noise ratios
∞ signals
stochastic processes

random variables
DEF Variables characterized by random behavior in assuming their different possible values. Mathematically, they are described by their probability distribution, which specifies the possible values of a random variable together with the probability associated (in an appropriate sense) with each value. Random variables are said to be continuous if their possible values extend over a continuum and discrete if their possible values are separated by finite intervals.
RT functions (mathematics)
Shannon-Wiener measure
∞ statistics
∞ variable

random vibration
GS vibration
. **random vibration**
RT bending vibration
flutter
forced vibration
lattice vibrations
linear vibration
missile vibration
noise (sound)
self induced vibration
structural vibration
torsional vibration

random walk
GS stochastic processes
. random processes
. . **random walk**
RT Markov chains
Monte Carlo method

∞ **range**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT distance
orbital position estimation
range (extremes)
ranges (facilities)

range (extremes)
UF *extrema*
Gumbel theory
GS **range (extremes)**
. dynamic range
. frequency ranges
. . octaves
. . radio range
. . subaudible frequencies
. proportional limit
. Roche limit
RT confidence limits
constraints
distance
domains
dynamic characteristics
errors
functions (mathematics)
heterogeneity
horizon
integral equations
∞ limits
maxima
mean
minima
optimization
quality control
∞ range
sensitivity
standard deviation
statistical tests
tolerances (mechanics)
tolerances (physiology)
∞ travel

variability
variance (statistics)

range and range rate tracking
GS distance
. **range and range rate tracking**
radar
. **range and range rate tracking**
tracking (position)
. **range and range rate tracking**
RT Global Tracking Network
missile tracking
optical tracking
radar tracking
radio tracking
satellite tracking
STDN (network)

range control
USE **trajectory control**

range errors
SN (EXCLUDES ERRORS IN DISTANCE TRAVELED--LIMITED TO ERRORS IN DISTANCE MEASUREMENT)
DEF Errors in radar range measurement due to the propagation of radio energy through a nonhomogeneous atmosphere. These errors are due to the fact that the velocity of radio wave propagation varies with the index of refraction and that ray travel is not in straight lines through actual atmospheres. The resulting range errors are generally insignificant.
GS errors
. **range errors**
RT accuracy
boresight error
distance measuring equipment
error analysis
error signals

range finders
UF *range indicators*
GS measuring instruments
. distance measuring equipment
. . **range finders**
. . . optical range finders
. . . . laser range finders
RT altimeters
fire control
geodimeters
laser ranger/tracker
lunar rangefinding
navigation aids
position indicators
radar equipment
rangefinding
sound localization
space perception
stadimeters
tellurometers

range indicators
USE **range finders**

range measurement
USE **rangefinding**

range resources
GS resources
. Earth resources
. . **range resources**

range safety
GS safety
. **range safety**
RT aerospace safety
impact prediction
missile ranges
test ranges
trajectory control

rangefinding
UF *range measurement*
ranging
GS **rangefinding**
. airborne range and orbit
determination
. laser ranging
. lunar rangefinding
. sound ranging

. . satellite laser ranging
RT ballistic cameras
laser ranger/tracker
Marots (ESA)
∞ measurement
radar measurement
radar tracking
radio tracking
range finders
tracking (position)

rangelands
DEF Land providing forage for domestic and wild animals, wildlife cover, recreation opportunities, and vegetation for watershed protection.
GS land
. **rangelands**
RT cattle
grasslands
grazing
livestock
rural areas
rural land use

Rangemaster aircraft
USE **G-1 aircraft**

Ranger 1 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . **Ranger 1 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . **Ranger 1 lunar probe**

Ranger 2 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . **Ranger 2 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . **Ranger 2 lunar probe**

Ranger 3 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . **Ranger 3 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . **Ranger 3 lunar probe**

Ranger 4 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . **Ranger 4 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . **Ranger 4 lunar probe**
RT Atlas Agena B launch vehicle

Ranger 5 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . **Ranger 5 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . **Ranger 5 lunar probe**

Ranger 6 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . **Ranger 6 lunar probe**
unmanned spacecraft

- . space probes
- . . . lunar probes
- Ranger lunar probes
- **Ranger 6 lunar probe**
- Ranger 7 lunar probe**
- GS lunar spacecraft
- . lunar probes
- . . Ranger lunar probes
- . . . **Ranger 7 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Ranger lunar probes
- **Ranger 7 lunar probe**
- Ranger 8 lunar probe**
- GS lunar spacecraft
- . lunar probes
- . . Ranger lunar probes
- . . . **Ranger 8 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Ranger lunar probes
- **Ranger 8 lunar probe**
- Ranger 9 lunar probe**
- GS lunar spacecraft
- . lunar probes
- . . Ranger lunar probes
- . . . **Ranger 9 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Ranger lunar probes
- **Ranger 9 lunar probe**
- Ranger block 3 television system**
- GS communication equipment
- . spacecraft television
- . . **Ranger block 3 television system**
- telecommunication
- . spacecraft television
- . . **Ranger block 3 television system**
- television systems
- . spacecraft television
- . . **Ranger block 3 television system**
- RT ∞ systems
- Ranger lunar landing vehicles**
- GS lunar spacecraft
- . lunar probes
- . . Ranger lunar probes
- . . . **Ranger lunar landing vehicles**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Ranger lunar probes
- **Ranger lunar landing vehicles**
- RT BE-3 engine
- ∞ vehicles
- Ranger lunar probes**
- UF *Ranger satellites*
- GS lunar spacecraft
- . lunar probes
- . . **Ranger lunar probes**
- . . . Ranger 1 lunar probe
- . . . Ranger 2 lunar probe
- . . . Ranger 3 lunar probe
- . . . Ranger 4 lunar probe
- . . . Ranger 5 lunar probe
- . . . Ranger 6 lunar probe
- . . . Ranger 7 lunar probe
- . . . Ranger 8 lunar probe
- . . . Ranger 9 lunar probe
- . . . Ranger lunar landing vehicles
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . **Ranger lunar probes**
- Ranger 1 lunar probe
- Ranger 2 lunar probe
- Ranger 3 lunar probe
- Ranger 4 lunar probe
- Ranger 5 lunar probe
- Ranger 6 lunar probe
- Ranger 7 lunar probe
- Ranger 8 lunar probe
- Ranger 9 lunar probe
- Ranger lunar landing vehicles
- **Ranger 6 lunar probe**
- Ranger 7 lunar probe
- Ranger 8 lunar probe
- Ranger 9 lunar probe
- Ranger lunar landing vehicles
- RT Atlas Agena B launch vehicle
- Ranger project**
- GS programs
- . NASA programs
- . . NASA space programs
- . . . **Ranger project**
- Agena B Ranger Program
- . projects
- . . **Ranger project**
- . . . Agena B Ranger Program
- . space programs
- . . NASA space programs
- . . . **Ranger project**
- Agena B Ranger Program
- RT Agena B rocket vehicle
- Agena rocket vehicles
- Atlas launch vehicles
- lunar photographs
- lunar photography
- lunar probes
- Ranger satellites*
- USE **Ranger lunar probes**
- ranges (facilities)**
- GS **ranges (facilities)**
- . test ranges
- . . ballistic ranges
- . . missile ranges
- RT radio beacons
- ∞ range
- ranging*
- USE **rangefinding**
- rank tests**
- GS statistical analysis
- . statistical tests
- . . **rank tests**
- RT ∞ tests
- Rankine cycle**
- DEF An ideal thermodynamic cycle consisting of heat addition at constant pressure, isentropic expansion, heat rejection at constant pressure, and isentropic compression; used as an ideal standard for the performance of heat-engine and heat-pump installations operating with a condensable vapor as the working fluid, such as a steam power plant.
- GS cycles
- . thermodynamic cycles
- . . **Rankine cycle**
- RT ASTEC solar turboelectric generator
- Brayton cycle
- Carnot cycle
- laser propulsion
- Otto cycle
- solar dynamic power systems
- solar generators
- thermodynamics
- Rankine-Hugoniot relation**
- RT aerothermodynamics
- ∞ density
- pressure gradients
- shock wave propagation
- ranking**
- RT arrays
- comparison
- evaluation
- ratings
- selection
- sequencing
- value
- Raoult law**
- RT composition (property)
- Henry law
- partial pressure
- solutions
- vapor pressure
- RAPCON (control)*
- USE **radar approach control**
- rapid ballistics identification**
- GS identifying
- . **rapid ballistics identification**
- RT display devices
- imaging techniques
- laser applications
- lasers
- measuring instruments
- photography
- scanning
- stimulated emission
- stimulated emission devices
- rapid eye movement state**
- UF *desynchronized sleep*
- REMS*
- RT dreams
- eye movements
- sleep
- rapid prototyping**
- (added November 2001)
- DEF The fabrication of functional prototypes within a short turn-around time in order to support model verification, reduce design-cycle time, or reduce the overall cost of development. A set of advanced manufacturing technologies that can quickly generate three-dimensional objects directly from computer-based models.
- RT computer aided design
- computer aided manufacturing
- cost reduction
- fabrication
- product development
- prototypes
- three dimensional models
- rapid quenching (metallurgy)**
- DEF Rapid cooling of molten metals or alloys to achieve maximum uniformity in the crystal structure. Used for rapid solidification.
- UF *rapid solidification*
- GS cooling
- . quenching (cooling)
- . . **rapid quenching (metallurgy)**
- RT crystal growth
- crystal lattices
- crystal structure
- ∞ metallurgy
- ∞ quenching
- rapid solidification*
- USE **rapid quenching (metallurgy) solidification**
- rapid transit systems**
- UF *high speed transportation*
- GS transportation
- . **rapid transit systems**
- RT air transportation
- automated guideway transit vehicles
- automated transit vehicles
- cargo
- ground effect machines
- highways
- logistics
- passengers
- rail transportation
- rails
- roads
- ∞ systems
- ∞ transport vehicles
- transportation networks
- urban transportation
- rapids**
- RT meanders
- river basins
- rivers
- streams
- water currents
- water flow
- rare earth alloys**
- GS alloys

rare earth compounds

- . rare earth alloys
- . . erbium alloys
- . . gadolinium alloys
- . . lanthanum alloys
- . . mischmetal
- . . neodymium alloys
- RT yttrium alloys

rare earth compounds

- GS **rare earth compounds**
 - . cerium compounds
 - . . bastnasite
 - . . cerium oxides
 - . dysprosium compounds
 - . erbium compounds
 - . europium compounds
 - . lanthanum tellurides
 - . lutetium compounds
 - . . neodymium compounds
 - . . praseodymium compounds
 - . . samarium compounds
 - . . scandium compounds
 - . . scandium oxides
 - . . terbium compounds
 - . . thulium compounds
 - . . ytterbium compounds
- RT ∞ chemical compounds
- ∞ Group 3B compounds
- ∞ metal compounds

rare earth elements

- UF *lanthanide series metals*
- GS chemical elements
 - . **rare earth elements**
 - . . cerium
 - . . . cerium isotopes
 - cerium 137
 - cerium 144
 - . . dysprosium
 - . . . dysprosium isotopes
 - . . erbium
 - . . . erbium isotopes
 - . . europium
 - . . . europium isotopes
 - . . gadolinium
 - . . . gadolinium isotopes
 - . . holmium
 - . . . holmium isotopes
 - . . lanthanum
 - . . . lanthanum isotopes
 - . . lutetium
 - . . . lutetium isotopes
 - . . neodymium
 - . . . neodymium isotopes
 - . . praseodymium
 - . . . praseodymium isotopes
 - . . promethium
 - . . . promethium isotopes
 - . . samarium
 - . . . samarium isotopes
 - . . scandium
 - . . . scandium isotopes
 - . . terbium
 - . . . terbium isotopes
 - . . thulium
 - . . . thulium isotopes
 - . . ytterbium
 - . . . ytterbium isotopes
 - . . yttrium
 - . . . yttrium isotopes
- metals
 - . **rare earth elements**
 - . . cerium
 - . . . cerium isotopes
 - cerium 137
 - cerium 144
 - . . dysprosium
 - . . . dysprosium isotopes
 - . . erbium
 - . . . erbium isotopes
 - . . europium
 - . . . europium isotopes
 - . . gadolinium
 - . . . gadolinium isotopes
 - . . holmium
 - . . . holmium isotopes
 - . . lanthanum
 - . . . lanthanum isotopes
 - . . lutetium
 - . . . lutetium isotopes

- . . . lutetium isotopes
- . . neodymium
 - . . . neodymium isotopes
- . . praseodymium
 - . . . praseodymium isotopes
- . . promethium
 - . . . promethium isotopes
- . . samarium
 - . . . samarium isotopes
- . . scandium
 - . . . scandium isotopes
- . . terbium
 - . . . terbium isotopes
- . . thulium
 - . . . thulium isotopes
- . . ytterbium
 - . . . ytterbium isotopes
- . . yttrium
 - . . . yttrium isotopes
- RT alkali vapor lamps
- kreep
- neodymium lasers
- transition metals

∞ **rare gas compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 - . excimer lasers
 - . excimers
 - . helium compounds
 - . xenon compounds

rare gases

- DEF Gases such as helium, neon, argon, krypton, xenon, and radon, all of whose shells of planetary electrons contain stable numbers of electrons so that the atoms are almost completely chemically inactive. Used for inert gases and noble gases.
- UF *inert gases*
- GS *noble gases*
 - . chemical elements
 - . **rare gases**
 - . . argon
 - . . . argon isotopes
 - . . helium
 - . . . helium isotopes
 - . . liquid helium
 - . . . liquid helium 2
 - . . krypton
 - . . . krypton isotopes
 - krypton 85
 - . . neon
 - . . . liquid neon
 - . . . neon isotopes
 - . . radon
 - . . . radon isotopes
 - . . xenon
 - . . . xenon isotopes
 - xenon 129
 - xenon 133
 - xenon 135
 - . gases
 - . . **rare gases**
 - . . . argon
 - . . . argon isotopes
 - . . helium
 - . . . helium isotopes
 - . . liquid helium
 - . . . liquid helium 2
 - . . krypton
 - . . . krypton isotopes
 - krypton 85
 - . . neon
 - . . . liquid neon
 - . . . neon isotopes
 - . . radon
 - . . . radon isotopes
 - . . xenon
 - . . . xenon isotopes
 - xenon 129
 - xenon 133
 - xenon 135
- RT monatomic gases
- nonpolar gases
- Ramsauer effect

rare gas-halide lasers

- DEF A class of lasers in which the inert

gases are used as the amplifying medium.

- GS stimulated emission devices
 - . lasers
 - . . gas lasers
 - . . . **rare gas-halide lasers**
 - krypton fluoride lasers
 - xenon chloride lasers
 - xenon fluoride lasers
- RT coherent light
- laser pumping
- lasing
- light beams
- optical pumping
- stimulated emission

rarefaction

- RT antinodes
- compressing
- elastic waves
- expansion
- vacuum

rarefaction waves

- USE **elastic waves**

rarefied gas dynamics

- GS mechanics (physics)
 - . fluid mechanics
 - . . fluid dynamics
 - . . . gas dynamics
 - **rarefied gas dynamics**
- RT atomic beams
- BGK model
- Chapman-Enskog theory
- continuum flow
- ∞ dynamics
 - . free molecular flow
 - . Knudsen flow
 - . low density flow
 - . low density wind tunnels
 - . molecular beams
 - . molecular flow
 - . plasmas (physics)
 - . slip flow
 - . transition flow

rarefied gases

- UF *low density gases*
- GS gases
 - . **rarefied gases**
 - . . cosmic gases
 - . . . interplanetary gas
 - . . . interstellar gas
 - RT electron gas
 - . free molecular flow
 - . gas density
 - . gas temperature
 - . high temperature gases
 - . low density flow
 - . low density research
 - . molecular gases

rarefied plasmas

- GS gases
 - . **rarefied plasmas**
 - . particles
 - . . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **rarefied plasmas**
 - corpuscular radiation
 - energetic particles
 - plasmas (physics)
 - **rarefied plasmas**
 - RT cathode glow
 - cold plasmas
 - collisionless plasmas
 - electron plasma
 - nonuniform plasmas

rasers

- USE **masers**

raster scanning

- DEF Sweeping a cathode ray screen or an antenna beam characterized by a network of parallel sweeps either from side to side or from top to bottom.
- GS imaging techniques
 - . **raster scanning**

- scanning
- . raster scanning
- RT cathode ray tubes
- computer graphics
- display devices
- image processing
- images
- picture tubes
- television cameras
- rate meters
- USE measuring instruments
- rate of climb indicators
- GS aircraft instruments
- . rate of climb indicators
- RT altimeters
- flight instruments
- ∞ indicators
- rates (per time)
- GS rates (per time)
- . acceleration (physics)
- . . . angular acceleration
- . . . deceleration
- . . . spin reduction
- . . . electron acceleration
- . . . high acceleration
- . . . high gravity environments
- . . . impact acceleration
- . . . particle acceleration
- . . . plasma acceleration
- . . . transverse acceleration
- . acoustic velocity
- . airtspeed
- . angular velocity
- . bit error rate
- . burning rate
- . collision rates
- . critical velocity
- . decay rates
- . . . electron decay rate
- . drift rate
- . escape velocity
- . evaporation rate
- . exhaust velocity
- . flow velocity
- . . . solar wind velocity
- . flux (rate)
- . . . heat flux
- . . . magnetic flux
- . . . solar flux
- . flux density
- . . . current density
- . . . photon density
- . . . radiant flux density
- . . . irradiance
- illuminance
- solar constant
- . . . lumens
- . . . luminous intensity
- illuminance
- . . . luminance
- particle flux density
- electron flux density
- neutron flux density
- proton flux density
- . . . radiance
- . . . radiancy
- . . . solar flux density
- solar constant
- . . . sound intensity
- . . . zero sound
- . ground speed
- . group velocity
- . heart rate
- . . . arrhythmia
- . . . bradycardia
- . . . tachycardia
- . high speed
- . hypersonic speed
- . ion production rates
- . landing speed
- . light speed
- . loading rate
- . low speed
- . mass flow rate
- . orbital velocity
- . phase velocity
- . physiological acceleration
- . propagation velocity
- . pulse rate
- . . . pulse repetition rate
- . radial velocity
- . recombination coefficient
- . relativistic velocity
- . respiratory rate
- . . . dyspnea
- . . . hypoventilation
- . . . tachypnea
- . rotor speed
- . signal fading rate
- . solar velocity
- . star formation rate
- . strain energy release rate
- . strain rate
- . subsonic speed
- . supersonic speed
- . systole
- . terminal velocity
- . tip speed
- . transmission rate (communications)
- . transonic speed
- . wind velocity
- . . . solar wind velocity
- RT access time
- MTBF
- solitary waves
- time functions
- time measurement
- volume
- ratings
- GS ratings
- . pilot ratings
- . . . Cooper-Harper ratings
- RT assessments
- consistency
- evaluation
- normalizing (statistics)
- ∞ performance
- position (title)
- ranking
- ratiometers
- GS measuring instruments
- . ratiometers
- rational functions
- GS analysis (mathematics)
- . complex variables
- . . . meromorphic functions
- rational functions
- functions (mathematics)
- . meromorphic functions
- . . rational functions
- rations
- GS rations
- . space rations
- RT ∞ food
- ratios
- UF percentage
- GS ratios
- . aspect ratio
- . . fineness ratio
- . . high aspect ratio
- . . low aspect ratio
- . . thickness ratio
- . Biot number
- . bypass ratio
- . compression ratio
- . fiber volume fraction
- . Froude number
- . fuel-air ratio
- . Grashof number
- . Hartmann number
- . hematocrit ratio
- . indexes (ratios)
- . . KP index
- . . morphological indexes
- . . . vegetative index
- . . . leaf area index
- . . . normalized difference vegetation index
- . isotope ratios
- . Laval number
- . Lewis numbers
- . lift drag ratio
- . likelihood ratio
- . Mach number
- . mass ratios
- . . . mass to light ratios
- . . . mixing ratios
- . . . payload mass ratio
- . . . propellant mass ratio
- . Mills ratio
- . modular ratios
- . Nusselt number
- . Peclet number
- . perveance
- . Poisson ratio
- . Prandtl number
- . pressure ratio
- . Rayleigh number
- . Reynolds number
- . . . high Reynolds number
- . . . low Reynolds number
- . Brinkman number
- . Richardson number
- . scale (ratio)
- . Schmidt number
- . signal to noise ratios
- . similarity numbers
- . standing wave ratios
- . Stanton number
- . stress ratio
- . Strouhal number
- . temperature ratio
- . thrust-weight ratio
- . void ratio
- RT dynamic range
- efficiency
- fractals
- fractions
- proportion
- psychological tests
- refractivity
- rats
- GS animals
- . vertebrates
- . . . mammals
- rodents
- rats
- RT animal models
- mice
- pocket mice
- RATSCAT program
- USE radar target scatter site program
- Raven helicopter
- USE OH-23 helicopter
- ravines
- GS landforms
- . ravines
- RT canyons
- erosion
- river basins
- topography
- valleys
- water erosion
- rawinsondes
- DEF Combinations of raob and rawin; observations of temperature, pressure, relative humidity, and winds-aloft by means of radiosonde and radio direction finding equipment of radar tracking.
- GS measuring instruments
- . meteorological instruments
- . . radiosondes
- . . . rawinsondes
- . . . sondes
- . . . radiosondes
- rawinsondes
- radio equipment
- . radio transmitters
- . . radiosondes
- . . . rawinsondes
- transmitters
- . radio transmitters
- . . radiosondes
- . . . rawinsondes
- RT dropsondes
- meteorological balloons
- radar tracking

ray tracing

radio tracking
wind measurement

ray acoustics

USE **geometrical acoustics**

ray casting

(added May 1997)

USE **ray tracing**

ray optics

USE **geometrical optics**

ray tracing

DEF A procedure used in the graphical determination of the path followed by a single ray of radiant energy as it travels through media of varying indices of refraction.

UF *ray casting*

RT diffraction

geometrical optics
geometrical theory of diffraction
gradient index optics
grazing incidence
optical measurement
reflectance
tracking (position)
transmittance

Rayleigh distribution

GS functions (mathematics)
. probability density functions
. . . **Rayleigh distribution**
statistical analysis
. probability density functions
. . . **Rayleigh distribution**
statistical distributions
. **Rayleigh distribution**
RT error analysis
operations research
radial distribution

Rayleigh equations

RT ∞ equations
flow equations
heat transfer
thermodynamics

Rayleigh fading

(added June 2000)

DEF Rapid-fluctuation, small-scale fading resulting from multipath effects, and typically occurring in non-line-of-sight (NLOS) environments.

GS fading

. signal fading

. . . **Rayleigh fading**

RT channels (data transmission)
mobile communication systems
multipath transmission
phase shift keying
radio signals
reception diversity

Rayleigh number

GS dimensionless numbers
. **Rayleigh number**
ratios
. **Rayleigh number**
RT Benard cells
buoyancy
Rayleigh-Benard convection

Rayleigh scattering

DEF Any scattering process produced by spherical particles whose radii are smaller than about one tenth the wavelength of the scattered radiation.

GS scattering

. wave scattering
. . . electromagnetic scattering
. . . . Mie scattering
. . . . **Rayleigh scattering**

RT

airglow
gray gas
light scattering
Raman spectroscopy

sky

Rayleigh waves

DEF Two dimensional barotropic disturbances in a fluid having one or more discontinuities in the vorticity profile. Surface waves associated with the free boundary of a solid, such that a surface particle describes an ellipse whose major axis is normal to the surface and whose center is at the undisturbed surface. At maximum particle displacement away from the solid surface the motion of the particle is opposite to that of the wave.

GS elastic waves

. seismic waves

. . . **Rayleigh waves**

RT barotropic flow

fluid flow

S waves

two dimensional flow

Rayleigh-Benard convection

DEF The flow of a fluid contained between horizontal thermally conducting plates and heated from below. The Rayleigh number is proportional to the temperature difference between the plates.

GS convection

. free convection

. . . **Rayleigh-Benard convection**

. . . . Benard cells

fluid flow

. convective flow

. . . **Rayleigh-Benard convection**

. . . . Benard cells

RT buoyancy-driven flow

convection currents

convection-diffusion equation

convective heat transfer

forced convection

hot surfaces

laminar flow

Rayleigh number

solar convection (astronomy)

stellar convection

thermal boundary layer

Rayleigh-Ritz method

GS analysis (mathematics)

. numerical analysis

. . approximation

. . . **Rayleigh-Ritz method**

RT ∞ methodology

variational principles

rayon

DEF A manufactured fiber composed of regenerated cellulose, as well as fibers composed of regenerated cellulose in which substituents have replaced not more than 15 percent of the hydrogens of the hydroxyl groups.

GS fibers

. synthetic fibers

. . **rayon**

textiles

. **rayon**

∞ rays

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT atmospheric radiation

background noise

beams (radiation)

caustics (optics)

coherent radiation

continuous radiation

corpuscular radiation

electromagnetic radiation

extraterrestrial radiation

gamma rays

lunar rays

polarized radiation

pulsed radiation

Raytheon computers

GS data processing equipment
. computers
. . digital computers

. . . **Raytheon computers**

razor blades

GS cutters
. blades (cutters)
. . **razor blades**

RB-47 aircraft

USE **B-47 aircraft**

RB-50 aircraft

USE **B-50 aircraft**

RB-57 aircraft

USE **B-57 aircraft**

RB-66 aircraft

USE **B-66 aircraft**

RBCC engines

(added August 1999)

USE **rocket-based combined-cycle engines**

RBE

USE **relative biological effectiveness (RBE)**

RC circuits

UF *RC networks*

GS circuits

. **RC circuits**

RT capacitance
coupling circuits
discriminators
electric filters
electrical resistance
LC circuits
network analysis
network synthesis
RLC circuits
time constant
transconductance

RC networks

USE **RC circuits**

RCA computers

GS data processing equipment
. computers
. . **RCA computers**
. . . RCA spectra 70 computer
. . . . RCA-110 computers
RT data processing

RCA Satcom satellites

DEF Domestic commercial communications satellites launched by NASA for the RCA Corporation.

GS artificial satellites

. communication satellites

. . **RCA Satcom satellites**

commercial spacecraft

. **RCA Satcom satellites**

RT Delta launch vehicle
domestic satellite communications systems

RCA spectra 70 computer

GS data processing equipment
. computers
. . digital computers
. . . **RCA spectra 70 computer**
. . . . RCA computers
. . . . **RCA spectra 70 computer**

RCA-110 computers

GS data processing equipment
. computers
. . RCA computers
. . . **RCA-110 computers**

RCB stars

USE **R Coronae Borealis stars**

RDX

UF *cyclotrimethylene trinitramine*
trinitrotriazocyclohexane
GS explosives
. **RDX**
nitrogen compounds

- . azo compounds
 - . . **RDX**
 - organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **RDX**
 - propellants
 - . **RDX**
 - RT pyrotechnics
 - solid propellants
 - solid rocket propellants
- reactance**
- GS electrical properties
 - . electrical impedance
 - . . **reactance**
 - impedance
 - . electrical impedance
 - . . **reactance**
 - RT capacitance
 - electrical resistance
 - Foster theory
 - inductance
 - Smith chart
 - transconductance
- reactance amplifiers*
- USE **parametric amplifiers**
- reacting flow**
- (added August 1991)
- DEF Fluid flows in which chemical reactions are occurring or potentially can occur. Used for chemically reacting flow.
 - UF *chemically reacting flow*
 - GS fluid flow
 - . **reacting flow**
 - . . combustible flow
 - RT boundary layer combustion
 - chemical reactions
 - combustion chemistry
 - detonable gas mixtures
 - direct numerical simulation
 - flame propagation
 - ∞ flow
 - fuel flow
 - premixed flames
 - propellant combustion
 - reaction kinetics
 - turbulent combustion
 - turbulent flow
- ∞ **reaction**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT chemical reactions
 - human reactions
 - irritation
 - nuclear reactions
 - thrust
- reaction bonding**
- DEF Chemical combining of ingredients to produce silicon nitride ceramics.
 - GS bonding
 - . **reaction bonding**
 - RT aluminum
 - ceramics
 - chemical reactions
 - melting points
 - nitrogen
 - oxygen
 - powder metallurgy
 - sialon
 - silicon
 - silicon nitrides
 - sintering
- ∞ **reaction control**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT chemical reaction control
 - ∞ control
 - directional control
 - Marquardt R4D engine
 - nuclear reactor control
 - reactor safety
- thrust control
- reaction intermediates**
- (added August 2004)
- DEF Substances formed during or contributing towards, the synthesis or metabolism of other products. Reaction intermediates may also be the desired product of two or more initial reacting materials.
 - GS products
 - . reaction products
 - . . **reaction intermediates**
 - RT chemical reactions
 - reaction kinetics
 - synthesis (chemistry)
- reaction jet backpacks*
- USE **self maneuvering units**
- reaction jets*
- USE **jet flow**
 - jet thrust**
- reaction kinetics**
- UF *chemical kinetics*
 - reaction rate*
 - GS kinetics
 - . **reaction kinetics**
 - RT amino radical
 - association reactions
 - autocatalysis
 - catalysis
 - chemical equilibrium
 - chemical reactions
 - combustion chemistry
 - Damkohler number
 - Fischer-Tropsch process
 - half life
 - heat of dissociation
 - interstellar chemistry
 - irreversible processes
 - nitrous acid
 - nuclear reactions
 - pressure dependence
 - reacting flow
 - reaction intermediates
 - reaction-diffusion equations
 - reagents
 - solvation
- reaction products**
- DEF The substances formed in a chemical reaction -- the desired items as well as the unwanted fumes, sludge, residues, etc.
 - GS products
 - . **reaction products**
 - . . combustion products
 - . . . soot
 - . . reaction intermediates
 - RT ashes
 - by-products
 - effluents
 - engines
 - exhaust gases
 - fumes
 - gases
 - infrared suppression
 - jet engines
 - precipitates
 - residues
 - slags
 - sludge
- reaction rate*
- USE **reaction kinetics**
- reaction time**
- DEF In human engineering, the interval between an input signal (physiological) or a stimulus (psychophysiological) and the response elicited by the signal. Used for reverse time.
 - UF *reverse time*
 - GS time
 - . **reaction time**
 - . . chronaxy
 - RT adaptation
 - conditioned reflexes
 - dynamic characteristics
 - dynamic response
 - human reactions
- perceptual time constant
 - physiological effects
 - pontryagin principle
 - psychological effects
 - psychomotor performance
 - ramp functions
 - reflexes
 - refractory period
 - sensitivity
 - sensorimotor performance
 - step functions
 - time constant
 - time lag
- reaction wheels**
- UF *inertia wheels*
 - GS wheels
 - . **reaction wheels**
 - RT attitude control
 - counter-rotating wheels
 - flywheels
- reaction-diffusion equations**
- (added July 1994)
- RT combustion physics
 - convection-diffusion equation
 - diffusion coefficient
 - ∞ equations
 - Ficks equation
 - partial differential equations
 - reaction kinetics
 - transport theory
- reactive centers*
- (added August 2004)
- USE **active sites (chemistry)**
- reactivity**
- DEF The ability to react. For proper use of the term, the reaction in question and the conditions should be stated and the parameter used in measuring reactivity indicated, such as rate, uniformity, or the like.
 - GS **reactivity**
 - . photorefractivity
 - RT chemical reactions
 - inhour equation
 - nuclear reactions
- reactor chemistry*
- USE **radiochemistry**
- reactor cores**
- DEF In nuclear reactors, the regions containing the fissionable material.
 - GS cores
 - . **reactor cores**
 - RT annular core pulse reactors
 - control rods
 - nuclear fuel elements
 - nuclear fuels
 - nuclear reactors
 - ∞ operators
 - plasma core reactors
 - reflectometers
 - reflectors
 - void ratio
- reactor design**
- RT annular core pulse reactors
 - blankets (fission reactors)
 - blankets (fusion reactors)
 - chemical reactors
 - computer aided design
 - ∞ design
 - engine design
 - engineering test reactors
 - Hanford reactors
 - high temperature nuclear reactors
 - limiters (fusion reactors)
 - nuclear reactors
 - nuclear research and test reactors
 - offshore reactor sites
 - organic cooled reactors
 - pebble bed reactors

reactor materials

product development

reactor fuels

USE **nuclear fuels**

reactor in flight test program

USE **RIFT (reactor in flight test)**

reactor materials

RT annular core pulse reactors
blankets (fission reactors)
blankets (fusion reactors)
chemical reactors
∞ construction materials
coolants
limiters (fusion reactors)
loss of coolant
∞ materials
materials selection
moderators
nuclear fuel elements
nuclear fuels
nuclear reactors
pressure vessels
radiation shielding
spent fuels

reactor physics

GS nuclear physics
. **reactor physics**
RT annular core pulse reactors
beta factor
Hanford reactors
inhour equation
nuclear fuel burnup
nuclear reactors
∞ physics
∞ science

reactor safety

DEF Theoretical and experimental investigations of the behavior of reactor types and designs under various real or hypothetical accidents.

GS safety
. **reactor safety**
RT annular core pulse reactors
chemical reactors
control rods
explosions
industrial safety
nuclear reactor control
nuclear reactors
offshore reactor sites
radiation hazards
∞ reaction control
relief valves
Transient Reactor Test Facility

reactor startup tests

GS fuel tests
. **reactor startup tests**
RT initiation
nuclear fuels
nuclear reactors
starting
∞ tests

reactor technology

GS technologies
. **reactor technology**
RT annular core pulse reactors
∞ engineering
engineering test reactors
Hanford reactors
high temperature nuclear reactors
Joint European Torus
nuclear fuel burnup
nuclear reactors
nuclear research and test reactors
offshore reactor sites
organic cooled reactors
pebble bed reactors
reverse field pinch

∞ **reactors**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT annular core pulse reactors
chemical reactors

electric reactors
fast test reactors
fusion reactors
fusion-fission hybrid reactors
high temperature nuclear reactors
molten salt nuclear reactors
nuclear reactors
nuclear research and test reactors
plasma core reactors
power reactors
RIFT (reactor in flight test)
SNAPTRAN reactor
spheromaks
swimming pool reactors
thermal reactors
tokamak devices
water cooled reactors

readers

UF *reading machines*
RT character recognition
conical scanning
∞ detectors
magnetic tapes
microfilms
optical data processing
optical scanners
pattern recognition
punched cards
punched tapes
reading

reading

GS **reading**
. lip reading
RT character recognition
conical scanning
data transmission
display devices
input
∞ interpretation
legibility
perception
printing
readers
scanners
scanning
symbols
visibility

reading machines

USE **readers**

readjustment

USE **adjusting**

read-only memory devices

DEF Computer devices for storing data in permanent or nonerasable form. Used for ROM devices.

UF *ROM devices*
GS computer components
. computer storage devices
. **read-only memory devices**
. . . CD-ROM
RT computer design
computer systems design
computers

readout

RT display devices
multiple output programs
output
printers (data processing)
printouts
remote consoles

reagents

RT catalysts
chemical analysis
chemical reactions
reaction kinetics

real gases

GS gases
. **real gases**
RT equations of state
gas density
ideal gas
kinetic theory

molecular gases
monatomic gases

real numbers

GS **real numbers**
. integers
RT complex numbers
∞ numbers

real time operation

DEF Time in which reporting on events or recording of events is simultaneous with the events.

RT automatic control
computer programming
computers
display devices
integrated mission control center
multiprocessing (computers)
onboard data processing
windows (computer programs)

real variables

GS analysis (mathematics)
. **real variables**
. . . Abel function
. . . asymptotes
. . . Bessel functions
. . . Hankel functions
. . . Bethe-Salpeter equation
. . . calculus of variations
. . . composite functions
. . . delta function
. . . differential equations
. . . Blasius equation
. . . Chandrasekhar equation
. . . cosine series
. . . Duffing differential equation
. . . Falkner-Skan equation
. . . hyperbolic differential equations
. . . Lamé wave equations
. . . partial differential equations
. . . . biharmonic equations
. . . . Burger equation
. . . . Cauchy-Riemann equations
. . . . elliptic differential equations
. Monge-Ampère equation
. . . . Euler-Cauchy equations
. . . . Ffowcs Williams-Hawkings equation
. . . . Fokker-Planck equation
. . . . Gauss equation
. . . . Helmholtz vorticity equation
. . . . Liouville equations
. . . . parabolic differential equations
. . . . Poisson equation
. . . . vlasov equations
. . . Riccati equation
. . . vorticity equations
. . . Helmholtz vorticity equation
. . Einstein equations
. . existence theorems
. . extremum values
. . limits (mathematics)
. . . maxima
. . . minima
. . . . Cramer-Rao bounds
. . . Fourier-Bessel transformations
. . Green's functions
. . hyperbolic functions
. . hyperplanes
. . Jacobi integral
. . Jacobi matrix method
. . kernel functions
. . Liapunov functions
. . linear equations
. . . Ffowcs Williams-Hawkings equation
. . . linear evolution equations
. . . Riccati equation
. . Lipschitz condition
. . measure and integration
. . . binary integration
. . . Borel sets
. . . functional integration
. . . integral calculus
. . . J integral
. . . Lebesgue theorem
. . . numerical integration
. . . Runge-Kutta method

- . . . Stieltjes integral
- . . . weighting functions
- . . . Neumann problem
- . . . nonlinear equations
- . . . cubic equations
- . . . Duffing differential equation
- . . . Monge-Ampere equation
- . . . nonlinear evolution equations
- . . . quadratic equations
- . . . quartic equations
- . . . numerical differentiation
- . . . periodic functions
- . . . trigonometric functions
- cosine series
- sine series
- tangents
- . . . series (mathematics)
- . . . asymptotic series
- . . . Campbell-Hausdorff series
- . . . cosine series
- . . . Fourier series
- . . . Pade approximation
- . . . power series
- Taylor series
- MacLaurin series
- . . . progressions
- . . . Prony series
- . . . sine series
- . . . Sturm-Liouville theory
- . . . vector analysis
- . . . collinearity
- . . . coplanarity
- . . . curl (vectors)
- . . . vorticity
- . . . Weierstrass functions
- . . . Whittaker functions

- RT aperiodic functions
calculus
Cholesky factorization
complex variables
continuums
dependent variables
differential calculus
factorization
Fourier analysis
Hermitian polynomial
hyperspheres
infinity
inflection points
maximum principle
monotone functions
Schmidt method
stability derivatives
uniqueness theorem
∞ variable

rearward facing steps
USE **backward facing steps**

- reattached flow**
GS fluid flow
. viscous flow
. . boundary layer flow
. . . **reattached flow**
RT ∞ attachment
backward facing steps
boundary layer separation
Coanda effect
Crocco-Lee theory
flow characteristics
flow distribution
separated flow

reattachment
USE **attachment**

REB
USE **relativistic electron beams**

- rebreathing**
RT air purification
carbon dioxide concentration
carbon dioxide removal
expired air
life support systems
spacecraft cabin atmospheres

receivers
DEF Initial components or sensing elements of measuring systems. For example, the

receiver of a thermoelectric thermometer is the measuring thermocouple. Instruments used to detect the presence and to determine the information carried by electromagnetic radiation. Receivers include circuits designed to detect, amplify, rectify, and shape the incoming radio frequency signals received at the antenna in such a manner that the information containing component of the received energy can be delivered to the desired indicating of recording equipment. Used for receiving systems.

- UF *receiving systems*
GS **receivers**
. linear receivers
. logarithmic receivers
. radar receivers
. radio receivers
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
. radiotelephones
. television receivers
RT amplifiers
∞ detectors
display devices
duplexers
electric filters
instrument receivers
∞ receiving
repeaters
tanks (containers)
teleprinters
teletypewriters
transmitters

- ∞ **receiving**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *reception*
RT acquisition
collection
delivery
procurement
radar reception
radio reception
receivers
recognition
signal reception
television reception

receiving systems
USE **receivers**

receptacles (containers)
USE **containers**

reception
USE **receiving**

- reception diversity**
UF *space diversity*
GS radio equipment
. **reception diversity**
RT fading
radio antennas
radio receivers
radio reception
Rayleigh fading
signal fading

receptors (physiology)
DEF Sensory nerve endings or organs in a living organism that is sensitive to physical or chemical stimuli.

- GS **receptors (physiology)**
. baroreceptors
. chemoreceptors
. gravireceptors
. . otolith organs
. . mechanoreceptors
. photoreceptors
. proprioceptors
. thermoreceptors
RT sense organs
sensitometry

recesses
RT cavities
crevasses

∞ hollow

recession
RT ∞ depression
economics

recharging
DEF The restoring of discharged electric storage batteries to a charged condition by passing direct current through them in a direction opposite to that of the discharging current.
RT charge efficiency

reciprocal theorems
GS theorems
. **reciprocal theorems**
RT angles (geometry)
geometry
lines (geometry)
points (mathematics)
projective geometry

reciprocating engines
USE **piston engines**

reciprocation
RT cycles
mechanical oscillators
piston engines
pistons

reciprocity theorem
DEF Any theorem expressing reciprocal relations for the behavior of some physical system in which input and output can be interchanged without altering the response of the system to a given excitation.

- GS theorems
. **reciprocity theorem**
RT acoustic scattering
electromagnetic fields
electromagnetic scattering
wave scattering

recirculation
USE **circulation**

recirculative fluid flow
GS fluid flow
. **recirculative fluid flow**
RT backward facing steps
boundary layer flow
boundary layer separation
reversed flow
turbulent flow
turbulent mixing
vortices

reclamation
GS **reclamation**
. materials recovery
. . gas recovery
. . nuclear fuel reprocessing
. . solvolysis
. . water reclamation
RT environmental cleanup
oil recovery
∞ recovery
recycling
regeneration (engineering)
waste management

recognition
DEF The psychological process in which an observer so interprets the visual or auditory stimuli he receives from a distant object that he forms a correct conclusion as to the exact nature of that object or sound.

- GS **recognition**
. pattern recognition
. . character recognition
. . graphology
. speech recognition
. target recognition
. timber identification
RT acquisition
consciousness
crop identification
identifying
IFF systems (identification)

recoil atoms

- ∞ interpretation
- memory
- ∞ receiving
- remote sensing

recoil atoms

- GS atoms
- . **recoil atoms**
- RT recoillings

recoil ions

- GS ions
- . **recoil ions**
- RT atomic collisions
- charge exchange
- electron scattering
- ion impact
- ion production rates
- ion scattering
- ionic collisions
- recoillings

recoil protons

- GS particles
- . charged particles
- . . . protons
- . . . **recoil protons**
- . elementary particles
- . . . fermions
- protons
- **recoil protons**
- RT baryons
- recoillings

recoillings

- RT collisions
- particle motion
- recoil atoms
- recoil ions
- recoil protons

recombinant DNA

USE **deoxyribonucleic acid**

recombination coefficient

DEF A measure of the specific rate at which oppositely charged ions join to form neutral particles (a measure of ion recombination).

- GS coefficients
- . **recombination coefficient**
- rates (per time)
- . **recombination coefficient**
- RT free electrons
- ion recombination
- ionized gases

recombination reactions

- GS **recombination reactions**
- . atomic recombination
- . . oxygen recombination
- . electron recombination
- . . radiative recombination
- . electron-ion recombination
- . . radiative recombination
- . hydrogen recombinations
- . ion recombination
- RT atomic collisions
- capture effect
- fertilization
- Suhl effect

recommendations

- GS **recommendations**
- . suggestion
- RT decision theory
- general overviews

recompression

USE **compressing**

reconfigurable hardware

(added September 2001)

DEF Electronic circuit devices whose architectures can be programmatically modified to suit the application at hand.

- GS **reconfigurable hardware**
- . programmable logic devices
- . . field-programmable gate arrays
- evolvable hardware
- RT chips (electronics)

- ∞ hardware
- integrated circuits
- logic circuits

reconnaissance

- GS **reconnaissance**
- . aerial reconnaissance
- . . Airborne Integrated Reconnaissance System
- . photoreconnaissance
- . . spectral reconnaissance
- RT COSPAS
- Earth resources
- observation
- patrols
- photogeology
- SarSat
- searching
- situational awareness
- space observations (from Earth)
- space surveillance (spaceborne)
- surveillance
- surveys
- terrain analysis

reconnaissance aircraft

- UF *Darkstar unmanned aerial vehicle*
- GS **reconnaissance aircraft**
- . A-9 aircraft
- . Breguet 1150 aircraft
- . Cessna L-19 aircraft
- . HS-801 aircraft
- . SR-71 aircraft
- . TSR-2 aircraft
- . U-2 aircraft
- . Victor MK-1 aircraft
- . weather reconnaissance aircraft
- RT aerial reconnaissance
- ∞ aircraft
- antisubmarine warfare aircraft
- Earth Resources Survey aircraft
- flying platforms
- jet aircraft
- light aircraft
- ∞ military aircraft
- ∞ military aviation
- military helicopters
- observation aircraft
- pilotless aircraft
- submersible aircraft
- supersonic aircraft
- unmanned aircraft systems
- utility aircraft
- V/STOL aircraft
- Valiant aircraft
- water takeoff and landing aircraft
- YF-12 aircraft

reconnaissance spacecraft

- GS military spacecraft
- . **reconnaissance spacecraft**
- . . Inspector satellite
- . . Midas satellites
- . . . Midas 2 satellite
- . . . Midas 3 satellite
- . . . Midas 4 satellite
- . . . Midas 5 satellite
- . . . Midas 6 satellite
- . . . Midas 7 satellite
- . . photo reconnaissance spacecraft
- . . Samos
- RT aerial reconnaissance
- artificial satellites
- manned orbital laboratories
- manned spacecraft
- unmanned spacecraft

reconstruction

- GS **reconstruction**
- . image reconstruction
- . wave front reconstruction
- RT construction
- restoration

∞ recorders

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cable force recorders
- data recorders

- playbacks
- recording instruments
- registers (computers)
- tape recorders
- VLF emission recorders

recording

- GS **recording**
- . data recording
- . data smoothing
- . magnetic recording
- . photographic recording
- . prediction recording
- RT playbacks
- plotting
- privacy
- ∞ storage

recording heads

- RT data recording
- magnetic recording
- magnetic tapes
- recording instruments
- tape recorders
- video equipment

recording instruments

- UF *emissographs*
- pluviographs*
- thermograms*
- GS **recording instruments**
- . bathythermographs
- . cable force recorders
- . flight recorders
- . . flight load recorders
- . force vector recorders
- . mechanographs
- . oscillographs
- . plotters
- . . x-y plotters
- . pressure recorders
- . radiometeorographs
- . seismographs
- . . lunar seismographs
- . tape recorders
- . . video tape recorders
- . weather data recorders
- . whistler recorders
- RT aircraft instruments
- automatic control
- bubble technique
- control equipment
- counters
- data recorders
- electronic recording systems
- flight instruments
- graphs (charts)
- indicating instruments
- instrument receivers
- instrument transmitters
- ∞ instruments
- measuring instruments
- meteorological instruments
- ∞ pens
- photographic recording
- ∞ recorders
- recording heads
- sonograms
- sphygmography
- transducers
- VLF emission recorders

records

- GS documents
- . **records**
- . . video disks
- RT case histories
- ∞ data
- data processing
- data recording
- documentation
- ∞ drawing
- format
- histories
- periodicals
- playbacks
- Presidential reports
- privacy
- records management
- reports

supplements
 technical writing
 ∞ tests
 texts

records management
(added August 1989)
 GS management
 . information management
 . . **records management**
 RT data management
 information resources management
 information systems
 management information systems
 records

recoverability
 RT damage assessment
 ∞ properties
 ∞ recovery

recoverable launch vehicles
 GS launch vehicles
 . **recoverable launch vehicles**
 RT booster recovery
 launch vehicle configurations
 multiengine vehicles
 ∞ recovery
 recovery parachutes
 reusable launch vehicles
 ∞ vehicles
 ∞ winged vehicles
 X-33 reusable launch vehicle
 X-34 reusable launch vehicle

recoverable satellites
 USE **recoverable spacecraft**

recoverable spacecraft
 UF *recoverable satellites*
 GS reentry vehicles
 . **recoverable spacecraft**
 . . Apollo spacecraft
 . . . Apollo lunar experiment module
 . . Astro vehicle
 . . Gemini B spacecraft
 . . Gemini spacecraft
 . . . Gemini 2 spacecraft
 . . . Gemini (GT-1) spacecraft
 . . Mercury spacecraft
 . . . Aurora 7
 . . . Faith 7
 . . . Friendship 7
 . . . SIGMA 7
 . . reusable spacecraft
 . . . aerospace planes
 HOPE aerospace plane
 HOTOL launch vehicle
 VentureStar launch vehicle
 X-30 vehicle
 X-37 vehicle
 X-40A vehicle
 . . . MARS (Manned Reusable
 Spacecraft)
 . . . single stage to orbit vehicles
 Delta Clipper
 HOTOL launch vehicle
 . . . space shuttles
 Buran space shuttle
 Hermes manned spaceplane
 Space Shuttle orbiters
 Atlantis (orbiter)
 Challenger (Orbiter)
 Columbia (Orbiter)
 Discovery (Orbiter)
 Endeavour (orbiter)
 Enterprise (Orbiter)
 . . voskhod manned spacecraft
 . . . Voskhod 1 spacecraft
 . . . Voskhod 2 spacecraft
 . . Vostok spacecraft
 . . . Vostok 1 spacecraft
 . . . Vostok 2 spacecraft
 . . . Vostok 3 spacecraft
 . . . Vostok 4 spacecraft
 . . . Vostok 5 spacecraft
 . . . Vostok 6 spacecraft
 RT booster rocket engines
 boostglide vehicles
 expendable stages (spacecraft)

hypersonic vehicles
 Inertial Upper Stage
 interim stages (spacecraft)
 lifting reentry vehicles
 maneuverable spacecraft
 manned spacecraft
 military spacecraft
 rendezvous spacecraft
 space capsules
 ∞ spacecraft
 spacecraft recovery
 unmanned spacecraft
 ∞ winged vehicles

∞ **recovery**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT booster recovery
 gas recovery
 loop transfer recovery
 materials recovery
 nuclear fuel reprocessing
 oil recovery
 pressure recovery
 reclamation
 recoverability
 recoverable launch vehicles
 recovery parachutes
 retrieval
 reuse
 spacecraft recovery
 stress relaxation
 stress relieving
 visual discrimination

recovery parachutes
 GS parachutes
 . **recovery parachutes**
 RT booster recovery
 Discoverer recovery capsules
 recoverable launch vehicles
 ∞ recovery
 ribbon parachutes
 spacecraft recovery

recovery vehicles
 SN (EXCLUDES RECOVERABLE VEHICLES)
 GS **recovery vehicles**
 . Assured Crew Return Vehicle
 . X-38 crew return vehicle
 RT helicopters
 ∞ military vehicles
 trucks
 ∞ vehicles

recovery zones
 RT downrange
 landing sites
 reentry range
 regions
 spacecraft recovery

recreation
 RT morale
 parks
 relaxation (physiology)
 rest
 Starsite program
 tourism
 urban planning
 urban research

recrystallization
 DEF In metals, the change from one crystal
 structure to another, as occurs on heating or
 cooling through a critical temperature. The for-
 mation of a new strain free grain structure from
 that existing in cold worked metal, usually ac-
 complished by heating.
 GS crystallization
 . **recrystallization**
 RT annealing
 heat treatment
 laser annealing
 ∞ metallurgy
 nucleation
 polygonization

∞ separation

rectangles
 GS geometry
 . Euclidean geometry
 . . polygons
 . . . tetragons
 **rectangles**
 RT rectangular planforms

rectangular beams
 GS structural members
 . beams (supports)
 . . **rectangular beams**
 RT box beams

rectangular coordinates
 USE **Cartesian coordinates**

rectangular drainage
 USE **drainage patterns**

rectangular panels
 GS panels
 . **rectangular panels**
 planforms
 . rectangular planforms
 . . **rectangular panels**
 RT strakes
 structural members
 wing panels

rectangular planforms
 GS planforms
 . **rectangular planforms**
 . . rectangular panels
 . . rectangular plates
 . . rectangular wings
 RT rectangles
 wing planforms

rectangular plates
 GS planforms
 . rectangular planforms
 . . **rectangular plates**
 structural members
 . plates (structural members)
 . . **rectangular plates**
 RT flat plates
 metal plates
 ∞ plates

rectangular waveguides
 GS waveguides
 . **rectangular waveguides**
 RT beam waveguides
 microwave filters

rectangular wind tunnels
 GS test facilities
 . wind tunnels
 . . **rectangular wind tunnels**
 RT subsonic wind tunnels

rectangular wings
 UF *straight wings*
 GS airfoils
 . wings
 . . unswept wings
 . . . **rectangular wings**
 planforms
 . rectangular planforms
 . . **rectangular wings**

rectennas
 DEF Devices that convert microwave en-
 ergy into direct-current power by utilizing a num-
 ber of small diodes each with its own diode
 rectifier. Used for rectifier antennas.
 UF *rectifier antennas*
 GS antennas
 . radio antennas
 . . microwave antennas
 . . . **rectennas**
 microwave equipment
 . microwave antennas
 . . **rectennas**
 radio equipment
 . radio antennas
 . . microwave antennas
 . . . **rectennas**

rectification

RT satellite power transmission
solar radiation
spacetennas

rectification

GS **rectification**
. geometric rectification (imagery)

RT ∞ condensation
distillation
purification
refining

rectifier antennas

USE **rectennas**

rectifiers

SN (EXCLUDES PHOTOGRAPHIC
RECTIFIER)

DEF Static devices having an asymmetrical conduction characteristic which is used to convert attending current into direct current.

GS **rectifiers**
. avalanche diodes
. . cryosar
. crystal rectifiers
. germanium diodes
. ignitrons
. thyratrons
. thyristors
. . silicon controlled rectifiers

RT Barritt diodes
current converters (AC to DC)
diodes
electron tubes

∞ energy sources
form factors
ITO (semiconductors)
mercury arcs
metal oxide semiconductors

∞ power supplies
power supply circuits
semiconductor devices
solid state devices
thin films

rectum

GS anatomy
. digestive system
. . gastrointestinal system
. . . intestines
. . . . **rectum**

recuperators

USE **regenerators**

recursion formulas

USE **recursive functions**

recursive filters

(added December 2002)
USE **IIR filters**

recursive functions

UF *recursion formulas*

GS functions (mathematics)
. **recursive functions**

RT FIR filters
IIR filters
LISP (programming language)
strange attractors

recycling

RT economy
extraction
materials recovery
nuclear fuel reprocessing

∞ processing
reclamation
refining
resources
solvolyis
spent fuels
waste management

red arcs

GS atmospheric radiation
. auroras
. . auroral arcs
. . . **red arcs**

RT ∞ arcs

auroral ionization

red blood cells

USE **erythrocytes**

red dwarf stars

DEF Red stars of low luminosity, so designated by E. Hertzsprung. Red Dwarf stars are commonly those main sequence stars fainter than an absolute magnitude of plus 1, and are the faintest and coolest of the dwarfs.

GS celestial bodies
. stars
. . main sequence stars
. . . dwarf stars
. . . . **red dwarf stars**

RT hot stars
late stars
massive compact halo objects
stellar luminosity
stellar magnitude
subdwarf stars
supernova remnants
white dwarf stars

red giant stars

DEF Stars whose evolution has progressed to the point where hydrogen core burning has been completed, the helium core has become denser and hotter than originally, and the envelope has expanded to perhaps 100 times its initial size.

GS celestial bodies
. stars
. . giant stars
. . . **red giant stars**
. . . . carbon stars

RT asymptotic giant branch stars
late stars
M stars
Mira variables
S stars
stellar evolution
stellar luminosity

Red Sea

GS seas
. **Red Sea**

RT Africa
Asia

red shift

DEF In astronomy, the displacement of observed spectral lines toward the longer wavelengths of the red end of the spectrum.

RT blue shift
cosmology
Doppler effect
Doppler-Fizeau effect
galaxies
Hubble constant
Hubble diagram
irregular galaxies
radial velocity

red sprites

(added January 2000)
USE **sprites (atmospheric physics)**

red tide

RT fishes
marine environments
microorganisms
oceanography
plankton
sea water
toxicology

Redeye missile

GS missiles
. antiaircraft missiles
. . **Redeye missile**
. surface to air missiles
. . **Redeye missile**

RT solid propellant rocket engines

Redox cells

DEF Cells for converting the energy of reactants to electrical energy; an intermediate reductant in the form of liquid electrolyte reacts

at the anode in a conventional manner and is regenerated by reaction with a primary fuel.

GS electrochemical cells
. electric batteries
. . **Redox cells**

RT electrochemistry
electrolytes
energy conversion efficiency
energy storage

reduced gravity

USE **microgravity**

reduced instruction set computing

USE **RISC processors**

reduced order filters

GS linear filters
. **reduced order filters**

RT electric filters

∞ filters
Kalman filters
navigation aids

∞ reduction

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *decrementing*
diminution
shortening

RT attenuation
cleaning
comminution
contraction
damping
data reduction
deceleration
decontamination
demagnetization
deoxygenation
depletion
depolarization
dilution
dimming
dispersing
dissipation
drag reduction
elimination
friction reduction
hydrogenolysis

∞ inhibition
iodimetry
leakage
metal working
noise reduction
optimization
pressure reduction
prevention
purification
reduction (chemistry)
refining
relaxation (mechanics)
removal
retarding
shrinkage
sidelobe reduction
spin reduction
stopping
tapering

reduction (chemistry)

GS chemical reactions
. **reduction (chemistry)**
. . deoxidizing
. . hydrogenation

RT ∞ chemistry
dehydrogenation
electrodeposition
electrolysis
metal powder
oxidation
oxidation-reduction reactions
purification

∞ reduction
roasting
smelting

trichloroethylene

reduction (mathematics)
 USE **optimization**

redundancy
 DEF The existence of more than one means of accomplishing a given task, where all means must fail before there is an overall failure of the system.
 RT assurance
 communication theory
 computer program integrity
 correction
 error detection codes
 information theory
 reliability

redundancy encoding
 GS coding
 . **redundancy encoding**
 RT concatenated codes
 data transmission
 error correcting codes
 error correcting devices
 error detection codes
 Reed-Solomon codes
 repetition
 signal encoding

redundant components
 UF *redundant structures*
 RT backups
 ∞ components
 reliability
 spare parts
 ∞ structures

redundant structures
 USE **redundant components**

reeds (plants)
 GS plants (botany)
 . grasses
 . . **reeds (plants)**

Reed-Solomon codes
 (*added June 1992*)
 UF *RS codes*
 GS error correcting codes
 . **Reed-Solomon codes**
 RT bit error rate
 ∞ codes
 coding
 concatenated codes
 decoders
 redundancy encoding
 signal encoding

reefs
 DEF Chains of rocks, sand ridges, or coral at or near the surface of water.
 GS landforms
 . barriers (landforms)
 . . **reefs**
 RT atolls
 bars (landforms)
 coral reefs
 island arcs
 islands
 oceanography
 rocks
 sands
 shallow water
 ∞ shelves
 shoals

reels
 RT cables (ropes)
 ∞ containers
 magnetic tapes
 spools
 tethered balloons
 tethered satellites
 tethering

reentry
 DEF The event occurring when a spacecraft or other object comes back into the sensible atmosphere after going to higher altitudes; the

action involved in this event.
 GS atmospheric entry
 . **reentry**
 . . hyperbolic reentry
 . . hypersonic reentry
 . . . uncontrolled reentry (spacecraft)
 . . manned reentry
 . . spacecraft reentry
 . . . uncontrolled reentry (spacecraft)
 RT ablation
 aerodynamic heating
 aerodynamic stability
 aerodynamics
 aerothermodynamics
 descent
 descent trajectories
 ∞ entry
 flight paths
 impact prediction
 lifting reentry vehicles
 low observable reentry vehicles
 missiles
 ∞ rockets
 space flight
 terminal guidance

reentry bodies
 USE **reentry vehicles**

reentry breakup
 USE **spacecraft breakup**

reentry communication
 GS telecommunication
 . space communication
 . . spacecraft communication
 . . . **reentry communication**
 RT blackout (propagation)
 manned reentry
 plasma sheaths
 radio communication
 voice communication

reentry decoys
 GS countermeasures
 . **reentry decoys**
 decoys
 . **reentry decoys**
 reentry vehicles
 . **reentry decoys**
 RT ballistic missile decoys
 missile defense

reentry effects
 RT ablation
 aerodynamic heating
 blackout (propagation)
 ∞ effects
 hypersonic reentry
 plasma sheaths
 spacecraft breakup
 temperature effects

reentry gliders
 USE **lifting reentry vehicles**

reentry guidance
 GS guidance (motion)
 . **reentry guidance**
 RT automatic control
 descent trajectories
 inertial guidance
 manual control
 satellite guidance
 spacecraft guidance
 terminal guidance

reentry physics
 RT ablation
 aerothermochemistry
 aerothermodynamics
 hypersonic reentry
 low observable reentry vehicles
 ∞ physics
 plasma sheaths
 ∞ science

reentry range
 GS distance
 . **reentry range**

RT missile ranges
 recovery zones

reentry shielding
 GS shielding
 . heat shielding
 . . **reentry shielding**
 RT ablation
 ablative nose cones
 aerodynamic heating
 aerothermochemistry
 heat sinks
 ∞ insulated structures
 Ludox (trademark)
 nose cones
 reusable heat shielding
 spacecraft shielding
 thermal control coatings
 thermal insulation
 thermal protection

reentry trajectories
 DEF Those parts of rocket trajectories that begin at reentry and end at target or at the surface.
 GS trajectories
 . descent trajectories
 . . **reentry trajectories**
 RT circumlunar trajectories
 flight mechanics
 hyperbolic reentry
 missile trajectories
 moon-Earth trajectories
 spacecraft trajectories
 terminal guidance

reentry vehicles
 DEF Any payload carrying vehicles designed to leave the sensible atmosphere and then return through it to Earth. Used for reentry bodies.
 UF *reentry bodies*
 GS **reentry vehicles**
 . boostglide vehicles
 . . X-20 aircraft
 . low observable reentry vehicles
 . maneuverable reentry bodies
 . . lifting reentry vehicles
 . . . FDL-5 reentry vehicle
 . . . HL-10 reentry vehicle
 . . . HLD-35 reentry vehicle
 . . . Janus spacecraft
 . . . M-2 lifting body
 . . . M-2F2 lifting body
 . . . X-20 aircraft
 . . . X-24 aircraft
 . Mark 1 reentry body
 . Mark 2 reentry body
 . Mark 3 reentry body
 . Mark 4 reentry body
 . Mark 5 reentry body
 . Mark 6 reentry body
 . Mark 11 reentry body
 . Mark 12 reentry body
 . Mark 17 reentry body
 . recoverable spacecraft
 . . Apollo spacecraft
 . . . Apollo lunar experiment module
 . . Astro vehicle
 . . Gemini B spacecraft
 . . Gemini spacecraft
 . . . Gemini 2 spacecraft
 . . . Gemini (GT-1) spacecraft
 . . Mercury spacecraft
 . . . Aurora 7
 . . . Faith 7
 . . . Friendship 7
 . . . SIGMA 7
 . . reusable spacecraft
 . . . aerospace planes
 HOPE aerospace plane
 HOTOL launch vehicle
 VentureStar launch vehicle
 X-30 vehicle
 X-37 vehicle
 X-40A vehicle
 . . . MARS (Manned Reusable Spacecraft)
 . . . single stage to orbit vehicles
 . . . Delta Clipper

reference atmospheres

- HOTOL launch vehicle
 - space shuttles
 - Buran space shuttle
 - Hermes manned spaceplane
 - Space Shuttle orbiters
 - Atlantis (orbiter)
 - Challenger (Orbiter)
 - Columbia (Orbiter)
 - Discovery (Orbiter)
 - Endeavour (orbiter)
 - Enterprise (Orbiter)
 - Voskhod manned spacecraft
 - Voskhod 1 spacecraft
 - Voskhod 2 spacecraft
 - Vostok spacecraft
 - Vostok 1 spacecraft
 - Vostok 2 spacecraft
 - Vostok 3 spacecraft
 - Vostok 4 spacecraft
 - Vostok 5 spacecraft
 - Vostok 6 spacecraft
 - reentry decoys
 - Trailblazer 1 reentry vehicle
 - Trailblazer 2 reentry vehicle
 - X-17 reentry vehicle
 - RT ablative nose cones
 - aeroshells
 - aerothermochemistry
 - Athena rocket vehicle
 - ∞ ballistic vehicles
 - bluff bodies
 - ∞ bodies
 - ferry spacecraft
 - ∞ flight vehicles
 - hypersonic vehicles
 - ∞ insulated structures
 - landing modules
 - lifting bodies
 - maneuverable spacecraft
 - missiles
 - nose cones
 - pyramidal bodies
 - ∞ rockets
 - space capsules
 - ∞ spacecraft
 - spacecraft configurations
 - terminal guidance
 - test vehicles
 - ∞ vehicles
 - ∞ winged vehicles
- reference atmospheres**
- UF *standard atmospheres*
 - GS models
 - . atmospheric models
 - . . **reference atmospheres**
 - standards
 - . **reference atmospheres**
- reference stars**
- GS celestial bodies
 - . stars
 - . . **reference stars**
 - RT astronomical coordinates
 - astronomical photography
 - celestial navigation
 - laser guide stars
 - navigation aids
 - space navigation
- ∞ **reference systems**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT bibliographies
 - celestial reference systems
 - coordinates
 - documentation
 - indexes (documentation)
 - inertial reference systems
 - libraries
 - spherical coordinates
 - ∞ systems
 - Wiswesser notations
- references (standards)*
- USE **standards**
- refilling**
- GS filling

- . **refilling**
 - RT ∞ loading
 - replenishment
- refining**
- GS **refining**
 - . electrorefining
 - . electroslag refining
 - RT alkylation
 - beneficiation
 - chemical fractionation
 - clean fuels
 - cleaning
 - ∞ conversion
 - crystallization
 - desulfurizing
 - dewaxing
 - distillation
 - drop transfer
 - energy policy
 - enrichment
 - extraction
 - fractionation
 - hydrogenation
 - hydrometallurgy
 - isomerization
 - materials recovery
 - polymerization
 - ∞ processing
 - purification
 - pyrometallurgy
 - rectification
 - recycling
 - ∞ reduction
 - ∞ separation
 - smelting
 - sublimation
 - upgrading
 - zone melting
- reflectance**
- DEF The ratio of the radiant flux reflected by a body to that incident upon it. Used for reflection coefficient and reflectivity.
 - UF *reflection coefficient*
 - reflectivity*
 - GS electromagnetic properties
 - . optical properties
 - . . **reflectance**
 - . . . bidirectional reflectance
 - . . . spectral reflectance
 - RT absorptance
 - albedo
 - attenuation coefficients
 - birefringence
 - bistatic reflectivity
 - brightness
 - coarseness
 - cosmic ray albedo
 - Earth albedo
 - flow coefficients
 - geometrical theory of diffraction
 - luster
 - MISR (radiometry)
 - optical measurement
 - optical reflection
 - photometry
 - ray tracing
 - reflection
 - reflectometers
 - surface properties
 - surface roughness effects
 - thermochromic coatings
 - transmittance
 - vegetative index
- reflected radiation*
- USE **reflected waves**
- reflected rays*
- USE **reflected waves**
- reflected waves**
- DEF Shock waves, expansion waves, or compression waves reflected by another wave incident upon a wall or other boundary. In electronics, radio waves reflected from a surface or object. Used for reflected radiation and reflected rays.
 - UF *reflected radiation*

- reflected rays*
 - RT corpuscular radiation
 - elastic waves
 - electromagnetic radiation
 - evanescent waves
 - incident radiation
 - optical reflection
 - photon beams
 - ∞ radiation
 - refracted waves
 - retroreflection
 - wave reflection
- reflecting telescopes**
- DEF Telescopes which collect light by means of concave mirrors.
 - GS telescopes
 - . **reflecting telescopes**
 - . . Large Deployable Reflector
 - . . Starsat telescope
 - RT Cassegrain optics
 - honeycomb mirrors
 - mirrors
 - optical equipment
 - optical measuring instruments
 - paraboloid mirrors
 - reflectors
 - Schmidt telescopes
 - segmented mirrors
 - spectroscopic telescopes
 - stratoscope telescopes
- reflection**
- DEF The process whereby a surface of discontinuity turns back a portion of the incident radiation into the medium through which the radiation approached.
 - GS **reflection**
 - . infrared reflection
 - . optical reflection
 - . retroreflection
 - . signal reflection
 - . specular reflection
 - . spread reflection
 - . ultraviolet reflection
 - . wave reflection
 - . . Mach reflection
 - RT bidirectional reflectance
 - Brewster angle
 - deflection
 - diffusion
 - echelette gratings
 - echelle gratings
 - electromagnetic absorption
 - electromagnetic radiation
 - impingement
 - Lambert surface
 - light (visible radiation)
 - ∞ optics
 - reflectance
 - refraction
 - scattering
 - transmission
 - zero sound
- reflection coefficient*
- USE **reflectance**
- reflection nebulae**
- DEF Any celestial body having a hazy cloudy appearance whose brightness results from the scattering by dust particles of light from nearby stars.
 - GS celestial bodies
 - . nebulae
 - . . **reflection nebulae**
 - RT cosmic dust
 - interstellar matter
 - light scattering
- reflectivity*
- USE **reflectance**
- reflectometers**
- DEF Instruments for measuring reflectance.
 - GS measuring instruments
 - . optical measuring instruments
 - . . **reflectometers**
 - . . . microwave reflectometers
 - optical equipment

- . optical measuring instruments
 - . . . **reflectometers**
 - microwave reflectometers
 - RT comparators
 - directors (antenna elements)
 - optical measurement
 - photometers
 - reactor cores
 - reflectance
 - reflector antennas
 - Schelkunoff principle
 - two reflector antennas
 - ultraviolet reflection
- reflector antennas**
- DEF Antennas consisting of one or more reflecting surfaces and a radiating (receiving) feed system.
 - GS antennas
 - . directional antennas
 - . . . **reflector antennas**
 - parabolic antennas
 - two reflector antennas
 - RT antenna feeds
 - antenna radiation patterns
 - Cassegrain antennas
 - microwave antennas
 - multibeam antennas
 - parabolic reflectors
 - radar antennas
 - radar corner reflectors
 - radar reflectors
 - radio antennas
 - reflectometers
 - reflectors
 - subreflectors
- reflector satellites*
- USE **passive satellites**
- reflectors**
- GS **reflectors**
 - . Fresnel reflectors
 - . parabolic reflectors
 - . . paraboloid mirrors
 - . radar reflectors
 - . . radar corner reflectors
 - . retroreflectors
 - . solar reflectors
 - . . solar collectors
 - . . solettas
 - . Bragg reflectors
 - . wiggler magnets
 - RT antennas
 - attenuators
 - baffles
 - ceilings (architecture)
 - deflectors
 - directors (antenna elements)
 - etalons
 - heliostats
 - Large Deployable Reflector
 - mirrors
 - parasitic elements (antennas)
 - plasma core reactors
 - radiation shielding
 - reactor cores
 - reflecting telescopes
 - reflector antennas
 - Schelkunoff principle
 - subreflectors
 - telescopes
 - two reflector antennas
- reflexes**
- GS **reflexes**
 - . conditioned reflexes
 - . respiratory reflexes
 - . . cough
 - . . Hering-Breuer reflex
 - . . sneezing
 - . baroreflexes
 - . vestibular nystagmus
 - . . carotid sinus reflex
 - RT deconditioning
 - reaction time
 - vasoconstriction
- vasodilation
- reforestation**
- DEF The reestablishment of a tree crop on forest land.
 - GS management
 - . resources management
 - . . forest management
 - . . . **reforestation**
 - RT forests
 - timber inventory
- refracted radiation*
- USE **refracted waves**
- refracted rays*
- USE **refracted waves**
- refracted waves**
- DEF Waves that have had their direction of motion changed by refraction. Used for refracted radiation and refracted rays.
 - UF *refracted radiation*
 - refracted rays*
 - RT corpuscular radiation
 - eikonal equation
 - elastic waves
 - electromagnetic radiation
 - incident radiation
 - photon beams
 - reflected waves
 - refraction
 - ∞ waves
- refracting telescopes**
- DEF Telescopes which collect light by means of a lens or system of lenses.
 - GS telescopes
 - . **refracting telescopes**
 - RT lenses
 - optical equipment
 - optical measuring instruments
 - spectroscopic telescopes
 - stratoscope telescopes
- refraction**
- DEF The process in which the direction of energy propagation is changed as the result of a change within the propagating medium, or as the energy passes through the interface representing a density discontinuity between the two media. In the first instance, the rays undergo a smooth bending over a finite distance. In the second case, the index of refraction changes through an interfacial layer that is thin compared to the wavelength of the radiation; thus, the refraction is abrupt, essentially discontinuous.
 - GS **refraction**
 - . atmospheric refraction
 - . . radio wave refraction
 - . birefringence
 - . . Kerr electrooptical effect
 - RT asphericity
 - astigmatism
 - ∞ conduction
 - deflection
 - diffraction
 - distortion
 - divergence
 - Huygens principle
 - isochromatics
 - lenses
 - light (visible radiation)
 - photoelasticity
 - prisms
 - reflection
 - refracted waves
 - refractivity
 - sinking
 - Snells law
 - transmission
 - Voigt effect
 - wave dispersion
 - wave propagation
- refractive index*
- USE **refractivity**
- refractivity**
- UF *refractive index*
- GS electromagnetic properties
 - . optical properties
 - . . **refractivity**
 - . . . photorefractivity
 - RT atmospheric refraction
 - birefringence
 - birefringent coatings
 - birefringent filters
 - Brewster angle
 - gradient index optics
 - isotropism
 - light (visible radiation)
 - opacity
 - optical thickness
 - polarization (waves)
 - ratios
 - refraction
 - reflectometers
 - Snells law
 - underwater optics
- reflectometers**
- DEF Instruments for measuring the index of refraction of a liquid, gas, or solid.
 - GS measuring instruments
 - . optical measuring instruments
 - . . **reflectometers**
 - optical equipment
 - . optical measuring instruments
 - . . **reflectometers**
 - RT goniometers
 - optical measurement
 - refractivity
- refractories**
- GS refractory materials
 - . **refractories**
 - RT ceramics
 - cermets
 - combustion chambers
 - forsterite
 - furnaces
 - hearth
 - mortars (material)
 - refractory coatings
 - rocket engines
 - rocket linings
 - thermal insulation
 - turbines
- refractory coatings**
- DEF Pyrolytic materials used for coating other materials exposed to high temperatures.
 - GS coatings
 - . protective coatings
 - . . **refractory coatings**
 - RT ceramics
 - pyrolytic materials
 - refractories
 - thermal insulation
- refractory materials**
- UF *high melting compounds*
 - high temperature materials*
 - pyrographalloy*
 - GS **refractory materials**
 - . Ludox (trademark)
 - . porcelain
 - . refractories
 - . refractory metal alloys
 - . . molybdenum alloys
 - . . . Rene 41
 - . . . Rene 63
 - . . . Rene 77
 - . . . Rene 95
 - . . niobium alloys
 - . . osmium alloys
 - . . rhenium alloys
 - . . tantalum alloys
 - . . tungsten alloys
 - . refractory metals
 - . . chromium
 - . . . chromium isotopes
 - . . iridium
 - . . . iridium isotopes
 - . . molybdenum
 - . . niobium
 - . . . niobium isotopes
 - niobium 95
 - . . osmium

refractory metal alloys

- . . . osmium isotopes
- . . . rhenium
- . . . rhenium isotopes
- . . . tantalum
- . . . tantalum isotopes
- . . . tungsten
- . . . tungsten isotopes
- RT ablative materials
- carbides
- Carborundum (trademark)
- ceramics
- cermets
- ∞ chemical compounds
- clays
- high temperature research
- ∞ inorganic materials
- ∞ materials
- ∞ metal compounds
- nonflammable materials
- nozzle walls
- pyrolytic materials
- Scotchlite (trademark)
- sialon

refractory metal alloys

- GS alloys
- . heat resistant alloys
- . . . **refractory metal alloys**
- molybdenum alloys
- Rene 41
- Rene 63
- Rene 77
- Rene 95
- niobium alloys
- osmium alloys
- rhenium alloys
- tantalum alloys
- tungsten alloys
- refractory materials
- . **refractory metal alloys**
- . . molybdenum alloys
- . . . Rene 41
- . . . Rene 63
- . . . Rene 77
- . . . Rene 95
- . . . niobium alloys
- . . . osmium alloys
- . . . rhenium alloys
- . . . tantalum alloys
- . . . tungsten alloys

refractory metals

DEF Usually alloys of high-melting point, hard-to-work metals, but can also refer to certain unalloyed elements.

- GS metals
- . **refractory metals**
- . . chromium
- . . . chromium isotopes
- . . . iridium
- iridium isotopes
- . . . molybdenum
- . . . niobium
- niobium isotopes
- niobium 95
- . . . osmium
- osmium isotopes
- . . . rhenium
- rhenium isotopes
- . . . tantalum
- tantalum isotopes
- . . . tungsten
- tungsten isotopes
- refractory materials
- . **refractory metals**
- . . chromium
- . . . chromium isotopes
- . . . iridium
- iridium isotopes
- . . . molybdenum
- . . . niobium
- niobium isotopes
- niobium 95
- . . . osmium
- osmium isotopes
- . . . rhenium
- rhenium isotopes
- . . . tantalum
- tantalum isotopes

- . . tungsten
- . . . tungsten isotopes
- RT heat resistant alloys
- transition metals

refractory period

- RT reaction time
- ∞ relaxation responses
- time lag

Refrasil (trademark)

- USE **fibers**
- silicon dioxide**

refrigerants

- RT absorbers (materials)
- absorption cooling
- air conditioning
- ammonia
- brines
- coolants
- cooling systems
- fluorohydrocarbons
- freon
- ice
- refrigerating
- refrigerating machinery
- refrigerators
- solid nitrogen

refrigerating

- RT air conditioning
- air cooling
- cold traps
- condensing
- coolers
- cooling
- cooling systems
- cryogenic cooling
- cryogenic equipment
- cryogenics
- defrosting
- dehumidification
- freezing
- freon
- frozen foods
- humidity
- low temperature
- magnetic cooling
- preserving
- refrigerants
- refrigerators
- temperature
- temperature control
- temperature distribution
- thermoacoustic refrigerators
- thermoelectric cooling
- ventilation

refrigerating machinery

- GS **refrigerating machinery**
- . refrigerators
- . . thermoacoustic refrigerators
- RT absorbers (equipment)
- air conditioning
- air conditioning equipment
- blowers
- compressors
- condensers (liquefiers)
- coolers
- cooling systems
- cryogenic equipment
- evaporators
- heat pumps
- ∞ machinery
- refrigerants
- temperature control
- thermoelectric cooling

refrigerators

- GS refrigerating machinery
- . **refrigerators**
- . . thermoacoustic refrigerators
- RT coolers
- defrosting
- refrigerants

refrigerating

Refsat

- DEF A proposed satellite that broadcasts navigation aiding signals to low cost user terminals which employ the constellation of 24 NavStar Global Positioning System (GPS) satellites for position determination.
- GS artificial satellites
- . navigation satellites
- . . **Refsat**
- RT NAVSTAR satellites
- synchronous satellites

refueling

- UF *fueling*
- GS **refueling**
- . air to air refueling
- RT aircraft hazards
- flight operations
- fuel consumption
- fuel contamination
- fuel control
- fuel systems
- ground support equipment
- preflight operations
- propellant transfer
- replenishment
- retractable equipment

∞ regeneration

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT regeneration (engineering)
- regeneration (physiology)

regeneration (engineering)

- UF *regenerative cycles*
- RT ∞ generation
- positive feedback
- reclamation
- ∞ regeneration

regeneration (physiology)

- UF *bioregeneration*
- RT physiology
- ∞ regeneration

regenerative cooling

DEF The cooling of a part of an engine by the fuel or propellant being delivered to the combustion chamber; specifically, the cooling of a rocket engine combustion chamber or nozzle by circulating the fuel or oxidizer, or both, around the part to be cooled.

- GS cooling
- . **regenerative cooling**
- RT heat exchangers
- precooling
- regenerators

regenerative cycles

- USE **regeneration (engineering)**

regenerative feedback

- USE **positive feedback**

regenerative fuel cells

- GS electric generators
- . direct power generators
- . . fuel cells
- . . . **regenerative fuel cells**
- electrochemical cells
- . fuel cells
- . . **regenerative fuel cells**
- RT biochemical fuel cells
- phosphoric acid fuel cells
- storage batteries

regenerators

DEF Devices used in a thermodynamic process for capturing and returning to the process heat that would otherwise be lost. Used for recuperators.

- UF *recuperators*
- GS **regenerators**
- . thermosiphons
- RT energy storage
- heat exchangers
- heat sinks

- regenerative cooling
tube heat exchangers
- Regge poles**
RT angular momentum
∞ poles
Pomeranchuk theorem
pomeron
scattering cross sections
- regimes**
RT communities
culture (social sciences)
environments
governments
nations
politics
- regional planning**
GS planning
. **regional planning**
. . urban planning
RT conservation
farmlands
forest management
forests
harbors
highways
industrial areas
lakes
land management
megalopolises
parks
residential areas
rural areas
rural land use
St Louis-Kansas City Corridor (MO)
suburban areas
urban development
urban transportation
- regions**
UF *zones*
GS **regions**
. auroral zones
. Brillouin zones
. Central America
. Central Atlantic Region (US)
. Central Europe
. D region
. E region
. . E-1 layer
. . E-2 layer
. . sporadic E layer
. equatorial regions
. F region
. . F 1 region
. . F 2 region
. Fresnel region
. Great Basin (US)
. Great Plains Corridor (North America)
. Gutenberg zone
. habitats
. lumbar region
. M region
. Middle East
. New England (US)
. null zones
. Pacific Northwest (US)
. Panama Canal Zone
. pelagic zone
. polar regions
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions
. remote regions
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions
. Sand Hills Region (GA-NC-SC)
. Sand Hills Region (NE)
. sciatic region
. Southeast Asia
. Southern California
. Southern Yemen
. temperate regions
. tropical regions
. . Amazon region (South America)
. . . intertropical convergent zones
RT asteroid belts
∞ belts
boundaries
Earth ionosphere
∞ layers
recovery zones
∞ sectors
sites
∞ **registers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT registers (air circulation)
registers (computers)
- registers (air circulation)**
RT cooling systems
∞ registers
- registers (computers)**
DEF Devices capable of retaining information, often that contained in a small subset (e.g., one word) of the aggregate information in a digital computer.
GS computer components
. computer storage devices
. . **registers (computers)**
. . . accumulators (computers)
RT central processing units
∞ recorders
∞ registers
shift registers
- regolith**
DEF The layer rock or blanket or unconsolidated rocky debris of any thickness that overlies bedrock and forms the surface of the land.
GS rocks
. **regolith**
RT basalt
bedrock
breccia
carbonaceous rocks
coal
core-mantle boundary
Earth mantle
Earth resources
enstatite
geology
igneous rocks
lava
lithology
lunar geology
lunar mantle
lunar rocks
magma
olivine
peridotite
pyroxenes
rock intrusions
selenology
stratigraphy
- regression (statistics)*
USE **regression analysis**
- regression analysis**
DEF The statistical counterpart or analog of the functional expression, in ordinary mathematics, of one variable in terms of others.
UF *regression (statistics)*
GS statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . **regression analysis**
. . . . regression coefficients
RT autoregressive moving average
autoregressive processes
clumps
correlation
covariance
experiment design
factor analysis
forecasting
least squares method
quality control
- significance
statistical tests
variability
- regression coefficients**
GS coefficients
. **regression coefficients**
statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . regression analysis
. . . . **regression coefficients**
RT correlation
forecasting
mathematical models
quality control
- regularity**
RT continuity (mathematics)
convergence
irregularities
∞ normalizing
∞ patterns
periodic variations
physiology
∞ properties
trend analysis
- regulation*
USE **control**
- regulations**
RT air law
allowances
∞ control
copyrights
crime
law (jurisprudence)
liabilities
licensing
patent policy
penalties
police
policies
procurement policy
prohibition
rules
- regulators**
SN (LIMITED TO DEVICES)
GS control equipment
. **regulators**
. . automatic control valves
. . . pressure regulators
. . . relief valves
. . cryostats
. . current regulators
. . flow regulators
. . . fuel flow regulators
. . oxygen regulators
. . speed regulators
. . thermostats
. . voltage regulators
RT actuators
automatic control
∞ control
controllers
gibberellins
speed control
- regulatory mechanisms (biology)**
SN (RESTRICTED TO THE REGULATION OF PHYSIOLOGICAL AND PHYSIOCHEMICAL PROCESSES--EXCLUDES ECOLOGICAL, GENETIC, OR BIOTECHNOLOGICAL REGULATION)
DEF Specific processes by which living organisms control the rates of biochemical and physiological reactions involved in processes such as metabolism and cellular differentiation.
RT biocontrol systems
calmodulin
∞ control
hormones
thermoregulation
- Regulus missile**
GS missiles
. surface to surface missiles
. . **Regulus missile**
RT solid propellant rocket engines

reinforced plastics

- turbojet engines
- reheating*
 - USE **heating**
- reignition*
 - USE **ignition**
- reinforced plastics**
 - DEF Plastics with some strength properties greatly superior to those of the base resin, resulting from the presence of high-strength fillers imbedded in the composition. Note: The reinforcing fillers are usually fibers, fabrics, or mats made of fibers. The plastic laminates are the most common and strongest.
 - GS composite materials
 - . polymer matrix composites
 - . . . **reinforced plastics**
 - . . . carbon fiber reinforced plastics
 - . . . carbon-phenolic composites
 - . . . glass fiber reinforced plastics
 - . . . micarta
 - plastics
 - . **reinforced plastics**
 - . . carbon fiber reinforced plastics
 - . . carbon-phenolic composites
 - . . glass fiber reinforced plastics
 - . . micarta
 - RT aircraft survivability
 - aramid fiber composites
 - aramid fibers
 - boron fibers
 - boron reinforced materials
 - fiber composites
 - graphite-epoxy composites
 - hybrid composites
 - laminates
 - reinforcement (structures)
 - thermosetting resins
- reinforced plates**
 - GS structural members
 - . plates (structural members)
 - . . . **reinforced plates**
 - RT anisotropic plates
 - corrugated plates
 - laminates
 - plastic plates
 - reinforcement (structures)
- reinforced shells**
 - GS shells (structural forms)
 - . **reinforced shells**
 - RT anisotropic shells
 - corrugated shells
 - cylindrical shells
 - fluid filled shells
 - hemispherical shells
 - liquid filled shells
 - metal shells
 - orthotropic shells
 - plastic shells
 - reinforcement (structures)
 - reinforcement rings
 - shell stability
 - spherical shells
 - thin walled shells
 - toroidal shells
 - wind tunnel walls
- ∞ **reinforcement**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT reinforcement (psychology)
 - reinforcement (structures)
- reinforcement (psychology)**
 - GS **reinforcement (psychology)**
 - . reward (psychology)
 - RT learning
 - motivation
 - ∞ reinforcement
 - self stimulation
- reinforcement (structures)**
 - RT bulkheads
 - composite materials
 - fillers
 - longerons
- reinforced plastics
 - reinforced plates
 - reinforced shells
- ∞ reinforcement
 - reinforcement rings
 - ribs (supports)
 - rigid structures
 - ring structures
 - stiffening
 - strakes
 - stringers
 - structural members
 - structural stability
 - structural strain
 - supports
 - thick walls
 - wire
 - wire cloth
- reinforcement rings**
 - GS ring structures
 - . **reinforcement rings**
 - RT reinforced shells
 - reinforcement (structures)
 - ribs (supports)
 - ∞ rings
- reinforcing fibers**
 - GS fibers
 - . **reinforcing fibers**
 - . . aramid fibers
 - . . . Kevlar (trademark)
 - . . boron fibers
 - . . carbon fibers
 - RT boron reinforced materials
 - braided composites
 - carbon fiber reinforced plastics
 - carbon-carbon composites
 - ceramic fibers
 - ceramic matrix composites
 - composite materials
 - Dacron (trademark)
 - debonding (materials)
 - fiber composites
 - fiber orientation
 - fiber pullout
 - fiber pushout
 - fiber volume fraction
 - fiber-matrix interfaces
 - glass fiber reinforced plastics
 - glass fibers
 - graphite-epoxy composites
 - hybrid composites
 - kink bands
 - lay-up
 - metal fibers
 - metal matrix composites
 - micromechanics
 - reinforcing materials
 - resin transfer molding
 - superhybrid materials
 - synthetic fibers
 - whisker composites
 - woven composites
- reinforcing materials**
 - DEF Fibers, filaments, fabrics, and other substances used for strengthening of matrices in composite materials.
 - RT aramid fibers
 - composite materials
 - fabrics
 - fiber composites
 - fibers
 - ∞ filaments
 - ∞ materials
 - matrix materials
 - particulate reinforced composites
 - reinforcing fibers
- Reissner theory**
 - RT Mindlin plates
 - plates (structural members)
 - stress analysis
 - ∞ theories
- Reissner-Mindlin plates*
 - (added April 1998)
 - USE **Mindlin plates**
- Reissner-Nordstrom solution**
 - DEF The unique solution of general relativ-
- ity theory describing a nonrotating, charged black hole.
 - RT astronomical models
 - black holes (astronomy)
 - charged particles
 - gravitational effects
 - relativity
- rejection**
 - RT acceptability
 - elimination
 - evaluation
 - exclusion
 - removal
 - selection
- relational data bases**
 - (added June 1997)
 - GS data bases
 - . **relational data bases**
 - architecture (computers)
 - computer systems design
 - data base management systems
 - data management
 - data retrieval
 - RT
- ∞ **relationships**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *interrelationships*
 - RT approximation
 - duality theorem
 - homology
 - stress-strain relationships
- relative biological effectiveness (RBE)**
 - UF *RBE*
 - GS biological effects
 - . **relative biological effectiveness (RBE)**
 - RT ∞ biology
 - physiological effects
- relativistic effects**
 - RT Bose-Einstein condensates
 - dimensions
 - ∞ effects
 - gravitational lenses
 - mass
 - relativity
 - time
 - velocity
- relativistic electron beams**
 - DEF Beams of electrons traveling at approximately the speed of light. Used for REB.
 - UF *REB*
 - GS beams (radiation)
 - . particle beams
 - . . electron beams
 - . . . **relativistic electron beams**
 - particles
 - . charged particles
 - . . energetic particles
 - . . . electrons
 - high energy electrons
 - **relativistic electron beams**
 - corpuscular radiation
 - electron radiation
 - electron beams
 - **relativistic electron beams**
 - energetic particles
 - electrons
 - high energy electrons
 - **relativistic electron beams**
 - elementary particles
 - fermions
 - leptons
 - electrons
 - high energy electrons
 - **relativistic electron beams**
 - relativistic particles
 - **relativistic electron beams**
 - RT beam plasma amplifiers
 - beta particles
 - controlled fusion
 - diffraction radiation
 - electron bombardment
 - electron scattering
 - inertial fusion (reactor)

ionizing radiation
 plasma heating
 plasma jets
 plasma-particle interactions

relativistic particles
 DEF Particles with a velocity so large that their relativistic mass exceeds their rest mass by an amount which is significant for the computation or other considerations at hand.
 GS particles
 . relativistic particles
 . . relativistic electron beams
 RT Hamilton-Jacobi equation

relativistic plasmas
 GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **relativistic plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **relativistic plasmas**
 RT Astron thermonuclear reactor
 bremsstrahlung
 cosmic plasma
 electron plasma
 electron-positron plasmas
 gravitational collapse
 high temperature plasmas
 pinch effect
 plasma jets
 plasma radiation
 plasma-particle interactions
 ponderomotive forces

relativistic theory
 UF *Wightman theory*
 RT ∞ theories

relativistic velocity
 DEF A velocity sufficiently high that some properties of a particle of this velocity have values significantly different from those obtaining when the particle is at rest.
 GS rates (per time)
 . relativistic velocity
 velocity
 . relativistic velocity
 RT high speed
 ∞ hypervelocity
 light speed
 particle motion

relativity
 DEF A principle that postulates the equivalence of the description of the universe, in terms of physical laws, by various observers, or for various frames of reference. Used for geometrodynamics and space-time continuum.
 UF *geometrodynamics*
space-time continuum
 RT big bang cosmology
 continuums
 differential geometry
 event horizon
 field theory (physics)
 grand unified theory
 gravitational lenses
 Gravity Probe B
 inertial reference systems
 light-cone expansion
 Lorentz contraction
 naked singularities
 nonrelativistic mechanics
 paradoxes
 ponderomotive forces
 quantum mechanics
 Reissner-Nordstrom solution
 relativistic effects
 Schwarzschild metric
 space-time functions
 string theory
 supergravity
 tensor analysis

unified field theory

relaxation
 ∞ SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT cross relaxation
 molecular relaxation
 refractory period
 relaxation (mechanics)
 relaxation (physiology)
 relaxation method (mathematics)

relaxation (mechanics)
 GS **relaxation (mechanics)**
 . spin-lattice relaxation
 . stress relaxation
 RT ∞ equilibrium
 expansion
 magnetic relaxation
 molecular relaxation
 nuclear relaxation
 ∞ reduction
 ∞ relaxation
 relaxation method (mathematics)
 relaxation time
 residual stress
 strain energy release rate
 viscoelasticity
 viscoplasticity

relaxation (physiology)
 RT compressibility effects
 massaging
 recreation
 ∞ relaxation
 work-rest cycle

relaxation method (mathematics)
 DEF An iterative numerical method for solving elliptic partial differential equations, e.g., a Poisson equation.
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **relaxation method (mathematics)**
 RT computational fluid dynamics
 ∞ methodology
 ∞ relaxation
 relaxation (mechanics)

relaxation oscillators
 GS oscillators
 . **relaxation oscillators**
 . . phantastons

relaxation time
 DEF In general, the time required for a system, object, or fluid to recover to a specified condition or value after disturbance. Specifically, the time taken by an exponentially decaying quantity to decrease in amplitude by a factor of $1/e = 0.3679$.
 GS time
 . **relaxation time**
 RT ∞ equilibrium
 excitation
 Maxwell bodies
 molecular relaxation
 relaxation (mechanics)
 spin-lattice relaxation
 time constant

relay
 ∞ SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT disconnect devices
 electric contacts
 electric relays
 logic circuits
 radio relay systems
 repeaters

Relay 1 satellite
 GS artificial satellites
 . communication satellites
 . . Relay satellites

. . . **Relay 1 satellite**

Relay 2 satellite
 GS artificial satellites
 . communication satellites
 . . Relay satellites
 . . . **Relay 2 satellite**

Relay satellites
 GS artificial satellites
 . communication satellites
 . . **Relay satellites**
 . . . Relay 1 satellite
 . . . Relay 2 satellite
 RT Advent Project
 Thor Delta launch vehicle
 transoceanic communication

releasing
 GS **releasing**
 . fiber pullout
 . fiber pushout
 RT decoupling
 ∞ discharge
 disconnect devices
 dispersing
 dumping
 ejection
 emission
 emptying
 exhaust emission
 materials handling
 relieving
 scattering
 spilling
 unloading
 venting

reliability
 DEF Of a piece of equipment or a system, the probability of specified performance for a given period of time when used in the specified manner.
 GS **reliability**
 . aircraft reliability
 . circuit reliability
 . component reliability
 . software reliability
 . . computer program integrity
 . spacecraft reliability
 . structural reliability
 RT acceptability
 accuracy
 aircraft survivability
 allowances
 assurance
 censored data (mathematics)
 computer systems performance
 confidence
 confidence limits
 consistency
 cumulative damage
 ∞ design
 design analysis
 downtime
 durability
 dynamic characteristics
 errors
 estimates
 expectation
 failure analysis
 forecasting
 maintainability
 maintenance
 maximum likelihood estimates
 mechanical properties
 missile design
 MTBF
 nondestructive tests
 ∞ performance
 performance prediction
 precision
 prelaunch problems
 probability theory
 product development
 production management
 productivity
 quality
 quality control
 redundancy

reliability analysis

- redundant components
- risk
- safety factors
- sampling
- specifications
- stability
- standards
- statistical analysis
- statistical distributions
- statistical tests
- ∞ statistics
- system effectiveness
- systems compatibility
- systems engineering
- ∞ tests
- tolerances (mechanics)
- total quality management
- validity
- variability
- vulnerability

reliability analysis

- RT ∞ analyzing
- design analysis
- performance prediction
- preventive maintenance
- software reliability
- trend analysis

reliability control

- USE **quality control**
- reliability engineering**

reliability engineering

DEF The engineering discipline which formulates an acceptable combination of design features, repair philosophy, and maintenance resources to achieve a specified level of reliability as an operational requirement, at optimum life cycle costs.

- UF *reliability control*
- RT complex systems
- concurrent engineering
- ∞ engineering
- fault detection
- fault tolerance
- lessons learned
- performance prediction
- quality control
- sneak circuit analysis
- system effectiveness
- system identification
- systems compatibility
- systems engineering
- Taguchi methods
- total quality management
- value engineering

relic radiation

DEF Background radiation resulting from the primordial big bang.

- RT astronomy
- astrophysics
- background radiation
- big bang cosmology
- cosmic microwave background radiation
- extraterrestrial radiation
- large-scale structure of the universe
- Microwave Anisotropy Probe
- Population III stars
- ∞ radiation
- Sunyaev-Zeldovich effect
- universe

relief maps

- GS maps
- . **relief maps**
- RT digital elevation models
- hypsography
- photogrammetry
- photomaps
- topography

relief valves

- GS control equipment
- . regulators
- . . automatic control valves
- . . . **relief valves**
- valves

- . automatic control valves
- . . **relief valves**
- RT automatic control
- bypasses
- fuel tank pressurization
- fuel valves
- gas valves
- hydraulic equipment
- pressure regulators
- reactor safety
- venting
- vents

relieving

- GS **relieving**
- . stress relieving
- RT ∞ discharge
- exhausting
- purging
- releasing

relocation

- RT installing
- positioning
- replacing

reluctance

DEF The ratio of the magnetomotive force to the magnetic flux through any cross section of the magnetic circuit.

- UF *reluctivity*
- GS magnetic properties
- . **reluctance**
- RT magnetic permeability
- magneto-resistivity

reluctivity

- USE **reluctance**

remagnetization

- USE **magnetization**

remanence

DEF The magnetic flux density which remains in a magnetic circuit after the removal of an applied magnetomotive force. Also called retentivity.

- GS magnetic properties
- . **remanence**
- RT flux density
- paleomagnetism

remelting

- USE **melting**

remodulation

- RT demodulation
- intermodulation
- modulation

remote consoles

- GS computer components
- . peripheral equipment (computers)
- . . **remote consoles**
- consoles
- . **remote consoles**
- data processing equipment
- . peripheral equipment (computers)
- . . **remote consoles**
- RT computer components
- computer graphics
- data links
- data processing terminals
- display devices
- plotters
- readout

remote control

DEF Control of an operation from a distance, especially by means of electricity or electronics; a controlling switch, lever, or other device used in this kind of control. Used for electromagnetic control.

- UF *electromagnetic control*
- GS **remote control**
- . radio control
- RT aircraft control
- antiradiation missiles
- attitude control
- automatic control

- ∞ automation
- cascade control
- ∞ control
- control boards
- controllers
- digital command systems
- dynamic characteristics
- electric control
- electronic control
- engine control
- flight control
- ground based control
- guidance (motion)
- hydraulic control
- ∞ instruments
- Kalman-Schmidt filtering
- manipulators
- manual control
- missile control
- optical control
- pneumatic control
- remote manipulator system
- rocket engine control
- satellite control
- servocontrol
- servomechanisms
- spacecraft control
- teleoperators
- telerobotics
- temperature control
- turbojet engine control
- visual control

remote handling

- UF *telechirics*
- GS materials handling
- . **remote handling**
- RT manipulators
- payload deployment & retrieval system
- Space Station Mobile Servicing System
- teleoperators

remote manipulator system

DEF Devices used in space for deploying and retrieving payloads by remote control; also used for space maintenance and/or servicing of satellites and other spacecraft.

- GS manipulators
- . **remote manipulator system**
- . . Space Station Mobile Servicing System
- RT payload deployment & retrieval system
- payload retrieval (STS)
- remote control
- space maintenance
- space transportation system
- ∞ systems

remote regions

- GS regions
- . **remote regions**
- . . Antarctic regions
- . . . McMurdo sound
- . . . Ross ice shelf
- . . Arctic regions
- . . . subarctic regions
- RT deserts
- Mojave Desert (CA)
- offshore reactor sites
- Sahara Desert (Africa)
- wilderness

remote sensing

DEF The collection of information about an object or phenomena by a recording device that is not in physical contact with it. The term is usually restricted to mean the methods for, and activity of, recording features and phenomena of the Earth surface from a remote platform or vehicle. Typically the methods used record reflected or radiated electromagnetic energy, such as radiometry, photometry, spectrometry, and photographic and radar techniques.

- GS detection
- . **remote sensing**
- RT aeromagnetism
- airborne radar

- Aqua spacecraft
 - Aura spacecraft
 - band ratioing
 - CALIPSO (Pathfinder satellite)
 - CERES (experiment)
 - change detection
 - CloudSat
 - cluster analysis
 - Coastal Zone Color Scanner
 - data products
 - desertification
 - differential absorption lidar
 - DMSF satellites
 - Earth Observing System (EOS)
 - Earth resources
 - Envisat-1 satellite
 - EOS data and information system
 - Feature Identification and Location
 - Exper
 - FIRE (climatology)
 - geographic distribution
 - geographic information systems
 - GRACE mission
 - image analysis
 - image classification
 - imaging spectrometers
 - in situ measurement
 - ISCCP Project
 - Landsat 6
 - Landsat 7
 - leaf area index
 - low Earth orbits
 - Mapsat
 - MISR (radiometry)
 - Mission to Planet Earth
 - MODIS (radiometry)
 - multisensor applications
 - multisensor fusion
 - Multispectral Resource Sampler
 - normalized difference vegetation index
 - observation scheduling
 - OSTA-3 payload
 - pixels
 - planetary geology
 - plant stress
 - Priroda module
 - recognition
 - Shuttle Imaging Radar
 - small satellite technology
 - space station polar platforms
 - spectral mixture analysis
 - Surface Meteorology and Solar Energy project
 - Surface Radiation Budget project
 - swath width
 - Terra spacecraft
 - thematic mappers (LANDSAT)
 - vegetative index
- remote sensors**
- GS **remote sensors**
 - . thematic mappers (LANDSAT)
 - RT Advanced Microwave Sounding Unit
 - Advanced Very High Resolution Radiometer
 - AgRISTARS project
 - airborne lasers
 - airborne radar
 - automatic weather stations
 - Coastal Zone Color Scanner
 - crop identification
 - crop inventories
 - data acquisition
 - data collection platforms
 - data products
 - ∞ detectors
 - Earth resources
 - Earthnet
 - EROS (satellites)
 - Feature Identification and Location
 - Exper
 - geographic applications program
 - haze detection
 - image classification
 - imaging radar
 - measuring instruments
 - multisensor applications
 - ocean color scanner
 - ∞ probes
 - radiometric resolution
 - satellite-borne instruments
 - Sea-viewing Wide Field-of-view Sensor
 - ∞ sensors
 - spaceborne lasers
 - transducers
 - wildlife radiolocation
- remotely piloted vehicles**
- UF *RPV*
 - RT ∞ aircraft
 - DAST program
 - drone aircraft
 - highly maneuverable aircraft
 - Jindivik target aircraft
 - oblique wings
 - orbital maneuvering vehicles
 - pilotless aircraft
 - target drone aircraft
 - unmanned aircraft systems
 - unmanned ground vehicles
 - VATOL aircraft
 - ∞ vehicles
- removal**
- GS **removal**
 - . carbon dioxide removal
 - . paint removal
 - RT
 - anodic stripping
 - cancellation
 - clearing
 - deletion
 - depletion
 - disposal
 - dissipation
 - ejection
 - emptying
 - evacuating (transportation)
 - evacuating (vacuum)
 - exhausting
 - expulsion
 - extraction
 - materials recovery
 - ∞ reduction
 - rejection
 - ∞ separation
 - unloading
 - wear
- REMS**
- USE **rapid eye movement state**
- renal calculi*
- USE **calculi**
 - kidney stones**
- renal function**
- RT ∞ functions
 - glomerulus
 - kidney stones
 - kidneys
 - vasopressins
- rendezvous**
- DEF The event of two or more objects meeting with zero relative velocity at a preconceived time and place. The point in space at which such an event takes place, or is to take place.
 - GS **rendezvous**
 - . space rendezvous
 - . . orbital rendezvous
 - . . . Earth orbital rendezvous
 - lunar orbital rendezvous
 - RT Apollo Soyuz test project
 - flight mechanics
 - interception
 - maneuvers
 - orbital mechanics
- rendezvous guidance**
- GS guidance (motion)
 - . **rendezvous guidance**
 - RT Automated Transfer Vehicle
 - autonomous docking
 - command guidance
 - homing devices
 - injection guidance
 - midcourse guidance
- orbital rendezvous
 - proportional navigation
 - satellite guidance
 - spacecraft guidance
 - terminal guidance
- rendezvous spacecraft**
- GS maneuverable spacecraft
 - . **rendezvous spacecraft**
 - RT Columbus space station
 - command guidance
 - ferry spacecraft
 - interplanetary spacecraft
 - lunar spacecraft
 - manned spacecraft
 - military spacecraft
 - orbital rendezvous
 - recoverable spacecraft
 - space capsules
 - space stations
 - spacecrew transfer
 - unmanned spacecraft
- rendezvous trajectories**
- GS trajectories
 - . **rendezvous trajectories**
 - RT ascent trajectories
 - circumlunar trajectories
 - Earth orbital rendezvous
 - Earth-Moon trajectories
 - flight mechanics
 - interplanetary trajectories
 - Near Earth Asteroid Rendezvous Mission
 - orbital mechanics
 - orbital rendezvous
 - Rosetta mission
 - space rendezvous
 - spacecraft docking
 - spacecraft trajectories
- Rene 41**
- GS alloys
 - . chromium alloys
 - . . **Rene 41**
 - . . cobalt alloys
 - . . **Rene 41**
 - . . heat resistant alloys
 - . . refractory metal alloys
 - . . . molybdenum alloys
 - **Rene 41**
 - . . nickel alloys
 - . . **Rene 41**
 - refractory materials
 - . refractory metal alloys
 - . . molybdenum alloys
 - . . . **Rene 41**
 - RT wrought alloys
- Rene 63**
- GS alloys
 - . chromium alloys
 - . . **Rene 63**
 - . . cobalt alloys
 - . . **Rene 63**
 - . . heat resistant alloys
 - . . refractory metal alloys
 - . . . molybdenum alloys
 - **Rene 63**
 - . . nickel alloys
 - . . **Rene 63**
 - refractory materials
 - . refractory metal alloys
 - . . molybdenum alloys
 - . . . **Rene 63**
 - RT wrought alloys
- Rene 77**
- GS alloys
 - . chromium alloys
 - . . **Rene 77**
 - . . cobalt alloys
 - . . **Rene 77**
 - . . heat resistant alloys
 - . . refractory metal alloys
 - . . . molybdenum alloys
 - **Rene 77**
 - . . nickel alloys
 - . . **Rene 77**
 - refractory materials

- . refractory metal alloys
- . . . molybdenum alloys
- . . . **Rene 77**
- RT wrought alloys

Rene 95

- DEF High-strength nickel-base superalloy.
- GS alloys
 - . chromium alloys
 - . . . **Rene 95**
 - . cobalt alloys
 - . . . **Rene 95**
 - . heat resistant alloys
 - . . . refractory metal alloys
 - molybdenum alloys
 - **Rene 95**
 - . nickel alloys
 - . . . **Rene 95**
- refractory materials
- . refractory metal alloys
- . . molybdenum alloys
- . . . **Rene 95**

renewable energy

(added December 1998)

- GS **renewable energy**
 - . geothermal energy utilization
 - . hydroelectricity
 - . tidepower
 - . waterwave energy
 - . windpower utilization
- RT bioconversion
- biomass energy production
- clean energy
- energy policy
- ∞ energy sources
- energy technology
- geothermal energy conversion
- hydrogen-based energy
- ocean thermal energy conversion
- solar energy conversion
- Surface Meteorology and Solar Energy project
- waste utilization
- waterwave energy conversion

renin

(added August 2004)

- DEF An enzyme which is secreted by the kidney and is formed from protein in plasma and kidney. The enzyme cleaves the Leu-Leu bond in angiotensinogen to generate angiotensin I.
- GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **renin**
- organic compounds
 - . proteins
 - . . enzymes
 - . . . **renin**
- RT angiotensins
- kidneys

renormalization group methods

(added August 1990)

- RT Monte Carlo method normalizing (statistics)
- statistical mechanics
- turbulence models

reorientation

USE **retraining**

repairing

USE **maintenance**

repeaters

- UF *interpolators*
- GS transmitters
 - . **repeaters**
- RT amplifiers
- radar receivers
- receivers
- ∞ relay
- ∞ translators

repetition

- RT counting
- pattern recognition

redundancy encoding

replacing

- RT damage assessment
- installing
- maintenance
- relocation
- replenishment
- substitutes

replenishment

- RT filling
- input
- ∞ loading
- refilling
- refueling
- replacing

replicas

- RT electron microscopes
- metallography
- models
- reproduction (copying)

report generators

- RT computer programs
- computer systems programs
- ∞ generators
- user manuals (computer programs)

reports

- GS **reports**
 - . congressional reports
 - . postlaunch reports
 - . Presidential reports
 - . wage surveys
- RT aerospace technology transfer
- conferences
- ∞ discussion
- documentation
- documents
- information
- information dissemination
- papers
- proposals
- records
- summaries
- supplements
- technology transfer

representations

- RT characterization
- descriptions
- drawings
- graphs (charts)
- images
- photographs
- signatures

∞ **reproduction**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT fertilization
- reproduction (biology)
- reproduction (copying)
- reproductive systems

reproduction (biology)

- RT ∞ biology
- birth
- breeding (reproduction)
- cell division
- cloning (biology)
- embryology
- fertility
- fetuses
- mitosis
- progeny
- ∞ reproduction
- reproductive systems
- sex glands
- zygotes

reproduction (copying)

- UF *duplicating*
- GS imagery
 - . **reproduction (copying)**
 - . . xerography
- RT blueprints
- document storage

- drawings
- engineering drawings
- lithography
- microfilms
- photographic processing equipment
- photography
- printing
- replicas
- ∞ reproduction
- stencil processes

reproductive systems

- GS anatomy
 - . genitourinary system
 - . . . **reproductive systems**
 - . . . sex glands
 - gonads
 - ovaries
 - testes
 - prostate gland
 - . . . uterus
- RT birth
- chromosomes
- fertility
- fetuses
- ∞ reproduction
- reproduction (biology)
- ∞ systems

reptiles

- GS animals
 - . vertebrates
 - . . **reptiles**
 - . . . lizards
 - . . . snakes
 - . . . turtles
- RT poikilothermia

Republic aircraft

- GS **Republic aircraft**
 - . A-10 aircraft
 - . F-84 aircraft
 - . F-105 aircraft
- RT ∞ aircraft

Republic of China

USE **Taiwan**

Republic of Korea

USE **South Korea**

Republic of South Africa

- UF *South Africa*
- GS nations
 - . **Republic of South Africa**
- RT Africa
- Botswana
- Kalahari Basin (Africa)
- Lesotho
- Namibia
- Swaziland

Republic of Vietnam

USE **Vietnam**

repulsion

USE **force**

requirements

- GS **requirements**
 - . user requirements
- RT specifications

rescue operations

- RT aeronautical satellites
- Assured Crew Return Vehicle
- COSPAS
- HH-65 helicopter
- Marots (ESA)
- ∞ operations
- SarSat
- spacecraft recovery
- X-38 crew return vehicle

research

- GS **research**
 - . dynamic programming
 - . high temperature research
 - . linear programming
 - . low density research
 - . market research

- . multidisciplinary research
 - . nonlinear programming
 - . nuclear research
 - . quadratic programming
 - RT critical path method
 - ∞ design
 - ethics
 - exploration
 - interservice data exchange program
 - investigation
 - minimax technique
 - ∞ research projects
- research aircraft**
- UF *experimental aircraft*
 - ornithopter aircraft*
 - GS research vehicles
 - . **research aircraft**
 - .. Avian 2/180 autogiro
 - .. AVRO 707 aircraft
 - .. B-70 aircraft
 - .. Breguet 940 aircraft
 - .. C-8A augmentor wing aircraft
 - .. D-558 aircraft
 - .. FD 2 aircraft
 - .. Firebee 2 target drone aircraft
 - .. H-17 helicopter
 - .. H-126 aircraft
 - .. HP-115 aircraft
 - .. meteorological research aircraft
 - .. Nord 1500 aircraft
 - .. Questol aircraft
 - .. rotor systems research aircraft
 - .. SC-1 aircraft
 - .. U-2 aircraft
 - .. VZ-2 aircraft
 - .. VZ-8 aircraft
 - .. X-1 aircraft
 - .. X-2 aircraft
 - .. X-3 aircraft
 - .. X-5 aircraft
 - .. X-13 aircraft
 - .. X-14 aircraft
 - .. X-15 aircraft
 - .. X-19 aircraft
 - .. X-20 aircraft
 - .. X-21 aircraft
 - .. X-21A aircraft
 - .. X-22 aircraft
 - .. X-22A aircraft
 - .. X-24 aircraft
 - .. X-31 aircraft
 - .. X-32 aircraft
 - .. X-35 aircraft
 - .. X-36 aircraft
 - .. X-45 aircraft
 - .. XH-51 helicopter
 - .. XV-4 aircraft
 - .. XV-5 aircraft
 - .. XV-8A aircraft
 - .. XV-9A aircraft
 - .. XV-11A aircraft
 - RT aerospace planes
 - ∞ aircraft
 - drone aircraft
 - fan in wing aircraft
 - flight test vehicles
 - flying platforms
 - ground effect machines
 - hovercraft ground effect machines
 - hypersonic aircraft
 - jet aircraft
 - joined wings
 - ∞ military aircraft
 - nuclear propelled aircraft
 - rocket planes
 - submersible aircraft
 - supersonic aircraft
 - tailless aircraft
 - tandem wing aircraft
 - test vehicles
 - tilt wing aircraft
 - V/STOL aircraft
 - vertical takeoff aircraft
 - ∞ winged vehicles
 - YF-12 aircraft
- research and development**
- RT ∞ design
- investigation
 - management planning
 - operations research
 - outer space treaty
 - programs
 - project management
 - proposals
 - ∞ research projects
 - systems engineering
 - technology utilization
 - weapons development
- research facilities**
- RT ∞ facilities
 - laboratories
 - ∞ research projects
 - space industrialization
 - space laboratories
 - test facilities
- research management**
- GS management
 - . **research management**
 - RT allocations
 - block diagrams
 - ∞ budgets
 - engineering management
 - feasibility analysis
 - goals
 - industrial management
 - manpower
 - multidisciplinary research
 - operations research
 - personnel
 - priorities
- ∞ **research projects**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT Chinese space program
 - Earth & Ocean Physics Applications Program
 - French space program
 - Indian space program
 - Japanese space program
 - management
 - NASA programs
 - programs
 - project management
 - projects
 - research
 - research and development
 - research facilities
 - space programs
 - SPHINX
- research vehicles**
- SN (VEHICLES DESIGNED TO BE SUBJECTS OF RESEARCH--NOT RESEARCH EQUIPMENT CONTAINERS)
 - GS **research vehicles**
 - . automated mixed traffic vehicles
 - . research aircraft
 - .. Avian 2/180 autogiro
 - .. AVRO 707 aircraft
 - .. B-70 aircraft
 - .. Breguet 940 aircraft
 - .. C-8A augmentor wing aircraft
 - .. D-558 aircraft
 - .. FD 2 aircraft
 - .. Firebee 2 target drone aircraft
 - .. H-17 helicopter
 - .. H-126 aircraft
 - .. HP-115 aircraft
 - .. meteorological research aircraft
 - .. Nord 1500 aircraft
 - .. Questol aircraft
 - .. rotor systems research aircraft
 - .. SC-1 aircraft
 - .. U-2 aircraft
 - .. VZ-2 aircraft
 - .. VZ-8 aircraft
 - .. X-1 aircraft
 - .. X-2 aircraft
 - .. X-3 aircraft
 - .. X-5 aircraft
 - .. X-13 aircraft
 - .. X-14 aircraft
 - .. X-15 aircraft
 - .. X-19 aircraft
- .. X-20 aircraft
 - .. X-21 aircraft
 - .. X-21A aircraft
 - .. X-22 aircraft
 - .. X-22A aircraft
 - .. X-24 aircraft
 - .. X-31 aircraft
 - .. X-32 aircraft
 - .. X-35 aircraft
 - .. X-36 aircraft
 - .. X-45 aircraft
 - .. XH-51 helicopter
 - .. XV-4 aircraft
 - .. XV-5 aircraft
 - .. XV-8A aircraft
 - .. XV-9A aircraft
 - .. XV-11A aircraft
 - underwater research laboratories
 - . X-30 vehicle
 - . X-37 vehicle
 - . X-40A vehicle
 - . X-43 vehicle
 - RT boats
 - electric motor vehicles
 - ∞ flight vehicles
 - lunar roving vehicles
 - Mars roving vehicles
 - ∞ military vehicles
 - roving vehicles
 - ships
 - space laboratories
 - ∞ spacecraft
 - surface effect ships
 - underwater vehicles
 - ∞ vehicles
 - water vehicles
- reserpine**
- GS bases (chemical)
 - . alkaloids
 - . . **reserpine**
 - drugs
 - . pentobarbital sodium
 - . . **reserpine**
 - nitrogen compounds
 - . alkaloids
 - . . **reserpine**
 - organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . alkaloids
 - **reserpine**
 - RT antihypertensive agents
- reserves**
- RT abundance
 - availability
 - backups
 - contingency
 - crude oil
 - economic factors
 - energy policy
 - estimates
 - estimating
 - evaluation
 - exploitation
 - exploration
 - forecasting
 - inventories
 - inventory controls
 - ∞ materials
 - mineral deposits
 - mines (excavations)
 - ∞ production
 - resources
 - stockpiling
 - ∞ storage
- reservoirs**
- SN (FOR SURFACE WATER STORAGE--NOT OIL OR GAS POOLS)
 - RT dams
 - evaporation
 - fresh water
 - lagoons
 - Lake Texoma (OK-TX)
 - lakes
 - ponds
 - rivers
 - solar ponds (heat storage)

residential areas

streams
water resources
windpowered pumps

residential areas

RT cities
inhabitants
land
land use
megalopolises
regional planning
rural areas
suburban areas
urban development

residential energy

DEF Household energy requirements in residences, apartments, etc.

RT energy conservation
energy technology
heat pumps
solar cooling
solar heating
solar houses
space cooling (buildings)
space heating (buildings)
water heating

residual gas

GS gases
. **residual gas**
RT getters
high vacuum
outgassing
partial pressure
ultrahigh vacuum
vacuum apparatus
vacuum tubes

residual strength

RT crack propagation
fatigue (materials)
fracture mechanics
fracture strength
residual stress
∞ strength
tensile strength

residual stress

DEF In structures, any stress in an unloaded body. These stresses arise from local yielding of the material due to machining, welding, quenching or cold working. Used for internal stress.

UF *internal stress*
GS stresses
. **residual stress**
RT creep properties
machining
relaxation (mechanics)
residual strength
strain hardening
stress relaxation
stress relieving
stress-strain relationships
temperature inversions

residues

RT ashes
organic wastes (fuel conversion)
reaction products
solid wastes
waste treatment
waste water
wastes

resilience

GS mechanical properties
. **resilience**
RT compressive strength
elastic properties
shear properties
springs (elastic)
tensile strength

resin bonding

GS bonding
. **resin bonding**
RT adhesive bonding
metal bonding

metal-metal bonding

resin film infusion

(added August 1997)

UF *RFI (composite materials)*
RT composite materials
composite structures
fabrication
infiltration
polymer matrix composites
preforms
resin matrix composites
resin transfer molding

resin matrix composites

DEF Composite materials utilizing a matrix of filaments and/or fibers of glass, metal, or other material bound with a polymer or resin.

GS composite materials
. **resin matrix composites**
. . boron-epoxy composites
. . carbon-phenolic composites
. . graphite-epoxy composites
RT aramid fibers
bismaleimide
epoxy resins
hybrid composites
matrix materials
metal matrix composites
PEEK
polyimide resins
polymer matrix composites
prepregs
pultrusion
resin film infusion
resin transfer molding
resins
sheet molding compounds

resin transfer molding

(added May 1992)

UF *RTM (composite materials)*
GS forming techniques
. **resin transfer molding**
RT casting
composite materials
curing
fabrication
fiber composites
injection molding
matrix materials
molding materials
molds
polymer matrix composites
preforms
reinforcing fibers
resin film infusion
resin matrix composites

resins

GS **resins**
. alkyd resins
. ion exchange resins
. polyimide resins
. polyurethane resins
. silicone resins
. synthetic resins
. . addition resins
. . acrylic resins
. . vinyl copolymers
. . polyester resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate
. . thermoplastic resins
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
. . thermosetting resins
. . epoxy resins
. . . phenolic epoxy resins
. . . furan resins
. . . polyamide resins
. . . . Kevlar (trademark)
. . . . Nylon (trademark)
. . . phenolic resins
. . . micarta
. . . phenolic epoxy resins
RT acrylates
Bakelite (trademark)

bismaleimide
Delrin (trademark)
fillers
Lexan (trademark)
melamine
paraplasts
∞ patterns
phenol formaldehyde
phloroglucinol
plasticols
resin matrix composites
teflon (trademark)

∞ resistance

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF In electricity, the factor by which the square of the instantaneous conduction current must be multiplied to obtain the power lost by heat dissipation or other permanent radiation of energy away from the electrical current. In mechanics, the opposition by frictional effects to forces tending to produce motion. Used for conductance and resistance coefficients.

UF *conductance*
resistance coefficients
RT abrasion resistance
acceleration tolerance
acoustic properties
aerodynamic drag
chemical properties
constrictions
contact resistance
corrosion resistance
crack propagation
creep strength
damping
diffusivity
durability
earthquake resistance
electrical properties
electrical resistance
electrical resistivity
flammability
flow resistance
fracture strength
fusibility
Hall resistance
∞ high resistance
immunity
impact resistance
impact strength
impedance
Kapitza resistance
life (durability)
∞ low resistance
magnetoresistivity
moisture resistance
negative resistance circuits
negative resistance devices
oxidation resistance
permeability
prevention
protection
quality
radiation tolerance
resistance thermometers
retarding
sensitivity
shock resistance
skin resistance
stability
thermal resistance
tolerances (physiology)
transconductance
vulnerability
wave resistance
wear resistance

resistance coefficients

USE **resistance**

resistance heating

UF *Joule heating*
GS heating
. **resistance heating**
RT arc heating
electroslag refining
gas heating

- levitation melting
- resistance thermometers**
- GS measuring instruments
 - . temperature measuring instruments
 - . . thermometers
 - . . . **resistance thermometers**
 - RT bolometers
 - ohmmeters
 - ∞ resistance
 - temperature measurement
 - thermocouple pyrometers
- resistivity*
- USE **electrical resistivity**
- resistojet engines**
- UF *resistojets*
 - GS engines
 - . rocket engines
 - . . electric rocket engines
 - . . . electrothermal engines
 - **resistojet engines**
 - RT arc jet engines
 - plasma engines
 - pulsed jet engines
 - space station propulsion
- resistojets*
- USE **resistojet engines**
- resistors**
- UF *tunnel resistors*
 - GS attenuators
 - . **resistors**
 - . . potentiometers (resistors)
 - . . printed resistors
 - . . thermistors
 - RT ballasts (impedances)
 - electric conductors
 - electric filters
 - electric reactors
 - ∞ filaments
 - photoconductors
 - semiconductors (materials)
 - solid state devices
 - varistors
- resolution**
- DEF The ability of a film, a lens, a combination of both, or a vidicon system to render barely distinguishable a standard pattern of black and white lines. In radar, the minimum angular separation at the antenna at which two targets can be distinguished (a function of beamwidth); or the minimum range at which two targets at the same azimuth can be separated (equal to one half the pulse height). Of a gyro, a measure of response to small changes in input; the maximum value of the minimum input change that will cause a detectable change in the output for inputs greater than the threshold, expressed as a percent of one half the input range. Used for resolving power.
- UF *resolving power*
 - GS **resolution**
 - . angular resolution
 - . high resolution
 - . image resolution
 - . radar resolution
 - . radiometric resolution
 - . spatial resolution
 - . spectral resolution
 - . temporal resolution
 - RT accuracy
 - automatic traffic advisory and resolution
 - blurring
 - character recognition
 - contrast
 - definition
 - dynamic characteristics
 - errors
 - foci
 - high resolution coverage antennas
 - image contrast
 - image enhancement
 - legibility
 - loci
 - numerical aperture
- ∞ optics
 - perception
 - ∞ power
 - precision
 - resolution cell
 - sensitivity
 - spatial filtering
 - Stark effect
 - ∞ thresholds
 - tolerances (mechanics)
 - visibility
 - vision
- resolution cell**
- RT ∞ cells
 - imaging techniques
 - radar detection
 - radar imagery
 - resolution
- resolvers**
- RT analog computers
 - instrument transformers
 - transformers
- resolving power*
- USE **resolution**
- resonance**
- DEF The phenomena of amplification of a free wave or oscillation of a system by a forced wave or oscillation of exactly equal period. The forced wave may arise from an impressed force upon the system or from a boundary condition. The growth of the resonant amplitude is characteristically linear in time. Of a system in forced oscillation, the condition which exists when any change, however small, in the frequency of excitation causes a decrease in the response of the system.
- GS **resonance**
 - . baryon resonance
 - . cyclotron resonance
 - . . electron cyclotron resonance
 - . . magnetic resonance
 - . . ferromagnetic resonance
 - . . nuclear magnetic resonance
 - . . . proton magnetic resonance
 - . . . proton resonance
 - . . paramagnetic resonance
 - . . . electron paramagnetic resonance
 - . . magnetosonic resonance
 - . . meson resonance
 - . . X mesons
 - . acoustic resonance
 - . microwave resonance
 - . nuclear quadrupole resonance
 - . optical resonance
 - . orbital resonances (celestial mechanics)
 - . plasma resonance
 - . resonant vibration
 - . spin resonance
 - RT Foster theory
 - oscillations
 - Overhauser effect
 - resonant frequencies
 - syntony
 - tuning
 - vibration
- resonance charge exchange**
- GS exchanging
 - . charge exchange
 - . . **resonance charge exchange**
 - RT spin exchange
- resonance fluorescence**
- DEF The emission of radiation by a gas or vapor as a result of excitation of atoms to a higher energy level by incident photons at the resonance frequency of the gas or vapor. Used for resonance radiation.
- UF *resonance radiation*
 - GS emission
 - . light emission
 - . . luminescence
 - . . . fluorescence
 - **resonance fluorescence**
 - RT atomic excitations
- atomic physics
 - quantum electrodynamics
 - ∞ radiation
- resonance lines**
- DEF Spectral lines which occur either as absorption or emission lines. Used for dielectronic satellite lines.
- UF *dielectronic satellite lines*
 - RT line spectra
 - optical resonance
 - plasma resonance
- resonance probes**
- GS measuring instruments
 - . **resonance probes**
 - RT impedance probes
 - magnetic probes
 - microwave plasma probes
 - plasma diagnostics
 - plasma resonance
 - tuners
- resonance radiation*
- USE **resonance fluorescence**
- resonance scattering**
- SN (INTERACTION WITH THE INTERIOR OF THE NUCLEUS--EXCLUDES POTENTIAL SCATTERING)
 - GS nuclear reactions
 - . nuclear scattering
 - . . **resonance scattering**
 - . . scattering
 - . . nuclear scattering
 - . . . **resonance scattering**
 - RT inverse scattering
 - Mossbauer effect
 - neutron scattering
- resonance testing**
- RT damping tests
 - elastic damping
 - electronic equipment tests
 - fatigue tests
 - resonant frequencies
 - stability tests
 - static tests
 - structural stability
 - ∞ tests
 - vibration tests
 - viscous damping
- resonant cavities*
- USE **cavity resonators**
- resonant frequencies**
- DEF Frequencies at which resonance exists. Used for natural frequencies and vibrational frequencies (structural).
- UF *natural frequencies*
 - UF *vibrational frequencies (structural)*
 - GS frequencies
 - . **resonant frequencies**
 - RT acoustic frequencies
 - acoustic resonance
 - antinodes
 - bandwidth
 - beat frequencies
 - Bordoni peaks
 - cavity resonators
 - critical frequencies
 - critical velocity
 - damping
 - dynamic characteristics
 - ∞ dynamics
 - electromagnetic absorption
 - harmonics
 - impedance
 - Mossbauer effect
 - nodes (standing waves)
 - oscillators
 - resonance
 - resonance testing
 - resonators
 - standing waves
 - transient response
 - tuners

resonant tunneling

tuning

resonant tunneling

(added September 1988)

- RT barrier layers
- electron tunneling
- negative resistance devices
- quantum electronics
- quantum wells
- resonant tunneling diodes
- transistors
- tunnel diodes
- ∞ tunneling

resonant tunneling diodes

(added September 2008)

DEF Solid-state, nanoelectronic devices capable of producing negative differential resistance comprised of one or more narrow quantum well structures each containing only a single, resonant energy level.

- GS electronic equipment
 - . diodes
 - . . semiconductor diodes
 - . . . tunnel diodes
 - **resonant tunneling diodes**
 - . solid state devices
 - . . semiconductor devices
 - . . . **resonant tunneling diodes**
 - . negative resistance devices
 - . **resonant tunneling diodes**
- RT barrier layers
- heterojunctions
- holes (electron deficiencies)
- integrated circuits
- nanotechnology
- negative resistance circuits
- quantum electronics
- quantum wells
- resonant tunneling
- ∞ solid state physics

resonant vibration

UF *mechanical resonance*

GS resonance

. **resonant vibration**
vibration

. **resonant vibration**

- RT acoustic resonance
- damping
- dynamic stability
- ∞ dynamics
- flapping
- flutter
- mechanical oscillators
- oscillations
- Q factors
- stable oscillations
- structural vibration
- undamped oscillations

resonators

DEF In radio and radar applications, circuits which will resonate at a given frequency, or over a range of frequencies, when properly excited.

GS **resonators**

- . cavity resonators
- . . superconducting cavity resonators
- . Helmholtz resonators
- . multimode resonators
- . optical resonators

- RT delta antennas
- electron tubes
- frequency standards
- grazing flow
- magnetrons
- masers
- oscillators
- resonant frequencies
- self excitation
- tuning
- tuning fork gyroscopes

resource allocation

GS allocations

- . **resource allocation**
management
- . resources management
- . . **resource allocation**

RT distributing

energy conservation

energy policy

engineering management

logistics

NASA Interactive Planning System

outer space treaty

priorities

products

resources

resources

GS **resources**

- . Earth resources
 - . . forests
 - . . . rain forests
 - . . fossil fuels
 - coal
 - anthracite
 - lignite
 - solvent refined coal
 - . . crude oil
 - . . natural gas
 - . . . liquefied natural gas
 - . . peat
 - . . shale oil
 - . . glaciers
 - . . icebergs
 - . . kerogen
 - . . land ice
 - . . marine resources
 - . . oil fields
 - . . range resources
 - . . springs (water)
 - . . tar sands
 - . . thermal resources
 - . . . geothermal resources
 - geysers
 - . . underwater resources
 - . . water resources
 - . . . aquifers
 - . . extraterrestrial resources
 - . . lunar resources
 - . Internet resources
 - . . websites

RT

- abundance
- availability
- depletion
- economic development
- economic factors
- economic impact
- economics
- energy conservation
- energy policy
- engineering management
- geothermal technology
- Great Lakes (North America)
- inventory management
- logistics
- logistics management
- man environment interactions
- manpower
- ∞ materials
- Mississippi River (US)
- personnel
- personnel development
- production management
- recycling
- reserves
- resource allocation
- site selection
- urban development
- vegetation

resources management

GS management

- . **resources management**
- . . forest management
- . . . reforestation
- . . information resources management
- . . land management
- . . resource allocation
- RT Earth resources
- environment management
- environmental control
- leasing
- NASA Interactive Planning System
- thermal resources

water runoff

respiration

DEF The interchange of gases of living organisms and the gases of the medium in which they live. Used for apnea and inhalation.

UF *apnea*

inhalation

GS **respiration**

- . high altitude breathing
- . liquid breathing
- . pressure breathing

RT alveoli

asphyxia

∞ breathing

expiration

expired air

hydrogen metabolism

metabolism

oxygen metabolism

photosynthesis

physiology

plant physiology

respirators

respiratory system

resuscitation

sinuses

Valsalva exercise

respirators

GS medical equipment

. **respirators**

RT

breathing apparatus

emergency breathing techniques

respiration

resuscitation

therapy

respiratory diseases

GS diseases

. **respiratory diseases**

. . aerosinusitis

. . asthma

. . emphysema

. . influenza

. . pneumonia

. . tuberculosis

RT

beryllium poisoning

congestion

fungal diseases

lung morphology

pulmonary lesions

respiratory impedance

GS impedance

. **respiratory impedance**

respiratory physiology

GS physiology

. **respiratory physiology**

RT

exercise physiology

∞ science

respiratory rate

GS rates (per time)

. **respiratory rate**

. . dyspnea

. . hypoventilation

. . tachypnea

RT

hypercapnia

hyperpnea

spirometers

respiratory reflexes

GS reflexes

. **respiratory reflexes**

. . cough

. . Hering-Breuer reflex

. . sneezing

RT

∞ breathing

respiratory system

GS anatomy

. **respiratory system**

. . bronchi

. . diaphragm (anatomy)

. . larynx

. . . glottis

. . . vocal cords

. . lungs

- . . . alveoli
- . . . nose (anatomy)
- . . . paranasal sinuses
- . . . pharynx
- . . . trachea
- RT evaporation
- homeostasis
- hypercapnia
- organs
- pleurae
- pulmonary circulation
- respiration
- ∞ systems
- respirometers**
- GS measuring instruments
- . **respirometers**
- RT bioinstrumentation
- exhalation
- responders*
- USE **transponders**
- response bias**
- GS bias
- . **response bias**
- RT dynamic response
- errors
- ∞ time response
- transient response
- response time (computers)**
- GS time
- . **response time (computers)**
- RT computer programming
- computer systems performance
- data processing
- parallel processing (computers)
- responses**
- DEF Of devices or systems, the motions (or other output) resulting from excitation under specified conditions.
- GS **responses**
- . dynamic response
- . . . transient response
- . frequency response
- . galvanic skin response
- . modal response
- . physiological responses
- . . . hemodynamic responses
- RT chronaxy
- learning
- refractory period
- ∞ thresholds
- time lag
- ∞ time response
- rest**
- GS **rest**
- . bed rest
- RT prone position
- recreation
- sitting position
- sleep
- supine position
- restartable rocket engines**
- GS engines
- . rocket engines
- . . **restartable rocket engines**
- RT ducted rocket engines
- electric rocket engines
- electrostatic engines
- electrothermal engines
- hybrid propellant rocket engines
- ion engines
- liquid propellant rocket engines
- nuclear rocket engines
- retrorocket engines
- solid propellant rocket engines
- sustainer rocket engines
- turborocket engines
- Vernier engines
- restoration**
- RT addition
- reconstruction
- restraints*
- USE **constraints**
- restrictions*
- USE **constrictions**
- resultants**
- DEF The sums of two or more vectors.
- RT vector analysis
- resuscitation**
- UF *artificial respiration*
- RT emergency breathing techniques
- first aid
- liquid breathing
- respiration
- respirators
- retaining**
- RT asteroid capture
- constraints
- containment
- ∞ holding
- ∞ joining
- locking
- ∞ retention
- sealing
- ∞ storage
- retardants**
- GS **retardants**
- . flame retardants
- RT accelerating agents
- additives
- anticipating additives
- antiknock additives
- antioxidants
- catalysts
- explosion suppression
- inhibitors
- neutralizers
- penetrants
- preservatives
- ∞ retarders
- retarding
- stabilizers (agents)
- suppressors
- surfactants
- wear inhibitors
- ∞ **retarders**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT retardants
- retarders (devices)
- retarders (devices)**
- RT blocking
- brakes (for arresting motion)
- braking
- constrictions
- ∞ retarders
- retarding
- retarding**
- UF *suppression*
- RT attenuation
- blocking
- braking
- damping
- deceleration
- fouling
- hysteresis
- prevention
- ∞ reduction
- ∞ resistance
- retardants
- retarders (devices)
- stopping
- retarding ion mass spectrometers*
- USE **mass spectrometers**
- ∞ **retention**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT retaining
- retention (psychology)
- retention (psychology)**
- RT learning
- memory
- ∞ retention
- reticles**
- DEF Systems of lines or wires placed in the focal plane of an optical instrument to serve as a reference. Also called a reticule.
- GS **reticles**
- . wire grid lenses
- RT contact lenses
- eyepieces
- ∞ grids
- lenses
- optical equipment
- scale (ratio)
- reticulocytes**
- GS cells (biology)
- . blood cells
- . . . erythrocytes
- . . . **reticulocytes**
- RT hematology
- hemoglobin
- hemolysis
- hemorrhages
- retina**
- GS anatomy
- . sense organs
- . . . eye (anatomy)
- . . . **retina**
- fovea
- RT electroretinography
- phosphene
- photoreceptors
- vision
- visual fields
- visual pigments
- retinal adaptation**
- GS adaptation
- . **retinal adaptation**
- . . dark adaptation
- . . light adaptation
- RT perception
- visibility
- vision
- retinal images**
- GS images
- . **retinal images**
- RT vision
- visual fields
- retinene**
- UF *vitamin A*
- GS organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . **retinene**
- . lipids
- . . **retinene**
- vitamins
- . **retinene**
- RT aldehydes
- carotene
- retirement**
- RT employee relations
- industries
- personnel
- sociology
- retirement for cause**
- DEF Procedure, primarily on aircraft, based on fracture mechanics, which allows safe utilization of the full life capacities of each component.
- RT component reliability
- engine parts
- fatigue life
- fracture strength
- inventory management
- life (durability)
- metal fatigue
- service life

retort processing

spare parts

RETORC (torpedoes)
USE **torpedoes**

retort processing

DEF One method for converting shale oil into oil similar to petroleum oils.

RT fractionation
hydrocarbon fuels
oils
∞ processing
shale oil

retractable equipment

UF *retractable landing gear*
RT aerodynamic brakes
landing gear
refueling

retractable landing gear

USE **landing gear**
retractable equipment

retraining

UF *reorientation*
RT adaptation
education
management methods
manpower
personnel
tasks
training analysis

retrieval

GS **retrieval**
. data retrieval
. information retrieval
. payload retrieval (STS)
RT ∞ recovery
searching

retroaction

USE **retrothrust**

retrofiring

GS firing (igniting)
. rocket firing
. . . **retrofiring**
RT deceleration
retrorocket engines
retrothrust

retrofitting

DEF Modification of equipment to incorporate changes made in later production of similar equipment; the changes may be performed in the factory or in the field.

GS **retrofitting**
. acoustic retrofitting
RT installing

retrograde orbits

(added June 1995)

DEF Motion in an orbit opposite to the usual orbital direction of celestial bodies within a given system. Specifically, of a satellite, motion in a direction opposite to the direction of rotation of the primary.

GS orbits
. **retrograde orbits**
RT interacting galaxies
orbital mechanics
planetary orbits
precession
satellite orbits
spacecraft orbits
stellar orbits
three body problem

retroreflection

DEF Reflection wherein the reflected rays return along paths parallel to those of their corresponding incident rays. Also called retroflection.

GS reflection
. **retroreflection**
RT antenna arrays
incident radiation
LAGEOS (satellite)
laser ranging

lunar retroreflectors
reflected waves
retroreflectors
satellite laser ranging

retroreflectors

DEF Class of optical instruments which cause reflected radiation to return along paths parallel to those of their corresponding incident rays.

GS radar equipment
. **retroreflectors**
reflectors
. **retroreflectors**
RT laser ranging
radar corner reflectors
retroreflection
satellite laser ranging

retrorocket engines

DEF Rocket engines fitted on or in spacecraft, satellites, or the like to produce thrust opposed to forward motion.

GS engines
. rocket engines
. . . **retrorocket engines**
. . . BE-3 engine
RT control rockets
internal combustion engines
liquid propellant rocket engines
man operated propulsion systems
restartable rocket engines
retrofiring
retrothrust
solid propellant rocket engines

retrothrust

DEF Thrust used for a braking maneuver; reverse thrust. Used for retroaction.

UF *retroaction*
GS thrust
. rocket thrust
. . . **retrothrust**
RT deceleration
retrofiring
retrorocket engines

return beam vidicons

GS electron tubes
. camera tubes
. . . vidicons
. . . . **return beam vidicons**
. . . . thermicons
RT television cameras

return to Earth space flight

GS space flight
. **return to Earth space flight**
RT Assured Crew Return Vehicle
interplanetary flight
manned Mars missions
Mars missions
spacecraft reentry
X-38 crew return vehicle

reusable heat shielding

GS shielding
. heat shielding
. . . **reusable heat shielding**
RT cooling
heat transfer
reentry shielding
spacecraft shielding
temperature control
thermal control coatings
thermal protection

reusable launch vehicles

GS launch vehicles
. **reusable launch vehicles**
. . single stage to orbit vehicles
. . . Delta Clipper
. . . HOTOL launch vehicle
. . . X-33 reusable launch vehicle
. . . X-34 reusable launch vehicle
RT Advanced Launch System (STS)
Aeromaneuvering Orbit to Orbit Shuttle
recoverable launch vehicles
rocket engines

spacecraft launching
spacecraft recovery
∞ vehicles
X-37 vehicle
X-40A vehicle

reusable rocket engines

GS engines
. rocket engines
. . . **reusable rocket engines**
RT oxygen-hydrocarbon rocket engines

reusable spacecraft

GS reentry vehicles
. recoverable spacecraft
. . . **reusable spacecraft**
. . . aerospace planes
. . . . HOPE aerospace plane
. . . . HOTOL launch vehicle
. . . . VentureStar launch vehicle
. . . . X-30 vehicle
. . . . X-37 vehicle
. . . . X-40A vehicle
. . . MARS (Manned Reusable Spacecraft)
. . . single stage to orbit vehicles
. . . . Delta Clipper
. . . . HOTOL launch vehicle
. . . space shuttles
. . . . Buran space shuttle
. . . . Hermes manned spaceplane
. . . . Space Shuttle orbiters
. Atlantis (orbiter)
. Challenger (Orbiter)
. Columbia (Orbiter)
. Discovery (Orbiter)
. Endeavour (orbiter)
. Enterprise (Orbiter)
RT expendable stages (spacecraft)
ferry spacecraft
Inertial Upper Stage
interim stages (spacecraft)
interplanetary spacecraft
landing modules
lunar landing modules
manned spacecraft
Saenger space transportation system
soft landing spacecraft
Space Shuttle Boosters
unmanned spacecraft
X-33 reusable launch vehicle
X-34 reusable launch vehicle

reuse

GS utilization
. **reuse**
. . software reuse
RT oil recovery
∞ recovery

revenue

RT allocations
assessments
budgeting
costs
international trade

reverberation

DEF The persistence of sound in an enclosed space, as a result of multiple reflections, after the sound source has stopped. The sound that persists in an enclosed space, as a result of repeated reflection or scattering after the source of the sound has stopped.

GS acoustic properties
. acoustic scattering
. . **reverberation**
scattering
. wave scattering
. . acoustic scattering
. . . **reverberation**
RT echoes
noise (sound)
reverberation chambers
sound waves

reverberation chambers

DEF Chambers designed to eliminate outside noise for accurate acoustic measurement.
GS compartments

. test chambers
 . . **reverberation chambers**
 test facilities
 . **reverberation chambers**

RT acoustic measurement
 acoustic simulation
 ∞ chambers
 environmental tests
 reverberation

reverse engineering
(added May 1992)
 RT computer programming
 design analysis
 reversing
 software development tools
 software engineering
 systems engineering

reverse field pinch
 DEF A method of plasma confinement under investigation as part of the mirror and pinch programs.
 GS pinch effect
 . **reverse field pinch**
 RT magnetohydrodynamic flow
 plasma control
 reactor technology
 screw pinch
 toroidal plasmas

reverse osmosis
 DEF The application of pressure to stop or reverse the transport of solvent through a semipermeable membrane separating two solutions of different solute concentration. The applied pressure required to prevent the flow of solvent across a perfectly semipermeable membrane is called the osmotic pressure and is a characteristic of the solution.
 GS osmosis
 . **reverse osmosis**
 RT demineralizing
 desalination
 membranes
 permeating

reverse time
 USE **reaction time**

reversed flow
 GS fluid flow
 . **reversed flow**
 RT boundary layer separation
 recirculative fluid flow
 reversing
 separated flow

reversing
 RT ∞ direction
 reverse engineering
 reversed flow

reviewing
 RT ∞ discussion
 evaluation
 examination
 training evaluation

revisions
 UF *alteration*
modification
 RT adjusting
 contracts
 correction
 extensions
 variations

revolution (motion)
 USE **revolving**

revolving
 DEF Moving in a path about an axis, usually external to the body accomplishing the motion. Used for revolution (motion).
 UF *revolution (motion)*
 GS gyration
 . **revolving**
 RT angular velocity
 centripetal force

rotation

reward (psychology)
 GS reinforcement (psychology)
 . **reward (psychology)**
 RT comfort
 human reactions
 psychological factors

Reynolds averaging
(added October 1997)
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **Reynolds averaging**
 RT average
 boundary layer equations
 computational fluid dynamics
 flow equations
 large eddy simulation
 Navier-Stokes equation
 Reynolds stress
 turbulence models

Reynolds equation
 UF *Reynolds law*
 GS equations of motion
 . **Reynolds equation**
 flow equations
 . **Reynolds equation**
 RT aerodynamic configurations
 ∞ equations
 Navier-Stokes equation
 scale models

Reynolds law
 USE **Reynolds equation**

Reynolds number
 DEF A nondimensional parameter representing the ratio of the momentum forces to the viscous forces in fluid flow. (After Osborne Reynolds, 1842-1912, English scientist). Used for critical Reynolds number.
 UF *critical Reynolds number*
 GS dimensionless numbers
 . **Reynolds number**
 . . high Reynolds number
 . . low Reynolds number
 ratios
 . **Reynolds number**
 . . high Reynolds number
 . . low Reynolds number
 RT boundary layer flow
 boundary layer stability
 boundary layer transition
 critical velocity
 fluid flow
 Froude number
 Grashof number
 inviscid flow
 laminar flow
 Peclet number
 Prandtl number
 Richardson number
 scale effect
 transition points
 turbulent flow
 viscous flow

Reynolds stress
 DEF In the mathematical treatment of a viscous, incompressible, homogeneous fluid in turbulent motion, that represents the transfer of momentum due to turbulent fluctuations.
 GS stresses
 . **Reynolds stress**
 RT incompressible flow
 Navier-Stokes equation
 Reynolds averaging
 turbulent boundary layer

turbulent flow

RF-4 aircraft
 USE **F-4 aircraft**

RF-8 aircraft
 USE **F-8 aircraft**

RFI (composite materials)
(added August 1997)
 USE **resin film infusion**

RH-2 helicopter
 USE **UH-1 helicopter**

Rhea (astronomy)
 DEF A natural satellite of the planet Saturn orbiting at a mean distance of 527,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . icy satellites
 . . . **Rhea (astronomy)**
 . . Saturn satellites
 . . . **Rhea (astronomy)**
 RT Saturn (planet)
 solar system

rhenium
 GS chemical elements
 . **rhenium**
 . . rhenium isotopes
 metals
 . refractory metals
 . . **rhenium**
 . . . rhenium isotopes
 . transition metals
 . . **rhenium**
 . . . rhenium isotopes
 refractory materials
 . refractory metals
 . . **rhenium**
 . . . rhenium isotopes

rhenium alloys
 GS alloys
 . heat resistant alloys
 . . refractory metal alloys
 . . . **rhenium alloys**
 refractory materials
 . refractory metal alloys
 . . **rhenium alloys**

rhenium compounds
 RT ∞ chemical compounds
 ∞ Group 7B compounds
 ∞ metal compounds

rhenium isotopes
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **rhenium isotopes**
 . rhenium
 . . **rhenium isotopes**
 metals
 . refractory metals
 . . rhenium
 . . . **rhenium isotopes**
 . transition metals
 . . rhenium
 . . . **rhenium isotopes**
 refractory materials
 . refractory metals
 . . rhenium
 . . . **rhenium isotopes**
 RT radioactive isotopes

rheocasting
 DEF Use of partially solidified metal alloys (fractions solids) fed directly into a casting machine for forming into machine parts.
 GS forming techniques
 . casting
 . . **rheocasting**
 RT alloys
 cast alloys
 dies
 forging
 slurries

rheoelectrical simulation

solidification

rheoelectrical simulation

- GS simulation
- . **rheoelectrical simulation**
- RT analog circuits
- analog simulation
- bionics
- flow distribution

rheoencephalography

- RT blood circulation
- brain
- brain circulation

rheology

- DEF The study of the deformation and flow of matter.
- RT electrorheological fluids
- flow measurement
- flow theory
- ∞ fluids
- liquid flow
- magnetorheological fluids
- Maxwell fluids
- nonNewtonian fluids
- plastic flow
- plastic properties
- viscosity

rheometers

- GS measuring instruments
- . flowmeters
- . . **rheometers**
- RT blood circulation

Rhesus factor

- RT antigens
- blood
- congenital anomalies

rheumatic diseases

- GS diseases
- . **rheumatic diseases**
- RT arthritis

rhizopus

- GS plants (botany)
- . fungi
- . . **rhizopus**
- RT blight
- ∞ mold

rhodamine

- (added July 1988)
- GS dyes
- . **rhodamine**
- organic compounds
- . cyclic compounds
- . . **rhodamine**
- RT amines
- dye lasers
- fluorescence
- laser materials

Rhode Island

- GS nations
- . United States
- . . **Rhode Island**
- RT Block Island Sound (RI)

Rhodesia

USE **Zimbabwe**

rhodium

- GS chemical elements
- . **rhodium**
- . . rhodium isotopes
- metals
- . transition metals
- . . **rhodium**
- . . . rhodium isotopes

rhodium 102

USE **rhodium isotopes**

rhodium 106

USE **rhodium isotopes**

rhodium alloys

- GS alloys

. rhodium alloys

RT platinum alloys

rhodium compounds

- RT ∞ chemical compounds
- ∞ Group 8 compounds

rhodium isotopes

- UF *rhodium 102*
- rhodium 106*
- GS chemical elements
- . nuclides
- . . isotopes
- . . . **rhodium isotopes**
- . rhodium
- . . **rhodium isotopes**
- metals
- . transition metals
- . . rhodium
- . . . **rhodium isotopes**

rhombic antennas

DEF Antennas composed of long wire radiators comprising the sides of a rhombus. The antenna usually is terminated in an impedance. The sides of the rhombus, the angle between the sides, the elevation, and the termination are proportioned to give the desired directivity.

- GS antennas
- . directional antennas
- . . **rhombic antennas**

RT antenna design

radio antennas

rhombohedrons

- GS geometry
- . Euclidean geometry
- . . polyhedrons
- . . . **rhombohedrons**

rhomboids

DEF Parallelograms whose adjacent sides are not equal.

- GS geometry
- . Euclidean geometry
- . . polygons
- . . . tetragons
- parallelograms
- **rhomboids**

rho-mesons

- GS particles
- . elementary particles
- . . bosons
- . . . mesons
- vector mesons
- **rho-mesons**
- . . fermions
- . . . baryons
- **rho-mesons**
- . . hadrons
- . . . baryons
- **rho-mesons**
- . . . mesons
- vector mesons
- **rho-mesons**
- . nuclear particles
- . . bosons
- . . . mesons
- vector mesons
- **rho-mesons**
- RT charged particles
- eta-mesons

Rhone Delta (France)

- GS landforms
- . deltas
- . . **Rhone Delta (France)**
- RT France
- Mediterranean Sea
- river

rhyolite

- GS rocks
- . igneous rocks
- . . **rhyolite**
- RT lava
- magma

silicon dioxide

∞ rhythm

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT oscillations
- periodic variations
- rhythm (biology)

rhythm (biology)

- UF *biological clocks*
- biological rhythm*
- biorhythms*
- chronobiology*
- periodicity (biology)*
- GS **rhythm (biology)**
- . circadian rhythms
- RT activity cycles (biology)
- alternations
- ∞ biology
- cycles
- desynchronization (biology)
- jet lag
- phenology
- ∞ rhythm
- zeitgebers

ribbon parachutes

DEF Parachutes having a canopy consisting of an arrangement of closely spaced tapes. These parachutes have high porosity with attendant stability and slight opening shock.

- GS parachutes
- . **ribbon parachutes**
- RT drag chutes
- recovery parachutes

ribbons

- RT conveyors
- fabrics
- fasteners
- metal strips
- ∞ strip
- ∞ tapes

riblets

- (added October 1988)
- DEF Longitudinal striations forming V-shaped grooves on aerodynamic and hydrodynamic surfaces. The riblet devices act to reduce large-scale disturbances near the boundary layer. These grooves are dimensional on the order of the wall vortices and turbulent dimensions.
- GS grooves
- . V grooves
- . . **riblets**
- RT boundary layer control
- drag reduction
- friction drag
- shear layers
- skin friction
- striation
- turbulent boundary layer
- vortex alleviation

riboflavin

- UF *vitamin B 2*
- vitamin G*
- GS organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . **riboflavin**
- vitamins
- . **riboflavin**

ribonucleic acids

DEF A chemical found in the nucleus and cytoplasm of cells. It plays an important role in protein synthesis and other chemical activities of the cell. Used for RNA, messenger RNA, transfer RNA, and ribosomal RNA.

- UF *messenger RNA*
- ribosomal RNA*
- transfer RNA*
- GS acids
- . nucleic acids
- . . **ribonucleic acids**
- biopolymers
- . nucleic acids

- . . **ribonucleic acids**
- organic compounds
- . nucleic acids
- . . **ribonucleic acids**
- RT adenines
- gene expression
- genes
- genome
- guanosines
- polynucleotides
- ribosomes
- transcription (genetics)
- ribose**
- GS organic compounds
- . carbohydrates
- . . sugars
- . . . monosaccharides
- pentose
- **ribose**
- RT nucleosides
- ribosomal RNA*
- USE **ribonucleic acids**
- ribosomes**
- (added August 2004)
- DEF A class of multi-component structures found in all cells, in mitochondria, and chloroplasts. They have roles both in genetic translation of transcripts and in the manufacture and secretion of the proteins.
- GS organelles
- . **ribosomes**
- RT cells (biology)
- cytoplasm
- ribonucleic acids
- ribs (supports)**
- RT longerons
- reinforcement (structures)
- reinforcement rings
- stiffening
- webs (supports)
- Riccati equation**
- GS algebra
- . linear equations
- . . **Riccati equation**
- analysis (mathematics)
- . real variables
- . . differential equations
- . . . **Riccati equation**
- . . linear equations
- . . . **Riccati equation**
- rice**
- GS farm crops
- . grains (food)
- . . **rice**
- plants (botany)
- . **rice**
- RT wheat
- Richards theorem**
- GS theorems
- . **Richards theorem**
- RT network synthesis
- signal flow graphs
- Richardson number**
- DEF A nondimensional number arising in the study of shearing flows of a stratified fluid.
- GS dimensionless numbers
- . **Richardson number**
- ratios
- . **Richardson number**
- RT aerodynamic stability
- Reynolds number
- shear flow
- Richardson-Dushman equation*
- USE **temperature effects**
- thermionic emission**
- ∞ **ridges**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *cestas*
- hogbacks*
- RT bridges (landforms)
- buckling
- corrugating
- gaps (geology)
- karst
- landforms
- mid-ocean ridges
- mountains
- protuberances
- wrinkling
- riding quality**
- GS quality
- . **riding quality**
- RT comfort
- passengers
- seats
- suspension systems (vehicles)
- transportation
- Riemann integral*
- USE **measure and integration**
- Riemann manifold**
- UF *Riemann space*
- Riemann sphere*
- GS geometry
- . differential geometry
- . . **Riemann manifold**
- manifolds (mathematics)
- . **Riemann manifold**
- RT Euclidean geometry
- Riemann problem*
- USE **Cauchy problem**
- Riemann space*
- USE **Riemann manifold**
- Riemann sphere*
- USE **Riemann manifold**
- Riemann waves**
- GS elastic waves
- . shock waves
- . . **Riemann waves**
- RT blast loads
- differential equations
- dynamic pressure
- explosions
- hyperbolic functions
- Riesz theorem**
- GS theorems
- . **Riesz theorem**
- RT differential equations
- hyperbolic functions
- rifles**
- GS weapons
- . guns (ordnance)
- . . **rifles**
- RT artillery
- RIFT (reactor in flight test)**
- UF *reactor in flight test program*
- RT electric propulsion
- ∞ reactors
- rocket engines
- Rover project
- Saturn project
- rift valleys*
- USE **valleys**
- rifts*
- USE **geological faults**
- rigging**
- RT assembling
- construction
- ∞ equipment
- materials handling
- shrouds
- rigid bodies*
- USE **rigid structures**
- rigid mounting**
- GS mounting
- . **rigid mounting**
- RT pylon mounting
- rigid rotor helicopters**
- GS V/STOL aircraft
- . rotary wing aircraft
- . . helicopters
- . . . **rigid rotor helicopters**
- CH-3 helicopter
- F-28 helicopter
- XH-51 helicopter
- RT ∞ aircraft
- OH-5 helicopter
- rigid rotors**
- UF *hingeless rotors*
- GS airfoils
- . wings
- . . rotary wings
- . . . **rigid rotors**
- rigid structures
- . **rigid rotors**
- rotating bodies
- . rotors
- . . rotary wings
- . . . **rigid rotors**
- RT bearingless rotors
- rigid rotors (plasma physics)**
- DEF Ensembles of electrons moving in circular or nearly circular orbits at a constant angular frequency.
- GS **rigid rotors (plasma physics)**
- . plasma physics
- RT molecular collisions
- molecular rotation
- ∞ physics
- plasma control
- rigid structures**
- UF *inelastic bodies*
- rigid bodies*
- stiff structures*
- GS **rigid structures**
- . rigid rotors
- . rigid wings
- RT arches
- composite materials
- concrete structures
- Euler equations of motion
- hybrid structures
- plastic bodies
- reinforcement (structures)
- sandwich structures
- space erectable structures
- steel structures
- ∞ structures
- translational motion
- welded structures
- rigid wings**
- SN (EXCLUDES 'RIGID ROTORS')
- GS airfoils
- . wings
- . . **rigid wings**
- rigid structures
- . **rigid wings**
- RT aeroelasticity
- fixed wings
- flexible wings
- low aspect ratio wings
- ∞ **rigidity**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT flexibility
- magnetic rigidity
- mechanical properties
- modulus of elasticity
- ruggedness
- stiffness
- structural stability
- rills*
- USE **valleys**
- rims**
- RT ∞ blades
- borders
- edges
- margins

ring currents

sides

ring currents
GS electric current
. **ring currents**
RT atmospheric electricity
electrojets
plasma currents

ring discharge
GS electric current
. electric discharges
. . Townsend discharge
. . . gas discharges
. . . . toroidal discharge
. . . . **ring discharge**
RT ∞ discharge
electrodeless discharges
gas ionization
high frequencies
radio frequency discharge

ring galaxies
(added November 1988)
GS celestial bodies
. galaxies
. . **ring galaxies**
RT elliptical galaxies
galactic evolution
galactic structure
interacting galaxies
spiral galaxies

ring lasers
GS stimulated emission devices
. lasers
. . **ring lasers**

ring structures
GS **ring structures**
. reinforcement rings
. ring wings
RT aerodynamic configurations
 ∞ bands
hoops
reinforcement (structures)
 ∞ rings
 ∞ structures

ring wings
GS airfoils
. wings
. . uncambered wings
. . . **ring wings**
. . unswept wings
. . . **ring wings**
ring structures
. **ring wings**
RT ducted fans
shrouded propellers
twisted wings

Ringleb flow
(added July 1998)
GS fluid flow
. compressible flow
. . **Ringleb flow**
. steady flow
. . **Ringleb flow**
. two dimensional flow
. . **Ringleb flow**
RT critical flow
subsonic flow
transonic flow

∞ **rings**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT annuli
bodies of revolution
circles (geometry)
Jupiter rings
O ring seals
planetary rings
reinforcement rings
ring structures
rings (mathematics)
Saturn rings
storage rings (particle accelerators)
toroidal plasmas

toruses
Uranus rings
vortex rings

rings (mathematics)
RT ∞ mathematics
 ∞ rings

Rio Grande (North America)
GS rivers
. **Rio Grande (North America)**
RT Gulf of Mexico
Mexico
New Mexico
texas

riometers
GS measuring instruments
. radiation measuring instruments
. . **riometers**
RT atmospheric ionization
auroral absorption
ionograms
ionosondes
ionospheric noise
ionospheric propagation

ripples
GS elastic waves
. capillary waves
. . **ripples**
surface waves
. capillary waves
. . **ripples**
RT gravity waves
interfacial tension
water waves
wind (meteorology)

RISC processors
(added March 1995)
DEF A type of computer processor designed to optimize total system performance by simple, fast decoding of the instructions most commonly employed in computer operations and characterized by: a simple instruction set with the majority of instructions being single cycle; instructions that are register-to-register with LOAD and STORE commands being the only memory-reference instructions; very few addressing modes; hardware control; instructions with one or two sizes and with fields at fixed locations; and some degree of pipelining.
UF *reduced instruction set computing*
GS computer components
. central processing units
. . **RISC processors**
RT architecture (computers)
chips (electronics)
computer programming
computer systems performance
firmware
pipelining (computers)
systems-on-a-chip
very large scale integration

risers
RT castings
pipes (tubes)

risk
DEF The combined effect of the likelihood of an unfavorable occurrence and the potential impact of that occurrence.
RT acceptability
assumptions
 ∞ capacity
commerce
confidence
confidence limits
contingency
decision theory
estimates
estimating
finance
forecasting
game theory
hazards
inventory controls
mathematical models

maximum likelihood estimates
operations research
predictions
reliability
risk assessment
strategy

risk assessment
(added March 2008)
DEF The identification, evaluation, and estimation of the levels of risks involved in a situation, their comparison against benchmarks or standards, and determination of an acceptable level of risk.
GS assessments
. **risk assessment**
RT decision making
evaluation
failure analysis
hazards
predictions
risk
risk management

risk management
(added April 2008)
DEF An organized, systematic process that identifies, analyzes, tracks, controls, communicates and documents risks to increase the likelihood of achieving success.
GS management
. **risk management**
RT accident prevention
decision making
project planning
risk assessment
safety management

RIT engines
DEF Radio frequency ion thrusters which generate thrust by converting electric energy into a reaction force by utilizing an electromagnetic field. Used for radio frequency ion thruster engines.
UF *radio frequency ion thruster engines*
GS engines
. rocket engines
. . electric rocket engines
. . . electrostatic engines
. . . . ion engines
. . . . **RIT engines**
RT plasma engines

Ritz averaging method
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Ritz averaging method**
RT ∞ methodology

river basins
GS landforms
. structural basins
. . **river basins**
. . . Atchafalaya River Basin (LA)
. . . Chena River Basin (AK)
. . . Columbia River Basin (ID-OR-WA)
. . . Delaware River Basin (US)
. . . Feather River Basin (CA)
. . . Missouri River Basin (US)
. . . Susquehanna River Basin (MD-NY-PA)
. . . Wabash River Basin (IL-IN-OH)
. . . wadis
RT Amazon region (South America)
Chesapeake Bay (US)
Death Valley (CA)
International Hydrological Decade
lakes
meanders
Mississippi River (US)
Missouri River (US)
rapids
ravines
rivers
Sacramento Valley (CA)
Saginaw Bay (MI)
San Joaquin Valley (CA)
Shenandoah Valley (VA)

- vadose water
watersheds
- rivers**
DEF A general term for natural fresh water surface streams of considerable volume and permanent or seasonal flow, moving in definite channels toward seas, lakes, or other rivers. Rivers are large streams or ones larger than brooks or creeks, such as trunk systems and the larger branches of drainage systems.
- GS **rivers**
. Colorado River (North America)
. Hudson River (NY-NJ)
. Mississippi River (US)
. Missouri River (US)
. Ohio River (US)
. Rio Grande (North America)
- RT alluvium
Amazon region (South America)
Atchafalaya River Basin (LA)
aufeis (ice)
bayous
canyons
Columbia River Basin (ID-OR-WA)
Delaware River Basin (US)
deltas
Earth resources
erosion
estuaries
Feather River Basin (CA)
inland waters
Lake Erie
Lake Huron
Lake Michigan
Lake Ontario
Lake Superior
meanders
Mississippi Delta (LA)
Missouri River Basin (US)
rapids
reservoirs
Rhone Delta (France)
river basins
shoals
shorelines
sounds (topographic features)
streams
surface water
Susquehanna River Basin
(MD-NY-PA)
tributaries
valleys
Wabash River Basin (IL-IN-OH)
wadis
water color
water runoff
watersheds
waterways
wharves
- riveted joints**
GS **joints** (junctions)
. **riveted joints**
RT bolted joints
butt joints
lap joints
metal joints
welded joints
- riveting**
RT ∞ joining
rivets
sealing
- rivets**
GS fasteners
. **rivets**
RT couplings
holders
pins
riveting
- RL circuits**
UF *LR circuits*
GS circuits
. **RL circuits**
. . . RLC circuits
RT coupling circuits
electrical resistance
- inductance
LC circuits
network analysis
network synthesis
time constant
transconductance
- RL-10 engines**
GS engines
. rocket engines
. . . liquid propellant rocket engines
. . . . **RL-10 engines**
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
RT Atlas Centaur launch vehicle
Centaur project
cryogenic rocket propellants
Saturn launch vehicles
- RL-10-A-1 engine**
GS engines
. rocket engines
. . . liquid propellant rocket engines
. . . . hydrogen oxygen engines
. . . . **RL-10-A-1 engine**
. . . . RL-10 engines
. . . . **RL-10-A-1 engine**
- RL-10-A-3 engine**
GS engines
. rocket engines
. . . liquid propellant rocket engines
. . . . hydrogen oxygen engines
. . . . **RL-10-A-3 engine**
. . . . RL-10 engines
. . . . **RL-10-A-3 engine**
RT Saturn D launch vehicle
- RLC circuits**
UF *LRC circuits*
RLC networks
GS circuits
. RL circuits
. . **RLC circuits**
RT capacitance
capacitance switches
electrical resistance
LC circuits
network analysis
network synthesis
RC circuits
time constant
transconductance
- RLC networks*
USE **RLC circuits**
- roads**
GS **roads**
. highways
RT ∞ facilities
intersections
passageways
pavements
rapid transit systems
site selection
streets
transportation
transportation networks
- roadway powered vehicles**
DEF Surface vehicles utilizing a combination of an electrical power source embedded in a roadway and an inductive coupled power pickup.
GS surface vehicles
. **roadway powered vehicles**
RT electric batteries
electric motor vehicles
energy storage
- roasting**
UF *calcination*
RT baking
desulfurizing
drying
heating
ignition
oxidation
reduction (chemistry)
- sintering
- ROBIN balloons**
GS expandable structures
. inflatable structures
. . balloons
. . . meteorological balloons
. . . . **ROBIN balloons**
RT high altitude balloons
radiosondes
rockoons
skyhook balloons
sounding
- robot arms**
(added January 1990)
UF *arms (robotics)*
GS **robot arms**
. Space Station Mobile Servicing
System
RT electroactive polymers
end effectors
manipulators
robot dynamics
robotics
robots
- robot control**
(added December 1990)
RT adaptive control
 ∞ control
control systems design
control theory
dynamic control
feedback control
inverse kinematics
robot dynamics
robotics
robots
unmanned ground vehicles
- robot dynamics**
(added January 1990)
UF *robot motion*
RT dynamic control
 ∞ dynamics
end effectors
gait
inverse kinematics
manipulators
robot arms
robot control
robotics
telerobotics
trajectory planning
- robot fingers*
USE **end effectors**
- robot hands*
USE **end effectors**
- robot motion*
USE **robot dynamics**
- robot sensors**
(added January 1990)
GS **robot sensors**
. tactile sensors (robotics)
. torque sensors (robotics)
RT acceleration measurement
computer vision
robotics
robots
 ∞ sensors
- robotics**
DEF A discipline that employs the principles and techniques of mechanical and electrical engineering and artificial intelligence to develop programmable or self-controlled machines that often include sensory systems and a degree of intelligence.
GS **robotics**
. telerobotics
RT artificial intelligence
automata theory
automatic control
 ∞ automation
computer aided design

robots

- computer aided manufacturing
- computer aided mapping
- computer vision
- end effectors
- inverse kinematics
- man machine systems
- manipulators
- multisensor fusion
- position sensing
- robot arms
- robot control
- robot dynamics
- robot sensors
- robots
- task planning (robotics)
- teleoperators
- trajectory planning
- unmanned ground vehicles
- voice control

robots

- RT artificial intelligence
- automata theory
- bionics
- computer vision
- end effectors
- psycholinguistics
- robot arms
- robot control
- robot sensors
- robotics
- servomechanisms
- Space Station Mobile Servicing System
- tactile sensors (robotics)
- task planning (robotics)
- telerobotics
- torque sensors (robotics)
- voice control

robustness (mathematics)

DEF Insensitivity of systems to uncontrolled perturbations and independent of changes in environmental parameters as demonstrated mathematically.

- RT algorithms
- control stability
- control theory
- feedback control
- linear systems
- mathematical models

Roche limit

- GS range (extremes)
 - . **Roche limit**
- RT celestial mechanics
- dimensional stability
- gravitation
- natural satellites
- orbits
- rotating bodies
- two body problem

rock bolts

- GS fasteners
 - . bolts
 - . . **rock bolts**

rock intrusions

DEF Vertical tabular bodies of rock that fill fissures in host rocks. Used for dikes (geology).

- UF *dikes (geology)*
- GS **rock intrusions**
 - . batholiths
- RT contacts (geology)
- igneous rocks
- inliers (landforms)
- regolith
- rocks
- veins (petrology)

rock mechanics

DEF The theoretical and applied science of the physical behavior of rocks, representing a branch of mechanics concerned with the response of rock to the force fields of its physical environment.

- RT fracture mechanics
- geology
- rocks

- soil mechanics
- structural properties (geology)

rock salt

USE **halites**

rocket boosters

USE **booster rocket engines**

rocket catapults

- GS launchers
 - . catapults
 - . . **rocket catapults**
 - . rocket launchers
 - . . **rocket catapults**
- RT gun launchers
- launch vehicles
- launching sites
- missiles
- ∞ rockets

rocket chambers

USE **thrust chambers**

rocket engine 9KS-11000

- GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **rocket engine 9KS-11000**

rocket engine cases

- UF *missile engine cases*
- rocket motor cases*
- GS cases (containers)
 - . **rocket engine cases**
- RT bonded joints
- missile bodies
- orthotropic cylinders
- perforated shells
- shells (structural forms)
- thrust chambers

rocket engine control

- GS engine control
 - . **rocket engine control**
- RT attitude control
- automatic control
- ∞ control
- directional control
- flight control
- fuel control
- HEUS rocket engines
- missile control
- remote control
- servocontrol
- spacecraft control
- thrust control

rocket engine design

- GS engine design
 - . **rocket engine design**
- RT aerospike engines
- cold flow tests
- ∞ design
- engine tests
- prefiring tests
- Rover project

rocket engine noise

- GS elastic waves
 - . sound waves
 - . . noise (sound)
 - . . . engine noise
 - **rocket engine noise**
- RT mufflers

rocket engines

DEF Reaction engines that contain within themselves, or carry along with themselves, all the substances necessary for their operation or for the consumption or combustion of their fuel, not requiring of any outside substance and hence capable of operation in outer space. Used for interplanetary propulsion.

- UF *interplanetary propulsion*
- GS engines
 - . **rocket engines**
 - . . booster rocket engines
 - . . . AJ-10 engine
 - . . . Algol engine

- . . . apogee boost motors
- . . . H-1 engine
- . . . LR-87-AJ-5 engine
- . . . M-1 engine
- . . . M-55 engine
- . . . MA-2 engine
- . . . MA-3 engine
- . . . MA-5 engine
- . . . Nike booster rocket engines
- . . . P-1 engine
- . . . rocket engine 9KS-11000
- . . . Space Shuttle Boosters
- Advanced Solid Rocket Motor (STS)
- . . . X-405 engine
- . . ducted rocket engines
- . . electric rocket engines
- . . electrostatic engines
- ion engines
- cesium engines
- Hall thrusters
- mercury ion engines
- RIT engines
- . . . electrothermal engines
- . . . arc jet engines
- pulsed jet engines
- resistojet engines
- . . . plasma engines
- . . . magnetoplasmadynamic thrusters
- . . . pulsed inductive thrusters
- . . . pulsed plasma thrusters
- . . . two stage plasma engines
- . . . VASIMR (propulsion system)
- . . HEUS rocket engines
- . . hot water rocket engines
- . . hybrid propellant rocket engines
- . . lithergol rocket engines
- . . liquid propellant rocket engines
- . . . AJ-10 engine
- . . . F-1 rocket engine
- . . . H-1 engine
- . . . hydrazine engines
- . . . hydrogen oxygen engines
- . . . J-2 engine
- . . . M-1 engine
- . . . RL-10-A-1 engine
- . . . RL-10-A-3 engine
- . . . liquid air cycle engines
- . . . LR-62-RM-2 engine
- . . . LR-87-AJ-5 engine
- . . . LR-91-AJ-5 engine
- . . . MA-2 engine
- . . . MA-3 engine
- . . . MA-5 engine
- . . . oxygen-hydrocarbon rocket engines
- . . . RL-10 engines
- RL-10-A-1 engine
- RL-10-A-3 engine
- . . . pulse detonation engines
- . . . Space Shuttle Main Engine
- . . . X-405 engine
- . . . XLR-99 engine
- . . . YLR-91-AJ-1 engine
- . . M-100 engine
- . . microrocket engines
- . . . Orbit Maneuvering Engine (Space Shuttle)
- . . nozzleless rocket engines
- . . nuclear engine for rocket vehicles
- . . nuclear ramjet engines
- . . nuclear rocket engines
- . . nuclear lightbulb engines
- . . restartable rocket engines
- . . retrorocket engines
- . . . BE-3 engine
- . . reusable rocket engines
- . . solid propellant rocket engines
- . . . Algol engine
- . . . apogee boost motors
- . . . ASROC engine
- . . . Hercules engine
- . . . M-46 engine
- . . . M-55 engine
- . . . M-56 engine
- . . . M-57 engine
- . . . Nike booster rocket engines
- . . . P-1 engine

- . . . SL-3 rocket engine
- . . . Space Shuttle Boosters
- Advanced Solid Rocket Motor (STS)
- . . . SYNCOM apogee engines
- . . . TX-77 engine
- . . . TX-354 engine
- . . . X-248 engine
- . . . X-254 engine
- . . . X-258 engines
- X-258-B1 engine
- . . . X-259 engine
- . . . XM-33 engine
- . . sustainer rocket engines
- . . turborocket engines
- . . ullage rocket engines
- . . upper stage rocket engines
- . . Vernier engines
- . . . control rockets
- . . . SYNCOM apogee engines
- . . aerospike engines
- . . rocket-based combined-cycle engines

RT aircraft engines
axial modes
burning time
dump combustors
ejectors
exhaust nozzles
expendable stages (spacecraft)
heavy lift launch vehicles
hybrid propulsion
ignition systems
internal combustion engines
jet engines
jet propulsion
laser propulsion
launch vehicles
Lunar Module Ascent Stage
magnetoplasmadynamics
matter-antimatter propulsion
missile configurations
missiles
multistage rocket vehicles
negative matter propulsion
post boost propulsion system

∞ propellant actuated devices
propellant explosions
refractories
reusable launch vehicles
RIFT (reactor in flight test)

∞ rockets
single stage rocket vehicles
solid rocket propellants
spacecraft components
spacecraft propulsion
spacecraft structures
thrust
thrust vector control

∞ thrusters
thrust-weight ratio

rocket exhaust
GS plumes
. **rocket exhaust**
RT aerospike engines
base heating
combustion products
exhaust clouds
exhaust gases
exhaust systems
jet exhaust

rocket firing
GS firing (igniting)
. **rocket firing**
. . retrofiring
RT burning time
detonation
liftoff (launching)
static firing
test firing

rocket flight
RT climbing flight
coasting flight
∞ flight
flight paths
horizontal flight
hypersonic flight

- meteorological flight
- space flight
- suborbital flight
- supersonic flight
- trajectories
- transonic flight
- vertical flight

rocket launchers
DEF Devices for launching rockets.
GS launchers
. **rocket launchers**
. . rocket catapults
RT ground support equipment
gun launchers
launch vehicles
launching
launching sites
missile launchers
∞ rockets
rockoons
sea launching

rocket launching
UF *blastoff*
GS launching
. **rocket launching**
. . liftoff (launching)
. . lunar launch
. . . orbital launching
RT Delta 4 Heavy launch vehicle
exhaust clouds
launch vehicles
launch windows
launchers
spacecraft launching

rocket linings
DEF In solid rockets, the layers of inhibitors applied to the inner surface of the chamber holding the grain.
GS linings
. **rocket linings**
RT bonded joints
engine parts
refractories

rocket motor cases
USE **rocket engine cases**

rocket nose cones
GS cones
. nose cones
. . **rocket nose cones**
forebodies
. noses (forebodies)
. . nose cones
. . . **rocket nose cones**
RT ablative nose cones

rocket nozzles
DEF The exhaust nozzles of rockets.
GS **rocket nozzles**
. dual thrust nozzles
RT aerospike engines
annular nozzles
carbon-phenolic composites
conical nozzles
convergent-divergent nozzles
divergent nozzles
hypersonic nozzles
magnetic nozzles
nozzle inserts
nozzleless rocket engines
∞ nozzles
plug nozzles
skirts
spike nozzles
supersonic nozzles

rocket oxidizers
UF *propellant oxidizers*
GS oxidizers
. **rocket oxidizers**
. . FLOX
. . TAGN
RT cryogenic fluids
Domino propellants
high energy oxidizers
hydrogen peroxide

- liquid oxidizers
- liquid oxygen
- nitrogen tetroxide
- nitronium perchlorate
- TATB
- tetrafluorohydrazine

rocket planes
GS rocket vehicles
. **rocket planes**
. . X-1 aircraft
. . X-2 aircraft
. . X-15 aircraft
RT aerospace planes
∞ aircraft
boostglide vehicles
research aircraft

rocket propellant tanks
USE **propellant tanks**

rocket propellants
DEF Agents used for consumption or combustion in rockets and from which the rockets derive their thrust, such as fuels, oxidizers, additives, catalysts or any compounds or mixtures of these. Used for multipropellants.
UF *multipropellants*
GS propellants
. **rocket propellants**
. . gaseous rocket propellants
. . liquid rocket propellants
. . . cryogenic rocket propellants
. . . gelled rocket propellants
. . . hypergolic rocket propellants
. . . monopropellants
. . . RP-1 rocket propellants
. . . slurry propellants
. . . . slush hydrogen
. aerosine
. nitramine propellants
. solid rocket propellants
. double base rocket propellants
. HMX
. HTPB propellants
. metal propellants
. TAGN
. TATB
RT ascent propulsion systems
auxiliary propulsion
fuels
hydrazines
hydrocarbon fuels
missiles
propellant binders
propellant consumption
propellant storage
propulsion
solid propellants
specific impulse
storable propellants
thrust
torpedo engines

rocket propelled sleds
GS surface vehicles
. sleds
. . **rocket propelled sleds**
RT Javelin rocket vehicle
∞ test equipment

rocket sondes
USE **sounding rockets**

rocket sounding
GS sounding
. **rocket sounding**
RT acoustic sounding
atmospheric sounding
barium ion clouds
in situ measurement
ionospheric sounding
Judi-Dart rocket
microwave sounding
satellite sounding
sounding rockets
Vertical rockets

rocket test facilities
GS test facilities

rocket thrust

. rocket test facilities

RT engine tests
test firing
test ranges
test stands

rocket thrust

DEF The thrust of a rocket engine usually expressed in pounds.

GS thrust

. rocket thrust

. . . retrothrust
RT high thrust
jet thrust
liftoff (launching)
low thrust
low thrust propulsion
microthrust
propulsion system performance
specific impulse
static thrust
thrust loads
thrust termination
variable thrust

rocket vehicles

DEF Vehicles propelled by rocket engines, used to place satellites in orbit, place missiles on target or carry passengers over rails as on rocket sleds.

GS rocket vehicles

. Arcon rocket vehicle
. Blue Streak launch vehicle
. Blue Streak missile
. Centaur launch vehicle
. . . Atlas Centaur launch vehicle
. Folding Fin aircraft rocket vehicle
. hovering rocket vehicles
. Meteor 1 rocket vehicle
. multistage rocket vehicles
. . . Ablestar launch vehicle
. . . Antares rocket vehicle
. . . Argo rocket vehicles
. . . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
. . . Athena rocket vehicle
. . . Atlas launch vehicles
. . . Atlas Able 5 launch vehicle
. . . Atlas Agena B launch vehicle
. . . Atlas Agena launch vehicles
. . . Atlas Centaur launch vehicle
. . . Atlas SLV-3 launch vehicle
. . . Berenice rocket vehicle
. . . Black Knight rocket vehicle
. . . Blue Scout rocket vehicle
. . . Diamant launch vehicle
. . . Eldo launch vehicle
. . . EXOS sounding rocket
. . . Jaguar rocket vehicle
. . . Javelin rocket vehicle
. . . Juno launch vehicles
. . . Juno 1 launch vehicle
. . . Juno 2 launch vehicle
. . . Jupiter C rocket vehicle
. . . Kappa rocket vehicles
. . . Kappa 8 rocket vehicle
. . . Kappa 9 rocket vehicle
. . . Lambda rocket vehicles
. . . Little Joe 2 launch vehicle
. . . Nike rocket vehicles
. . . Nike-Apache rocket vehicle
. . . Nike-Cajun rocket vehicle
. . . Nike-Hydrac rocket vehicle
. . . Nike-Iroquois rocket vehicle
. . . Nike-Javelin rocket vehicle
. . . Nike-Tomahawk rocket vehicle
. . . Nova launch vehicles
. . . Pegasus air-launched booster
. . . Phoenix sounding rocket
. . . RAM B launch vehicle
. . . Rubis rocket vehicle
. . . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . Saturn 1 SA-1 launch vehicle
. . . . Saturn 1 SA-10 launch vehicle
. . . . Saturn 1 SA-2 launch vehicle
. . . . Saturn 1 SA-3 launch vehicle
. . . . Saturn 1 SA-4 launch vehicle
. . . . Saturn 1 SA-5 launch vehicle

. . . . Saturn 1 SA-6 launch vehicle
. . . . Saturn 1 SA-7 launch vehicle
. . . . Saturn 1 SA-8 launch vehicle
. . . . Saturn 1 SA-9 launch vehicle
. . . Saturn 1B launch vehicles
. . . Saturn 2 launch vehicles
. . . Saturn 5 launch vehicles
. . . Saturn D launch vehicle
. . . Scout launch vehicle
. . . Skylark rocket vehicle
. . . Thor launch vehicles
. . . Thor Able rocket vehicle
. . . Thor Agena launch vehicle
. . . Thor Delta launch vehicle
. . . Titan launch vehicles
. . . Titan 3 launch vehicle
. . . Titan 4 launch vehicle
. . . . Titan 4B launch vehicle
. . . Ares 1 launch vehicle
. . . vanguard 2 launch vehicle
. . . Vega launch vehicle
. . . WASP sounding rocket
. . . Ares 1 first stage
. . . Ares 1 upper stage
. . . Ares 5 cargo launch vehicle
. . . payload assist module
. rocket planes
. . . X-1 aircraft
. . . X-2 aircraft
. . . X-15 aircraft
. Saturn stages
. . . Saturn S-1 stage
. . . Saturn S-1B stage
. . . Saturn S-1C stage
. . . Saturn S-2 stage
. . . Saturn S-4 stage
. . . Saturn S-4B stage
. . . single stage rocket vehicles
. . . Agena rocket vehicles
. . . . Agena A rocket vehicle
. . . . Agena B rocket vehicle
. . . . Agena C rocket vehicle
. . . . Agena D rocket vehicle
. . . Arcas rocket vehicles
. . . Black Brant sounding rockets
. . . . Black Brant 1 sounding rocket
. . . . Black Brant 2 sounding rocket
. . . . Black Brant 3 sounding rocket
. . . . Black Brant 4 sounding rocket
. . . . Black Brant 5 sounding rocket
. . . Black Knight rocket vehicle
. . . Dornier paraglider rocket vehicle
. . . Genie rocket vehicle
. . . Honest John rocket vehicle
. . . Hyla-Star rocket vehicle
. . . Little John rocket vehicle
. . . Loki rocket vehicle
. . . Nomad launch vehicle
. . . Veronique rocket vehicles
. . . Viking rocket vehicle
. . . Zuni rocket vehicle
. . . sounding rockets
. . . Aerobee rocket vehicle
. . . Antares rocket vehicle
. . . Apache rocket vehicle
. . . Arcas rocket vehicles
. . . Aries sounding rocket
. . . Astrobee rocket vehicles
. . . . Astrobee 1500 rocket vehicle
. . . Black Brant sounding rockets
. . . . Black Brant 1 sounding rocket
. . . . Black Brant 2 sounding rocket
. . . . Black Brant 3 sounding rocket
. . . . Black Brant 4 sounding rocket
. . . . Black Brant 5 sounding rocket
. . . Cajun rocket vehicle
. . . Dornier paraglider rocket vehicle
. . . EXOS sounding rocket
. . . Jaguar rocket vehicle
. . . Judi-Dart rocket
. . . Kappa rocket vehicles
. . . . Kappa 8 rocket vehicle
. . . . Kappa 9 rocket vehicle
. . . Lambda rocket vehicles
. . . Loki rocket vehicle
. . . Petrel sounding rocket
. . . Phoenix sounding rocket
. . . Skua rocket vehicles
. . . Skylark rocket vehicle

. . . Venus fly trap rocket vehicle
. . . Veronique rocket vehicles
. . . Vertikal rockets
. . . WASP sounding rocket
. . . Standard Launch Vehicles
. . . Atlas SLV-3 launch vehicle
. . . Standard Launch Vehicle 5
. . . surface to surface rockets
. . . Honest John rocket vehicle
. . . Little John rocket vehicle
. . . Thorad launch vehicles
. . . Thor Able rocket vehicle
. . . Thor Agena launch vehicle
. . . Thor Delta launch vehicle
. . . Titan Centaur launch vehicle
RT acoustic sounding
∞ ballistic vehicles
∞ flight vehicles
HEUS rocket engines
launch vehicles
missile configurations
multiengine vehicles
∞ rockets
Space Processing Applications
Rocket
stage separation
test vehicles
Trailblazer 1 reentry vehicle
Trailblazer 2 reentry vehicle
∞ vehicles
∞ winged vehicles
X-17 reentry vehicle

rocket-based combined-cycle engines

(added August 1999)

DEF Launch vehicle engines that integrate a high specific impulse, low thrust-to-weight, airbreathing engine with a low-impulse, high thrust-to-weight rocket. The engines are often defined by four modes of operation in a single-stage-to-orbit configuration. In the first mode, the engine functions as a rocket-driven ejector. When the rocket engine is switched off, subsonic combustion (mode 2) is present in the ramjet mode. As the vehicle continues to accelerate, supersonic combustion (mode 3) occurs in the ramjet mode. Finally, as the edge of the atmosphere is approached and the engine inlet is closed off, the rocket is reignited and the final ascent to orbit is undertaken in an all-rocket mode (mode 4).

UF RBCC engines

GS engines

. rocket engines

. . rocket-based combined-cycle engines

RT air breathing boosters
air breathing engines
hybrid propulsion
integral rocket ramjets
ramjet engines
single stage to orbit vehicles
spacecraft propulsion
supersonic combustion ramjet engines

rocket-borne instruments

RT controllers

flight test instruments

∞ instruments

measuring instruments
meteorological instruments
position indicators

rocket-borne photography

GS imagery

. photography

. . rocket-borne photography

RT aerial photography
astronomical photography
black and white photography
photomapping
satellite-borne photography
spaceborne photography

∞ rockets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT air slew missiles

ammunition
 escape rockets
 heavy lift launch vehicles
 incendiary ammunition
 launch vehicles
 missiles
 nuclear ramjet engines
 nuclear rocket engines
 nuclear weapons
 Patriot missile
 Petrel sounding rocket
 pyrotechnics
 reentry
 reentry vehicles
 rocket catapults
 rocket engines
 rocket launchers
 rocket vehicles
 rockoons
 space flight
 surface to air missiles
 surface to surface missiles
 surface to surface rockets
 torpedoes
 warheads
 weapon systems
 weapons delivery

rockoons

DEF High altitude sounding systems that consist of small solid propellant research rockets carried aloft by large plastic balloons.
 RT high altitude balloons
 meteorological balloons
 ROBIN balloons
 rocket launchers
 ∞ rockets
 skyhook balloons

rocks

DEF Naturally formed aggregates of mineral matter occurring in large masses or fragments. Used for stones (rocks).
 UF *stones (rocks)*
 GS **rocks**
 . andesite
 . ataxite
 . bedrock
 . . Baltic Shield (Europe)
 . . batholiths
 . breccia
 . gneiss
 . igneous rocks
 . . anorthosite
 . . basalt
 . . diorite
 . . dunite
 . . eclogite
 . . felsite
 . . gabbro
 . . granite
 . . obsidian
 . . . moldavite
 . . peridotite
 . . pumice
 . . rhyolite
 . . syenite
 . . trachyte
 . lunar rocks
 . . krep
 . metamorphic rocks
 . . quartzite
 . regolith
 . schist
 . sedimentary rocks
 . . carbonaceous rocks
 . . . coal
 anthracite
 lignite
 solvent refined coal
 . . limestone
 . . sandstones
 . . shales
 . shatter cones
 RT aggregates
 bauxite
 boreholes
 clays
 contacts (geology)

crossbedding (geology)
 dirt
 dolomite (mineral)
 Earth resources
 effusives
 enstatite
 folds (geology)
 formations
 geology
 gypsum
 inliers (landforms)
 karst
 landslides
 laterites
 lava
 ledges
 lithology
 magma
 metamorphism (geology)
 minerals
 nunataks
 olivine
 outliers (landforms)
 paleomagnetism
 petrography
 petrology
 pyroxenes
 quartz
 reefs
 rock intrusions
 rock mechanics
 serpentine
 soils
 stratigraphy
 tunneling (excavation)
 veins (petrology)

Rockwell hardness

GS mechanical properties
 . hardness
 . . **Rockwell hardness**
 RT microhardness

Rocky Mountains (North America)

GS landforms
 . mountains
 . . **Rocky Mountains (North America)**
 RT Canada
 United States

rodents

GS animals
 . vertebrates
 . . mammals
 . . . **rodents**
 guinea pigs
 hamsters
 mice
 jerboas
 knockout mice
 pocket mice
 rabbits
 rats
 squirrels
 ground squirrels

rods

GS **rods**
 . control rods
 RT bars
 billets
 directors (antenna elements)
 structural members
 wire

Roe flux difference splitting scheme

USE **flux difference splitting**

Roentgen satellite

USE **ROSAT mission**

Rogallo wings

USE **flexible wings**
folding structures

rogue planets

(added April 2001)
 USE **hypothetical planets**

roll

DEF The act of rolling; rotational or oscilla-

tory movement of an aircraft or similar body about a longitudinal axis through the body -- called roll for any degree of such rotation. The amount of this movement, i.e., the angle of roll.

GS attitude (inclination)
 . **roll**
 RT damping
 lateral control
 lateral oscillation
 lateral stability
 pitch (inclination)
 rollers
 ∞ rolling
 rolling moments
 rotation
 sideslip
 turning flight
 wing rock
 yaw

roll control

USE **lateral control**

roll forming

GS forming techniques
 . **roll forming**
 RT cold working
 metal working

roller bearings

GS bearings
 . antifriction bearings
 . . **roller bearings**
 . . . needle bearings
 RT ball bearings
 thrust bearings

rollers

RT conveyors
 cylindrical bodies
 dispensers
 distributors
 idlers
 platens
 pulleys
 roll
 tires
 vehicle wheels
 wheels

∞ **rolling**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ausforming
 flattening
 forging
 leveling
 metal working
 roll

rolling contact loads

GS loads (forces)
 . contact loads
 . . **rolling contact loads**
 . dynamic loads
 . . **rolling contact loads**
 RT antifriction bearings
 stresses
 structural design criteria

rolling moments

DEF Moments that tend to rotate an aircraft, rocket or spacecraft about a longitudinal axis. These moments are considered positive when they tend to depress the starboard side of the body.
 GS moments
 . stability derivatives
 . . **rolling moments**
 RT aerodynamic coefficients
 lateral stability
 moments of inertia
 pitching moments
 roll
 torque

Romania

yawing moments

rollup solar arrays

USE **solar arrays**

ROM devices

USE **read-only memory devices**

Romania

UF *Rumania*

GS nations

. **Romania**

RT Black Sea

Central Europe

Europe

Ronchi test

DEF An improvement on the Foucault knife-edge test for curved mirrors, in which the knife edge is replaced with a transmission grating with 15 to 80 lines per centimeter, and the pinhole source is replaced with a slit or a section of the same grating.

GS interferometry

. **Ronchi test**

RT electromagnetic radiation

etalons

gratings (spectra)

interferometers

measuring instruments

optical measurement

roofs

RT buildings

sheaths

room temperature

DEF A temperature in the range of 20 to 30 C (68 to 85 F).

GS temperature

. **room temperature**

RT ambient temperature

operating temperature

rooms

GS **rooms**

. clean rooms

. darkrooms

RT compartments

enclosures

∞ lounges

root-mean-square errors

DEF In statistics, the square root of the arithmetic mean of the squares of the deviations of the various items from the arithmetic mean of the whole.

GS errors

. **root-mean-square errors**

RT error analysis

statistical analysis

∞ roots

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT plant roots

radicals

roots of equations

wing roots

roots of equations

UF *zero crossings*

RT eigenvalues

∞ equations

existence theorems

matrices (mathematics)

Newton methods

nonlinear equations

polynomials

∞ roots

Rorschach tests

GS psychological tests

. **Rorschach tests**

RT mental health

psychology

∞ tests

ROSAT mission

UF *Roentgen satellite*

GS artificial satellites

. **ROSAT mission**

observatories

. astronomical observatories

. . **ROSAT mission**

RT astronomical satellites

international cooperation

spaceborne astronomy

spaceborne telescopes

x ray astronomy

x ray sources

x ray telescopes

Rosetta mission

(added October 1995)

UF *CNSR*

GS space missions

. asteroid missions

. . **Rosetta mission**

RT comet nuclei

Comet Rendezvous Asteroid Flyby

Mission

∞ missions

Near Earth Asteroid Rendezvous

Mission

rendezvous trajectories

sampling

rosette shapes

GS shapes

. **rosette shapes**

RT antenna radiation patterns

crystallites

spherulites

strain gages

Roshko prediction

GS predictions

. **Roshko prediction**

RT bluff bodies

laminar flow

Oseen approximation

three dimensional flow

rosin

GS gums (substances)

. **rosin**

RT organic materials

Ross ice shelf

GS regions

. polar regions

. . Antarctic regions

. . . **Ross ice shelf**

. remote regions

. . Antarctic regions

. . . **Ross ice shelf**

Southern Hemisphere

. Antarctic regions

. . **Ross ice shelf**

RT McMurdo sound

Rossby regimes

RT barotropic flow

planetary waves

Rossby waves

USE **planetary waves**

Rossi X Ray Timing Explorer

(added March 1999)

USE **X Ray Timing Explorer**

rotary drives

USE **mechanical drives**

rotary engines

DEF A positive displacement engine consisting of a rotor and stator. The control volume which encloses the working fluid during the thermodynamic cycle moves in a generally circular motion rather than a linear motion as in a piston engine.

GS engines

. internal combustion engines

. . **rotary engines**

. . . Wankel engines

RT aircraft engines

automobile engines

piston engines

rotary gyroscopes

GS gyroscopes

. **rotary gyroscopes**

. . fluid rotor gyroscopes

RT gyroscope fluids

gyroscopic stability

rotating bodies

rotary stability

UF *whirl instability*

GS dynamic characteristics

. dynamic stability

. . motion stability

. . . **rotary stability**

. . . . gyroscopic stability

stability

. dynamic stability

. . motion stability

. . . **rotary stability**

. . . . gyroscopic stability

RT airfoil oscillations

directional stability

flow stability

lateral stability

longitudinal stability

rotating bodies

rotation

rotor dynamics

rotary wing aircraft

DEF A heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors.

UF *rotorcraft*

GS V/STOL aircraft

. **rotary wing aircraft**

. . autogyros

. . . Avian 2/180 autogiro

. . . helicopters

. . . . Alouette helicopters

. . . . SA-330 helicopter

. . . . SE-3160 helicopter

. . . . Bell 214A helicopter

. . . . compound helicopters

. . . . S-67 helicopter

. . . . H-17 helicopter

. . . . heavy lift helicopters

. . . . CH-62 helicopter

. . . . light helicopters

. . . . OH-4 helicopter

. . . . OH-5 helicopter

. . . . OH-6 helicopter

. . . . OH-58 helicopter

. . . . military helicopters

. . . . AH-1G helicopter

. . . . AH-1S helicopter

. . . . AH-1W helicopter

. . . . AH-63 helicopter

. . . . AH-64 helicopter

. . . . BO-105 helicopter

. . . . CH-3 helicopter

. . . . CH-21 helicopter

. . . . CH-34 helicopter

. . . . CH-46 helicopter

. . . . CH-47 helicopter

. . . . CH-54 helicopter

. . . . CH-62 helicopter

. . . . H-19 helicopter

. . . . H-43 helicopter

. . . . H-53 helicopter

. . . . H-54 helicopter

. . . . H-56 helicopter

. . . . H-60 Helicopter

. . . . HC-3 helicopter

. . . . HH-43 helicopter

. . . . HH-65 helicopter

. . . . OH-4 helicopter

. . . . OH-5 helicopter

. . . . OH-6 helicopter

. . . . OH-13 helicopter

. . . . OH-23 helicopter

. . . . OH-58 helicopter

. . . . P-531 helicopter

. . . . QH-50 helicopter

. . . . S-67 helicopter

. . . . SA-321 helicopter

. . . . SA-330 helicopter

. . . . SH-3 helicopter

- SH-4 helicopter
- Sikorsky Whirlwind helicopter
- UH-1 helicopter
- UH-2 helicopter
- UH-34 helicopter
- UH-60A helicopter
- UH-61A helicopter
- Westland Whirlwind helicopter
- XV-9A aircraft
- rigid rotor helicopters
- CH-3 helicopter
- F-28 helicopter
- XH-51 helicopter
- S-58 helicopter
- S-61 helicopter
- tandem rotor helicopters
- CH-46 helicopter
- CH-47 helicopter
- H-25 helicopter
- EH-101 helicopter
- TH-55 helicopter
- rotor systems research aircraft
- tilt rotor aircraft
- V-22 aircraft
- XV-15 aircraft
- RT ∞ aircraft
 - autorotation
 - commercial aircraft
 - lifting rotors
 - ∞ military aircraft
 - passenger aircraft
 - rotor stator interactions
 - short takeoff aircraft
 - ∞ subsonic aircraft
 - transport aircraft
 - vertical takeoff aircraft
 - Weser aircraft
 - Westland aircraft
- rotary wings**
 - UF *helicopter rotors*
 - hinged rotor blades*
 - GS airfoils
 - . wings
 - . . . **rotary wings**
 - circulation control rotors
 - lifting rotors
 - bearingless rotors
 - rigid rotors
 - tilting rotors
 - tip driven rotors
 - x wing rotors
 - rotating bodies
 - . rotors
 - . . **rotary wings**
 - circulation control rotors
 - lifting rotors
 - bearingless rotors
 - rigid rotors
 - tilting rotors
 - tip driven rotors
 - x wing rotors
 - RT blade tips
 - ∞ blades
 - blade-vortex interaction
 - convertible fan-shaft engines
 - fan blades
 - flapping hinges
 - folding structures
 - ground resonance
 - harmonic control
 - helicopter propeller drive
 - helicopter tail rotors
 - lift fans
 - propeller blades
 - ∞ rotor blades
 - rotor dynamics
 - tail rotors
 - Tilt Rotor Research Aircraft Program
 - V-22 aircraft
 - whirl towers
- rotating*
- USE **rotation**
- rotating bodies**
 - UF *rotating vehicles*
 - solid rotation*
 - GS **rotating bodies**
 - . lunar rotation
- rotating cylinders
- rotating disks
- rotating spheres
- rotors
 - . . . compressor rotors
 - . . . flywheels
 - . . . impellers
 - pump impellers
 - . . . rotary wings
 - circulation control rotors
 - lifting rotors
 - bearingless rotors
 - rigid rotors
 - tilting rotors
 - tip driven rotors
 - x wing rotors
 - tail rotors
 - helicopter tail rotors
 - tip vanes
 - turbine wheels
 - wave rotors
- RT axes of rotation
 - ∞ bodies
 - planetary rotation
 - Roche limit
 - rotary gyroscopes
 - rotary stability
 - rotation
 - spinning unguided rocket trajectory
- rotating cylinders**
 - GS rotating bodies
 - . **rotating cylinders**
 - symmetrical bodies
 - . bodies of revolution
 - . . cylindrical bodies
 - . . . **rotating cylinders**
 - RT Couette flow
 - ∞ cylinders
 - cylindrical shells
 - elastohydrodynamics
 - Magnus effect
 - shafts (machine elements)
 - viscometers
 - viscometry
- rotating disks**
 - GS disks (shapes)
 - . **rotating disks**
 - rotating bodies
 - . **rotating disks**
 - RT accretion disks
 - counter rotation
 - Karman-Bodewadt flow
 - mistuning (turbomachinery)
- ∞ **rotating electrical machines**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT armatures
 - commutators
 - electric hybrid vehicles
 - electric motors
 - induction motors
 - ∞ machinery
 - rotating generators
 - rotors
 - servomotors
 - stators
- rotating environments**
 - GS environments
 - . **rotating environments**
 - RT artificial gravity
 - Barany chair
 - clinorotation
 - clinostats
 - Coriolis effect
 - high gravity environments
 - Langley complex coordinator
 - spacecraft environments
 - tumbling motion
- rotating fluids**
 - GS matter (physics)
 - . rotating matter
 - . . **rotating fluids**
 - . . . rotating liquids
 - . . . rotating plasmas
- RT counter rotation
 - ∞ fluids
 - Goertler instability
 - Karman-Bodewadt flow
 - liquid sloshing
 - planetary waves
 - superrotation
 - Taylor instability
 - trapped vortices
 - turbulent flow
 - vortex sheets
 - vortices
 - wing tip vortices
- rotating generators**
 - UF *dynamos*
 - GS electric generators
 - . **rotating generators**
 - . . amplidyne
 - . . dynamometers
 - . . homopolar generators
 - . . turbogenerators
 - . . . ASTEC solar turboelectric generator
 - RT AC generators
 - commutators
 - DC generators
 - electrostatic generators
 - ∞ generators
 - ∞ rotating electrical machines
 - turbines
 - turbomachinery
- rotating liquids**
 - UF *liquid rotation*
 - GS liquids
 - . **rotating liquids**
 - matter (physics)
 - . rotating matter
 - . . rotating fluids
 - . . . **rotating liquids**
 - RT Goertler instability
 - planetary waves
 - rotation
 - trapped vortices
 - vortices
- rotating matter**
 - GS matter (physics)
 - . **rotating matter**
 - . . rotating fluids
 - . . . rotating liquids
 - . . . rotating plasmas
 - RT degenerate matter
 - rotation
 - spin dynamics
- rotating mirrors**
 - GS mirrors
 - . **rotating mirrors**
 - RT framing cameras
 - high speed cameras
- rotating plasmas**
 - GS matter (physics)
 - . rotating matter
 - . . rotating fluids
 - . . . **rotating plasmas**
 - particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **rotating plasmas**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **rotating plasmas**
 - RT drift rate
 - nonequilibrium plasmas
 - plasma flux measurement
 - theta pinch
 - toroidal plasmas
 - two fluid models
 - zeta pinch
- rotating shafts**
 - GS shafts (machine elements)
 - . **rotating shafts**

rotating spheres

. . turboshafts

rotating spheres

GS rotating bodies
. **rotating spheres**
symmetrical bodies
. bodies of revolution
. . spheres
. . . **rotating spheres**
RT equators
spherical shells

rotating stalls

RT aerodynamic stalling
boundary layer separation
compressor blades
∞ rotor blades
∞ stalling
turbocompressors

rotating vehicles

USE **rotating bodies vehicles**

rotation

DEF The motion of a body about some straight line wherein the particles of the body along the line or its extensions have a zero velocity relative to some reference. The line of stationary particles is called the axis of rotation. Used for rotating, whirl, and whirling.

UF *rotating*
whirl
whirling
GS gyration
. **rotation**
. . autorotation
. . corotation
. . counter rotation
. . Earth rotation
. . galactic rotation
. . image rotation
. . lunar rotation
. . molecular rotation
. . muon spin rotation
. . planetary rotation
. . satellite rotation
. . stellar rotation
. . . solar rotation
. . clinorotation
. . superrotation
RT angular acceleration
angular velocity
axes of rotation
circulation
coning motion
Coriolis effect
cross polarization
Faraday effect
libration
∞ motion
nutation
pitch (inclination)
polarization (spin alignment)
polarization (waves)
precession
revolving
roll
rotary stability
rotating bodies
rotating liquids
rotating matter
rotons
torque
vortex avoidance
vortices
yaw

rotational flow

USE **fluid flow vortices**

rotational spectra

(added July 1989)
GS molecular properties
. molecular spectra
. . **rotational spectra**
spectra
. molecular spectra
. . **rotational spectra**

RT absorption spectra
line spectra
molecular excitation
molecular rotation
molecular spectroscopy
rotational states
vibrational spectra

rotational states

(added December 1993)
SN (LIMITED TO MOLECULAR ENERGY LEVELS - EXCLUDES ROTATIONAL DYNAMICS OF VEHICLES OR OTHER BODIES)
GS level (quantity)
. energy levels
. . molecular energy levels
. . . **rotational states**
molecular properties
. molecular energy levels
. . **rotational states**
RT molecular excitation
rotational spectra

Rotifera

DEF A phylum of multicellular animals in the subkingdom Eumatazoa.
GS animals
. invertebrates
. . **Rotifera**
microorganisms
. **Rotifera**
RT worms

rotochutes

GS parachutes
. **rotochutes**
RT autorotation

rotons

GS mechanics (physics)
. fluid mechanics
. . fluid dynamics
. . . **rotons**
RT activation energy
excitation
photons
rotation

rotor aerodynamics

GS mechanics (physics)
. fluid mechanics
. . fluid dynamics
. . . gas dynamics
. . . . aerodynamics
. **rotor aerodynamics**
RT Ffowcs Williams-Hawkings equation
flapping
flapping hinges
ground resonance
rotor body interactions
rotor dynamics
rotor stator interactions
rotors
whirl towers

∞ rotor blades

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT helicopter tail rotors
mistuning (turbomachinery)
rotary wings
rotating stalls
rotor blades (turbomachinery)
tail rotors
x wing rotors

rotor blades (turbomachinery)

UF *impeller blades*
GS turbomachine blades
. **rotor blades (turbomachinery)**
RT airfoils
blade tips
∞ blades
compressor blades
compressor rotors
impellers
∞ rotor blades
mistuning (turbomachinery)
∞ rotor blades
rotor stator interactions
rotors

stator blades
turbine blades

rotor body interactions

DEF Aerodynamic interactions between a helicopter rotor and a body.
RT aerodynamic characteristics
aerodynamic configurations
helicopter design
rotor aerodynamics
rotor stator interactions

rotor disks

USE **turbine wheels**

rotor dynamics

(added July 1989)
UF *rotordynamics*
RT dynamic characteristics
dynamic response
dynamic stability
∞ dynamics
rotary stability
rotary wings
rotor aerodynamics
rotors
structural vibration
turbomachinery

rotor hubs

USE **hubs rotors**

rotor lift

GS aerodynamic characteristics
. lift
. . **rotor lift**
aerodynamic forces
. lift
. . **rotor lift**
dynamic characteristics
. lift
. . **rotor lift**
RT distribution (property)

rotor speed

GS rates (per time)
. **rotor speed**
velocity
. **rotor speed**
RT angular velocity
high speed
labyrinth seals
tip speed

rotor stator interactions

(added June 1995)
DEF Aerodynamic interaction between a rotor and a stator.
RT aerodynamic interference
interactional aerodynamics
rotary wing aircraft
rotor aerodynamics
rotor blades (turbomachinery)
rotor body interactions
stator blades
structural stability
supersonic turbines
surface noise interactions
tilt rotor aircraft
turbine blades

rotor systems research aircraft

GS research vehicles
. research aircraft
. . **rotor systems research aircraft**
V/STOL aircraft
. rotary wing aircraft
. . **rotor systems research aircraft**
RT ∞ aircraft
aircraft design
helicopters
NASA programs

- ∞ systems
- rotorcraft*
 - USE **rotary wing aircraft**
- rotordynamics*
 - USE **rotor dynamics**
- rotors**
 - UF *rotor hubs*
 - GS rotating bodies
 - . **rotors**
 - . . compressor rotors
 - . . flywheels
 - . . impellers
 - . . . pump impellers
 - . . rotary wings
 - . . . circulation control rotors
 - . . . lifting rotors
 - bearingless rotors
 - rigid rotors
 - tilting rotors
 - tip driven rotors
 - x wing rotors
 - . . tail rotors
 - . . . helicopter tail rotors
 - . . tip vanes
 - . . turbine wheels
 - . . wave rotors
 - RT airfoils
 - armatures
 - centrifugal compressors
 - heavy lift airships
 - mistuning (turbomachinery)
 - ∞ rotating electrical machines
 - rotor aerodynamics
 - rotor blades (turbomachinery)
 - rotor dynamics
 - stators
 - turbines
 - turbocompressors
 - turbomachine blades
 - turboshafes
 - wheels
 - wings
- roughness**
 - GS **roughness**
 - . sea roughness
 - . surface roughness
 - RT coarseness
 - contours
 - flatness
 - mechanical properties
 - motion stability
 - profilometers
 - smoothing
 - surface properties
- round trip trajectories**
 - GS trajectories
 - . **round trip trajectories**
 - . . circumlunar trajectories
 - RT Earth-Moon trajectories
 - interorbital trajectories
 - interplanetary flight
 - interplanetary trajectories
 - moon-Earth trajectories
 - orbital mechanics
 - spacecraft trajectories
 - swingby technique
- Rouse belts**
 - RT ∞ belts
 - cones (volcanoes)
 - earthquakes
 - geological faults
 - Mars volcanoes
 - seismology
 - tremors
 - volcanoes
 - volcanology
- routes**
 - RT air traffic control
 - flight plans
 - ∞ paths
 - site selection
- transportation
- ∞ **routines**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT computer programs
 - computer systems programs
 - data conversion routines
 - disk operating system (DOS)
 - input/output routines
 - merging routines
 - operating systems (computers)
 - user manuals (computer programs)
- Rover project**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Rover project**
 - . projects
 - . . **Rover project**
 - . . space programs
 - . . NASA space programs
 - . . . **Rover project**
 - RT KIWI reactors
 - nuclear engine for rocket vehicles
 - nuclear propulsion
 - nuclear reactors
 - RIFT (reactor in flight test)
 - rocket engine design
 - spacecraft propulsion
- roving vehicles**
 - UF *extraterrestrial roving vehicles*
 - GS surface vehicles
 - . **roving vehicles**
 - . . lunar roving vehicles
 - . . . Lunokhod lunar roving vehicles
 - . . . manned lunar surface vehicles
 - . . Mars roving vehicles
 - . . . Marsokhod Mars roving vehicles
 - RT Mars sample return missions
 - planetary landing
 - planetary surfaces
 - research vehicles
 - toroidal wheels
 - unmanned ground vehicles
 - ∞ vehicles
- ∞ **rovings**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT composite materials
 - webs (sheets)
 - yarns
- Rowland circles**
 - RT gratings (spectra)
 - optical filters
- RP-1 rocket propellants**
 - GS propellants
 - . rocket propellants
 - . . liquid rocket propellants
 - . . . **RP-1 rocket propellants**
 - RT JP-4 jet fuel
 - kerosene
- RPV*
 - USE **remotely piloted vehicles**
- RS codes*
 - USE **Reed-Solomon codes**
- RTM (composite materials)*
 - USE **resin transfer molding**
- RTV-40 rubber (trademark)**
 - GS elastomers
 - . rubber
 - . . synthetic rubbers
 - . . . silicone rubber
 - **RTV-40 rubber (trademark)**
 - vulcanized elastomers
 - **RTV-40 rubber (trademark)**
- RTV-60 rubber (trademark)**
 - GS elastomers
 - . rubber
 - . . synthetic rubbers
- . . . silicone rubber
- **RTV-60 rubber (trademark)**
- vulcanized elastomers
- **RTV-60 rubber (trademark)**
- Ruanda-Urundi*
 - USE **Burundi**
 - Rwanda**
- rubber**
 - DEF A material that is capable of recovering from large deformations quickly and forcibly, and can be, or already is modified to a state in which it is essentially insoluble (but can swell) in boiling solvent such as benzene, methyl ethyl ketone, and ethanol-toluene azeotrope.
 - GS elastomers
 - . **rubber**
 - . . synthetic rubbers
 - . . . Adiprene (trademark)
 - . . . Buna (trademark)
 - . . . silicone rubber
 - RTV-40 rubber (trademark)
 - RTV-60 rubber (trademark)
 - . . . Viton rubber (trademark)
 - . . . vulcanized elastomers
 - RTV-40 rubber (trademark)
 - RTV-60 rubber (trademark)
 - . . . chloroprene resins
 - RT guayule
 - gums (substances)
 - latex
 - organic materials
 - polyisoprenes
- rubber coatings**
 - GS coatings
 - . **rubber coatings**
 - RT paints
 - protective coatings
- rubidium**
 - GS chemical elements
 - . alkali metals
 - . . **rubidium**
 - . . . rubidium isotopes
 - rubidium 86
 - metals
 - . alkali metals
 - . . **rubidium**
 - . . . rubidium isotopes
 - rubidium 86
- rubidium 86**
 - GS chemical elements
 - . alkali metals
 - . . rubidium
 - . . . rubidium isotopes
 - **rubidium 86**
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - **rubidium 86**
 - rubidium isotopes
 - **rubidium 86**
 - metals
 - . alkali metals
 - . . rubidium
 - . . . rubidium isotopes
 - **rubidium 86**
- rubidium compounds**
 - RT ∞ alkali metal compounds
 - ∞ chemical compounds
 - ∞ metal compounds
- rubidium isotopes**
 - GS chemical elements
 - . alkali metals
 - . . rubidium
 - . . . **rubidium isotopes**
 - rubidium 86
 - . nuclides
 - . . isotopes
 - . . . **rubidium isotopes**
 - rubidium 86
 - metals
 - . alkali metals
 - . . rubidium
 - . . . **rubidium isotopes**
 - rubidium 86

Rubis rocket vehicle

. . . . rubidium 86

Rubis rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . **Rubis rocket vehicle**
RT solid propellant rocket engines

ruby
RT aluminum oxides
crystals

ruby lasers
GS electronic equipment
. solid state devices
. . solid state lasers
. . . **ruby lasers**
stimulated emission devices
. lasers
. . solid state lasers
. . . **ruby lasers**
RT pulsed lasers
Q switched lasers
Verneuil process

rudders
GS control surfaces
. **rudders**
. . aerial rudders
. . marine rudders
RT airfoils
fins
pintles
stabilizers (fluid dynamics)
sweptback tail surfaces
tabs (control surfaces)
tail assemblies
tail surfaces
trapezoidal tail surfaces

ruggedness
RT durability
∞ high resistance
mechanical properties
∞ rigidity

ruler method
RT ∞ methodology

rules
GS **rules**
. flight rules
. . instrument flight rules
. . visual flight rules
. Palmgren-Miner rule
. phase rule
. selection rules (nuclear physics)
. sum rules
. Whitham rule
RT laws
patent policy
policies
procurement policy
regulations
sea law

Rumania
USE **Romania**

run time (computers)
RT computer programming
computers
time sharing

Runge-Kutta method
DEF A method for the numerical solution of an ordinary differential equation.
GS analysis (mathematics)
. numerical analysis
. . numerical integration
. . . **Runge-Kutta method**
. real variables
. . measure and integration
. . . numerical integration
. . . . **Runge-Kutta method**
RT ∞ methodology

running
GS locomotion
. **running**
RT gait

physical exercise
walking

runoffs
USE **drainage**

runway alignment
SN (ALIGNMENT WITH RUNWAYS--NOT ALIGNMENT OF RUNWAYS)
RT aircraft landing
takeoff runs

runway conditions
GS conditions
. **runway conditions**
RT aviation meteorology
ice
runway incursions
runways
slush
surface roughness
water
weather

runway incursions
(added May 2006)
DEF Any occurrence at an airport involving an aircraft, vehicle, person or object on the ground, that creates a collision hazard or results in the loss of separation with an aircraft taking off, intending to take off or intending to land.
GS hazards
. aircraft hazards
. . **runway incursions**
RT aerospace safety
aircraft accidents
aircraft safety
airfield surface movements
airport surface detection equipment
collision avoidance
collisions
crashes
flight safety
runway conditions
runways
situational awareness

runway lights
GS landing aids
. airport lights
. . **runway lights**
lighting equipment
. luminaires
. . airport lights
. . . **runway lights**
RT approach control
∞ flares
∞ markers
runways
searchlights
visual control

runways
DEF A defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length.
RT airfield surface movements
airports
landing
landing aids
landing mats
landing sites
pavements
runway conditions
runway incursions
runway lights
∞ strip
takeoff
taxiing

rupturing
RT ∞ blisters
bursts
cracking (fracturing)
disrupting
failure
fracture mechanics
metal fatigue
self sealing
structural strain

tearing

rural areas
RT agriculture
farmlands
grasslands
land
megalopolises
rangelands
regional planning
residential areas
suburban areas
wilderness

rural land use
GS land use
. **rural land use**
RT agriculture
conservation
∞ development
Earth resources
farmlands
grasslands
grazing
Great Plains Corridor (North America)
land
land management
orchards
rangelands
regional planning
sites

Russia
USE **Russian Federation**

Russian Federation
(added August 1993)
UF *Russia*
GS nations
. **Russian Federation**
RT Asia
Automatic Universal Orbiting Stations
Europe
Moscow
Russian Space Program

Russian Space Program
(added September 1994)
GS programs
. space programs
. . **Russian Space Program**
RT Commonwealth of Independent States
cosmonauts
Energia launch vehicle
GLONASS
Granat satellite
international cooperation
Kvant modules
Proton launch vehicle
Russian Federation
Soviet satellites
Soviet spacecraft
U.S.S.R. space program
Vertikal rockets

rust fungi
UF *rusts (botany)*
GS plants (botany)
. fungi
. . **rust fungi**
RT blight
∞ mold
parasitic diseases
plant diseases

rusting
GS chemical reactions
. oxidation
. . **rusting**
corrosion
. **rusting**
RT atmospheric effects
chemical attack
coatings
corrosion resistance
degradation
desensitizing
deterioration
hot corrosion

- metal-water reactions
- oxidation resistance
- passivity
- scale (corrosion)
- weathering
- rusts (botany)*
- USE **rust fungi**
- ruthenium**
 - GS chemical elements
 - . **ruthenium**
 - . . ruthenium isotopes
 - metals
 - . noble metals
 - . . **ruthenium**
 - . . . ruthenium isotopes
 - . transition metals
 - . . **ruthenium**
 - . . . ruthenium isotopes
- ruthenium 106*
- USE **ruthenium isotopes**
- ruthenium alloys**
 - GS alloys
 - . **ruthenium alloys**
- ruthenium compounds**
 - RT ∞ chemical compounds
 - ∞ metal compounds
 - transition metals
- ruthenium isotopes**
 - UF *ruthenium 106*
 - GS chemical elements
- . nuclides
- . . isotopes
- . . . **ruthenium isotopes**
- . ruthenium
- . . **ruthenium isotopes**
- metals
- . noble metals
- . . ruthenium
- . . . **ruthenium isotopes**
- . transition metals
- . . ruthenium
- . . . **ruthenium isotopes**
- rutherfordium**
 - (added November 1994)
 - GS chemical elements
 - . **rutherfordium**
 - RT dubnium
 - ∞ elements
- rutile**
 - DEF A mineral form of titanium oxide (TiO₂) (tetragonal crystallization), but usually produced chemically for use in ceramics and other products.
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . titanium oxides
 - **rutile**
 - titanium compounds
 - . titanium oxides
 - . . **rutile**
 - RT anatase
 - coesite
 - cross relaxation
- minerals
- pigments
- stishovite
- Rwanda**
 - UF *Ruanda-Urundi*
 - GS nations
 - . **Rwanda**
 - RT Africa
 - Burundi
- RXTE (satellite)*
- (added March 1999)
- USE **X Ray Timing Explorer**
- Ryan aircraft**
 - GS **Ryan aircraft**
 - . Firebee 2 target drone aircraft
 - . X-13 aircraft
 - . XC-142 aircraft
 - . XV-5 aircraft
 - . XV-8A aircraft
 - RT ∞ aircraft
- Rydberg series**
 - GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . line spectra
 - **Rydberg series**
 - RT absorption spectra
 - atomic spectra
 - electron transitions
 - emission spectra
 - H lines
 - hydrogen

S

S band

USE **superhigh frequencies**
ultrahigh frequencies

S curves

GS geometry
 . curves (geometry)
 . . . **S curves**
 . . . Gompertz curves
 . Euclidean geometry
 . . analytic geometry
 . . . **S curves**
 . . . Gompertz curves

S glass

GS glass
 . E glass
 . . **S glass**

RT composite materials
 glass fiber reinforced plastics
 glass fibers
 silicon dioxide

S matrix theory

UF *scattering matrix*

RT operators (mathematics)
 scattering cross sections
 ∞ theories

S stars

GS celestial bodies
 . stars
 . . late stars
 . . . cool stars
 **S stars**

RT asymptotic giant branch stars
 giant stars
 M stars
 Mira variables
 red giant stars

S waves

DEF Waves in an elastic media which cause an element of the medium to change its shape without a change in volume. Mathematically, S waves are ones whose velocity field has zero divergence. Used for secondary waves, shear disturbances, and shear waves.

UF *secondary waves*
shear disturbances
shear waves

GS elastic waves
 . **S waves**
 . . SH waves

RT crustal fractures
 dilatational waves
 P waves
 polarized elastic waves
 Rayleigh waves
 seismic waves
 surface waves
 transverse waves

S-2 aircraft

UF *US-2A aircraft*

GS antisubmarine warfare aircraft
 . **S-2 aircraft**
 monoplanes
 . **S-2 aircraft**
 utility aircraft
 . **S-2 aircraft**

RT ∞ aircraft

S-3 aircraft

UF *ES-3A aircraft*
KS-3 aircraft

GS antisubmarine warfare aircraft
 . **S-3 aircraft**
 jet aircraft
 . **S-3 aircraft**
 Lockheed aircraft
 . **S-3 aircraft**
 monoplanes
 . **S-3 aircraft**

RT ∞ aircraft

∞ military aircraft

S-3 satellite

USE **Explorer 12 satellite**

S-6 satellite

USE **Explorer 17 satellite**

S-16 satellite

USE **OSO-1**

S-17 satellite

USE **OSO-2**

S-18 satellite

USE **OAO**

S-27 satellite

USE **Alouette 1 satellite**

S-49 satellite

USE **OGO-A**

S-50 satellite

USE **OGO-C**

S-51 satellite

USE **Ariel 1 satellite**

S-52 satellite

USE **Ariel 2 satellite**

S-57 satellite

USE **OSO-C**

S-58 helicopter

UF *Sikorsky S-58 helicopter*

GS Sikorsky aircraft
 . **S-58 helicopter**
 transport aircraft
 . **S-58 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **S-58 helicopter**

RT CH-34 helicopter
 UH-34 helicopter

S-61 helicopter

UF *Sikorsky S-61 helicopter*

GS Sikorsky aircraft
 . **S-61 helicopter**
 transport aircraft
 . **S-61 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **S-61 helicopter**

RT ∞ aircraft
 antisubmarine warfare aircraft
 CH-3 helicopter
 SH-3 helicopter
 SH-4 helicopter
 water takeoff and landing aircraft

S-64 helicopter

USE **CH-54 helicopter**

S-66 satellite

USE **Beacon Explorer A**

S-67 helicopter

UF *Sikorsky S-67 helicopter*

GS Sikorsky aircraft
 . **S-67 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . compound helicopters
 **S-67 helicopter**
 military helicopters
 **S-67 helicopter**

RT ∞ aircraft

S-74 satellite

USE **Explorer 18 satellite**

SA-321 helicopter

UF *Sud Aviation SA-321 helicopter*

GS Sud Aviation aircraft

. **SA-321 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **SA-321 helicopter**

RT ∞ aircraft

SA-330 helicopter

UF *Sud Aviation SA-330 helicopter*

GS Sud Aviation aircraft
 . Alouette helicopters
 . . **SA-330 helicopter**
 transport aircraft
 . **SA-330 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . Alouette helicopters
 **SA-330 helicopter**
 military helicopters
 **SA-330 helicopter**

RT ∞ aircraft

Saab 37 aircraft

GS attack aircraft
 . fighter aircraft
 . . **Saab 37 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Saab 37 aircraft**
 Saab aircraft
 . **Saab 37 aircraft**
 supersonic aircraft
 . **Saab 37 aircraft**

RT ∞ aircraft
 canard configurations
 Harrier aircraft

Saab 105 aircraft

GS jet aircraft
 . turbofan aircraft
 . . **Saab 105 aircraft**
 light aircraft
 . **Saab 105 aircraft**
 monoplanes
 . **Saab 105 aircraft**
 Saab aircraft
 . **Saab 105 aircraft**
 utility aircraft
 . **Saab 105 aircraft**

RT ∞ aircraft
 passenger aircraft

Saab aircraft

GS **Saab aircraft**
 . Saab 37 aircraft
 . Saab 105 aircraft

RT ∞ aircraft

Sabatier reaction

GS chemical reactions
 . **Sabatier reaction**

RT photographic film

Sabot projectiles

DEF Projectiles having devices fitted around or in back of the projectiles in gun barrels or launching tubes to support or protect the projectiles or to prevent the escape of gas ahead of it. The sabot separates from the projectile after launching.

GS projectiles
 . **Sabot projectiles**

RT artillery
 fragmentation
 gun launchers
 guns (ordnance)

sabotage

DEF Deliberate destructive action that may be directed against property, processes, systems, organizations, governments, or people and that is intended to prevent a process, undermine a group, or interfere with progress towards a goal.

RT accidents
 air defense
 damage

- deactivation
 - disasters
 - hazards
 - injuries
 - prevention
 - safety
 - space law
 - terrorism
 - wreckage
- Sabre aircraft*
USE **F-86 aircraft**
- Sabreliner aircraft*
USE **T-39 aircraft**
- Saccadic eye movements**
GS eye movements
 . **Saccadic eye movements**
RT fovea
 ∞ motion
 visual fields
- saccharides*
USE **carbohydrates**
- saccharomyces**
GS plants (botany)
 . fungi
 . . **saccharomyces**
- Sacramento Valley (CA)**
GS valleys
 . **Sacramento Valley (CA)**
RT California
 river basins
- saddle points**
GS **saddle points**
 . saddle points (game theory)
RT curve fitting
 game theory
 minimax technique
- saddle points (game theory)**
GS game theory
 . **saddle points (game theory)**
 saddle points
 . **saddle points (game theory)**
RT operations research
 saddles
 ∞ theories
 zero sum games
- saddles**
RT saddle points (game theory)
- saddles (supports)**
GS structural members
 . **saddles (supports)**
 supports
 . **saddles (supports)**
- Saenger space transportation system**
(added September 1995)
UF *Saenger space transportation system*
GS transportation
 . space transportation
 . . space transportation system
 . . . **Saenger space transportation system**
RT aerospace planes
 German space program
 piggyback systems
 ramjet engines
 reusable spacecraft
- Safeguard system**
GS weapon systems
 . missile systems
 . . **Safeguard system**
RT antimissile defense
 ballistic missiles
 military technology
 missile defense
 Sentinel system
 ∞ systems
- safety**
GS **safety**
 . aerospace safety
- . aircraft safety
 - . flight safety
 - . industrial safety
 - . range safety
 - . reactor safety
- RT accident prevention
 accidents
 air bag restraint devices
 crashes
 ∞ detectors
 emergency life sustaining systems
 energy policy
 explosions
 fire prevention
 fireproofing
 fires
 hazards
 prevention
 protection
 sabotage
 ∞ storage
 vortex avoidance
 warning
 warning systems
- safety devices**
GS **safety devices**
 . abort apparatus
 . air bag restraint devices
 . arresting gear
 . ejection seats
 . . flying ejection seats
 . escape capsules
 . escape rockets
 . helmets
 . seat belts
RT accident prevention
 accident proneness
 accidents
 aircraft safety
 ambulances
 antiskid devices
 automobile accidents
 ∞ barriers
 chemical defense
 deflectors
 ∞ devices
 emergency life sustaining systems
 enclosures
 ∞ equipment
 fail-safe systems
 fire prevention
 flame deflectors
 flight safety
 gates (openings)
 guards (shields)
 harnesses
 hazards
 human factors engineering
 landing aids
 pressure suits
 protection
 protective clothing
 protectors
 radiation measuring instruments
 radiation shielding
 shielding
 smoke detectors
 space suits
 spacecraft shielding
 warning
 warning systems
- safety factors**
RT accident proneness
 aerospace safety
 design analysis
 escape systems
 hazards
 health physics
 reliability
 stability
- safety management**
GS management
 . **safety management**
RT accident prevention
 aerospace safety
 Assured Crew Return Vehicle
 education
- fail-safe systems
 - fire prevention
 - guards (shields)
 - hazards
 - human factors engineering
 - production management
 - risk management
 - warning systems
- SAGE air defense system**
GS air defense
 . **SAGE air defense system**
RT ∞ systems
- SAGE satellite**
DEF Spacecraft for the study of stratospheric aerosols and gases. Used for Stratospheric Aerosol & Gas Experiment.
UF *Stratospheric Aerosol & Gas Experiment*
GS artificial satellites
 . **SAGE satellite**
RT aerosols
 ozone
- Saginaw Bay (MI)**
GS bays (topographic features)
 . **Saginaw Bay (MI)**
RT inlets (topography)
 Lake Huron
 Michigan
 river basins
- Sagittarius constellation**
GS constellations
 . **Sagittarius constellation**
- Sagnac effect**
DEF A phase shift (and consequent measurable rotation rate) caused by nonreciprocity (different optical path lengths) of two counter-propagating light waves traveling in the same coil in a fiber optic gyro or ring interferometer.
GS phase shift
 . **Sagnac effect**
RT angular velocity
 astronomical interferometry
 etalons
 fiber optics
 interferometers
 interferometry
 laser gyroscopes
 laser interferometry
 light transmission
 nonlinear optics
 optical gyroscopes
 optical paths
 speckle interferometry
 wave propagation
- Saha equations**
RT arc heating
 electric arcs
 ∞ equations
 ion density (concentration)
 ionization potentials
 temperature
- Sahara Desert (Africa)**
GS land
 . deserts
 . . **Sahara Desert (Africa)**
RT Africa
 arid lands
 barren land
 desertification
 dunes
 remote regions
- SAIL project**
UF *Shuttle Avionics Integration Laboratory*
GS programs
 . NASA programs
 . . NASA space programs
 . . . **SAIL project**
 . projects
 . . **SAIL project**
 . space programs
 . . NASA space programs

sails

... **SAIL project**
 RT Earth Viewing Applications Laboratory laboratories
 space laboratories
 space shuttles

sailplanes
 USE **gliders**

sails
 GS **sails**
 . magnetic sails
 . sailwings
 . solar sails
 RT fins
 gliders
 tail assemblies

sailwings
 UF *Princeton sailwings*
 GS folding structures
 . **sailwings**
 sails
 . **sailwings**
 RT gliders
 hang gliders

Saint Elmo fire
 GS electric current
 . electric discharges
 . . **Saint Elmo fire**
 RT fires

Saint Venant flexure problem
 USE **Saint Venant principle**

Saint Venant principle
 UF *Saint Venant flexure problem*
St Venant flexure problem
 RT plastic deformation
 static deformation
 static loads
 stress analysis
 stress concentration
 temperature inversions

salicylates
 GS **salicylates**
 . sodium salicylates
 RT acetylsalicylic acid
 drugs
 esters

salinity
 GS chemical properties
 . **salinity**
 RT alkalinity
 brines
 core sampling
 desalinization
 ocean currents
 oceanographic parameters
 sea water
 soil sampling
 thermohaline circulation

saliva
 GS body fluids
 . **saliva**
 RT digestive system
 mucus
 salivary glands

salivary glands
 UF *parotid gland*
 GS anatomy
 . digestive system
 . . **salivary glands**
 . glands (anatomy)
 . . **salivary glands**
 RT mouth
 saliva

salmonella
 GS microorganisms
 . bacteria
 . . **salmonella**

salt baths
 GS baths
 . **salt baths**

RT brines
 heat treatment
 molten salts

salt beds
 DEF Deposits of sodium chloride and other salts resulting from the evaporation and/or precipitation of ancient oceans.

GS geology
 . beds (geology)
 . . **salt beds**
 landforms
 . beds (geology)
 . . **salt beds**

RT brines
 bromides
 chlorides
 flats (landforms)
 sodium chlorides

salt flats
 USE **flats (landforms)**

salt spray tests
 GS chemical tests
 . **salt spray tests**
 environmental tests
 . corrosion tests
 . . **salt spray tests**
 RT corrosion
 corrosion resistance
 spray ingestion
 stress corrosion
 ∞ tests

Salton Sea (CA)
 GS seas
 . **Salton Sea (CA)**
 RT California
 deserts

∞ **salts**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT halites
 inorganic compounds
 molten salts
 organic charge transfer salts
 organic compounds
 sodium chlorides
 sulfonates

Salyut space station
 GS artificial satellites
 . space stations
 . . **Salyut space station**
 manned spacecraft
 . **Salyut space station**
 Soviet spacecraft
 . **Salyut space station**
 stations
 . space stations
 . . **Salyut space station**
 RT Soyuz spacecraft
 space bases
 space laboratories
 spacecraft docking
 U.S.S.R. space program

Samaritan aircraft
 USE **C-131 aircraft**

samarium
 GS chemical elements
 . rare earth elements
 . . **samarium**
 . . . samarium isotopes
 metals
 . rare earth elements
 . . **samarium**
 . . . samarium isotopes

samarium compounds
 GS rare earth compounds
 . **samarium compounds**
 RT ∞ chemical compounds
 ∞ metal compounds

samarium isotopes
 GS chemical elements

. nuclides
 . . isotopes
 . . . **samarium isotopes**
 . rare earth elements
 . . samarium
 . . . **samarium isotopes**
 metals
 . rare earth elements
 . . samarium
 . . . **samarium isotopes**

Samoa
 GS landforms
 . islands
 . . Pacific islands
 . . . **Samoa**

Samos
 UF *Satellite and Missile Observation System*
 GS artificial satellites
 . **Samos**
 military spacecraft
 . reconnaissance spacecraft
 . . **Samos**
 RT satellite tracking

sample return missions
 (added March 2001)
 DEF Space missions to collect material samples from interplanetary space, a planet, or other body and return the samples to Earth.
 GS space missions
 . **sample return missions**
 . . Mars sample return missions
 . . Stardust Mission
 RT samples
 space exploration

sampled data systems
 (added July 1990)
 RT adaptive control
 automatic control
 control stability
 control theory
 data sampling
 feedback control

samplers
 UF *bombs (samplers)*
sampling devices
 RT ∞ bombs
 core sampling
 samples
 sampling
 selectors
 ∞ test equipment

samples
 DEF Physical or biological specimens intended to be representative of the whole.
 GS **samples**
 . Mars surface samples
 RT acceptability
 Mars sample return missions
 sample return missions
 samplers
 sampling
 specimens

sampling
 DEF Obtaining of a portion representative of the material concerned.
 GS **sampling**
 . air sampling
 . core sampling
 . data sampling
 . particulate sampling
 . random sampling
 . soil sampling
 . water sampling
 RT allowances
 assaying
 Bayes theorem
 censored data (mathematics)
 chemical analysis
 chemical tests
 collection
 concentration (composition)
 confidence limits

- counting
 - estimating
 - exploration
 - Global Air Sampling Program
 - heterogeneity
 - homogeneity
 - inspection
 - investigation
 - probability theory
 - process control (industry)
 - quality control
 - random errors
 - reliability
 - Rosetta mission
 - samplers
 - samples
 - selection
 - sequential analysis
 - specimens
 - standards
 - statistical analysis
 - ∞ statistics
 - ∞ sweep circuits
 - ∞ tests
 - variability
 - Weibull density functions
- sampling devices*
USE **samplers**
- San Andreas Fault**
GS geological faults
 . **San Andreas Fault**
RT California
 crustal fractures
 Earth crust
 earthquakes
 Mexico
- San Andreas Fault experiment**
RT earthquakes
 geological faults
- San Francisco (CA)**
GS cities
 . **San Francisco (CA)**
RT California
- San Francisco Bay (CA)**
GS bays (topographic features)
 . **San Francisco Bay (CA)**
RT California
 Pacific Ocean
 San Pablo Bay (CA)
- San Joaquin Valley (CA)**
GS valleys
 . **San Joaquin Valley (CA)**
RT California
 river basins
- San Juan Mountains (CO)**
GS landforms
 . mountains
 . . **San Juan Mountains (CO)**
RT Colorado
- San Marco 1 satellite**
GS artificial satellites
 . meteorological satellites
 . . San Marco satellites
 . . . **San Marco 1 satellite**
- San Marco 2 satellite**
GS artificial satellites
 . meteorological satellites
 . . San Marco satellites
 . . . **San Marco 2 satellite**
- San Marco 3 satellite**
GS artificial satellites
 . meteorological satellites
 . . San Marco satellites
 . . . **San Marco 3 satellite**
- San Marco satellites**
GS artificial satellites
 . meteorological satellites
 . . **San Marco satellites**
 . . . San Marco 1 satellite
 . . . San Marco 2 satellite
- . . . San Marco 3 satellite
 - RT Scout launch vehicle
- San Marino**
GS nations
 . **San Marino**
RT Europe
 Italy
- San Pablo Bay (CA)**
GS bays (topographic features)
 . **San Pablo Bay (CA)**
RT California
 San Francisco Bay (CA)
- sand casting**
GS forming techniques
 . casting
 . . **sand casting**
RT molding materials
 sands
- sand dunes*
USE **dunes**
- Sand Hills Region (GA-NC-SC)**
GS regions
 . **Sand Hills Region (GA-NC-SC)**
RT Georgia
 North Carolina
 South Carolina
- Sand Hills Region (NE)**
GS regions
 . **Sand Hills Region (NE)**
RT Nebraska
- Sandpiper target missile**
GS missile configurations
 . **Sandpiper target missile**
 missiles
 . **Sandpiper target missile**
RT drone vehicles
 targets
- sands**
GS sediments
 . **sands**
 . . monazite sands
 . . tar sands
 soils
 . **sands**
 . . monazite sands
 . . tar sands
RT aggregates
 alluvium
 aquifers
 deltas
 dunes
 dust
 Earth resources
 fans (landforms)
 gravels
 grit
 ilmenite
 littoral drift
 littoral transport
 molding materials
 porous materials
 quartz
 rain erosion
 reefs
 sand casting
 sandstones
 sedimentary rocks
 silica glass
 silicon dioxide
- sandstones**
GS rocks
 . sedimentary rocks
 . . **sandstones**
RT Earth resources
 sands
 schist
- soils
- sandwich construction*
USE **sandwich structures**
- sandwich structures**
UF *sandwich construction*
RT composite materials
 epoxy matrix composites
 honeycomb cores
 honeycomb structures
 interlayers
 laminates
 multilayer insulation
 ply orientation
 rigid structures
∞ structures
 walls
- Sanger space transportation system*
USE **Saenger space transportation system**
- sanitation**
RT consumables (spacecrew supplies)
 health
 housekeeping (spacecraft)
 hygiene
 potable water
 public health
 sewers
 toilets
 warning systems
 waste disposal
 waste management
- Santowax (trademark)**
RT polystyrene
- sapphire**
GS aluminum compounds
 . aluminum oxides
 . . **sapphire**
 chalcogenides
 . oxides
 . . metal oxides
 . . . aluminum oxides
 **sapphire**
- saprophytes**
GS plants (botany)
 . **saprophytes**
RT bacteria
 microorganisms
- sarcina**
GS microorganisms
 . bacteria
 . . **sarcina**
- sarcoma*
USE **cancer**
- sarcoplasmic reticulum**
GS organelles
 . endoplasmic reticulum
 . . **sarcoplasmic reticulum**
RT cells (biology)
 cytology
 cytoplasm
- Sargasso Sea**
DEF A region in the Atlantic characterized by mixing ocean currents and a lack of winds. Located northeast of the West Indies.
RT Atlantic Ocean
 Gulf Stream
 ocean models
 ocean surface
 oceanography
 seas
- SarSat**
DEF The US satellite of the COSPAS-SarSat project for the search and rescue of distressed vehicles, administered by USSR, US, French, and Canadian agencies. Used for Search and Rescue Satellite.
UF *Search and Rescue Satellite*
GS artificial satellites
 . **SarSat**

SAS

- RT COSPAS
 - NOAA 8 satellite
 - reconnaissance
 - rescue operations
 - searching
- SAS**
 - UF *Small Astronomy Satellites*
 - GS artificial satellites
 - . scientific satellites
 - . . . astronomical satellites
 - . . . **SAS**
 - Explorer 53 satellite
 - SAS-1
 - SAS-2
 - SAS-3
 - observatories
 - . astronomical observatories
 - . . . astronomical satellites
 - . . . **SAS**
 - Explorer 53 satellite
 - SAS-1
 - SAS-2
 - SAS-3
 - RT Explorer 48 satellite
 - Uhuru satellite
- SAS-1**
 - UF *Small Astronomy Satellite 1*
 - GS artificial satellites
 - . scientific satellites
 - . . . astronomical satellites
 - . . . **SAS**
 - **SAS-1**
 - observatories
 - . astronomical observatories
 - . . . astronomical satellites
 - . . . **SAS**
 - **SAS-1**
 - RT radio astronomy
 - SAS-2**
 - UF *Small Astronomy Satellite 2*
 - GS artificial satellites
 - . scientific satellites
 - . . . astronomical satellites
 - . . . **SAS**
 - **SAS-2**
 - observatories
 - . astronomical observatories
 - . . . astronomical satellites
 - . . . **SAS**
 - **SAS-2**
 - RT Explorer 48 satellite
 - radio astronomy
 - spaceborne astronomy
 - SAS-3**
 - UF *Small Astronomy Satellite 3*
 - GS artificial satellites
 - . scientific satellites
 - . . . astronomical satellites
 - . . . **SAS**
 - **SAS-3**
 - observatories
 - . astronomical observatories
 - . . . astronomical satellites
 - . . . **SAS**
 - **SAS-3**
 - RT Explorer 53 satellite
 - radio astronomy
 - spaceborne astronomy
 - x ray astronomy
 - SAS-D**
 - USE **IUE**
 - Saskatchewan**
 - GS nations
 - . Canada
 - . . **Saskatchewan**
 - SATAN (sensor)**
 - USE **terrain analysis**
 - satellite altimetry**
 - GS altimetry
 - . **satellite altimetry**
 - RT altimeters
 - digital elevation models
 - geodesy
 - geodetic satellites
 - geoids
 - GEOS 3 satellite
 - Geosat satellites
 - Ice, Cloud and Land Elevation Satellite
 - radar measurement
 - satellite observation
 - satellite-borne radar
 - SEASAT satellites
 - topography
 - Satellite and Missile Observation System*
 - USE **Samos**
 - satellite antennas**
 - GS antennas
 - . **satellite antennas**
 - RT furlable antennas
 - multibeam antennas
 - radio antennas
 - telecommunication
 - satellite atmospheres**
 - DEF The atmospheres that are found on natural satellites.
 - GS environments
 - . extraterrestrial environments
 - . . . **satellite atmospheres**
 - lunar atmosphere
 - Titan atmosphere
 - RT ∞ atmospheres
 - atmospheric chemistry
 - atmospheric composition
 - atmospheric physics
 - Earth atmosphere
 - Earth ionosphere
 - Earth magnetosphere
 - Huygens probe
 - ionospheric composition
 - magnetopause
 - natural satellites
 - planetary atmospheres
 - stellar atmospheres
 - Titan
 - Triton
 - upper atmosphere
 - satellite attitude control**
 - GS attitude control
 - . **satellite attitude control**
 - spacecraft control
 - . satellite control
 - . . . **satellite attitude control**
 - RT attitude stability
 - automatic control
 - ∞ control
 - directional control
 - gravity gradient satellites
 - jet control
 - lateral control
 - longitudinal control
 - Marquardt R4D engine
 - three axis stabilization
 - Transit Attitude Control satellite
 - satellite attitude disturbance*
 - USE **attitude stability**
 - spacecraft stability**
 - satellite breakup*
 - USE **spacecraft breakup**
 - satellite capture*
 - USE **spacecraft recovery**
 - satellite clusters*
 - USE **satellite constellations**
 - satellite communication**
 - DEF Use of communication satellites, passive reflecting belts of dipoles or needles, or reflecting orbiting balloons to extend the range of radio communication by returning signals to Earth from the orbiting object, with or without amplification.
 - GS telecommunication
 - . space communication
 - . . . spacecraft communication
 - . . . **satellite communication**
 - RT ACTS
 - ARPA computer network
 - astrionics
 - circumlunar communication
 - communication satellites
 - Earth terminals
 - facsimile communication
 - free-space optical communication
 - ground-air-ground communication
 - hoop column antennas
 - interplanetary communication
 - Iridium network
 - lunar communication
 - multibeam antennas
 - optical communication
 - packet transmission
 - plasma antennas
 - radio communication
 - satellite communications ships
 - satellite ground support
 - single channel per carrier
 - transmission
 - system generated electromagnetic pulses
 - transmission rate (communications)
 - unified S band
 - satellite communications ships**
 - UF *USNS Kingsport*
 - GS surface vehicles
 - . **satellite communications ships**
 - water vehicles
 - . ships
 - . . **satellite communications ships**
 - RT satellite communication
 - spacecraft communication
 - satellite configurations**
 - GS spacecraft configurations
 - . **satellite configurations**
 - RT aerodynamic configurations
 - satellite constellations**
 - (added February 1994)
 - UF *satellite clusters*
 - GS networks
 - . satellite networks
 - . . **satellite constellations**
 - . . . Constellation-X
 - . . . Iridium network
 - RT communication networks
 - communication satellites
 - formation flying
 - Global Positioning System
 - microsatellites
 - nanosatellites
 - satellite ground tracks
 - satellite navigation systems
 - spatial distribution
 - stationkeeping
 - satellite control**
 - GS spacecraft control
 - . **satellite control**
 - . . satellite attitude control
 - RT attitude control
 - automatic control
 - ∞ control
 - directional control
 - flexible spacecraft
 - formation flying
 - gravity gradient satellites
 - jet control
 - lateral control
 - longitudinal control
 - manual control
 - remote control
 - thrust control
 - satellite defense*
 - USE **spacecraft defense**
 - satellite design**
 - GS spacecraft design
 - . **satellite design**
 - RT computer aided design
 - ∞ design
 - Indian space program
 - Japanese space program

- microsatellites
- nanosatellites
- product development
- small satellite technology
- spacecraft structures
- structural design
- systems engineering
- satellite doppler positioning**
 - GS positioning
 - . **satellite doppler positioning**
 - RT Argos system
 - Doppler effect
 - Doppler navigation
 - Doppler radar
 - geodesy
 - geodetic accuracy
 - geodetic coordinates
 - geodetic satellites
 - geodetic surveys
 - polystation doppler tracking system
 - satellite tracking
 - tracking (position)
- satellite drag**
 - GS dynamic characteristics
 - . drag
 - . . **satellite drag**
 - RT aerodynamic drag
 - electrostatic drag
 - friction drag
- satellite fragmentation*
- USE **spacecraft breakup**
- satellite ground support**
 - RT ground support equipment
 - satellite communication
 - spacecraft communication
- satellite ground tracks**
 - GS ground tracks
 - . **satellite ground tracks**
 - RT flight paths
 - orbits
 - satellite constellations
- satellite guidance**
 - GS guidance (motion)
 - . spacecraft guidance
 - . . **satellite guidance**
 - RT automatic control
 - inertial guidance
 - injection guidance
 - LOCATES system
 - manual control
 - reentry guidance
 - rendezvous guidance
 - space navigation
- satellite imagery**
 - GS imagery
 - . **satellite imagery**
 - RT atmospheric correction
 - Coastal Zone Color Scanner
 - data products
 - image analysis
 - imaging techniques
 - MISR (radiometry)
 - normalized difference vegetation index
 - pixels
 - satellite observation
 - satellite-borne photography
 - vegetative index
- satellite instruments**
 - GS spacecraft instruments
 - . **satellite instruments**
 - . . multispectral linear arrays
 - RT flight instruments
 - ∞ instruments
 - laser altimeters
 - measuring instruments
 - needs (data system)
 - wildlife radiolocation
- satellite interceptors**
 - RT ∞ interceptors
- pursuit tracking
- satellite laser ranging**
(added July 2001)
- DEF A technique for determining the distance to or from an artificial satellite by precise measurement of the time required for a laser pulse to travel from a transmitter to a retroreflector and return to a detector.
- UF *SLR (ranging)*
- GS rangefinding
- . laser ranging
- . . **satellite laser ranging**
- utilization
- . laser applications
- . . laser ranging
- . . . **satellite laser ranging**
- RT celestial geodesy
- geodetic satellites
- LAGEOS (satellite)
- laser range finders
- passive satellites
- retroreflection
- retroreflectors
- satellite tracking
- satellite launching*
- USE **spacecraft launching**
- satellite lifetime**
 - GS life (durability)
 - . **satellite lifetime**
 - RT orbit decay
 - spacecraft reentry
- satellite maneuvers*
- USE **spacecraft maneuvers**
- satellite navigation systems**
 - GS **satellite navigation systems**
 - . Global Positioning System
 - . GLONASS
 - . Transit navigation system
 - RT autonomous navigation
 - navigation satellites
 - radar navigation
 - radio navigation
 - satellite constellations
 - space navigation
 - ∞ systems
- satellite networks**
 - SN (NETWORKS INCORPORATING SATELLITES)
 - GS networks
 - . **satellite networks**
 - . . Argos system
 - . . satellite constellations
 - . . . Constellation-X
 - . . . Iridium network
 - . . VSAT (network)
 - RT aeronautical satellites
 - Aerosat satellites
 - code division multiple access
 - communication networks
 - communication satellites
 - ComStar satellites
 - demand assignment multiple access
 - domestic satellite communications systems
 - formation flying
 - HET experiment
 - L-Sat
 - Marecs maritime satellites
 - military spacecraft
 - Molniya satellites
 - multimission modular spacecraft
 - navigation satellites
 - NAVSTAR satellites
 - network control
 - Skynet satellites
 - TDR satellites
 - teleconferencing
 - time division multiple access
- satellite observation**
 - SN (OBSERVATION OF THE EARTH BY SATELLITE)
 - GS observation
 - . Earth observations (from space)
 - . . **satellite observation**
- RT arc clouds
- Earth Resources Program
- Envisat-1 satellite
- EOS data and information system
- EROS (satellites)
- ESSA satellites
- FIRE (climatology)
- Glory Mission satellite
- GRACE mission
- IRIS satellites
- ISCCP Project
- Landsat satellites
- meteorological satellites
- METEOSAT satellite
- MISR (radiometry)
- Nimbus project
- Nimbus satellites
- satellite altimetry
- satellite imagery
- SIRS B satellite
- spaceborne photography
- Surface Meteorology and Solar Energy project
- Surface Radiation Budget project
- swath width
- Synchronous Earth Observatory satellite
- TIROS operational satellite system
- TIROS satellites
- TOPEX
- Uhuru satellite
- vegetative index
- Vela satellites
- wildlife radiolocation
- satellite oceans*
(added June 2001)
- USE **extraterrestrial oceans**
- satellite orbit calculation*
- USE **orbit calculation**
- satellite orbits**
 - SN (LIMITED TO ORBITS OF ARTIFICIAL SATELLITES)
 - GS orbits
 - . spacecraft orbits
 - . . **satellite orbits**
 - . . . geosynchronous orbits
 - . . . parking orbits
 - . . . stationary orbits
 - . . . twenty-four hour orbits
 - RT circular orbits
 - Earth orbits
 - elliptical orbits
 - equatorial orbits
 - Lissajous figures
 - low Earth orbits
 - lunar orbits
 - orbit insertion
 - orbit spectrum utilization
 - orbital mechanics
 - orbital position estimation
 - orbital resonances (celestial mechanics)
 - planetary orbits
 - retrograde orbits
 - transfer orbits
- satellite orientation**
 - GS attitude (inclination)
 - . **satellite orientation**
 - RT flexible spacecraft
 - image dissector tubes
 - spin stabilization
 - three axis stabilization
- satellite perturbation**
 - GS perturbation
 - . orbit perturbation
 - . . **satellite perturbation**
 - RT Discos (satellite attitude control)
 - gravitational fields
 - orbital mechanics
 - Schach effect
 - spacecraft stability
 - tesseral harmonics

satellite power transmission

satellite power transmission

(added November 1989)

- GS power beaming
 - . **satellite power transmission**
- RT laser power beaming
 - microwave power beaming
 - rectennas
 - solar arrays
 - solar cells
 - solar power satellites

satellite rendezvous

USE **orbital rendezvous**

satellite repair

USE **orbital servicing**

satellite rotation

- GS gyration
 - . rotation
 - . . **satellite rotation**
- RT flexible spacecraft
 - spin reduction
 - spin stabilization
 - tumbling motion
 - yo-yo devices

satellite solar energy conversion

- GS energy conversion
 - . **satellite solar energy conversion**
- RT ∞ conversion
 - microwave transmission
 - microwaves
 - power conditioning
 - solar cells
 - sun

satellite solar power stations

- RT energy conversion
 - microwave transmission
 - microwaves
 - power conditioning
 - solar cells
 - sun

satellite sounding

- GS sounding
 - . **satellite sounding**
- RT Advanced Microwave Sounding Unit
 - artificial satellites
 - atmospheric sounding
 - ionosondes
 - ionospheric sounding
 - meteorological satellites
 - radiosondes
 - rocket sounding
 - visible infrared spin scan radiometer

satellite surfaces

- SN (RESTRICTED TO NATURAL SATELLITES)
- DEF The crust and soil of natural satellites.
- GS **satellite surfaces**
 - . lunar surface
- RT craters
 - extraterrestrial oceans
 - icy satellites
 - Mercury surface
 - natural satellites
- ∞ surfaces
 - terrain analysis

satellite television

- GS communication equipment
 - . spacecraft television
 - . . **satellite television**
 - telecommunication
 - . spacecraft television
 - . . **satellite television**
 - television systems
 - . spacecraft television
 - . . **satellite television**
 - RT color television
 - direct broadcast satellites
 - meteorological satellites
 - space probes
 - stereotelevision
 - Symphonie satellites
 - television cameras
- television transmission

satellite temperature

- GS spacecraft temperature
 - . **satellite temperature**
 - temperature
 - . **satellite temperature**
- RT ambient temperature
 - radiative heat transfer
 - solar radiation shielding
 - spacecraft design
 - spacecraft environments
 - temperature distribution
 - temperature measurement
 - thermal environments

satellite tracking

- GS tracking (position)
 - . spacecraft tracking
 - . . **satellite tracking**
 - . . . satellite-to-satellite tracking
- RT cinetheodolites
 - Global Tracking Network
 - International Satellite Geodesy Experiment
 - laser target designators
 - minitrack system
 - optical satellite tracking program
 - orbit determination
 - photographic tracking
 - range and range rate tracking
 - Samos
 - satellite doppler positioning
 - satellite laser ranging
 - Space Flight Tracking and Data Network
 - STDN (network)
 - tracking networks
 - tracking stations
 - transponder control group

Satellite Tracking and Data Acq Network

USE **STDN (network)**

satellite transmission

- GS transmission
 - . signal transmission
 - . . **satellite transmission**
- RT Aloha system
 - binary phase shift keying
 - code division multiplexing
 - data transmission
 - direct broadcast satellites
 - domestic satellite communications systems
 - downlinking
 - Earth terminals
 - frequency division multiplexing
 - frequency reuse
 - MSAT
 - multiplexing
 - pulse communication
 - quadrature phase shift keying
 - radio transmission
 - single channel per carrier transmission
 - spacecraft television
 - TDR satellites
 - television transmission
 - uplinking

satellite-borne instruments

- GS measuring instruments
 - . **satellite-borne instruments**
 - . . Advanced Microwave Sounding Unit
 - . . Advanced Very High Resolution Radiometer
 - . . AMPS (satellite payload)
 - . . MISR (radiometry)
 - . . Total Ozone Mapping Spectrometer
- RT AMPTE (satellites)
 - data products
 - DIAL satellite
 - infrared radiometers
 - instrument packages
- ∞ instruments
 - OPEN Project
 - particle telescopes
 - radiation detectors

- remote sensors
- Sea-viewing Wide Field-of-view Sensor
- single event upsets
- Solar Backscatter UV Spectrometer
- visible infrared spin scan radiometer

satellite-borne photography

- GS imagery
 - . photography
 - . . spaceborne photography
 - . . . **satellite-borne photography**
- RT aerial photography
 - astronomical photography
 - black and white photography
 - DMSP satellites
 - forest fire detection
 - geographic applications program
 - infrared photography
 - Mars photographs
 - photomapping
 - photomaps
 - rocket-borne photography
 - satellite imagery
 - space surveillance (spaceborne)
 - spectral reconnaissance
 - timber inventory

satellite-borne radar

- GS radar
 - . **satellite-borne radar**
- RT Envisat-1 satellite
 - radar detection
 - satellite altimetry
 - search radar
 - surveillance radar
 - synthetic aperture radar
 - tracking radar

∞ satellites

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Any objects, man-made or natural, that orbit celestial bodies.
- RT artificial satellites
 - natural satellites
- ∞ spacecraft

satellite-to-satellite tracking

- GS tracking (position)
 - . spacecraft tracking
 - . . satellite tracking
 - . . . **satellite-to-satellite tracking**
- RT space surveillance (spaceborne)
 - tracking networks

saturnable reactors

- UF *SR (reactors)*
- GS electric reactors
 - . **saturnable reactors**
- RT magnet coils
 - magnetic amplifiers
 - magnetic circuits
 - magnetic cores
 - magnetic switching
 - power reactors
 - transformers

saturated hydrocarbons

USE **alkanes**

∞ saturation

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT concentration (composition)
 - condensing
 - crowding
 - desaturation
 - penetration
 - permeating
 - precipitation (chemistry)
 - precipitation (meteorology)
 - unsaturation (chemistry)
 - wetting

saturation (chemistry)

DEF The state of a solution when it holds the maximum equilibrium quantity of dissolved matter at a given temperature.

Saturn launch vehicles

- RT RL-10-A-3 engine
 - Saturn launch vehicles**
 - GS launch vehicles
 - Saturn launch vehicles**
 - . . Saturn 1 launch vehicles
 - . . . Saturn 1 SA-1 launch vehicle
 - . . . Saturn 1 SA-10 launch vehicle
 - . . . Saturn 1 SA-2 launch vehicle
 - . . . Saturn 1 SA-3 launch vehicle
 - . . . Saturn 1 SA-4 launch vehicle
 - . . . Saturn 1 SA-5 launch vehicle
 - . . . Saturn 1 SA-6 launch vehicle
 - . . . Saturn 1 SA-7 launch vehicle
 - . . . Saturn 1 SA-8 launch vehicle
 - . . . Saturn 1 SA-9 launch vehicle
 - . . Saturn 1B launch vehicles
 - . . Saturn 2 launch vehicles
 - . . Saturn 5 launch vehicles
 - . . Saturn D launch vehicle
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **Saturn launch vehicles**
 - . . . Saturn 1 launch vehicles
 - Saturn 1 SA-1 launch vehicle
 - Saturn 1 SA-10 launch vehicle
 - Saturn 1 SA-2 launch vehicle
 - Saturn 1 SA-3 launch vehicle
 - Saturn 1 SA-4 launch vehicle
 - Saturn 1 SA-5 launch vehicle
 - Saturn 1 SA-6 launch vehicle
 - Saturn 1 SA-7 launch vehicle
 - Saturn 1 SA-8 launch vehicle
 - Saturn 1 SA-9 launch vehicle
 - . . . Saturn 1B launch vehicles
 - . . . Saturn 2 launch vehicles
 - . . . Saturn 5 launch vehicles
 - . . . Saturn D launch vehicle
 - RT Apollo project
 - F-1 rocket engine
 - RL-10 engines
 - ∞ vehicles
- Saturn project**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Saturn project**
 - . projects
 - . . **Saturn project**
 - . space programs
 - . . NASA space programs
 - . . . **Saturn project**
 - RT Apollo applications program
 - Apollo spacecraft
 - Centaur launch vehicle
 - launch vehicles
 - lunar launch
 - Pegasus satellites
 - RIFT (reactor in flight test)
 - ∞ Saturn
 - Voyager project
- Saturn rings**
 - GS celestial bodies
 - . planetary rings
 - . . **Saturn rings**
 - RT gas giant planets
 - Jupiter rings
 - moonlets
 - natural satellites
 - planetary atmospheres
 - planetary composition
 - planetary surfaces
 - planetary temperature
 - planetology
 - planets
 - ∞ rings
 - solar system
 - Uranus rings
- Saturn S-1 stage**
 - GS rocket vehicles
 - . Saturn stages
 - . . **Saturn S-1 stage**
 - RT liquid propellant rocket engines
- Saturn S-1B stage**
 - GS rocket vehicles
 - . Saturn stages
 - . . **Saturn S-1B stage**
 - RT liquid propellant rocket engines
- . . **Saturn S-1B stage**
 - RT liquid propellant rocket engines
- Saturn S-1C stage**
 - GS rocket vehicles
 - . Saturn stages
 - . . **Saturn S-1C stage**
 - RT liquid propellant rocket engines
- Saturn S-2 stage**
 - GS rocket vehicles
 - . Saturn stages
 - . . **Saturn S-2 stage**
 - RT liquid propellant rocket engines
- Saturn S-4 stage**
 - GS rocket vehicles
 - . Saturn stages
 - . . **Saturn S-4 stage**
 - RT liquid propellant rocket engines
- Saturn S-4B stage**
 - GS rocket vehicles
 - . Saturn stages
 - . . **Saturn S-4B stage**
 - RT liquid propellant rocket engines
- Saturn satellites**
 - DEF The natural satellites of the planet Saturn.
 - GS celestial bodies
 - . natural satellites
 - . . **Saturn satellites**
 - . . . Calypso
 - . . . Dione
 - . . . Enceladus
 - . . . Epimetheus
 - . . . Helene
 - . . . Hyperion
 - . . . Iapetus
 - . . . Janus
 - . . . Mimas
 - . . . Pandora
 - . . . Phoebe
 - . . . Prometheus
 - . . . Rhea (astronomy)
 - . . . Telesto
 - . . . Tethys
 - . . . Titan
 - RT icy satellites
- Saturn stages**
 - GS rocket vehicles
 - . **Saturn stages**
 - . . Saturn S-1 stage
 - . . Saturn S-1B stage
 - . . Saturn S-1C stage
 - . . Saturn S-2 stage
 - . . Saturn S-4 stage
 - . . Saturn S-4B stage
 - RT liquid propellant rocket engines
- Saturn workshops**
 - GS artificial satellites
 - . orbital workshops
 - . . **Saturn workshops**
 - . . . Saturn 1 workshop
 - . . . Saturn 5 workshop
 - manned spacecraft
 - . orbital workshops
 - . . **Saturn workshops**
 - . . . Saturn 1 workshop
 - . . . Saturn 5 workshop
 - RT airlock modules
 - Apollo applications program
 - Apollo project
 - multiple docking adapters
 - Skylab program
 - space stations
- Saudi Arabia**
 - GS nations
 - . **Saudi Arabia**
 - RT Asia
 - Saudi Arabian space program
- Saudi Arabian space program**
 - GS programs
 - . space programs
 - . . **Saudi Arabian space program**
- RT Arabsat
- Arcomsat
- Saudi Arabia
- Space Shuttle mission 51-G
- Savage aircraft*
- USE **A-2 aircraft**
- Savannah nuclear ship**
 - GS surface vehicles
 - . cargo ships
 - . . **Savannah nuclear ship**
 - . nuclear powered ships
 - . . **Savannah nuclear ship**
 - . water vehicles
 - . ships
 - . . cargo ships
 - . . . **Savannah nuclear ship**
 - . nuclear powered ships
 - . . . **Savannah nuclear ship**
 - RT marine propulsion
 - nuclear propulsion
- savannahs*
- USE **grasslands**
- S-A-W devices*
- USE **surface acoustic wave devices**
- saws**
 - GS cutters
 - . **saws**
 - tools
 - . **saws**
 - RT machine tools
 - shears
- sawtooth waveforms**
 - GS waveforms
 - . **sawtooth waveforms**
 - RT pulse amplitude
 - pulse duration
 - square waves
- SC-1 aircraft**
 - UF *Short SC-1 aircraft*
 - GS jet aircraft
 - . **SC-1 aircraft**
 - monoplanes
 - . **SC-1 aircraft**
 - research vehicles
 - . research aircraft
 - . . **SC-1 aircraft**
 - tailless aircraft
 - . **SC-1 aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **SC-1 aircraft**
 - RT ∞ aircraft
- SC-5 aircraft**
 - UF *Belfast aircraft*
 - Short Belfast C MK-1 aircraft*
 - Short SC-5 aircraft*
 - GS jet aircraft
 - . turboprop aircraft
 - . . **SC-5 aircraft**
 - monoplanes
 - . **SC-5 aircraft**
 - transport aircraft
 - . **SC-5 aircraft**
 - RT ∞ aircraft
- SC-7 aircraft**
 - UF *Short SC-7 aircraft*
 - Skyvan aircraft*
 - Turbo-Skyvan aircraft*
 - GS light aircraft
 - . **SC-7 aircraft**
 - monoplanes
 - . **SC-7 aircraft**
 - transport aircraft
 - . **SC-7 aircraft**
 - RT ∞ aircraft
 - cargo aircraft

passenger aircraft

RT tensor analysis

optical equipment

*scalar magnetic charge*USE **magnetic charge density****scalars**

DEF Any physical quantity whose field can be described by a single numerical value at each point in space.

RT tensor analysis
tensors∞ **scale**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT scale (corrosion)
scale (ratio)
temperature scales
weight indicators**scale (corrosion)**GS corrosion
. **scale (corrosion)**
RT chemical attack
degradation
descaling
hot corrosion
pickling (metallurgy)
rusting
∞ scale
∞ scaling**scale (ratio)**GS ratios
. **scale (ratio)**
RT mapping
reticles
∞ scale**scale effect**

DEF Any variation in the nature of the flow and in the force coefficients associated with a change in value of the Reynolds number, i.e., caused by change in size without change in shape.

RT ∞ effects
force distribution
multiscale models
parameterization
Reynolds number
∞ scaling**scale height**

DEF A measure of the relationship between density and temperature at any point in the atmosphere.

GS dimensions
. height
. . **scale height**
RT Earth atmosphere
geopotential height
head (fluid mechanics)**scale models**

DEF Three-dimensional representations of objects or structures containing all parts in the same proportion as their true size.

GS models
. **scale models**
RT aerodynamic configurations
aircraft models
multiscale models
Reynolds equation
scaling laws
semispan models
similarity theorem
similitude law
spacecraft models
wind tunnel models**scalars**

DEF Devices that produce output pulses whenever a prescribed number of input pulses have been received.

GS circuits
. counting circuits
. . **scalars**∞ **scaling**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT calibrating
errors
scale (corrosion)
scale effect
scaling laws**scaling laws**GS laws
. **scaling laws**
RT dimensional analysis
dimensionless numbers
scale models
∞ scaling
similarity numbers
wind tunnel calibration**scaloping**RT edges
electron beams
traveling wave tubes**Scandinavia**RT Denmark
Finland
Norway
Sweden**scandium**GS chemical elements
. rare earth elements
. . **scandium**
. . . scandium isotopes
metals
. rare earth elements
. . **scandium**
. . . scandium isotopes
. transition metals
. . **scandium**
. . . scandium isotopes*scandium 46*USE **scandium isotopes****scandium compounds**GS rare earth compounds
. **scandium compounds**
. . scandium oxides
RT ∞ chemical compounds
∞ Group 3B compounds
∞ metal compounds**scandium isotopes**UF *scandium 46*
GS chemical elements
. nuclides
. . isotopes
. . . **scandium isotopes**
. rare earth elements
. . scandium
. . . **scandium isotopes**
metals
. rare earth elements
. . scandium
. . . **scandium isotopes**
. transition metals
. . scandium
. . . **scandium isotopes****scandium oxides**GS chalcogenides
. oxides
. . metal oxides
. . . **scandium oxides**
rare earth compounds
. scandium compounds
. . **scandium oxides****Scanner project**GS programs
. projects
. . **Scanner project**
RT horizon scanners
infrared scanners**scanners**

DEF Radar mechanisms incorporating such things as rotatable antennas, radiators, motor drives, or mountings for directing a searching radar beam through space and imparting target information to an indicator. Used for scanning devices.

UF *scanning devices*GS **scanners**
. horizon scanners
. infrared scanners
. ocean color scanner
. . Coastal Zone Color Scanner
. . Sea-viewing Wide Field-of-view
Sensor. . optical scanners
. . flying spot scanners
. . multispectral band scanners
. . . thematic mappers (LANDSAT)
. ultrasonic scannersRT conical scanning
optical data processing
optical equipment
panoramic scanning
reading
scanning
subreflectors**scanning**

DEF In radar, the motion of the antenna assembly when searching for targets.

GS **scanning**. conical scanning
. frequency scanning
. panoramic scanning
. radar scanning
. raster scanningRT Earth resources
EROS (satellites)
examination
monitors
multispectral band scanners
rapid ballistics identification
reading
scanners
searching
surveillance
ultrasonic scanners*scanning devices*USE **scanners****scanning electron microscopy***(added September 1992)*

DEF A type of electron microscopy in which a beam of electrons, a few hundred angstroms in diameter, systematically sweeps over the specimen. The intensity of secondary electrons generated at the point of impact of the beam on the specimen is measured and the resulting signal is fed into a cathode-ray-tube display which is scanned in synchronism with the scanning of the specimen.

UF *SEM (microscopy)*GS microscopy
. electron microscopy
. . **scanning electron microscopy**RT electron beams
electron microscopes
field emission
ion microscopes
magnetic lenses
microanalysis
phase contrast
secondary emission*scanning laser acoustic microscope (SLAM)*USE **acoustic microscopes****scanning tunneling microscopy***(added October 1988)*GS microscopy
. electron microscopy
. . **scanning tunneling microscopy**
RT electron microscopes
electron tunneling
nanofabrication

scapula

transmission electron microscopy

scapula

- GS anatomy
 - . musculoskeletal system
 - . . bones
 - . . . **scapula**
- RT arm (anatomy)
 - shoulders

SCAR program

USE **supersonic cruise aircraft research**

scarf joints

(added March 1998)

DEF A joint in which the overlapping parts are tapered to form a continuous length, with no increase in dimension at the joint.

- GS joints (junctions)
 - . **scarf joints**

- RT bolted joints
 - bonded joints
 - lap joints
 - metal joints
 - scarfing

scarfing

- GS cutting
 - . **scarfing**
- RT cleaning
 - grinding (material removal)
 - metal cutting
 - scarf joints
 - slicing

scarp

USE **escarpments**

scars

- GS tissues (biology)
 - . **scars**

scars (geology)

USE **erosion**

SCAT

USE **supersonic commercial air transport**

SCATHA satellite

DEF Satellite for investigating spacecraft charging at high altitudes. A joint NASA-Air Force venture. Used for P78-2 satellite.

UF *P78-2 satellite*
Spacecraft Charging at High Altitude

- GS artificial satellites
 - . scientific satellites
 - . . **SCATHA satellite**

- RT ∞ charging
 - electric charge
 - electromagnetic interference
 - electrostatic charge
 - electrostatic probes
 - electrostatic shielding
 - high energy electrons

scatter plates (optics)

DEF Holograms of diffusing screens for scattering incident light by the process of diffraction.

- GS optical equipment
 - . **scatter plates (optics)**
- RT beam splitters
 - coherent light
 - holographic interferometry
 - holography
 - interferometry
 - light scattering
- ∞ optics
- ∞ plates
 - speckle holography
 - speckle interferometry

scatter propagation

DEF Specifically, the long-range propagation of radio signals by scattering due to index of refraction inhomogeneities in the lower atmosphere.

- GS transmission
 - . electromagnetic wave transmission
 - . . **scatter propagation**

- . . . ionospheric F-scatter propagation
- . wave propagation
- . . **scatter propagation**
- . . . ionospheric F-scatter propagation
- RT backscattering
 - forward scattering
 - ionospheric propagation
 - meteor trails
 - radio reception
 - radio scattering
 - radio transmission
 - radio waves

scatterers

USE **scattering**

scattering

DEF The process by which small particles suspended in a medium of a different index of diffraction diffuse a portion of the incident radiation in all directions. In scattering, no energy transformation results, only a change in the spatial distribution of the radiation. Used for scatterers.

UF *scatterers*

GS **scattering**

- . backscattering
- . coherent scattering
- . Compton effect
- . elastic scattering
- . electron scattering
- . . electron runaway (plasma physics)
- . forward scattering
- . incoherent scattering
- . inelastic scattering
- . inverse scattering
- . ion scattering
- . nuclear scattering
- . . neutron scattering
- . . resonance scattering
- . nucleon-nucleon scattering
- . proton scattering
- . radar scattering
- . radio scattering
 - . . microwave scattering
 - . wave scattering
 - . . acoustic scattering
 - . . . reverberation
 - . . atmospheric scattering
 - . . . tropospheric scattering
 - . . electromagnetic scattering
 - . . . ionospheric F-scatter propagation
 - . . . light scattering
 - halos
 - . . . microwave scattering
 - . . . Mie scattering
 - Rayleigh scattering
 - . . . Raman spectra
 - . . . Thomson scattering
 - . . . x ray scattering

- RT atomic collisions
 - bistatic reflectivity
 - circumsolar radiation
 - collision parameters
 - collisions
 - deep scattering layers
 - deflection
 - diffusion
 - dispersing
 - electromagnetic radiation
 - encounters
 - Huygens principle
 - impingement
 - incident radiation
 - inelastic collisions
 - mean free path
 - particle collisions
 - pomerons
 - reflection
 - releasing
 - scatterometers
 - shock wave interaction
 - spread reflection
 - spreading
 - sprinkling
 - statistical distributions
 - transmittance
 - wave degradation
 - wave dispersion

wave interaction

scattering amplitude

- GS amplitudes
 - . **scattering amplitude**
- RT Faddeev equations
 - Mandelstam representation
 - wave scattering

scattering coefficients

DEF Measures of the attenuation due to scattering of radiation as it traverses a medium containing scattering particles.

- GS coefficients
 - . **scattering coefficients**
- RT absorptivity
 - attenuation coefficients
 - form factors

scattering cross sections

DEF The hypothetical areas normal to the incident radiation that would geometrically intercept the total amount of radiation actually scattered by a scattering particle. They are also defined, equivalently, as the cross section areas of isotropic scatterers (spheres) which would scatter the same amount of radiation as the actual amount.

- RT absorption cross sections
 - baryon resonance
 - Born approximation
 - ∞ cross sections
 - electron runaway (plasma physics)
 - ionization cross sections
 - neutron cross sections
 - Pomeranchuk theorem
 - pomerons
 - Ramsauer effect
 - Regge poles
 - S matrix theory
 - stopping power

scattering functions

DEF The intensities of scattered radiation in a given direction per lumen of flux incident upon the scattering material.

- RT flux density
 - ∞ functions
 - radiant flux density

scattering matrix

USE **S matrix theory**

scatterometers

- GS measuring instruments
 - . **scatterometers**
- RT ∞ instruments
 - microwave scattering
 - microwaves
 - QuikSCAT satellite
 - radar
 - radar scattering
 - scattering
 - wave scattering

scavenging

- RT cleaning
 - degassing
 - deoxidizing
 - purification

SCCF

USE **Solar Cell Calibration Facility**

scene analysis

- GS data processing
 - . **scene analysis**
- RT change detection
 - character recognition
 - edge detection
 - Feature Identification and Location
 - Exper
 - image analysis
 - imagery
 - imaging techniques
 - optical flow (image analysis)

- video landmark acquisition and tracking
- scene generation**
(added July 1998)
GS imaging techniques
 . **scene generation**
 simulation
 . **scene generation**
RT computer graphics
flight simulation
image reconstruction
scientific visualization
target simulators
- scenedesmus**
GS plants (botany)
 . algae
 . . **scenedesmus**
- SCF*
USE **self consistent fields**
- Schach effect**
DEF When a slowly or nonrotating satellite is heated on its sunward side, the photons of thermal radiation carry away more momentum from the hot sunward side than the cold shadowed side, thereby giving the satellite a certain net acceleration in the direction away from the sun. This effect was discovered by Milton Schach in the course of an investigation of unknown perturbations in the LAGEOS satellite.
RT celestial mechanics
∞ effects
 orbit perturbation
 perturbation
 satellite perturbation
- Schauder fixpoint theorem**
GS theorems
 . **Schauder fixpoint theorem**
RT complex variables
differential equations
- schedules**
GS **schedules**
 . countdown
RT contract management
precision
predictions
production planning
time
time lag
turnaround (STS)
- scheduling**
GS **scheduling**
 . prediction analysis techniques
 . programming (scheduling)
 . . thrust programming
 . observation scheduling
RT calendars
consecutive events
continuity
∞ control
 crop calendars
 decision theory
 forecasting
 lateness
 mathematical models
 matrix management
 mission planning
 optimization
 production engineering
 quality control
 sequencing
 task complexity
 task planning (robotics)
 tasks
 time series analysis
- scheelite**
GS calcium compounds
 . **scheelite**
 chalcogenides
 . oxides
 . . metal oxides
 . . . tungsten oxides
 . . . **scheelite**
- minerals
 . **scheelite**
 tungsten compounds
 . tungsten oxides
 . . **scheelite**
- Schelkunoff principle**
RT antenna radiation patterns
horn antennas
Huygens principle
reflectometers
reflectors
- schematics*
USE **circuit diagrams**
- Schiff bases*
USE **imines**
- schist**
DEF A strongly foliated crystalline rock formed by dynamic metamorphism which can be readily split into thin flakes or slabs due to the well developed parallelism of more than 508 of the minerals present.
GS rocks
 . **schist**
RT limestone
sandstones
- schizophrenia**
GS psychoses
 . **schizophrenia**
RT ∞ depression
irrationality
mental health
- Schleicher aircraft**
RT ∞ aircraft
gliders
- Schlieren photography**
DEF A method of photography for flow patterns that takes advantage of the fact that light passing through a density gradient in a gas is refracted as though it were passing through a prism.
GS imagery
 . photography
 . . shadowgraph photography
 . . . **Schlieren photography**
RT black and white photography
differential interferometry
flow visualization
Mach-Zehnder interferometers
Moire effects
- Schmidt cameras**
GS optical equipment
 . cameras
 . . **Schmidt cameras**
 photographic equipment
 . cameras
 . . **Schmidt cameras**
RT astronomical photography
Baker-Nunn camera
telescopes
- Schmidt method**
RT differential equations
integral equations
∞ methodology
real variables
- Schmidt number**
GS dimensionless numbers
 . **Schmidt number**
 ratios
 . **Schmidt number**
RT Nusselt number
Prandtl number
- Schmidt telescopes**
GS telescopes
 . **Schmidt telescopes**
RT reflecting telescopes
- schools**
RT education
instructors
training evaluation
- universities
- schools (fish)**
GS animals
 . vertebrates
 . . fishes
 . . . **schools (fish)**
RT fishing
ichthyology
- Schottky barrier diodes*
USE **Schottky diodes**
- Schottky diodes**
UF *Schottky barrier diodes*
GS electronic equipment
 . diodes
 . . semiconductor diodes
 . . . **Schottky diodes**
 . solid state devices
 . . semiconductor devices
 . . . **Schottky diodes**
RT ∞ barriers
 Barritt diodes
 gallium arsenides
 MSM (semiconductors)
 n-type semiconductors
 semiconductor junctions
 silicon
 SIS (semiconductors)
 work functions
 zinc selenides
- Schottky effect*
USE **work functions**
- schreibersite**
GS iron compounds
 . **schreibersite**
 minerals
 . **schreibersite**
 nickel compounds
 . **schreibersite**
 phosphorus compounds
 . phosphides
 . . **schreibersite**
RT iron meteorites
meteoritic composition
stony meteorites
- Schroedinger equation**
GS wave equations
 . **Schroedinger equation**
RT ∞ equations
Wentzel-Kramer-Brillouin method
- Schuler tuning**
DEF Adjusting a system performing the function of a pendulum so that it has a period of 84 minutes.
GS tuning
 . **Schuler tuning**
RT gyroscopic pendulums
gyroscopic stability
inertial navigation
- Schumann-Runge bands**
GS spectra
 . spectral bands
 . . **Schumann-Runge bands**
RT absorption spectra
∞ bands
 emission spectra
 Herzberg bands
 oxygen
 quantum theory
- Schwartz inequality**
GS inequalities
 . **Schwartz inequality**
RT algebra
linear transformations
vectors (mathematics)
- Schwartz method**
GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **Schwartz method**
 stress analysis

Schwarz-Christoffel transformation

- . **Schwartz method**
- RT ∞ methodology
- Schwarz-Christoffel transformation**
- GS analysis (mathematics)
 - . complex variables
 - . . **Schwarz-Christoffel transformation**
 - functions (mathematics)
 - . **Schwarz-Christoffel transformation**
- RT conformal mapping
- Schwarzschild antennas**
- GS antennas
 - . **Schwarzschild antennas**
- RT horns
 - parabolic reflectors
 - radar antennas
 - radio antennas
- Schwarzschild metric**
- RT bimetric theories
 - coordinate transformations
 - escape velocity
 - event horizon
 - gravitational fields
 - ionization
 - light speed
 - orbitals
 - orbits
 - relativity
- Schwassmann-Wachmann comet**
- GS celestial bodies
 - . comets
 - . . **Schwassmann-Wachmann comet**
- RT Comet Nucleus Tour
 - solar system
- sciatic region**
- GS anatomy
 - . **sciatic region**
 - regions
 - . **sciatic region**
- RT human body
 - lumbar region
 - musculoskeletal system
 - nerves
 - spine
- ∞ **science**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT acoustics
 - aeroacoustics
 - aerodynamics
 - ∞ aeronautics
 - aerospace medicine
 - aerothermodynamics
 - algebra
 - anthropology
 - astrodynamics
 - astronomy
 - astrophysics
 - atmospheric physics
 - atomic physics
 - bioacoustics
 - bioastronautics
 - biodynamics
 - ∞ biology
 - biophysics
 - botany
 - cloud physics
 - combustion physics
 - computational astrophysics
 - electrophysics
 - electrophysiology
 - entomology
 - fluid dynamics
 - fluid mechanics
 - geology
 - geometry
 - geophysics
 - health physics
 - heliogeology
 - hydrogeology
 - hydromechanics
 - life sciences
 - low temperature physics
 - marine biology
 - marine chemistry
 - marine meteorology
 - ∞ materials science
 - ∞ mathematics
 - medical science
 - ∞ metallurgy
 - meteorology
 - ∞ molecular physics
 - neurophysiology
 - neutron physics
 - nuclear physics
 - oceanography
 - ∞ optics
 - ∞ physical sciences
 - ∞ physics
 - physiochemistry
 - physiology
 - plasma physics
 - polymer physics
 - psychophysics
 - psychophysiology
 - radio astronomy
 - radio physics
 - reactor physics
 - reentry physics
 - respiratory physiology
 - seismology
 - solar diameter
 - solar physics
 - solid mechanics
 - ∞ solid state physics
 - stellar physics
 - sunrise
 - sunset
 - taxonomy
 - theoretical physics
 - trigonometry
 - underwater physiology
 - ∞ zoology
- scientific instrument modules*
- USE **SIM**
- scientific satellites**
- GS artificial satellites
 - . **scientific satellites**
 - . . AMPTE (satellites)
 - . . astronomical satellites
 - . . . Astronomical Netherlands Satellite
 - . . . Gamma Ray Observatory
 - . . . Ginga satellite
 - . . . HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - HEAO 4
 - . . . Hubble Space Telescope
 - . . . Infrared Astronomy Satellite
 - . . . Infrared Space Observatory (ISO)
 - . . . IUE
 - . . . Large Deployable Reflector
 - . . . Magellan ultraviolet astronomy satellite
 - . . . OAO
 - OAO 1
 - OAO 2
 - OAO 3
 - . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - . . . Quasat
 - . . . SAS
 - Explorer 53 satellite
 - SAS-1
 - SAS-2
 - SAS-3
 - . . . Constellation-X
 - . . . Fermi Gamma-ray Space Telescope
 - . . . James Webb Space Telescope
 - . . . LISA (observatory)
 - . . . Space Infrared Telescope Facility
 - . . . Spartan satellites
 - . . . Submillimeter Wave Astronomy Satellite
 - . . . Swift observatory
 - . . . Tenma satellite
 - . . . X Ray Astrophysics Facility
 - . . . XMM-Newton telescope
 - . . . ATS
 - ATS 1
 - ATS 2
 - ATS 3
 - ATS 4
 - ATS 5
 - ATS 6
 - ATS 7
 - ATS 8
 - . . . Azur satellite
 - . . . Cannonball 2 satellite
 - . . . CRRES (satellite)
 - . . . DIAL satellite
 - . . . Environmental Research Satellites
 - ERS 17
 - ERS 18
 - Intasat satellite
 - . . . EXOS satellites
 - EXOS-A satellite
 - EXOS-B satellite
 - EXOS-C satellite
 - EXOS-D satellite
 - . . . Exosat satellite
 - . . . Explorer satellites
 - Applications Explorer Satellites
 - Cosmic Background Explorer satellite
 - Dual Air Density Explorer
 - . . . Dynamics Explorer satellites
 - Dynamics Explorer 1 satellite
 - Dynamics Explorer 2 satellite
 - . . . Explorer 1 satellite
 - . . . Explorer 2 satellite
 - . . . Explorer 3 satellite
 - . . . Explorer 4 satellite
 - . . . Explorer 5 satellite
 - . . . Explorer 6 satellite
 - . . . Explorer 7 satellite
 - . . . Explorer 8 satellite
 - . . . Explorer 9 satellite
 - . . . Explorer 10 satellite
 - . . . Explorer 11 satellite
 - . . . Explorer 12 satellite
 - . . . Explorer 14 satellite
 - . . . Explorer 15 satellite
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 - . . . Explorer 48 satellite
 - . . . Explorer 49 satellite
 - . . . Explorer 50 satellite

- ... Explorer 51 satellite
 - ... Explorer 52 satellite
 - ... Explorer 53 satellite
 - ... Explorer 54 satellite
 - ... Explorer 55 satellite
 - ... Extreme Ultraviolet Explorer satellite
 - ... Far UV Spectroscopic Explorer
 - ... IMP
 - ... International Magnetospheric Explorer
 - ... International Sun Earth Explorers
 - ... International Sun Earth Explorer 1
 - ... International Sun Earth Explorer 2
 - ... International Sun Earth Explorer 3
 - ... Advanced Composition Explorer
 - ... IMAGE satellite
 - ... Micrometeoroid Explorer satellites
 - ... Radio Astronomy Explorer satellite
 - ... Solar Mesosphere Explorer
 - ... Submillimeter Wave Astronomy Satellite
 - ... Transition Region and Coronal Explorer
 - ... Uhuru satellite
 - ... X Ray Timing Explorer
 - ... Geopotential Research Mission
 - ... Hawkeye satellites
 - ... Long Duration Exposure Facility
 - ... LZEEBE satellite
 - ... MagSat satellites
 - ... MagSat 1 satellite
 - ... Magsat A satellite
 - ... MagSat B satellite
 - ... ORBIS
 - ... ORBIS CAL satellite
 - ... OV-1 satellites
 - ... OV-2 satellites
 - ... OV-3 satellites
 - ... OV-4 satellites
 - ... OV-5 satellites
 - ... SCATHA satellite
 - ... small scientific satellites
 - ... Submillimeter Wave Astronomy Satellite
 - ... Transition Region and Coronal Explorer
 - ... UK satellites
 - ... Ariel 4 satellite
 - ... Ariel 5 satellite
 - ... Miranda satellite
 - ... UK 4 satellite
 - ... Aqua spacecraft
 - ... Aura spacecraft
 - ... CALIPSO (Pathfinder satellite)
 - ... CloudSat
 - ... Glory Mission satellite
 - ... Ice, Cloud and Land Elevation Satellite
 - ... Polar/GGS spacecraft
 - ... QuikSCAT satellite
 - ... TRMM satellite
 - ... Upper Atmosphere Research Satellite (UARS)
 - ... Wind/GGS spacecraft
 - RT Canadian space program
 - Cluster Mission
 - EOS data and information system
 - ESRO 4 satellite
 - SOHO Mission
 - technology feasibility spacecraft
- scientific visualization**
(added July 1993)
- UF *data visualization*
 - GS information analysis
 - . **scientific visualization**
 - ... numerical flow visualization
 - RT computer graphics
 - computerized simulation
 - display devices
 - image processing
 - Mission to Planet Earth
 - scene generation
- software development tools
- scintillating fibers**
(added December 1992)
- UF *scintillation fibers*
 - GS fibers
 - . optical fibers
 - ... **scintillating fibers**
 - optical materials
 - . optical fibers
 - ... **scintillating fibers**
 - waveguides
 - . optical waveguides
 - ... optical fibers
 - ... **scintillating fibers**
 - RT calorimeters
 - cosmic rays
 - fiber optics
 - gamma ray spectrometers
 - gamma ray telescopes
 - gamma rays
 - hodoscopes
 - photomultiplier tubes
 - radiation counters
 - scintillation
 - scintillation counters
- scintillation**
- DEF Generic term for rapid variations in apparent position, brightness, or color of a distant luminous object viewed through the atmosphere. A flash of light produced in a phosphor by an ionizing event. On a radar display, a rapid apparent displacement of the target from its mean position.
 - RT glint
 - phosphorescence
 - scintillating fibers
 - seeing (astronomy)
- scintillation counters**
- DEF The combinations of phosphor, photomultiplier tube, and associated circuits for counting scintillations. Used for scintillators and scintillometers.
 - UF *scintillators*
 - scintillometers*
 - GS measuring instruments
 - . counters
 - ... radiation counters
 - ... **scintillation counters**
 - . radiation measuring instruments
 - ... radiation counters
 - ... **scintillation counters**
 - RT anticoincidence detectors
 - Cerenkov counters
 - neutron counters
 - particle telescopes
 - photomultiplier tubes
 - photopeak
- scintillating fibers**
- GS manpower
 - . **scientists**
 - personnel
 - . **scientists**
 - RT awards
 - engineers
- Scimitar aircraft**
- UF *Vickers Scimitar aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - ... **Scimitar aircraft**
 - BAC aircraft
 - . **Scimitar aircraft**
 - jet aircraft
 - . **Scimitar aircraft**
 - monoplanes
 - . **Scimitar aircraft**
 - RT ∞ aircraft
- scintillating fibers**
- RT ∞ aircraft
- scintillating fibers**
- scintillating fibers
 - USE **scintillating fibers**
- scintillators**
- USE **scintillation counters**
- scintillometers**
- USE **scintillation counters**
- scission**
- USE **cleavage**
- scoops**
- RT air intakes
 - conveyors
 - ducts
 - intake systems
 - nose inlets
 - side inlets
 - ∞ water intakes
- scopolamine**
- USE **hyoscine**
- SCORE omnirange**
- USE **self calibrating omnirange**
- SCORE satellite**
- GS artificial satellites
 - . **SCORE satellite**
- scoring**
- UF *scribing*
 - RT abrasion
 - defects
 - friction
 - pitting
 - wear
- Scorpio constellation**
- USE **Scorpius constellation**
- Scorpius constellation**
- UF *Scorpio constellation*
 - GS constellations
 - . **Scorpius constellation**
 - RT zodiac
- Scotchlite (trademark)**
- RT membrane structures
 - refractory materials
- Scotland**
- GS nations
 - . United Kingdom
 - ... **Scotland**
 - RT Europe
- Scout helicopter**
- USE **P-531 helicopter**
- Scout launch vehicle**
- GS launch vehicles
 - . **Scout launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - ... **Scout launch vehicle**
 - RT Algol engine
 - Explorer 9 satellite
 - Explorer 16 satellite
 - Explorer 19 satellite
 - Explorer 20 satellite
 - Explorer 22 satellite
 - Explorer 23 satellite
 - Explorer 24 satellite
 - Explorer 25 satellite
 - Explorer 27 satellite
 - Explorer 30 satellite
 - Explorer 37 satellite
 - Explorer 39 satellite
 - Explorer 40 satellite
 - San Marco satellites
 - solid propellant rocket engines
 - TX-354 engine
 - X-248 engine
 - X-254 engine
 - X-258 engines
 - X-259 engine

Scout project

- XM-33 engine
- Scout project**
 - GS programs
 - . NASA programs
 - . . . NASA space programs
 - **Scout project**
 - . projects
 - . . . **Scout project**
 - . . . space programs
 - . . . NASA space programs
 - **Scout project**
 - RT ∞ boosters
 - Explorer satellites
 - launch vehicles
- SCPC transmission*
 - USE **single channel per carrier transmission**
- SCR (rectifiers)*
 - USE **silicon controlled rectifiers**
- ∞ **SCRAM**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT missiles
 - shutdowns
 - supersonic combustion ramjet engines
- scrambling (communication)**
 - RT intelligibility
 - security
 - signal distortion
 - signal encoding
 - vocoders
 - voice communication
- scramjet engines*
 - USE **supersonic combustion ramjet engines**
- scramjets*
 - USE **supersonic combustion ramjet engines**
- scrap**
 - RT chips
 - debris
 - metal particles
 - wastes
- scrapers**
 - RT cutters
 - files (tools)
 - honing
 - ∞ separation
- screech tones**
 - (added March 1998)
 - DEF Discrete acoustic tones produced by imperfectly expanded supersonic jets. The phenomenon is a result of a resonant feedback condition involving downstream traveling shear-layer disturbances and upstream traveling acoustic waves.
 - GS elastic waves
 - . sound waves
 - . . . noise (sound)
 - flow noise
 - aerodynamic noise
 - **screech tones**
 - frequencies
 - . acoustic frequencies
 - . . **screech tones**
 - RT aeroacoustics
 - feedback
 - jet aircraft noise
 - jet mixing flow
 - nozzle flow
 - shear layers
 - supersonic jet flow
 - supersonic nozzles
- screen effect**
 - RT ∞ coma
 - dielectrics
 - Earth magnetosphere
 - ∞ effects
- electromagnetic wave filters
- electromagnetic wave transmission
- electron gas
- semiconductors (materials)
- wave propagation
- ∞ **screening**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT filtration
 - finer
 - louvers
 - selection
 - water treatment
- ∞ **screens**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT curtains
 - display devices
 - protectors
 - shielding
 - sizing screens
 - wire cloth
- screw dislocations**
 - GS defects
 - . crystal defects
 - . . crystal dislocations
 - . . . **screw dislocations**
 - dislocations (materials)
 - . crystal dislocations
 - . . **screw dislocations**
 - RT edge dislocations
- screw pinch**
 - DEF A cylindrical plasma equilibrium in which the axial and azimuthal components of the vacuum field are of the same size.
 - GS pinch effect
 - . plasma pinch
 - . . **screw pinch**
 - RT magnetic fields
 - magnetohydrodynamic flow
 - plasma control
 - reverse field pinch
 - theta pinch
 - zeta pinch
- screws**
 - SN (EXCLUDES PROPELLERS AND CRYSTAL DEFECTS)
 - GS fasteners
 - . **screws**
 - RT anchors (fasteners)
 - bolts
 - couplings
 - holders
 - nuts (fasteners)
 - studs (structural members)
 - threads
- scribing*
 - USE **scoring**
- scrubbers**
 - DEF Apparatus used in sampling and in gas cleaning in which the gas is passed through a space containing wetted "packing" or spray.
 - RT cleaning
 - columns (process engineering)
 - flue gases
 - washing
- scrubbing*
 - USE **washing**
- scrubs (botany)*
 - USE **brush (botany)**
- Scutum constellation**
 - GS constellations
 - . **Scutum constellation**
 - RT zodiac
- Scylla**
 - GS plasma generators
 - . **Scylla**
 - RT magnetic fields
 - magnetic mirrors
- magnetic variations
- plasmas (physics)
- thermonuclear reactions
- SDP (computers)*
 - USE **site data processors**
- SDS 900 series computers**
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **SDS 900 series computers**
 - SDS 930 computer
- SDS 930 computer**
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . SDS 900 series computers
 - **SDS 930 computer**
- SDS 9300 computer**
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **SDS 9300 computer**
- SDV*
 - USE **Shuttle Derived Vehicles**
- SE-210 aircraft**
 - UF *Caravelle aircraft*
 - Sud Aviation SE-210 aircraft*
 - GS commercial aircraft
 - . **SE-210 aircraft**
 - jet aircraft
 - turbofan aircraft
 - . . **SE-210 aircraft**
 - monoplanes
 - . **SE-210 aircraft**
 - passenger aircraft
 - . **SE-210 aircraft**
 - Sud Aviation aircraft
 - . **SE-210 aircraft**
 - RT ∞ aircraft
- SE-3160 helicopter**
 - UF *Alouette 3 helicopter*
 - Sud Aviation SE-3160 helicopter*
 - GS Sud Aviation aircraft
 - . Alouette helicopters
 - . . **SE-3160 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . Alouette helicopters
 - **SE-3160 helicopter**
- SE-A*
 - USE **Explorer 30 satellite**
- sea breeze**
 - DEF A coastal, local wind that blows from sea to land caused by temperature differences when the sea surface is colder than the adjacent land.
 - GS wind (meteorology)
 - . **sea breeze**
 - RT aerology
 - air currents
 - atmospheric circulation
 - barotropic flow
 - climatology
 - geostrophic wind
 - gusts
 - marine environments
 - meteorology
 - monsoons
 - offshore energy sources
 - tidal waves
 - wind direction
 - wind effects
 - wind erosion
 - wind measurement
 - windpower utilization
 - winds aloft
- sea floor spreading**
 - (added July 1992)
 - DEF A hypothesis that the oceanic crust is

increasing by convective upwelling of magma along the mid-ocean ridges or world rift system, and by a moving-away of the new material at a rate of one to ten centimeters per year. This movement provides the source of dynamic thrust in the hypothesis of plate tectonics.

UF *ocean floor spreading*

RT Earth crust
Earth mantle
Earth movements
mid-ocean ridges
neotectonics
ocean bottom
plates (tectonics)
submarine hydrothermal vents
tectonics
terradyamics

sea grasses

GS plants (botany)
. grasses
. . **sea grasses**
RT marine biology
oceanography
seaweeds
vegetation
wetlands

sea ice

UF *ice packs*
GS ice
. **sea ice**
. . ice floes
. . icebergs
. . pressure ice
RT air sea ice interactions
bay ice
freezing
glacial drift
glaciers
ice environments
ice formation
ice mapping
lake ice
land ice
nunataks
oceanography
polynyas

sea keeping

DEF Maintaining the stability of a surface vessel in linear response to wave height, pitch, heave, center of gravity, and bow acceleration.

RT attitude gyros
damping
gyroscopic stability
gyrostabilizers
motion stability
∞ stabilizers
torquers

Sea King helicopter

USE **SH-3 helicopter**

Sea Knight helicopter

USE **CH-46 helicopter**

sea launching

GS launching
. **sea launching**
RT antiship missiles
antiship warfare
ballistic missile submarines
catapults
drydocks
fleet ballistic missiles
missile launchers
Poseidon missiles
rocket launchers
torpedoes
water takeoff and landing aircraft
Zenit launch vehicles

sea law

DEF United Nations declaration regarding rights to minerals and other marine resources.

GS law (jurisprudence)
. international law
. . **sea law**
RT ∞ cooperation

international cooperation

rules
United Nations

sea level

DEF The level of the surface of the ocean; especially, the mean level halfway between high and low tide used as a standard in reckoning land elevation or sea depths.

GS altitude
. **sea level**
RT ocean surface
oceanography
sea states

Sea of Japan

GS seas
. **Sea of Japan**
RT Asia

Sea of Okhotsk

GS seas
. **Sea of Okhotsk**
RT Pacific Ocean
U.S.S.R.

sea roughness

GS roughness
. **sea roughness**
RT hydrodynamic coefficients
ocean models
ocean surface
oceanography
surface waves
tidal waves
tide powered generators
tide powered machines
tidepower
tides
turbulence
water currents
water waves
waterwave energy conversion
waterwave powered machines
wind effects
wind velocity

sea states

RT ocean models
ocean surface
ocean temperature
oceanographic parameters
oceanography
sea level
TOPEX
water currents
water waves
wind effects

sea surface temperature

GS oceanographic parameters
. ocean temperature
. . **sea surface temperature**
surface properties
. surface temperature
. . **sea surface temperature**
temperature
. surface temperature
. . **sea surface temperature**
. water temperature
. . ocean temperature
. . . **sea surface temperature**
RT air water interactions
land surface temperature
ocean surface
oceanography

sea truth

RT aerial photography
coastal currents
imagery
ocean surface
ocean temperature
photointerpretation

sea urchins

GS animals
. invertebrates

. . **sea urchins**

sea walls

USE **breakwaters**

sea water

GS water
. **sea water**
RT brines
coastal water
dissolved organic matter
fisheries
marine resources
nearshore water
ocean surface
ocean temperature
oceanography
red tide
salinity
seaweeds
thermoclines
thermohaline circulation
underwater photography
underwater resources
water resources
water sampling

seaborgium

(*added May 1998*)
GS chemical elements
. **seaborgium**
RT bohrium
dubnium

Seafarer project

UF *Global Communications Antenna Grid (navy)*
underground radio antenna grid (navy)
GS programs
. projects
. . **Seafarer project**
RT extremely low frequencies
radio transmission
submarines
telecommunication
underwater communication

seafloor hydrothermal vents

(*added April 2005*)
USE **submarine hydrothermal vents**

Seahorse helicopter

USE **UH-34 helicopter**

sealants

USE **sealers**

sealers

UF *sealants*
RT adhesives
coatings
dopes
fillers
packaging
packings (seals)
paints
sealing
seals (stoppers)
seams (joints)
solders
varnishes

sealing

GS **sealing**
. self sealing
RT adhesion
adhesive bonding
binding
blocking
blowers
bonding
brazing
caulking
cements
clamps
closing
coating
coatings
containment

seals (animals)

- coverings
- encapsulating
- glands (seals)
- ∞ joining
- lining processes
- moisture resistance
- ∞ packing
- packings (seals)
- plugging
- retaining
- riveting
- sealers
- soldering
- spraying
- stopping
- waterproofing
- welding

seals (animals)

- GS animals
 - . vertebrates
 - . . mammals
 - . . . marine mammals
 - **seals (animals)**
- RT marine biology

seals (stoppers)

- GS **seals (stoppers)**
 - . brush seals
 - . gaskets
 - . glands (seals)
 - . hermetic seals
 - . labyrinth seals
 - . O ring seals
 - . packings (seals)
 - . plugs
 - . pump seals
- RT air locks
- barrier layers
- ∞ barriers
- blocking
- ∞ caps
- closures
- constrictions
- cuffs
- plugging
- sealers
- spherical caps
- ∞ tapes
- valves

seamounts

- DEF Elevations of the ocean floor rising to about 3000-1000 feet or more with the summit about 1000-6000 feet below sea level.
- RT continental shelves
- crevasses
- ∞ faults
- folds (geology)
- islands
- landforms
- mid-ocean ridges
- ocean bottom
- structural basins

seams (joints)

- GS joints (junctions)
 - . **seams (joints)**
- RT adhesives
- fillets
- metal joints
- sealers

seaplanes

- GS water takeoff and landing aircraft
 - . **seaplanes**
- RT amphibious aircraft
- amphibious vehicles
- hulls (structures)
- monoplanes

Search and Rescue Satellite

- USE **SarSat**

Search for Extraterrestrial Intelligence

- USE **Project SETI**

search profiles

- GS searching
 - . **search profiles**

- RT data retrieval
- information retrieval
- ∞ profiles

search radar

- GS radar
 - . **search radar**
 - . . over-the-horizon radar
- RT airport surface detection equipment
- coherent radar
- continuous wave radar
- pulse radar
- radar detection
- radar tracking
- satellite-borne radar
- side-looking radar
- surveillance radar
- tracking radar
- TRADEX radar system

searching

- GS **searching**
 - . search profiles
- RT conical scanning
- COSPAS
- panoramic scanning
- reconnaissance
- retrieval
- SarSat
- scanning
- selection

searchlights

- GS lighting equipment
 - . luminaires
 - . . **searchlights**
- RT airport lights
- arc lamps
- beacons
- projectors
- runway lights

seas

- DEF Inland bodies of salt water or geographic divisions of oceans or ocean areas of wave generation.

- GS **seas**
 - . Arabian Sea
 - . Baltic sea
 - . Barents Sea
 - . Beaufort Sea (North America)
 - . Bering Sea
 - . Black Sea
 - . Caribbean Sea
 - . Caspian Sea
 - . Chukchi Sea
 - . Mediterranean Sea
 - . . Adriatic Sea
 - . North Sea
 - . Red Sea
 - . Salton Sea (CA)
 - . Sea of Japan
 - . Sea of Okhotsk
- RT archipelagoes
- coastal currents
- coasts
- deep water
- Earth hydrosphere
- ocean temperature
- oceanography
- oceans
- Sargasso Sea
- seaweeds
- shallow water
- shoals
- straits
- thermal pollution
- underwater photography

SEASAT 1

- GS artificial satellites
 - . SEASAT satellites
 - . . **SEASAT 1**
- RT Landsat satellites
- oceanography
- programs
- SEASAT-B satellite

SEASAT program

- GS programs

- . NASA programs
- . . NASA space programs
- . . . Earth Resources Program
- Earth Resources Survey
- Program
- **SEASAT program**
- . space programs
- . . NASA space programs
- . . . Earth Resources Program
- Earth Resources Survey
- Program
- **SEASAT program**
- RT Landsat satellites
- oceanography

SEASAT satellites

- GS artificial satellites
 - . **SEASAT satellites**
 - . . SEASAT 1
 - . . SEASAT-B satellite
- RT Landsat satellites
- NASA programs
- oceanography
- programs
- satellite altimetry
- Synchronous Earth Observatory
- satellite

SEASAT-B satellite

- GS artificial satellites
 - . SEASAT satellites
 - . . **SEASAT-B satellite**
- RT Landsat satellites
- oceanography
- programs
- SEASAT 1

seasonal variations

- USE **annual variations**

seasons

- GS **seasons**
 - . autumn
 - . spring (season)
 - . summer
 - . winter
- RT annual variations
- climatology
- crop calendars
- equinoxes
- meteorology
- solar position
- solstices
- weather
- wind variations

Seasprite helicopter

- USE **UH-2 helicopter**

seat belts

- DEF Safety belts that fasten across the lap.
- GS safety devices
 - . **seat belts**
- RT ∞ belts
- harnesses
- seats

seats

- UF *benches*
- chairs*
- GS **seats**
 - . Barany chair
 - . ejection seats
 - . . flying ejection seats
- RT comfort
- couches
- cushions
- harnesses
- ∞ lounges
- riding quality
- seat belts
- sitting position

Sea-viewing Wide Field-of-view Sensor

- (added December 1998)

- UF *SeaWiFS*
- GS scanners
 - . ocean color scanner
 - . . **Sea-viewing Wide Field-of-view**
 - Sensor

RT chlorophylls
Coastal Zone Color Scanner
ocean surface
phytoplankton
remote sensors
satellite-borne instruments
water color

seaweeds
UF *kelp*
RT marine biology
oceanography
oceans
sea grasses
sea water
seas

SeaWiFS
(added December 1998)
USE **Sea-viewing Wide Field-of-view
Sensor**

sebaceous glands
GS anatomy
. glands (anatomy)
.. **sebaceous glands**

sebacic acid
GS acids
. carboxylic acids
.. fatty acids
... **sebacic acid**
organic compounds
. carboxylic acids
.. fatty acids
... **sebacic acid**

secondary batteries
USE **storage batteries**

secondary cosmic rays
DEF Secondary emission in the atmosphere stimulated by primary cosmic rays. Used for Moliere formula.
UF *Moliere formula*
GS ionizing radiation
. cosmic rays
.. **secondary cosmic rays**
RT atmospheric radiation
cosmic ray albedo
cosmic ray showers
electron decay rate
electron photon cascades
electron precipitation
primary cosmic rays
single event upsets

secondary emission
DEF Emission of subatomic particles of photons stimulated by primary radiation; for example, cosmic rays impinging on other particles and causing them, by disruption of their electron configurations or even of their nuclei, to emit particles or photons or both in turn.
GS emission
. particle emission
.. electron emission
... **secondary emission**
RT dynodes
electron irradiation
field emission
monoscopes
multipactor discharges
photomultiplier tubes
scanning electron microscopy
Townsend avalanche

secondary flow
GS fluid flow
. parallel flow
.. three dimensional flow
... **secondary flow**
. viscous flow
.. boundary layer flow
... **secondary flow**
translational motion
. three dimensional motion
.. three dimensional flow
... **secondary flow**
RT compressibility effects

corner flow
three dimensional boundary layer
vortices
vorticity

secondary injection
GS injection
. **secondary injection**
RT fluid injection
shock wave control
shock wave propagation
supersonic flow
thrust augmentation
thrust vector control

secondary ion mass spectrometry
(added July 1991)
DEF Mass spectrometry performed on ions sputtered from a sample by a primary ion beam.
UF *SIMS (spectrometry)*
GS spectroscopy
. mass spectroscopy
.. **secondary ion mass spectrometry**
RT mass spectrometers

secondary radar
DEF A radar technique or mode of operation in which the return signals are obtained from beacons, transponders, or repeaters carried by the targets, contrasted with primary radar in which the return signals are obtained by reflection from the targets.
GS radar
. **secondary radar**
RT discrete address beacon system
interrogation

secondary waves
USE **S waves**

secretions
GS **secretions**
. endocrine secretions
.. hormones
... corticosteroids
.... aldosterone
.... hydroxycorticosteroid
..... cortisone
.... glucocorticoids
... estrogens
... hypertensin
... pituitary hormones
... adrenocorticotropin (ACTH)
... vasopressins
... prostaglandins
... thyroxine
.. insulin
. sweat
RT body fluids
gall
glands (anatomy)
hydrogen metabolism
melatonin
metabolism
mineral metabolism
skin (anatomy)

∞ **sections**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT categories
classes
subdivisions
subsidiaries

∞ **sectors**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT area
circles (geometry)
regions

secular perturbation
USE **long term effects**

secular variations
GS variations
. periodic variations
.. **secular variations**

RT atmospheric physics
solar activity effects
solar cycles
teleconnections (meteorology)

security
GS **security**
. airport security
. computer security
.. computer information security
.. firewalls (computers)
.. intrusion detection (computers)
RT ∞ classifying
computer program integrity
crime
integrity
police
privacy
scrambling (communication)
selective dissemination of information
steganography
terrorism
vulnerability

sedatives
GS drugs
. **sedatives**
RT pentobarbital
phenobarbital
psychotropic drugs
tranquilizers

sediment transport
RT mass flow
mass transfer
sediments

sedimentary rocks
DEF Rocks resulting from the consolidation of loose sediments that have accumulated in layers, e.g., clastic rocks (such as fragments of older rocks transported from their source and deposited in water or from air or ice. Sedimentary rocks constitute one of the three main classes into which rocks are divided, the others being igneous rocks and metamorphic rocks.
GS rocks
. **sedimentary rocks**
.. carbonaceous rocks
... coal
... anthracite
... lignite
... solvent refined coal
.. limestone
.. sandstones
.. shales
RT alluvium
breccia
clays
dolomite (mineral)
gypsum
igneous rocks
∞ layers
monazite sands
petrography
sands
sediments
shatter cones
soils
stratigraphy

sediments
DEF Solid fragmental materials that originate from weathering of rocks and are transported or deposited by air, water, or ice, or that accumulate by other natural agents, such as chemical precipitation from solution or secretion by organisms, and that form in layers on the Earth's surface at ordinary temperatures in a loose, unconsolidated form; e.g., sand, gravel, silt, mud, till, loess, and alluvium.
UF *silts*
GS **sediments**
. gravels
. mud
. sands
.. monazite sands
.. tar sands
RT alluvium
clays

Seebeck effect

deposition
deposits
dissolved organic matter
dredged materials
fans (landforms)
glacial drift
grit
littoral drift
marine chemistry
ocean bottom
peat
sediment transport
sedimentary rocks
sewage treatment
sludge
soil pollution

SEE (software engineering environments)

USE **programming environments**

Seebeck coefficient

USE **Seebeck effect**

Seebeck effect

DEF The establishment of an electric potential difference tending to produce a flow of current in a circuit of two dissimilar metals the junctions of which are at different temperatures. Used for Seebeck coefficient.

UF *Seebeck coefficient*

RT ∞ effects

Peltier effects
temperature effects
thermocouples
thermodynamic properties
thermoelectricity
thermophysical properties
transport properties

seeding (inoculation)

USE **inoculation**

seedlings (botany)

(added August 2004)

DEF A very young plant after germination of seeds.

GS plants (botany)

. **seedlings (botany)**

RT plant physiology

plant roots
seeds

seeds

RT alfalfa
barley
citrus trees
corn
embryos
farm crops
grains (food)
nuts (fruits)
oats
planting
plants (botany)
seedlings (botany)
sugar beets
sugar cane
tomatoes
utricle
vegetables
viability

seeing (astronomy)

(added July 1989)

UF *atmospheric seeing*

RT astronomical observatories

astronomy
atmospheric effects
atmospheric optics
atmospheric turbulence
optical correction procedure
scintillation
space observations (from Earth)
telescopes

turbulence effects

seekers

USE **homing devices**

seepage

RT canals
drainage
flood damage
flow nets
hydrodynamics
intrusion
irrigation
leakage
losses
offshore energy sources
penetration
percolation
permeability
piezometers
water consumption

segmented mirrors

(added August 1995)

DEF Telescope mirrors made up of many small, thin, glass segments. Motorized controllers keep the segments optically aligned to form a single large mirror.

GS mirrors

. **segmented mirrors**

RT adaptive optics
astronomical observatories
deformable mirrors
honeycomb mirrors
optical correction procedure
reflecting telescopes

segments

RT circles (geometry)
∞ components
curves (geometry)
lines (geometry)
radii

Segre characteristic

RT ∞ characteristics
crack propagation
metal fatigue

segregation

USE **separation**

seismic energy

RT earthquake damage
∞ energy
strain energy methods

seismic waves

DEF The disturbance of earth tremors produced by a mechanical disturbance on the surface or underground. Used for electroseismic effect.

UF *electroseismic effect*

GS elastic waves

. **seismic waves**

. . Love waves
. . microseisms
. . Rayleigh waves

RT crustal fractures
detonation waves
dilatational waves
Earth movements
earthquake damage
earthquake resistance
earthquake resistant structures
earthquakes
Gutenberg zone
large aperture seismic array
longitudinal waves
P waves
planetary quakes
polarized elastic waves
S waves
seismology
SH waves
shock waves
surface waves
tsunami waves
underground explosions

∞ waves

seismocardiography

DEF The measurement of the high frequency vibrations of the heart.

GS bioengineering

. biometrics

. . cardiography

. . . **seismocardiography**

RT ballistocardiography
fibrillation

seismograms

RT seismographs

seismographs

UF *seismometers*

GS measuring instruments

. vibration meters

. . **seismographs**

. . . lunar seismographs

recording instruments

. **seismographs**

. . lunar seismographs

RT accelerometers
acoustic measurement
phased arrays
seismograms
shock measuring instruments
tiltmeters

seismology

DEF The study of earthquakes, by extension, the structure of the interior of the Earth via both natural and artificially generated seismic signals.

GS **seismology**

. asteroseismology

. moonquakes

. . helioseismology

RT asthenosphere
crustal fractures
Earth movements
Earth sciences
earthquake damage
earthquakes
geology
geophysics
isostasy
large aperture seismic array
lunar geology
mid-ocean ridges
Rouse belts
∞ science
seismic waves
subduction (geology)
tidal waves

seismometers

USE **seismographs**

seizures

RT convulsions
cramps

SEL computers

GS data processing equipment

. computers

. . digital computers

. . . **SEL computers**

selection

UF *choice*

GS **selection**

. personnel selection

. . pilot selection

. materials selection

. site selection

RT certification

∞ classifying

collection

decisions

evaluation

figure of merit

options

ranking

rejection

sampling

∞ screening

searching

sorting algorithms
 ∞ tests
selection rules (nuclear physics)
 GS rules
 . **selection rules (nuclear physics)**
 RT alpha decay
 emission
 forbidden transitions
 neutron emission
 ∞ physics
 quantum numbers

selective dissemination of information
 GS communicating
 . information dissemination
 . . **selective dissemination of information**
 RT computer information security
 data storage
 documentation
 indexes (documentation)
 information flow
 information retrieval
 information systems
 libraries
 management planning
 security
 technology transfer

selective fading
 GS fading
 . signal fading
 . . **selective fading**
 RT frequency analyzers
 ground wave propagation
 modulation
 sidebands
 signal fading rate

selective surfaces
 DEF Surfaces, often coated, for which the spectral optical properties, such as reflectance, absorptance, emittance, or transmittance vary significantly with wavelength. Such properties are of interest in solar energy applications. Used for solar selective coatings.
 UF *solar selective coatings*
 RT energy absorption films
 selectivity
 solar collectors
 solar energy absorbers
 thermochromic coatings

selectivity
 RT discrimination
 photothermal conversion
 selective surfaces

selectors
 RT analyzers
 circuits
 electric relays
 samplers
 switches
 switching circuits

selenides
 GS chalcogenides
 . **selenides**
 . . cadmium selenides
 . . copper selenides
 . . . copper indium selenides
 . . gallium selenides
 . . indium selenides
 . . . copper indium selenides
 . . lead selenides
 . . zinc selenides
 selenium compounds
 . **selenides**
 . . cadmium selenides
 . . copper selenides
 . . . copper indium selenides
 . . gallium selenides
 . . indium selenides
 . . . copper indium selenides
 . . lead selenides

. . zinc selenides

selenium
 GS chemical elements
 . **selenium**
 RT selenium isotopes

selenium alloys
 GS alloys
 . **selenium alloys**
 RT copper

selenium compounds
 GS **selenium compounds**
 . selenides
 . . cadmium selenides
 . . copper selenides
 . . . copper indium selenides
 . . gallium selenides
 . . indium selenides
 . . . copper indium selenides
 . . lead selenides
 . . zinc selenides
 . selenium oxides
 RT ∞ chemical compounds
 ∞ Group 6A compounds

selenium isotopes
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **selenium isotopes**
 RT selenium

selenium oxides
 GS chalcogenides
 . oxides
 . . **selenium oxides**
 selenium compounds
 . **selenium oxides**

selenography
 RT geography
 lunar craters
 lunar crust
 lunar landing sites
 lunar maps
 lunar mobile laboratories
 lunar rays
 lunar rocks
 lunar topography
 moon
 selenology
 surface properties

selenology
 DEF That branch of astronomy that treats of the moon, its magnitude, motion, constitution, and the like. Selene is Greek for moon.

RT astronomy
 lunar composition
 lunar core
 lunar craters
 lunar crust
 lunar dust
 lunar echoes
 lunar eclipses
 lunar effects
 lunar environment
 lunar equator
 lunar evolution
 lunar exploration
 lunar far side
 lunar figure
 lunar geology
 lunar gravitation
 lunar gravitational effects
 lunar limb
 lunar luminescence
 lunar magnetic fields
 lunar mantle
 lunar maria
 lunar occultation
 lunar phases
 lunar radar echoes
 lunar radiation
 lunar rocks
 lunar rotation
 lunar seismographs
 lunar shadow

lunar soil
 lunar surface
 lunar temperature
 lunar tides
 lunar topography
 moon
 moonquakes
 regolith
 selenography

self absorption
 GS energy absorption
 . radiation absorption
 . . **self absorption**
 RT ∞ absorption
 absorption spectra
 absorptivity
 automatic control
 diffusion
 ∞ radiation

self adaptive control systems
 DEF Particular types of stability augmentation systems which change the responses of given control inputs by constantly sampling responses and adjusting their gain, rather than having fixed or selective gain systems.

GS automatic control
 . adaptive control
 . . **self adaptive control systems**
 RT active control
 adaptive optics
 automata theory
 autonomy
 ∞ control
 ∞ systems

self alignment
 GS alignment
 . **self alignment**
 RT active control
 adaptive control
 automatic control
 landing gear
 model reference adaptive control
 servomechanisms

self assembly
 (added January 2001)
 DEF Coordinated action of independent units to produce a larger structure or to achieve a desired group effect. A strategy for nanofabrication that involves designing molecules and supramolecular entities so that shape-complementarity or other properties causes them to aggregate into desired structures.

GS assembling
 . **self assembly**
 RT abiogenesis
 ∞ assembly
 chemical evolution
 fabrication
 micelles
 molecular biology
 molecular structure
 monomolecular films
 nanofabrication
 nanostructure (characteristics)
 nanotechnology
 synthesis (chemistry)

self calibrating omnirange
 UF *SCORE omnirange*
 GS navigation aids
 . beacons
 . . radio beacons
 . . . omnidirectional radio ranges
 **self calibrating omnirange**
 radio equipment
 . radio transmitters
 . . radio beacons
 . . . omnidirectional radio ranges
 **self calibrating omnirange**
 transmitters
 . radio transmitters
 . . radio beacons
 . . . omnidirectional radio ranges
 **self calibrating omnirange**

self consistent fields

RT solar compasses

self consistent fields

UF *SCF*

RT computational chemistry

field theory (physics)

∞ fields

Hartree approximation

magnetic fields

molecular orbitals

quantum electrodynamics

shell theory

self deploying space stations

USE **self erecting devices**
space stations

self diffusion (solid state)

DEF The spontaneous movement of an atom to a new site in a crystal of its own species.

GS diffusion

. **self diffusion (solid state)**

RT atomic mobilities

ionic diffusion

molecular diffusion

particle diffusion

self erecting devices

UF *self deploying space stations*

RT ∞ automation

∞ devices

∞ equipment

inflatable spacecraft

inflatable structures

orbital assembly

space erectable structures

self excitation

GS excitation

. **self excitation**

RT forced vibration

free vibration

oscillators

resonators

self focusing

GS focusing

. **self focusing**

RT image contrast

∞ machinery

optical correction procedure

optical measuring instruments

self ignition

(added April 1997)

USE **spontaneous combustion**

self induced vibration

GS vibration

. structural vibration

. . . **self induced vibration**

. . . . panel flutter

. . . . subsonic flutter

. . . . supersonic flutter

. . . . transonic flutter

RT bending vibration

flutter

forced vibration

free vibration

missile vibration

pilot induced oscillation

random vibration

torsional vibration

self initiated anti-aircraft missiles

USE **SIAM missiles**

self lubricating materials

RT impregnating

lubrication

∞ materials

solid lubricants

spacecraft lubrication

self lubrication

GS lubrication

. **self lubrication**

RT impregnating

self maneuvering units

UF *personnel propulsion systems*

reaction jet backpacks

SMU (maneuvering units)

space self maneuvering units

GS **self maneuvering units**

. IMLSS

RT astronaut maneuvering equipment

extravehicular activity

extravehicular mobility units

maneuvers

manned maneuvering units

self organizing systems

UF *perceptrons*

RT artificial intelligence

machine learning

∞ systems

Turing machines

self oscillation

GS oscillations

. **self oscillation**

RT feedback amplifiers

positive feedback

transfer functions

self propagation

GS diffusion

. **self propagation**

transmission

. **self propagation**

RT ∞ propagation

self regulating

USE **automatic control**

self repairing devices

RT ∞ automation

∞ devices

evolvable hardware

maintenance

self sealing

GS sealing

. **self sealing**

RT flight safety

fuel systems

rupturing

support systems

self shadowing

RT large space structures

shadows

solar arrays

self stimulation

RT motivation

reinforcement (psychology)

self subtraction holography

USE **holographic subtraction**

self sustained emission

GS emission

. **self sustained emission**

RT electron emission

light emission

particle emission

stimulated emission

self tests

DEF Programmed functions performed by a machine, either automatically at start-up or on user demand, that test the working order of the machine. In particular, programs stored in read-only memory that test the integrity of a machine's integrated circuits and the connections between the circuits and the devices they control.

RT automatic test equipment

avionics

checkout

electronic equipment tests

fail-safe systems

∞ tests

Selsyns (trademark)

USE **servomotors**

SEM (microscopy)

USE **scanning electron microscopy**

semantics

GS linguistics

. **semantics**

RT communication theory

grammars

languages

message processing

messages

natural language processing

nomenclatures

orthography

parsing algorithms

predicate logic

psycholinguistics

sentences

speech

syllables

symbols

syntax

words (language)

semicircular canals

DEF Structures of the inner ear, the primary function of which is to register movement of the body in space. They respond to change in the rate of movement.

GS anatomy

. sense organs

. . ear

. . . labyrinth

. . . . **semicircular canals**

RT eardrums

middle ear

otolith organs

vestibules

semiconducting films

RT amorphous semiconductors

amorphous silicon

diamond films

energy absorption films

∞ films

superconducting films

thick films

thin films

semiconductor devices

DEF Electron devices in which the characteristic distinguishing electronic conduction takes place within semiconductors.

GS electronic equipment

. solid state devices

. . **semiconductor devices**

. . . avalanche diodes

. . . . cryosar

. . . . Barritt diodes

. . . . charge transfer devices

. . . . bucket brigade devices

. . . . charge coupled devices

. . . . charge injection devices

. . . . germanium diodes

. . . . heterojunction devices

. . . . high electron mobility transistors

. MODFETS

. . . . junction diodes

. . . . MIM diodes

. . . . step recovery diodes

. . . . light emitting diodes

. . . . metal oxide semiconductors

. . . . CMOS

. . . . ITO (semiconductors)

. . . . SOS (semiconductors)

. . . . MIM (semiconductors)

. . . . MIS (semiconductors)

. . . . MOM (semiconductors)

. . . . MSM (semiconductors)

. . . . NDM semiconductor devices

. . . . neuristors

. . . . parametric diodes

. . . . photodiodes

. . . . photovoltaic cells

. . . . solar cells

- vertical junction solar cells
- . . . Schottky diodes
- . . . semiconductor lasers
- aluminum gallium arsenide lasers
- gallium arsenide lasers
- quantum cascade lasers
- quantum well lasers
- YLF lasers
- SOI (semiconductors)
- . . . thermistors
- . . . thyristors
- silicon controlled rectifiers
- . . . transferred electron devices
- . . . transistor amplifiers
- . . . transistors
- bipolar transistors
- field effect transistors
- charge flow devices
- JFET
- MODFETS
- high electron mobility transistors
- MODFETS
- junction transistors
- JFET
- phototransistors
- silicon transistors
- SOS (semiconductors)
- single electron transistors
- cascode devices
- quantum well infrared photodetectors
- resonant tunneling diodes
- TRAPATT devices
- . . . varactor diodes
- . . . varistors
- RT barrier layers
- bubble technique
- chips (memory devices)
- crystal rectifiers
- diffusion electrodes
- diffusion length
- diodes
- doping (materials)
- Gunn diodes
- Gunn effect
- Hall effect
- hybrid circuits
- ion implantation
- ∞ junctions
- microminiaturization
- modulation doping
- molecular electronics
- nanostructures (devices)
- organic semiconductors
- oscillators
- parametric amplifiers
- pentodes
- quantum dots
- quantum Hall effect
- quantum wires
- rectifiers
- semiconductors (materials)
- silicon films
- tetrodes
- triodes
- tunnel junctions
- wafers

semiconductor diodes

DEF Two-electrode semiconductor devices utilizing the rectifying properties of junctions or point contacts.

- GS electronic equipment
- . diodes
- . . **semiconductor diodes**
- . . . avalanche diodes
- cryosar
- Barritt diodes
- . . . germanium diodes
- . . . Gunn diodes
- transferred electron devices
- . . . junction diodes
- MIM diodes
- step recovery diodes
- . . . light emitting diodes
- . . . parametric diodes
- . . . photodiodes
- . . . Schottky diodes

- . . . tunnel diodes
- resonant tunneling diodes
- . . . varactor diodes
- RT MIM diodes
- SIS (semiconductors)
- thermionic diodes

semiconductor insulator semiconductors
USE **SIS (semiconductors)**

semiconductor junctionsGS **semiconductor junctions**

- . heterojunctions
- . homojunctions
- . MBM junctions
- . n-n junctions
- . n-p-n junctions
- . p-i-n junctions
- . p-n junctions
- . p-n-p junctions
- . p-n-p-n junctions
- . silicon junctions

RT Barritt diodes

- heterojunction devices

- ∞ junctions

- MSM (semiconductors)
- n-type semiconductors
- p-type semiconductors
- Schottky diodes
- SIS (semiconductors)
- threshold voltage
- tunnel junctions

semiconductor lasersUF *laser diodes*

- GS electronic equipment

- . solid state devices

- . . semiconductor devices

- . . . **semiconductor lasers**

- aluminum gallium arsenide lasers

- gallium arsenide lasers

- quantum cascade lasers

- quantum well lasers

- YLF lasers

- stimulated emission devices

- . lasers

- . . **semiconductor lasers**

- . . . aluminum gallium arsenide lasers

- . . . gallium arsenide lasers

- . . . quantum cascade lasers

- . . . quantum well lasers

- . . . YLF lasers

RT Bragg reflectors

- DBR lasers

- distributed feedback lasers

- fiber lasers

- gadolinium-gallium garnet

- gallium arsenides

- Gunn effect

- injection lasers

- laser arrays

- laser cavities

- optical switching

- pulsed lasers

- Q switched lasers

- quantum dots

- quantum wires

- solid state lasers

- surface emitting lasers

- waveguide lasers

semiconductor plasmas

GS particles

- . charged particles

- . . energetic particles

- . . . plasmas (physics)

- **semiconductor plasmas**

- . corpuscular radiation

- . . energetic particles

- . . . plasmas (physics)

- **semiconductor plasmas**

RT electron mobility

- electron-hole drops

- holes (electron deficiencies)

- plasma physics

- semiconductors (materials)

semiconductors (materials)

DEF Electronic conductors, with resistivity

in the range between metals and insulators, in which the electrical charge carrier concentration increases with increasing temperature over some temperature range. Certain semiconductors possess two types of carriers, namely, negative electrons and positive holes.

GS **semiconductors (materials)**

- . acceptor materials
- . amorphous semiconductors
- . . amorphous silicon
- . donor materials
- . metal oxide semiconductors
- . . CMOS
- . . ITO (semiconductors)
- . . SOS (semiconductors)
- . metal-nitride-oxide-semiconductors
- . metal-nitride-oxide-silicon
- . MIM (semiconductors)
- . MIS (semiconductors)
- . MOM (semiconductors)
- . n-type semiconductors
- . organic semiconductors
- . photoconductors
- . p-type semiconductors
- . superlattices
- . Vycor

RT

- aluminum arsenides
- antisite defects
- bipolar transistors
- bucket brigade devices
- carbon nitrides
- carrier density (solid state)
- carrier injection
- charge injection devices
- conducting polymers
- conduction bands
- conductors
- copper indium selenides
- doping (materials)
- electric conductors
- electron affinity
- electron density (concentration)
- electron tunneling
- electrons
- emitters
- excitons
- gadolinium-gallium garnet
- gallium nitrides
- hole distribution (electronics)
- holes (electron deficiencies)
- indium antimonides
- indium gallium arsenides
- indium selenides
- indium tellurides
- intermetallics
- majority carriers
- ∞ materials
- melts (crystal growth)
- metalloids
- minority carriers
- modulation doping
- nanostructure (characteristics)
- negative electron affinity
- organic charge transfer salts
- polyacetylene
- pseudopotentials
- resistors
- screen effect
- semiconductor devices
- semiconductor plasmas
- ∞ solid state physics
- thermoelectric materials

semiempirical equations

RT algebra

- ∞ equations

- parameterization

semimetals

USE **metalloids**

semiregular variable stars

GS celestial bodies

- . stars

- . . variable stars

- . . . **semiregular variable stars**

- RT irregular variable stars

semisolids

periodic variations

semisolids

- RT plastic properties
- solids
- thixotropy
- viscous fluids

semispan models

- GS models
- . **semispan models**
- RT aerodynamic configurations
- aircraft models
- scale models
- wind tunnel models

Senarmont polariscopes

- GS measuring instruments
- . polariscopes
- . . **Senarmont polariscopes**
- optical equipment
- . polariscopes
- . . **Senarmont polariscopes**
- RT lasers
- optical measuring instruments

senders

USE **transmitters**

Seneca aircraft

USE **PA-34 Seneca aircraft**

Senegal

- GS nations
- . **Senegal**
- RT Africa

sense organs

- GS anatomy
- . **sense organs**
- . . chemoreceptors
- . . ear
- . . . eardrums
- . . . eustachian tubes
- . . . labyrinth
- cochlea
- Corti organ
- otolith organs
- semicircular canals
- vestibules
- . . . middle ear
- . . eye (anatomy)
- . . . choroid membranes
- . . . conjunctiva
- . . . cornea
- . . . oculomotor nerves
- . . . pupils
- . . . retina
- fovea
- . . . gravireceptors
- . . . otolith organs
- . . . baroreceptors
- . . . mechanoreceptors
- . . . photoreceptors
- . . . proprioceptors
- . . . thermoreceptors
- RT fingers
- head (anatomy)
- nervous system
- olfactory perception
- organs
- perceptual time constant
- receptors (physiology)
- sensitometry
- skin (anatomy)

senses

USE **sensory perception**

sensibility

USE **sensitivity**

sensing

USE **detection**

sensitivity

DEF Response of a mathematical model to variations of the input parameters. Used for insensitivity and sensibility.

UF *insensitivity*

sensibility

sensitivity

- . anaphylaxis
- . impact resistance
- . notch sensitivity
- . pain sensitivity
- . photosensitivity
- . . light adaptation
- . . phototropism
- . . propellant sensitivity
- . . radiation tolerance
- . . sensitometry
- . . spectral sensitivity
- RT acuity
- adaptation
- amplification
- auditory perception
- dynamic characteristics
- dynamic response
- frequency response
- itching
- perception
- precision
- range (extremes)
- reaction time
- ∞ resistance
- resolution
- sensitizing
- shock resistance
- ∞ thresholds
- thresholds (perception)
- tolerances (mechanics)
- transfer functions
- transient response
- visibility
- vulnerability

sensitivity analysis

(added February 2001)

DEF Study of how the variation in the output of a system model can be qualitatively or quantitatively apportioned to different input parameters, model structures, or calibration data.

- RT ∞ analyzing
- design analysis
- design optimization
- error analysis
- factorial design
- optimization
- parameter identification
- parameterization
- shape optimization
- systems analysis

sensitizing

- RT activation
- actuation
- anaphylaxis
- corrosion prevention
- sensitivity

sensitometry

DEF The measurement of the light response characteristics of photographic film under specified conditions of exposure and development.

- GS sensitivity
- . **sensitometry**
- RT gravireceptors
- mechanoreceptors
- photoreceptors
- photosensitivity
- proprioceptors
- radiation measurement
- receptors (physiology)
- sense organs
- thermoreceptors

sensor fusion

USE **multisensor fusion**

sensorimotor performance

- UF *motor skills*
- GS **sensorimotor performance**
- . psychomotor performance
- . . psychosomatics
- RT afferent nervous systems
- effluent nervous systems
- human performance
- human reactions

perceptual time constant

- physiological tests
- pilot performance
- reaction time
- sensory feedback

∞ **sensors**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Devices designed to respond to physical stimuli (as temperature, illumination, and motion) and transmit a resulting signal for interpretation, or measurement, or for operating a control. Used for pickoffs and pickups.

UF *pickoffs*

pickups

- RT bioinstrumentation
- character recognition
- charge flow devices
- contour sensors
- crop identification
- data acquisition
- electronic transducers
- FLIR detectors
- gas detectors
- guidance sensors
- image velocity sensors
- laser gyroscopes
- measuring instruments
- microoptoelectromechanical systems
- microwave sensors
- multispectral linear arrays
- remote sensors
- robot sensors
- servomotors
- smart materials
- tactile sensors (robotics)
- torque sensors (robotics)
- transducers

sensory deprivation

- GS deprivation
- . **sensory deprivation**
- RT confinement
- confining
- monotony
- perception

sensory discrimination

- GS discrimination
- . **sensory discrimination**
- . . brightness discrimination
- . . tactile discrimination
- . . visual discrimination
- RT speech recognition
- time discrimination

sensory feedback

- UF *feelings*
- GS feedback
- . biofeedback
- . . **sensory feedback**
- RT emotional factors
- emotions
- moods
- moon illusion
- nonlinear feedback
- perception
- sensorimotor performance

sensory perception

- UF *senses*
- GS perception
- . **sensory perception**
- . . auditory perception
- . . consciousness
- . . extrasensory perception
- . . kinesthesia
- . . olfactory perception
- . . pain
- . . pain sensitivity
- . . proprioception
- autokinesis
- . . taste
- . . touch
- tactile discrimination
- . . vertical perception
- . . vibration perception
- . . visual perception

. . . critical flicker fusion
 . . . space perception
 . . . autokinesis
 . . . visual discrimination
 RT afterimages
 anesthesia
 electrocutaneous communication
 itching

sensory stimulation
 GS stimulation
 . **sensory stimulation**

RT chronaxy
 emotional factors
 subliminal stimuli

sensory thresholds
 (added August 2004)
 USE **thresholds (perception)**

sentences
 RT communication theory
 languages
 messages
 semantics
 signal reception
 signal transmission
 speech
 syntax
 talking
 words (language)

Sentinel system
 GS weapon systems
 . **Sentinel system**
 RT antimissile defense
 antimissile missiles
 civil defense
 Nike missiles
 Safeguard system
 Spartan missile
 Sprint missile
 surface to air missiles
 ∞ systems

SEO (Indian spacecraft)
 USE **Indian spacecraft**

SEOCS (satellite)
 DEF An ESA meteorological satellite designed for sun-Earth observation and climatology.
 GS artificial satellites
 . meteorological satellites
 . . **SEOCS (satellite)**

SEOS
 USE **Synchronous Earth Observatory satellite**

SEPAC (payload)
 DEF Space experiment particle accelerators. A Spacelab 1 payload that experiments on the Earth's ionosphere and magnetosphere. Used for Space Exper with Particle Accelerators.
 UF *Space Exper with Particle Accelerators*
 GS payloads
 . **SEPAC (payload)**
 RT ∞ accelerators
 particle accelerators
 Spacelab

separated flow
 UF *flow separation*
 GS fluid flow
 . viscous flow
 . . boundary layer flow
 . . . **separated flow**
 . . . boundary layer separation
 RT cavitation flow
 conical flow
 Crocco-Lee theory
 flow characteristics
 flow distribution
 forward facing steps
 reattached flow
 reversed flow
 ∞ separation

surface roughness effects
 turbulence effects
 vortex flaps

∞ **separation**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *segregation*
 RT adsorption
 aeration
 agglomeration
 agitation
 beneficiation
 boundary layer separation
 breaking
 centrifuging
 chemical fractionation
 chipping
 classifiers
 cleaning
 coagulation
 coalescing
 Coanda effect
 colloids
 concentrating
 condensing
 crystallization
 cutting
 debonding (materials)
 decontamination
 degassing
 dehumidification
 dehydration
 deionization
 delaminating
 demineralizing
 deoxygenation
 deposition
 descaling
 desorption
 dialysis
 diffusion
 dispersing
 dissolving
 distillation
 diverters
 ∞ division
 drying
 electro dialysis
 electrostatic precipitators
 elimination
 elution
 evaporation
 exchanging
 exclusion
 external store separation
 extraction
 filtration
 flaking
 flashing (vaporizing)
 flotation
 flushing
 foaming
 fractionation
 fracturing
 homogenizing
 ion exchanging
 ion extraction
 ion stripping
 isolation
 leaching
 materials recovery
 melting
 mixing
 osmosis
 percolation
 phase separation (materials)
 polarization (charge separation)
 precipitation (chemistry)
 purging
 purification
 radiochemical separation
 recrystallization
 refining
 removal
 scrapers
 separated flow
 separators
 settling

shaking
 shearing
 size separation
 slicing
 solvent extraction
 sorption
 spacing
 splitting
 spreading
 stage separation
 stripping (distillation)
 sublimation
 swirling
 thermal diffusion
 thermophoresis
 tumbling motion
 vaporizing
 venting
 washing
 zone melting

separators
 UF *battery separators*
 GS **separators**
 . classifiers
 . . sizing screens
 . . thickeners (equipment)
 . dividers
 . drying apparatus
 . . desiccators
 . dust collectors
 . evaporators
 . fluid filters
 . . air filters
 . precipitators
 . . electrostatic precipitators
 . sieves
 . spirals (concentrators)
 . stills
 RT centrifuges
 cleaners
 columns (process engineering)
 concentrating
 concentrators
 condensers (liquefiers)
 curtains
 ∞ diffusers
 ∞ diverters
 ∞ filters
 floats
 fluidized bed processors
 furnaces
 ion exchange membrane electrolytes
 mixers
 ∞ separation
 shakers
 spacers
 traps
 vaporizers
 washers (cleaners)
 washers (spacers)
 windows (apertures)

septum
 RT mediastinum
 membranes
 ∞ partitions

sequencing
 RT consecutive events
 coordination
 critical path method
 interruption
 ∞ operations
 operations research
 packet switching
 Petri nets
 planning
 priorities
 ranking
 scheduling
 sequential control
 switching
 switching theory
 turnaround (STS)

sequential analysis
 GS statistical analysis
 . **sequential analysis**
 RT quality control

sequential computers

- sampling
- sorting algorithms
- temporal logic

sequential computers

- GS data processing equipment
 - computers
 - digital computers
 - sequential computers

sequential control

DEF Control by completion of a series of one or more events.

- GS automatic control
 - sequential control
- RT accuracy
 - computer programming
 - consecutive events
- ∞ control
 - data flow analysis
 - numerical control
 - sequencing

Serbska Republic

(added June 1996)

- GS nations
 - Serbska Republic
- RT Bosnia and Herzegovina
 - Europe
 - Yugoslavia

sergeant missiles

- GS missiles
 - surface to surface missiles
 - sergeant missiles
- RT Juno 1 launch vehicle
 - Juno 2 launch vehicle
 - Jupiter C rocket vehicle
 - Little Joe 2 launch vehicle
 - solid propellant rocket engines

sergenium

- GS chemical elements
 - actinide series
 - transuranium elements
 - sergenium
 - nuclides
 - isotopes
 - radioactive isotopes
 - transuranium elements
 - sergenium
- metals
 - actinide series
 - transuranium elements
 - sergenium

series (mathematics)

- GS analysis (mathematics)
 - calculus
 - series (mathematics)
 - asymptotic series
 - Campbell-Hausdorff series
 - cosine series
 - Fourier series
 - Pade approximation
 - power series
 - Taylor series
 - MacLaurin series
 - progressions
 - Prony series
 - sine series
 - real variables
 - series (mathematics)
 - asymptotic series
 - Campbell-Hausdorff series
 - cosine series
 - Fourier series
 - Pade approximation
 - power series
 - Taylor series
 - MacLaurin series
 - progressions
 - Prony series
 - sine series
- RT Abel function
 - Chebyshev approximation
 - divergence
 - form factors
 - Fourier-Bessel transformations
 - function space

- functional analysis
- Gibbs phenomenon
- infinity
- series expansion
- sums

series expansion

DEF In mathematics, a divergent series of terms the sum of which is asymptotic or ascending.

- GS expansion
 - series expansion
- RT asymptotic series
 - divergence
- ∞ mathematics
 - series (mathematics)

serotonin

- GS drugs
 - vasoconstrictor drugs
 - serotonin
 - organic compounds
 - amines
 - tryptamines
 - serotonin
 - cyclic compounds
 - heterocyclic compounds
 - indoles
 - tryptamines
 - serotonin

serpentine

- GS minerals
 - serpentine
- RT asbestos
 - chromites
 - rocks
 - soils

serratia

- GS microorganisms
 - bacteria
 - serratia

SERT 1 spacecraft

- RT electric propulsion
 - electric rocket engines
 - engine tests
 - space electric rocket tests
- ∞ spacecraft

SERT 2 spacecraft

- RT electric propulsion
 - electric rocket engines
 - engine tests
 - space electric rocket tests
- ∞ spacecraft

SERT (rocket tests)

USE space electric rocket tests

serums

- GS serums
 - blood serum
 - inoculum
- RT antiserums
 - fluids
 - proteins

service life

- UF machine life
- GS life (durability)
 - service life
- RT accelerated life tests
 - equipment
 - fatigue life
 - maintenance
 - retirement for cause
 - systems health monitoring

Service Module (ISS)

(added March 1999)

DEF Primary Russian component of the International Space Station providing an early station living quarters and life support system functions to all early elements. Also provides propulsive attitude control and reboost capability for the early station.

- UF Zvezda Service Module
- GS modules

- space station modules
- Service Module (ISS)
- RT International Space Station
 - life support systems

service modules

- GS modules
 - service modules
 - Multi-Purpose Logistics Modules
 - spacecraft components
 - service modules
 - Multi-Purpose Logistics Modules
- RT Apollo spacecraft
 - command modules
 - spacecraft docking modules
 - spacecraft modules

service oriented architecture

(added May 2007)

DEF A paradigm for organizing and utilizing loosely coupled, platform-independent, distributed capabilities that may be under the control of different ownership domains. The set of components comprising the architecture can be invoked and their interface descriptions can be published and discovered.

- GS architecture (computers)
 - service oriented architecture
- RT computer networks
 - computer systems design
 - distributed processing
 - web services

services

- GS services
 - medical services
 - meteorological services
 - web services
- RT ∞ food
 - government procurement
 - Internet resources
 - inventory management
 - logistics
 - logistics management
 - materials handling
 - personnel
 - procurement
 - procurement management
 - products
 - site selection
 - support systems
 - transportation
 - utilities

servoamplifiers

- GS amplifiers
 - servoamplifiers
 - control equipment
 - servoamplifiers
 - controllers
 - servomechanisms
 - servoamplifiers
- RT feedback amplifiers
 - fly by tube control
 - servocontrol

servocontrol

- UF servostability control
- RT aeroservoelasticity
 - aircraft hydraulic systems
 - automatic control
- ∞ control
 - control moment gyroscopes
 - control theory
 - digital command systems
 - feedback control
 - hydraulic equipment
 - manipulators
 - manual control
 - off-on control
 - pneumatic equipment
 - proportional control
 - remote control
 - rocket engine control
 - servoamplifiers
 - servomechanisms
 - servomotors
 - stepping motors
 - turbojet engine control

- visual control
- servomechanisms**
 DEF Control systems incorporating feedback in which one or more of the system signals represent mechanical motion.
 GS controllers
 . **servomechanisms**
 . . servoamplifiers
 . . servomotors
- RT active control
 actuators
 aircraft hydraulic systems
 automatic control
 automatic control valves
 ∞ automation
 ∞ control
 control moment gyroscopes
 electric motors
 feedback control
 hydraulic equipment
 pneumatic equipment
 radar equipment
 remote control
 robots
 self alignment
 servocontrol
 stepping motors
 tactile sensors (robotics)
 torque sensors (robotics)
- servomotors**
 UF *Magnesyn (trademark)*
Selsyns (trademark)
servos
 GS controllers
 . servomechanisms
 . . **servomotors**
 motors
 . **servomotors**
- RT actuators
 amplidynes
 automatic control
 electric motors
 heliostats
 ∞ rotating electrical machines
 ∞ sensors
 servocontrol
 slewing
 synchronizers
 torque motors
- servos*
 USE **servomotors**
- servostability control*
 USE **servocontrol**
- SES*
 USE **surface effect ships**
- SES (Shuttle)*
 USE **Shuttle Engineering Simulator**
- set**
 SN (EXCLUDES SET THEORY)
 GS mechanical properties
 . **set**
 RT deformation
 shear properties
- set theory**
 UF *subsets (mathematics)*
 GS mathematical logic
 . **set theory**
 . . Borel sets
 . . equivalence
 . . threshold logic
- RT Boolean algebra
 branching (mathematics)
 combinatorial analysis
 ∞ conjunction
 Fibonacci numbers
 fractals
 fuzzy sets
 fuzzy systems
 graph theory
 homotropy
 hyperplanes
 lattices (mathematics)
- Lebesgue theorem
 Orlicz space
 permutations
 ∞ space
 subdivisions
 subgroups
 ∞ theories
- SETI*
 USE **Project SETI**
- ∞ **setting**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT adjusting
 coagulation
 curing
 hardening (materials)
 polymerization
 positioning
 solidification
- settling**
 RT accumulations
 agglomeration
 agitation
 beneficiation
 coagulation
 coalescing
 concentrating
 crystallization
 deposition
 effluents
 flocculating
 flotation
 particle motion
 precipitation (chemistry)
 ∞ processing
 ∞ separation
 size separation
 Stokes law (fluid mechanics)
 subsidence
 water treatment
- setups**
 RT machining
 tooling
- Severe Storms Observing Satellite*
 USE **StormSat satellite**
- sewage**
 GS wastes
 . **sewage**
 RT activated sludge
 effluents
 environment effects
 human wastes
 liquid wastes
 metabolic wastes
 organic wastes (fuel conversion)
 sewers
 solid wastes
 waste disposal
 water treatment
- sewage treatment**
 GS management
 . waste management
 . . waste treatment
 . . . **sewage treatment**
- RT aerobes
 anaerobes
 chemical sterilization
 filtration
 Modular Integrated Utility System
 purification
 sediments
 sludge
 ∞ treatment
 waste disposal
- sewers**
 DEF Networks of pipelines for the transportation of metabolic and/or industrial wastes for disposal.
 GS pipelines
 . **sewers**
 RT drainage
 effluents
- garbage
 human wastes
 metabolic wastes
 sanitation
 sewage
 waste disposal
 wastes
- sewing**
 RT binding
 ∞ joining
 needles
 weaving
- sex**
 RT ∞ drives
 females
 males
 sex factor
 zygotes
- sex factor**
 RT females
 males
 physiological factors
 psychological factors
 sex
 sex glands
- sex glands**
 GS anatomy
 . genitourinary system
 . . reproductive systems
 . . . **sex glands**
 gonads
 ovaries
 testes
 prostate gland
 . glands (anatomy)
 . . **sex glands**
 . . . gonads
 . . . ovaries
 . . . testes
 . . . prostate gland
- RT estrogens
 reproduction (biology)
 sex factor
- sextants**
 DEF Double reflecting instruments for measuring angles, primarily altitudes of celestial bodies.
 GS measuring instruments
 . optical measuring instruments
 . . **sextants**
 . optical equipment
 . optical measuring instruments
 . . **sextants**
- RT navigation aids
 position indicators
 stadimeters
 theodolites
 transits
- Seychelles**
(added February 1989)
 GS landforms
 . islands
 . . **Seychelles**
 nations
 . **Seychelles**
- RT Africa
 Indian Ocean
- Seyfert galaxies**
 GS celestial bodies
 . galaxies
 . . active galaxies
 . . . **Seyfert galaxies**
- RT active galactic nuclei
 blazars
 galactic nuclei
 infrared radiation
 line spectra
 luminous intensity
 Markarian galaxies
 spiral galaxies
 stellar spectra

SH waves

ultraviolet radiation

SFAR
USE **sound fixing and ranging**

sferics
USE **atmospherics**

SGEMP
USE **system generated electromagnetic pulses**

SGML
USE **document markup languages**

SGR (astronomy)
(added January 2000)
USE **soft gamma repeaters**

SGR (nuclear reactors)
USE **sodium graphite reactors**

SH waves
(added September 1988)
UF *horizontally polarized shear waves*
GS elastic waves
. S waves
. . **SH waves**
RT nondestructive tests
seismic waves
transverse waves
ultrasonic tests
∞ waves

SH-3 helicopter
UF *HSS-2 helicopter*
Sea King helicopter
Sikorsky HSS-2 helicopter
GS antisubmarine warfare aircraft
. **SH-3 helicopter**
Sikorsky aircraft
. **SH-3 helicopter**
transport aircraft
. **SH-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **SH-3 helicopter**
RT S-61 helicopter
SH-4 helicopter

SH-4 helicopter
GS antisubmarine warfare aircraft
. **SH-4 helicopter**
Sikorsky aircraft
. **SH-4 helicopter**
transport aircraft
. **SH-4 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **SH-4 helicopter**
RT S-61 helicopter
SH-3 helicopter

Shackleton bomber
GS attack aircraft
. bomber aircraft
. . **Shackleton bomber**
Hawker Siddeley aircraft
. **Shackleton bomber**
monoplanes
. **Shackleton bomber**

shades
RT louvers
shielding
∞ shutters

shadowgraph photography
DEF Photography in which steep density gradients in the flow about a body are made visible, the body itself being presented in silhouette. Used for shadowgraphs and spark shadowgraph photography.
UF *shadowgraphs*
spark shadowgraph photography
GS imagery
. photography

. . **shadowgraph photography**
. . . Schlieren photography

RT black and white photography
color photography
flow visualization
wind tunnel models

shadowgraphs
USE **shadowgraph photography**

shadows
DEF Darknesses in regions, caused by obstructions between the source of light and the regions.
GS **shadows**
. lunar shadow
. penumbras
RT cloud cover
clouds (meteorology)
darkness
illuminating
light (visible radiation)
night
self shadowing
umbras

shafts (machine elements)
UF *axles*
journals (shafts)
trunnions
GS **shafts (machine elements)**
. rotating shafts
. . turbshafts
RT axes of rotation
bearings
bushings
∞ journals
∞ loading
loads (forces)
mandrels
mechanical drives
packings (seals)
pintles
pivots
rotating cylinders
spindles
supports
torque
transmissions (machine elements)
vehicle wheels
wheels

shakers
RT classifiers
mixers
separators
shaking
sieves
sizing screens
vertical motion simulators
vibration simulators

shaking
GS **shaking**
. dithers
RT agitation
buffeting
dispersing
epilepsy
flapping
flutter
mixing
∞ separation
shakers
structural vibration
suspending (mixing)
swirling
vibration

shale oil
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . **shale oil**
oils
. **shale oil**
resources
. Earth resources
. . fossil fuels

. . . **shale oil**

RT fuel oils
fuels
gasoline
hydrocarbon fuels
kerogen
kerosene
lubricating oils
paraffins
retort processing

shales
DEF Fine grained detrital sedimentary rocks, formed by the consolidation (especially by compression) of clay, silt, or mud. They are characterized by finely laminated structures, which impart a fissility approximately parallel to the bedding, along which rocks break readily into thin layers and are commonly most conspicuous on weathered surfaces. They are characterized by an appreciable content of clay minerals and detrital quartz; thinly laminated or fissile claystones, siltstones, or mudstones.
GS rocks
. sedimentary rocks
. . **shales**
RT boreholes
clays
Earth resources
minerals
soils

shallow shell equations
RT end plates
∞ equations
pressure vessels
stress analysis

shallow shells
GS shells (structural forms)
. **shallow shells**
RT critical loading
shell stability
shell theory

shallow water
GS water
. **shallow water**
RT cnoidal waves
fisheries
oceanography
oceans
reefs
seas
shorelines
topography
water depth

shanks
USE **joints (junctions)**

Shannon information theory
USE **information theory**

Shannon-Wiener measure
RT entropy
information theory
random variables

shape control
DEF The control of large flexible platforms in orbit by means of actuators strategically located.
RT actuators
Columbus space station
∞ control
control theory
flexible spacecraft
large space structures
space platforms
spacecraft control

shape functions
(added July 1992)
GS functions (mathematics)
. **shape functions**
RT finite element method
polynomials
shape optimization

structural analysis

shape memory alloys

DEF Martensitic alloys (titanium-nickel) which exhibit shape recovery characteristics by stress-induced transformation and reorientation. Reverse transformation during heating restores the original grain structure of the high temperature phase.

- GS alloys
 - . **shape memory alloys**
 - . . nitinol alloys
 - ferroelastic materials
 - . **shape memory alloys**
 - . . nitinol alloys

- RT ferroelasticity
 - microstructure
 - nickel alloys
 - phase transformations
 - plastic memory
 - smart materials
 - stress-strain diagrams
 - temperature effects
 - titanium alloys
 - transition metals

shape optimization

(added February 2001)

DEF Process of, or techniques for, determining values of shape design variables that minimize or maximize a selected object function while satisfying limiting constraints.

- GS optimization
 - . design optimization
 - . . **shape optimization**
- RT aircraft design
 - airfoil profiles
- ∞ design
 - design analysis
 - fineness ratio
 - sensitivity analysis
 - shape functions
 - structural analysis
 - structural design
 - structural design criteria

shaped charges

DEF An explosive device configured so that its energy can be controlled in one direction.

- GS explosive devices
 - . **shaped charges**
- RT ammunition
 - bombs (ordnance)
 - explosive forming
 - explosives
 - projectiles
 - torpedoes
 - warheads
 - weapons

shapers

- GS tools
 - . machine tools
 - . . **shapers**
- RT grinding machines
 - milling machines

shapes

- UF *curved surfaces form*
- GS **shapes**
 - . convexity
 - . ellipticity
 - . flatness
 - . line shape
 - . ogee shape
 - . rosette shapes
 - . T shape
- RT asymmetry
 - concavity
 - contour sensors
 - contours
 - corners
- ∞ cross sections
 - crystal morphology
 - curvature
 - curved panels
 - geoids
 - geometry
 - morphology

- oblate spheroids
- planforms
- ∞ profiles
 - profilometers
 - prolateness
- ∞ surface geometry
 - symmetry
 - topology

sharks

- GS animals
 - . vertebrates
 - . . fishes
 - . . . **sharks**

sharp leading edges

- GS edges
 - . leading edges
 - . . **sharp leading edges**
- RT airfoils
 - forebodies
 - trailing edges

∞ **sharpness**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT clarity
 - contrast
 - precision
 - slender bodies

shatter cones

DEF Distinctively striated conical rock fragments along which fracturing has occurred, ranging in length from less than a centimeter to several meters, and generally found in nested or composite groups in rocks of cryptoexplosion structures and believed to be formed by shock waves generated by meteorite impact.

- GS cones
 - . **shatter cones**
 - rocks
 - . **shatter cones**
- RT carbonaceous rocks
 - cometary collisions
 - crustal fractures
 - formations
 - geology
 - geomorphology
 - meteorite collisions
 - meteorite craters
 - sedimentary rocks
 - shock loads
 - striation
 - structural properties (geology)

shattering

USE **fragmentation**

Shawnee helicopter

USE **CH-21 helicopter**

∞ **shear**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT dilatational waves
 - shearing
 - shears

shear creep

- GS mechanical properties
 - . creep properties
 - . . **shear creep**
- RT plastic deformation
 - tensile creep

shear disturbances

USE **S waves**

shear fatigue

USE **shear stress**

shear flow

- GS fluid flow
 - . **shear flow**
- RT coaxial flow
 - core flow
 - creep properties
- ∞ flow
 - grazing flow

- Kolmogorov theory
- Krook equation
- mixing length flow theory
- plastic flow
- Richardson number
- stratified flow

shear layers

- UF *Chapman shear layer*
- RT boundary layers
 - Earth ionosphere
- ∞ layers
 - mixing layers (fluids)
 - riblets
 - screech tones
 - shock layers
 - shock wave control
- ∞ transition layers

shear properties

- GS mechanical properties
 - . **shear properties**
 - . . shear strength
- RT creep properties
 - ductility
 - fatigue (materials)
 - Hookes law
 - hysteresis
 - impact strength
 - modulus of elasticity
- ∞ properties
 - resilience
 - set
 - stress relaxation
 - stresses
 - stress-strain diagrams
 - temperature inversions
 - toughness

shear strain

DEF The tangent of the angular change, due to force, between two lines originally perpendicular to each other through a point in a body.

- RT mechanical properties
 - Mindlin plates
 - structural strain
 - torsional vibration

shear strength

DEF The maximum shear stress which a material is capable of sustaining. Shear strength is calculated from the maximum load during a shear or torsion test and is based on the original dimensions of the cross section of the specimen.

- GS mechanical properties
 - . shear properties
 - . . **shear strength**
- RT compressive strength
 - fiber strength
 - high strength
 - interfacial energy
- ∞ strength
 - tensile strength

shear stress

DEF The stress component tangential to the plane on which the forces act. Used for shear fatigue and shearing stress.

- UF *shear fatigue*
- shearing stress*
- GS stresses
 - . **shear stress**
 - . . torsional stress
- RT interlaminar stress
 - mechanical properties
 - shearography
 - transverse loads

shear waves

USE **S waves**

shearing

- GS cutting
 - . **shearing**
- RT blanking (cutting)
 - cold working
 - failure
 - failure modes

shearography

hot working
loads (forces)
metal cutting
metal working
∞ separation
∞ shear
shears
stamping
structural strain

shearing stress

USE **shear stress**

shearography

(added February 1996)

DEF An interferometric method that provides whole field observation of derivatives of small surface displacement and hence, strain.

GS interferometry
. **shearography**
RT displacement measurement
nondestructive tests
shear stress
strain measurement
stress measurement

shears

GS cutters
. **shears**
tools
. **shears**
RT machine tools
saws
∞ shear
shearing

sheaths

GS **sheaths**
. ion sheaths
. plasma sheaths
RT ∞ casing
encapsulating
fairings
jackets
linings
protectors
roofs
walls

shedding

RT ejection
molting
peeling
vortex shedding

sheds

RT shelters

sheep

GS animals
. vertebrates
. mammals
. . . **sheep**
RT livestock
wool

sheet metal

USE **metal sheets**

sheet molding compounds

(added July 1993)

DEF Resin matrix of polymer matrix fiber composites formed into sheets and used as molding materials for structures.

GS molding materials
. **sheet molding compounds**
RT composite materials
composite structures
fiber composites
graphite-epoxy composites
molds
plastics
polymer matrix composites
resin matrix composites
∞ sheets

∞ sheets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT coatings

current sheets
elastic sheets
fabrics
flat plates
laminates
membrane structures
membranes
metal foils
metal sheets
multilayer insulation
neutral sheets
panels
papers
polymeric films
sheet molding compounds
thick plates
thin plates
vortex sheets
vortex streets
webs (sheets)

shell anodes

GS electrodes
. anodes
. . **shell anodes**
RT heat measurement

shell galaxies

(added March 1991)

GS celestial bodies
. galaxies
. . **shell galaxies**
RT elliptical galaxies
galactic structure
interacting galaxies

shell stability

GS mechanical properties
. dimensional stability
. . structural stability
. . . **shell stability**
stability
. static stability
. . dimensional stability
. . . structural stability
. . . . **shell stability**
RT buckling
fluid filled shells
liquid filled shells
orthotropic shells
plastic shells
reinforced shells
shallow shells

shell stars

(added November 1988)

GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . B stars
. . . . **shell stars**
. . peculiar stars
. . . **shell stars**
RT stellar envelopes

shell theory

RT perforated shells
self consistent fields
shallow shells
∞ theories

shellfish

DEF Aquatic invertebrate animals having shells.
RT coastal water
marine biology
marine environments
marine resources
mollusks

shells (structural forms)

GS **shells (structural forms)**
. anisotropic shells
. circular shells
. conical shells
. corrugated shells
. cylindrical shells
. domes (structural forms)
. . radomes

. elastic shells
. fluid filled shells
. . liquid filled shells
. hemispherical shells
. metal shells
. orthotropic shells
. perforated shells
. plastic shells
. reinforced shells
. shallow shells
. spherical shells
. . spherical caps
. thin walled shells
. toroidal shells
RT aircraft structures
arches
bays (structural units)
∞ capsules
clamped structures
coverings
cowlings
enclosures
fairings
housings
hulls (structures)
isotensoid structures
membrane structures
membranes
monocoque structures
nacelles
pressure vessel design
protuberances
rocket engine cases
skin (structural member)
walls

shelters

GS **shelters**
. lunar shelters
RT buildings
civil defense
environmental engineering
habitability
sheds
Starsite program
survival

∞ shelves

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bedrock
cases (containers)
cliffs
continental shelves
racks (frames)
reefs

Shenandoah Valley (VA)

GS valleys
. **Shenandoah Valley (VA)**
RT river basins
Virginia

Shenzhou 5 spacecraft

(added October 2003)

DEF Chinese manned spacecraft consisting of a forward orbital module, a re-entry capsule, and an aft service module.

GS Chinese spacecraft
. **Shenzhou 5 spacecraft**
manned spacecraft
. **Shenzhou 5 spacecraft**
RT Chinese space program
Long March launch vehicles

shergottites

(added September 1991)

DEF Achondritic stony meteorites composed mainly of pigeonite and maskolyinite.

GS celestial bodies
. meteorites
. . stony meteorites
. . . achondrites
. . . . **shergottites**
RT chassignites
nakhlites

SNC meteorites

Shergotty Nakhla Chassigny meteorites
(added March 1998)

USE **SNC meteorites**

shielding

DEF The arrangement of shields used for any particular circumstance; the use of shields.

GS **shielding**

- . electromagnetic shielding
- . . radio frequency shielding
- . electrostatic shielding
- . heat shielding
- . . reentry shielding
- . . reusable heat shielding
- . magnetic shielding
- . radiation shielding
- . . solar radiation shielding
- . spacecraft shielding

RT

- ablative nose cones
- absorbers (materials)
- armor
- attenuation
- attenuators
- baffles
- ∞ barriers
- blast deflectors
- blinds
- deflectors
- diverters
- enclosures
- flame deflectors
- guards (shields)
- housings
- linings
- louvers
- manipulators
- panels
- protection
- protectors
- safety devices
- ∞ screens
- shades
- suppressors
- windows (apertures)
- windshields

shields (geology)

USE **bedrock**

∞ **shift**

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

- exchanging
- frequency shift
- phase shift
- shift registers
- transferring

shift registers

GS computer components

. **shift registers**

RT

- computer storage devices
- delay lines (computer storage)
- digital techniques
- registers (computers)

∞ shift

shifting equilibrium flow

GS fluid flow

- . gas flow
- . . equilibrium flow
- . . . **shifting equilibrium flow**

RT

frozen equilibrium flow

Shillelagh missiles

GS missiles

- . surface to surface missiles
- . . antitank missiles
- . . . **Shillelagh missiles**

ship hulls

GS hulls (structures)

. **ship hulls**

RT

- hydrodynamic coefficients
- hydrodynamics
- ships
- structural design

submarines

ship terminals

GS terminal facilities

. **ship terminals**

RT

- artificial harbors
- deepwater terminals
- harbors
- Marots (ESA)
- offshore docking
- tanker terminals
- ∞ terminals
- wharves

ship to shore communication

DEF Communication between a ship at sea and a shore station.

GS telecommunication

. communication

. . **ship to shore communication**

RT

- data transmission
- radio communication
- ships
- telemetry

ships

GS water vehicles

. **ships**

. . Advanced Range Instrumentation

Ship

. . aircraft carriers

. . cargo ships

. . . Savannah nuclear ship

. . . tanker ships

. . nuclear powered ships

. . . Savannah nuclear ship

. . satellite communications ships

. . submarines

. . . ballistic missile submarines

. . . guided missile submarines

. . . trident submarine

. . surface effect ships

. . SWATH (ship)

RT

amphibious vehicles

antiship missiles

antiship warfare

boats

harbors

hydrofoil craft

hydrofoils

keels

marine transportation

∞ military vehicles

navy

ocean data acquisitions systems

propellers

research vehicles

ship hulls

ship to shore communication

shipyards

surface navigation

surface vehicles

∞ transport vehicles

transportation energy

underwater vehicles

∞ vessels

shipyards

RT

cargo ships

construction

enclosures

industrial areas

industries

logistics

maintenance

oceanography

∞ ports

ships

tanker ships

water vehicles

Shiva laser system

DEF High energy multi-arm solid state (Nd doped ED-2 glass) infrared laser system used for laser driven fusion experiments.

GS stimulated emission devices

. lasers

. . high power lasers

. . . **Shiva laser system**

RT

coherent light

- laser fusion
- laser outputs
- Nova Laser System
- ∞ systems

shivering

GS **shivering**

. dithers

RT

body temperature

shoals

GS water

. **shoals**

RT

- beaches
- lakes
- oceanography
- oceans
- reefs
- ivers
- seas
- water depth

∞ **shock**

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

- convulsions
- mechanical shock
- shock (physiology)
- shock resistance
- thermal shock

shock (physiology)

DEF Clinical manifestations of circulatory insufficiency, including hypotension, weak pulse, tachycardia, pallor, and diminished urinary output.

RT

- human reactions
- human tolerances
- physiological effects
- physiology
- ∞ shock

shock absorbers

DEF Devices for the dissipation of energy used to modify the response of a mechanical system to applied shock.

RT ∞ absorbers

- absorbers (equipment)
- cushions
- damping
- energy absorption
- hydraulic equipment
- impact
- impact acceleration
- isolators
- landing gear
- mechanical shock
- pneumatic equipment
- silencers
- springs (elastic)
- suspension systems (vehicles)
- vibration damping
- vibration isolators

shock diffusers

USE **diffusers**

shock wave attenuation

shock discontinuity

GS discontinuity

. **shock discontinuity**

RT

density distribution

wave fronts

shock fronts

DEF Shock waves regarded as the forward surfaces of fluid regions having characteristics different from those of the region ahead of the wave. The front sides of shock waves.

GS

wave fronts

. **shock fronts**

RT ∞

- fronts
- magnetosheath
- wave propagation
- wave scattering

shock heating

GS heating

. kinetic heating

. . aerodynamic heating

shock layers

- . . . **shock heating**
- . transient heating
- . . . **shock heating**
- RT magnetohydrodynamic shear heating
- plasma heating

shock layers

- RT ∞ layers
- normal shock waves
- oblique shock waves
- shear layers
- stress waves
- ∞ transition layers

shock loads

- GS loads (forces)
- . dynamic loads
- . . transient loads
- . . . **shock loads**
- blast loads
- RT aerodynamic loads
- axial compression loads
- compression loads
- contact loads
- crustal fractures
- impact loads
- landing loads
- shatter cones
- structural design criteria

shock measuring instruments

- GS measuring instruments
- . **shock measuring instruments**
- RT accelerometers
- pressure gages
- seismographs
- strain gages

shock resistance

- GS **shock resistance**
- . impact resistance
- RT earthquake resistance
- high acceleration
- impact
- mechanical properties
- mechanical shock
- propellant sensitivity
- ∞ resistance
- sensitivity
- ∞ shock
- thermal shock
- vibration

shock simulators

- GS simulators
- . **shock simulators**
- RT vertical motion simulators
- vibration simulators

shock spectra

- DEF Plots of the maximum acceleration experienced by single degree of freedom systems as a function of their own natural frequency in response to applied shocks.
- GS spectra
- . **shock spectra**
- RT dynamic structural analysis
- energy spectra
- mechanical shock
- noise spectra
- stroking tests
- structural design
- structural vibration

shock tests

- RT drop tests
- impact tests
- load tests
- railroad humping tests
- ∞ tests
- vibration tests

shock tubes

- DEF Relatively long tubes or pipes in which very brief high speed gas flows are produced by the sudden release of gas at very high pressure into low pressure portions of the tubes; the high speed flows move into the region of low pressure behind shock waves.
- GS shock wave generators

. shock tubes

- . . magnetic annular shock tubes
- . . shock tunnels
- RT gas temperature
- hotshot wind tunnels
- hypersonic flow
- hypersonic wind tunnels
- hypervelocity wind tunnels
- low density research
- low density wind tunnels
- magnetic pistons
- test facilities
- tube lasers
- ∞ tubes

shock tunnels

- DEF Shock tubes used as wind tunnels.
- GS shock wave generators
- . shock tubes
- . . **shock tunnels**
- test facilities
- . wind tunnels
- . . hypersonic wind tunnels
- . . . **shock tunnels**
- . . hypervelocity wind tunnels
- . . . **shock tunnels**
- RT cascade wind tunnels
- hotshot wind tunnels
- hypersonic flow
- low density research
- low density wind tunnels
- supersonic wind tunnels

shock wave attenuation

- UF *shock diffusers*
- GS attenuation
- . wave attenuation
- . . acoustic attenuation
- . . . **shock wave attenuation**
- RT atmospheric attenuation
- noise reduction
- wave propagation

shock wave control

- RT ∞ control
- secondary injection
- shear layers

shock wave generators

- GS **shock wave generators**
- . shock tubes
- . . magnetic annular shock tubes
- . . shock tunnels
- RT ∞ generators
- magnetic pistons
- pressure sensors
- pulse generators
- wave generation

shock wave interaction

- GS wave interaction
- . **shock wave interaction**
- RT Godunov method
- interactional aerodynamics
- ∞ interactions
- interplanetary shock waves
- propagation modes
- scattering
- wave degradation

shock wave luminescence

- GS emission
- . light emission
- . . luminescence
- . . . **shock wave luminescence**
- RT low density research
- wave interaction

shock wave profiles

- RT Krook equation
- pressure distribution
- ∞ profiles
- velocity distribution
- wave interaction

shock wave propagation

- GS transmission
- . wave propagation
- . . **shock wave propagation**
- RT atmospheric attenuation

- Burger equation
- Crocco method
- high temperature gases
- interplanetary shock waves
- nonequilibrium radiation
- Rankine-Hugoniot relation
- secondary injection
- sound propagation
- two fluid models
- wave attenuation
- wave interaction

shock waves

DEF Surfaces or sheets of discontinuity (i.e., abrupt changes in conditions) set up in supersonic fields of flow, through which the fluids undergo a finite decrease in velocity accompanied by a marked increase in pressure, density, temperature, and entropy, as occurs, e.g., in supersonic flows about bodies. Used for bow shock waves.

- UF *bow shock waves*
- GS elastic waves
- . **shock waves**
- . . detonation waves
- . . interplanetary shock waves
- . . Mach cones
- . . normal shock waves
- . . oblique shock waves
- . . Riemann waves
- . . sonic booms

- RT adiabatic equations
- aerodynamic noise
- blast loads
- ∞ blasts
- bow waves
- Burnett equations
- caustic lines
- crustal fractures
- detonation
- earthquake damage
- earthquake resistance
- earthquake resistant structures
- earthquakes
- electrostatic waves
- exploding wires
- explosions
- gas temperature
- geodynamics
- Hugoniot equation of state
- hypersonic flow
- hypersonic shock
- hypersonic wakes
- impact
- implosions
- longitudinal waves
- Mach number
- Mach reflection
- magnetohydrodynamic waves
- mechanical shock
- molecular relaxation
- noise (sound)
- novae
- plane waves
- planetary quakes
- plasma waves
- plumes
- pressure pulses
- seismic waves
- sound pressure
- sound waves
- stress waves
- supersonic flow
- ∞ transition layers
- transonic flow
- tsunami waves
- underwater acoustics
- underwater communication
- ∞ waves
- wedge flow
- Whitham rule

Shoemaker-Levy 9 comet

- (added June 1994)
- GS celestial bodies
- . comets
- . . **Shoemaker-Levy 9 comet**
- RT cometary collisions

- Jupiter (planet)
- shoes**
 GS clothing
 . **shoes**
 RT boots (footwear)
 leather
 protective clothing
 socks
- Shooting Star aircraft*
 USE **T-33 aircraft**
- shops**
 RT maintenance
- Shoran**
 DEF A precision electronic position fixing system using a pulse transmitter and receiver and two transponder beacons at fixed points. Used for short range navigation.
 UF *short range navigation*
 GS navigation
 . radio navigation
 . . hyperbolic navigation
 . . . **Shoran**
 RT air navigation
 Decca navigation
 distance measuring equipment
 navigation aids
 solar compasses
- shorelines**
 RT beaches
 coastal water
 coasts
 lakes
 oceanography
 oceans
 rivers
 shallow water
 tidal flats
 wetlands
- Short Belfast C MK-1 aircraft*
 USE **SC-5 aircraft**
- short circuit currents**
 DEF The steady value of the input alternating currents that flow when the output direct current terminals are short-circuited and rated line alternating voltage is applied to the line terminals.
 GS electric current
 . **short circuit currents**
 RT open circuit voltage
 photovoltaic cells
 short circuits
 solar cells
 volt-ampere characteristics
- short circuits**
 DEF An abnormal connection of relatively low resistance between two points on a circuit. The result is a flow of excess (often damaging) current between these points.
 GS electrical faults
 . **short circuits**
 RT circuits
 electric arcs
 failure
 jumpers
 short circuit currents
 sneak circuit analysis
 system failures
- short cracks**
 GS fractures (materials)
 . cracks
 . . **short cracks**
 RT crack geometry
 crack initiation
 crack propagation
 fatigue life
 fracture mechanics
 metal fatigue
- short haul aircraft**
 GS transport aircraft
 . **short haul aircraft**
- . . C-8A augmentor wing aircraft
 . . Cessna 402B aircraft
 . . Mercure aircraft
 RT air transportation
 ∞ aircraft
 aircraft design
 airline operations
 passenger aircraft
 V/STOL aircraft
- short range ballistic missiles**
 GS missiles
 . ballistic missiles
 . . **short range ballistic missiles**
 . surface to surface missiles
 . . **short range ballistic missiles**
 RT field army ballistic missiles
 intermediate range ballistic missiles
- short range navigation*
 USE **Shoran**
- Short SC-1 aircraft*
 USE **SC-1 aircraft**
- Short SC-5 aircraft*
 USE **SC-5 aircraft**
- Short SC-7 aircraft*
 USE **SC-7 aircraft**
- short takeoff & vertical landing aircraft*
 USE **STOVL aircraft**
- short takeoff aircraft**
 UF *STOL aircraft*
 GS V/STOL aircraft
 . **short takeoff aircraft**
 . . Aladin 2 aircraft
 . . Breguet 940 aircraft
 . . Breguet 941 aircraft
 . . C-8A augmentor wing aircraft
 . . C-15 aircraft
 . . C-123 aircraft
 . . DHC 4 aircraft
 . . DHC 5 aircraft
 . . Questol aircraft
 . . U-10 aircraft
 RT ∞ aircraft
 circulation control airfoils
 compound helicopters
 externally blown flaps
 fan in wing aircraft
 helicopters
 JATO engines
 jet aircraft
 jet flaps
 lift fans
 lifting rotors
 ∞ military aircraft
 powered lift aircraft
 rotary wing aircraft
 Siebel aircraft
 STOVL aircraft
 ∞ subsonic aircraft
 takeoff runs
 tilt wing aircraft
 vertical takeoff aircraft
 ∞ winged vehicles
- short wave radiation**
 SN (RADIO WAVES)
 GS electromagnetic radiation
 . radio waves
 . . **short wave radiation**
 . . . microwaves
 centimeter waves
 cosmic microwave background radiation
 decimeter waves
 microwave emission
 millimeter waves
 submillimeter waves
 RT far infrared radiation
 high frequencies
 long wave radiation
 monochromatic radiation
 ∞ radiation
 Surface Meteorology and Solar Energy project
- Surface Radiation Budget project
- short wave radio transmission**
 GS transmission
 . electromagnetic wave transmission
 . . radio transmission
 . . . **short wave radio transmission**
 . signal transmission
 . . radio transmission
 . . . **short wave radio transmission**
 RT high frequencies
 wave propagation
- shortening*
 USE **reduction**
- ∞ **shot**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ammunition
 launching
 orbital shots
 pellets
 shot noise
 shot peening
- shot noise**
 DEF Quantum noise caused by electric current fluctuations attributable to the discrete nature of charge carriers.
 GS electromagnetic interference
 . radio frequency interference
 . . electromagnetic noise
 . . . **shot noise**
 RT Barritt diodes
 ∞ shot
 thermal noise
- shot peening**
 GS hardening (materials)
 . **shot peening**
 metal finishing
 . peening
 . . **shot peening**
 RT cold working
 descaling
 fatigue (materials)
 metal working
 ∞ shot
 strain hardening
 surface finishing
 work hardening
- shoulders**
 RT joints (anatomy)
 scapula
- ∞ **showers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT cosmic ray showers
 flood predictions
 meteoroid showers
 rain
 rain forests
 rainstorms
- shrapnel**
 RT fragmentation
 fragments
 projectiles
 weapons
- shredding**
 GS comminution
 . **shredding**
 RT composting
 cutting
 tearing
- Shrike missile**
 GS missiles
 . air to surface missiles
 . . **Shrike missile**
 RT solid propellant rocket engines
- shrinkage**
 RT casting
 contraction
 growth

shrouded nozzles

- ∞ reduction
- sintering
- temperature inversions
- warping

shrouded bodies

USE **shrouds**

shrouded nozzles

- RT annular nozzles
- nozzle geometry
- nozzle walls
- ∞ nozzles

shrouded propellers

- UF *ducted propellers*
- GS propellers
- . **shrouded propellers**
- RT ducted fans
- ring wings
- thrust augmentation
- XV-11A aircraft

shrouded turbines

- GS turbomachinery
- . turbines
- . . **shrouded turbines**

shrouds

- UF *shrouded bodies*
- RT coverings
- ducted bodies
- rigging

shunts

USE **bypasses**
circuits

shutdowns

- DEF The processes of decreasing engine thrusts to zero.
- RT deactivation
- engines
- ∞ SCRAM

∞ shutters

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT blinds
- camera shutters
- louvers
- shades

Shuttle Avionics Integration Laboratory

USE **SAIL project**

Shuttle Boosters

USE **Space Shuttle Boosters**

Shuttle Derived Vehicles

- DEF New configuration resulting from the production and operation of the Space Shuttle. Used for SDV.
- UF *SDV*
- RT Advanced Launch System (STS)
- manned spacecraft
- Space Shuttle orbiters
- space shuttles
- ∞ spacecraft
- spacecraft design

Shuttle Engineering Simulator

- DEF Training equipment for crew members in mission operation procedures including various approach maneuvers, braking, final approach, etc.
- UF *SES (Shuttle)*
- GS simulators
- . **Shuttle Engineering Simulator**
- RT space shuttles

shuttle glow

USE **spacecraft glow**

Shuttle Imaging Radar

- UF *Earth resources shuttle imaging radar*
- SIR-A*
- SIR-B*
- SIR-C*
- SIR-D*
- GS radar

- . Doppler radar
- . . pulse Doppler radar
- . . . **Shuttle Imaging Radar**
- . imaging radar
- . . **Shuttle Imaging Radar**
- . pulse radar
- . . pulse Doppler radar
- . . . **Shuttle Imaging Radar**
- . space based radar
- . . **Shuttle Imaging Radar**
- . synthetic aperture radar
- . . **Shuttle Imaging Radar**
- RT Earth observations (from space)
- radar geology
- radar imagery
- remote sensing
- Space Shuttle payloads
- synthetic arrays

Shuttle Mission Simulator

- UF *SMS (Shuttle)*
- GS simulators
- . **Shuttle Mission Simulator**

Shuttle Orbiters

USE **Space Shuttle orbiters**

Shuttle pallet satellites

- DEF Reusable pallet type structures designed to be shuttle launched which will act as building blocks for larger platforms. Used for SPAS (ESA platforms).
- UF *SPAS (ESA platforms)*
- GS artificial satellites
- . **Shuttle pallet satellites**
- RT space shuttles

Shuttle Superlightweight Tank
(added June 1998)

USE **external tanks**
propellant tanks

SI

USE **International System of Units**

sialon

- DEF Any composition containing silicon, aluminum, oxygen, and nitrogen and usually produced by the high-temperature reactions among the ingredients.
- GS mixtures
- . **sialon**
- RT aluminum
- ceramics
- high temperature
- nitrogen
- oxygen
- reaction bonding
- refractory materials
- silicon nitrides
- sintering

SIAM missiles

- UF *self initiated antiaircraft missiles*
- GS missiles
- . antiaircraft missiles
- . . **SIAM missiles**
- RT air to air missiles
- antimissile missiles

Siberia

- RT Arctic regions
- Asia
- U.S.S.R.

SIC (coefficient)

USE **structural influence coefficients**

Sicily

- GS landforms
- . islands
- . . **Sicily**
- RT Italy
- Mediterranean Sea

sicknesses

- GS **sicknesses**
- . altitude sickness
- . decompression sickness

- . motion sickness

SID (ionospheric disturbances)

USE **sudden ionospheric disturbances**

side inlets

- GS intake systems
- . **side inlets**
- RT air intakes
- bypass ratio
- hypersonic inlets
- inlet airframe configurations
- nose inlets
- scoops
- supersonic inlets
- ∞ water intakes

sidebands

- RT ∞ bands
- double sideband transmission
- selective fading
- single sideband transmission

sidelobe reduction

- GS attenuation
- . **sidelobe reduction**
- RT apodization
- horn antennas
- radar antennas
- radar attenuation
- radar reception
- radar reflectors
- radar resolution
- ∞ reduction
- sidelobes

sidelobes

- GS distribution (property)
- . radiation distribution
- . . antenna radiation patterns
- . . . **sidelobes**
- RT antenna design
- ∞ lobes
- near fields
- sidelobe reduction

side-looking radar

- GS radar
- . synthetic aperture radar
- . . **side-looking radar**
- RT airborne radar
- change detection
- imaging radar
- radar imagery
- radar scanning
- search radar

sidereal time

- DEF Time based upon the rotation of the Earth relative to the vernal equinox.
- GS time
- . **sidereal time**
- RT astronomy
- Earth rotation
- stellar motions
- time measurement
- units of measurement

siderite meteorites

USE **iron meteorites**

siderites

- DEF A spathic iron ore; an iron carbonate.
- GS carbon compounds
- . carbonates
- . . **siderites**
- iron compounds
- . **siderites**
- minerals
- . **siderites**

siderophile elements

- (added January 2002)
- DEF Elements having a chemical affinity for iron, and normally found in the metal-rich interiors of compositionally segregated planets and asteroids.
- GS chemical elements
- . **siderophile elements**
- RT chondrites

- Earth mantle
 - geochemistry
 - iron
 - lunar composition
 - meteoritic composition
 - mineralogy
 - minerals
 - petrography
 - planetary composition
 - trace elements
- sides**
 - RT edges
 - geometry
 - rims
 - walls
- sideslip**
 - RT maneuvers
 - roll
 - skidding
 - ∞ slip
 - spacecraft motion
 - yaw
- sidewash*
 - USE **backwash**
- Sidewinder missiles**
 - GS missiles
 - . air to air missiles
 - .. **Sidewinder missiles**
 - . anti-aircraft missiles
 - .. **Sidewinder missiles**
- Siebel aircraft**
 - RT ∞ aircraft
 - short takeoff aircraft
- Siemens 2002 computer**
 - GS data processing equipment
 - . computers
 - .. **Siemens 2002 computer**
- Sierra Leone**
 - GS nations
 - . **Sierra Leone**
 - RT Africa
- Sierra Nevada Mountains (CA)**
 - GS landforms
 - . mountains
 - .. **Sierra Nevada Mountains (CA)**
 - RT California
- sieves**
 - GS separators
 - . **sieves**
 - RT fluid filters
 - shakers
 - sizing screens
 - wire cloth
- sight*
 - USE **visual perception**
- SIGMA 5 computer**
 - GS data processing equipment
 - . computers
 - .. analog computers
 - ... **SIGMA 5 computer**
 - .. digital computers
 - ... **SIGMA 5 computer**
- SIGMA 7**
 - GS manned spacecraft
 - . Mercury spacecraft
 - .. **SIGMA 7**
 - reentry vehicles
 - . recoverable spacecraft
 - .. Mercury spacecraft
 - ... **SIGMA 7**
 - soft landing spacecraft
 - . Mercury spacecraft
 - .. **SIGMA 7**
 - space capsules
 - . Mercury spacecraft
 - .. **SIGMA 7**
- RT Mercury MA-8 flight
- SIGMA 9 computer**
 - GS data processing equipment
 - . computers
 - .. digital computers
 - ... SIGMA computers
 - **SIGMA 9 computer**
- SIGMA computers**
 - GS data processing equipment
 - . computers
 - .. digital computers
 - ... **SIGMA computers**
 - SIGMA 9 computer
- Sigma Orionis**
 - GS celestial bodies
 - . stars
 - .. double stars
 - ... binary stars
 - **Sigma Orionis**
 - .. early stars
 - ... hot stars
 - B stars
 - **Sigma Orionis**
 - .. peculiar stars
 - ... **Sigma Orionis**
 - RT Orion constellation
 - stellar systems
- sigma-mesons**
 - GS particles
 - . elementary particles
 - .. bosons
 - ... mesons
 - vector mesons
 - **sigma-mesons**
 - .. fermions
 - ... baryons
 - **sigma-mesons**
 - .. hadrons
 - ... baryons
 - **sigma-mesons**
 - ... mesons
 - vector mesons
 - **sigma-mesons**
 - RT nuclear particles
 - .. bosons
 - ... mesons
 - vector mesons
 - **sigma-mesons**
 - RT charged particles
 - eta-mesons
 - signal analysis**
 - GS data processing
 - . **signal analysis**
 - .. cepstral analysis
 - RT ∞ analyzing
 - digital radar systems
 - frequency analyzers
 - Gabor transformation
 - phase deviation
 - signal measurement
 - spectrum analysis
 - wavelet analysis
 - signal analyzers**
 - GS measuring instruments
 - . analyzers
 - .. **signal analyzers**
 - RT analog computers
 - autodynes
 - signal detection**
 - GS detection
 - . **signal detection**
 - .. correlation detection
 - RT autodynes
 - ∞ detectors
 - discrimination
 - dynamic range
 - phase detectors
 - preamplifiers
 - radar detection
 - signal measurement
 - sound transducers
 - telecommunication
 - signal detectors**
 - UF *signal discriminators*
 - RT anticoincidence detectors
 - autodynes
 - ∞ detectors
 - discrimination
 - microwave sensors
 - preamplifiers
 - signal measurement
 - sound transducers
 - telecommunication
 - signal discriminators*
 - USE **signal detectors**
 - signal distortion**
 - GS distortion
 - . **signal distortion**
 - RT intersymbolic interference
 - radio signals
 - scrambling (communication)
 - signal encoding**
 - GS coding
 - . **signal encoding**
 - .. amplitude modulation
 - ... quadrature amplitude modulation
 - .. frequency modulation
 - ... feedback frequency modulation
 - ... FM/PM (modulation)
 - ... frequency shift keying
 - ... pulse frequency modulation
 - .. phase modulation
 - ... FM/PM (modulation)
 - ... phase shift keying
 - binary phase shift keying
 - quadrature phase shift keying
 - .. pulse modulation
 - ... pulse amplitude modulation
 - ... pulse code modulation
 - ... delta modulation
 - ... differential pulse code modulation
 - ... pulse frequency modulation
 - ... pulse time modulation
 - ... pulse duration modulation
 - ... pulse position modulation
 - .. trellis coding
 - RT concatenated codes
 - digital to analog converters
 - pulse frequency modulation telemetry
 - redundancy encoding
 - Reed-Solomon codes
 - scrambling (communication)
 - telecommunication
 - transmitters
 - video compression
 - Viterbi decoders
 - voice data processing
 - wavelet analysis
 - signal fadeout*
 - USE **signal fading**
 - signal fading**
 - UF *signal fadeout*
 - GS fading
 - . **signal fading**
 - .. Rayleigh fading
 - .. selective fading
 - RT acoustic instability
 - atmospheric scattering
 - attenuation
 - diffraction patterns
 - electromagnetic absorption
 - ground effect (communications)
 - radio frequency interference
 - radio scattering
 - reception diversity
 - signal measurement
 - smear
 - sound intensity
 - signal fading rate**
 - GS rates (per time)
 - . **signal fading rate**
 - RT fading
 - selective fading

signal flow graphs

sound intensity

signal flow graphs

- RT duality principle
- ∞ flow graphs
- network analysis
- Richards theorem
- sneak circuit analysis

signal generators

DEF Shielded sources of voltage or power, the output level and frequency of which are calibrated, and usually variable over a range.

- GS **signal generators**
 - . frequency synthesizers
 - . function generators
- RT circuits
- ∞ generators
 - Hall generators
 - oscillators
 - sirens
 - solid state devices
 - sound generators
 - subharmonic generators
 - voltage generators

signal measurement

- UF *electronic signal measurement*
- RT electromagnetic measurement
- ionospheric propagation
- ∞ measurement
 - signal analysis
 - signal detection
 - signal detectors
 - signal fading
 - signal processing
 - signal to noise ratios

signal mixing

- GS mixing
 - . **signal mixing**
- RT auditory signals
- error signals
- four-wave mixing
- magnetic signals
- radio signals

signal processing

- GS data processing
 - . **signal processing**
 - . . space-time adaptive processing
- RT audio signals
- companding
- direction finding
- discrete cosine transform
- equalizers (circuits)
- frequency domain analysis
- interference immunity
- maximum entropy method
- message processing
- multisensor fusion
- onboard data processing
- ∞ processing
 - signal measurement
 - smoke detectors
 - surface acoustic wave devices
 - telemetry
 - time domain analysis
 - VHSIC (circuits)
 - video signals
 - Viterbi decoders
 - wavelet analysis

signal reception

- GS **signal reception**
 - . homodyne reception
 - . radar reception
 - . radio reception
 - . television reception
- RT antenna gain
- preamplifiers
- ∞ receiving
 - sentences
 - transmission rate (communications)
 - vocoders

signal reflection

- GS echoes
 - . **signal reflection**
- reflection

. signal reflection

- RT cepstral analysis
- spread reflection
- transmission
- wave reflection

signal stabilization

- GS stabilization
 - . **signal stabilization**
- RT frequency control
- transmission circuits

signal to noise ratios

DEF Ratios which measure the comprehensibility of a data source or transmission link, usually expressed as the root mean square signal amplitude divided by the root mean square noise amplitude.

- GS ratios
 - . **signal to noise ratios**
- RT amplitude distribution analysis
- attenuation
- background noise
- bit error rate
- carrier to noise ratios
- channel noise
- communication theory
- companding
- correlation detection
- dark current
- dynamic range
- electromagnetic interference
- electromagnetic noise
- false alarms
- image contrast
- image enhancement
- interference immunity
- low noise
- matched filters
- maximum entropy method
- ∞ noise
 - noise propagation
 - noise spectra
 - noise threshold
 - random noise
 - random signals
 - signal measurement
- ∞ signals
 - white noise

signal transmission

- GS transmission
 - . **signal transmission**
 - . . data transmission
 - . . . automatic picture transmission
 - . . . multiple access
 - Aloha system
 - carrier sense multiple access
 - code division multiple access
 - demand assignment multiple access
 - . . . frequency division multiple access
 - . . . time division multiple access
 - . . . packet transmission
 - Aloha system
 - . . . single channel per carrier transmission
 - . . . microwave attenuation
 - . . . radar transmission
 - . . . radio transmission
 - double sideband transmission
 - . . . ionospheric propagation
 - ionospheric F-scatter propagation
 - . . . microwave transmission
 - . . . multipath transmission
 - . . . short wave radio transmission
 - . . . single sideband transmission
 - . . . spread spectrum transmission
 - . . . transequatorial propagation
 - . . . transhorizon radio propagation
 - . . . satellite transmission
 - . . . telemetry
 - biotelemetry
 - P.A.C.M. telemetry
 - PCM telemetry
 - radio telemetry
 - pulse frequency modulation
 - telemetry

- . . television transmission
- RT audio signals
- code division multiplexing
- message processing
- messages
- multiplexing
- orthogonal multiplexing theory
- packet switching
- pulse communication
- radar attenuation
- radio attenuation
- radio scattering
- sentences
- sound transmission
- syllables
- talking
- telecommunication
- transmission efficiency
- transmission rate (communications)
- video signals
- wireless communication

signal-processing-in-the-element detectors
(added January 2000)

USE **infrared detectors**

∞ signals

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT audio signals
- auditory signals
- beacons
- bells
- chirp signals
- electric pulses
- error signals
- horns
- magnetic signals
- messages
- pseudorandom sequences
- pyrotechnics
- radio signals
- random signals
- signal to noise ratios
- sirens
- sound generators
- symbols
- telecommunication
- time signals
- video signals
- visual signals
- visual stimuli

signature analysis

- RT ∞ analyzing
 - cepstral analysis
 - detection
 - imagery
 - infrared signatures
 - microwave signatures
 - missile signatures
 - radar signatures
 - signatures
 - target recognition

signatures

- GS **signatures**
 - . infrared signatures
 - . magnetic signatures
 - . missile signatures
 - . radar signatures
 - . spectral signatures
 - . . microwave signatures
- RT amplitude distribution analysis
- biomarkers
- detection
- representations
- signature analysis
- target recognition
- video landmark acquisition and tracking

significance

- RT confidence limits
- correlation
- covariance
- degrees of freedom
- finite difference theory
- null hypothesis

- numerical analysis
regression analysis
statistical tests
teleconnections (meteorology)
- signs (symbols)*
USE **symbols**
- signs and symptoms**
UF *symptoms*
syndromes
GS **signs and symptoms**
. acquired immunodeficiency syndrome
. bradycardia
. cough
. dizziness
. dyspnea
. edema
. headache
. hematuria
. kidney stones
. leukopenia
. nausea
. vertigo
RT asphyxia
diseases
hallucinations
∞ indication
symptomology
- Sikhote-Alin meteorite**
GS celestial bodies
. meteorites
. iron meteorites
. . . **Sikhote-Alin meteorite**
- Sikkim**
GS nations
. **Sikkim**
RT Asia
Bhutan
Himalayas
India
- Sikorsky aircraft**
GS **Sikorsky aircraft**
. CH-3 helicopter
. CH-34 helicopter
. CH-54 helicopter
. H-19 helicopter
. H-53 helicopter
. H-56 helicopter
. H-60 Helicopter
. S-58 helicopter
. S-61 helicopter
. S-67 helicopter
. SH-3 helicopter
. SH-4 helicopter
. Sikorsky Whirlwind helicopter
. UH-34 helicopter
. UH-60A helicopter
. UH-61A helicopter
RT ∞ aircraft
- Sikorsky HSS-2 helicopter*
USE **SH-3 helicopter**
- Sikorsky S-58 helicopter*
USE **S-58 helicopter**
- Sikorsky S-61 helicopter*
USE **S-61 helicopter**
- Sikorsky S-64 helicopter*
USE **CH-54 helicopter**
- Sikorsky S-65 helicopter*
USE **H-53 helicopter**
- Sikorsky S-67 helicopter*
USE **S-67 helicopter**
- Sikorsky Whirlwind helicopter**
GS Sikorsky aircraft
. **Sikorsky Whirlwind helicopter**
V/STOL aircraft
. rotary wing aircraft
. helicopters
. . . military helicopters
. . . **Sikorsky Whirlwind helicopter**
- RT ∞ aircraft
- silanes**
GS hydrogen compounds
. hydrides
. . . **silanes**
. . . chlorosilanes
. . . methyl chlorosilanes
silicon compounds
. **silanes**
. chlorosilanes
. . . methyl chlorosilanes
RT disilicides
polycarbosilanes
polysilanes
- silence**
RT noise reduction
transmission loss
- silencers**
RT attenuators
damping
inhibitors
mufflers
shock absorbers
squelch circuits
suppressors
zero sound
- silica*
USE **silicon dioxide**
- silica gel**
DEF A colloidal, highly absorbent silica used as a dehumidifying and dehydrating agent, as a catalyst carrier, and sometimes as a catalyst.
GS gels
. **silica gel**
RT aerogels
dehumidification
dehydration
drying
silicon dioxide
xerogels
- silica glass**
GS glass
. **silica glass**
RT glass coatings
glass electrodes
glass fibers
glassware
sands
silicon dioxide
- silicates**
GS silicon compounds
. **silicates**
. . . aluminum silicates
. . . andesite
. . . feldspars
. . . gehlenite
. . . kaolinite
. . . montmorillonite
. . . pyrophyllite
. . . plagioclase
. . . aragonite
. . . beryl
. . . alexandrite
. . . calcium silicates
. . . gehlenite
. . . cordierite
. . . fayalite
. . . fluorosilicates
. . . forsterite
. . . garnets
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet
. . . merwinite
. . . monticellite
. . . nepheline
. . . potassium silicates
. . . pyroxenes
. . . enstatite
. . . sodium silicates
. . . spodumene
. . . talc
- . . . tourmaline
. . . zeolites
RT akermanite
amphiboles
disilicides
minerals
silicides
silicon dioxide
tetraethyl orthosilicate
vermiculite
- silicides**
GS silicon compounds
. **silicides**
. . . disilicides
RT intermetallics
silicates
- silicon**
GS chemical elements
. metalloids
. . . **silicon**
. . . amorphous silicon
. . . porous silicon
. . . silicon isotopes
RT float zones
reaction bonding
Schottky diodes
silicon alloys
- silicon alloys**
GS alloys
. **silicon alloys**
RT aluminum alloys
germanium alloys
iron alloys
magnesium alloys
microstructure
nickel alloys
silicon
- silicon carbides**
GS carbon compounds
. carbides
. . . **silicon carbides**
silicon compounds
. **silicon carbides**
RT abrasives
carbon-silicon carbide composites
Carborundum (trademark)
ceramic fibers
nanocomposites
polycarbosilanes
- silicon compounds**
GS **silicon compounds**
. flint
. organic silicon compounds
. . . triphenyl silicon
. silanes
. . . chlorosilanes
. . . methyl chlorosilanes
. silicates
. . . aluminum silicates
. . . andesite
. . . feldspars
. . . gehlenite
. . . kaolinite
. . . montmorillonite
. . . pyrophyllite
. . . plagioclase
. . . aragonite
. . . beryl
. . . alexandrite
. . . calcium silicates
. . . gehlenite
. . . cordierite
. . . fayalite
. . . fluorosilicates
. . . forsterite
. . . garnets
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet
. . . merwinite
. . . monticellite
. . . nepheline
. . . potassium silicates
. . . pyroxenes
. . . enstatite

silicon controlled rectifiers

- . . . sodium silicates
 - . . . spodumene
 - . . . talc
 - . . . tourmaline
 - . . . zeolites
 - . silicides
 - . . disilicides
 - . silicon carbides
 - . silicon nitrides
 - . silicon oxides
 - . . muscovite
 - . . nephelite
 - . . silicon dioxide
 - . . . quartz
 - coesite
 - stishovite
 - . . spodumene
 - . silicon tetrachloride
 - RT akermanite
 - ∞ chemical compounds
 - ∞ Group 4A compounds
 - methyl polysiloxanes
 - polysiloxanes
 - silicones
 - siloxanes
- silicon controlled rectifiers**
- UF *SCR (rectifiers)*
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . thyristors
 - **silicon controlled rectifiers**
 - rectifiers
 - . thyristors
 - . . **silicon controlled rectifiers**
 - RT current converters (AC to DC)
 - thyatron
- silicon dioxide**
- DEF The chemically resistant dioxide of silicon. Used for Refrasil (trademark) and silica.
 - UF *Refrasil (trademark)*
 - silica*
 - GS chalcogenides
 - . oxides
 - . . dioxides
 - . . . **silicon dioxide**
 - quartz
 - coesite
 - stishovite
 - . . silicon oxides
 - . . . **silicon dioxide**
 - quartz
 - coesite
 - stishovite
 - silicon compounds
 - . silicon oxides
 - . . **silicon dioxide**
 - . . . quartz
 - coesite
 - stishovite
 - RT borosilicate glass
 - ceramics
 - E glass
 - glass
 - metallic glasses
 - obsidian
 - porcelain
 - quartz crystals
 - rhyolite
 - S glass
 - sands
 - silica gel
 - silica glass
 - silicates
 - Vycor
 - xerogels
- silicon films**
- RT amorphous silicon
 - ∞ films
 - semiconductor devices
 - SOI (semiconductors)
 - thin films
- silicon isotopes**
- GS chemical elements
 - . metalloids
 - . . silicon

- . . . **silicon isotopes**
 - . nuclides
 - . . isotopes
 - . . . **silicon isotopes**
- silicon junctions**
- GS semiconductor junctions
 - . **silicon junctions**
 - RT amorphous silicon
 - heterojunctions
 - homojunctions
 - SIS (semiconductors)
 - SOI (semiconductors)
 - threshold voltage
- silicon nitrides**
- GS nitrogen compounds
 - . nitrides
 - . . **silicon nitrides**
 - silicon compounds
 - . **silicon nitrides**
 - RT ceramic matrix composites
 - nanocomposites
 - reaction bonding
 - sialon
- silicon oxides**
- GS chalcogenides
 - . oxides
 - . . **silicon oxides**
 - . . . muscovite
 - . . . nephelite
 - . . . silicon dioxide
 - quartz
 - coesite
 - stishovite
 - . . . spodumene
 - silicon compounds
 - . **silicon oxides**
 - . . muscovite
 - . . nephelite
 - . . silicon dioxide
 - . . . quartz
 - coesite
 - stishovite
 - . . spodumene
 - RT akermanite
- silicon polymers**
- GS **silicon polymers**
 - . silicone resins
 - . silicones
 - . . polysiloxanes
 - . . siloxanes
 - . . . methyl polysiloxanes
 - . . polysilanes
 - . . polycarbosilanes
 - RT ∞ polymers
- silicon radiation detectors**
- GS measuring instruments
 - . radiation measuring instruments
 - . . radiation detectors
 - . . . **silicon radiation detectors**
 - RT ∞ radiation
- silicon rectifiers*
- USE **crystal rectifiers**
- silicon solar cells*
- USE **solar cells**
- silicon tetrachloride**
- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **silicon tetrachloride**
 - . . halides
 - . . chlorides
 - . . . **silicon tetrachloride**
 - silicon compounds
 - . **silicon tetrachloride**
- silicon transistors**
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . transistors
 - **silicon transistors**
 - SOS (semiconductors)

- RT SOI (semiconductors)
- silicone resins**
- GS resins
 - . **silicone resins**
 - silicon polymers
 - . **silicone resins**
 - RT thermosetting resins
- silicone rubber**
- GS elastomers
 - . rubber
 - . . synthetic rubbers
 - . . . **silicone rubber**
 - RTV-40 rubber (trademark)
 - RTV-60 rubber (trademark)
- silicones**
- GS silicon polymers
 - . **silicones**
 - . . polysiloxanes
 - . . siloxanes
 - . . . methyl polysiloxanes
 - RT ∞ polymers
 - silicon compounds
- siliconizing**
- GS hardening (materials)
 - . **siliconizing**
 - RT coating
 - coatings
 - corrosion prevention
 - corrosion resistance
 - oxidation resistance
 - passivity
- silicon-on-insulator semiconductors*
- USE **SOI (semiconductors)**
- silicon-on-sapphire junctions*
- USE **SOS (semiconductors)**
- silicon-on-sapphire semiconductors*
- USE **SOS (semiconductors)**
- silicon-on-sapphire transistors*
- USE **SOS (semiconductors)**
- silk**
- GS fabrics
 - . **silk**
 - fibers
 - . **silk**
 - RT crepe
 - organic materials
- silkworms**
- GS animals
 - . invertebrates
 - . . arthropods
 - . . . insects
 - moths
 - **silkworms**
 - larvae
 - . **silkworms**
 - RT infestation
- silos (missile storage)*
- USE **missile silos**
- siloxanes**
- GS silicon polymers
 - . silicones
 - . . **siloxanes**
 - RT ∞ polymers
 - polysiloxanes
 - silicon compounds
- silts*
- USE **sediments**
- silver**
- GS chemical elements
 - . **silver**
 - . . silver isotopes
 - metals
 - . noble metals
 - . . **silver**
 - . . . silver isotopes
 - . . transition metals
 - . . **silver**

- ... silver isotopes
- silver alloys**
 - GS alloys
 - . **silver alloys**
 - RT bearing alloys
 - gold alloys
- silver bromides**
 - GS halogen compounds
 - . bromine compounds
 - .. bromides
 - ... **silver bromides**
 - . halides
 - .. bromides
 - ... **silver bromides**
 - .. metal halides
 - ... silver halides
 - ... **silver bromides**
 - silver compounds
 - . silver halides
 - .. **silver bromides**
- silver cadmium batteries**
 - UF *cadmium silver batteries*
 - GS electrochemical cells
 - . electric batteries
 - . storage batteries
 - ... **silver cadmium batteries**
 - RT nickel cadmium batteries
- silver chlorides**
 - GS halogen compounds
 - . chlorine compounds
 - .. chlorides
 - ... **silver chlorides**
 - . halides
 - .. chlorides
 - ... **silver chlorides**
 - .. metal halides
 - ... silver halides
 - ... **silver chlorides**
 - silver compounds
 - . silver halides
 - .. **silver chlorides**
- silver compounds**
 - GS **silver compounds**
 - . silver halides
 - .. silver bromides
 - ... silver chlorides
 - ... silver iodides
 - . silver nitrates
 - . silver oxides
 - RT ∞ chemical compounds
 - ∞ Group 1B compounds
 - ∞ metal compounds
- silver halides**
 - GS halogen compounds
 - . halides
 - .. metal halides
 - ... **silver halides**
 - ... silver bromides
 - ... silver chlorides
 - ... silver iodides
 - silver compounds
 - . **silver halides**
 - .. silver bromides
 - .. silver chlorides
 - .. silver iodides
- silver hydrogen batteries**
 - DEF Secondary batteries having silver and hydrogen electrodes. They have good energy density and cycle life.
 - GS electrochemical cells
 - . electric batteries
 - . storage batteries
 - ... **silver hydrogen batteries**
- silver iodides**
 - GS halogen compounds
 - . halides
 - .. metal halides
 - ... silver halides
 - ... **silver iodides**
 - . iodine compounds
 - .. iodides
 - ... **silver iodides**
- silver compounds
 - . silver halides
 - .. **silver iodides**
- silver isotopes**
 - GS chemical elements
 - . nuclides
 - . isotopes
 - ... **silver isotopes**
 - . silver
 - .. **silver isotopes**
 - metals
 - . noble metals
 - . silver
 - ... **silver isotopes**
 - . transition metals
 - . silver
 - ... **silver isotopes**
- silver nitrates**
 - GS nitrogen compounds
 - . nitrates
 - . inorganic nitrates
 - ... **silver nitrates**
 - silver compounds
 - . **silver nitrates**
- silver oxide zinc batteries*
 - USE **silver zinc batteries**
- silver oxides**
 - GS chalcogenides
 - . oxides
 - .. metal oxides
 - ... **silver oxides**
 - silver compounds
 - . **silver oxides**
- silver zinc batteries**
 - UF *silver oxide zinc batteries*
 - zinc silver batteries*
 - zinc silver oxide batteries*
 - GS electrochemical cells
 - . electric batteries
 - . storage batteries
 - ... **silver zinc batteries**
- silviculture**
 - DEF The theory and practice of controlling the establishment, composition, and growth of stands of trees for the harvesting of foliage limbs, and possibly the trees themselves for biomass.
 - GS agriculture
 - . **silviculture**
 - RT biomass
 - botany
 - cultivation
 - forests
 - orchards
 - planting
 - trees (plants)
- SIM**
 - UF *scientific instrument modules*
 - GS modules
 - . spacecraft modules
 - .. **SIM**
 - spacecraft components
 - . spacecraft modules
 - .. **SIM**
 - RT Apollo 15 flight
 - Apollo project
 - cameras
 - instrument packages
 - ∞ instruments
- SIMD (computers)**
 - DEF A type of parallel computer with multiple memories and an arithmetic logic unit for each memory. A single control unit allocates instruction execution according to the memory that holds the required operands. Used for single instruction multiple datastream.
 - UF *single instruction multiple datastream*
 - GS data processing equipment
 - . computers
 - . digital computers
 - ... parallel computers
 - ... **SIMD (computers)**
- RT architecture (computers)
- computer design
- computer programming
- concurrent processing
- interprocessor communication
- MIMD (computers)
- operating systems (computers)
- parallel processing (computers)
- SIMICOR (image correlator)*
 - USE **image correlators**
- similarities*
 - USE **analogies**
- similarity numbers**
 - GS dimensionless numbers
 - . **similarity numbers**
 - ratios
 - . **similarity numbers**
 - RT dimensional analysis
 - scaling laws
- similarity theorem**
 - GS theorems
 - . **similarity theorem**
 - .. Lagrange similarity hypothesis
 - RT dynamic models
 - mathematical models
 - scale models
- similitude law**
 - GS laws
 - . **similitude law**
 - RT gravitation
 - inertia
 - scale models
 - viscosity
- simple harmonic motion**
 - DEF A motion such that the displacement is a sinusoidal function of time.
 - GS harmonic motion
 - . **simple harmonic motion**
 - harmonics
 - . **simple harmonic motion**
 - RT acoustics
 - Fourier analysis
 - harmonic excitation
- simplex method**
 - DEF A finite iterative algorithm used in linear programming whereby successive solutions are obtained and tested for optimality.
 - GS mathematical logic
 - . algorithms
 - .. **simplex method**
 - optimization
 - . **simplex method**
 - RT linear programming
 - mathematical programming
 - matrices (mathematics)
 - ∞ methodology
 - problem solving
- simplification**
 - RT assumptions
 - linearization
- SIMS (spectrometry)*
 - USE **secondary ion mass spectrometry**
- simulated altitude*
 - USE **altitude simulation**
- simulated annealing**
 - (added December 1992)
 - RT annealing
 - computerized simulation
 - laser annealing
 - optimization
 - pulse heating
 - simulation
- simulation**
 - GS **simulation**
 - . atmospheric entry simulation
 - . computerized simulation
 - .. analog simulation
 - .. digital simulation
 - .. distributed interactive simulation

simulators

- . control simulation
- . data simulation
- . environment simulation
- . . . acoustic simulation
- . . . altitude simulation
- . . . space environment simulation
- . . . thermal simulation
- weightlessness simulation
- neutral buoyancy simulation
- . exhaust flow simulation
- . flight simulation
- . . in-flight simulation
- . landing simulation
- . motion simulation
- . rheoelectrical simulation
- . solar simulation
- . systems simulation
- . . computer systems simulation
- . direct numerical simulation
- . hardware-in-the-loop simulation
- . large eddy simulation
- . magnetohydrodynamic simulation
- . scene generation

RT analogies

bionics

bond graphs

data processing equipment

deception

Earth analogs

game theory

heuristic methods

hypervelocity projectiles

mathematical models

Monte Carlo method

operations research

simulated annealing

simulators

spacecraft cabin simulators

systems analysis

validity

virtual reality

war games

simulator training

USE **training simulators**

simulators

GS **simulators**

- . environment simulators
- . . Lunar Gravity Simulator
- . . solar simulators
- . . space simulators
- . . . clinostats
- . . . High Vacuum Orbital Simulator
- . . . Langley complex coordinator
- . lunar orbit and landing simulators
- . motion simulators
- . shock simulators
- . Shuttle Engineering Simulator
- . Shuttle Mission Simulator
- . target simulators
- . training simulators
- . . flight simulators
- . . . cockpit simulators
- . . . spacecraft cabin simulators
- . vibration simulators
- . . vertical motion simulators

RT analogs

computer systems simulation

dummies

∞ missile simulators

models

simulation

∞ test equipment

test facilities

training devices

simultaneous equations

RT ∞ equations

- least squares method
- matrices (mathematics)

simultaneous image correlator

USE **image correlators**

sine series

GS analysis (mathematics)

- . calculus
- . . series (mathematics)
- . . . **sine series**

- . real variables
- . . periodic functions
- . . . trigonometric functions
- **sine series**
- . . series (mathematics)
- . . . **sine series**
- functions (mathematics)
- . transcendental functions
- . . periodic functions
- . . . trigonometric functions
- **sine series**

sine waves

DEF Waves which can be expressed as the sine of a linear function of time, or space, or both. Used for sinusoids.

UF *sinusoids*

RT elastic waves

- electromagnetic radiation
- trigonometric functions
- wavelet analysis

∞ waves

Singapore

GS nations

- . **Singapore**

RT Asia

single channel per carrier transmission

DEF Voice and data transmission system for satellite communication featuring the use of a carrier frequency for each channel of communication. Used for SCPC transmission.

UF *SCPC transmission*

GS telecommunication

- . **single channel per carrier transmission**
- transmission
- . signal transmission
- . . data transmission
- . . . **single channel per carrier transmission**

RT carrier frequencies

channels (data transmission)

satellite communication

satellite transmission

spacecraft communication

telegraph systems

telemetry

telephony

voice communication

voice data processing

single crystals

UF *monocrystals*

GS crystals

- . **single crystals**

RT bicrystals

boules

Bravais crystals

Bridgman method

crystal lattices

diamonds

graphite

kink bands

needles

piezoelectric crystals

polycrystals

space processing

ultrapure metals

single electron transistors

(added July 2008)

DEF Three-terminal, solid-state, nanoelectronic switching devices that use quantum mechanical electron tunneling to control the movement of single electrons and amplify current.

GS electronic equipment

- . solid state devices
- . . semiconductor devices
- . . . transistors
- **single electron transistors**
- nanostructures (devices)
- . **single electron transistors**

RT carbon nanotubes

- electron mobility
- electron tunneling
- nanotechnology
- quantum dots

tunnel junctions

single engine aircraft

GS **single engine aircraft**

- . Cessna 172 aircraft
- . Cessna 205 aircraft
- . Cessna 210 aircraft
- . F-8 aircraft
- . F-9 aircraft
- . F-16 aircraft
- . F-84 aircraft
- . F-86 aircraft
- . F-94 aircraft
- . F-100 aircraft
- . F-101 aircraft
- . F-102 aircraft
- . F-104 aircraft
- . F-105 aircraft
- . F-106 aircraft
- . Jaguar aircraft
- . jet provost aircraft
- . L-29 jet trainer
- . MiG aircraft
- . Mirage aircraft
- . . Mirage 3 aircraft
- . P-51 aircraft
- . P-1127 aircraft
- . P-1154 aircraft
- . T-2 aircraft
- . T-28 aircraft
- . T-33 aircraft
- . Vampire MK 35 aircraft
- . VJ-101 aircraft

RT ∞ aircraft

- fighter aircraft
- general aviation aircraft

single event upsets

DEF Radiation-induced errors in microelectronic circuits caused when charged particles (usually from the radiation belts or from cosmic rays) lose energy by ionizing the medium through which they pass, leaving behind a wake of electron-hole pairs.

GS radiation effects

- . **single event upsets**

RT astronautics

- avionics
- charged particles
- cosmic rays
- electron-hole drops
- inner radiation belt
- ionization
- microelectronics
- radiation damage
- radiation dosage
- satellite-borne instruments
- secondary cosmic rays
- spacecraft charging
- spacecraft electronic equipment

single input single output systems

USE **SISO (control systems)**

single instruction multiple datastream

USE **SIMD (computers)**

single sideband modulation

USE **single sideband transmission**

single sideband transmission

UF *single sideband modulation*

GS transmission

- . electromagnetic wave transmission
- . . radio transmission
- . . . **single sideband transmission**
- . signal transmission
- . . radio transmission
- . . . **single sideband transmission**

RT amplitude modulation

- double sideband transmission
- sidebands
- television transmission
- voice communication
- wave propagation

single stage rocket vehicles

GS rocket vehicles

- . **single stage rocket vehicles**
- . . Agena rocket vehicles

- . . . Agena A rocket vehicle
- . . . Agena B rocket vehicle
- . . . Agena C rocket vehicle
- . . . Agena D rocket vehicle
- . . . Arcas rocket vehicles
- . . . Black Brant sounding rockets
- . . . Black Brant 1 sounding rocket
- . . . Black Brant 2 sounding rocket
- . . . Black Brant 3 sounding rocket
- . . . Black Brant 4 sounding rocket
- . . . Black Brant 5 sounding rocket
- . . . Black Knight rocket vehicle
- . . . Dornier paraglider rocket vehicle
- . . . Genie rocket vehicle
- . . . Honest John rocket vehicle
- . . . Hyla-Star rocket vehicle
- . . . Little John rocket vehicle
- . . . Loki rocket vehicle
- . . . Nomad launch vehicle
- . . . Veronique rocket vehicles
- . . . Viking rocket vehicle
- . . . Zuni rocket vehicle
- RT Mauler missile rocket engines
- ∞ vehicles

single stage to orbit vehicles

DEF Second and third generation (post-Space Shuttle) vehicles studied for Earth orbit international space transportation system.

- GS launch vehicles
 - . reusable launch vehicles
 - . . . **single stage to orbit vehicles**
 - . . . Delta Clipper
 - . . . HOTOL launch vehicle
- reentry vehicles
- . recoverable spacecraft
- . reusable spacecraft
- . . . **single stage to orbit vehicles**
- Delta Clipper
- HOTOL launch vehicle
- RT NASA programs
- rocket-based combined-cycle engines
- space shuttles
- space transportation
- ∞ vehicles
- X-30 vehicle

single-phase flow

- UF *one-phase flow*
- uniphase flow*
- GS fluid flow
- . **single-phase flow**
- RT critical flow
- gas flow
- laminar flow
- liquid flow
- mass flow
- multiphase flow
- orifice flow
- pipe flow
- steady flow
- steam flow
- subcritical flow
- supercritical flow
- turbulent flow
- two phase flow
- uniform flow
- unsteady flow

singular integral equations

- GS analysis (mathematics)
- . functional analysis
- . . integral equations
- . . . **singular integral equations**
- RT ∞ equations

singularity (mathematics)

- GS analysis (mathematics)
- . complex variables
- . . **singularity (mathematics)**
- . . . naked singularities
- RT points (mathematics)
- uniqueness

sinkholes

DEF Circular depressions in a Karst area. Their drainage is subterranean, their size is measured in meters or tens of meters, and they are commonly funnel shaped.

- GS landforms
 - . structural basins
 - . . karst
 - . . . **sinkholes**
- RT kettles (geology)
- structural properties (geology)

sinking

- RT falling
- refraction
- submerging
- water immersion

sinks

- SN (EXCLUDES PLUMBING FIXTURES--LIMITED TO AREAS FOR ABSORPTIVE DISPOSAL OF HEAT OR FLUIDS)
- GS **sinks**
 - . heat sinks
- RT absorbers (materials)
- disposal
- ∞ sources

sinks (geology)

USE **structural basins**

Sinope

(added January 1996)

DEF A natural satellite of Jupiter orbiting at a mean distance of 23,700,000 kilometers.

- GS celestial bodies
- . natural satellites
- . . Jupiter satellites
- . . . **Sinope**
- RT Jupiter (planet)

sintered aluminum powder

- GS particles
- . metal particles
- . . metal powder
- . . . powdered aluminum
- **sintered aluminum powder**
- . . . powder (particles)
- . . metal powder
- . . . powdered aluminum
- **sintered aluminum powder**
- RT aluminum
- powder metallurgy

sintering

DEF The bonding of adjacent surfaces of particles in a mass of powders, usually metal, by heating. Used for presintering.

- UF *presintering*
- GS **sintering**
 - . liquid phase sintering
- RT agglomeration
- combustion synthesis
- furnaces
- growth
- heating
- hot isostatic pressing
- hot pressing
- metal powder
- mixed crystals
- porosity
- powder metallurgy
- pyrometallurgy
- reaction bonding
- roasting
- shrinkage
- sialon

sinuses

DEF A term used in anatomical nomenclature to designate a cavity or hollow space.

- GS **sinuses**
 - . paranasal sinuses
- RT carotid sinus body
- carotid sinus reflex
- nose (anatomy)

respiration

sinusoids

USE **sine waves**

Sioux helicopter

USE **OH-13 helicopter**

siphoning

DEF The transfer of a liquid from a high to a lower level by atmospheric pressure forcing it up the shorter leg while the weight of the liquid in the longer leg causes continuous downward flow.

- RT ∞ fluids
- siphons
- thermosiphons

siphons

- RT materials handling
- pipelines
- pipes (tubes)
- pumps
- siphoning
- ∞ tubes

SIR-A

USE **Shuttle Imaging Radar**

SIR-B

USE **Shuttle Imaging Radar**

SIR-C

USE **Shuttle Imaging Radar**

SIR-D

USE **Shuttle Imaging Radar**

sirens

- RT horns
- noise intensity
- signal generators
- ∞ signals
- sound generators
- sound intensity
- sound transmission
- warning systems

SIRIO satellite

- GS artificial satellites
- . synchronous satellites
- . . **SIRIO satellite**
- RT Italian space program
- Italy

SIRS B satellite

- GS artificial satellites
- . meteorological satellites
- . . **SIRS B satellite**
- RT meteorological flight
- meteorological instruments
- satellite observation
- unmanned spacecraft

SIRTF

USE **Space Infrared Telescope Facility**

SIS (semiconductors)

DEF Semiconductor devices consisting of an electrically insulating layer sandwiched between two semiconducting materials. Used for semiconductor insulator semiconductors.

- UF *semiconductor insulator semiconductors*
- GS electronic equipment
- . solid state devices
- . . **SIS (semiconductors)**
- RT barrier layers
- MIM (semiconductors)
- MIS (semiconductors)
- MSM (semiconductors)
- photodiodes
- photovoltaic cells
- p-n junctions
- Schottky diodes
- semiconductor diodes
- semiconductor junctions
- silicon junctions
- SOI (semiconductors)
- solar cells
- SOS (semiconductors)

SIS (superconductors)

tin oxides
transistors

SIS (superconductors)

(added March 1989)

UF *superconductor insulator*
superconductors

GS electronic equipment
. solid state devices
. . . **SIS (superconductors)**
superconducting devices
. **SIS (superconductors)**

RT high temperature superconductors
Josephson effect
Josephson junctions
squid (detectors)

SISO (control systems)

(added October 1988)

UF *single input single output systems*

RT ∞ control
control stability
control systems design
control theory
feedback control
∞ systems
systems stability

site data processors

UF *SDP (computers)*
GS data processing equipment
. computers
. . . **site data processors**
RT Apollo project
∞ data
data links
data processing

site selection

DEF Selecting the location for any physical plant (nuclear power, solar house, etc.) while considering the environmental impact, safety, etc.

GS selection
. **site selection**

RT airports
certification
∞ facilities
industrial areas
land use
leasing
logistics
Mars landing sites
options
resources
roads
routes
services
sites
terminal facilities
transportation
utilities

sites

UF *tracts*

GS **sites**
. Central Atlantic Regional Ecol Test
Site
. landing sites
. . . lunar landing sites
. . . Mars landing sites
. launching sites
. . . launching pads
. offshore reactor sites
RT airport planning
barren land
∞ facilities
land
∞ plots
position (location)
regions
rural land use
site selection

sitting position

RT prone position
rest
seats

supine position

situational awareness

(added October 2001)

DEF The degree and accuracy to which a human or robotic agent perceives the operating environment.

RT accident prevention
air traffic control
alertness
decision support systems
display devices
flight management systems
human factors engineering
operator performance
perception
pilot performance
pilot support systems
reconnaissance
runway incursions
surveillance
threat evaluation

size (dimensions)

GS **size (dimensions)**

. grain size

RT fineness

size determination

GS **size determination**

. precipitation particle measurement

RT body measurement (biology)
classifiers
dimensional measurement
∞ measurement
particle size distribution
∞ sizing

size distribution

DEF The study of the size of objects or features and their distribution.

GS **size distribution**

. particle size distribution

RT drop size
mass distribution
statistical distributions

size separation

UF *sizing (separation)*

RT beneficiation
classifiers
∞ classifying
concentrators
filtration
flotation
metal powder
particle size distribution
powder (particles)
∞ separation
settling
∞ sizing

∞ **sizing**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT body measurement (biology)
size determination
size separation
sizing (shaping)
sizing (surface treatment)
sizing materials

sizing (separation)

USE **size separation**

sizing (shaping)

GS metal working

. **sizing (shaping)**

RT coining
pressing (forming)
∞ sizing

sizing (surface treatment)

SN (EXCLUDES MECHANICAL SHAPING OR REMOVAL OF SURFACE MATERIALS)

RT finishes
∞ sizing
sizing materials

∞ surfaces

sizing materials

SN (MATERIALS USED FOR SURFACE TREATMENT)

RT binders (materials)
clays
fillers
glues
∞ materials
∞ sizing
sizing (surface treatment)
starches

sizing screens

GS separators
. classifiers
. . . **sizing screens**
RT agitation
concentrators
fluid filters
∞ screens
shakers
sieves

skeletal muscle

(added August 2004)

DEF Striated muscles having fibers connected at either or both extremities with the bony framework of the body. These are found in appendicular and axial muscles.

UF *striated muscle*
voluntary muscle

GS anatomy
. musculoskeletal system
. . . muscles

. . . **skeletal muscle**

RT muscle fibers
muscular strength
smooth muscle
striation

skeletal myocytes

(added December 2004)

USE **muscle fibers**

skeleton

USE **musculoskeletal system**

skewness

RT asymmetry
deformation
displacement
distortion
distribution moments
eccentricity
moments

skid landings

RT air cushion landing systems
crash landing
hydroplaning
skidding

skidding

RT hydroplaning
landing gear
sideslip
skid landings
sleds
yaw

skills

USE **abilities**

skin (anatomy)

GS anatomy
. **skin (anatomy)**
. . . epidermis
RT albinism
∞ blisters
carotene
chlorophylls
collagens
contact dermatitis
cytochromes
dermatitis
dermatology
epithelium
evaporation
hair

- homeostasis
 - leather
 - melanin
 - membranes
 - perspiration
 - petechia
 - pigments
 - secretions
 - sense organs
 - thermoreceptors
 - touch
- skin (structural member)**
- GS membranes
 - . membrane structures
 - . . **skin (structural member)**
 - structural members
 - . membrane structures
 - . . **skin (structural member)**
 - RT aircraft construction materials
 - ∞ construction materials
 - hulls (structures)
 - metal shells
 - shells (structural forms)
 - stressed-skin structures
 - thin walled shells
 - thin walls
 - toroidal shells
 - webs (supports)
- skin friction**
- UF *friction pressure drop*
 - GS friction
 - . **skin friction**
 - . . friction drag
 - . . . aerodynamic drag
 - supersonic drag
 - . . . viscous drag
 - RT aerodynamic heating
 - drag
 - drag devices
 - flow resistance
 - fluid flow
 - friction factor
 - riblets
 - streamlining
- skin grafts**
- RT surgery
 - therapy
- skin resistance**
- GS electrical properties
 - . electrical impedance
 - . . electrical resistance
 - . . . **skin resistance**
 - impedance
 - . electrical impedance
 - . . electrical resistance
 - . . . **skin resistance**
 - RT ∞ resistance
- skin temperature (biology)**
- GS temperature
 - . **skin temperature (biology)**
 - RT ∞ biology
 - fever
 - hyperthermia
 - hypothermia
- skin temperature (non-biological)**
- GS surface properties
 - . surface temperature
 - . . **skin temperature (non-biological)**
 - temperature
 - . surface temperature
 - . . **skin temperature (non-biological)**
 - RT aerodynamic heating
 - aerothermodynamics
- Skinner boxes**
- RT behavior
 - psychological tests
 - psychometrics
- skirts**
- RT afterbodies
 - boattails
- conical nozzles
 - exhaust nozzles
 - foundations
 - ∞ jet nozzles
 - rocket nozzles
- skis**
- RT hydrofoils
 - hydroplanes (surfaces)
 - landing gear
- Skua rocket vehicles**
- GS rocket vehicles
 - . sounding rockets
 - . . **Skua rocket vehicles**
 - RT solid propellant rocket engines
 - ∞ vehicles
- skull**
- GS anatomy
 - . head (anatomy)
 - . . **skull**
 - . . . cranium
 - intracranial cavity
 - mastoids
 - musculoskeletal system
 - bones
 - **skull**
 - cranium
 - intracranial cavity
 - mastoids
 - RT forehead
 - intercranial circulation
- sky**
- GS **sky**
 - . night sky
 - RT cloud cover
 - clouds (meteorology)
 - dayglow
 - Rayleigh scattering
 - sunlight
- sky brightness**
- GS electromagnetic properties
 - . optical properties
 - . . brightness
 - . . . **sky brightness**
 - RT airglow
 - auroras
 - cloud cover
 - daytime
 - gegenschein
 - glare
 - light (visible radiation)
 - light emission
 - luminance
 - night
 - night sky
 - nightglow
 - solar radiation
 - sunlight
 - zodiacal light
- sky radiation**
- GS atmospheric radiation
 - . **sky radiation**
 - . . airglow
 - . . . geocoronal emissions
 - . . . nightglow
 - . . . twilight glow
 - . . dayglow
 - . . elves
 - . . sprites (atmospheric physics)
 - electromagnetic radiation
 - . light (visible radiation)
 - . . **sky radiation**
 - . . . airglow
 - geocoronal emissions
 - nightglow
 - twilight glow
 - . . . dayglow
 - . . . elves
 - . . . sprites (atmospheric physics)
 - RT background radiation
 - pyranometers
 - ∞ radiation
 - stratosphere radiation
 - sunlight
 - thermal radiation
- tropospheric radiation
- sky surveys (astronomy)**
- GS observation
 - . **sky surveys (astronomy)**
 - surveys
 - . **sky surveys (astronomy)**
 - RT asteroid detection
 - astronomical catalogs
 - astronomy
 - indexes (documentation)
 - northern sky
 - Southern sky
- sky waves**
- DEF In radio, radio energy that is received after having been reflected by the ionosphere.
 - GS electromagnetic radiation
 - . radio waves
 - . . **sky waves**
 - . . . whistlers
 - RT ground wave propagation
 - ionospheric noise
- Skybolt missile**
- GS missiles
 - . ballistic missiles
 - . . **Skybolt missile**
 - RT solid propellant rocket engines
- Skycrane helicopter*
- USE **CH-54 helicopter**
- Skydrol (trademark)**
- GS liquids
 - . hydraulic fluids
 - . . **Skydrol (trademark)**
 - RT esters
 - phosphates
 - plasticizers
- Skyhawk aircraft*
- USE **A-4 aircraft**
- skyhook balloons**
- DEF Large free balloons having plastic envelopes, used especially for constant level meteorological observations at very high altitudes. (Originally a code name for a U.S. Navy project.)
 - GS expandable structures
 - . inflatable structures
 - . . balloons
 - . . . high altitude balloons
 - **skyhook balloons**
 - RT high altitude
 - meteorological balloons
 - ROBIN balloons
 - rockoons
- Skylab 1**
- UF *SKYLAB space station (unmanned)*
 - SL 1
 - GS artificial satellites
 - . orbital workshops
 - . . **Skylab 1**
 - . . space stations
 - . . . **Skylab 1**
 - laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Skylab 1**
 - manned spacecraft
 - . manned orbital laboratories
 - . . **Skylab 1**
 - . . orbital workshops
 - . . . **Skylab 1**
 - stations
 - . space stations
 - . . **Skylab 1**
 - RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - space missions
- Skylab 2**
- UF *SL 2*
 - GS artificial satellites
 - . orbital workshops
 - . . **Skylab 2**

Skylab 3

- . space stations
 - .. **Skylab 2**
 - laboratories
 - . space laboratories
 - .. manned orbital laboratories
 - ... **Skylab 2**
 - manned spacecraft
 - . manned orbital laboratories
 - .. **Skylab 2**
 - . orbital workshops
 - .. **Skylab 2**
 - stations
 - . space stations
 - .. **Skylab 2**
 - RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles
 - space missions
- Skylab 3**
- UF *SL 3*
 - GS artificial satellites
 - . orbital workshops
 - .. **Skylab 3**
 - . space stations
 - .. **Skylab 3**
 - laboratories
 - . space laboratories
 - .. manned orbital laboratories
 - ... **Skylab 3**
 - manned spacecraft
 - . manned orbital laboratories
 - .. **Skylab 3**
 - . orbital workshops
 - .. **Skylab 3**
 - stations
 - . space stations
 - .. **Skylab 3**
 - RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles
 - space missions
- Skylab 4**
- UF *SL 4*
 - GS artificial satellites
 - . orbital workshops
 - .. **Skylab 4**
 - . space stations
 - .. **Skylab 4**
 - laboratories
 - . space laboratories
 - .. manned orbital laboratories
 - ... **Skylab 4**
 - manned spacecraft
 - . manned orbital laboratories
 - .. **Skylab 4**
 - . orbital workshops
 - .. **Skylab 4**
 - stations
 - . space stations
 - .. **Skylab 4**
 - RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles
 - space missions
- Skylab program**
- GS programs
 - . NASA programs
 - .. NASA space programs
 - ... **Skylab program**
 - . space programs
 - .. NASA space programs
 - ... **Skylab program**
 - RT AAP 1 mission
 - AAP 2 mission
 - AAP 3 mission
 - AAP 4 mission
 - airlock modules
 - Apollo applications program
- Apollo flights
 - Apollo project
 - Apollo spacecraft
 - Apollo telescope mount
 - Earth Resources Information System
 - Earth Resources Program
 - Earth Resources Survey Program
 - orbital workshops
 - Saturn 1 workshop
 - Saturn 5 workshop
 - Saturn workshops
 - Spacelab
- SKYLAB space station (unmanned)*
- USE **Skylab 1**
- Skylark*
- USE **Skylark rocket vehicle**
- Skylark rocket vehicle**
- UF *Skylark*
 - GS rocket vehicles
 - . multistage rocket vehicles
 - .. **Skylark rocket vehicle**
 - . sounding rockets
 - .. **Skylark rocket vehicle**
 - RT solid propellant rocket engines
- Skymaster aircraft*
- USE **C-54 aircraft**
- Skynet satellites**
- GS artificial satellites
 - . **Skynet satellites**
 - RT communication satellites
 - satellite networks
 - UK satellites
- Skyraider aircraft*
- USE **A-1 aircraft**
- Skyrocket aircraft*
- USE **D-558 aircraft**
- Skystreak aircraft*
- USE **D-558 aircraft**
- Skyvan aircraft*
- USE **SC-7 aircraft**
- Skywarrior aircraft*
- USE **A-3 aircraft**
- SL 1*
- USE **Skylab 1**
- SL 2*
- USE **Skylab 2**
- SL 3*
- USE **Skylab 3**
- SL 4*
- USE **Skylab 4**
- SL-3 rocket engine**
- GS engines
 - . rocket engines
 - .. solid propellant rocket engines
 - ... **SL-3 rocket engine**
- slabs**
- RT billets
 - blocks
 - flat plates
 - metal plates
 - plates (structural members)
 - ∞ platforms
 - structural members
- slags**
- RT aggregates
 - reaction products
- wastes
- SLAM*
- USE **supersonic low altitude missile**
- slamming**
- RT fluid dynamics
- slant*
- USE **slopes**
- slant perception*
- USE **space perception**
- slashes*
- USE **clearings (openings)**
- Slater orbitals**
- GS orbitals
 - . **Slater orbitals**
 - RT Hartree-Fock-Slater method
- sleds**
- GS surface vehicles
 - . **sleds**
 - .. rocket propelled sleds
 - RT dollies
 - skidding
 - towed bodies
 - tractors
 - trailers
- sleep**
- UF *drowsiness*
 - GS **sleep**
 - . hypersomnia
 - . hypnosis
 - . insomnia
 - RT dreams
 - ∞ drives
 - melatonin
 - rapid eye movement state
 - rest
- sleep deprivation**
- GS deprivation
 - . **sleep deprivation**
 - RT consciousness
 - fatigue (biology)
 - insomnia
 - wakefulness
- sleeves**
- SN (EXCLUDES CLOTHING)
 - RT connectors
 - couplings
 - fasteners
 - fittings
 - joints (junctions)
- slender bodies**
- GS **slender bodies**
 - . slender cones
 - RT aerodynamic configurations
 - aerodynamics
 - axisymmetric bodies
 - ∞ bodies
 - ducted bodies
 - fineness ratio
 - missile bodies
 - power law bodies
 - ∞ sharpness
 - streamlined bodies
 - symmetrical bodies
 - ∞ thin bodies
- slender cones**
- GS cones
 - . conical bodies
 - .. **slender cones**
 - slender bodies
 - . **slender cones**
 - symmetrical bodies
 - . bodies of revolution
 - .. conical bodies
 - ... **slender cones**
 - RT aerodynamic configurations
 - axisymmetric bodies
- slender wings**
- UF *high aspect ratio wings*

- GS airfoils
 . wings
 . . **slender wings**
 . . . infinite span wings
- RT fixed wings
 wing planforms
 wing rock
- slenderness ratio*
 (added March 2000)
 USE **aspect ratio**
- slewing**
 DEF Of a gyro, the rotation of the spin axis caused by applying torque about the axis of rotation. In radar, changing the scale on the display.
 RT antennas
 error signals
 positioning devices (machinery)
 radar tracking
 servomotors
 ∞ spinners
- slicing**
 GS cutting
 . **slicing**
 RT metal cutting
 planing
 planning
 scarfing
 ∞ separation
 splitting
- slicks*
 USE **oil slicks**
- slides*
 USE **chutes**
- slides (microscopy)**
 DEF Rectangular pieces of glass on which objects are mounted for microscopic examination.
 RT microscopy
- sliding**
 DEF Relative displacement between two bodies along a surface, without loss of contact between the bodies.
 RT interfacial tension
 lubrication
 mass flow
 ∞ slip
 slumping
 static friction
- ∞ **sliding contact**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT contact loads
 electric contacts
 sliding friction
 vapor phase lubrication
- sliding friction**
 GS friction
 . kinetic friction
 . . **sliding friction**
 RT coefficient of friction
 dry friction
 electric contacts
 ∞ sliding contact
 static friction
 tribometers
 wear
 wear resistance
- ∞ **slip**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT plastic deformation
 polyslips
 sideslip
- sliding
- slip bands*
 USE **edge dislocations**
- slip casting**
 GS forming techniques
 . casting
 . . **slip casting**
- slip flow**
 SN (LIMITED TO RAREFIED GAS FLOW IN THE REGION BETWEEN KNUDSEN NUMBERS 0. 01 AND 0. 1 ONLY--EXCLUDES TRANSITION FLOW, FREE MOLECULE FLOW CREEP, SHEAR FLOW, AND PLASTIC FLOW)
 DEF Rarefied gas flow in the region between Knudsen numbers 0. 01 and 0. 1.
 GS fluid flow
 . gas flow
 . . molecular flow
 . . . **slip flow**
 RT continuum flow
 free molecular flow
 low density wind tunnels
 rarefied gas dynamics
 transition flow
- slipstreams**
 GS wakes
 . aircraft wakes
 . . **slipstreams**
 . . . propeller slipstreams
 . turbulent wakes
 . . **slipstreams**
 . . . propeller slipstreams
 RT backwash
 Strouhal number
 turbulence
- slits**
 GS openings
 . **slits**
 RT apertures
 Fresnel reflectors
 slots
- slivers**
 RT fibers
 wood
- slopes**
 DEF The inclined surfaces of any part of the Earth's surface, as in hillslopes; also broad parts of a continent descending toward an ocean, as in the Pacific slope. Used for cant, slant, and steepness.
 UF *cant*
slant
steepness
 GS **slopes**
 . glide paths
 RT angles (geometry)
 cliffs
 escarpments
 ∞ grade
 gradients
 height
 ∞ inclination
 landforms
 landslides
 level (horizontal)
 pitch (inclination)
 ∞ profiles
 ∞ rakes
 ramp functions
 ramps (structures)
 topography
- sloshing*
 USE **liquid sloshing**
- slot antennas**
 UF *slotted antennas*
 GS antennas
 . directional antennas
 . . **slot antennas**
 RT antenna design
 horn antennas
 microwave antennas
 radant
- radar antennas
 waveguide antennas
- slots**
 GS **slots**
 . wing slots
 RT lift devices
 louvers
 openings
 slits
- slotted antennas*
 USE **slot antennas**
- slotted wind tunnels**
 GS test facilities
 . wind tunnels
 . . **slotted wind tunnels**
 RT supersonic wind tunnels
 transonic wind tunnels
 trisonic wind tunnels
 vents
- Slovakia**
 (added September 1994)
 GS nations
 . **Slovakia**
 RT Czech Republic
 Czechoslovakia
 Europe
- slow neutrons*
 USE **thermal neutrons**
- SLR (ranging)*
 (added July 2001)
 USE **satellite laser ranging**
- sludge**
 DEF A water-formed sedimentary deposit.
 GS **sludge**
 . activated sludge
 RT deposits
 liquid wastes
 mud
 ocean bottom
 organic wastes (fuel conversion)
 reaction products
 sediments
 sewage treatment
 solid wastes
 waste treatment
 wastes
- slumping**
 RT geomorphology
 mass flow
 sliding
- slurries**
 GS mixtures
 . **slurries**
 RT dispersions
 emulsions
 gels
 rheocasting
 slurry propellants
 slush hydrogen
- slurry propellants**
 GS propellants
 . rocket propellants
 . . liquid rocket propellants
 . . . **slurry propellants**
 . . . slush hydrogen
 RT aircraft fuels
 colloidal propellants
 dispersions
 gelled rocket propellants
 metal fuels
 metal propellants
 monopropellants
 slurries
 solid rocket propellants
- slush**
 RT bay ice
 cryogenic rocket propellants
 ice
 runway conditions
 snow

slush hydrogen

water . . . **smallpox**

slush hydrogen
(added March 1990)
GS propellants
. rocket propellants
. . liquid rocket propellants
. . . slurry propellants
. . . . **slush hydrogen**
RT hydrogen fuels
liquid hydrogen
slurries

SLV
USE **Standard Launch Vehicles**

SLV (soft landing vehicles)
USE **soft landing spacecraft**

SLWT (propellant tank)
(added June 1998)
USE **external tanks**
propellant tanks

SM-65 missile
USE **Atlas launch vehicles**

SM-68 missile
USE **Titan 1 ICBM**

SM-68B missile
USE **Titan 2 ICBM**

SMA (image analysis)
(added July 2000)
USE **spectral mixture analysis**

Small Astronomy Satellite 1
USE **SAS-1**

Small Astronomy Satellite 2
USE **SAS-2**

Small Astronomy Satellite 3
USE **SAS-3**

Small Astronomy Satellites
USE **SAS**

small perturbation flow
GS fluid flow
. **small perturbation flow**
RT flow distortion
oscillating flow

small satellite technology
(added January 1996)
UF *Small Satellite Technology Initiative SSTI*
GS technologies
. **small satellite technology**
RT cost reduction
microsatellites
nanosatellites
remote sensing
satellite design
small scientific satellites

Small Satellite Technology Initiative
USE **small satellite technology**

small scientific satellites
GS artificial satellites
. scientific satellites
. . **small scientific satellites**
. . . Submillimeter Wave Astronomy Satellite
. . . Transition Region and Coronal Explorer
RT microsatellites
nanosatellites
small satellite technology

Small Water Plane Area Twin Hull
USE **SWATH (ship)**

smallpox
GS diseases
. infectious diseases
. . viral diseases

smart materials
(added March 1998)
DEF Engineered materials capable of responding to their environment to a significant degree, by virtue of intrinsic properties and/or built-in sensor/actuator elements. Applications of these materials include vibration suppression/isolation, precision positioning, damage detection, and tunable devices.
UF *intelligent materials*
GS **smart materials**
. thermochromic coatings
RT actuators
biomimetics
composite materials
electrorheological fluids
electrostriction
ferroelastic materials
ferroelasticity
ferroelectric materials
ferromagnetic materials
magnetorheological fluids
∞ materials
piezoelectric actuators
piezoelectric ceramics
∞ sensors
shape memory alloys
smart structures
vibration damping

smart structures
(added August 1990)
DEF Structures and/or structural components which contain embedded internal sensors. The sensors serve as lifetime health monitors analogous to a central nervous system, and give information on structural properties, providing real time nondestructive evaluation.
UF *intelligent structures*
RT active control
adaptive control
biomimetics
composite structures
fiber optics
large space structures
piezoelectric actuators
smart materials
space station structures
spacecraft structures
strain measurement
structural engineering
structural members
∞ structures
systems health monitoring
tensegrity structures

smear
RT frequency response
image contrast
signal fading
television transmission
video data

smectite
(added October 2001)
USE **montmorillonite**

smell
USE **olfactory perception**

smelting
RT melting
∞ metallurgy
reduction (chemistry)
refining

Smith chart
RT electrical impedance
impedance
polar coordinates
reactance
standing wave ratios
transmission lines

waveguides

SMM-A
USE **Solar Maximum Mission-A**

smog
RT air pollution
air sampling
carbon monoxide
combustion products
environmental chemistry
exhaust gases
flames
fog
hydrocarbon combustion
hydrocarbon poisoning
lead poisoning
particulates
smoke

smoke
GS mixtures
. dispersions
. . plastisols
. . . **smoke**
RT aerosols
air pollution
biomass burning
combustion products
dust
exhaust gases
fire damage
fog
forest fires
fumes
haze detection
∞ markers
particles
particulates
smog
smoldering
soot
vapors
visibility

smoke abatement
RT aerosols
air pollution
carbon dioxide removal
exhaust gases
pollution
soot

smoke detectors
GS measuring instruments
. indicating instruments
. . **smoke detectors**
RT fire prevention
fumes
gas detectors
safety devices
signal processing

smoke trails
RT ∞ tracks
wind direction
wind measurement
wind profiles

smoldering
(added July 1997)
DEF A slow, flameless combustion of a solid fuel.
GS combustion
. **smoldering**
RT burning rate
combustion stability
erosive burning
fires
flammability
smoke

smooth muscle
(added August 2004)
DEF Unstriated and unstriped muscle, one of the muscles of the internal organs, blood vessels, hair follicles, etc. Contractile elements are elongated, usually spindle-shaped cells with centrally located nuclei. Smooth muscle fibers are bound together into sheets or bundles by

reticular fibers and frequently elastic nets are also abundant.

- UF *involuntary muscle*
- GS anatomy
 - . musculoskeletal system
 - . . muscles
 - . . . **smooth muscle**
- RT muscle cells
 - muscular function
 - skeletal muscle

smoothing

- GS **smoothing**
 - . data smoothing
- RT adjusting
 - flattening
 - honing
 - leveling
 - planing
 - polishing
 - roughness
 - structured grids (mathematics)

SMS

USE **Synchronous Meteorological Satellite**

SMS 1

DEF A meteorological satellite in synchronous orbit over the Atlantic Ocean to give coverage to the Eastern US. It was launched in May 1974 and is no longer operational, but still in orbit.

- GS artificial satellites
 - . meteorological satellites
 - . . Synchronous Earth Observatory satellite
 - . . . **SMS 1**
 - . . Synchronous Meteorological Satellite
 - . . . **SMS 1**
 - . . synchronous satellites
 - . . Synchronous Earth Observatory satellite
 - . . . **SMS 1**
 - . . Synchronous Meteorological Satellite
 - . . . **SMS 1**
- RT GOES 2
 - NOAA satellites

SMS 2

DEF Meteorological satellite in synchronous orbit over Honolulu to give coverage to the Western US. It was launched in February 1975 and is no longer operational, but still in orbit.

- GS artificial satellites
 - . meteorological satellites
 - . . Synchronous Earth Observatory satellite
 - . . . **SMS 2**
 - . . Synchronous Meteorological Satellite
 - . . . **SMS 2**
 - . . synchronous satellites
 - . . Synchronous Earth Observatory satellite
 - . . . **SMS 2**
 - . . Synchronous Meteorological Satellite
 - . . . **SMS 2**
- RT GOES 2
 - NOAA satellites

SMS (Shuttle)

USE **Shuttle Mission Simulator**

SMU (maneuvering units)

USE **self maneuvering units**

S-N diagrams

- UF *fatigue diagrams*
- GS diagrams
 - . **S-N diagrams**
- RT bending fatigue
 - cyclic loads
 - fatigue (materials)
 - fatigue life
 - fatigue tests
 - metal fatigue

stress analysis
stress cycles
stress measurement
stress ratio

snails

- GS animals
 - . invertebrates
 - . . mollusks
 - . . . **snails**

snakes

- GS animals
 - . vertebrates
 - . . reptiles
 - . . . **snakes**

snaking

USE **lateral oscillation**

SNAP

UF *Systems for Nuclear Auxiliary Power*

- GS auxiliary power sources
 - . nuclear auxiliary power units
 - . . **SNAP**
 - . . . fission electric cells
 - SNAP 2
 - SNAP 4
 - SNAP 8
 - SNAP 10A
 - . . . SNAP 1
 - . . . SNAP 3
 - . . . SNAP 7
 - . . . SNAP 9A
 - . . . SNAP 11
 - . . . SNAP 13
 - . . . SNAP 15
 - . . . SNAP 17
 - . . . SNAP 19
 - . . . SNAP 21
 - . . . SNAP 23
 - . . . SNAP 27
 - . . . SNAP 29
 - . . . SNAP 50
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . . **SNAP**
 - . . . fission electric cells
 - SNAP 2
 - SNAP 4
 - SNAP 8
 - SNAP 10A
 - . . . SNAP 1
 - . . . SNAP 3
 - . . . SNAP 7
 - . . . SNAP 9A
 - . . . SNAP 11
 - . . . SNAP 13
 - . . . SNAP 15
 - . . . SNAP 17
 - . . . SNAP 19
 - . . . SNAP 21
 - . . . SNAP 23
 - . . . SNAP 27
 - . . . SNAP 29
 - . . . SNAP 50
- RT electric generators
 - heat exchangers
 - nuclear power reactors
 - SNAPTRAN reactor
 - space power unit reactors
 - ∞ systems
 - thermionic converters
 - thermionic power generation
 - thermoelectric generators
 - thermoelectric power generation
 - Transient Reactor Test Facility
 - turbogenerators

SNAP 1

- GS auxiliary power sources
 - . nuclear auxiliary power units
 - . . SNAP
 - . . . **SNAP 1**
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . . SNAP
 - . . . **SNAP 1**
- RT heat exchangers

turbogenerators

SNAP 2

- GS auxiliary power sources
 - . nuclear auxiliary power units
 - . . SNAP
 - . . . fission electric cells
 - **SNAP 2**
 - . . space power reactors
 - . . . fission electric cells
 - **SNAP 2**
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . . SNAP
 - . . . fission electric cells
 - **SNAP 2**
 - . . space power reactors
 - . . . fission electric cells
 - **SNAP 2**
 - . . nuclear power reactors
 - . . space power reactors
 - . . . fission electric cells
 - **SNAP 2**
 - . . nuclear power reactors
 - . . space power reactors
 - . . . fission electric cells
 - **SNAP 2**
- RT heat exchangers
 - space power unit reactors
 - turbogenerators

SNAP 3

- GS auxiliary power sources
 - . nuclear auxiliary power units
 - . . SNAP
 - . . . **SNAP 3**
 - electric generators
 - . direct power generators
 - . . thermoelectric generators
 - . . . **SNAP 3**
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . . SNAP
 - . . . **SNAP 3**

SNAP 4

- GS auxiliary power sources
 - . nuclear auxiliary power units
 - . . SNAP
 - . . . fission electric cells
 - **SNAP 4**
 - . . space power reactors
 - . . . fission electric cells
 - **SNAP 4**
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . . SNAP
 - . . . fission electric cells
 - **SNAP 4**
 - . . space power reactors
 - . . . fission electric cells
 - **SNAP 4**
 - . . nuclear power reactors
 - . . space power reactors
 - . . . fission electric cells
 - **SNAP 4**
- RT space power unit reactors

SNAP 7

- GS auxiliary power sources
 - . nuclear auxiliary power units
 - . . SNAP
 - . . . **SNAP 7**
 - electric generators
 - . direct power generators
 - . . radioisotope batteries
 - . . . **SNAP 7**
 - . . thermoelectric generators
 - . . . **SNAP 7**
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . . SNAP

- ... SNAP 7
 - SNAP 8**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... fission electric cells
 - ... SNAP 8
 - . space power reactors
 - ... fission electric cells
 - ... SNAP 8
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... fission electric cells
 - ... SNAP 8
 - . space power reactors
 - ... fission electric cells
 - ... SNAP 8
 - . nuclear power reactors
 - . space power reactors
 - ... fission electric cells
 - ... SNAP 8
 - nuclear reactors
 - . nuclear power reactors
 - . space power reactors
 - ... fission electric cells
 - ... SNAP 8
 - RT heat exchangers
 - space power unit reactors
 - turbogenerators
 - SNAP 9A**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 9A
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 9A
 - . thermoelectric generators
 - ... SNAP 9A
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 9A
 - SNAP 10A**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... fission electric cells
 - ... SNAP 10A
 - . space power reactors
 - ... fission electric cells
 - ... SNAP 10A
 - electric generators
 - . direct power generators
 - . thermoelectric generators
 - ... SNAP 10A
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... fission electric cells
 - ... SNAP 10A
 - . space power reactors
 - ... fission electric cells
 - ... SNAP 10A
 - . nuclear power reactors
 - . space power reactors
 - ... fission electric cells
 - ... SNAP 10A
 - nuclear reactors
 - . nuclear power reactors
 - . space power reactors
 - ... fission electric cells
 - ... SNAP 10A
 - RT heat exchangers
 - Snapshot satellite
 - SNAP 11**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 11
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 11
 - ... thermoelectric generators
 - ... SNAP 11
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 11
 - SNAP 13**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 13
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 13
 - . thermionic converters
 - ... SNAP 13
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 13
 - RT thermionic power generation
 - SNAP 15**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 15
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 15
 - . thermoelectric generators
 - ... SNAP 15
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 15
 - SNAP 17**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 17
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 17
 - . thermoelectric generators
 - ... SNAP 17
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 17
 - SNAP 19**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 19
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 19
 - . thermoelectric generators
 - ... SNAP 19
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 19
 - SNAP 21**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 21
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 21
 - . thermoelectric generators
 - ... SNAP 21
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 21
 - SNAP 23**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 23
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 23
 - . thermoelectric generators
 - ... SNAP 23
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 23
 - ... nuclear auxiliary power units
 - ... SNAP
 - ... SNAP 23
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 23
 - . thermoelectric generators
 - ... SNAP 23
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 23
- SNAP 27**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 27
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 27
 - . thermoelectric generators
 - ... SNAP 27
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 27
- SNAP 29**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 29
 - electric generators
 - . direct power generators
 - . radioisotope batteries
 - ... SNAP 29
 - . thermoelectric generators
 - ... SNAP 29
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 29
- SNAP 50**
 - GS auxiliary power sources
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 50
 - . space power reactors
 - ... SNAP 50
 - nuclear electric power generation
 - . nuclear auxiliary power units
 - . SNAP
 - ... SNAP 50
 - . space power reactors
 - ... SNAP 50
 - nuclear power reactors
 - . space power reactors
 - ... SNAP 50
 - nuclear reactors
 - . nuclear power reactors
 - . space power reactors
 - ... SNAP 50
 - RT space power unit reactors
- Snapshot satellite**
 - GS artificial satellites
 - . Snapshot satellite
 - RT SNAP 10A
- SNAPTRAN reactor**
 - RT ∞ reactors
 - SNAP
- snatching*
- USE spacecraft recovery
- SNC meteorites**
 - (added March 1998)
 - DEF Meteorites with petrologic characteristics, isotopic signatures, trapped gas compositions, and relatively young crystallization ages (less than 1.3 billion years), which together point to a Martian origin. The name of these meteorites is derived from first three known examples-- Shergotty, Nakhla, and Chassigny.
 - UF *Martian meteorites*

- Shergotty Nakhla Chassigny meteorites*
- GS celestial bodies
 . meteorites
 . . . stony meteorites
 achondrites
 **SNC meteorites**
- RT chassignites
 Mars (planet)
 Mars surface
 nakhlites
 shergottites
- sneak circuit analysis**
 DEF In electrical or electronic circuits, the detection and/or prevention of "sneak circuits" -- paths having latent electrical conditions resulting from unapparent stimulus-response relationships which cause unwanted functions or inhibit desired function.
 GS network analysis
 . **sneak circuit analysis**
- RT automatic test equipment
 circuit protection
 circuit reliability
 critical path method
 electric networks
 electrical faults
 reliability engineering
 short circuits
 signal flow graphs
 trees (mathematics)
- sneezing**
 GS reflexes
 . respiratory reflexes
 . . **sneezing**
- RT involuntary actions
 vasoconstriction
- Snellen tests**
 RT ∞ tests
 visual acuity
- Snells law**
 DEF A law of geometric optics that defines the amount of bending that takes place when a light ray strikes a refractive boundary (e.g., an air-glass interface) at a non-normal angle.
 GS laws
 . **Snells law**
- RT geometrical optics
 ∞ optics
 refraction
 refractivity
- snow**
 DEF A form of ice composed of small white or translucent hexagonal crystals of frozen water, formed directly by sublimation of atmospheric water vapor around solid nuclei at a temperature below the freezing point. The crystals grow while floating or falling to the ground, and are often agglomerated into snowflakes.
 GS precipitation (meteorology)
 . **snow**
- RT acid rain
 cirques (landforms)
 cloud glaciation
 graupel
 ice formation
 precipitation measurement
 slush
 storms (meteorology)
- Snow aerial applicator aircraft S-2B*
 USE **agricultural aircraft**
- snow cover**
 GS precipitation (meteorology)
 . **snow cover**
- RT cloud glaciation
 cold weather
 Earth cryosphere
 storm damage
 storms
- storms (meteorology)
- Snow S-2 aircraft*
 USE **agricultural aircraft**
- snowplow effect*
 USE **plasma dynamics**
- snowstorms**
 GS storms
 . storms (meteorology)
 . . **snowstorms**
- RT climatology
 precipitation (meteorology)
 storm enhancement
 storm suppression
 weather forecasting
 weather modification
- SOAC (electronics)*
(added May 2001)
 USE **systems-on-a-chip**
- ∞ **soaking**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT baths
 heat treatment
 heating
 submerging
 water immersion
 wetting
- soaps**
 RT detergents
 stearates
 surfactants
 wetting
- soaring**
 RT climbing flight
 coasting flight
 ∞ flight
 gliders
 gliding
 hang gliders
 horizontal flight
 man powered aircraft
 vertical air currents
- Sobolev space**
 DEF A Banach space whose elements are functions defined in a domain in Euclidean space and whose norm measures the size and smoothness of the functions.
 GS algebra
 . vector spaces
 . . Banach space
 . . . Hilbert space
 **Sobolev space**
 analysis (mathematics)
 . function space
 . . Banach space
 . . . Hilbert space
 **Sobolev space**
 functional analysis
 . . Banach space
 . . . Hilbert space
 **Sobolev space**
 geometry
 . topology
 . . metric space
 . . . Hilbert space
 **Sobolev space**
- RT boundary value problems
 Euclidean geometry
- SoC (microelectronics)*
(added December 2005)
 USE **systems-on-a-chip**
- social factors**
 GS sociology
 . **social factors**
 . . ethnic factors
- RT anthropology
 crime
 culture (social sciences)
 police
 race factors
- space psychology
 Starsite program
 urban planning
 urban research
 ∞ variable
- social isolation**
 GS isolation
 . **social isolation**
- RT sociology
- social psychiatry**
 GS medical science
 . psychiatry
 . . **social psychiatry**
- RT sociology
- sociology**
 GS **sociology**
 . social factors
 . . ethnic factors
- RT anthropology
 case histories
 cities
 communities
 culture (social sciences)
 demography
 dependence
 group dynamics
 human relations
 minorities
 politics
 race factors
 retirement
 social isolation
 social psychiatry
 systems analysis
 urban planning
- socks**
 GS clothing
 . **socks**
- RT fabrics
 shoes
- sod**
 DEF The top stratum of soil usually containing grassy plants with their matted roots.
 GS soils
 . **sod**
- RT canopies (vegetation)
 farmlands
 grasses
 grasslands
 land
 plowing
- sodalite**
 RT chemical reactions
 photochemical reactions
 photochromism
- sodar**
 DEF Meteorological instrument used to measure the scattering of sound waves by atmospheric turbulence.
 RT acoustic scattering
 atmospheric sounding
 atmospheric turbulence
 Doppler radar
 echo sounding
 meteorological instruments
 meteorology
 sound waves
 wind measurement
 wind profiles
- sodium**
 GS chemical elements
 . alkali metals
 . . **sodium**
 . . . liquid sodium
 sodium isotopes
 sodium 22
 sodium 24
 sodium vapor
 metals
 . alkali metals
 . . **sodium**
 . . . liquid sodium

sodium 22

- . . . sodium isotopes
 - sodium 22
 - sodium 24
- RT dawsonite
- electrolyte metabolism
- liquid metal cooled reactors
- sodium 22**
 - GS chemical elements
 - . alkali metals
 - . sodium
 - . . . sodium isotopes
 - **sodium 22**
 - . nuclides
 - . isotopes
 - . . . radioactive isotopes
 - **sodium 22**
 - . . . sodium isotopes
 - **sodium 22**
 - metals
 - . alkali metals
 - . sodium
 - . . . sodium isotopes
 - **sodium 22**
 - GS chemical elements
 - . alkali metals
 - . sodium
 - . . . sodium isotopes
 - **sodium 24**
 - . nuclides
 - . isotopes
 - . . . radioactive isotopes
 - **sodium 24**
 - . . . sodium isotopes
 - **sodium 24**
 - metals
 - . alkali metals
 - . sodium
 - . . . sodium isotopes
 - **sodium 24**
 - sodium alloys**
 - GS alloys
 - . **sodium alloys**
 - sodium azides**
 - GS nitrogen compounds
 - . azides (inorganic)
 - . **sodium azides**
 - . azides (organic)
 - . **sodium azides**
 - sodium compounds
 - . **sodium azides**
 - RT detonators
 - explosives
 - sodium bromides**
 - GS halogen compounds
 - . bromine compounds
 - . bromides
 - . . . **sodium bromides**
 - . halides
 - . bromides
 - . . . **sodium bromides**
 - . metal halides
 - . . . alkali halides
 - **sodium bromides**
 - sodium compounds
 - . **sodium bromides**
 - sodium carbonates**
 - GS carbon compounds
 - . carbonates
 - . **sodium carbonates**
 - sodium compounds
 - . **sodium carbonates**
 - RT dawsonite
 - sodium channels (biology)*
(added August 2002)
 - USE **ion channels (biology)**
 - sodium chlorides**
 - GS halogen compounds
 - . chlorine compounds
 - . chlorides
 - . . . **sodium chlorides**
 - . halides
 - . chlorides
 - . . . **sodium chlorides**
 - . metal halides
 - . . . alkali halides
 - **sodium chlorides**
 - sodium compounds
 - . **sodium chlorides**
 - RT molten salts
 - salt beds
 - ∞ salts
 - sodium chlorodifluoroacetates**
 - GS acetates
 - . **sodium chlorodifluoroacetates**
 - esters
 - . **sodium chlorodifluoroacetates**
 - sodium chromites**
 - GS chromium compounds
 - . **sodium chromites**
 - sodium compounds
 - . **sodium chromites**
 - sodium compounds**
 - GS **sodium compounds**
 - . cryolite
 - . Nembutal (trademark)
 - . nepheline
 - . sodium azides
 - . sodium bromides
 - . sodium carbonates
 - . sodium chlorides
 - . sodium chromites
 - . sodium fluorides
 - . sodium gallates
 - . sodium hydrides
 - . sodium hydroxides
 - . sodium iodides
 - . sodium nitrates
 - . sodium peroxides
 - . sodium salicylates
 - . sodium silicates
 - . spodumene
 - . talc
 - . tourmaline
 - . sodium sulfates
 - . sodium sulfites
 - RT ∞ alkali metal compounds
 - bleoedite
 - ∞ chemical compounds
 - ∞ metal compounds
 - sodium cooling**
 - SN (COOLING WITH SODIUM)
 - GS cooling
 - . **sodium cooling**
 - RT coolants
 - liquid cooled reactors
 - liquid cooling
 - sodium fluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . fluorides
 - . . . metal fluorides
 - **sodium fluorides**
 - . halides
 - . fluorides
 - . . . metal fluorides
 - **sodium fluorides**
 - . metal halides
 - . . . alkali halides
 - **sodium fluorides**
 - . . . metal fluorides
 - **sodium fluorides**
 - . metal halides
 - . . . alkali halides
 - **sodium fluorides**
 - sodium compounds
 - . **sodium fluorides**
 - sodium gallates**
 - GS gallium compounds
 - . gallates
 - . **sodium gallates**
 - sodium compounds
 - . **sodium gallates**
 - sodium graphite reactors**
 - UF *SGR (nuclear reactors)*
 - GS nuclear reactors
 - liquid cooled reactors
 - . . liquid metal cooled reactors
 - . . . **sodium graphite reactors**
 - RT Hallam Nuclear Power Facility
 - nuclear power reactors
 - sodium hydrides**
 - GS hydrogen compounds
 - . hydrides
 - . metal hydrides
 - . . . **sodium hydrides**
 - sodium compounds
 - . **sodium hydrides**
 - sodium hydroxides**
 - GS bases (chemical)
 - . alkalis
 - . . **sodium hydroxides**
 - hydroxides
 - . **sodium hydroxides**
 - sodium compounds
 - . **sodium hydroxides**
 - sodium iodides**
 - GS halogen compounds
 - . halides
 - . metal halides
 - . . alkali halides
 - . . . **sodium iodides**
 - iodine compounds
 - . iodides
 - . . **sodium iodides**
 - sodium compounds
 - . **sodium iodides**
 - sodium isotopes**
 - GS chemical elements
 - . alkali metals
 - . sodium
 - . . . **sodium isotopes**
 - sodium 22
 - sodium 24
 - . nuclides
 - . isotopes
 - . . . **sodium isotopes**
 - sodium 22
 - sodium 24
 - metals
 - . alkali metals
 - . sodium
 - . . . **sodium isotopes**
 - sodium 22
 - sodium 24
 - sodium nitrates**
 - GS nitrogen compounds
 - . nitrates
 - . inorganic nitrates
 - . . **sodium nitrates**
 - sodium compounds
 - . **sodium nitrates**
 - sodium peroxides**
 - GS chalcogenides
 - . oxides
 - . anhydrides
 - . . peroxides
 - . . . **sodium peroxides**
 - metal oxides
 - . . **sodium peroxides**
 - sodium compounds
 - . **sodium peroxides**
 - sodium reactor experiment**
 - UF *SRE reactor*
 - GS nuclear reactors
 - . liquid cooled reactors
 - . liquid metal cooled reactors
 - . . **sodium reactor experiment**
 - . nuclear research and test reactors
 - . . **sodium reactor experiment**
 - sodium salicylates**
 - GS esters
 - . **sodium salicylates**
 - salicylates
 - . **sodium salicylates**
 - sodium compounds

. **sodium salicylates**

sodium silicates

GS silicon compounds
. silicates
. . . **sodium silicates**
. . . spodumene
. . . talc
. . . tourmaline
sodium compounds
. **sodium silicates**
. . . spodumene
. . . talc
. . . tourmaline

RT minerals
plagioclase

sodium sulfates

DEF Sodium compounds containing the -SO₄ group.

GS sodium compounds
. **sodium sulfates**
sulfur compounds
. sulfates
. . . **sodium sulfates**

sodium sulfites

GS sodium compounds
. **sodium sulfites**
sulfur compounds
. sulfites
. . . **sodium sulfites**

sodium sulfur batteries

DEF One of several types of rechargeable batteries under consideration as power sources for electrically actuated vehicles. This battery uses a solid electrolyte as well as a sodium reservoir made of metal.

GS electric generators
. direct power generators
. . . primary batteries
. . . **sodium sulfur batteries**
electrochemical cells
. electric batteries
. . . primary batteries
. . . **sodium sulfur batteries**

RT ∞ electric cells

sodium vapor

GS chemical elements
. alkali metals
. . . sodium
. . . **sodium vapor**
metals
. alkali metals
. . . sodium
. . . **sodium vapor**
. metal vapors
. . . **sodium vapor**
vapors
. metal vapors
. . . **sodium vapor**

RT mercury vapor

SOFAR
USE **sound fixing and ranging**

SOFIA (airborne observatory)
(added March 1990)

SN (STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY)

UF *Stratospheric Observatory for IR Astronomy*

GS observatories
. astronomical observatories
. . . **SOFIA (airborne observatory)**

RT airborne equipment
Boeing 747 aircraft
infrared astronomy
Kuiper Airborne Observatory
spaceborne astronomy

soft gamma repeaters
(added January 2000)

DEF A class of x-ray source which emits repeating bright bursts of "soft" or low-energy gamma rays, along with steady x-ray pulsations. By the end of 1999 only a handful of these sources had been identified in our galaxy and in the Large Magellanic Cloud. Since they are

associated with supernova remnants, these sources are probably some kind of young neutron star. One theory holds that these stars are young magnetars (magnetically-powered neutron stars). Bright bursts occur when the evolving, ultra-strong magnetic field stresses the neutron star's solid crust to breaking, in a sudden starquake. X-ray pulsations are due to the rotation of the star, with it's hot surface bright in x-rays.

UF *SGR (astronomy)*

GS celestial bodies
. stars
. . . neutron stars
. . . **soft gamma repeaters**
. . . x ray stars
. . . **soft gamma repeaters**
gamma ray sources (astronomy)
. **soft gamma repeaters**
x ray sources
. x ray stars
. . . **soft gamma repeaters**

RT gamma ray astronomy
gamma ray bursts
magnetars
supernova remnants

soft landing

SN (SPACECRAFT OR AIRCRAFT)

DEF The act of landing on the surface of a planet or natural satellite without damage to any portion of the vehicle or payload except possibly the landing gear. Used for soft recovery.

UF *soft recovery*

GS landing
. **soft landing**

RT aircraft landing
∞ astronautics
crash landing
glide landings
hard landing
horizontal spacecraft landing
lunar landing
Mars landing
planetary landing
spacecraft landing
Surveyor project
Viking 1975 entry vehicle
water landing

soft landing spacecraft

UF *SLV (soft landing vehicles)*

GS **soft landing spacecraft**
. aerospace planes
. . . HOPE aerospace plane
. . . HOTOL launch vehicle
. . . VentureStar launch vehicle
. . . X-30 vehicle
. . . X-37 vehicle
. . . X-40A vehicle
. Apollo spacecraft
. . . Apollo lunar experiment module
. Astro vehicle
. Buran space shuttle
. Gemini B spacecraft
. Gemini spacecraft
. . . Gemini 2 spacecraft
. . . Gemini (GT-1) spacecraft
. Janus spacecraft
. landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . Apollo lunar experiment module
. . . . LSSM
. . . . Lunar Module 5
. . . . Lunar Module 7
. . . . Altair Lunar Lander
. . . Mars Excursion Module
. Mercury spacecraft
. . . Aurora 7
. . . Faith 7
. . . Friendship 7
. . . SIGMA 7
. Surveyor lunar probes
. . . Surveyor 1 lunar probe
. . . Surveyor 2 lunar probe
. . . Surveyor 3 lunar probe
. . . Surveyor 4 lunar probe
. . . Surveyor 5 lunar probe
. . . Surveyor 6 lunar probe

. . . Surveyor 7 lunar probe
. voskhod manned spacecraft
. . . Voskhod 1 spacecraft
. . . Voskhod 2 spacecraft
. Vostok spacecraft
. . . Vostok 1 spacecraft
. . . Vostok 2 spacecraft
. . . Vostok 3 spacecraft
. . . Vostok 4 spacecraft
. . . Vostok 5 spacecraft
. . . Vostok 6 spacecraft

RT Apollo project
ferry spacecraft
hovering rocket vehicles
lunar probes
reusable spacecraft
space capsules
∞ spacecraft
spacecraft landing
Surveyor project
X-20 aircraft

soft recovery
USE **soft landing**

softening

SN (EXCLUDES WATER SOFTENING)

GS **softening**
. work softening

RT annealing
deionization
demineralizing
digesting
dissolving
hardening (materials)
ion exchanging

softness

RT ductility
elastic properties
flexibility
hardness
stiffness

software (computers)
USE **computer programs**

software development tools

DEF Computer programs that aid in the specification, construction, testing, analysis, management, documentation, and maintenance of other computer programs.

UF *software tools*

GS computer programs
. **software development tools**
tools
. **software development tools**

RT applications programs (computers)
architecture (computers)
computer systems design
object-oriented programming
program verification (computers)
programming environments
reverse engineering
scientific visualization
software engineering
software reuse

software engineering

DEF The systematic approach to the development, operation, maintenance, and retirement of software.

RT computer programming
computer programs
computer systems design
computer systems programs
computer viruses
data bases
∞ engineering
object-oriented programming
open source licensing (computers)
programming environments
reverse engineering
software development tools
software reliability
software reuse
structured programming
systems engineering

software reliability

UNIX (operating system)

software engineering environments
USE **programming environments**

software reliability

(added January 1993)

UF *computer program reliability*
program reliability (computers)
reliability

GS . **software reliability**

RT . . computer program integrity
computer programming
computer programs
computer systems performance
program verification (computers)
reliability analysis
software engineering
systems health monitoring

software reuse

(added May 1992)

GS utilization

. reuse

. . **software reuse**

RT computer programming
computer programs
productivity
software development tools
software engineering

software tools

USE **software development tools**

SOHO Mission

(added September 1989)

DEF One of the joint NASA/ESA missions comprising the International Solar Terrestrial Program. The SOHO Mission will investigate the physical processes in the solar corona and solar wind and the structure and dynamics of the solar interior.

UF *Solar and Heliospheric Observatory*

GS space missions
. **SOHO Mission**

RT Cluster Mission
ESA satellites
European space programs
heliosphere
international cooperation
∞ missions
scientific satellites
solar corona
solar interior
solar observatories
solar wind
Transition Region and Coronal Explorer

SOI (semiconductors)

DEF Semiconductor devices consisting of a silicon layer coupled to an electrically insulating layer. Used for silicon-on-insulator semiconductors.

UF *silicon-on-insulator semiconductors*

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **SOI (semiconductors)**

RT field effect transistors
metal oxide semiconductors
silicon films
silicon junctions
silicon transistors
SIS (semiconductors)
SOS (semiconductors)

soil contamination

USE **soil pollution**

soil erosion

GS erosion

. **soil erosion**

RT abrasion
atmospheric effects
deterioration
environment effects
hydrogeology
landslides
outliers (landforms)

rain erosion
rain impact damage
soils
water erosion
weathering
wind effects

soil mapping

GS mapping

. **soil mapping**

RT geographic applications program
ground penetrating radar
maps
Mars Reconnaissance Orbiter
photomapping
soils
SPOT (French satellite)
surveys
terrain analysis

soil mechanics

DEF Mechanical properties of unconsolidated accumulations of particles produced by the disintegration and chemical decomposition of rocks.

RT crustal fractures
fracture mechanics
geotechnical engineering
geotechnical fabrics
rock mechanics

soil moisture

GS moisture

. **soil moisture**

RT lysimeters
moisture content
plant stress
soil sampling
soils
vegetation growth

soil pollution

(added September 1995)

UF *soil contamination*

GS pollution

. environment pollution

. . **soil pollution**

RT contaminants
environmental cleanup
ground water
heavy metals
industrial wastes
pollution monitoring
radioactive wastes
sediments
toxicity and safety hazard
waste disposal
water pollution

soil sampling

(added March 1995)

GS sampling

. **soil sampling**

RT alkalinity
Mars surface samples
pH factor
salinity
soil moisture
terrain analysis

soil science

UF *pedology*

RT agriculture
conservation
erosion
soils
vegetation growth

soils

GS **soils**

. alluvium
. dirt
. gravels
. laterites
. lunar soil
. . lunar dust
. mud
. permafrost
. sands
. . monazite sands

. . tar sands

RT . sod
andesite
anorthosite
arid lands
ataxite
barren land
basalt
bedrock
bentonite
boreholes
breccia
carbonaceous rocks
clays
coal
conservation
cultivation
deltas
diorite
dunite
Earth resources
eclogite
enstatite
formations
geology
gneiss
granite
igneous rocks
illite
kaolinite
land
landslides
lava
limestone
lysimeters
magma
minerals
moldavite
muskegs
obsidian
olivine
peridotite
planting
polyurethane foam
porous materials
pumice
pyroxenes
quartz
rocks
sandstones
sedimentary rocks
serpentine
shales
soil erosion
soil mapping
soil moisture
soil science
strip mining
syenite
trachyte
tunneling (excavation)
vadose water
vegetation growth

solar activity

DEF Any type of variation in the appearance of energy output of the sun.

GS stellar activity

. **solar activity**

. . faculae
. . solar flares
. . solar prominences
. . solar storms
. . spicules
. . sunspots

RT ∞ activity
auroras
∞ disturbances
International Quiet Sun Year
interplanetary shock waves
IRIS satellites
magnetic disturbances
prominences
radio auroras
solar convection (astronomy)
solar interior
solar planetary interactions
starspots
STEREO (observatory)

sun
sunspot cycle

solar activity effects

RT blackout (propagation)
∞ effects
galactic cosmic rays
heliosphere
interplanetary shock waves
magnetic disturbances
secular variations
solar oscillations
solar planetary interactions
space weather
sudden ionospheric disturbances
sudden storm commencements
sun

Solar and Heliospheric Observatory

USE **SOHO Mission**

solar arrays

UF *rollup solar arrays*
GS arrays
. **solar arrays**
. . solar blankets
RT electrostatic bonding
payload delivery (STS)
photovoltaic conversion
power modules (STS)
satellite power transmission
self shadowing
solar atriums
solar energy conversion
space station power supplies
sun

solar atmosphere

GS environments
. extraterrestrial environments
. . stellar atmospheres
. . . **solar atmosphere**
. . . . solar transition region
RT ∞ atmospheres
chromosphere
M region
photosphere
solar convection (astronomy)
solar oscillations
spicules
stellar structure
sun
Transition Region and Coronal Explorer

solar atriums

DEF Open courts within buildings designed for passive solar heating.
RT solar arrays
solar heating
solar reflectors
space heating (buildings)
sun

solar auxiliary power units

GS auxiliary power sources
. **solar auxiliary power units**
. . ASTEC solar turboelectric generator
electric generators
. solar generators
. . **solar auxiliary power units**
. . . ASTEC solar turboelectric generator
RT sun

solar azimuth

USE **azimuth**
solar position

Solar Backscatter UV Spectrometer

DEF A spaceborne spectrometer that measures solar UV spectral irradiance incident on the Earth and backscattered radiance from the Earth and thereby estimates the total atmospheric ozone content of the atmosphere and the attitude distribution of ozone.

GS measuring instruments
. spectrometers
. . **Solar Backscatter UV**

Spectrometer

RT irradiance
NOAA 11 satellite
NOAA 14 satellite
satellite-borne instruments

solar blankets

DEF Large, high-temperature, low-mass solar arrays consisting of ultrathin silicon solar cells interconnected, welded, and bonded to flexible substances.

GS arrays
. solar arrays
. . **solar blankets**
electric generators
. direct power generators
. . thermionic converters
. . . **solar blankets**

RT ∞ blankets
∞ converters
sun

Solar Cell Calibration Facility

DEF One of the spacelab payloads. Used for SCCF.

UF *SCCF*
GS payloads
. Spacelab payloads
. . **Solar Cell Calibration Facility**
RT calibrating
∞ facilities
Space Transportation System flights

solar cells

DEF Photovoltaic cells that convert sunlight into electrical energy. Used for silicon solar cells and wraparound contact solar cells.

UF *silicon solar cells*
wraparound contact solar cells
GS electric generators
. direct power generators
. . photoelectric generators
. . . photovoltaic cells
. . . . **solar cells**
. vertical junction solar cells
. solar generators
. . **solar cells**
. . . vertical junction solar cells
electronic equipment
. solid state devices
. . semiconductor devices
. . . photovoltaic cells
. . . . **solar cells**
. vertical junction solar cells
photoelectric cells
. photovoltaic cells
. . **solar cells**
. . . vertical junction solar cells
RT amorphous silicon
antireflection coatings
carrier lifetime
carrier transport (solid state)

∞ cells
copper indium selenides
diffusion length
∞ electric cells
electrostatic bonding
float zones
fuel cells
heterojunctions
homojunctions
indium selenides
open circuit voltage
photodiodes
photovoltaic conversion
p-i-n junctions
quantum efficiency
satellite power transmission
satellite solar energy conversion
satellite solar power stations
short circuit currents
SIS (semiconductors)
solar energy conversion
solar powered aircraft
space station power supplies
spectrophotovoltaics
sun
thermionic converters
thermoelectric generators
thermophotovoltaic conversion

tunnel junctions

solar collectors

DEF Devices designed to absorb incident solar radiation and transfer the energy to a fluid passing through it. Used for solar receivers.

UF *solar receivers*
GS accumulators
. **solar collectors**
reflectors
. solar reflectors
. . **solar collectors**
RT concentrators
mirrors
photothermal conversion
selective surfaces
solar dynamic power systems
solar energy conversion
space cooling (buildings)
spectrophotovoltaics
sun

solar companion star

USE **Nemesis (star)**

solar compasses

GS measuring instruments
. indicating instruments
. . compasses
. . . **solar compasses**
navigation aids
. navigation instruments
. . compasses
. . . **solar compasses**
RT air navigation
air traffic control
aircraft safety
airport beacons
all-weather air navigation
approach indicators
automatic flight control
automatic pilots
beacons
Decca navigation
display devices
distance measuring equipment
flight control
flight instruments
flight paths
gyrocompasses
heliports
homing devices
landing aids
loran
magnetic compasses
omnidirectional radio ranges
position indicators
radar beacons
radio beacons
radio navigation
self calibrating omnirange
Shoran
sun
Tacan
VHF omnirange navigation
weather

solar constant

DEF The rate at which solar radiation is received outside the Earth's atmosphere on a surface normal to the incident radiation and at the Earth's mean distance from the sun.

GS constants
. **solar constant**
rates (per time)
. flux density
. . radiant flux density
. . . irradiance
. . . . **solar constant**
. solar flux density
. **solar constant**
solar energy
. solar flux density
. . **solar constant**
RT illuminance
particle flux density
sun

solar convection (astronomy)

(added June 1992)

solar cooling

SN (LIMITED TO CONVECTION PHENOMENA OF THE SOLAR ATMOSPHERE AND INTERIOR)
GS convection
. stellar convection
. . **solar convection (astronomy)**
RT Benard cells
convection currents
convective flow
dynamo theory
fluid flow
free convection
Rayleigh-Benard convection
solar activity
solar atmosphere
solar interior
solar magnetic field
solar physics

solar converters

USE **solar generators**

solar cooling

DEF Conversion of solar energy into refrigeration energy.
GS cooling
. **solar cooling**
RT cooling systems
domestic energy
energy technology
residential energy
solar energy conversion
space cooling (buildings)
sun

solar corona

GS coronas
. stellar coronas
. . **solar corona**
. . . coronal holes
. . . coronal loops
RT chromosphere
coronal mass ejection
electric corona
interplanetary shock waves
magnetic clouds
nebulae
SOHO Mission
solar transition region
stellar structure
sun
Transition Region and Coronal Explorer

solar corpuscular radiation

UF *solar streams*
GS extraterrestrial radiation
. solar radiation
. . **solar corpuscular radiation**
. . . solar electrons
. . . solar neutrinos
. . . solar neutrons
. . . solar protons
particles
. corpuscular radiation
. . **solar corpuscular radiation**
. . . solar electrons
. . . solar neutrinos
. . . solar neutrons
. . . solar protons
RT Advanced Composition Explorer
M region
 ∞ radiation
solar planetary interactions
sudden storm commencements
sun
Wind/GGS spacecraft

solar cosmic rays

DEF Cosmic rays supposedly originating in the sun.
GS extraterrestrial radiation
. primary cosmic rays
. . **solar cosmic rays**
. . solar radiation
. . . **solar cosmic rays**
ionizing radiation
. cosmic rays
. . primary cosmic rays
. . . **solar cosmic rays**

particles
. corpuscular radiation
. . primary cosmic rays
. . . **solar cosmic rays**
RT Advanced Composition Explorer
electron acceleration
energetic particles
GRIST (telescope)
sun

solar cycles

GS cycles
. **solar cycles**
. . sunspot cycle
RT International Quiet Sun Year
IRIS satellites
secular variations
sun
sunspots
twenty-seven day variation

solar diameter

DEF Observable dimension of the sun.
RT astrometry
 ∞ science
solar eclipses

solar disk

USE **sun**

solar dynamic power systems

DEF Electric power systems using a solar heated working fluid to drive a turboalternator. Primary applications are for space stations and spacecraft.

GS electric generators
. solar generators
. . **solar dynamic power systems**
electric power supplies
. **solar dynamic power systems**
RT Brayton cycle
heat storage
photothermal conversion
Rankine cycle
solar collectors
solar energy conversion
solar thermal electric power plants
space station power supplies
spacecraft power supplies
Stirling cycle

solar dynamics

USE **helioseismology**

solar eclipses

DEF Obscurations of the light of the sun by the moon.
GS eclipses
. **solar eclipses**
occultation
. lunar occultation
. . **solar eclipses**
RT lunar shadow
solar diameter
sun

solar electric propulsion

GS propulsion
. electric propulsion
. . **solar electric propulsion**
. . low thrust propulsion
. . solar propulsion
. . . **solar electric propulsion**
. . spacecraft propulsion
. . solar propulsion
. . . **solar electric propulsion**
RT Deep Space 1 Mission
solar powered aircraft
solar thermal propulsion
space station propulsion
sun

solar electrons

GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar electrons**
particles
. charged particles
. . energetic particles

. . . electrons
. . . **solar electrons**
corpuscular radiation
. energetic particles
. . electrons
. . . **solar electrons**
. . solar corpuscular radiation
. . . **solar electrons**
elementary particles
. fermions
. . leptons
. . . electrons
. . . . **solar electrons**
RT sun

solar energy

SN (LIMITED TO DISCUSSIONS OF THE RADIANT ENERGY ORIGINATING FROM THE SUN. FOR SOLAR ENERGY TECHNOLOGIES REFER TO 'SOLAR ENERGY CONVERSION' AND ITS ASSOCIATED TERMS)

DEF The radiant energy originating from the sun. Approximately 998 of solar energy lies between the wavelengths of 300 to 3,500 nm.

GS solar energy

. solar flux
. solar flux density
. . solar constant
. insolation

RT ∞ energy

IRIS satellites
solar radiation
sun
sunlight
Surface Meteorology and Solar Energy project

solar energy absorbers

GS absorbers (materials)
. **solar energy absorbers**
RT electromagnetic absorption
photothermal conversion
selective surfaces
sun
Trombe walls

solar energy conversion

GS energy conversion
. **solar energy conversion**
. . photothermal conversion
. . . thermophotovoltaic conversion
. . photovoltaic conversion
. . . thermophotovoltaic conversion
. . solar total energy systems

RT cogeneration

∞ conversion
energy technology
heterojunction devices
hydrogen production
phase change materials
photoelectric generators
photoelectrochemical devices
renewable energy
solar arrays
solar cells
solar collectors
solar cooling
solar dynamic power systems
solar generators
solar heating
solar-pumped lasers
space cooling (buildings)
sun

solar faculae

USE **faculae**

solar flares

DEF A rapid release of electromagnetic (visible, radio, ultraviolet, x ray) and particulate (protons, electrons) energy from the sun. Flares are classified according to the optically observed area of the solar surface covered, ranging from zero for the smallest to 3 for the largest, and their intensity, either faint, normal, or brilliant.

GS stellar activity
. solar activity
. . **solar flares**
. stellar flares

- . . **solar flares**
- RT coronal loops
- coronal mass ejection
- flare stars
- ∞ flares
- ∞ flash
- Forbush decreases
- force-free magnetic fields
- interplanetary shock waves
- IRIS satellites
- magnetic disturbances
- Solar Maximum Mission
- solar neutrons
- sudden storm commencements
- sun
- sunspots
- solar flux**
- SN (LIMITED TO ENERGY OR PARTICLES EMITTED FROM THE SUN PER UNIT TIME--SEE SOLAR FLUX DENSITY FOR ENERGY OR PARTICLE EMISSION OR DETECTION RATE PER UNIT AREA)
- GS rates (per time)
- . flux (rate)
- . . **solar flux**
- solar energy
- . **solar flux**
- RT heat flux
- limb brightening
- sun
- solar flux density**
- SN (LIMITED TO SOLAR ENERGY OR PARTICLE EMISSION OR DETECTION RATE UNIT AREA--SEE SOLAR FLUX FOR EMISSION RATE PER UNIT TIME)
- GS rates (per time)
- . flux density
- . . radiant flux density
- . . . **solar flux density**
- solar constant
- solar energy
- . **solar flux density**
- . . solar constant
- RT electron flux density
- Helios satellites
- illuminance
- irradiance
- limb brightening
- luminance
- luminous intensity
- particle flux density
- proton flux density
- radiance
- radiancy
- radiation pressure
- sun
- solar furnaces**
- GS heating equipment
- . furnaces
- . . **solar furnaces**
- RT Forbush decreases
- melting
- sun
- vacuum furnaces
- solar generators**
- UF *solar converters*
- solar power generation*
- solar power sources*
- GS electric generators
- . **solar generators**
- . . solar auxiliary power units
- . . . ASTEC solar turboelectric generator
- . . solar cells
- . . . vertical junction solar cells
- . . solar dynamic power systems
- RT direct power generators
- fuel cells
- paddles
- photoelectric cells
- photoelectric generators
- photovoltaic cells
- ∞ power supplies
- Rankine cycle
- solar energy conversion
- solar sea power plants
- sun
- thermoelectric generators
- turbogenerators
- solar granulation**
- GS photosphere
- . **solar granulation**
- RT Benard cells
- brightness distribution
- convection currents
- limb brightening
- sun
- surface layers
- temperature effects
- solar gravitation**
- UF *evection*
- GS gravitation
- . stellar gravitation
- . . **solar gravitation**
- RT sun
- solar heating**
- GS heating
- . **solar heating**
- RT bioconversion
- hydrothermal systems
- insolation
- phase change materials
- radiant heating
- residential energy
- solar atriums
- solar energy conversion
- space heating (buildings)
- sun
- sunlight
- Trombe walls
- solar houses**
- DEF Habitable buildings designed with large expanses of glass or other transparent materials to collect solar radiation for heating.
- RT buildings
- domestic energy
- energy technology
- heat storage
- residential energy
- space heating (buildings)
- sun
- Trombe walls
- solar instruments**
- GS **solar instruments**
- . spectroheliographs
- RT telescopes
- filtergrams
- optical measuring instruments
- radiation measuring instruments
- solar optical telescope
- spectrometers
- sun
- telescopes
- solar interior**
- GS stellar interiors
- . **solar interior**
- RT helioseismology
- SOHO Mission
- solar activity
- solar convection (astronomy)
- solar physics
- stellar cores
- stellar structure
- sun
- solar lasers*
- USE **solar-pumped lasers**
- solar limb**
- RT coronal loops
- limb brightening
- limb darkening
- ∞ limbs
- planetary limb
- sun
- solar longitude**
- GS longitude
- . **solar longitude**
- RT astronomical coordinates
- celestial reference systems
- sun
- solar magnetic field**
- UF *heliomagnetism*
- GS magnetic fields
- . stellar magnetic fields
- . . **solar magnetic field**
- RT electromagnetic fields
- force-free magnetic fields
- interplanetary magnetic fields
- magnetic field reconnection
- solar convection (astronomy)
- sun
- Transition Region and Coronal Explorer
- Solar Maximum Mission**
- DEF Use of the multimission modular spacecraft for the study of solar particles, emissions, and flares.
- GS space missions
- . **Solar Maximum Mission**
- . . Solar Maximum Mission-A
- RT ∞ flares
- flux density
- gamma ray spectrometers
- ∞ missions
- multimission modular spacecraft
- polarimeters
- programs
- solar flares
- space programs
- sun
- ultraviolet spectrometers
- Ulysses mission
- Solar Maximum Mission-A**
- DEF The solar maximum mission spacecraft. Used for SMM-A.
- UF *SMM-A*
- GS space missions
- . Solar Maximum Mission
- . . **Solar Maximum Mission-A**
- RT ∞ missions
- space exploration
- ∞ spacecraft
- sun
- Solar Mesosphere Explorer**
- DEF A satellite whose experiments provided a comprehensive study of atmospheric ozone and the processes which form and destroy it. The satellite was launched in October of 1981. On May 15, 1989, the mission was terminated due to battery problems.
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Solar Mesosphere Explorer**
- RT atmospheric composition
- mesosphere
- ozone
- sun
- solar nebula**
- (added June 2001)
- DEF Clouds of gas and dust from which the Sun, planets, and other solar system bodies formed.
- UF *protosolar nebula*
- GS celestial bodies
- . nebulae
- . . **solar nebula**
- RT meteoritic composition
- planetary evolution
- protoplanets
- protostars
- solar system
- solar system evolution
- star formation
- stellar evolution
- sun
- solar neighborhood**
- DEF The portion of the Milky Way Galaxy centering around the sun and containing the nearest neighboring stars.
- RT astronomy
- celestial bodies
- local group (astronomy)

solar neutrinos

Milky Way Galaxy
Nemesis (star)
solar system
star clusters
stars
sun

solar neutrinos

DEF Neutral particles originating from nuclear reactions in the core of the sun.

GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar neutrinos**
particles
. corpuscular radiation
. . solar corpuscular radiation
. . . **solar neutrinos**
. elementary particles
. . fermions
. . . leptons
. . . . neutrinos
. **solar neutrinos**

RT astronomical models
astrophysics
nuclear reactions
stellar models
sun
weakly interacting massive particles

solar neutrons

GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar neutrons**
particles
. corpuscular radiation
. . solar corpuscular radiation
. . . **solar neutrons**
. elementary particles
. . fermions
. . . neutrons
. . . . **solar neutrons**
. neutral particles
. . neutrons
. . . **solar neutrons**

RT neutron flux density
solar flares

solar noise

USE **solar radio emission**

solar oblateness

RT oblate spheroids
sun

solar observatories

GS observatories
. astronomical observatories
. . **solar observatories**
. . . OSO
. . . . AOSO
. . . . OSO-1
. . . . OSO-2
. . . . OSO-3
. . . . OSO-4
. . . . OSO-5
. . . . OSO-6
. . . . OSO-7
. . . . OSO-8
. . . . OSO-C
. . . Pinhole Occulter Facility
. . . STEREO (observatory)

RT coronagraphs
SOHO Mission
sun
Transition Region and Coronal Explorer

solar optical telescope

DEF A 1-M class, high resolution solar telescope which NASA had planned to operate on the Shuttle Spacelab during the mid and late 1980s. Used for SOT.

UF SOT
GS telescopes
. spaceborne telescopes
. . **solar optical telescope**

RT solar instruments

solar physics

solar orbits

SN (RESTRICTED TO ORBITS AROUND THE SUN)
UF *heliocentric orbits*
planetary motion

GS orbits
. **solar orbits**

RT aphelions
circular orbits

∞ Earth motion
ecliptic
elliptical orbits
HEOS satellites
interplanetary trajectories

∞ motion
orbital resonances (celestial mechanics)
perihelions
protoplanets
spacecraft orbits
sun
transfer orbits

solar oscillations

DEF Irregular oscillations in the solar atmosphere.

GS oscillations
. stellar oscillations
. . **solar oscillations**
stellar motions
. stellar oscillations
. . **solar oscillations**

RT astronomical models
atmospheric models
cataclysmic variables
solar activity effects
solar atmosphere
stellar models
sun
variable stars

solar parallax

DEF The angle at the sun subtended by the equatorial diameter of the Earth.

GS parallax
. **solar parallax**

RT astronomy
stellar parallax
sun

solar physics

DEF The study of the structure and activities of the Sun.

GS astrophysics
. stellar physics
. . **solar physics**

RT filtergrams
helioseismology
International Quiet Sun Year
photosphere

∞ physics
plasmas (physics)

∞ science
solar convection (astronomy)
solar interior
solar optical telescope
Spartan satellites
sun
Transition Region and Coronal Explorer

solar planetary interactions

DEF The interactions and subsequent effects caused by the interactions of solar activity and/or wind with a planet, its magnetic field, its atmosphere, or natural satellites.

GS **solar planetary interactions**
. solar terrestrial interactions

RT Earth magnetosphere
magnetic disturbances
magnetosheath
Nozomi Mars Orbiter
planetary atmospheres
planetary magnetic fields
planetary magnetospheres
planetary magnetotails
plasma interactions
solar activity

solar activity effects
solar corpuscular radiation
solar wind
solar wind velocity

solar plasma (radiation)

USE **solar wind**

solar ponds (heat storage)

DEF Large, shallow ponds covered with thin, transparent plastic shields and used for collecting and storing solar heat for conversion to electric power.

RT electric generators
energy conversion
ponds
reservoirs
sun

solar position

UF *solar azimuth*

GS position (location)
. **solar position**

RT astrolabes
celestial navigation
equinoxes
seasons
solstices
sun
zenith

solar power generation

USE **solar generators**

solar power satellites

DEF Proposed very large space structures consisting of hundreds of square miles of solar thermal collectors and/or photovoltaic converters constructed or assembled in space. Power would be transmitted to Earth in microwave form.

GS artificial satellites
. **solar power satellites**

RT large space structures
power beaming
satellite power transmission
sun

solar power sources

USE **solar generators**

solar powered aircraft

DEF Aircraft powered by solar energy.

RT ∞ aircraft
solar cells
solar electric propulsion
solar propulsion
sun

solar probes

GS unmanned spacecraft
. space probes
. . **solar probes**
. . . Helios 1
. . . Helios 2
. . . Helios A
. . . Helios B
. . . Starprobe spacecraft
. . . Sunblazer space probe

RT Helios Project
Pioneer space probes
sun
Ulysses mission

solar prominences

DEF Filamentlike protuberances from the chromosphere of the sun. Used for filaments (solar physics).

UF *filaments (solar physics)*

GS prominences
. **solar prominences**
stellar activity
. solar activity
. . **solar prominences**

RT chromosphere
sun

solar propulsion

GS propulsion
. low thrust propulsion

solar rotation

sun

solar rotation
UF *Carrington rotation*
GS gyration
. rotation
. . stellar rotation
. . . **solar rotation**
stellar motions
. stellar rotation
. . **solar rotation**
RT sun
twenty-seven day variation

solar sails
GS sails
. **solar sails**
RT propulsion
space flight
spacecraft propulsion
sun

solar sea power plants
GS electric generators
. direct power generators
. . thermoelectric generators
. . . **solar sea power plants**
RT electric power plants
energy conversion
∞ generators
ocean temperature
ocean thermal energy conversion
∞ power plants
solar generators
sun

solar seismology
USE **helioseismology**

solar selective coatings
USE **selective surfaces**

solar sensors
UF *sun sensors*
RT attitude control
guidance sensors
IRIS satellites
navigation aids
navigation instruments
star trackers
sun
tracking (position)

solar simulation
GS simulation
. **solar simulation**
RT space environment simulation
sun
thermal simulation

solar simulators
DEF Devices which produce thermal energy, equivalent in intensity and spectral distribution to that from the sun, used in testing materials and space vehicles.
GS simulators
. environment simulators
. . **solar simulators**
RT space simulators
sun
test facilities

solar spectra
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . stellar spectra
. . . . **solar spectra**
RT absorption spectra
astronomical spectroscopy
continuous spectra
coronas
D lines
emission spectra
filtergrams
Fraunhofer lines
H alpha line
H beta line
H gamma line
H lines

infrared spectra
line spectra
Lyman spectra
molecular spectra
oxygen spectra
sun
ultraviolet spectra
visible spectrum
x ray spectra

solar spectrometers
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . **solar spectrometers**
. spectrometers
. . **solar spectrometers**
RT absorption spectra
emission spectra
filter wheel infrared spectrometers
infrared spectrometers
spectroheliographs
sun
ultraviolet spectrometers

solar storms
GS stellar activity
. solar activity
. . **solar storms**
storms
. **solar storms**
RT Forbush decreases
ionospheric storms
magnetic storms
noise storms
sun

solar streams
USE **solar corpuscular radiation**

solar system
DEF The sun and other celestial bodies within its gravitational influence, including planets, asteroids, satellites, comets, and meteors.
GS celestial bodies
. **solar system**
planetary systems
. **solar system**
RT Amalthea
Amor asteroid
Apollo asteroids
Arend-Roland comet
asteroid belts
asteroid capture
asteroids
Brorsen-Metcalf comet
celestial mechanics
Charon
Chiron
comet heads
comet nuclei
comet tails
comets
Earth-Moon system
gas giant planets
Giacobini-Zinner comet
Grigg-Skjellerup comet
Halley's comet
Humason comet
IRAS-Araki-Alcock comet
Jupiter satellites
Kohoutek comet
Kuiper belt
Mercury surface
meteoroids
Morehouse comet
Mrkos comet
natural satellites
Oort cloud
planetary geology
planets
protoplanets
Quaoar
Rhea (astronomy)
Saturn rings
Schwassmann-Wachmann comet
solar nebula
solar neighborhood
solar system evolution
sun

∞ systems
Tempel 2 comet
terrestrial planets
Toro asteroid
trans-Neptunian objects
Venus surface
Vesta asteroid
Voyager 1977 mission
West comet

solar system evolution
(added January 1991)
DEF The origin and development of the solar system.
GS evolution (development)
. **solar system evolution**
RT Genesis mission
Kuiper belt
lunar evolution
planetary evolution
planetary systems
planets
protoplanetary disks
solar nebula
solar system
stellar evolution
sun

solar temperature
GS temperature
. **solar temperature**
RT solar transition region
sun

solar terrestrial interactions
GS solar planetary interactions
. **solar terrestrial interactions**
RT Cluster Mission
corpuscular radiation
Earth magnetosphere
∞ flares
∞ interactions
International Geosphere-Biosphere program
magnetic disturbances
magnetic storms
magnetosheath
Polar/GGS spacecraft
space weather
STEREO (observatory)
storms
sun
sunspots
weather
Wind/GGS spacecraft

Solar Terrestrial Relations Observatory
(added July 2007)
USE **STEREO (observatory)**

solar thermal electric power plants
DEF The use of solar energy to generate steam for producing electricity.
GS electric power plants
. **solar thermal electric power plants**
RT photothermal conversion
∞ power plants
solar dynamic power systems
thermal energy

solar thermal propulsion
DEF Proposed energy source for spacecraft propulsion by passing hydrogen through a heat exchanger placed at the focal point of a large parabolic dish solar concentrator mirror.
GS propulsion
. low thrust propulsion
. . solar propulsion
. . . **solar thermal propulsion**
. spacecraft propulsion
. . solar propulsion
. . . **solar thermal propulsion**
RT propulsion system performance
solar electric propulsion
sun

solar total energy systems

DEF Systems for converting solar energy directly into electrical and thermal energy.

- GS energy conversion
 - . solar energy conversion
 - . . **solar total energy systems**
 - . . . total energy systems
 - **solar total energy systems**
- RT ∞ conversion
 - direct power generators
- ∞ energy
 - sun
- ∞ systems

solar transition region

(added September 1993)

DEF A layer of the solar atmosphere only a few hundred miles thick between the chromosphere and the corona across which the temperature rises rapidly from a few times 10(exp 4) K to the order of 10(exp 6) K.

- GS environments
 - . extraterrestrial environments
 - . . stellar atmospheres
 - . . . solar atmosphere
 - **solar transition region**
- RT chromosphere
 - solar corona
 - solar temperature
 - Transition Region and Coronal Explorer

solar velocity

- GS rates (per time)
 - . **solar velocity**
 - velocity
 - . . **solar velocity**
- RT sun

solar wind

DEF Streams of plasma flowing approximately radially outward from the sun. Used for solar plasma (radiation).

- UF *solar plasma (radiation)*
- GS extraterrestrial radiation
 - . solar radiation
 - . . **solar wind**
 - . . . particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - space plasmas
 - **solar wind**
 - corpuscular radiation
 - energetic particles
 - plasmas (physics)
 - space plasmas
 - **solar wind**
- RT Advanced Composition Explorer
 - AMPTE (satellites)
 - Chapman-Ferraro problem
 - Cluster Mission
 - comet tails
 - coronal holes
 - coronal mass ejection
 - cosmic plasma
 - galactic cosmic rays
 - Genesis mission
 - Grigg-Skjellerup comet
 - heliosphere
 - hydrogen plasma
 - interplanetary gas
 - interplanetary medium
 - interplanetary shock waves
 - M region
 - magnetic clouds
 - magnetic sails
 - magnetopause
 - magnetosheath
 - planetary magnetotails
 - plasmopause
 - Polar/GGS spacecraft
- ∞ radiation
 - radiation pressure
 - SOHO Mission
 - solar planetary interactions
 - stellar winds
 - sun

Wind/GGS spacecraft

solar wind velocity

- GS dynamic characteristics
 - . flow characteristics
 - . . flow velocity
 - . . . **solar wind velocity**
 - rates (per time)
 - flow velocity
 - **solar wind velocity**
 - wind velocity
 - **solar wind velocity**
 - velocity
 - flow velocity
 - **solar wind velocity**
 - wind velocity
 - **solar wind velocity**
- RT alpha particles
 - Earth magnetosphere
 - magnetic disturbances
 - magnetohydrodynamic flow
 - solar planetary interactions
 - stellar winds
 - sun
 - velocity measurement

solar x-rays

- GS electromagnetic radiation
 - . x rays
 - . . **solar x-rays**
 - . . . extraterrestrial radiation
 - solar radiation
 - **solar x-rays**
 - ionizing radiation
 - x rays
 - **solar x-rays**
- RT coronal holes
 - sun

solar-pumped lasers

- UF *solar lasers*
- GS stimulated emission devices
 - . lasers
 - . . **solar-pumped lasers**
- RT laser pumping
 - optical pumping
 - solar energy conversion
 - solar radiation

soldered joints

- GS joints (junctions)
 - . metal joints
 - . . **soldered joints**
- RT beam leads
 - bonded joints
 - butt joints
 - lap joints
 - soldering

soldering

- GS **soldering**
 - . ultrasonic soldering
- RT bonding
 - brazing
 - fluxes
 - heat affected zone
- ∞ joining
 - laser welding
 - low temperature brazing
 - metal bonding
 - metal-metal bonding
 - sealing
 - soldered joints
 - solders
 - welding

solders

- GS alloys
 - . **solders**
- RT lead alloys
 - sealers
 - soldering
 - tin alloys
 - zinc alloys

solenoid valves

- GS valves
 - . **solenoid valves**
- RT automatic control valves
 - electric control

- ∞ electric equipment
 - electric relays
 - electric switches
 - hydraulic control
 - off-on control
 - solenoids

solenoids

- SN (EXCLUDES METEOROLOGICAL SOLENOIDS)
- RT actuators
 - electric relays
 - electromagnets
 - magnet coils
 - solenoid valves
 - toroidal plasmas

solettas

- DEF Orbiting solar mirrors (reflectors).
- GS mirrors
 - . **solettas**
 - . . reflectors
 - . . . solar reflectors
 - **solettas**
- RT ∞ platforms
 - ∞ spacecraft

sol-gel processes

- RT alkoxides
 - ceramic nuclear fuels
 - nuclear fuels
- ∞ processes
 - xerogels

solid argon

USE **solidified gases**

solid cryogen cooling

- DEF Cooling with solidified cryogenic fluids.
- GS cooling
 - . **solid cryogen cooling**
- RT cryogenic fluids
 - cryogenics
 - liquefied gases

solid cryogenics

- DEF Solidified cryogenic fluids.
- GS gases
 - . solidified gases
 - . . **solid cryogenics**
 - . . . solid nitrogen
 - solids
 - solidified gases
 - **solid cryogenics**
 - solid nitrogen
- RT cooling systems
 - cryogenic equipment
 - cryogenics
 - liquid nitrogen

solid electrodes

- GS electrodes
 - . **solid electrodes**
- RT transconductance

solid electrolytes

- DEF Single crystals, certain alloys, alkaline metals, and other compact compounds used in galvanic cells (batteries).
- GS conductors
 - . electrolytes
 - . . **solid electrolytes**
- RT solid oxide fuel cells

solid lubricants

- SN (EXCLUDES SEMISOLIDS SUCH AS GREASES)
- GS lubricants
 - . **solid lubricants**
- RT binders (materials)
 - gas lubricants
 - graphite
 - self lubricating materials

solid mechanics

- GS mechanics (physics)
 - . **solid mechanics**
 - . . fracture mechanics
- RT computational mechanics
 - continuum mechanics
 - finite element method

solid nitrogen

- mechanical properties
- meshfree methods
- ∞ science
- solids
- structural analysis

solid nitrogen

- GS chemical elements
 - . nitrogen
 - . . **solid nitrogen**
- gases
 - . nitrogen
 - . . **solid nitrogen**
 - . solidified gases
 - . . solid cryogenes
 - . . . **solid nitrogen**
- solids
 - . solidified gases
 - . . solid cryogenes
 - . . . **solid nitrogen**
- RT cryogenics
- refrigerants

solid oxide fuel cells

(added December 1995)

- GS electric generators
 - . direct power generators
 - . . fuel cells
 - . . . **solid oxide fuel cells**
- electrochemical cells
 - . fuel cells
 - . . **solid oxide fuel cells**
- RT oxides
- solid electrolytes

solid phases

- GS **solid phases**
 - . Laves phases
- RT eutectics
- gas-metal interactions
- gas-solid interfaces
- liquid phases
- liquid-solid interfaces
- liquidus
- metallic hydrogen
- phase diagrams
- phase separation (materials)
- ∞ phases
 - . solidified gases
 - . solidus
 - . syntectic alloys

solid propellant combustion

DEF The burning of solid propellants by rapid oxidation and production of expanding gases, heat, and light.

- GS combustion
 - . propellant combustion
 - . . **solid propellant combustion**
 - . . . solid propellant ignition
- RT burning rate
- combustion stability
- erosive burning
- fuel combustion
- heat generation
- metal combustion
- propellant chemistry
- propellant consumption

solid propellant ignition

- GS combustion
 - . propellant combustion
 - . . solid propellant combustion
 - . . . **solid propellant ignition**
- ignition
 - . **solid propellant ignition**
- RT hybrid propellants
- hypergolic rocket propellants
- igniters
- ignition temperature
- inhibitors
- metal combustion
- pyrophoric materials
- squibs

solid propellant rocket engines

DEF Rocket engines fueled with solid propellants. Such motors consist essentially of a combustion chamber containing the propellant, and a nozzle for the exhaust jet, although they

often contain other components, such as grids or liners.

- GS engines
 - . rocket engines
 - . . **solid propellant rocket engines**
 - . . . Algol engine
 - . . . apogee boost motors
 - . . . ASROC engine
 - . . . Hercules engine
 - . . . M-46 engine
 - . . . M-55 engine
 - . . . M-56 engine
 - . . . M-57 engine
 - . . . Nike booster rocket engines
 - . . . P-1 engine
 - . . . SL-3 rocket engine
 - . . . Space Shuttle Boosters
 - Advanced Solid Rocket Motor (STS)
 - SYNCOM apogee engines
 - . . . TX-77 engine
 - . . . TX-354 engine
 - . . . X-248 engine
 - . . . X-254 engine
 - . . . X-258 engines
 - X-258-B1 engine
 - . . . X-259 engine
 - . . . XM-33 engine
- RT air slew missiles
- Antares rocket vehicle
- Arcas rocket vehicles
- Argo rocket vehicles
- Astrobee 1500 rocket vehicle
- Astrobee rocket vehicles
- Athena rocket vehicle
- BE-3 engine
- Berenice rocket vehicle
- Black Brant 1 sounding rocket
- Black Brant 2 sounding rocket
- Black Brant 3 sounding rocket
- Black Brant 4 sounding rocket
- Black Brant 5 sounding rocket
- Black Brant sounding rockets
- Blue Goose missile
- Blue Scout rocket vehicle
- BOMARC A missile
- BOMARC B missile
- bonded joints
- booster rocket engines
- burning rate
- burnout
- Cajun rocket vehicle
- Diamant launch vehicle
- ducted rocket engines
- EXOS sounding rocket
- Falcon missile
- Folding Fin aircraft rocket vehicle
- Genie rocket vehicle
- Hawk missile
- Honest John rocket vehicle
- ∞ hybrid propellant rocket engines
- ∞ hybrid rocket engines
- integral rocket ramjets
- internal combustion engines
- Jaguar rocket vehicle
- JATO engines
- Javelin rocket vehicle
- Juno 1 launch vehicle
- Juno 2 launch vehicle
- Juno launch vehicles
- Jupiter C rocket vehicle
- Kappa 8 rocket vehicle
- Kappa 9 rocket vehicle
- Kappa rocket vehicles
- Lambda rocket vehicles
- liquid propellant rocket engines
- Little Joe 2 launch vehicle
- Little John rocket vehicle
- Loki rocket vehicle
- Mace missiles
- Matra missile
- Mauler missile
- Meteor 1 rocket vehicle
- Minuteman ICBM
- Nike-Ajax missile
- Nike-Apache rocket vehicle
- Nike-Cajun rocket vehicle
- Nike-Hercules missile
- Nike-Javelin rocket vehicle

- Nike-Tomahawk rocket vehicle
- Nike-Zeus missile
- Pershing missile
- Phoenix sounding rocket
- polaris missiles
- RAM B launch vehicle
- Redeye missile
- Regulus missile
- restartable rocket engines
- retrorocket engines
- Rubis rocket vehicle
- Scout launch vehicle
- sergeant missiles
- Shrike missile
- Skua rocket vehicles
- Skybolt missile
- Skylark rocket vehicle
- Space Shuttle upper stage D
- Sparrow 2 missile
- Sparrow missiles
- Sprint missile
- SS-11 missile
- Sunblazer space probe
- sustainer rocket engines
- Talos missile
- tartar missile
- terrier missile
- Thor Able rocket vehicle
- Thor Delta launch vehicle
- Thor launch vehicles
- Titan launch vehicles
- Trailblazer 1 reentry vehicle
- Trailblazer 2 reentry vehicle
- ullage rocket engines
- vanguard 2 launch vehicle
- Vernier engines
- WASP sounding rocket
- X-17 reentry vehicle
- Zuni rocket vehicle

solid propellants

DEF Specifically, a rocket propellant in the solid form, usually containing both fuel and oxidizer combined or mixed, and formed into a monolithic (not powdered or granulated) grain.

- GS propellants
 - . **solid propellants**
 - . . case bonded propellants
 - . . composite propellants
 - . . nitramine propellants
 - . . plastic propellants
 - . . solid rocket propellants
 - . . . double base rocket propellants
 - . . . HMX
 - . . . HTPB propellants
 - . . . metal propellants
- RT aircraft fuels
- chemical fuels
- colloidal propellants
- gelled propellants
- high temperature propellants
- hybrid propellants
- inhibitors
- metal fuels
- nitroguanidine
- plasticizers
- propellant binders
- propellant grains
- RDX
- rocket propellants
- storable propellants

solid rocket binders

- GS additives
 - . propellant additives
 - . . propellant binders
 - . . . **solid rocket binders**
- binders (materials)
- . propellant binders
- . . **solid rocket binders**
- RT glycidyl azide polymer
- plasticizers

Solid Rocket Boosters (Space Shuttle)

USE **Space Shuttle Boosters**

solid rocket propellants

- GS propellants
 - . rocket propellants
 - . . **solid rocket propellants**

- ... double base rocket propellants
- ... HMX
- ... HTPB propellants
- ... metal propellants
- ... solid propellants
- ... **solid rocket propellants**
- ... double base rocket propellants
- ... HMX
- ... HTPB propellants
- ... metal propellants
- RT ammonium perchlorates
- burning rate
- case bonded propellants
- composite propellants
- Domino propellants
- gelled rocket propellants
- hybrid propellants
- liquid rocket propellants
- monopropellants
- potassium perchlorates
- propellant grains
- RDX
- rocket engines
- slurry propellants
- solid rotation*
- USE **rotating bodies**
- solid solutions**
- GS mixtures
- ... solutions
- ... **solid solutions**
- solids
- ... **solid solutions**
- RT aging (metallurgy)
- alloying
- alloys
- antiphase boundaries
- cluster variation method
- liquid phases
- liquidus
- melting points
- order-disorder transformations
- Ostwald ripening
- phase diagrams
- precipitation hardening
- supersaturation
- ternary systems
- solid state**
- RT crystallization
- energy gaps (solid state)
- melting points
- metallic hydrogen
- solids
- solid state devices**
- DEF Devices which utilize the electric, magnetic, and photic properties of the solid materials, e.g., binary magnetic cores or transistors.
- GS electronic equipment
- ... **solid state devices**
- ... cryotrons
- ... crystal rectifiers
- ... metal-nitride-oxide-semiconductors
- ... multispectral linear arrays
- ... semiconductor devices
- ... avalanche diodes
- ... cryosar
- ... Barritt diodes
- ... charge transfer devices
- ... bucket brigade devices
- ... charge coupled devices
- ... charge injection devices
- ... germanium diodes
- ... heterojunction devices
- ... high electron mobility transistors
- ... MODFETS
- ... junction diodes
- ... MIM diodes
- ... step recovery diodes
- ... light emitting diodes
- ... metal oxide semiconductors
- ... CMOS
- ... ITO (semiconductors)
- ... SOS (semiconductors)
- ... MIM (semiconductors)
- ... MIS (semiconductors)
- ... MOM (semiconductors)
- ... MSM (semiconductors)
- ... NDM semiconductor devices
- ... neuristors
- ... parametric diodes
- ... photodiodes
- ... photovoltaic cells
- ... solar cells
- ... vertical junction solar cells
- ... Schottky diodes
- ... semiconductor lasers
- ... aluminum gallium arsenide lasers
- ... gallium arsenide lasers
- ... quantum cascade lasers
- ... quantum well lasers
- ... YLF lasers
- ... SOI (semiconductors)
- ... thermistors
- ... thyristors
- ... silicon controlled rectifiers
- ... transferred electron devices
- ... transistor amplifiers
- ... transistors
- ... bipolar transistors
- ... field effect transistors
- ... charge flow devices
- ... JFET
- ... MODFETS
- ... high electron mobility transistors
- ... MODFETS
- ... junction transistors
- ... JFET
- ... phototransistors
- ... silicon transistors
- ... SOS (semiconductors)
- ... single electron transistors
- ... cascode devices
- ... quantum well infrared photodetectors
- ... resonant tunneling diodes
- ... TRAPATT devices
- ... varactor diodes
- ... varistors
- ... SIS (semiconductors)
- ... SIS (superconductors)
- ... solid state lasers
- ... aluminum gallium arsenide lasers
- ... DBR lasers
- ... fiber lasers
- ... gallium arsenide lasers
- ... quantum cascade lasers
- ... quantum well lasers
- ... ruby lasers
- ... YAG lasers
- ... YLF lasers
- RT amplifiers
- bubble technique
- capacitors
- circuits
- ∞ devices
- electric bridges
- laser cavities
- lasers
- MBM junctions
- miniature electronic equipment
- oscillators
- photomasks
- rectifiers
- resistors
- signal generators
- superconductors (materials)
- thin films
- threshold voltage
- transformers
- wafers
- solid state lasers**
- GS electronic equipment
- ... solid state devices
- ... **solid state lasers**
- ... aluminum gallium arsenide lasers
- ... DBR lasers
- ... fiber lasers
- ... gallium arsenide lasers
- ... quantum cascade lasers
- ... quantum well lasers
- ... ruby lasers
- ... YAG lasers
- ... YLF lasers
- stimulated emission devices
- ... lasers
- ... **solid state lasers**
- ... aluminum gallium arsenide lasers
- ... DBR lasers
- ... fiber lasers
- ... gallium arsenide lasers
- ... quantum cascade lasers
- ... quantum well lasers
- ... ruby lasers
- ... YAG lasers
- ... YLF lasers
- RT continuous wave lasers
- distributed feedback lasers
- infrared lasers
- laser cavities
- Q switched lasers
- semiconductor lasers
- surface emitting lasers
- ∞ **solid state physics**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The study of the physical structure and properties of solid matter, including electrical conduction in metal crystals and semiconductors, superconductivity, and photoconductivity.
- RT condensed matter physics
- crystallography
- electrical properties
- electron mobility
- energy gaps (solid state)
- forbidden transitions
- hole mobility
- magnetic properties
- optical properties
- ∞ physics
- quantum electronics
- resonant tunneling diodes
- ∞ science
- semiconductors (materials)
- superconductivity
- theoretical physics
- thin films
- transport properties
- solid surfaces**
- GS **solid surfaces**
- ... crystal surfaces
- RT liquid surfaces
- metal surfaces
- surface cracks
- surface finishing
- surface properties
- ∞ surfaces
- solid suspensions**
- GS mixtures
- ... **solid suspensions**
- RT colloidal propellants
- composite materials
- metallography
- particulates
- phase diagrams
- ∞ suspensions
- solid wastes**
- GS wastes
- ... **solid wastes**
- RT composting
- garbage
- human wastes
- industrial wastes
- landfills
- liquid wastes
- metabolic wastes
- pollution
- radioactive wastes
- residues
- sewage
- sludge
- waste disposal
- waste energy utilization
- waste utilization
- solidification**
- UF *rapid solidification*
- GS **solidification**
- ... directional solidification (crystals)
- ... melt spinning

solidified gases

RT casting
 castings
 coagulation
 crystallization
 freezing
 gelation
 ingots
 melting points
 mushy zones
 occlusion
 Ostwald ripening
 phase transformations
 rheocasting
 ∞ setting
 solidified gases
 transition temperature
 vitrification

solidified gases

UF *solid argon*
 GS gases
 . **solidified gases**
 . . solid cryogenics
 . . . solid nitrogen
 solids
 . **solidified gases**
 . . solid cryogenics
 . . . solid nitrogen
 RT cryogenic fluids
 cryogenic temperature
 cryogenics
 freezing
 low temperature physics
 melting points
 metallic hydrogen
 solid phases
 solidification

solids

GS **solids**
 . organic solids
 . solid solutions
 . solidified gases
 . . solid cryogenics
 . . . solid nitrogen
 RT ∞ bodies
 ∞ fluids
 ∞ materials
 metallic hydrogen
 phase transformations
 semisolids
 solid mechanics
 solid state
 thermochromatic materials
 vapor phases

solids flow

GS fluid flow
 . **solids flow**
 RT ∞ flow
 flow measurement
 flow theory
 mass flow
 multiphase flow
 particle size distribution
 steady flow
 two phase flow
 uniform flow
 unsteady flow

solid-solid interfaces

GS interfaces
 . **solid-solid interfaces**
 RT antiphase boundaries
 gas-solid interfaces
 liquid-solid interfaces
 surface properties

solidus

RT binary systems (materials)
 liquid phases
 liquidus
 solid phases

solions

RT circuits
 diodes
 integrators

ion currents

solitary waves

DEF Nonlinear waves capable of propagation without spreading out, breaking up, or dissipating their strength over distance. Used for Solitrons.

UF *solitons*
 GS traveling waves
 . **solitary waves**
 RT backward waves
 cnoidal waves
 elastic waves
 electromagnetic radiation
 plane waves
 pulses
 radio waves
 rates (per time)
 velocity

solithanes

RT elastomers
 ∞ polymers
 synthetic rubbers

solitons

USE **solitary waves**

Solomon computers

GS data processing equipment
 . computers
 . . digital computers
 . . . **Solomon computers**

Solrad 10 satellite

USE **Explorer 44 satellite**

solstices

DEF The two points of the ecliptic farthest from the celestial equator; two points on the celestial sphere occupied by the sun at maximum declination.

RT equinoxes
 seasons
 solar position
 summer
 winter

solubility

UF *immiscibility*
miscibility
 RT clarity
 concentration (composition)
 diffusivity
 dissolved gases
 dissolving
 gas-solid interfaces
 Henry law
 hydrophobicity
 hygroscopicity
 incompatibility
 liquid phases
 liquid-gas mixtures
 liquid-liquid interfaces
 liquid-vapor interfaces
 miscibility gap
 mixtures
 phase diagrams
 phase separation (materials)
 precipitation (chemistry)
 solutions
 supercritical fluids
 thermodynamic properties
 thixotropy
 turbidity
 viscosity

solutes

RT dissolved organic matter
 dissolving
 solutions

∞ solution

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT dissolving
 problem solving

solutions

solutions

GS mixtures
 . **solutions**
 . . aqueous solutions
 . . gas mixtures
 . . . air
 alveolar air
 compressed air
 expired air
 high temperature air
 liquid air
 detonable gas mixtures
 . . photographic emulsions
 . . . nuclear emulsions
 . . solid solutions
 RT azeotropes
 composition (property)
 dissolved gases
 emulsions
 eutectics
 Henry law
 Raoult law
 solubility
 solutes
 ∞ solution
 solvents
 titration

solvation

DEF The process of swelling, getting, or dissolving of a material by a solvent; for resins, the solvent can be plasticized.

RT aqueous solutions
 chemical reactions
 reaction kinetics
 solvents

solvent extraction

GS extraction
 . **solvent extraction**
 RT ion extraction
 purification
 ∞ separation

solvent refined coal

DEF Low-sulfur distillate fuels from coal, plus the byproducts of methane, light hydrocarbons, and naphtha, all useful for making pipeline gas, ethylene, and high-octane unleaded gasoline.

GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . fossil fuels
 coal
 **solvent refined coal**
 resources
 . Earth resources
 . . fossil fuels
 . . . coal
 **solvent refined coal**
 rocks
 . sedimentary rocks
 . . carbonaceous rocks
 . . . coal
 **solvent refined coal**
 RT benzene
 bitumens
 carbonaceous materials
 coal liquefaction
 coal utilization
 fractionation
 fuel oils
 gasoline
 hydrocarbon fuel production
 methane
 product development

solvent retention

DEF The occurrence of solvent residues in chemical or material end products or intermediates.

RT dissolving
 solvents

solvents

DEF The liquid part of an aerosol formulation used to dissolve solid or other liquid parts. Used for thinners.
 UF *thinners*
 GS **solvents**
 . tetrahydrofuran
 . turpentine
 RT additives
 coatings
 diluents
 dissolving
 extraction
 furans
 paint removal
 solutions
 solvation
 solvent retention
 solvolysis
 toluene
 triacetin
 trichloroethylene

solvolysis

GS reclamation
 . materials recovery
 . . **solvolysis**
 RT recycling
 solvents

Somalia

GS nations
 . **Somalia**
 RT Africa

Sommerfeld approximation

GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **Sommerfeld approximation**
 RT antenna radiation patterns
 directional antennas
 electromagnetic fields
 radio transmission

Sommerfeld waves

GS electromagnetic radiation
 . **Sommerfeld waves**
 surface waves
 . **Sommerfeld waves**
 RT dielectric properties
 electric conductors

sonar

DEF A method or system, analogous to radar used under water, in which high frequency sound waves are emitted so as to be reflected back from objects, and used to detect the objects of interest. Called asdic by the British. (From SOUND, NAVigation, and Ranging.)
 GS **sonar**
 . sonobuoys
 RT distance measuring equipment
 echo sounding
 echo suppressors
 hydrophones
 LOFAR
 navigation aids
 sound localization
 sound ranging
 ultrasonic wave transducers
 underwater acoustics
 underwater communication

sondes

UF *meteorological probes*
 GS measuring instruments
 . **sondes**
 . . dropsondes
 . . Judi-Dart rocket
 . . radiosondes
 . . . ionosondes
 . . . rawinsondes
 . . ozonesondes
 RT Apache rocket vehicle
 Cajun rocket vehicle
 ∞ probes
 sounding

sounding rockets

sonic anemometers

GS measuring instruments
 . anemometers
 . . **sonic anemometers**
 RT acoustics
 flowmeters
 hot-film anemometers
 velocity measurement

sonic booms

DEF Noises created by shock waves that emanate from aircraft or other objects traveling at or above sonic velocity.
 GS elastic waves
 . shock waves
 . . **sonic booms**
 . sound waves
 . . noise (sound)
 . . . aircraft noise
 **sonic booms**
 RT acoustic velocity
 aerodynamic noise
 ∞ boom
 caustic lines
 jet aircraft noise
 supersonic flight
 transonic flight

sonic fatigue

USE **acoustic fatigue**

sonic flow

USE **transonic flow**

sonic nozzles

RT acoustic nozzles
 conical nozzles
 ∞ nozzles
 supersonic nozzles
 transonic flow
 transonic nozzles

sonic soldering

USE **ultrasonic soldering**

sonic speed

USE **acoustic velocity**

sonic waveguides

USE **acoustic delay lines**

sonobuoys

GS radio equipment
 . radio transmitters
 . . **sonobuoys**
 sonar
 . **sonobuoys**
 transmitters
 . radio transmitters
 . . **sonobuoys**
 RT antisubmarine warfare
 hydrophones
 underwater acoustics
 underwater communication

sonochemistry

(added June 1998)
 USE **ultrasonic processing**

sonograms

RT recording instruments
 sound waves
 whistler recorders
 whistlers

sonoholography

USE **acoustical holography**

sonoluminescence

GS emission
 . light emission
 . . luminescence
 . . . **sonoluminescence**

soot

GS carbonaceous materials
 . **soot**
 particles
 . particulates

. . **soot**

products
 . reaction products
 . . combustion products
 . . . **soot**
 RT air pollution
 carbon
 fire damage
 Glory Mission satellite
 smoke
 smoke abatement

sorbates

DEF Gas taken up by sorbents.
 RT sorbents
 sorption

sorbents

DEF The materials which take up gas by sorption.
 GS **sorbents**
 . absorbents
 . adsorbents
 RT sorbates
 sorption

Soret coefficient

GS coefficients
 . diffusion coefficient
 . . **Soret coefficient**
 transport properties
 . diffusion coefficient
 . . **Soret coefficient**
 RT liquid flow
 thermal diffusion

sorghum

DEF Any of a number of related cereal grasses with sweet juicy stalks cultivated as farm crops for grain, fodder, syrup, etc.
 GS farm crops
 . grains (food)
 . . **sorghum**
 plants (botany)
 . grasses
 . . **sorghum**
 RT agriculture
 crop identification
 ∞ crops
 Earth resources

sorption

DEF The taking up of gas by absorption, adsorption, chemisorption, or any combination of these processes. Used for cryosorption.
 UF *cryosorption*
 GS **sorption**
 . adsorption
 . . chemisorption
 RT ∞ absorption
 bioavailability
 chromatography
 concentrating
 extraction
 gas chromatography
 hydrophobicity
 liquid chromatography
 material absorption
 permeating
 ∞ separation
 sorbates
 sorbents
 surface properties

sortie can

USE **sortie systems**

sortie lab

USE **sortie systems**

sortie systems

UF *sortie can*
sortie lab
 GS payloads
 . **sortie systems**
 RT space laboratories
 Space Shuttle payloads
 space shuttles
 space stations

sorting algorithms

Spacelab payloads

sorting

USE **classifying**

sorting algorithms

(added November 1994)

DEF An algorithm that finds the most significant element in a set which is then compared to each element in succession to achieve an efficient sorting process.

GS mathematical logic
. algorithms
. . . **sorting algorithms**

RT ∞ classifying
computer techniques
heuristic methods
hypercube multiprocessors
iterative solution
parallel processing (computers)
Poisson density functions
selection
sequential analysis

SOS (semiconductors)

UF *silicon-on-sapphire junctions*
silicon-on-sapphire semiconductors
silicon-on-sapphire transistors

GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . . metal oxide semiconductors
. . . . **SOS (semiconductors)**
. . . . transistors
. . . . silicon transistors
. **SOS (semiconductors)**
semiconductors (materials)
. metal oxide semiconductors
. . . **SOS (semiconductors)**
RT ITO (semiconductors)
SIS (semiconductors)
SOI (semiconductors)

SOT

USE **solar optical telescope**

sound

USE **acoustics**

sound absorption

USE **sound transmission**

sound amplification

GS amplification
. **sound amplification**
RT acoustic attenuation
acoustic excitation
acoustics

sound barrier

USE **acoustic velocity**

sound detecting and ranging

(added February 1993)

UF *acoustic detection*
RT acoustic scattering
atmospheric temperature
∞ instruments
measuring instruments
meteorological instruments
meteorology
temperature measurement

sound detectors

USE **sound transducers**

sound fields

DEF Regions containing sound waves.
RT acoustics
field theory (physics)
microsonics
propeller noise

sound fixing and ranging

DEF A method for acoustically tracking submerged bodies or floats utilizing fixed hydrophones. Used for SFAR and SOFAR.

UF *SFAR*
SOFAR

RT sound ranging
sound transmission

underwater acoustics

sound frequencies

USE **acoustic frequencies**

sound generators

DEF Transducers which convert electrical, mechanical or other forms of energy into sound.

Used for acoustic generators.

UF *acoustic generators*
RT acoustic nozzles
audio frequencies
auditory stimuli
bells
continuous noise
∞ generators
horns
loudspeakers
noise generators
radiation sources
signal generators
∞ signals
sirens
warning systems

sound holography

USE **acoustical holography**

sound intensity

DEF In a specified direction at a point, the average rate of sound energy transmitted in the specified direction through a unit area normal to this direction at the point considered.

GS acoustic properties
. **sound intensity**
. . . zero sound
rates (per time)
. flux density
. . . **sound intensity**
. . . . zero sound

RT auditory stimuli
bioacoustics
effective perceived noise levels
loudness
noise intensity
noise measurement
radiant flux density
signal fading
signal fading rate
sirens

sound localization

GS perception
. **sound localization**
RT auditory perception
bearing (direction)
binaural hearing
detection
echo sounding
∞ orientation
position indicators
range finders
sonar
space perception
tracking (position)

sound measurement

USE **acoustic measurement**

sound perception

USE **auditory perception**

sound pressure

DEF At a point, the total instantaneous pressure at that point in the presence of a sound wave minus the static pressure at that point.

GS pressure
. radiation pressure
. . . **sound pressure**
RT acoustic measurement
acoustic velocity
explosions
flux density
loudness
noise (sound)
shock waves
static pressure

sound propagation

GS transmission

. wave propagation
. . . acoustic propagation
. . . . **sound propagation**
RT acoustics
attenuation
∞ conduction
diffusion
noise generators
noise propagation
shock wave propagation

sound ranging

GS rangefinding
. **sound ranging**
RT detection
distance measuring equipment
echo sounding
position (location)
sonar
sound fixing and ranging
target acquisition
tracking (position)

sound transducers

UF *sound detectors*
GS transducers
. **sound transducers**
. . . electroacoustic transducers
. . . . hydrophones
. . . . loudspeakers
. . . . microphones
RT electroacoustics
∞ radiators
signal detection
signal detectors
underwater acoustics
underwater communication

sound transmission

UF *sound absorption*
GS transmission
. **sound transmission**
RT ∞ absorption
acoustics
attenuation
audio frequencies
∞ conduction
earphones
elastic waves
energy absorption
monaural signals
multipath transmission
∞ paths
propeller noise
signal transmission
sirens
sound fixing and ranging
telephony
thermoclines
wave propagation

sound velocity

USE **acoustic velocity**

sound waves

SN (ELASTIC WAVES IN THE AUDIBLE RANGE)
DEF Mechanical disturbances advancing with infinite velocity through an elastic medium, and consisting of longitudinal displacements of the medium, i.e., consisting of compressional and rarefactional displacements parallel to the direction of advance of the disturbance; a longitudinal wave. Sound waves are small amplitude adiabatic oscillations. Used for acoustic radiation and acoustic vibrations.
UF *acoustic radiation*
acoustic vibrations
GS elastic waves
. **sound waves**
. . . electroacoustic waves
. . . ion acoustic waves
. . . Lamb waves
. . . noise (sound)
. . . . aircraft noise
. blade slap noise
. jet aircraft noise
. propeller noise
. sonic booms
. . . engine noise

. . . . rocket engine noise
 flow noise
 thermal noise
 aerodynamic noise
 blade slap noise
 propeller noise
 screech tones
 RT acoustic coupling
 acoustic frequencies
 acoustic measurement
 acoustic properties
 acoustic streaming
 acoustical holography
 acoustics
 aeolian tones
 audio frequencies
 auditory perception
 ∞ blasts
 computational aeroacoustics
 deep scattering layers
 detonation waves
 diffusion
 longitudinal waves
 loudness
 Mach cones
 magnetoelastic waves
 microsonics
 noise pollution
 noise prediction (aircraft)
 phonons
 plane waves
 polarized elastic waves
 ∞ radiation
 reverberation
 shock waves
 sodar
 sonograms
 surface acoustic wave devices
 thermoacoustic effects
 ultrasonic radiation
 ∞ waves
sounders
 USE **sounding**
sounding
 DEF Any penetration of the natural environment for scientific observation usually by sounding rockets or balloons. Used for sounders.
 UF *sounders*
 GS **sounding**
 . acoustic sounding
 . atmospheric sounding
 . balloon sounding
 . echo sounding
 . ionospheric sounding
 . microwave sounding
 . rocket sounding
 . satellite sounding
 RT bathymeters
 depth measurement
 ∞ measurement
 meteorological balloons
 meteorological flight
 ROBIN balloons
 sondes
sounding rockets
 DEF Rockets designed primarily for routine upper air observation (as opposed to research) in the lower 250,000 feet of the atmosphere, especially that portion inaccessible to balloons, i.e., above 100,000. Used for meteorological rockets and rocket sondes.
 UF *meteorological rockets*
rocket sondes
 GS rocket vehicles
sounding rockets
 . . Aerobee rocket vehicle
 . . Antares rocket vehicle
 . . Apache rocket vehicle
 . . Arcas rocket vehicles
 . . Aries sounding rocket
 . . Astrobee rocket vehicles
 . . . Astrobee 1500 rocket vehicle
 . . Black Brant sounding rockets
 . . . Black Brant 1 sounding rocket
 . . . Black Brant 2 sounding rocket
 . . . Black Brant 3 sounding rocket
 . . . Black Brant 4 sounding rocket

. . . Black Brant 5 sounding rocket
 . . . Cajun rocket vehicle
 . . . Dornier paraglider rocket vehicle
 . . . EXOS sounding rocket
 . . . Jaguar rocket vehicle
 . . . Judi-Dart rocket
 . . . Kappa rocket vehicles
 Kappa 8 rocket vehicle
 Kappa 9 rocket vehicle
 . . . Lambda rocket vehicles
 . . . Loki rocket vehicle
 . . . Petrel sounding rocket
 . . . Phoenix sounding rocket
 . . . Skua rocket vehicles
 . . . Skylark rocket vehicle
 . . . Venus fly trap rocket vehicle
 . . . Veronique rocket vehicles
 . . . Vertical rockets
 . . . WASP sounding rocket
 RT acoustic sounding
 Argo rocket vehicles
 ionosondes
 Javelin rocket vehicle
 meteorological instruments
 meteorological satellites
 Nike-Javelin rocket vehicle
 payload control
 radiosondes
 rocket sounding
 sondes
 Viking rocket vehicle
sounds (topographic features)
 GS **sounds (topographic features)**
 . Block Island Sound (RI)
 . McMurdo sound
 . Prince William Sound (AK)
 RT Chesapeake Bay (US)
 inlets (topography)
 oceans
 rivers
 water
sound-sound interactions
 RT harmonics
 ∞ interactions
 intermodulation
 wave dispersion
source programs
 GS computer programs
 . **source programs**
 RT open source licensing (computers)
 ∞ **sources**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT causes
 derivation
 electron sources
 extragalactic radio sources
 ion sources
 nonpoint sources
 radiation sources
 radio sources (astronomy)
 sinks
South Africa
 USE **Republic of South Africa**
South America
 GS continents
 . **South America**
 RT Andes Mountains (South America)
 Argentina
 Bolivia
 Brazil
 Central America
 Chile
 Colombia
 Ecuador
 French Guiana
 Guyana
 Magdalena-Cauca Valley (Colombia)
 Paraguay
 Peru
 Surinam
 Trinidad and Tobago
 Uruguay

Venezuela
South Carolina
 GS nations
 . United States
 . **South Carolina**
 RT Sand Hills Region (GA-NC-SC)
South Dakota
 GS nations
 . United States
 . **South Dakota**
 RT Black Hills (SD-WY)
 Missouri River (US)
South Korea
 UF *Republic of Korea*
 GS nations
 . **South Korea**
 RT Asia
 ∞ Korea
 North Korea
South Vietnam
 USE **Vietnam**
South West Africa
 USE **Namibia**
Southeast Asia
 GS regions
 . **Southeast Asia**
 RT Asia
 Vietnam
Southern California
 GS regions
 . **Southern California**
 RT California
 Mexico
 Nevada
 Pacific Ocean
 United States
Southern Hemisphere
 GS **Southern Hemisphere**
 . Antarctic regions
 . . McMurdo sound
 . . Ross ice shelf
 RT ∞ hemispheres
 Northern Hemisphere
 Southern Oscillation
 Southern sky
Southern Oscillation
 GS oscillations
 . **Southern Oscillation**
 RT anomalies
 atmospheric circulation
 atmospheric pressure
 climate
 el Nino
 Madden-Julian Oscillation
 periodic variations
 pressure oscillations
 quasi-biennial oscillation
 Southern Hemisphere
Southern sky
 DEF That portion of the celestial sphere between the celestial equator and the celestial south pole (and generally visible from areas in the Earth's southern hemisphere).
 RT astronomical catalogs
 astronomical observatories
 astronomical photography
 astronomical spectroscopy
 astronomy
 northern sky
 sky surveys (astronomy)
 Southern Hemisphere
Southern Yemen
 UF *Aden*
 GS nations
 . **Southern Yemen**
 regions
 . **Southern Yemen**

sovereignty

RT Asia

sovereignty

RT international cooperation
international law
politics
voting

Soviet satellites

GS artificial satellites
. **Soviet satellites**
.. Cosmos 782 satellite
.. Cosmos 936 satellite
.. Cosmos satellites
.. Cosmos 2 satellite
.. Cosmos 3 satellite
.. Cosmos 5 satellite
.. Cosmos 6 satellite
.. Cosmos 14 satellite
.. Cosmos 44 satellite
.. Cosmos 54 satellite
.. Cosmos 71 satellite
.. Cosmos 110 satellite
.. Cosmos 137 satellite
.. Cosmos 144 satellite
.. Cosmos 149 satellite
.. Cosmos 166 satellite
.. Cosmos 186 satellite
.. Cosmos 188 satellite
.. Cosmos 206 satellite
.. Cosmos 213 satellite
.. Cosmos 224 satellite
.. Cosmos 225 satellite
.. Cosmos 381 satellite
.. Cosmos 954 satellite
.. Cosmos 1129 satellite
.. Intercosmos satellites
.. Granat satellite
.. Molniya satellites
.. Prognoz satellites
.. Proton satellites
.. Proton 1 satellite
.. Proton 2 satellite
.. Proton 3 satellite
.. Proton 4 satellite
.. Raduga satellite
.. Sputnik satellites
.. Sputnik 1 satellite
.. Sputnik 2 satellite
.. Sputnik 3 satellite
.. Sputnik 4 satellite
.. Sputnik 5 satellite
.. Venera satellites
.. Venera 2 satellite
.. Venera 3 satellite
.. Venera 4 satellite
.. Venera 5 satellite
.. Venera 6 satellite
.. Venera 7 satellite
.. Venera 8 satellite
.. Venera 9 satellite
.. Venera 10 satellite
.. Venera 11 satellite
.. Venera 12 satellite
RT Russian Space Program

Soviet spacecraft

GS **Soviet spacecraft**
. Buran space shuttle
. Lunik lunar probes
.. Lunik 2 lunar probe
.. Lunik 3 lunar probe
.. Lunik 9 lunar probe
.. Lunik 10 lunar probe
.. Lunik 11 lunar probe
.. Lunik 12 lunar probe
.. Lunik 13 lunar probe
.. Lunik 14 lunar probe
.. Lunik 16 lunar probe
.. Lunik 17 lunar probe
.. Lunik 19 lunar probe
.. Lunik 20 lunar probe
.. Lunik 22 lunar probe
. Mars 1 spacecraft
. Mars 2 spacecraft
. Mars 3 spacecraft
. Mars 4 Spacecraft
. Mars 5 spacecraft
. Mars 6 spacecraft
. Mars 7 spacecraft

. Mir space station
. Salyut space station
. Soyuz spacecraft
. Sputnik satellites
.. Sputnik 1 satellite
.. Sputnik 2 satellite
.. Sputnik 3 satellite
.. Sputnik 4 satellite
.. Sputnik 5 satellite
.. Venera satellites
.. Venera 2 satellite
.. Venera 3 satellite
.. Venera 4 satellite
.. Venera 5 satellite
.. Venera 6 satellite
.. Venera 7 satellite
.. Venera 8 satellite
.. Venera 9 satellite
.. Venera 10 satellite
.. Venera 11 satellite
.. Venera 12 satellite
.. Zond space probes
.. Zond 1 space probe
.. Zond 2 space probe
.. Zond 3 space probe
.. Zond 4 space probe
.. Zond 5 space probe
.. Zond 6 space probe
.. Zond 7 space probe
.. Zond 8 space probe
.. Phobos spacecraft
RT Russian Space Program
∞ spacecraft

Soviet Union

USE **U.S.S.R.**

soybeans

GS farm crops
. leguminous plants
.. **soybeans**
plants (botany)
. leguminous plants
.. **soybeans**
RT ∞ food

Soyuz spacecraft

GS manned spacecraft
. **Soyuz spacecraft**
Soviet spacecraft
. **Soyuz spacecraft**
RT Apollo Soyuz test project
Assured Crew Return Vehicle
Kvant modules
Salyut space station
U.S.S.R. space program

∞ space

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT algebra
analysis (mathematics)
Cartan space
cislunar space
deep space
fractals
function space
hyperspaces
set theory
spatial dependencies

space adaptation syndrome

RT aerospace medicine
bioastronautics
biological effects
long duration space flight
manned space flight
motion sickness
physiological effects
psychological effects
space flight stress
space psychology
weightlessness

Space Arrow satellite

USE **Cosmos 149 satellite**

space based radar

DEF Radar systems installed on large
space structures.

GS radar

. **space based radar**
.. Shuttle Imaging Radar

RT airborne radar
antenna arrays
radiation effects
radiation shielding

space bases

GS **space bases**
. lunar bases
. planetary bases
. space colonies
.. Mars bases
RT ∞ bases
Mir space station
Salyut space station
space stations
stations

space biology

USE **exobiology**

space buses

USE **ferry spacecraft**

space capsules

DEF Containers used for carrying out exper-
iments in space. Used for capsules (space-
craft).

UF *capsules (spacecraft)*

GS **space capsules**

. Discoverer recovery capsules
. escape capsules
. Mercury spacecraft
.. Aurora 7
.. Faith 7
.. Friendship 7
.. SIGMA 7

RT artificial satellites
biosatellites
cabin atmospheres

∞ capsules
cockpits
Gemini spacecraft
interplanetary spacecraft
landing modules
lunar spacecraft
manned spacecraft
Mercury flights
recoverable spacecraft
reentry vehicles
rendezvous spacecraft
soft landing spacecraft
∞ spacecraft
spacecraft cabins
spacecraft modules
unmanned spacecraft
voskhod manned spacecraft
Vostok spacecraft

space charge

DEF The electric charge carries by a cloud
or stream of electrons or ions in a vacuum or a
region of low gas pressure when the charge is
sufficient to produce local changes in the poten-
tial distribution. The net electric charge within a
given volume.

GS electric charge

. **space charge**

RT bunching
Child-Langmuir law
electric discharges
electron clouds
Landau damping
magnetohydrodynamics
nonohmic effect
orbitrons
perveance
plasmas (physics)
static electricity

space colonies

GS communities
. **space colonies**
space bases
. **space colonies**
RT lunar bases
lunar shelters
Mars bases

- Mars exploration
- space habitats
- space stations
- terraforming
- space commercialization**
 - DEF For profit activities in space or prefatory to space activity.
 - GS commercialization
 - . **space commercialization**
 - RT aerospace industry
 - Ariane 4 launch vehicle
 - Ariane 5 launch vehicle
 - commerce lab
 - commercial spacecraft
 - communication satellites
 - data products
 - direct broadcast satellites
 - Energiya launch vehicle
 - insurance (contracts)
 - lunar mining
 - ∞ microgravity applications
 - Proton launch vehicle
 - space industrialization
 - space manufacturing
 - space processing
 - space tourism
 - spacecraft launching
 - technology transfer
- space communication**
 - DEF The act of, or methods for, conveying information to, from, or through outer space.
 - GS telecommunication
 - . **space communication**
 - . . . extraterrestrial communication
 - . . . interplanetary communication
 - . . . lunar communication
 - . . . circumlunar communication
 - . . . spacecraft communication
 - . . . reentry communication
 - . . . satellite communication
 - RT communication satellites
 - Defense Communications Satellite System
 - extraterrestrial intelligence
 - free-space optical communication
 - furlable antennas
 - interstellar communication
 - lasers
 - line of sight communication
 - manned space flight
 - optical communication
 - pulse communication
 - radio communication
 - radio telemetry
 - television systems
 - wireless communication
- space cooling (buildings)**
 - DEF The cooling of buildings with a solar energy system which incorporates water chillers controlled by thermostats and other devices to provide a comfortable living environment.
 - GS cooling
 - . **space cooling (buildings)**
 - RT cooling systems
 - energy technology
 - heat exchangers
 - heat pumps
 - liquid cooling
 - residential energy
 - solar collectors
 - solar cooling
 - solar energy conversion
 - temperature control
- space debris**
 - GS debris
 - . **space debris**
 - RT asteroid belts
 - asteroids
 - Chiron
 - cosmic dust
 - dust
 - meteoroids
 - micrometeoroids
 - near Earth objects
 - ∞ spacecraft
 - spacecraft breakup
- spacecraft design
 - Toro asteroid
 - Vesta asteroid
- space density**
 - GS density (mass/volume)
 - . **space density**
 - density (number/volume)
 - . **space density**
 - RT atmospheric density
 - electron density (concentration)
 - ion density (concentration)
 - particle density (concentration)
 - plasma density
 - plasma interaction experiment
 - proton density (concentration)
- space detection and tracking system**
 - UF *SPADATS (tracking system)*
 - GS networks
 - . tracking networks
 - . . **space detection and tracking system**
 - tracking (position)
 - . **space detection and tracking system**
 - RT minitrack system
 - missile tracking
 - optical tracking
 - photographic tracking
 - polystation doppler tracking system
 - spacecraft tracking
 - STDN (network)
 - ∞ systems
 - tracking stations
- space diversity*
 - USE **reception diversity**
- space electric rocket tests**
 - UF *SERT (rocket tests)*
 - GS engine tests
 - . **space electric rocket tests**
 - RT electric rocket engines
 - flight tests
 - ground tests
 - SERT 1 spacecraft
 - SERT 2 spacecraft
 - ∞ tests
- space elevators**
 - (added March 2005)
 - DEF Elevators designed to provide access to space from ground or low altitude.
 - GS elevators (lifts)
 - . **space elevators**
 - RT space transportation
- space environment*
 - USE **aerospace environments**
- space environment simulation**
 - GS simulation
 - . environment simulation
 - . . **space environment simulation**
 - . . . weightlessness simulation
 - neutral buoyancy simulation
 - RT altitude simulation
 - atmospheric entry simulation
 - clinorotation
 - clinostats
 - flight simulation
 - flight simulators
 - High Vacuum Orbital Simulator
 - Langley complex coordinator
 - motion simulators
 - solar simulation
 - thermal simulation
 - vacuum chambers
 - virtual reality
- space environmental lubrication*
 - USE **spacecraft lubrication**
- space erectable structures**
 - GS **space erectable structures**
 - . inflatable spacecraft
 - . . Beacon satellites
 - . . . Beacon Explorer A
 - . . . Explorer 22 satellite
- RT expandable structures
 - folding structures
 - inflatable space structures
 - inflatable structures
 - Large Deployable Reflector
 - large space structures
 - maypole antennas
 - orbital assembly
 - rigid structures
 - self erecting devices
 - space station modules
 - space station structures
 - space technology experiments
 - spacecraft modules
 - spacecraft structures
 - ∞ structures
- Space Exper with Particle Accelerators*
 - USE **SEPAC (payload)**
- space exploration**
 - UF *planetary exploration*
 - GS exploration
 - . **space exploration**
 - . . lunar exploration
 - . . Mars exploration
 - RT aerospace environments
 - asteroid missions
 - astrodynamics
 - ∞ astronautics
 - bioastronautics
 - Cassini mission
 - Constellation program
 - extraterrestrial environments
 - extraterrestrial resources
 - French space program
 - International Space Year
 - interplanetary flight
 - interplanetary spacecraft
 - interstellar spacecraft
 - Jupiter rings
 - Magellan project (NASA)
 - manned Mars missions
 - manned space flight
 - Mars 69 project
 - Mars 71 project
 - Mars sample return missions
 - MESSENGER (spacecraft)
 - New Horizons mission
 - planetary aerial vehicles
 - planetary bases
 - planetary composition
 - planetary geology
 - sample return missions
 - Solar Maximum Mission-A
 - TOPS (spacecraft)
 - Viking 1 spacecraft
 - Viking 2 spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking lander spacecraft
 - Viking Mars program
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter spacecraft
- space flight**
 - GS **space flight**
 - . interplanetary flight
 - . interstellar travel
 - . long duration space flight
 - . lunar flight
 - . manned space flight
 - . . Apollo flights
 - . . . Apollo 5 flight
 - . . . Apollo 6 flight
 - . . . Apollo 7 flight
 - . . . Apollo 8 flight
 - . . . Apollo 9 flight
 - . . . Apollo 10 flight
 - . . . Apollo 11 flight
 - . . . Apollo 12 flight
 - . . . Apollo 13 flight
 - . . . Apollo 14 flight
 - . . . Apollo 15 flight
 - . . . Apollo 16 flight
 - . . . Apollo 17 flight
 - . . Gemini flights
 - . . . Gemini 3 flight
 - . . . Gemini 4 flight

space flight feeding

- . . . Gemini 5 flight
- . . . Gemini 6 flight
- . . . Gemini 7 flight
- . . . Gemini 8 flight
- . . . Gemini 9 flight
- . . . Gemini 10 flight
- . . . Gemini 11 flight
- . . . Gemini 12 flight
- . . . manned reentry
- . . . Mercury flights
- . . . Mercury MA-1 flight
- . . . Mercury MA-2 flight
- . . . Mercury MA-3 flight
- . . . Mercury MA-4 flight
- . . . Mercury MA-5 flight
- . . . Mercury MA-6 flight
- . . . Mercury MA-7 flight
- . . . Mercury MA-8 flight
- . . . Mercury MA-9 flight
- . . . Mercury MR-1 flight
- . . . Mercury MR-2 flight
- . . . Mercury MR-3 flight
- . . . Mercury MR-4 flight
- . . . Space Shuttle missions
- . . . Space Shuttle mission 31-A
- . . . Space Shuttle mission 31-B
- . . . Space Shuttle mission 31-C
- . . . Space Shuttle mission 31-D
- . . . Space Shuttle mission 41-A
- . . . Space Shuttle mission 41-B
- . . . Space Shuttle mission 41-C
- . . . Space Shuttle mission 41-D
- . . . Space Shuttle mission 41-G
- . . . Space Shuttle mission 51-A
- . . . Space Shuttle mission 51-B
- . . . Space Shuttle mission 51-C
- . . . Space Shuttle mission 51-D
- . . . Space Shuttle mission 51-E
- . . . Space Shuttle mission 51-F
- . . . Space Shuttle mission 51-G
- . . . Space Shuttle mission 51-H
- . . . Space Shuttle mission 51-I
- . . . Space Shuttle mission 51-J
- . . . Space Shuttle mission 51-L
- . . . Space Shuttle mission 61-A
- . . . Space Shuttle mission 61-B
- . . . Space Shuttle mission 61-C
- . . . Space Shuttle mission 61-E
- . . . return to Earth space flight
- RT aerospace environments
- Apollo Soyuz test project
- ascent propulsion systems
- astrodynamics
- ∞ astronautics
- atmospheric entry
- auxiliary propulsion
- bioastronautics
- celestial bodies
- expeditions
- exploration
- extravehicular activity
- ∞ flight
- flight mechanics
- flight optimization
- flight simulation
- flyby missions
- Grand Tours
- Mariner Jupiter-Saturn flyby
- Mariner Jupiter-Uranus flyby
- meteorological flight
- ∞ missions
- orbits
- Physics and Chemistry Experiment in Space
- pointing control systems
- propulsion
- reentry
- rocket flight
- ∞ rockets
- solar sails
- Space Transportation System flights
- spacecraft guidance
- spacecraft maneuvers
- spacecraft propulsion
- suborbital flight
- trajectories
- Viking 1 spacecraft
- Viking 2 spacecraft
- Viking lander 1

- Viking lander 2
- Viking lander spacecraft
- Viking orbiter 1
- Viking orbiter 2
- Viking orbiter spacecraft

space flight feeding

- RT consumables (spacecrew supplies)
- dehydrated food
- diets
- eating
- ∞ food
- food intake
- food production (in space)
- life support systems
- nutrition
- nutritional requirements
- waste disposal

space flight stress

- GS stress (biology)
- . flight stress (biology)
- . . **space flight stress**
- RT boredom
- ∞ flight stress
- gravitational physiology
- gravity perception
- lower body negative pressure
- manned space flight
- space adaptation syndrome
- space psychology
- stress (physiology)
- stress (psychology)
- weightlessness

Space Flight Tracking and Data Network

- GS networks
- . tracking networks
- . . **Space Flight Tracking and Data Network**
- RT ∞ data
- data acquisition
- Global Tracking Network
- ground stations
- satellite tracking stations
- STDN (network)
- tracking stations

space flight training

- GS education
- . flight training
- . . **space flight training**
- . . . astronaut training
- RT pilot training
- spacecraft cabin simulators
- training simulators

space gliders

- USE **lifting reentry vehicles**

space glossaries

- RT bibliographies
- dictionaries
- documentation
- indexes (documentation)
- information retrieval
- thesauri

space habitats

- RT aerospace environments
- closed ecological systems
- life support systems
- Mars bases
- space colonies
- space stations
- spacecrews
- terraforming

space heating (buildings)

- DEF Heating of living areas for the comfort of occupants (human and/ or animal) by any means (electricity, fuels, solar radiation, etc.).
- GS heating
- . **space heating (buildings)**
- RT air conditioning
- environmental engineering
- heating equipment
- residential energy
- solar atriums

- solar heating
- solar houses
- temperature control
- waste energy utilization

space industrialization

- GS **space industrialization**
- . space manufacturing
- . space processing
- . space tourism
- RT commercial spacecraft
- economic development
- energy conversion industries
- lunar mining
- manufacturing
- ∞ processes
- product development
- products
- research facilities
- space commercialization

Space Infrared Telescope Facility

- UF *SIRTF*
- Spitzer Space Telescope*
- GS artificial satellites
- . scientific satellites
- . . astronomical satellites
- . . . **Space Infrared Telescope Facility**
- observatories
- . astronomical observatories
- . . astronomical satellites
- . . . **Space Infrared Telescope Facility**
- telescopes
- . infrared telescopes
- . . **Space Infrared Telescope Facility**
- . . . spaceborne telescopes
- . . . **Space Infrared Telescope Facility**
- RT infrared astronomy
- spaceborne astronomy

space laboratories

- GS laboratories
- . **space laboratories**
- . . Advanced Technology Laboratory
- . . Atmospheric Cloud Physics Lab (Spacelab)
- . . Earth Viewing Applications Laboratory
- . . Long Duration Exposure Facility
- . . manned orbital laboratories
- . . . Columbus module
- . . . Destiny Laboratory Module
- . . . Kibo Japanese Experiment Module
- . . . Skylab 1
- . . . Skylab 2
- . . . Skylab 3
- . . . Skylab 4
- . . . Spacelab
- RT ∞ aerospace sciences
- artificial satellites
- geophysical satellites
- lunar laboratories
- Mir space station
- orbital workshops
- research facilities
- research vehicles
- SAIL project
- Salyut space station
- sortie systems
- Space Station Freedom
- space stations
- spaceborne experiments
- ∞ spacecraft

space law

- GS law (jurisprudence)
- . international law
- . . **space law**
- RT air law
- direct broadcast satellites
- insurance (contracts)
- outer space treaty
- planetary protection

- sabotage
- space logistics**
 - GS logistics
 - . **space logistics**
 - RT Automated Transfer Vehicle
 - consumables (spacecraft)
 - consumables (spacecrew supplies)
 - extraterrestrial resources
 - manned space flight
 - spacecraft cabin simulators
 - spacecrew transfer
 - stowage (onboard equipment)
- space maintenance**
 - GS maintenance
 - . **space maintenance**
 - RT astronaut training
 - ∞ astronautics
 - extravehicular activity
 - orbital workers
 - payload transfer
 - remote manipulator system
 - Space Station Mobile Servicing System
- space manufacturing**
 - GS fabrication
 - . **space manufacturing**
 - manufacturing
 - . **space manufacturing**
 - space industrialization
 - . **space manufacturing**
 - RT aerospace environments
 - assembling
 - commercial spacecraft
 - construction
 - high vacuum
 - industries
 - levitation melting
 - liquid bridges
 - low gravity manufacturing
 - ∞ microgravity applications
 - space commercialization
 - space processing
 - spaceborne experiments
 - technologies
 - vacuum effects
 - weightlessness
- space mechanics**
 - GS mechanics (physics)
 - . classical mechanics
 - . . . **space mechanics**
 - astrodynamics
 - celestial mechanics
 - orbital mechanics
 - Kepler laws
 - minimum variance orbit determination
 - RT flight mechanics
 - magnetohydrodynamics
 - orbital space tests
 - quadratures
- space medicine*
 - USE **aerospace medicine**
- space missions**
 - GS **space missions**
 - . Cassini mission
 - . Cluster Mission
 - . flyby missions
 - . . . Giotto mission
 - . . . Grand Tours
 - Mariner Jupiter-Saturn flyby
 - Mariner Jupiter-Uranus flyby
 - Voyager 1977 mission
 - . . . Comet Nucleus Tour
 - . . . Comet Rendezvous Asteroid Flyby Mission
 - . . . Deep Impact Mission
 - . . . Mariner Venus-Mercury 1973
 - . . . Mariner-Mercury 1973
 - . . . Near Earth Asteroid Rendezvous Mission
 - . . . New Horizons mission
 - . . . Stardust Mission
 - . . . SOHO Mission
 - . . . Solar Maximum Mission
 - . . . Solar Maximum Mission-A
 - . . . asteroid missions
 - . . . Starprobe mission
 - . . . Ulysses mission
 - . . . Comet Rendezvous Asteroid Flyby Mission
 - . . . Near Earth Asteroid Rendezvous Mission
 - . . . Rosetta mission
 - . . . Deep Space 1 Mission
 - . . . Genesis mission
 - . . . Mars missions
 - 2001 Mars Odyssey
 - manned Mars missions
 - Mars sample return missions
 - Mars Surveyor 2001 Mission
 - . . . sample return missions
 - . . . Mars sample return missions
 - . . . Stardust Mission
 - . . . GRACE mission
 - RT Apollo Soyuz test project
 - Chinese space program
 - Earth-Venus trajectories
 - European space programs
 - French space program
 - Indian space program
 - Japanese space program
 - Magellan project (NASA)
 - MESSENGER (spacecraft)
 - ∞ missions
 - Skylab 1
 - Skylab 2
 - Skylab 3
 - Skylab 4
 - space programs
 - Space Shuttle missions
 - ∞ spacecraft
 - STEREO (observatory)
 - TOPS (spacecraft)
- space navigation**
 - GS navigation
 - . **space navigation**
 - . . . interplanetary navigation
 - RT air navigation
 - astrodynamics
 - ∞ astronautics
 - astronavigation
 - autonomous navigation
 - celestial navigation
 - digital navigation
 - Earth-Venus trajectories
 - formation flying
 - Global Positioning System
 - inertial navigation
 - interplanetary flight
 - interplanetary trajectories
 - manned spacecraft
 - orbit determination
 - orbital maneuvers
 - orbital mechanics
 - orbits
 - radar navigation
 - radio navigation
 - reference stars
 - satellite guidance
 - satellite navigation systems
 - spacecraft guidance
 - spacecraft position indicators
 - standardized space guidance
- space observations (from Earth)**
 - DEF Surveillance of extraterrestrial phenomena from the Earth's surface.
 - GS observation
 - . **space observations (from Earth)**
 - RT asteroid detection
 - astronomical interferometry
 - detection
 - observation scheduling
 - radio observation
 - reconnaissance
 - seeing (astronomy)
 - space surveillance (ground based)
- Space Operations Center (NASA)**
 - DEF A proposed NASA space station to be assembled in space that is designed for conducting space based operations such as satellite servicing, orbit transfer vehicle launch and recovery, and assembly of large space structures. Onboard capabilities could include space manufacturing and research experiments. When fully assembled it will be larger in size than the Space Shuttle.
 - GS artificial satellites
 - . space stations
 - . . . **Space Operations Center (NASA)**
 - . . . manned spacecraft
 - . . . **Space Operations Center (NASA)**
 - . . . stations
 - . . . space stations
 - . . . **Space Operations Center (NASA)**
 - RT large space structures
 - orbital assembly
 - orbital servicing
- ∞ **space orientation**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT attitude (inclination)
 - bearing (direction)
 - vertical perception
 - visual perception
- space perception**
 - DEF The ability to estimate depth or distance between points in the field of vision. Used for depth perception, distance perception, form perception, and slant perception.
 - UF *depth perception*
 - distance perception*
 - form perception*
 - slant perception*
 - GS perception
 - . sensory perception
 - . . . visual perception
 - **space perception**
 - autokinesis
 - RT binocular vision
 - monocular vision
 - peripheral vision
 - range finders
 - sound localization
 - visual fields
- space photography*
 - USE **spaceborne photography**
- space plasma H/V interaction experiments*
 - USE **SPHINX**
- space plasmas**
 - DEF Concentrations of free electrons and protons in the ionosphere, plasmasphere, and beyond.
 - GS particles
 - . charged particles
 - . . . energetic particles
 - plasmas (physics)
 - **space plasmas**
 - solar wind
 - stellar winds
 - corpuscular radiation
 - energetic particles
 - plasmas (physics)
 - **space plasmas**
 - solar wind
 - stellar winds
 - RT AMPTE (satellites)
 - Cluster Mission
 - CRRES (satellite)
 - dusty plasmas
 - Earth magnetosphere
 - flux transfer events
 - galactic winds
 - geomagnetism
 - IMAGE satellite
 - ionopause
 - magnetic field reconnection
 - magnetohydrodynamic stability
 - magnetohydrodynamics
 - OPEN Project
 - plasma density
 - plasma diagnostics
 - plasma interactions
 - plasma layers
 - plasma physics
 - plasma waves

space platforms

plasma-electromagnetic interaction
 polar cusps
 Polar/GGS spacecraft
 space weather
 SPHINX
 wave-particle interactions
 Wind/GGS spacecraft

space platforms

DEF Gimbal-mounted platforms equipped with gyros and accelerometers for maintaining a desired orientation in inertial space independent of spacecraft motion.

GS

space platforms

. Columbus space station
 . Eureka (ESA)
 . Long Duration Exposure Facility
 . man tended free flyers
 . space station polar platforms
 . synchronous platforms

RT

Earth Observing System (EOS)
 intraorbit transfer vehicles
 orbital servicing

∞ platforms

shape control
 Space Station Freedom
 space stations

space power reactors

GS

auxiliary power sources
 . nuclear auxiliary power units
 . . **space power reactors**
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors

nuclear electric power generation
 . nuclear auxiliary power units
 . . **space power reactors**

. . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors

. nuclear power reactors
 . . **space power reactors**

. . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors

nuclear reactors
 . nuclear power reactors
 . . **space power reactors**

. . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 SNAP 50
 . . . space power unit reactors

RT

heat exchangers
 space station power supplies
 turbogenerators

space power unit reactors

UF

SPUR (reactors)

GS

auxiliary power sources
 . nuclear auxiliary power units
 . . space power reactors
 . . . **space power unit reactors**
 nuclear electric power generation
 . nuclear auxiliary power units
 . . space power reactors
 . . . **space power unit reactors**

. nuclear power reactors
 . . space power reactors
 . . . **space power unit reactors**

nuclear reactors
 . nuclear power reactors
 . . space power reactors
 . . . **space power unit reactors**

RT

fission electric cells

heat exchangers
 SNAP
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 50
 turbogenerators

space probes

GS

unmanned spacecraft

space probes

. . . Explorer 18 satellite
 . . . Giotto mission
 . . . Jupiter probes
 . . . Galileo probe
 . . . Galileo spacecraft
 . . . lunar probes
 . . . Lunik lunar probes
 Lunik 2 lunar probe
 Lunik 3 lunar probe
 Lunik 9 lunar probe
 Lunik 10 lunar probe
 Lunik 11 lunar probe
 Lunik 12 lunar probe
 Lunik 13 lunar probe
 Lunik 14 lunar probe
 Lunik 16 lunar probe
 Lunik 17 lunar probe
 Lunik 19 lunar probe
 Lunik 20 lunar probe
 Lunik 22 lunar probe
 . . . Ranger lunar probes
 Ranger 1 lunar probe
 Ranger 2 lunar probe
 Ranger 3 lunar probe
 Ranger 4 lunar probe
 Ranger 5 lunar probe
 Ranger 6 lunar probe
 Ranger 7 lunar probe
 Ranger 8 lunar probe
 Ranger 9 lunar probe
 . . . Ranger lunar landing vehicles
 . . . Surveyor lunar probes
 Surveyor 1 lunar probe
 Surveyor 2 lunar probe
 Surveyor 3 lunar probe
 Surveyor 4 lunar probe
 Surveyor 5 lunar probe
 Surveyor 6 lunar probe
 Surveyor 7 lunar probe
 . . . Mariner space probes
 . . . Mariner 1 space probe
 . . . Mariner 2 space probe
 . . . Mariner 3 space probe
 . . . Mariner 4 space probe
 . . . Mariner 5 space probe
 . . . Mariner 6 space probe
 . . . Mariner 7 space probe
 . . . Mariner 8 space probe
 . . . Mariner 9 space probe
 . . . Mariner 10 space probe
 . . . Mariner 11 space probe
 . . . Mariner R 2 space probe
 . . . Mariner spacecraft
 . . . Mariner C spacecraft
 . . . Mariner Venus 67 spacecraft
 . . . Mars probes
 . . . Advanced Recon Electric Spacecraft
 . . . Mariner 3 space probe
 . . . Mariner 4 space probe
 . . . Mariner 6 space probe
 . . . Mariner 7 space probe
 . . . Mariner 8 space probe
 . . . Mariner 9 space probe
 . . . Mars 1 spacecraft
 . . . Mars 2 spacecraft
 . . . Mars 3 spacecraft
 . . . Mars 4 Spacecraft
 . . . Mars 5 spacecraft
 . . . Mars 6 spacecraft
 . . . Mars 7 spacecraft
 . . . Mars Observer
 . . . Mars Pathfinder
 . . . Viking 1975 entry vehicle
 . . . Viking spacecraft
 Viking 1 spacecraft
 Viking lander 1
 Viking orbiter 1

. . . . Viking 2 spacecraft
 Viking lander 2
 Viking orbiter 2
 Viking lander spacecraft
 Viking lander 1
 Viking lander 2
 Viking orbiter spacecraft
 Viking orbiter 1
 Viking orbiter 2
 Viking orbiter 1975
 . . . Mars Climate Orbiter
 . . . Mars Express
 . . . Mars Global Surveyor
 . . . Mars Polar Lander
 . . . Mars Reconnaissance Orbiter
 . . . Nozomi Mars Orbiter
 . . . Phobos spacecraft
 . . . Phoenix Mars Lander
 . . . Zond 2 space probe
 . . . Pioneer space probes
 . . . Pioneer 1 space probe
 . . . Pioneer 2 space probe
 . . . Pioneer 3 space probe
 . . . Pioneer 4 space probe
 . . . Pioneer 5 space probe
 . . . Pioneer 6 space probe
 . . . Pioneer 7 space probe
 . . . Pioneer 8 space probe
 . . . Pioneer 9 space probe
 . . . Pioneer 10 space probe
 . . . Pioneer 11 space probe
 . . . Pioneer Venus 2 entry probes
 Pioneer Venus 2 night probe
 Pioneer Venus 2 sounder probe
 . . . solar probes
 . . . Helios 1
 . . . Helios 2
 . . . Helios A
 . . . Helios B
 . . . Starprobe spacecraft
 . . . Sunblazer space probe
 . . . Venus probes
 . . . Magellan spacecraft (NASA)
 . . . Mariner 1 space probe
 . . . Mariner 2 space probe
 . . . Mariner 5 space probe
 . . . Mariner 10 space probe
 . . . Pioneer Venus 2 spacecraft
 Pioneer Venus 2 entry probes
 Pioneer Venus 2 night probe
 Pioneer Venus 2 sounder probe
 . . . Pioneer Venus 2 transporter bus
 . . . Venera satellites
 Venera 2 satellite
 Venera 3 satellite
 Venera 4 satellite
 Venera 5 satellite
 Venera 6 satellite
 Venera 7 satellite
 Venera 8 satellite
 Venera 9 satellite
 Venera 10 satellite
 Venera 11 satellite
 Venera 12 satellite
 . . . Zond 1 space probe
 . . . Zond 3 space probe
 . . . Zond 4 space probe
 . . . Zond 5 space probe
 . . . Zond 6 space probe
 . . . Zond 7 space probe
 . . . Zond 8 space probe
 . . . Huygens probe
 . . . MESSENGER (spacecraft)
 . . . Microwave Anisotropy Probe
 . . . Voyager 1 spacecraft
 . . . Voyager 2 spacecraft
 RT Atlas Able 5 launch vehicle
 Cassini mission
 Deep Impact Mission
 interplanetary spacecraft
 magnetic probes
 maneuverable spacecraft
 Mariner program
 meteorological satellites
 Pioneer project
 Pioneer Venus 1 spacecraft
 Pioneer Venus spacecraft
 ∞ probes

radio occultation
satellite television
Voyager 1977 mission
Voyager project

space processing

DEF Synthesis, processing, forming, and fabrication of compounds or materials in space or in a simulated space environment; normally involving techniques that exploit low-gravity or high-vacuum conditions.

GS space industrialization

. **space processing**

RT acoustic levitation
bioprocessing
commercial spacecraft
containerless melts
crystal growth
diamond films
electric furnaces
float zones
levitation melting
liquid bridges
low gravity manufacturing
Marangoni convection
metalorganic chemical vapor deposition
microgravity
∞ microgravity applications
miscibility gap
orbital workshops
protein crystal growth
single crystals
space commercialization
space manufacturing
spaceborne experiments
thermocapillary migration
ultrapure metals

Space Processing Applications Rocket

DEF Sounding rocket used for space processing experiments by NASA. Used for SPAR (rocket).

UF *SPAR (rocket)*

RT launch vehicles
metal foams
payloads
rocket vehicles
weightlessness

space programs

GS programs

. **space programs**

.. Argentine space program
.. Australian space program
.. Brazilian space program
.. Canadian space program
... Alouette project
.. Chinese space program
.. European space programs
... Austrian space program
... Belgian space program
... Czechoslovakian space program
... Danish space program
... Finnish space program
... French space program
... German space program
... Greek space program
... Hungarian space program
... Icelandic space program
... Italian space program
... Luxembourg space program
... Netherlands space program
... Norwegian space program
... Portuguese space program
... Spanish space program
... Swedish space program
... Swiss space program
... Turkish space program
... UK space program
.. geographic applications program
.. Indian space program
.. Indonesian space program
.. Israeli space program
.. Japanese space program
.. Mexican space program
.. NASA space programs
... Apollo applications program
... Apollo project

... Bioastronautical Orbital Space

System

... Centaur project

... Earth & Ocean Physics

Applications Program

... Earth Resources Program

... Earth Resources Survey

Program

... SEASAT program

... Echo project

... Galileo project

... Gemini project

... Helios Project

... Jupiter project

... Magellan project (NASA)

... Mariner program

... Mariner Venus-Mercury 1973

... Mariner-Mercury 1973

... Mars 69 project

... Mars 71 project

... Mercury project

... National Launch Vehicle Program

... NEW MOONS project

... Nimbus project

... OPEN Project

... Pioneer project

... Project SETI

... Ranger project

... Agena B Ranger Program

... Constellation program

... Mars Surveyor 98 Program

... New Horizons mission

... Rover project

... SAIL project

... Saturn project

... Scout project

... Skylab program

... Starprobe mission

... Surveyor project

... Synchronous Communications

Satellite Proj

... Tektite project

... TIROS project

... Titan project

... Vanguard project

... Viking Mars program

... Voyager project

.. New Zealand space program

.. Pakistan space program

.. Russian Space Program

.. Saudi Arabian space program

.. U.S.S.R. space program

.. Ukrainian space program

RT Apollo Soyuz test project

European Space Agency

International Space Year

ISRO

manned space flight

NASA programs

∞ research projects

Solar Maximum Mission

space missions

space psychology

GS medical science

. aerospace medicine

. **space psychology**

psychology

RT **space psychology**

astronaut performance

astronaut training

aviation psychology

manned space flight

military psychology

psychological effects

psychological factors

social factors

space adaptation syndrome

space flight stress

stress (psychology)

space radiation

USE **extraterrestrial radiation**

space radiators

USE **spacecraft radiators**

space rations

GS consumables (spacecrew supplies)

. **space rations**

rations

. **space rations**

RT ∞ food

food production (in space)

provisioning

stowage (onboard equipment)

space rendezvous

UF *spacecraft rendezvous*

GS rendezvous

. **space rendezvous**

.. orbital rendezvous

... Earth orbital rendezvous

... lunar orbital rendezvous

RT Apollo Soyuz test project

autonomous docking

rendezvous trajectories

spacecraft docking

transfer orbits

space sciences

USE **aerospace sciences**

space self maneuvering units

USE **self maneuvering units**

Space Shuttle Ascent Stage

DEF Shuttle take-off configuration comprising the orbiter, solid rocket boosters, and external tank.

GS spacecraft configurations

. **Space Shuttle Ascent Stage**

RT Advanced Solid Rocket Motor (STS)

ascent propulsion systems

external tanks

Space Shuttle Boosters

Space Shuttle orbiters

Space Shuttle upper stages

space shuttles

stage separation

Space Shuttle Boosters

UF *Shuttle Boosters*

Solid Rocket Boosters (Space

Shuttle)

Space Shuttle Solid Rocket Motors

SRB (Solid Rocket Boosters)

GS engines

. rocket engines

.. booster rocket engines

... **Space Shuttle Boosters**

... Advanced Solid Rocket Motor

(STS)

.. solid propellant rocket engines

... **Space Shuttle Boosters**

... Advanced Solid Rocket Motor

(STS)

RT ∞ boosters

manned spacecraft

O ring seals

reusable spacecraft

Space Shuttle Ascent Stage

Space Shuttle Main Engine

DEF Liquid propellant propulsion system using fuel drawn from external tanks to provide power for the orbiter to attain orbital speed.

GS engines

. rocket engines

.. liquid propellant rocket engines

... **Space Shuttle Main Engine**

RT propulsion

space transportation system

Space Transportation System flights

Space Shuttle mission 31-A

GS space flight

. manned space flight

.. Space Shuttle missions

... **Space Shuttle mission 31-A**

RT Columbia (Orbiter)

Space Shuttle mission 31-B

GS space flight

. manned space flight

.. Space Shuttle missions

... **Space Shuttle mission 31-B**

Space Shuttle mission 31-C

- RT Challenger (Orbiter)
- Space Shuttle mission 31-C**
- UF *Space Shuttle Orbital Flight 7*
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 31-C**
- RT Challenger (Orbiter)
- Space Shuttle mission 31-D**
- UF *Space Shuttle Orbital Flight 8*
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 31-D**
- RT Challenger (Orbiter)
- Space Shuttle mission 41-A**
- UF *Space Shuttle Orbital Flight 9*
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 41-A**
- RT Columbia (Orbiter)
- Space Shuttle mission 41-B**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 41-B**
- RT Challenger (Orbiter)
- Space Shuttle mission 41-C**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 41-C**
- RT Challenger (Orbiter)
- Space Shuttle mission 41-D**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 41-D**
- RT Discovery (Orbiter)
- Space Shuttle mission 41-G**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 41-G**
- RT Challenger (Orbiter)
- Space Shuttle mission 51-A**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-A**
- RT Discovery (Orbiter)
- Space Shuttle mission 51-B**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-B**
- RT Challenger (Orbiter)
- Space Shuttle mission 51-C**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-C**
- RT Discovery (Orbiter)
- Space Shuttle mission 51-D**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-D**
- RT Discovery (Orbiter)
- Space Shuttle mission 51-E**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-E**
- RT Challenger (Orbiter)
- Space Shuttle mission 51-F**
- GS space flight
- RT Challenger (Orbiter)
- Space Shuttle mission 51-G**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-G**
- RT Discovery (Orbiter)
- Saudi Arabian space program
- Space Shuttle mission 51-H**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-H**
- RT Atlantis (orbiter)
- Space Shuttle mission 51-I**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-I**
- RT Discovery (Orbiter)
- Space Shuttle mission 51-J**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-J**
- RT Atlantis (orbiter)
- Space Shuttle mission 51-L**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 51-L**
- RT Challenger (Orbiter)
- Space Shuttle mission 61-A**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 61-A**
- RT Challenger (Orbiter)
- Columbia (Orbiter)
- Space Shuttle mission 61-B**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 61-B**
- RT Atlantis (orbiter)
- Space Shuttle mission 61-C**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 61-C**
- RT Columbia (Orbiter)
- Space Shuttle mission 61-E**
- GS space flight
 - . manned space flight
 - .. Space Shuttle missions
 - ... **Space Shuttle mission 61-E**
- RT Columbia (Orbiter)
- Space Shuttle missions**
- GS space flight
 - . manned space flight
 - .. **Space Shuttle missions**
 - ... Space Shuttle mission 31-A
 - ... Space Shuttle mission 31-B
 - ... Space Shuttle mission 31-C
 - ... Space Shuttle mission 31-D
 - ... Space Shuttle mission 41-A
 - ... Space Shuttle mission 41-B
 - ... Space Shuttle mission 41-C
 - ... Space Shuttle mission 41-D
 - ... Space Shuttle mission 41-G
 - ... Space Shuttle mission 51-A
 - ... Space Shuttle mission 51-B
 - ... Space Shuttle mission 51-C
 - ... Space Shuttle mission 51-D
 - ... Space Shuttle mission 51-E
 - ... Space Shuttle mission 51-F
 - ... Space Shuttle mission 51-G
- ... Space Shuttle mission 51-H
- ... Space Shuttle mission 51-I
- ... Space Shuttle mission 51-J
- ... Space Shuttle mission 51-L
- ... Space Shuttle mission 61-A
- ... Space Shuttle mission 61-B
- ... Space Shuttle mission 61-C
- ... Space Shuttle mission 61-E

Shuttle Derived Vehicles
 Space Shuttle Ascent Stage
 space transportation system
 spacecraft recovery
 terminal area energy management

Space Shuttle payloads

GS payloads
 . **Space Shuttle payloads**
 . . Advanced Technology Laboratory
 . . Astro missions (STS)
 . . Atmospheric General Circulation Experiment
 . . Earth radiation budget experiment
 . . Earth Viewing Applications Laboratory
 . . electromagnetic environment experiment
 . . Get Away Specials (STS)
 . . Halogen Occultation Experiment
 . . OSS-1 payload
 . . OSTA-1 payload
 . . OSTA-3 payload
 . . Physics and Chemistry Experiment in Space
 . . plasma interaction experiment
 . . Spacelab
 . . X Ray Astrophysics Facility
 RT commerce lab
 extravehicular activity
 Feature Identification and Location Exper
 Hubble Space Telescope
 Multi-Purpose Logistics Modules
 orbital servicing
 payload assist module
 payload integration
 payload integration plan
 Shuttle Imaging Radar
 sortie systems
 space station payloads
 space technology experiments
 space transportation system
 spaceborne experiments
 Starlab

Space Shuttle Solid Rocket Motors

USE **Space Shuttle Boosters**

Space Shuttle upper stage A

DEF A version of a spinning solid upper stage centered around an Atlas Centaur launch vehicle. Used for SSUS-A.

UF *SSUS-A*

GS Space Shuttle upper stages

. **Space Shuttle upper stage A**

RT Atlas Centaur launch vehicle

Space Shuttle upper stage D

DEF A version of a spinning solid upper stage centered around a Delta launch vehicle. Used for SSUS-D.

UF *SSUS-D*

GS Space Shuttle upper stages

. **Space Shuttle upper stage D**

RT Delta launch vehicle

solid propellant rocket engines
 spin stabilization

Space Shuttle upper stages

DEF A collective term for the various types of upper stages planned for the Space Shuttle.

GS **Space Shuttle upper stages**

. Space Shuttle upper stage A

. Space Shuttle upper stage D

. spinning solid upper stage

RT Space Shuttle Ascent Stage

space shuttles

GS manned spacecraft

. **space shuttles**

. . Buran space shuttle

. . Hermes manned spaceplane

. . Space Shuttle orbiters

. . . Atlantis (orbiter)

. . . Challenger (Orbiter)

. . . Columbia (Orbiter)

. . . Discovery (Orbiter)

. . . Endeavour (orbiter)

. . . Enterprise (Orbiter)

reentry vehicles

. recoverable spacecraft

. . reusable spacecraft

. . . **space shuttles**

. . . . Buran space shuttle

. . . . Hermes manned spaceplane

. . . . Space Shuttle orbiters

. Atlantis (orbiter)

. Challenger (Orbiter)

. Columbia (Orbiter)

. Discovery (Orbiter)

. Endeavour (orbiter)

. Enterprise (Orbiter)

RT Advanced Launch System (STS)

AEPS

Aeromaneuvering Orbit to Orbit

Shuttle

annual suspension and pointing

system

approach and landing tests (STS)

Assess program

auxiliary propulsion

BESS (satellite)

Columbus space station

entry guidance (STS)

Eureca (ESA)

expendable stages (spacecraft)

German Infrared Laboratory

HOTOL launch vehicle

Inertial Upper Stage

interim stages (spacecraft)

International Space Station

intraorbit transfer vehicles

LIRTS (telescope)

manned space flight

Orbit Maneuvering Engine (Space

Shuttle)

orbit transfer vehicles

orbital maneuvers

payload control

payload deployment & retrieval

system

payload retrieval (STS)

SAIL project

Shuttle Derived Vehicles

Shuttle Engineering Simulator

Shuttle pallet satellites

single stage to orbit vehicles

sortie systems

Space Shuttle Ascent Stage

space transportation system

Space Transportation System flights

∞ spacecraft

spacecraft recovery

Spacelab

space simulators

DEF Devices used to simulate one or more parameters of the space environment used for testing space systems or components. Specifically, a closed chamber capable of approximating the vacuum and normal environments of space. Used for orbital simulators.

UF *orbital simulators*

GS simulators

. environment simulators

. . **space simulators**

. . . clinostats

. . . High Vacuum Orbital Simulator

. . . Langley complex coordinator

RT centrifuges

flight simulators

neutral buoyancy simulation

solar simulators

spacecraft environments

vacuum chambers

Space Station Freedom

(added August 1991)

UF *Freedom Space Station*

GS artificial satellites

. space stations

. . **Space Station Freedom**

stations

. space stations

. . **Space Station Freedom**

RT Columbus space station

International Space Station

large space structures

NASA space programs
 orbital servicing
 space laboratories
 space platforms
 space station payloads
 space station polar platforms
 space station power supplies
 space station propulsion
 space station structures

Space Station Mobile Servicing System

(added September 2001)

DEF Canadian robotic arm system for the International Space Station (ISS), used for ISS assembly, maintenance and payload servicing. Includes three primary components: the Space Station Remote Manipulator System, Mobile Base System, and Special Purpose Dexterous Manipulator.

UF *Canadarm (ISS)*

Mobile Servicing System (ISS)

MSS (International Space Station)

Space Station Remote Manipulator

System

GS manipulators

. remote manipulator system

. . **Space Station Mobile Servicing**

System

robot arms

. **Space Station Mobile Servicing**

System

RT Canadian space program

International Space Station

orbital assembly

payload deployment & retrieval

system

remote handling

robots

space maintenance

space station modules

space station modules

(added November 1998)

GS modules

. **space station modules**

. . Columbus module

. . Cupola Module

. . Destiny Laboratory Module

. . Kibo Japanese Experiment Module

. . Kvant modules

. . Multi-Purpose Logistics Modules

. . Priroda module

. . Service Module (ISS)

. . Unity connecting module

. . Zarya control module

RT

airlock modules

compartments

International Space Station

Mir space station

orbital assembly

space erectable structures

Space Station Mobile Servicing

System

space station structures

spacecraft docking modules

spacecraft modules

space station payloads

GS payloads

. **space station payloads**

RT Alpha Magnetic Spectrometer

Earth Observing System (EOS)

man tended free flyers

Space Shuttle payloads

Space Station Freedom

space station polar platforms

space stations

Spacelab payloads

space station polar platforms

UF *polar platforms (space stations)*

GS artificial satellites

. space stations

. . **space station polar platforms**

space platforms

. **space station polar platforms**

stations

. space stations

. . **space station polar platforms**

RT Columbus space station

space station power supplies

Earth Observing System (EOS)
polar orbits
remote sensing
Space Station Freedom
space station payloads

space station power supplies

GS electric power supplies
. **space station power supplies**
RT electric batteries
energy storage
solar arrays
solar cells
solar dynamic power systems
space power reactors
Space Station Freedom
space stations
spacecraft power supplies
thermoelectric generators

space station propulsion

GS propulsion
. **space station propulsion**
RT auxiliary propulsion
electric propulsion
hydrogen oxygen engines
ion engines
low thrust propulsion
propulsion system configurations
resistojet engines
solar electric propulsion
Space Station Freedom
space stations
spacecraft propulsion

*Space Station Remote Manipulator System
(added September 2001)*

USE **Space Station Mobile Servicing System**

space station structures

GS **space station structures**
. Integrated Truss Structure P1
. Integrated Truss Structure S1
. Integrated Truss Structure Z1
RT Kvant modules
large space structures
orbital assembly
Priroda module
smart structures
space erectable structures
Space Station Freedom
space station modules
space stations
spacecraft structures
structural design
∞ structures

space stations

UF *Earth orbiting space stations*
manned orbital space stations
MOSS (space stations)
self deploying space stations
GS artificial satellites
. **space stations**
.. Automatic Universal Orbiting Stations
.. Columbus space station
.. Halo Orbit space station
.. International Space Station
.. man tended free flyers
.. Mir space station
.. orbiting lunar stations
.. Salyut space station
.. Skylab 1
.. Skylab 2
.. Skylab 3
.. Skylab 4
.. Space Operations Center (NASA)
.. Space Station Freedom
.. space station polar platforms stations
. **space stations**
.. Automatic Universal Orbiting Stations
.. Columbus space station
.. Halo Orbit space station
.. International Space Station
.. man tended free flyers
.. Mir space station

.. orbiting lunar stations
.. Salyut space station
.. Skylab 1
.. Skylab 2
.. Skylab 3
.. Skylab 4
.. Space Operations Center (NASA)
.. Space Station Freedom
.. space station polar platforms

RT AEPS

autonomous docking
bioastronautics
ferry spacecraft
inflatable structures
large space structures
manned orbital laboratories
manned spacecraft
military spacecraft
orbital servicing
orbital space tests
orbital workshops
∞ platforms
rendezvous spacecraft
Saturn 1 workshop
Saturn 5 workshop
Saturn workshops
sortie systems
space bases
space colonies
space habitats
space laboratories
space platforms
space station payloads
space station power supplies
space station propulsion
space station structures
spacecraft docking
spin stabilization
X-38 crew return vehicle

space storage

RT cryogenic fluid storage
cryogenic rocket propellants
cryogenic tanks
propellant storage
storable propellants
∞ storage
storage tanks

space suits

DEF Pressure suits for wear in space or at very low ambient pressures within the atmosphere, designed to permit the wearer to leave the protection of a pressurized cabin.
GS clothing
. protective clothing
.. pressure suits
... **space suits**
... extravehicular mobility units
.. suits
.. pressure suits
... **space suits**
... extravehicular mobility units
RT safety devices

∞ space surveillance

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT space surveillance (ground based)
space surveillance (spaceborne)

space surveillance (ground based)

GS surveillance
. **space surveillance (ground based)**
RT air defense
antimissile defense
asteroid detection
minitrack system
space observations (from Earth)
∞ space surveillance
spacecraft tracking

space surveillance (spaceborne)

GS surveillance
. **space surveillance (spaceborne)**
RT air defense
antimissile defense
high altitude nuclear detection

ice mapping
ice reporting
military spacecraft
optical countermeasures
reconnaissance
satellite-borne photography
satellite-to-satellite tracking
∞ space surveillance
spacecraft tracking

space systems engineering

USE **aerospace engineering**

space technology experiments

RT antenna design
antennas
large space structures
space erectable structures
Space Shuttle payloads
spaceborne experiments

space temperature

GS temperature
. **space temperature**
RT cryogenic temperature
electron energy
ion temperature

space tools

GS tools
. **space tools**
RT low gravity manufacturing
orbital workers
telerobotics

space tourism

(added April 1999)
GS space industrialization
. **space tourism**
tourism
. **space tourism**
RT space commercialization
space transportation

space transportation

DEF The conveyance of payloads or personnel to, through, or from outer space.
GS transportation
. **space transportation**
.. space transportation system
... Advanced Launch System (STS)
... Saenger space transportation system
RT Delta Clipper
HOPE aerospace plane
HOTOL launch vehicle
Inertial Upper Stage
Japanese space program
orbit transfer vehicles
payload stations
payloads
single stage to orbit vehicles
space elevators
space tourism
terminal area energy management

space transportation system

DEF A joint NASA-DOD advanced space transportation concept for the 1980s. The main element of the STS is the Space Shuttle. Another element is the orbit transfer vehicles-OTV. A third element called Spacelab is designed and manufactured by the European Space Agency, has no propulsive capability and is carried by the Space Shuttle. Used for STS.

UF STS

GS transportation
. space transportation
.. **space transportation system**
... Advanced Launch System (STS)
... Saenger space transportation system
RT Advanced Solid Rocket Motor (STS)
annular suspension and pointing system
approach and landing tests (STS)
Atmospheric General Circulation Experiment
defense program
extravehicular mobility units

- Hermes manned spaceplane
 Inertial Upper Stage
 manned maneuvering units
 NASA programs
 orbital servicing
 OSS-1 payload
 OSTA-1 payload
 OSTA-2 payload
 OSTA-3 payload
 payload assist module
 payload delivery (STS)
 payload integration plan
 payload retrieval (STS)
 power modules (STS)
 remote manipulator system
 Space Shuttle Main Engine
 Space Shuttle missions
 Space Shuttle orbiters
 Space Shuttle payloads
 space shuttles
 Space Transportation System flights
 space tugs
 Spacelab
 ∞ systems
- Space Transportation System 1 flight**
 UF *OFT 1*
Orbital Flight Test 1 (shuttle)
Space Shuttle Orbital Flight Test 1 STS-1
 GS Space Transportation System flights
 . **Space Transportation System 1 flight**
- Space Transportation System 2 flight**
 UF *OFT 2*
Orbital Flight Test 2 (shuttle)
Space Shuttle Orbital Flight Test 2 STS-2
 GS Space Transportation System flights
 . **Space Transportation System 2 flight**
- Space Transportation System 3 flight**
 UF *OFT 3*
Orbital Flight Test 3 (shuttle)
Space Shuttle Orbital Flight Test 3 STS-3
 GS Space Transportation System flights
 . **Space Transportation System 3 flight**
- Space Transportation System 4 flight**
 UF *OFT 4*
Orbital Flight Test 4 (shuttle)
Space Shuttle Orbital Flight Test 4 STS-4
 GS Space Transportation System flights
 . **Space Transportation System 4 flight**
- Space Transportation System flights**
 DEF Revised collective designation for all Space Shuttle flights. Used for OFT, orbital flight tests (shuttle), Space Shuttle orbital flight tests, and Space Shuttle orbital flights.
 UF *OFT*
orbital flight tests (shuttle)
Space Shuttle Orbital Flight Tests
Space Shuttle Orbital Flights
 GS **Space Transportation System flights**
 . Space Transportation System 1 flight
 . Space Transportation System 2 flight
 . Space Transportation System 3 flight
 . Space Transportation System 4 flight
 RT entry guidance (STS)
 geophysical fluid flow cells
 Solar Cell Calibration Facility
 space flight
 Space Shuttle Main Engine
 space shuttles
 space transportation system
 ∞ systems
- ∞ tests
- space tugs**
 RT Inertial Upper Stage
 modules
 orbit transfer vehicles
 orbital servicing
 payloads
 propulsion
 space transportation system
 spacecraft propulsion
- space vehicle checkout program**
 UF *spacecraft prelaunch tests*
 RT checkout
 countdown
 performance tests
 prefiring tests
 spacecraft maintenance
 ∞ tests
- space vehicle control*
 USE **spacecraft control**
- space vehicles*
 USE **spacecraft**
- space weapons**
 GS weapons
 . **space weapons**
 RT air to air missiles
 antimissile missiles
 Chaparral missile
 laser weapons
 Minuteman ICBM
 nuclear weapons
 surface to air missiles
 weapon systems
 weapons delivery
- space weather**
(added June 1999)
 SN (FOR METEOROLOGICAL CONDITIONS RELATED TO THE MIDDLE AND LOWER ATMOSPHERES OF NON-EARTH PLANETS USE "PLANETARY METEOROLOGY".)
 DEF The dynamic, highly variable conditions of the geospace environment that encompasses the sun, the interplanetary medium, and the Earth magnetosphere-ionosphere-thermosphere system. Major contributing factors include variations in the solar wind, solar flares, and solar mass ejections. Effects of space weather phenomena include performance degradation of communication, navigation, and power systems on both spacecraft and ground-based systems; and potential health hazards during extravehicular activity.
 RT Advanced Composition Explorer
 aerospace environments
 aerospace safety
 Earth ionosphere
 Earth magnetosphere
 Earth orbital environments
 geomagnetism
 GOES 13
 interplanetary shock waves
 ionospheric disturbances
 magnetic disturbances
 magnetic storms
 Polar/GGS spacecraft
 radiation hazards
 solar activity effects
 solar terrestrial interactions
 space plasmas
 weather
- space weathering**
(added July 2001)
 DEF All processes that act on material exposed to the space environment including micrometeorite impacts and interactions with solar wind, cosmic rays, and ambient plasma. Includes processes associated with exposure at the surface of airless planets or small bodies.
 GS exposure
 . weathering
 . . **space weathering**
 RT aerospace environments
 damage
- erosion
 extraterrestrial environments
 Long Duration Exposure Facility
 lunar soil
 micrometeorites
- spaceborne astronomy**
 GS astronomy
 . **spaceborne astronomy**
 RT Alpha Magnetic Spectrometer
 Astro missions (STS)
 astronomical interferometry
 astronomical satellites
 Constellation-X
 Cosmic Background Explorer satellite
 faint object camera
 Fermi Gamma-ray Space Telescope
 Gamma Ray Observatory
 Granat satellite
 Hipparcos satellite
 Hubble Space Telescope
 Infrared Space Observatory (ISO)
 IUE
 James Webb Space Telescope
 LISA (observatory)
 Magellan ultraviolet astronomy satellite
 Microwave Anisotropy Probe
 Pinhole Occulter Facility
 Quasar
 ROSAT mission
 SAS-2
 SAS-3
 SOFIA (airborne observatory)
 Space Infrared Telescope Facility
 Starsat telescope
 Submillimeter Wave Astronomy Satellite
 Swift observatory
 telescopes
 ultraviolet telescopes
 X Ray Astrophysics Facility
- spaceborne experiments**
 DEF A collective term designating the various experiments performed or planned in orbiting spacecraft and usually involving physical phenomena in space environments.
 GS **spaceborne experiments**
 . Orbiting Frog Otolith
 . Physics and Chemistry Experiment in Space
 . plasma interaction experiment
 aerospace environments
 AMPTE (satellites)
 bioprocessing
 Columbus module
 CRRES (satellite)
 Destiny Laboratory Module
 experimentation
 geophysical fluid flow cells
 Get Away Specials (STS)
 International Space Station
 Kibo Japanese Experiment Module
 Long Duration Exposure Facility
 man tended free flyers
 molecular shields
 Multi-Purpose Logistics Modules
 OSS-1 payload
 OSTA-1 payload
 OSTA-3 payload
 payload assist module
 payload integration plan
 payloads
 space laboratories
 space manufacturing
 space processing
 Space Shuttle payloads
 space technology experiments
 Spacelab
 weightlessness
- spaceborne lasers**
 GS stimulated emission devices
 . lasers
 . . **spaceborne lasers**
 RT airborne lasers
 laser applications

spaceborne photography

remote sensors

spaceborne photography

- UF *space photography*
- GS imagery
 - . photography
 - . . **spaceborne photography**
 - . . . satellite-borne photography
- RT aerial photography
 - astronomical photography
 - black and white photography
 - cloud photographs
 - cloud photography
 - diffraction limited cameras
 - Earth resources
 - lunar photographs
 - lunar photography
 - Mars photographs
 - multispectral band scanners
 - photomapping
 - photomaps
 - rocket-borne photography
 - satellite observation

spaceborne telescopes

- GS telescopes
 - . **spaceborne telescopes**
 - . . Constellation-X
 - . . Fermi Gamma-ray Space Telescope
 - . . German Infrared Laboratory
 - . . Hubble Space Telescope
 - . . Infrared Space Observatory (ISO)
 - . . James Webb Space Telescope
 - . . Large Deployable Reflector
 - . . LIRTS (telescope)
 - . . solar optical telescope
 - . . Space Infrared Telescope Facility
 - . . Starlab
 - . . Starsat telescope
 - . . X Ray Astrophysics Facility
 - . . XMM-Newton telescope
- RT Astro missions (STS)
 - astronomical observatories
 - astronomical photography
 - astronomy
 - diffraction limited cameras
 - faint object camera
 - Gamma Ray Observatory
 - multi-anode microchannel arrays
 - Next Generation Space Telescope project
 - optical transfer function
 - ROSAT mission
 - Swift observatory

∞ spacecraft

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- DEF Devices, manned and unmanned, which are designed to be placed into an orbit about the Earth or into a trajectory to another celestial body. Used for space vehicles.
- UF *space vehicles*
- RT Advanced Recon Electric Spacecraft
 - aerospace vehicles
 - air data systems
 - Astro vehicle
 - astrodynamics
 - Atlantis (orbiter)
 - auxiliary propulsion
 - biosatellites
 - Canadian spacecraft
 - cargo spacecraft
 - Challenger (Orbiter)
 - Chinese spacecraft
 - Clementine spacecraft
 - Columbia (Orbiter)
 - Czechoslovakian spacecraft
 - Discovery (Orbiter)
 - dual spin spacecraft
 - Endeavour (orbiter)
 - Enterprise (Orbiter)
 - ESA spacecraft
 - escape rockets
 - expandable structures
 - flexible spacecraft
 - flight test vehicles
 - French space program

- Galileo probe
- Galileo spacecraft
- ground support equipment
- hypersonic vehicles
- Indian space program
- Indian spacecraft
- inflatable spacecraft
- interplanetary spacecraft
- Israeli spacecraft
- Japanese space program
- Japanese spacecraft
- launch vehicles
- lunar spacecraft
- Magellan spacecraft (NASA)
- maneuverable spacecraft
- manned orbital laboratories
- manned spacecraft
- Mariner Mark 2 Spacecraft
- Mark 1 spacecraft
- military spacecraft
- orbit transfer vehicles
- orbital maneuvering vehicles
- orbiting lunar stations
- outer planets explorers
- photo reconnaissance spacecraft
- Pioneer Venus 2 spacecraft
- power limited spacecraft
- Radiation Meteoroid spacecraft
- recoverable spacecraft
- reentry vehicles
- research vehicles
- ∞ satellites
 - SERT 1 spacecraft
 - SERT 2 spacecraft
 - Shuttle Derived Vehicles
 - soft landing spacecraft
 - Solar Maximum Mission-A solettas
 - Soviet spacecraft
 - space capsules
 - space debris
 - space laboratories
 - space missions
 - space shuttles
 - spacecraft cabin simulators
 - spacecraft modules
 - technology feasibility spacecraft
 - test vehicles
 - TOPS (spacecraft)
 - transatmospheric vehicles
 - unidentified flying objects
 - unmanned spacecraft
- ∞ vehicles
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter spacecraft
 - Voyager 1 spacecraft
 - Voyager 2 spacecraft
 - X-30 vehicle
 - X-37 vehicle

spacecraft antennas

- GS antennas
 - . **spacecraft antennas**
 - radio equipment
 - . **spacecraft antennas**
 - telecommunication
 - . **spacecraft antennas**
- RT furlable antennas

spacecraft breakup

- (added August 1989)
- UF *breakup (spacecraft)*
 - orbital breakup*
 - reentry breakup*
 - satellite breakup*
 - satellite fragmentation*
- RT atmospheric entry
 - destruction
 - hazards
 - meteoroid hazards
 - orbit decay
 - reentry effects
 - space debris
 - spacecraft reentry
 - spacecraft survivability
 - uncontrolled reentry (spacecraft)

wreckage

spacecraft cabin atmospheres

- GS controlled atmospheres
 - . cabin atmospheres
 - . . **spacecraft cabin atmospheres**
- RT carbon dioxide concentration
 - closed ecological systems
 - cockpits
 - environmental control
 - high pressure oxygen
 - pressurized cabins
 - rebreathing

spacecraft cabin simulators

- GS simulators
 - . training simulators
 - . . **spacecraft cabin simulators**
 - training devices
 - . training simulators
 - . . **spacecraft cabin simulators**
- RT aerospace environments
 - cockpit simulators
 - manned spacecraft
 - simulation
 - space flight training
 - space logistics
- ∞ spacecraft
 - test facilities

spacecraft cabins

- GS compartments
 - . **spacecraft cabins**
 - spacecraft components
 - . **spacecraft cabins**
- RT ∞ cabins
 - cockpits
 - crew experiment stations
 - crew observation stations
 - crew workstations
 - pressurized cabins
 - space capsules

spacecraft charging

- DEF Electric charge induction upon the surface of a spacecraft by magnetospheric plasmas or other ion sources.
- RT electric fields
 - external surface currents
 - single event upsets
 - spacecraft glow
 - system generated electromagnetic pulses

Spacecraft Charging at High Altitude

USE **SCATHA satellite**

spacecraft communication

- SN (COMMUNICATION OF SPACECRAFT WITH GROUND OR OTHER SPACECRAFT)
- DEF The act of, or methods for, conveying information to or from manned or unmanned spacecraft.
- GS telecommunication
 - . space communication
 - . . **spacecraft communication**
 - . . . reentry communication
 - . . . satellite communication
- RT ARPA computer network
 - astrionics
 - circumlunar communication
 - Earth terminals
 - facsimile communication
 - ground-air-ground communication
 - hoop column antennas
 - interplanetary communication
 - lunar communication
 - optical communication
 - packet transmission
 - plasma antennas
 - radio communication
 - satellite communications ships
 - satellite ground support
 - single channel per carrier transmission
 - system generated electromagnetic pulses
 - unified S band

wireless communication

visual control

spacecraft components

- GS **spacecraft components**
 - . service modules
 - . . Multi-Purpose Logistics Modules
 - . spacecraft cabins
 - . spacecraft docking modules
 - . spacecraft modules
 - . . command modules
 - . . command service modules
 - . . landing modules
 - . . . lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - Altair Lunar Lander
 - Mars Excursion Module
 - . . SIM
- RT airborne/spaceborne computers
 - boron-epoxy composites
 - commonality
- ∞ components
 - nose cones
 - rocket engines

*spacecraft computers*USE **airborne/spaceborne computers****spacecraft configurations**

- GS **spacecraft configurations**
 - . satellite configurations
 - . Space Shuttle Ascent Stage
- RT aerodynamic configurations
 - aircraft configurations
 - Apollo short stack
- ∞ configurations
 - flared bodies
 - launch vehicle configurations
 - propulsion system configurations
 - Radiation Meteoroid spacecraft
 - reentry vehicles
 - upper stage rocket engines

spacecraft construction materials

- RT ∞ construction materials
 - functionally gradient materials
 - Ludox (trademark)
- ∞ materials
 - materials selection

spacecraft contamination

- GS contamination
 - . **spacecraft contamination**
- RT decontamination
 - exobiology

spacecraft control

- UF *space vehicle control*
- GS **spacecraft control**
 - . satellite control
 - . . satellite attitude control
- RT attitude control
 - automatic control
- ∞ control
 - control simulation
 - crew procedures (preflight)
 - engine control
 - flexible spacecraft
 - flight control
 - fly by wire control
 - formation flying
 - ground based control
 - manual control
 - Marquardt R4D engine
 - missile control
 - orbit determination
 - pointing control systems
 - radio control
 - remote control
 - rocket engine control
 - shape control
 - stationkeeping
 - thrust vector control

spacecraft defense

DEF The protection of spacecraft from undesirable external forces. Used for satellite defense.

- UF *satellite defense*
- RT spacecraft survivability
 - stealth technology
 - vulnerability

spacecraft design

DEF The act of conceiving and planning the structure, systems, and performance characteristics of any type of spacecraft including space probes, satellites, space platforms and space stations.

- GS **spacecraft design**
 - . IPAD
 - . satellite design
- RT Advanced Launch System (STS)
 - aeroshells
 - computer aided design
- ∞ design
 - engine design
 - Hermes manned spaceplane
 - Indian space program
 - Japanese space program
 - lofting
 - product development
 - satellite temperature
 - Shuttle Derived Vehicles
 - space debris
 - spacecraft temperature
 - structural design
 - systems engineering
 - transatmospheric vehicles
 - weight reduction

spacecraft docking

DEF The act of coupling two or more orbiting objects; the operation of mechanically connecting together, or in some manner bring together orbital payloads.

- GS maneuvers
 - . docking
 - . . **spacecraft docking**
 - . spacecraft maneuvers
 - . . **spacecraft docking**
- RT ∞ astronautics
 - autonomous docking
 - interception
 - Mir space station
 - mooring
 - multiple docking adapters
 - orbital rendezvous
 - rendezvous trajectories
 - Salyut space station
 - space rendezvous
 - space stations
 - spacecraft docking modules
 - transfer orbits
 - Unity connecting module

spacecraft docking modules

- GS modules
 - . **spacecraft docking modules**
 - spacecraft components
 - . **spacecraft docking modules**
- RT airlock modules
 - command modules
 - command service modules
 - landing modules
 - Multi-Purpose Logistics Modules
 - service modules
 - space station modules
 - spacecraft docking

spacecraft electronic equipment

- GS electronic equipment
 - . **spacecraft electronic equipment**
 - onboard equipment
 - . spacecraft equipment
 - . . **spacecraft electronic equipment**
- RT airborne/spaceborne computers
 - astrionics
 - single event upsets

spacecraft environments*(added August 1989)*

SN (LIMITED TO SPACECRAFT INTERNAL COMPARTMENTS AND CABINS; FOR SPACECRAFT EXTERNAL ENVIRONMENTS REFER TO 'EXTRATERRESTRIAL ENVIRONMENTS')

- GS environments
 - . **spacecraft environments**
- RT aerospace medicine
 - Automatic Universal Orbiting Stations
 - bioastronautics
 - closed ecological systems
 - controlled atmospheres
 - environmental control
 - exobiology
 - extraterrestrial environments
 - intravehicular activity
 - life support systems
 - rotating environments
 - satellite temperature
 - space simulators
 - thermal environments
 - weightlessness

spacecraft equipment

- GS onboard equipment
 - . **spacecraft equipment**
 - . . spacecraft electronic equipment
- RT ∞ equipment
 - OSTA-3 payload
 - spacecraft instruments

spacecraft glow

- UF *shuttle glow*
- GS decay
 - . **spacecraft glow**
 - emission
 - . light emission
 - . . luminescence
 - . . . **spacecraft glow**
- RT Earth orbital environments
 - spacecraft charging
 - surface reactions

spacecraft guidance

- GS guidance (motion)
 - . **spacecraft guidance**
 - . . satellite guidance
- RT automatic control
 - autonomous docking
 - autonomous navigation
 - CCD star tracker
 - celestial navigation
 - command guidance
 - formation flying
 - ground based control
 - inertial guidance
 - injection guidance
 - interplanetary flight
 - interplanetary trajectories
 - laser gyroscopes
 - manual control
 - midcourse guidance
 - orbits
 - reentry guidance
 - rendezvous guidance
 - space flight
 - space navigation
 - star trackers
 - terminal guidance

spacecraft instruments

DEF Electronic, optical, gyroscopic, and other instruments that play a role in the control of the spacecraft, or that function to measure, record, display, or process different values or quantities encountered in the flight of a spacecraft.

- UF *spacecraft sensors*
- GS **spacecraft instruments**
 - . satellite instruments
 - . . multispectral linear arrays
 - . spacecraft position indicators
- RT astronautics
 - Atmospheric Cloud Physics Lab (Spacelab)
 - autonomous spacecraft clocks
 - bubble technique
 - flight instruments
 - flight test instruments
 - guidance sensors
 - I2S cameras

spacecraft landing

- instrument packages
- ∞ instruments
 - laser altimeters
 - measuring instruments
 - onboard equipment
 - spacecraft equipment
- spacecraft landing**
 - GS landing
 - spacecraft landing**
 - .. horizontal spacecraft landing
 - .. lunar landing
 - .. planetary landing
 - ... Mars landing
 - RT aircraft landing
 - approach and landing tests (STS)
 - crash landing
 - emergency landing
 - glide landings
 - hard landing
 - landing simulation
 - soft landing
 - soft landing spacecraft
 - terminal area energy management
 - touchdown
 - vertical landing
 - water landing
- spacecraft launching**
 - UF *satellite launching*
 - GS launching
 - spacecraft launching**
 - .. liftoff (launching)
 - RT countdown
 - Delta 4 Heavy launch vehicle
 - heavy lift launch vehicles
 - HOTOL launch vehicle
 - launch costs
 - launch dates
 - launch vehicles
 - launch windows
 - launching pads
 - missiles
 - orbit insertion
 - orbital launching
 - orbital shots
 - postlaunch reports
 - prelaunch summaries
 - railgun accelerators
 - reusable launch vehicles
 - rocket launching
 - space commercialization
- spacecraft lubrication**
 - UF *space environmental lubrication*
 - GS lubrication
 - spacecraft lubrication**
 - RT self lubricating materials
- spacecraft maintenance**
 - GS maintenance
 - spacecraft maintenance**
 - RT checkout
 - prelaunch tests
 - space vehicle checkout program
 - spacecraft reliability
 - tumaround (STS)
- spacecraft maneuvers**
 - UF *satellite maneuvers*
 - GS maneuvers
 - spacecraft maneuvers**
 - .. spacecraft docking
 - RT control simulation
 - formation flying
 - maneuverability
 - maneuverable spacecraft
 - orbit insertion
 - space flight
- spacecraft models**
 - GS models
 - spacecraft models**
 - RT aircraft models
 - dynamic models
 - mathematical models
 - scale models
- spacecraft modules**
 - GS modules

- spacecraft modules**
 - .. command modules
 - .. command service modules
 - .. landing modules
 - ... lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - Altair Lunar Lander
 - ... Mars Excursion Module
 - .. SIM
 - spacecraft components
 - spacecraft modules**
 - .. command modules
 - .. command service modules
 - .. landing modules
 - ... lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - Altair Lunar Lander
 - ... Mars Excursion Module
 - .. SIM
 - RT compartments
 - Cupola Module
 - Kibo Japanese Experiment Module
 - man tended free flyers
 - orbital assembly
 - service modules
 - space capsules
 - space erectable structures
 - space station modules
 - ∞ spacecraft
- spacecraft motion**
 - SN (NONTRAJECTORY MOTION)
 - RT aerodynamic balance
 - aerodynamic stability
 - attitude stability
 - buffeting
 - control stability
 - dynamic stability
 - flexible spacecraft
 - flutter
 - ∞ motion
 - motion stability
 - oscillations
 - sideslip
 - stability
 - tumbling motion
 - vibration
- spacecraft orbital assembly*
- USE **orbital assembly**
- spacecraft orbits**
 - GS orbits
 - spacecraft orbits**
 - .. satellite orbits
 - ... geosynchronous orbits
 - ... parking orbits
 - ... stationary orbits
 - ... twenty-four hour orbits
 - .. transfer orbits
 - ... interplanetary transfer orbits
 - RT circular orbits
 - Earth orbits
 - elliptical orbits
 - equatorial orbits
 - lunar orbits
 - orbit insertion
 - orbital mechanics
 - orbital position estimation
 - planetary orbits
 - retrograde orbits
 - solar orbits
- spacecraft performance**
 - DEF The manner or effectiveness in which any space vehicle, space platform, or space station functions while in operation in space, or in a simulated space environment.
 - RT astronaut performance
 - ∞ performance

- postlaunch reports
- spacecraft position indicators**
 - GS display devices
 - .. position indicators
 - ... **spacecraft position indicators**
 - measuring instruments
 - .. indicating instruments
 - .. position indicators
 - ... **spacecraft position indicators**
 - spacecraft instruments
 - .. **spacecraft position indicators**
- RT flight instruments
- head-up displays
- orbit determination
- orbital position estimation
- space navigation
- spacecraft power supplies**
 - DEF Sources of electrical energy, including batteries, generators, and energy conversion devices, that support the normal operation of spacecraft.
 - GS electric power supplies
 - .. **spacecraft power supplies**
 - RT auxiliary power sources
 - cryocycle principle
 - direct power generators
 - electric batteries
 - ∞ energy sources
 - free-piston engines
 - laser power beaming
 - microwave power beaming
 - nickel hydrogen batteries
 - nuclear auxiliary power units
 - power beaming
 - power modules (STS)
 - ∞ power supplies
 - propellants
 - solar dynamic power systems
 - space station power supplies
 - thermophotovoltaic conversion
- spacecraft prelaunch tests*
- USE **space vehicle checkout program**
- spacecraft propulsion**
 - DEF The action or process of imparting motion to a spacecraft by means of a force such as a thrust of air or energy released by burning fuel.
 - GS propulsion
 - spacecraft propulsion**
 - ... electromagnetic propulsion
 - ... magnetic sails
 - ... electrostatic propulsion
 - ... ion propulsion
 - ... matter-antimatter propulsion
 - ... negative matter propulsion
 - ... photonic propulsion
 - ... laser propulsion
 - ... plasma propulsion
 - ... solar propulsion
 - ... solar electric propulsion
 - ... solar thermal propulsion
 - RT chemical propulsion
 - descent propulsion systems
 - electric propulsion
 - fusion propulsion
 - Hall thrusters
 - laser propulsion
 - low thrust propulsion
 - magnetic nozzles
 - magnetoplasmadynamic thrusters
 - magnetoplasmadynamics
 - mass drivers
 - nuclear electric propulsion
 - nuclear propulsion
 - oxygen-hydrocarbon rocket engines
 - post boost propulsion system
 - propellants
 - pulsed inductive thrusters
 - pulsed plasma thrusters
 - rocket engines
 - rocket-based combined-cycle engines
 - Rover project
 - solar sails
 - space flight
 - space station propulsion
 - space tugs

- total impulse
- VASIMR (propulsion system)
- spacecraft radiators**
 - UF *space radiators*
 - GS heat radiators
 - . **spacecraft radiators**
 - RT condensers (liquefiers)
 - cooling
 - cooling systems
 - radiative heat transfer
 - solar reflectors
- spacecraft recovery**
 - UF *satellite capture*
 - snatching*
 - RT booster recovery
 - Discoverer recovery capsules
 - recoverable spacecraft
 - ∞ recovery
 - recovery parachutes
 - recovery zones
 - rescue operations
 - reusable launch vehicles
 - Space Shuttle orbiters
 - space shuttles
 - water landing
- spacecraft reentry**
 - GS atmospheric entry
 - . reentry
 - . . **spacecraft reentry**
 - . . . uncontrolled reentry (spacecraft)
 - RT Earth-Venus trajectories
 - entry guidance (STS)
 - flight mechanics
 - hypersonic reentry
 - lifting reentry vehicles
 - manned reentry
 - return to Earth space flight
 - satellite lifetime
 - spacecraft breakup
- spacecraft reliability**
 - GS reliability
 - . **spacecraft reliability**
 - RT circuit reliability
 - component reliability
 - controllability
 - prelaunch problems
 - quality control
 - spacecraft maintenance
- spacecraft rendezvous*
 - USE **space rendezvous**
- spacecraft sensors*
 - USE **spacecraft instruments**
- spacecraft shielding**
 - GS shielding
 - . **spacecraft shielding**
 - RT aeroshells
 - heat shielding
 - ∞ insulated structures
 - meteoroid protection
 - nose cones
 - radiation shielding
 - radio frequency shielding
 - reentry shielding
 - reusable heat shielding
 - safety devices
 - solar radiation shielding
- spacecraft stability**
 - UF *satellite attitude disturbance*
 - GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . **spacecraft stability**
 - stability
 - . dynamic stability
 - . . motion stability
 - . . . **spacecraft stability**
 - RT aerodynamic balance
 - aerodynamic stability
 - attitude stability
 - buffeting
 - control stability
 - counterbalances
- directional stability
- Discos (satellite attitude control)
- dual spin spacecraft
- lateral stability
- liquid sloshing
- longitudinal stability
- low speed stability
- nutation dampers
- satellite perturbation
- tumbling motion
- wind tunnel stability tests
- spacecraft sterilization**
 - GS cleaning
 - . sterilization
 - . . **spacecraft sterilization**
 - decontamination
 - . **spacecraft sterilization**
 - RT chemical sterilization
 - ethylene oxide
 - exobiology
 - planetary protection
 - planetary quarantine
 - purification
 - sterilization effects
- spacecraft structures**
 - RT aeroshells
 - aircraft structures
 - folding structures
 - fuel tanks
 - large space structures
 - meteoroid protection
 - orbital assembly
 - rocket engines
 - satellite design
 - smart structures
 - space erectable structures
 - space station structures
 - structural design
 - ∞ structures
- spacecraft survivability**
 - DEF The ability of a spacecraft to survive adverse conditions including reentry problems.
 - RT aircraft survivability
 - spacecraft breakup
 - spacecraft defense
 - survival
 - uncontrolled reentry (spacecraft)
 - vulnerability
- spacecraft television**
 - GS communication equipment
 - . **spacecraft television**
 - . . digital spacecraft television
 - . . Ranger block 3 television system
 - . . satellite television
 - telecommunication
 - . **spacecraft television**
 - . . digital spacecraft television
 - . . Ranger block 3 television system
 - . . satellite television
 - television systems
 - . **spacecraft television**
 - . . digital spacecraft television
 - . . Ranger block 3 television system
 - . . satellite television
 - RT color television
 - satellite transmission
 - stereotelevision
 - television transmission
- spacecraft temperature**
 - GS **spacecraft temperature**
 - . satellite temperature
 - RT heat pipes
 - spacecraft design
 - temperature control
- spacecraft tracking**
 - DEF The process of following the movements of a spacecraft or space platform by radar, optical, or other means.
 - GS tracking (position)
 - . **spacecraft tracking**
 - . . satellite tracking
 - . . . satellite-to-satellite tracking
 - RT Advanced Range Instrumentation
 - Ship
- Deep Space Network
- minitrack system
- missile tracking
- optical tracking
- polystation doppler tracking system
- radar tracking
- radio tracking
- space detection and tracking system
- space surveillance (ground based)
- space surveillance (spaceborne)
- tracking networks
- tracking stations
- transponder control group
- unified S band
- Spacecraft Tracking and Data Network*
 - USE **STDN (network)**
- spacecraft trajectories**
 - GS trajectories
 - . **spacecraft trajectories**
 - . . interplanetary trajectories
 - . . . Earth-Mars trajectories
 - . . . Earth-Mercury trajectories
 - . . . Earth-Venus trajectories
 - . . lunar trajectories
 - . . . circumlunar trajectories
 - . . . Earth-Moon trajectories
 - . . . moon-Earth trajectories
 - RT ascent trajectories
 - descent trajectories
 - Earth orbital rendezvous
 - flight mechanics
 - Goddard Trajectory Determination System
 - hyperbolic trajectories
 - interorbital trajectories
 - lunar orbital rendezvous
 - ∞ motion
 - orbital rendezvous
 - radio occultation
 - reentry trajectories
 - rendezvous trajectories
 - round trip trajectories
 - swingby technique
- spacecrew transfer**
 - UF *intervehicle spacecrew transfer*
 - RT Apollo Soyuz test project
 - command modules
 - manned space flight
 - rendezvous spacecraft
 - space logistics
- spacecrews**
 - GS personnel
 - . crews
 - . . flight crews
 - . . . **spacecrews**
 - fllying personnel
 - . . flight crews
 - . . . **spacecrews**
 - RT astronauts
 - cosmonauts
 - crew experiment stations
 - crew observation stations
 - crew procedures (inflight)
 - crew procedures (preflight)
 - crew workstations
 - space habitats
 - toilets
- Spacelab**
 - GS laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Spacelab**
 - manned spacecraft
 - . manned orbital laboratories
 - . . **Spacelab**
 - payloads
 - . Space Shuttle payloads
 - . . **Spacelab**
 - RT Advanced Technology Laboratory
 - annular suspension and pointing system
 - EXPOS (Spacelab payload)
 - geophysical fluid flow cells
 - German Infrared Laboratory
 - Get Away Specials (STS)

Spacelab payloads

GRIST (telescope)
LIRTS (telescope)
NASA programs
OSTA-2 payload
SEPAC (payload)
Skylab program
space shuttles
space transportation system
spaceborne experiments
Starlab

Spacelab payloads

DEF A general, collective term for the diverse and numerous ESA payloads planned for space experiments.

GS payloads
. **Spacelab payloads**
. . . AMPS (satellite payload)
. . . Atmospheric Cloud Physics Lab (Spacelab)
. . . Atmospheric General Circulation Experiment
. . . geophysical fluid flow cells
. . . Solar Cell Calibration Facility
RT annular suspension and pointing system
Astro missions (STS)
Get Away Specials (STS)
sortie systems
space station payloads

Spacelab simulation flights

USE **Assess program**

Spacelab UV-Optical Telescope Facility

USE **Starlab**

spacers

RT bushings
dividers
fasteners
inserts
isolators
separators
spacing
washers (spacers)

spacetennas

DEF The transmitting antennas of a solar power satellite transmission system which directs the high-power beam from space to a focus on the rectennas on Earth.

GS antennas
. radio antennas
. . . microwave antennas
. . . **spacetennas**
microwave equipment
. microwave antennas
. . **spacetennas**
radio equipment
. radio antennas
. . . microwave antennas
. . . **spacetennas**
RT microwave transmission
rectennas

space-time adaptive processing

(added November 2002)

DEF Multidimensional filtering technique that reduces the effects of airborne radar clutter and white noise jamming by using the input from a phased-array antenna to produce an adaptive weight vector which can then be applied to the signal.

UF **STAP (radar)**
GS data processing
. signal processing
. . **space-time adaptive processing**
RT adaptive filters
airborne radar clutter
interference immunity
jamming
radar detection
radar filters
surveillance radar

space-time CE/SE method

(added June 2002)

DEF A numerical framework used for solving

conservation laws in continuum mechanics, where both local and global flux conservations are enforced in space and time. The method is characterized by low dispersion errors and low dissipation.

UF **CE/SE method**
conservation element and solution element

GS analysis (mathematics)
. numerical analysis
. . **space-time CE/SE method**

RT aeroacoustics
computational fluid dynamics
conservation equations
conservation laws
flow equations

space-time continuum

USE **relativity**

space-time functions

UF *space-time metric*
GS functions (mathematics)
. **space-time functions**
RT light-cone expansion
Minkowski space
naked singularities
relativity
Yang-Mills theory

space-time metric

USE **space-time functions**

spacewalks

(added April 2001)

USE **extravehicular activity**

spacing

GS **spacing**
. aircraft approach spacing
RT altitude control
attitude control
clearances
intervals
isolation
positioning
 ∞ separation
spacers
thickness

SPADATS (tracking system)

USE **space detection and tracking system**

Spain

GS nations
. **Spain**
. . . Canary Islands
RT Andorra
Europe
Gibraltar
Pyrenees Mountains (Europe)
Spanish Sahara
Spanish space program

spallation

GS nuclear radiation
. **spallation**
nuclear reactions
. **spallation**
RT particle production

spalling

DEF Spontaneous separation of a surface layer from a metal.

RT chipping
flaking
fracturing
fragmentation
wear
wear tests

∞ span

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT aspect ratio
dimensions
life span
width

wing span

Spanish Sahara

RT Africa
nations
Spain

Spanish space program

(added March 1989)

GS programs
. space programs
. . European space programs
. . . **Spanish space program**
RT Spain

spanloader aircraft

DEF Advanced distributed-load cargo aircraft configurations in which the payloads are distributed across the span of the wing for a close match between aerodynamic and inertial loading for minimal bending stresses.

GS transport aircraft
. cargo aircraft
. . **spanloader aircraft**
RT ∞ aircraft
supercritical wings
swept wings

spanwise blowing

GS blowing
. **spanwise blowing**
RT cross flow
externally blown flaps
jet flow
lift augmentation
pressure distribution
tangential blowing
wing span

SPAR (rocket)

USE **Space Processing Applications Rocket**

spare parts

RT ∞ components
damage assessment
downtime
engine parts
inventory management
logistics management
maintenance
modules
redundant components
retirement for cause

spark chambers

GS ionization chambers
. **spark chambers**
measuring instruments
. counters
. . radiation counters
. . . **spark chambers**
. radiation measuring instruments
. . radiation counters
. . . **spark chambers**
RT bubble chambers
 ∞ chambers
cloud chambers
electric sparks
neutron counters

spark discharges

USE **electric sparks**

spark gaps

GS gaps
. **spark gaps**
RT arc generators
dielectrics
electric fields
electric sparks
electrical faults
multipactor discharges
potential gradients
trigatrons

spark ignition

GS ignition
. **spark ignition**
RT combustion

- electric ignition
electric sparks
eudiometers
- spark machining**
UF *electroerosion*
electrostatic erosion
GS cutting
. **spark machining**
machining
. **spark machining**
RT electroforming
erosion
metal cutting
piercing
- spark plugs**
RT arc generators
combustion chambers
electric sparks
igniters
ignition systems
internal combustion engines
- spark shadowgraph photography*
USE **shadowgraph photography**
- sparks**
GS **sparks**
. electric sparks
RT ignition
- Sparrow 2 missile**
GS missiles
. air to air missiles
. . Sparrow missiles
. . . **Sparrow 2 missile**
RT solid propellant rocket engines
- Sparrow 3 missile**
GS missiles
. air to air missiles
. . Sparrow missiles
. . . **Sparrow 3 missile**
RT liquid propellant rocket engines
- Sparrow missiles**
GS missiles
. air to air missiles
. . **Sparrow missiles**
. . . Sparrow 2 missile
. . . Sparrow 3 missile
RT solid propellant rocket engines
- Spartan missile**
GS missiles
. antimissile missiles
. . **Spartan missile**
RT Nike-Zeus missile
Sentinel system
Sprint missile
surface to air missiles
- Spartan satellites**
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Spartan satellites**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Spartan satellites**
RT astrophysics
solar physics
ultraviolet astronomy
- SPAS (ESA platforms)*
USE **Shuttle pallet satellites**
- spasms**
GS muscular function
. **spasms**
RT contraction
involuntary actions
muscles
- spatial dependencies**
GS dependence
. **spatial dependencies**
RT mathematical models
 ∞ space
- time dependence
- spatial distribution**
UF *Moliere formula*
spatial isotropy
GS distribution (property)
. **spatial distribution**
. . horizontal distribution
. . vertical distribution
. . . star distribution
. . geographic distribution
RT anisotropy
ion distribution
meteoroid concentration
particle density (concentration)
position (location)
satellite constellations
stereochemistry
teleconnections (meteorology)
temporal distribution
Voronoi diagrams
- spatial filtering**
GS filtration
. **spatial filtering**
RT aberration
attenuation
augmentation
blurring
 ∞ filters
Gabor filters
holography
images
 ∞ noise
photographs
photointerpretation
plane waves
resolution
speckle holography
- spatial isotropy*
USE **isotropy**
spatial distribution
- spatial marching**
DEF Techniques for solving partial differential equations that move along in a space direction.
RT acoustic ducts
duct geometry
numerical analysis
time marching
- spatial orientation*
USE **attitude (inclination)**
- spatial resolution**
DEF The precision with which an optical instrument can produce separable images of different points on an object.
GS resolution
. **spatial resolution**
RT atmospheric correction
high resolution
image processing
image resolution
imaging techniques
spectral resolution
temporal resolution
- SPDL*
USE **document markup languages**
- species diffusion**
GS diffusion
. **species diffusion**
RT biological diversity
evolution (development)
genetics
geographic distribution
- specific gravity*
USE **density (mass/volume)**
- specific heat**
DEF The ratio of the heat absorbed (or released) by unit mass of a system to the corresponding temperature rise (or fall). Used for Debye temperature and heat capacity.
UF *Debye temperature*
- heat capacity*
GS heat
. **specific heat**
thermodynamic properties
. thermophysical properties
. . **specific heat**
RT enthalpy
equipartition theorem
Gruneisen constant
heat budget
heat of fusion
ion temperature
Lewis numbers
melting points
neel temperature
thermal conductivity
thermal resistance
- specific impulse**
GS impulses
. **specific impulse**
RT mass flow rate
propellant mass ratio
propellants
propulsion system performance
propulsive efficiency
rocket propellants
rocket thrust
thermodynamic efficiency
thrust
total impulse
- specifications**
DEF Precise statements or sets of requirements to be satisfied by materials, products, systems, or services.
GS **specifications**
. aircraft specifications
. equipment specifications
. functional design specifications
RT aircraft performance
commonality
drawings
inspection
maintenance
 ∞ materials tests
mechanical properties
naming
performance tests
process control (industry)
procurement
quality
quality control
reliability
requirements
standardization
standards
technical writing
tolerances (mechanics)
user requirements
- specimen geometry**
GS geometry
. **specimen geometry**
RT fatigue tests
load tests
mechanical properties
tensile tests
- specimens**
RT Mars surface samples
samples
sampling
- speckle holography**
DEF An imaging technique whereby a speckle pattern results from laser illumination of a diffusely reflecting surface when interference occurs between the fields passing through the various portions of lens aperture. Information about the motion of an object can then be obtained from the imaged fringes resulting from the translation of two speckle patterns.
GS imagery
. photography
. . holography
. . . **speckle holography**
imaging techniques
. **speckle holography**
RT coherent light

speckle interferometry

- diffraction patterns
- hologrammetry
- holographic interferometry
- image correlators
- laser applications
- scatter plates (optics)
- spatial filtering
- speckle interferometry
- speckle patterns

speckle interferometry

DEF An imaging process whereby the pattern on the image plane of an interferometer is the result of interference between two mutually coherent, but randomly speckled, fields of two, lens formed images from laser illuminated, diffusely reflecting surfaces.

GS interferometry
 . **speckle interferometry**

RT diffraction patterns
Fresnel diffraction
Fresnel reflectors
infrared interferometers
isochromatics
laser applications
null zones
plasma flux measurement
Sagnac effect
scatter plates (optics)
speckle holography

speckle patterns

RT diffraction patterns
holography
laser outputs
light scattering

∞ patterns
speckle holography
surface roughness effects

spectra

UF *optical spectrum*

GS **spectra**
 . atomic spectra
 . continuous spectra
 . energy spectra
 . . . electronic spectra
 . . . neutron spectra
 . mass spectra
 . molecular spectra
 . . . electronic spectra
 . . . Raman spectra
 . . . rotational spectra
 . . . vibrational spectra
 . noise spectra
 . oxygen spectra
 . plasma spectra
 . power spectra
 . . . cepstra
 . radiation spectra
 . . . absorption spectra
 . . . Fraunhofer lines
 . . . Herzberg bands
 . . . telluric lines
 . . . electromagnetic spectra
 . . . gamma ray spectra
 . . . infrared spectra
 . . . line spectra
 Balmer series
 D lines
 electronic spectra
 Fraunhofer lines
 H lines
 H alpha line
 H beta line
 H gamma line
 K lines
 . . . Lyman spectra
 . . . Paschen series
 . . . Rydberg series
 . . . telluric lines
 . . . radio spectra
 microwave spectra
 . . . Raman spectra
 . . . stellar spectra
 solar spectra
 . . . UVB spectra
 . . . ultraviolet spectra
 . . . vibrational spectra
 . . . visible spectrum

 . . . x ray spectra
 . . . emission spectra
 . . . shock spectra
 . . . spectral bands
 . . . absorption spectra
 . . . Fraunhofer lines
 . . . Herzberg bands
 . . . telluric lines
 . . . diffuse interstellar bands
 . . . photoluminescent bands
 . . . Schumann-Runge bands
 . . . Swan bands
 . . . Vegard-Kaplan bands

RT astronomical spectroscopy
color
excitons
flux density
gamma ray spectrometers
isoelectronic sequence
spectral sensitivity
spectral shift control
spectral theory
spectrograms
spectrographs
spectrometers
spectroscopy
spectrum analysis
transition probabilities

spectral absorption

USE **absorption spectra**

spectral analysis

USE **spectrum analysis**

spectral bands

GS spectra
 . **spectral bands**
 . . . absorption spectra
 . . . Fraunhofer lines
 . . . Herzberg bands
 . . . telluric lines
 . . . diffuse interstellar bands
 . . . photoluminescent bands
 . . . Schumann-Runge bands
 . . . Swan bands
 . . . Vegard-Kaplan bands

RT band ratioing

∞ bands
electronic spectra
energy bands
frequencies
line spectra
visible spectrum
white noise

spectral correlation

GS correlation
 . **spectral correlation**

RT electromagnetic spectra
spectrophotography

spectral counterparts (astronomy)

(added August 2005)
DEF Corresponding radiation sources of different spectral regions that are believed to be associated with the same astronomical object.

RT gamma ray sources (astronomy)
radiation sources
radio sources (astronomy)
Swift observatory
x ray sources

spectral emission

GS emission
 . **spectral emission**

RT continuous spectra
electromagnetic radiation
emittance
incandescence
light emission
line spectra
nongray gas

∞ radiation
spectrograms
spectroscopy
spectrum analysis
spontaneous emission
ultraviolet emission

wavelengths

spectral energy distribution

GS distribution (property)
 . energy distribution
 . . . **spectral energy distribution**

RT ∞ distribution
electromagnetic radiation
energy spectra
fine structure
line spectra

spectral line width

GS bandwidth
 . **spectral line width**

RT line spectra
oscillator strengths

spectral lines

USE **line spectra**

spectral methods

RT computational fluid dynamics
differential equations

∞ methodology
spectrum analysis

spectral mixture analysis

(added July 2000)
DEF Linear algebraic method for defining subpixel fractions for each of the spectral end-members (e.g., ground cover categories) that constitute a mixed-pixel spectral signature.

UF *SMA (image analysis)*

GS discrimination
 . **spectral mixture analysis**
 . image analysis
 . **spectral mixture analysis**
 . spectrum analysis
 . **spectral mixture analysis**

RT image processing
pixels
principal components analysis
remote sensing
spectral reflectance

spectral noise

USE **white noise**

spectral reconnaissance

GS reconnaissance
 . **spectral reconnaissance**

RT Earth resources
electromagnetic spectra
multispectral band scanners
multispectral photography
multispectral radar
photoreconnaissance
radar photography
satellite-borne photography
spectrophotography

spectral reflectance

DEF The ratio of the reflected flux to the spectrally homogeneous incident flux.

GS electromagnetic properties
 . optical properties
 . . . reflectance
 . . . **spectral reflectance**
 . surface properties
 . **spectral reflectance**

RT bidirectional reflectance
imaging spectrometers
leaf area index
plant stress
spectral mixture analysis
spectrometers
spectroscopy
spectrum analysis
vegetative index

spectral resolution

GS resolution
 . **spectral resolution**

RT analog computers
Landsat 6
Landsat 7
line spectra
Q factors
radar resolution

radiometric resolution
 spatial resolution
 spectrum analysis

spectral response
 (added August 2000)
 USE **spectral sensitivity**

spectral sensitivity
 DEF In electronics, radiant sensitivity considered as a function of wavelength, or in physics, the response of a device or material to monochromatic light as a function of wavelength; also known as spectral response.
 UF *spectral response*
 GS sensitivity
 . **spectral sensitivity**
 RT frequency response
 instrument errors
 photothermal conversion
 spectra

spectral shift control
 DEF Type of reactor moderator control in which the neutron spectrum is intentionally changed.
 RT ∞ control
 spectra

spectral shift control reactor
 GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . pressurized water reactors
 **spectral shift control reactor**
 RT ∞ control

spectral signatures
 GS signatures
 . **spectral signatures**
 . . microwave signatures
 RT cepstral analysis
 chemical analysis
 chemical composition
 crop identification
 emission spectra
 identifying
 optical measurement
 spectrum analysis

spectral theory
 RT Lyman spectra
 spectra
 ∞ theories

spectrograms
 RT line spectra
 spectra
 spectral emission
 spectrographs
 spectrophotography
 spectroscopy
 spectrum analysis

spectrographs
 GS **spectrographs**
 . high dispersion spectrographs
 RT spectra
 spectrograms
 spectrometers
 spectroscopic analysis
 spectroscopy

spectroheliographs
 DEF Instruments for taking photographs (spectroheliograms) of the image of the sun in monochromatic light. The wavelength of light chosen for this purpose corresponds to one of the Fraunhofer lines, usually the light of hydrogen or ionized calcium. Used for heliography, heliography, and spectrohelioscopes.
 UF *heliographs*
heliography
spectrohelioscopes
 GS imagery
 . **spectroheliographs**
 measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . **spectroheliographs**

. spectrometers
 . . **spectroheliographs**
 optical equipment
 . **spectroheliographs**
 solar instruments
 . **spectroheliographs**
 RT black and white photography
 coronagraphs
 solar spectrometers
 Starsat telescope

spectrohelioscopes
 USE **spectroheliographs**

spectrometers
 UF *spectroscopes*
 GS measuring instruments
 . **spectrometers**
 . . Ebert spectrometers
 . . Fabry-Perot spectrometers
 . . gamma ray spectrometers
 . . imaging spectrometers
 . . infrared spectrometers
 . . . filter wheel infrared spectrometers
 . . laser spectrometers
 . . mass spectrometers
 . . microwave spectrometers
 . . neutron spectrometers
 . . Solar Backscatter UV Spectrometer
 . . solar spectrometers
 . . spectroheliographs
 . . time of flight spectrometers
 . . ultraviolet spectrometers
 . . . high dispersion spectrographs
 . . . Total Ozone Mapping Spectrometer
 . . Alpha Magnetic Spectrometer
 . . x ray spectrometers
 RT actinometers
 chemical analysis
 diffractometers
 electron probes
 goniometers
 **spectroradiometers**
 Michelson interferometers
 optical equipment
 optical measurement
 photogoniometers
 photographic measurement
 photometers
 radiation counters
 solar instruments
 spectra
 spectral reflectance
 spectrographs
 spectroradiometers
 spectroscopic analysis
 spectroscopy
 spectrum analysis

spectrometry
 USE **spectroscopy**

spectrophotography
 GS imagery
 . photography
 . . **spectrophotography**
 spectroscopy
 . **spectrophotography**
 RT black and white photography
 ground truth
 spectral correlation
 spectral reconnaissance
 spectrograms

spectrophotometers
 GS measuring instruments
 . optical measuring instruments
 . . **spectrophotometers**
 . . . infrared spectrophotometers
 . . . ultraviolet spectrophotometers
 . radiation measuring instruments
 . . actinometers
 . . . **spectrophotometers**
 infrared spectrophotometers
 ultraviolet spectrophotometers
 optical equipment
 . optical measuring instruments
 . . **spectrophotometers**

. . . infrared spectrophotometers
 . . . ultraviolet spectrophotometers
 RT chemical analysis
 duochromators
 monochromators
 optical measurement
 photometers
 radiometers
 spectroradiometers
 spectroscopic analysis
 spectroscopy

spectrophotometry
 GS optical measurement
 . photometry
 . . **spectrophotometry**
 . . . stellar spectrophotometry
 spectroscopy
 . **spectrophotometry**
 . . stellar spectrophotometry
 RT astronomical photometry
 colorimetry
 imaging spectrometers
 spectroscopic analysis

spectrophotovoltaics
 DEF The enhancement of solar cell productivity by concentrating and subdividing the sunlight spectrum and focusing on specific spectrum efficient solar cells.
 RT energy conversion efficiency
 energy spectra
 solar cells
 solar collectors

spectropolarimeters
 USE **polarimeters**

spectroradiometers
 GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . radiometers
 **spectroradiometers**
 MISR (radiometry)
 MODIS (radiometry)
 RT spectrometers
 spectrophotometers

spectroscopes
 USE **spectrometers**

spectroscopic analysis
 SN (FOR SPECTROSCOPIC TOOLS IN CHEMICAL ANALYSIS)
 GS chemical tests
 . chemical analysis
 . . **spectroscopic analysis**
 spectroscopy
 . **spectroscopic analysis**
 RT Auger spectroscopy
 auroral spectroscopy
 electrophotometry
 flame spectroscopy
 Fraunhofer line discriminators
 gas spectroscopy
 inductively coupled plasma mass spectrometry
 infrared spectroscopy
 laser spectroscopy
 laser-induced breakdown spectroscopy
 magnetic spectroscopy
 mass spectroscopy
 metallicity
 microanalysis
 molecular spectroscopy
 neutron activation analysis
 nuclear radiation spectroscopy
 photoelectron spectroscopy
 qualitative analysis
 quantitative analysis
 Raman spectroscopy
 spectrographs
 spectrometers
 spectrophotometers
 spectrophotometry
 ultraviolet spectroscopy
 vacuum spectroscopy

spectroscopic telescopes

x ray spectroscopy

spectroscopic telescopes

UF *diffraction telescopes*

GS telescopes

. **spectroscopic telescopes**

. . multispectral tracking telescopes

. . stratoscope telescopes

RT astronomical spectroscopy

reflecting telescopes

refracting telescopes

stellar spectrophotometry

spectroscopy

UF *spectrometry*

GS **spectroscopy**

. absorption spectroscopy

. . optogalvanic spectroscopy

. astronomical spectroscopy

. . stellar spectrophotometry

. Auger spectroscopy

. auroral spectroscopy

. electron spectroscopy

. flame spectroscopy

. gas spectroscopy

. holographic spectroscopy

. infrared spectroscopy

. ion mobility spectroscopy

. laser-induced breakdown

 spectroscopy

. magnetic spectroscopy

. . magnetic resonance spectroscopy

. mass spectroscopy

. . inductively coupled plasma mass

 spectrometry

. . secondary ion mass spectrometry

. molecular spectroscopy

. . Raman spectroscopy

. nuclear radiation spectroscopy

. optical emission spectroscopy

. . laser spectroscopy

. . . optogalvanic spectroscopy

. photoacoustic spectroscopy

. photoelectron spectroscopy

. radio spectroscopy

. spectrophotography

. spectrophotometry

. . stellar spectrophotometry

. photothermal deflection

 spectroscopy

. spectroscopic analysis

. ultrasonic spectroscopy

. ultraviolet spectroscopy

. vacuum spectroscopy

. x ray spectroscopy

RT chemical analysis

cinespectrographs

colorimetry

electrophotometry

Fraunhofer line discriminators

isoelectronic sequence

Lallemand cameras

∞ optics

photometry

pressure broadening

spectra

spectral emission

spectral reflectance

spectrograms

spectrographs

spectrometers

spectrophotometers

spectrum analysis

time of flight spectrometers

visible spectrum

x ray spectrometers

Zeeman effect

spectrum analysis

UF *spectral analysis*

GS **spectrum analysis**

. cepstral analysis

. flame spectroscopy

. maximum entropy method

. spectral mixture analysis

RT absorption spectra

∞ analyzing

emission spectra

frequency analyzers

frequency scanning

gamma ray spectrometers

holographic spectroscopy

hyperfine structure

Kramers-Kronig formula

laser spectroscopy

line spectra

magnetic resonance

optical resonance

signal analysis

spectra

spectral emission

spectral methods

spectral reflectance

spectral resolution

spectral signatures

spectrograms

spectrometers

spectroscopy

Stark effect

toroidal discharge

ultrasonic spectroscopy

ultraviolet spectroscopy

Zeeman effect

specular reflection

DEF Reflection in which the reflected radiation is not diffused; reflection as from a mirror.

GS reflection

. **specular reflection**

RT diffuse radiation

etalons

glare

mirrors

speech

GS **speech**

. articulation (speech)

. conversation

. phonemes

. phonetics

. talking

RT acoustics

auditory perception

consonants (speech)

English language

languages

lectures

linguistics

phonemics

public speaking

semantics

sentences

syntax

voice

voice communication

words (language)

speech baseband compression

DEF Technique for reducing the bandwidth required to represent the human voice waveform.

GS compressing

. **speech baseband compression**

RT bandwidth

vocoders

voice communication

waveforms

speech defects

GS defects

. **speech defects**

RT articulation (speech)

phonemics

phonetics

speech discrimination

USE **speech recognition**

speech recognition

UF *speech discrimination*

GS intelligibility

. **speech recognition**

recognition

. **speech recognition**

RT cepstral analysis

linguistics

phonemes

phonemics

phonetics

sensory discrimination

voice control

speeches

USE **lectures**

speed

USE **velocity**

speed control

UF *speed regulation*

RT automatic control

∞ control

control equipment

controllers

engine control

helicopter control

manual control

regulators

speed indicators

UF *Preston tubes*

speedometers

GS display devices

. **speed indicators**

. . tachometers

measuring instruments

. indicating instruments

. . **speed indicators**

. . . tachometers

RT accelerometers

aircraft instruments

anemometers

approach indicators

flight instruments

flowmeters

landing instruments

pitot tubes

velocity measurement

speed regulation

USE **speed control**

speed regulators

UF *governors*

GS control equipment

. regulators

. . **speed regulators**

RT controllers

engines

speedometers

USE **speed indicators**

spent fuels

DEF Nuclear reactor fuels irradiated to the extent that they no longer can effectively sustain a chain reaction.

GS fuels

. nuclear fuels

. . **spent fuels**

RT fuel capsules

neutron sources

∞ nuclear energy

nuclear fuel reprocessing

reactor materials

recycling

spermatocytes

USE **gametocytes**

spermatogenesis

RT abiogenesis

gametocytes

spermatozoa

spermatozoa

GS cells (biology)

. gametocytes

. . **spermatozoa**

RT fertilization

spermatogenesis

zygotes

Spert reactors

GS nuclear reactors

. liquid cooled reactors

. . water cooled reactors

. . . boiling water reactors

. . . **Spert reactors**

. nuclear research and test reactors

- .. **Spert reactors**
- SPF (materials)
 - USE **superplastic forming**
- sphalerite
 - USE **zincblende**
- spheres**
 - GS symmetrical bodies
 - . bodies of revolution
 - .. **spheres**
 - ... celestial sphere
 - ... concentric spheres
 - ... falling spheres
 - ... Poincare spheres
 - ... rotating spheres
 - RT aerodynamic configurations
 - asphericity
 - balls
 - circles (geometry)
 - Euclidean geometry
 - geometry
 - ∞ globes
 - globules
 - ∞ hemispheres
 - hemispherical shells
 - microballoons
 - nodules
 - ogives
 - spherical shells
 - spheroids
 - spherules
- spherical antennas**
 - GS antennas
 - . **spherical antennas**
 - RT communication equipment
 - electronic equipment
- spherical caps**
 - GS shells (structural forms)
 - . spherical shells
 - .. **spherical caps**
 - RT ∞ caps
 - coverings
 - nose cones
 - seals (stoppers)
- spherical coordinates**
 - DEF A system of curvilinear coordinates in which the position of a point in space is designated by its distance from the origin or pole (the radius vector), the angle phi between the radius vector and a vertically directed polar axis (the cone angle or coaltitude) and the angle theta between the plane of the phi and a fixed meridian plane through the polar axis (the polar angle or longitude). Used for curvilinear coordinates.
 - UF *curvilinear coordinates*
 - GS coordinates
 - . **spherical coordinates**
 - RT astronomical coordinates
 - celestial reference systems
 - geocentric coordinates
 - planetocentric coordinates
 - polar coordinates
 - position (location)
 - ∞ reference systems
- spherical harmonics**
 - GS analysis (mathematics)
 - . complex variables
 - .. **spherical harmonics**
 - functions (mathematics)
 - . **spherical harmonics**
 - harmonics
 - . **spherical harmonics**
 - RT Legendre functions
- spherical plasmas**
 - DEF Confined circular plasmas.
 - GS particles
 - . charged particles
 - .. energetic particles
 - ... plasmas (physics)
 - ... **spherical plasmas**
 - . corpuscular radiation
 - . energetic particles
 - ... plasmas (physics)
- ... **spherical plasmas**
- space plasmas
- spherical shells**
 - GS shells (structural forms)
 - . **spherical shells**
 - .. spherical caps
 - RT bodies of revolution
 - circular shells
 - hemispherical shells
 - metal shells
 - reinforced shells
 - rotating spheres
 - spheres
 - stressed-skin structures
 - thin walled shells
- spherical tanks**
 - GS tanks (containers)
 - . **spherical tanks**
 - RT fuel tanks
 - pressure vessels
 - propellant tanks
 - storage tanks
- spherical waves**
 - RT cylindrical waves
 - diffraction paths
 - diffraction propagation
 - elastic waves
 - electromagnetic radiation
 - Huygens principle
 - plane waves
 - point sources
 - three dimensional flow
 - ∞ waves
- spheroids**
 - DEF Ellipsoids; figure resembling spheres.
 - GS geometry
 - . Euclidean geometry
 - .. analytic geometry
 - ... **spheroids**
 - ... oblate spheroids
 - ... prolate spheroids
 - RT falling spheres
 - geoids
 - spheres
- spheromaks**
 - DEF Toroidal fusion reactors.
 - GS nuclear reactors
 - . fusion reactors
 - .. **spheromaks**
 - RT dense plasmas
 - magnetic field configurations
 - magnetic mirrors
 - plasma control
 - plasma currents
 - ∞ reactors
 - tokamak devices
 - toroidal plasmas
- spherules**
 - GS **spherules**
 - . spherulites
 - RT crystals
 - spheres
- spherulites**
 - GS crystals
 - . crystallites
 - .. **spherulites**
 - spherules
 - . **spherulites**
 - RT crystal structure
 - microcrystals
 - microstructure
 - nodules
 - rosette shapes
- SPHINX**
 - SN (SPACE PLASMA HIGH VOLTAGE INTERACTION EXPERIMENTS)
 - UF *space plasma H/V interaction experiments*
 - RT NASA programs
 - plasma interaction experiment
 - plasma-particle interactions
 - plasmas (physics)
 - ∞ research projects
- sphygmography**
 - RT arteries
 - bioinstrumentation
 - blood pressure
 - heart rate
 - ∞ measurement
 - recording instruments
- spicules**
 - DEF Bright spikes extending into the chromosphere of the sun from below.
 - GS stellar activity
 - . solar activity
 - .. **spicules**
 - RT chromosphere
 - photosphere
 - solar atmosphere
- spiders**
 - GS animals
 - . invertebrates
 - .. arthropods
 - ... **spiders**
- spike antennas*
 - USE **monopole antennas**
- spike nozzles**
 - GS exhaust nozzles
 - . **spike nozzles**
 - RT aerospike engines
 - conical nozzles
 - nozzle geometry
 - ∞ nozzles
 - plug nozzles
 - rocket nozzles
 - ∞ spikes
- spike potentials**
 - GS potential energy
 - . electric potential
 - .. **spike potentials**
 - RT bioelectricity
 - depolarization
 - ∞ spikes
- ∞ **spikes**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT fasteners
 - holders
 - monopole antennas
 - pins
 - spike nozzles
 - spike potentials
 - spikes (aerodynamic configurations)
- spikes (aerodynamic configurations)**
 - RT ∞ spikes
 - wind tunnels
- spiking**
 - RT electron beam welding
 - melting
 - metal cutting
- spilling**
 - RT dumping
 - emptying
 - jettisoning
 - oil slicks
 - releasing
 - spreading
- spin**
 - GS **spin**
 - . metal spinning
 - .. hydrospinning
 - . particle spin
 - .. electron spin
 - .. isotopic spin
 - .. nuclear spin
 - . spin-orbit interactions
 - .. electron capture
 - . spin-spin coupling
 - RT angular momentum
 - nuclear capture
 - ∞ spinners

spin decoupling

yo-yo devices

spin decoupling

- GS decoupling
- . **spin decoupling**
- RT photomagnetic effects

spin dynamics

- RT aircraft spin
- artificial gravity
- dynamic tests
- ∞ dynamics
- electron spin
- gyration
- lunar rotation
- rotating matter

spin exchange

- GS exchanging
- . **spin exchange**
- RT resonance charge exchange

spin forging

- USE **metal spinning**

spin glass

DEF A magnetic alloy in which the concentration of magnetic atoms is such that below a certain temperature their magnetic moments are no longer able to fluctuate thermally in time but are still directed at random in loose analogy to the atoms of ordinary glass.

- GS glass
- . **spin glass**
- RT amorphous materials
- magnetic properties
- metallic glasses
- spin-lattice relaxation
- superconductivity

spin reduction

- UF *despinning*
- jet damping*
- GS rates (per time)
- . acceleration (physics)
- . . . deceleration
- . . . **spin reduction**
- RT angular acceleration
- destabilization
- gravity gradient satellites
- ∞ reduction
- satellite rotation
- yo-yo devices

spin resonance

- GS resonance
- . **spin resonance**
- RT nuclear magnetic resonance
- particle spin

spin stabilization

DEF Directional stability of a spacecraft obtained by the action of gyroscopic forces which result from spinning the body about its axis of symmetry.

- GS stabilization
- . **spin stabilization**
- RT attitude control
- coning motion
- dual spin spacecraft
- missiles
- OV-1 satellites
- OV-2 satellites
- OV-3 satellites
- OV-4 satellites
- OV-5 satellites
- satellite orientation
- satellite rotation
- Space Shuttle upper stage D
- space stations
- ∞ spinners

spin temperature

- SN (LIMITED TO ASTROPHYSICS)
- GS temperature
- . **spin temperature**
- RT absorption spectra
- astrophysics
- hydrogen clouds
- interstellar gas

interstellar matter

spin tests

- UF *whirling tests*
- RT angular momentum
- dynamic tests
- environmental tests
- load tests
- polarization (spin alignment)
- ∞ tests
- whirl towers

spin waves

- USE **magnons**

spinach

- GS farm crops
- . **spinach**
- plants (botany)
- . **spinach**
- vegetables
- . **spinach**
- RT ∞ food

spinal cord

- GS anatomy
- . nervous system
- . . . central nervous system
- . . . **spinal cord**
- RT bones
- brain
- neuroglia
- spinal cord injuries
- spine

spinal cord injuries

(added August 2004)

DEF Penetrating and non-penetrating injuries to the spinal cord resulting from traumatic external forces.

- GS injuries
- . **spinal cord injuries**
- RT back injuries
- spinal cord
- spine
- whiplash injuries

spindles

- RT shafts (machine elements)
- spools
- winding

spine

- UF *vertebral column*
- GS anatomy
- . musculoskeletal system
- . . . bones
- . . . **spine**
- vertebrae
- RT sciatic region
- spinal cord
- spinal cord injuries

spinel

- GS minerals
- . **spinel**
- RT aluminates
- ferrites
- igneous rocks

spin-lattice relaxation

- GS magnetic properties
- . magnetic relaxation
- . . **spin-lattice relaxation**
- relaxation (mechanics)
- . **spin-lattice relaxation**
- RT lattice vibrations
- nuclear magnetic resonance
- relaxation time
- spin glass

∞ spinners

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT antenna components
- fairings
- slewing
- spin

spin stabilization

spinning (metallurgy)

- USE **metal spinning**

spinning solid upper stage

DEF Space Shuttle upper stage designed for launching of satellites not requiring the full capacity of the interim upper stage; does not require inertial guidance system nor three-axis stabilization; can handle payloads of the class now launched by Delta or Atlas/ Centaur.

- GS Space Shuttle upper stages
- . **spinning solid upper stage**
- RT booster rocket engines
- upper stage rocket engines

spinning unguided rocket trajectory

- UF *SPURT (trajectories)*

- GS trajectories
- . **spinning unguided rocket trajectory**
- RT equations of motion
- missile trajectories
- rotating bodies
- symmetrical bodies

spinor groups

- GS algebra
- . lie groups
- . . **spinor groups**
- geometry
- . differential geometry
- . . lie groups
- . . . **spinor groups**

spin-orbit interactions

- GS nuclear reactions
- . nuclear interactions
- . . **spin-orbit interactions**
- . . . electron capture
- particle interactions
- . nuclear interactions
- . . **spin-orbit interactions**
- . . . electron capture
- spin
- . **spin-orbit interactions**
- . . electron capture
- RT ∞ interactions

spin-spin coupling

- GS coupling
- . **spin-spin coupling**
- spin
- . **spin-spin coupling**
- RT couples
- cross relaxation

spiral antennas

- GS antennas
- . **spiral antennas**
- . . log spiral antennas
- RT antenna design
- broadband
- telemetry

spiral bevel gears

(added May 1999)

- GS gears
- . bevel gears
- . . **spiral bevel gears**

spiral galaxies

- GS celestial bodies
- . galaxies
- . . **spiral galaxies**
- . . . Andromeda Galaxy
- . . . barred galaxies
- . . . Milky Way Galaxy
- RT corotation
- density wave model
- disk galaxies
- elliptical galaxies
- galactic bulge
- galactic halos
- local group (astronomy)
- Maffei galaxies
- peculiar galaxies
- ring galaxies
- Seyfert galaxies

- Tully-Fisher relation
- Virgo galactic cluster
- spiral wrapping**
 - RT composite materials
 - composite wrapping
 - isotensoid structures
 - packaging
 - ∞ spirals
 - winding
- ∞ **spirals**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT curves (geometry)
 - ∞ helices
 - spiral wrapping
 - spirals (concentrators)
- spirals (concentrators)**
 - GS concentrators
 - . **spirals (concentrators)**
 - separators
 - . **spirals (concentrators)**
 - RT classifiers
 - ∞ spirals
- spirometers**
 - RT heart minute volume
 - lungs
 - respiratory rate
- Spitsbergen (Norway)**
 - RT archipelagoes
 - Arctic Ocean
 - ocean currents
- Spitzer Space Telescope*
(added December 2003)
- USE **Space Infrared Telescope Facility**
- splashing**
 - UF *swash*
 - RT agitation
 - surface waves
 - ullage
 - water landing
- spleen**
 - GS anatomy
 - . immune systems
 - . . lymphatic system
 - . . . **spleen**
 - RT polycythemia
- splicing**
 - RT fasteners
 - ∞ joining
 - ∞ tapes
 - wiring
- spline functions**
 - GS functions (mathematics)
 - . **spline functions**
 - RT approximation
 - matrix methods
- splines**
 - RT couplings
 - fasteners
 - holders
- splints**
 - RT bones
 - casts
 - first aid
- split flaps**
 - GS airfoils
 - . flaps (control surfaces)
 - . . **split flaps**
 - brakes (for arresting motion)
 - . aerodynamic brakes
 - . . **split flaps**
 - . aircraft brakes
 - . . **split flaps**
 - control surfaces
 - . flaps (control surfaces)
 - . . **split flaps**
 - drag devices
- . aerodynamic brakes
- . . **split flaps**
- RT jet flaps
- leading edge slats
- trailing edge flaps
- wing flaps
- splits (geology)*
- USE **geological faults**
- splitting**
 - GS **splitting**
 - . flux difference splitting
 - . flux vector splitting
 - . water splitting
 - RT chipping
 - cutting
 - fission
 - flaking
 - fracturing
 - laser cutting
 - ∞ separation
 - slicing
- spodumene**
 - GS aluminum compounds
 - . **spodumene**
 - chalcogenides
 - . oxides
 - . . silicon oxides
 - . . . **spodumene**
 - lithium compounds
 - . **spodumene**
 - minerals
 - . **spodumene**
 - silicon compounds
 - . silicates
 - . . sodium silicates
 - . . . **spodumene**
 - . silicon oxides
 - . . **spodumene**
 - sodium compounds
 - . sodium silicates
 - . . **spodumene**
- spoiler slot ailerons**
 - GS airfoils
 - . ailerons
 - . . **spoiler slot ailerons**
 - control surfaces
 - . ailerons
 - . . **spoiler slot ailerons**
 - RT spoilers
- spoilers**
 - DEF Plates, series of plates, combs, tubes, bars, or other devices that project into the air-stream about bodies to break up or spoil the smoothness of the flow, especially such devices that project from the upper surface of an airfoil, giving increased drag and decreased lift.
 - GS airfoils
 - . **spoilers**
 - control surfaces
 - . **spoilers**
 - drag devices
 - . **spoilers**
 - RT aerodynamic brakes
 - boundary layer control
 - deflectors
 - flaps (control surfaces)
 - gust alleviators
 - leading edge slats
 - spoiler slot ailerons
 - vortex alleviation
 - wings
- spokes**
 - RT hubs
 - wheels
- sponges (materials)**
 - SN (ORGANIC OPEN-CELL STRUCTURES)
 - RT elastomers
 - ∞ materials
 - polyurethane foam
 - porous materials
- spontaneous combustion**
 - UF *autoignition*
- self ignition*
- GS combustion
- . **spontaneous combustion**
- RT combustion temperature
- explosions
- fire point
- fire prevention
- flammability
- flash point
- fuel combustion
- hazards
- hypergolic rocket propellants
- ignition
- ignition temperature
- propellant sensitivity
- pyrophoric materials
- spontaneous emission**
 - GS emission
 - . **spontaneous emission**
 - RT atomic energy levels
 - electromagnetic radiation
 - emission spectra
 - spectral emission
- spools**
 - RT ∞ containers
 - inserts
 - magazines (supply chambers)
 - reels
 - spindles
- sporadic E layer**
 - GS Earth atmosphere
 - . upper atmosphere
 - . . Earth ionosphere
 - . . . E region
 - **sporadic E layer**
 - regions
 - . E region
 - . . **sporadic E layer**
 - RT E-1 layer
 - E-2 layer
 - midlatitude atmosphere
- sporadic meteoroids**
 - SN (METEOROIDS NOT ASSOCIATED WITH A METEOROID SHOWER OR STREAM)
 - GS celestial bodies
 - . meteoroids
 - . . **sporadic meteoroids**
 - RT meteor trails
 - meteoroid concentration
- spores**
 - DEF The reproductive elements of the lower forms of living organisms, usually unicellular.
 - GS **spores**
 - . microspores
 - RT biological weapons
 - fungi
 - microorganisms
 - plants (botany)
 - protozoa
 - tetrad theory
- sports medicine**
 - GS medical science
 - . **sports medicine**
 - RT aerospace medicine
 - athletes
 - clinical medicine
 - exercise physiology
 - physical fitness
 - physiological effects
- SPOT (French satellite)**
 - DEF French satellite with high visible resolution for observations of the Earth. It was launched in February 1986. The acronym is derived from the French, Satellite Pour Observation de la Terre.
 - GS artificial satellites
 - . French satellites
 - . . **SPOT (French satellite)**
 - RT crop identification
 - Earth observations (from space)
 - Earth resources
 - land use
 - mapping

spot welds

soil mapping
stereophotography

spot welds

GS joints (junctions)
. metal joints
. . . welded joints
. . . **spot welds**
RT arc welding
beads
electric welding
fusion welding
pressure welding
ultrasonic welding

spray characteristics

RT ∞ characteristics
sprayers
spraying

spray condensers

RT jet condensers
sprayers

spray ingestion

RT gas turbines
landing gear
salt spray tests

spray nozzles

RT annular nozzles
conical nozzles
fuel injection
fuel systems
injectors
∞ nozzles
orifices
sprayers

sprayed coatings

UF *sprayed protective coatings*
GS coatings
. **sprayed coatings**
RT ceramic coatings
finishes
HVOF thermal spraying
lacquers
metal coatings
paints
plasma spraying
plastic coatings
primers (coatings)
protective coatings
varnishes

sprayed protective coatings
USE **protective coatings**
sprayed coatings

sprayers

UF *spraying apparatus*
sprays
RT atomizers
blowers
colloidal generators
contactors
∞ containers
∞ diffusers
dispensers
distributors
drops (liquids)
ejectors
fuel sprays
∞ jets
materials handling
mixers
∞ nozzles
propellant sprays
spray characteristics
spray condensers
spray nozzles
spraying
vaporizers

spraying

GS **spraying**
. arc spraying
. crop dusting
. flame spraying
. . . HVOF thermal spraying

. metal spraying
. plasma spraying
RT aeration
aerosols
atomizing
blowing
coating
coatings
diffusion
dispersing
entrainment
forming techniques
fumigation
liquid atomization
metallizing
mixing
premixing
sealing
spray characteristics
sprayers
sprinkling
vaporizing
wetting

spraying apparatus

USE **sprayers**

sprays

USE **sprayers**

spread F

RT F 2 region
ionospheric storms
magnetic storms

spread reflection

DEF Reflection of electromagnetic radiation from a rough surface with large irregularities. Also known as mixed reflection.

GS reflection

. **spread reflection**

RT glare

infrared reflection
optical reflection
scattering
signal reflection
ultraviolet reflection
wave reflection

spread spectrum transmission

DEF Communications technique with many different signal waveforms transmitted in a wide band; power is spread thinly over the band so that narrow-band radios can operate within the band without interference.

GS transmission

. electromagnetic wave transmission
. . . radio transmission
. . . **spread spectrum transmission**
. signal transmission
. . . radio transmission
. . . **spread spectrum transmission**

RT communication

frequency hopping

spreading

RT adhesion
cohesion
diffusion
dispersing
disposal
dumping
emptying
interfacial tension
internal pressure
materials handling
scattering
∞ separation
spilling
swelling
throwing
unloading

spreadsheets

(added March 2001)

DEF Software applications that present a display of multiple columns and rows, and allow a user to input and manipulate numerical data for planning, tracking, analysis, and financial calculations.

GS computer programs
. applications programs (computers)
. . . **spreadsheets**

RT computer techniques
tables (data)

spring (season)

DEF The season of the year between winter and summer. Its beginning is the vernal equinox and its end the summer solstice.

GS seasons

. **spring (season)**

RT autumn
summer
winter

springs (elastic)

RT ∞ coils
energy storage
frames
oscillation dampers
oscillations
resilience
shock absorbers
suspension systems (vehicles)
vibration isolators

springs (water)

DEF Places where ground water flows naturally from rocks onto the land surface or into a body of surface water. Their occurrence depends on the nature and relationship of rocks, especially permeable and impermeable strata, on the position of the water table, and on the topography.

GS resources

. Earth resources
. . . **springs (water)**
water

. **springs (water)**

RT aquifers
fresh water
ground water
inland waters
lakes
oases
potable water
water tables
wells

sprinkling

RT scattering
spraying
wetting

Sprint missile

GS missiles
. antimissile missiles
. . . **Sprint missile**
. surface to air missiles
. . . **Sprint missile**
RT Nike-Zeus missile
Sentinel system
solid propellant rocket engines
Spartan missile

SPRITE detectors

(added January 2000)

USE **infrared detectors**

sprites (atmospheric physics)

(added January 2000)

DEF Short-lived luminosities observed at high altitudes above thunderstorms, apparently associated with upward discharges of thunderstorm electricity. They appear as columnar diffuse reddish glows between 30 km and 80 km above ground, lasting tens of milliseconds, following large positive cloud-to-ground lightning strokes.

UF *red sprites*

GS atmospheric radiation

. sky radiation
. . . **sprites (atmospheric physics)**
electromagnetic radiation
. light (visible radiation)
. . . sky radiation
. . . **sprites (atmospheric physics)**

RT atmospheric electricity
atmospheric ionization

- cloud-to-ground discharges
- elves
- lightning
- thunderstorms
- SPUR (reactors)*
- USE **space power unit reactors**
- SPURT (trajectories)*
- USE **spinning unguided rocket trajectory**
- Sputnik 1 satellite**
 - GS artificial satellites
 - . meteorological satellites
 - . . **Sputnik 1 satellite**
 - . Soviet satellites
 - . . . Sputnik satellites
 - **Sputnik 1 satellite**
 - Soviet spacecraft
 - . Sputnik satellites
 - . . **Sputnik 1 satellite**
- Sputnik 2 satellite**
 - GS artificial satellites
 - . biosatellites
 - . . **Sputnik 2 satellite**
 - . meteorological satellites
 - . . **Sputnik 2 satellite**
 - . Soviet satellites
 - . . . Sputnik satellites
 - **Sputnik 2 satellite**
 - Soviet spacecraft
 - . Sputnik satellites
 - . . **Sputnik 2 satellite**
- Sputnik 3 satellite**
 - GS artificial satellites
 - . geophysical satellites
 - . . **Sputnik 3 satellite**
 - . meteorological satellites
 - . . **Sputnik 3 satellite**
 - . Soviet satellites
 - . . . Sputnik satellites
 - **Sputnik 3 satellite**
 - Soviet spacecraft
 - . Sputnik satellites
 - . . **Sputnik 3 satellite**
- Sputnik 4 satellite**
 - GS artificial satellites
 - . Soviet satellites
 - . . Sputnik satellites
 - . . . **Sputnik 4 satellite**
 - Soviet spacecraft
 - . Sputnik satellites
 - . . **Sputnik 4 satellite**
- Sputnik 5 satellite**
 - GS artificial satellites
 - . Soviet satellites
 - . . Sputnik satellites
 - . . . **Sputnik 5 satellite**
 - Soviet spacecraft
 - . Sputnik satellites
 - . . **Sputnik 5 satellite**
 - RT Venus probes
- Sputnik satellites**
 - GS artificial satellites
 - . Soviet satellites
 - . . **Sputnik satellites**
 - . . . Sputnik 1 satellite
 - Sputnik 2 satellite
 - Sputnik 3 satellite
 - Sputnik 4 satellite
 - Sputnik 5 satellite
 - Soviet spacecraft
 - . **Sputnik satellites**
 - . . Sputnik 1 satellite
 - . . . Sputnik 2 satellite
 - Sputnik 3 satellite
 - Sputnik 4 satellite
 - Sputnik 5 satellite
- sputtering**
 - DEF Dislocation of surface atoms of a material from bombardment of high energy atomic particles.
 - GS **sputtering**
- . magnetron sputtering
- RT arc welding
- ∞ bombardment
 - deposition
 - duoplasmatrons
 - electron bombardment
 - emission
 - ion plating
 - ion sources
 - metal particles
 - plasma etching
 - surface finishing
 - thermal instability
- sputtering gages**
 - GS measuring instruments
 - . **sputtering gages**
 - RT metal films
 - thin films
- squalls**
 - GS wind (meteorology)
 - . **squalls**
 - RT ground wind
 - storms (meteorology)
- squama**
 - DEF A scale or structure resembling a scale.
 - RT fishes
- square waves**
 - DEF Oscillations, the amplitudes of which show periodic discontinuities between two values, remaining constant between jumps. Specifically, in radar pulses initiated by a rapid rise to peak power, maintained at a constant peak power over the finite pulse length, and terminated by rapid decrease from peak power.
 - GS waveforms
 - . **square waves**
 - RT form factors
 - pulse amplitude
 - pulse duration
 - sawtooth waveforms
 - time functions
 - wave functions
 - wave propagation
 - ∞ waves
- square wells**
 - DEF The impurity potential areas which bound an electron or hole in semiconducting crystals such as silicon.
 - RT electron mobility
 - magnetic fields
 - photoconductivity
 - vacancies (crystal defects)
 - wells
- squares (mathematics)**
 - GS geometry
 - . Euclidean geometry
 - . . polygons
 - . . . tetragons
 - **squares (mathematics)**
- squeeze casting**
 - (added September 1993)
 - DEF The technique of working liquid metals under pressure into near net shapes; it includes the technique of forging metal compounds.
 - GS forming techniques
 - . casting
 - . . **squeeze casting**
 - RT cast alloys
 - compressing
 - extruding
 - fabrication
 - forging
 - liquid metals
 - metal matrix composites
 - metal working
- squeeze films**
 - DEF Thin viscoelastic fluid films squeezed between two usually planar structures to serve as sealants, load dampers, lubricants, etc.
 - GS fluid films
 - . **squeeze films**
- RT boundary lubrication
 - elastohydrodynamics
 - ∞ films
 - gas bearings
 - gas lubricants
 - liquid-solid interfaces
 - lubricants
 - thin films
 - vapor phase lubrication
 - viscoelasticity
 - viscous fluids
- squeezed states (quantum theory)**
 - DEF Single mode minimum uncertainty states for which the fluctuations in one quadrature phase of the field are smaller than would occur for a coherent state. Used for two photon coherent states.
 - UF *two photon coherent states*
 - RT coherent electromagnetic radiation
 - coherent light
 - electromagnetic fields
 - fluctuation theory
 - light transmission
 - ∞ optics
 - photon density
 - quantum mechanics
 - quantum theory
- squeezing*
- USE **compressing**
- sqelch circuits**
 - GS circuits
 - . **sqelch circuits**
 - RT background noise
 - electromagnetic noise
 - noise reduction
 - silencers
 - suppressors
 - switching circuits
- squibs**
 - DEF Various small explosive devices. Explosive devices used in the ignition of a rocket. Used for XM-6 squib and XM-8 squib.
 - UF *XM-6 squib*
 - XM-8 squib*
 - GS igniters
 - . **squibs**
 - RT electric ignition
 - ignition systems
 - primers (explosives)
 - solid propellant ignition
 - starters
- squid (detectors)**
 - DEF Superconducting quantum interference device magnetometers. Used for superconducting quantum interferometers.
 - UF *superconducting quantum interferometers*
 - GS superconducting devices
 - . **squid (detectors)**
 - RT ∞ detectors
 - Josephson junctions
 - magnetic measurement
 - quantum counters
 - SIS (superconductors)
 - superconductors (materials)
- SQUID project**
 - GS programs
 - . projects
 - . . **SQUID project**
 - RT jet propulsion
- squirrels**
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . rodents
 - **squirrels**
 - ground squirrels
- SR (reactors)*
- USE **saturable reactors**

SR-71 aircraft

SR-71 aircraft

(added March 1990)

UF *Blackbird aircraft*

GS Lockheed aircraft

. **SR-71 aircraft**

reconnaissance aircraft

. **SR-71 aircraft**

supersonic aircraft

. **SR-71 aircraft**

RT ∞ aircraft

blended-wing-body configurations

∞ military aircraft

SRB (*Solid Rocket Boosters*)

USE **Space Shuttle Boosters**

SRB project

(added October 2007)

USE **Surface Radiation Budget project**

SRE reactor

USE **sodium reactor experiment**

SRET 1 satellite

GS artificial satellites

. French satellites

. . . SRET satellites

. . . **SRET 1 satellite**

. meteorological satellites

. . . SRET satellites

. . . **SRET 1 satellite**

RT French space program

SRET 2 satellite

GS artificial satellites

. French satellites

. . . SRET satellites

. . . **SRET 2 satellite**

. meteorological satellites

. . . SRET satellites

. . . **SRET 2 satellite**

SRET satellites

GS artificial satellites

. French satellites

. . . **SRET satellites**

. . . SRET 1 satellite

. . . SRET 2 satellite

. meteorological satellites

. . . **SRET satellites**

. . . SRET 1 satellite

. . . SRET 2 satellite

RT French space program

Sri Lanka

UF *Ceylon*

GS nations

. **Sri Lanka**

RT Asia

SR-N2 ground effect machine

USE **Westland ground effect machines**

SR-N3 ground effect machine

USE **Westland ground effect machines**

SR-N5 ground effect machine

USE **Westland ground effect machines**

SS-11 missile

GS missiles

. **SS-11 missile**

RT multistage rocket vehicles

solid propellant rocket engines

SSE project

(added October 2007)

USE **Surface Meteorology and Solar Energy project**

SSGS (*standardized space guidance*)

USE **standardized space guidance**

SSTI

USE **small satellite technology**

SSUS-A

USE **Space Shuttle upper stage A**

SSUS-D

USE **Space Shuttle upper stage D**

St Lawrence Valley (North America)

GS landforms

. **St Lawrence Valley (North America)**

valleys

. **St Lawrence Valley (North America)**

RT Canada

Maine

New Hampshire

New York

Vermont

St Louis-Kansas City Corridor (MO)

GS corridors

. **St Louis-Kansas City Corridor (MO)**

RT Missouri

regional planning

St Venant flexure problem

USE **Saint Venant principle**

stability

DEF The property of a body, as an aircraft or rocket, to maintain its attitude or to resist displacement, and, if displaced to develop forces and moments tending to restore the original condition. Of a fuel, the capability of a fuel to retain its characteristics in an adverse environment, e.g. extreme temperature. Used for instability.

UF *instability*

GS **stability**

. acoustic instability

. baroclinic instability

. dynamic stability

. . combustion stability

. . . flame stability

. . control stability

. . frequency stability

. . motion stability

. . . aerodynamic stability

. . . aircraft stability

. . . . hovering stability

. . . attitude stability

. . . directional stability

. . . . gyroscopic stability

. . . lateral stability

. . . longitudinal stability

. . flow stability

. . . boundary layer stability

. . . flame stability

. . . magnetohydrodynamic stability

. . . . Weibel instability

. . . . Goertler instability

. . . Taylor instability

. . low speed stability

. . rotary stability

. . . gyroscopic stability

. . spacecraft stability

. . gravitational instability

. interface stability

. laser stability

. magnetospheric instability

. numerical stability

. phase stability (materials)

. static stability

. . dimensional stability

. . . structural stability

. . . shell stability

. storage stability

. surface stability

. systems stability

. thermal stability

RT

amplification

ballast (mass)

chemical compatibility

compatibility

controllability

∞ drift

drift rate

durability

dynamic characteristics

equations of motion

∞ equilibrium

metastable state

quality

reliability

∞ resistance

safety factors

spacecraft motion

stabilizers (agents)

steady state

tolerances (mechanics)

Tresca flow

unity

unsteady state

variability

blasov equations

vulnerability

stability augmentation

DEF Maintenance of aircraft stability in flight by means of automatic control devices which supplement a pilot's manipulation of the aircraft controls. The automatic controls are used to modify inherent aircraft handling problems.

GS augmentation

. **stability augmentation**

RT aerodynamic stability

aircraft control

attitude (inclination)

automatic control

control stability

directional stability

feedback control

flight control

lateral oscillation

pitch (inclination)

stability derivatives

UF *aerodynamic moments*

GS moments

. **stability derivatives**

. . pitching moments

. . rolling moments

. . yawing moments

RT

complex variables

damping

differential equations

moments of inertia

real variables

vector analysis

stability tests

GS **stability tests**

. flight stability tests

. wind tunnel stability tests

RT

corrosion tests

damping tests

electronic equipment tests

flight tests

fuel tests

ground tests

missile tests

propellant tests

resonance testing

∞ tests

vibration tests

stabilization

UF *missile stabilization*

GS **stabilization**

. signal stabilization

. spin stabilization

. three axis stabilization

RT

acid base equilibrium

balancing

consolidation

∞ control

∞ equilibrium

heat treatment

horizontal orientation

laser gyroscopes

phase stability (materials)

stabilizers (agents)

stress relieving

vertical orientation

stabilized platforms

RT gimbals

gyroscopic stability

gyrostabilizers

inertial guidance

∞ platforms

three axis stabilization

∞ stabilizers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT gyroscopes

sea keeping
 stabilizers (agents)
 stabilizers (fluid dynamics)

stabilizers (agents)
 RT additives
 ∞ agents
 . anticoagulants
 . antioxidants
 . neutralizers
 . preservatives
 . retardants
 . stability
 . stabilization
 ∞ stabilizers

stabilizers (fluid dynamics)
 UF *horizontal stabilizers*
vertical stabilizers
vertical tails
 GS **stabilizers (fluid dynamics)**
 . horizontal tail surfaces
 RT aerial rudders
 airfoils
 control surfaces
 ∞ dynamics
 . elevators (control surfaces)
 . fins
 . keels
 . rudders
 ∞ stabilizers
 . sweptback tail surfaces
 . T tail surfaces
 . tabs (control surfaces)
 . tail assemblies
 . tail surfaces
 . trapezoidal tail surfaces

stable oscillations
 GS oscillations
 . **stable oscillations**
 RT dynamic stability
 frequency pulling
 frequency stability
 gyroscopic stability
 motion stability
 nonstabilized oscillation
 pilot induced oscillation
 resonant vibration
 transverse oscillation
 undamped oscillations
 wing oscillations

stacking fault energy
 RT crystal defects
 ∞ energy
 . twinning

stacking faults
 USE **crystal defects**

stacking sequence (composite materials)
(added June 1997)
 RT composite materials
 fiber composites
 fiber orientation
 laminates
 lay-up
 ply orientation

stacks
 RT chimneys
 crystal defects
 materials handling

STADAN (satellite tracking network)
 USE **STDN (network)**

stadimeters
 DEF Instruments for determining the distance to an object of known dimension by measuring the angle subtended at the observer by the object. The instrument is graduated directly in distance.
 GS measuring instruments
 . distance measuring equipment
 . . **stadimeters**
 RT range finders

sextants

stage separation
 UF *staging (rockets)*
 RT booster rocket engines
 expendable stages (spacecraft)
 interim stages (spacecraft)
 Lunar Module Ascent Stage
 missiles
 multistage rocket vehicles
 propellant mass ratio
 rocket vehicles
 ∞ separation
 . Space Shuttle Ascent Stage
 . sustainer rocket engines
 . thrust termination
 . upper stage rocket engines

staggering
 RT ∞ configurations
 . disorientation

staging (rockets)
 USE **stage separation**

stagnation flow
 GS fluid flow
 . inviscid flow
 . . **stagnation flow**
 RT boundary layer flow
 boundary layer separation
 compressible flow
 stagnation point

stagnation point
 DEF Point in a field of flow about a body where the fluid particles have zero velocity with respect to the body. Used for stagnation region.
 UF *stagnation region*
 RT blunt bodies
 boundary layer flow
 flow distribution
 fluid dynamics
 heat transfer
 stagnation flow

stagnation pressure
 GS pressure
 . **stagnation pressure**
 RT compressible flow
 inlet pressure

stagnation region
 USE **stagnation point**

stagnation temperature
 GS temperature
 . **stagnation temperature**
 RT adiabatic flow
 compressible flow
 inviscid flow

staining
 RT chemical tests
 discoloration
 marking
 methylene
 methylene blue

stainless steels
 GS alloys
 . iron alloys
 . . steels
 . . . **stainless steels**
 austenitic stainless steels
 ferritic stainless steels
 martensitic stainless steels
 RT chromium alloys
 maraging steels
 molybdenum alloys
 nickel alloys
 nickel steels

staircases
 USE **stairways**

stairsteps
 RT backward facing steps
 formations
 ∞ steps

topography

stairways
 UF *staircases*
 RT buildings
 escalators
 ladders
 treads

∞ **stalling**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT aerodynamic stalling
 boundary layer separation
 engine failure
 rotating stalls

stamping
 SN (EXCLUDES IDENTIFICATION MARKING)
 GS forming techniques
 . pressing (forming)
 . . **stamping**
 RT ∞ blanking
 blanking (cutting)
 coining
 cold working
 dies
 dimpling
 forging
 hot isostatic pressing
 hot pressing
 metal working
 punches
 shearing
 swaging
 upsetting

standard atmospheres
 USE **reference atmospheres**

standard deviation
 DEF A measure of the agreement between test results.
 GS moments
 . distribution moments
 . . **standard deviation**
 . statistical analysis
 . **standard deviation**
 RT confidence limits
 estimating
 heterogeneity
 quality control
 range (extremes)
 variability
 variance (statistics)

standard electroweak model
 USE **electroweak model**

standard launch vehicle 3
 USE **Atlas SLV-3 launch vehicle**

Standard Launch Vehicle 5
 GS launch vehicles
 . Standard Launch Vehicles
 . . **Standard Launch Vehicle 5**
 . rocket vehicles
 . Standard Launch Vehicles
 . . **Standard Launch Vehicle 5**

Standard Launch Vehicles
 UF *SLV*
 GS launch vehicles
 . **Standard Launch Vehicles**
 . . Atlas SLV-3 launch vehicle
 . . Standard Launch Vehicle 5
 . rocket vehicles
 . **Standard Launch Vehicles**
 . . Atlas SLV-3 launch vehicle
 . . Standard Launch Vehicle 5
 RT Atlas D ICBM
 ∞ vehicles

standard model (particle physics)
(added April 1994)
 GS field theory (physics)
 . gauge theory
 . . unified field theory
 . . . **standard model (particle physics)**

standardization

models

. **standard model (particle physics)**

RT bosons
CP violation
electroweak interactions (field theory)
electroweak model
elementary particles
particle theory
quantum chromodynamics
quantum theory
quark models
strong interactions (field theory)
weak interactions (field theory)

standardization

DEF The act or process of reducing something to, or comparing it with, a standard. A measure of uniformity. A special case of calibration whereby a known input is applied to a device or system for the purpose of verifying the output of adjusting the output to a desired level or scale factor.

GS **standardization**

. commonality

RT calibrating
intercalibration
metrication
naming
numerical control
product development
production engineering
quality control
specifications
standards
variability

standardized space guidance

UF *SSGS (standardized space guidance)*

GS guidance (motion)

. **standardized space guidance**

RT space navigation

standards

DEF References used as a basis for comparison or calibration. Concepts that have been established by authority, custom, or agreement to serve as models or rules in the measurement of quantity of the establishment of a practice or a procedure. Used for references (standards).

UF *references (standards)*

GS **standards**

. frequency standards
. reference atmospheres

RT acceptability
accuracy
calibrating
∞ codes
conventions
criteria
document markup languages
inspection
interoperability
∞ measurement
∞ measures
metrology
∞ performance
performance tests
quality control
reliability
sampling
specifications
standardization
temperature scales
tolerances (mechanics)
validity
value engineering

standing wave ratios

GS ratios

. **standing wave ratios**

RT amplitudes
electrical properties
Smith chart
transmission lines

standing waves

DEF Periodic waves having fixed distribution in space which are the result of interference of progressive waves of the same frequency and kind. Such waves are characterized by the ex-

istence of nodes or partial nodes and antinodes that are fixed in space.

RT antinodes
beat frequencies
frequencies
harmonics
nodes (standing waves)
∞ radiation
resonant frequencies
vibration
wavelengths
∞ waves

stands

USE **supports**

stannates

GS tin compounds

. **stannates**

RT ∞ oxygen compounds

stannides

GS tin compounds

. **stannides**

. . niobium stannides

RT tin alloys

Stanton number

GS dimensionless numbers

. **Stanton number**

ratios

. **Stanton number**

RT forced convection
heat transfer

STAP (radar)

(added November 2002)

USE **space-time adaptive processing**

staphylococcus

GS microorganisms

. bacteria

. . **staphylococcus**

RT pleurotin

star catalogs

USE **astronomical catalogs**

star clusters

DEF Groups of stars physically close together.

GS celestial bodies
. **star clusters**
. . globular clusters
. . open clusters
. . . Pleiades cluster
. . . Praesepe star clusters
RT barred galaxies
binary stars
∞ clusters
color-magnitude diagram
disk galaxies
elliptical galaxies
galactic clusters
galaxies
irregular galaxies
Magellanic clouds
metallicity
solar neighborhood
stars
stellar systems
Virgo galactic cluster

star distribution

UF *star fields*

stellar fields

GS distribution (property)

. spatial distribution

. . vertical distribution

. . . **star distribution**

RT angular distribution
astrolabes
barred galaxies
cosmology
galactic clusters
galactic evolution
galactic halos
globular clusters
mass distribution
radial distribution

star formation
stellar systems
Virgo galactic cluster

star fields

USE **star distribution**

star formation

DEF The collapse under gravity of molecular clouds of interstellar matter to form clusters of protostars, and the continuing collapse of the protostars to form main-sequence stars.

GS evolution (development)

. stellar evolution

. . **star formation**

RT astrophysics
cooling flows (astrophysics)
cosmology
early stars
hydrogen clouds
interstellar gas
interstellar matter
molecular clouds
nebulae
nuclear fusion
pre-main sequence stars
protogalaxies
protostars
solar nebula
star distribution
star formation rate
starburst galaxies
stars
stellar mass accretion
Submillimeter Wave Astronomy
Satellite
T Tauri stars

star formation rate

DEF The rate at which stars are formed within a specified region or galaxy; sometimes expressed as the number of solar masses per year.

GS rates (per time)

. **star formation rate**

RT galactic evolution
galaxies
star formation
starburst galaxies
stellar evolution

star trackers

DEF Telescopic instruments on rockets or other flight borne vehicles that lock onto a celestial body and give guidance reference to the vehicles during flight. Used for star tracking.

UF *star tracking*

GS tracking (position)

. **star trackers**

. . CCD star tracker

RT Astroguide Navigation System
astrolabes
attitude control
celestial navigation
charge injection devices
flight instruments
guidance sensors
inertial navigation
laser guide stars
missile control
navigation
navigation aids
navigation instruments
solar sensors
spacecraft guidance

star tracking

USE **star trackers**

starburst galaxies

GS celestial bodies

. galaxies

. . **starburst galaxies**

RT galactic nuclei
star formation
star formation rate

starches

GS biopolymers

. polysaccharides

- . . starches
- organic compounds
- . carbohydrates
- . . polysaccharides
- . . . starches
- RT chitin
- ∞ food
- sizing materials

Stardust Mission
(added March 1999)

DEF First U.S. mission launched to robotically obtain samples in deep space and return them to Earth. The NASA Discovery-class mission will return dust samples collected from the debris cloud surrounding the nucleus of Comet Wild 2. Interstellar dust will also be collected. The mission spacecraft takes advantage of an Earth gravity-assist maneuver to reach the comet, and uses an aerogel-based dust collector.

GS space missions

- . flyby missions
- . . **Stardust Mission**
- . sample return missions
- . . **Stardust Mission**

RT comet nuclei

- interstellar matter
- Wild 2 comet

Starfighter aircraft

USE **F-104 aircraft**

Stark effect

DEF The broadening or splitting of a spectral line observed when a luminous gas is acted upon by a strong electric field.

RT ∞ effects

- electric fields
- electro-optics
- hydrogen plasma
- line spectra
- resolution
- spectrum analysis
- Zeeman effect

Starlab

DEF A proposed satellite ultraviolet telescope that was a joint project between the United States, Canada, and Australia. It is currently in abeyance. Used for Spacelab UV-Optical Telescope Facility.

UF *Spacelab UV-Optical Telescope Facility*

GS telescopes

- . spaceborne telescopes
- . . **Starlab**
- . ultraviolet telescopes
- . . **Starlab**

RT ∞ optics

- Space Shuttle payloads
- Spacelab

Starlifter aircraft

USE **C-141 aircraft**

Starprobe mission

GS programs

- . NASA programs
- . . NASA space programs
- . . . **Starprobe mission**
- . space programs
- . . NASA space programs
- . . . **Starprobe mission**
- space missions
- . **Starprobe mission**

RT Starprobe spacecraft

Starprobe spacecraft

GS unmanned spacecraft

- . space probes
- . . solar probes
- . . . **Starprobe spacecraft**

RT Starprobe mission

starquakes
(added July 1989)

RT asteroseismology

- gamma ray bursts
- neutron stars

- pulsars
- stars
- stellar activity
- stellar physics
- stellar rotation
- stellar structure

stars

DEF Self-luminous celestial bodies exclusive of nebulas, comets, and meteors; suns seen in the heavens. Distinguished from planets or natural satellites that shine by reflected light.

GS celestial bodies

- . **stars**
- . . black holes (astronomy)
- . . brown dwarf stars
- . . double stars
- . . . binary stars
- cataclysmic variables
- companion stars
- Nemesis (star)
- eclipsing binary stars
- dwarf novae
- Lambda Tauri stars
- Zeta Aurigae star
- Sigma Orionis
- symbiotic stars
- x ray binaries
- . . early stars
- . . hot stars
- A stars
- B stars
- shell stars
- Sigma Orionis
- blue stars
- O stars
- white dwarf stars
- Wolf-Rayet stars
- . . F stars
- . . G stars
- . . sun
- . . giant stars
- . . . asymptotic giant branch stars
- . . . Omicron Ceti star
- . . . red giant stars
- . . . carbon stars
- . . horizontal branch stars
- . . infrared stars
- . . late stars
- . . cool stars
- . . . carbon stars
- . . . flare stars
- . . . K stars
- . . . M stars
- Van Biesbroeck star
- Mira variables
- Omicron Ceti star
- S stars
- . . magnetic stars
- . . magnetars
- . . main sequence stars
- . . dwarf stars
- . . . dwarf novae
- . . . flare stars
- . . . red dwarf stars
- . . sun
- . . massive stars
- . . metallic stars
- . . neutron stars
- . . magnetars
- . . pulsars
- . . soft gamma repeaters
- . . peculiar stars
- . . shell stars
- . . Sigma Orionis
- . . symbiotic stars
- . . Praesepe star clusters
- . . protostars
- . . . pre-main sequence stars
- T Tauri stars
- . . radio stars
- . . pulsars
- . . reference stars
- . . subdwarf stars
- . . subgiant stars
- . . supergiant stars
- . . . R Coronae Borealis stars
- . . supermassive stars
- . . triple stars

- . . variable stars
- . . . cataclysmic variables
- . . . cepheid variables
- . . . flare stars
- . . . irregular variable stars
- R Coronae Borealis stars
- . . . Lambda Tauri stars
- . . . Mira variables
- Omicron Ceti star
- . . . novae
- . . . dwarf novae
- . . . Hercules nova
- . . . semiregular variable stars
- . . . supernovae
- supernova 1987A
- . . . symbiotic stars
- . . . T Tauri stars
- . . white holes (astronomy)
- . . x ray stars
- . . . soft gamma repeaters
- . . . x ray binaries
- . . Population I stars
- . . Population II stars
- . . Population III stars

RT Aries constellation

- astrolabes
- barred galaxies
- Cassiopeia constellation
- celestial mechanics
- Centaurus constellation
- constellations
- Corona Borealis constellation
- Cygnus constellation
- faint objects
- galaxies
- irregular galaxies
- Lyra constellation
- Magellanic clouds
- metallicity
- Milky Way Galaxy
- quasars
- solar neighborhood
- star clusters
- star formation
- starquakes
- starspots
- stellar activity
- stellar composition
- stellar cores
- stellar gravitation
- stellar interiors
- stellar magnitude
- stellar oscillations
- Virgo galactic cluster

stars (mathematics)

RT ∞ mathematics

Starsat telescope

DEF An anastigmatic 3-mirror reflecting telescope for ultraviolet astronomy purposes aboard the Starsat satellite.

GS telescopes

- . reflecting telescopes
- . . **Starsat telescope**
- . spaceborne telescopes
- . . **Starsat telescope**

RT

- coronagraphs
- spaceborne astronomy
- spectroheliographs
- ultraviolet astronomy

Starsite program

GS programs

- . **Starsite program**

RT

- architecture
- buildings
- communities
- conferences
- construction
- decision making
- ∞ development
- environmental engineering
- information retrieval
- land use
- management methods
- NASA programs
- planning
- recreation
- shelters

starspots

social factors
technology transfer
urban development
urban planning

starspots

DEF Temporary disturbed areas in the stellar photosphere that appear dark because they are colder than the surrounding areas.

GS stellar activity
. starspots
. . sunspots
RT faculae
magnetic disturbances
photosphere
solar activity
stars
stellar atmospheres
stellar luminosity
stellar magnetic fields
stellar radiation
sunspot cycle
twenty-seven day variation

starters

GS **starters**
. engine starters
RT actuators
ignition systems
squibs
starting

starting

GS **starting**
. air start
RT activation
actuation
cycles
electric ignition
engine primers
excitation
firing (igniting)
ignition
initiation
launching
∞ priming
reactor startup tests
starters
stimulation

state equations

USE **equations of state**

state estimation

RT algorithms
Kalman filters
linear systems
orbital position estimation
state vectors
stochastic processes

state vectors

GS algebra
. vector spaces
. . vectors (mathematics)
. . . **state vectors**
RT observability (systems)
phase-space integral
state estimation
steady state
strange attractors

static aerodynamic characteristics

GS aerodynamic characteristics
. **static aerodynamic characteristics**
static characteristics
. **static aerodynamic characteristics**
RT aerodynamic balance
aerodynamic stability
∞ characteristics

static alternators

GS electric generators
. AC generators
. . **static alternators**

static characteristics

SN (EXCLUDES STATICS)
GS **static characteristics**
. static aerodynamic characteristics

RT static loads
static stability
static tests

static deformation

GS deformation
. **static deformation**
RT creep properties
Maxwell-Mohr method
Saint Venant principle

static dischargers

UF *antistatic devices*
GS dischargers
. **static dischargers**

static electricity

GS electricity
. **static electricity**
RT atmospheric electricity
atmospherics
electric corona
electric fields
electric potential
electric sparks
electrostatic charge
electrostatics
lightning
open circuit voltage
space charge

static firing

DEF The firing of a rocket engine in a hold down position to measure thrust and accomplish other tests.

GS captive tests
. static tests
. . **static firing**
engine tests
. **static firing**
firing (igniting)
. test firing
. . **static firing**
ground tests
. prelaunch tests
. . **static firing**
RT rocket firing

static friction

GS friction
. **static friction**
RT coefficient of friction
dry friction
friction measurement
kinetic friction
sliding
sliding friction

static inverters

GS inverters
. **static inverters**
RT electric generators

static loads

UF *deadweight*
GS loads (forces)
. **static loads**
RT aerodynamic loads
axial compression loads
axial loads
ballast (mass)
bending moments
compression loads
critical loading
dynamic loads
edge loading
flexural strength
loading moments
mass distribution
moment distribution
pressure distribution
random loads
Saint Venant principle
static characteristics
structural design criteria
transverse loads
wing loading

static models

DEF Sets of equations of physical laws to

determine a balance of systems at rest.

GS models
. **static models**
RT approximation
dynamic models
optimization

static pressure

GS pressure
. **static pressure**
. . hydrostatic pressure
RT isostatic pressure
pitot tubes
sound pressure

static stability

GS stability
. **static stability**
. . dimensional stability
. . . structural stability
. . . . shell stability
RT aircraft stability
counterbalances
drift (instrumentation)
dynamic stability
magnetohydrostatics
static characteristics
storage stability
stratification
surface stability

static tests

SN (ENCOMPASSES MATERIALS, ENGINE, AND VEHICLE TESTS)
GS captive tests
. **static tests**
. . static firing
RT cold flow tests
compression tests
creep tests
dynamic tests
engine tests
fatigue tests
ground tests
hardness tests
inspection
load tests
∞ materials tests
missile tests
nondestructive tests
prefiring tests
prelaunch tests
quality control
resonance testing
static characteristics
tensile tests
test firing
∞ tests
vibration tests
wear tests

static thrust

GS thrust
. **static thrust**
RT jet thrust
rocket thrust

statics

GS **statics**
. aerostatics
. electrostatics
. hydrostatics
. . magnetohydrostatics
RT ∞ dynamics
elastostatics
∞ equilibrium
fluid mechanics
mechanics (physics)

stationary orbits

DEF Orbits in which the satellite revolves about the primary at the angular rate at which the primary rotates on its axis. From the primary, the satellite thus appears to be stationary over a point on the primary.

GS orbits
. circular orbits
. . **stationary orbits**
. equatorial orbits
. . **stationary orbits**

- . spacecraft orbits
- . . satellite orbits
- . . . **stationary orbits**
- RT Earth orbits
- geosynchronous orbits
- synchronous satellites
- twenty-four hour orbits

stationkeeping

DEF The sequence of maneuvers that maintains a vehicle in predetermined orbit.

- GS positioning
- . **stationkeeping**

- RT formation flying
- guidance (motion)
- navigation
- orbital mechanics
- orbits
- payload retrieval (STS)
- satellite constellations
- spacecraft control

stations

- GS **stations**
- . ground stations
- . . Deep Space Instrumentation Facility
- . . Earth terminals
- . . integrated mission control center
- . . polystation doppler tracking system
- . hydroelectric power stations
- . payload stations
- . space stations
- . . Automatic Universal Orbiting Stations
- . . Columbus space station
- . . Halo Orbit space station
- . . International Space Station
- . . man tended free flyers
- . . Mir space station
- . . orbiting lunar stations
- . . Salyut space station
- . . Skylab 1
- . . Skylab 2
- . . Skylab 3
- . . Skylab 4
- . . Space Operations Center (NASA)
- . . Space Station Freedom
- . . space station polar platforms
- . tracking stations
- . . Deep Space Instrumentation Facility
- . . Global Tracking Network
- . . polystation doppler tracking system
- . weather stations
- . . automatic weather stations
- . workstations
- . . crew workstations
- . . . crew experiment stations
- . . . crew observation stations

- RT ∞ bases
- ∞ facilities
- lunar bases
- military air facilities
- planetary bases
- position (location)
- space bases
- Space Flight Tracking and Data Network

statistical analysis

- GS **statistical analysis**
- . amplitude distribution analysis
- . correlation coefficients
- . discriminant analysis (statistics)
- . factor analysis
- . goodness of fit
- . likelihood ratio
- . Maxwell-Boltzmann density function
- . nonparametric statistics
- . Poisson density functions
- . probability density functions
- . . normal density functions
- . . Pearson distributions
- . . Rayleigh distribution
- . . Weibull density functions
- . probability distribution functions
- . quantiles
- . sequential analysis
- . standard deviation

- . statistical correlation
- . statistical decision theory
- . statistical tests
- . . Kolmogorov-Smirnov test
- . . Mann-Whitney-Wilcoxon U test
- . . rank tests
- . . variance (statistics)
- . . analysis of variance
- . . multivariate statistical analysis
- . . . bivariate analysis
- . . . covariance
- . . . orthogonality
- . . . regression analysis
- regression coefficients

- RT ∞ analyzing
- ∞ applications of mathematics
- approximation
- autoregressive processes
- binomial theorem
- biometrics
- censored data (mathematics)
- charts
- Chebyshev approximation
- cluster analysis
- coefficients
- confidence
- confidence limits
- continuity (mathematics)
- correlation
- ∞ data
- data correlation
- decision theory
- discrete functions
- ∞ dispersion
- economics
- estimates
- estimating
- events
- expectancy hypothesis
- experiment design
- exponential functions
- extrapolation
- factorial design
- failure analysis
- forecasting
- game theory
- Gauss-Markov theorem
- graphs (charts)
- information theory
- inspection
- interpolation
- linear prediction
- management
- ∞ mathematics
- maximum entropy method
- mean
- median (statistics)
- Mills ratio
- minimum variance orbit determination
- Monte Carlo method
- MTBF
- operations research
- outliers (statistics)
- parameter identification
- probability theory
- quality control
- quantiles
- queueing theory
- random processes
- reliability
- root-mean-square errors
- sampling
- ∞ statistics
- stochastic processes
- system identification
- systems analysis
- systems engineering
- tables (data)
- Taguchi methods
- teleconnections (meteorology)
- traveling salesman problem
- trend analysis
- Wiener filtering
- Yang-Mills theory

statistical communication theory
USE **communication theory**

statistical correlation
GS correlation

- . **statistical correlation**
- statistical analysis
- . **statistical correlation**
- RT correlation coefficients
- data correlation
- econometrics
- evaluation
- quality control
- ∞ statistics
- teleconnections (meteorology)

statistical decision theory

- GS decision theory
- . **statistical decision theory**
- statistical analysis
- . **statistical decision theory**
- RT game theory
- ∞ theories

statistical distributions

- UF *random distributions*
- GS **statistical distributions**
- . brightness distribution
- . Pearson distributions
- . probability distribution functions
- . Rayleigh distribution
- RT binomial theorem
- censored data (mathematics)
- complexity
- curve fitting
- ∞ distribution
- distribution (property)
- distribution functions
- distribution moments
- error functions
- events
- expectancy hypothesis
- forecasting
- gamma function
- goodness of fit
- Kolmogorov-Smirnov test
- kurtosis
- mathematical models
- outliers (statistics)
- probability theory
- quality control
- quantiles
- quantum theory
- quartiles
- reliability
- scattering
- size distribution

statistical mechanics

DEF Branch of physics concerned with predictions of the behavior of macroscopic systems based on the interactions of the microscopic constituents of the system, where the number of constituents is very large.

- RT Boltzmann distribution
- Boltzmann transport equation
- classical mechanics
- closure law
- cluster variation method
- continuum mechanics
- energy distribution
- fluctuation theory
- function space
- Ising model
- Liouville equations
- macroscopic equations
- Malkus theory
- many body problem
- Maxwell-Boltzmann density function
- mechanics (physics)
- molecular dynamics
- Onsager phenomenological coefficient
- quantum mechanics
- quantum theory
- renormalization group methods
- thermodynamic equilibrium
- virial theorem
- weighting functions

statistical moments
USE **distribution moments**

statistical probability
USE **probability theory**

statistical tests
UF *Bruceton test*

statistical weather forecasting

GS statistical analysis
 . **statistical tests**
 . . Kolmogorov-Smirnov test
 . . Mann-Whitney-Wilcoxon U test
 . . rank tests

RT charts
 confidence limits
 curve fitting
 ∞ data
 estimates
 estimating
 factor analysis
 goodness of fit
 heterogeneity
 homogeneity
 likelihood ratio
 normality
 null hypothesis
 outliers (statistics)
 quality control
 range (extremes)
 regression analysis
 reliability
 significance
 ∞ tests
 validity

statistical weather forecasting

GS meteorology
 . weather forecasting
 . . **statistical weather forecasting**
 predictions
 . forecasting
 . . weather forecasting
 . . . **statistical weather forecasting**

RT long range weather forecasting
 numerical weather forecasting

∞ statistics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT arrays
 biometrics
 census
 ∞ data
 demography
 entropy (statistics)
 estimates
 estimating
 Fermi-Dirac statistics
 information theory
 nonparametric statistics
 populations
 probability theory
 quantiles
 quantum statistics
 random variables
 reliability
 sampling
 statistical analysis
 statistical correlation
 stochastic processes
 surveys
 systems engineering
 tables (data)
 time series analysis

stator blades

GS turbomachine blades
 . **stator blades**

RT ∞ blades
 compressor blades
 rotor blades (turbomachinery)
 rotor stator interactions
 stators
 turbine blades
 vanes

stators

DEF In machinery, parts or assemblies that remain stationary with respect to rotating or moving parts or assemblies such as the field frames of electric motors or generators, or the stationary casings and blades surrounding axial flow compressor rotors or turbine wheels.

RT compressors
 electric motors
 ∞ generators
 impellers

motors
 pumps
 ∞ rotating electrical machines
 rotors
 stator blades
 turbines

statutes

USE **law (jurisprudence)**

stays

USE **guy wires**

STDN (network)

DEF Spaceflight Tracking and Data Network. Name changed from Space Tracking and Data Acquisition Network (STDAN). Used for Satellite Tracking and Data Acq Network, Spacecraft Tracking and Data Network, and STADAN (satellite tracking network).

UF *Satellite Tracking and Data Acq Network*

Spacecraft Tracking and Data Network

STADAN (satellite tracking network)

GS networks

. tracking networks
 . . **STDN (network)**

RT

data acquisition
 Global Tracking Network
 minitrack system
 optical tracking
 range and range rate tracking
 satellite tracking
 space detection and tracking system
 Space Flight Tracking and Data Network
 tracking stations

steady flow

GS fluid flow
 . **steady flow**
 . . Couette flow
 . . Hartmann flow
 . . Ringleb flow

RT Beltrami flow
 continuity equation
 critical flow
 Crocco method
 equilibrium flow
 ∞ flow
 flow characteristics
 flow geometry
 flow stability
 gas flow
 heat transmission
 hydrodynamic coefficients
 laminar flow
 liquid flow
 low turbulence
 mass flow
 method of characteristics
 multiphase flow
 nonNewtonian flow
 orifice flow
 parallel flow
 pipe flow
 pressure gradients
 quasi-steady states
 single-phase flow
 solids flow
 steam flow
 Stokes flow
 subcritical flow
 supercritical flow
 turbulence
 turbulent flow
 two dimensional flow
 uniform flow
 unsteady flow

steady state

DEF The condition of a substance or system whose local physical and chemical properties do not vary with time.

RT ∞ equilibrium
 fluid dynamics
 metastable state
 stability
 state vectors

unsteady flow
 unsteady state

steady state creep

GS mechanical properties
 . creep properties
 . . **steady state creep**

RT plastic flow
 quasi-steady states

steady state flow

USE **equilibrium flow**

stealth bomber

USE **B-2 aircraft**

stealth technology

(added November 2001)

DEF Methods, materials, and designs for reducing the detectability of vehicles and other systems by radar or any other electronic or optical means.

UF *antidetection technology*

GS countermeasures

. **stealth technology**

RT antiradar coatings
 B-2 aircraft
 camouflage
 electronic countermeasures
 electronic warfare
 optical countermeasures
 radar absorbers
 radar cross sections
 radar detection
 radar signatures
 spacecraft defense
 target masking
 target recognition
 X-45 aircraft

steam

RT boilers
 fog
 superheating
 thermodynamics
 water
 water vapor

steam flow

GS fluid flow
 . **steam flow**

RT critical flow
 gas flow
 laminar flow
 mass flow
 multiphase flow
 orifice flow
 pipe flow
 pipelines
 pressure gradients
 single-phase flow
 steady flow
 subcritical flow
 supercritical flow
 turbulent flow
 uniform flow
 unsteady flow

steam generators

USE **boilers**

steam turbines

GS turbomachinery
 . turbines
 . . **steam turbines**

RT axial flow turbines
 combined cycle power generation
 gas turbine engines
 gas turbines
 turbogenerators
 two stage turbines

stearates

GS esters
 . **stearates**

RT soaps

stearothermophilus

GS microorganisms
 . bacteria

.. Bacillus
 ... **stearothermophilus**

steatite
 USE **talc**

steel structures
 GS welded structures
 . **steel structures**
 RT composite structures
 construction
 rigid structures
 ∞ structures

steels
 GS alloys
 . iron alloys
 . . **steels**
 . . . bainitic steel
 . . . carbon steels
 . . . low carbon steels
 . . . chromium steels
 . . . Croloy
 . . . high strength steels
 . . . maraging steels
 . . . nickel steels
 . . . stainless steels
 . . . austenitic stainless steels
 . . . ferritic stainless steels
 . . . martensitic stainless steels
 RT austenite
 bainite
 cementite
 ferrites
 hydrogen embrittlement
 martensite
 mischmetal
 pearlite

steep gradient aircraft
 USE **V/STOL aircraft**

steepest ascent method
 USE **steepest descent method**

steepest descent method
 UF *steepest ascent method*
 RT calculus of variations
 dynamic programming
 ∞ methodology
 minima
 optimization
 parameter identification
 system identification

steepness
 USE **slopes**

steerable antennas
 DEF Directional antennas whose major lobe can be readily shifted in direction.
 GS antennas
 . directional antennas
 . . **steerable antennas**
 . . . inertialess steerable antennas
 arrays
 . antenna arrays
 . . **steerable antennas**
 . . . inertialess steerable antennas
 RT beam steering
 phased arrays
 radar antennas

steering
 GS **steering**
 . beam steering
 RT ∞ control
 control rockets
 controllability
 electron optics
 ∞ flight
 focusing
 suspension systems (vehicles)

steering rockets
 USE **control rockets**

Stefan-Boltzmann law
 DEF One of the radiation laws which states that the amount of energy radiated per unit time from a unit surface area of an ideal black body is

proportional to the fourth power of the absolute temperature of the black body.
 GS laws
 . radiation laws
 . . **Stefan-Boltzmann law**
 RT electromagnetic radiation
 emissivity
 flux (rate)
 heat radiators
 Kirchhoff law of radiation
 radiative heat transfer

steganography
(added April 2002)
 DEF The art and science of communicating in a hidden manner, usually involving a message embedded in a carrier medium such as print, images, or computer files.
 RT computer information security
 cryptography
 security

Stellar (star tracker)
 USE **CCD star tracker**

stellar activity
 DEF A general term encompassing stellar phenomena such as stellar flares, starspot activity, magnetic activity, nuclear fusion, etc.
 GS **stellar activity**
 . solar activity
 . . faculae
 . . solar flares
 . . solar prominences
 . . solar storms
 . . spicules
 . . sunspots
 . . starspots
 . . sunspots
 . . stellar flares
 . . solar flares
 RT flare stars
 ∞ flares
 magnetic disturbances
 magnetohydrodynamics
 photosphere
 starquakes
 stars
 stellar convection
 stellar interiors
 stellar luminosity
 stellar magnetic fields
 stellar mass ejection
 stellar oscillations
 stellar physics
 stellar radiation
 sunspot cycle

stellar atmospheres
 GS environments
 . extraterrestrial environments
 . . **stellar atmospheres**
 . . . chromosphere
 . . . solar atmosphere
 solar transition region
 RT ∞ atmospheres
 cool stars
 limb brightening
 limb darkening
 local thermodynamic equilibrium
 metallic stars
 pulsar magnetospheres
 radiative transfer
 satellite atmospheres
 starspots
 stellar convection
 stellar coronas
 stellar interiors
 stellar magnetospheres

stellar color
 DEF The particular wavelengths of optical radiation emitted by a star.
 GS electromagnetic properties
 . optical properties
 . . color
 . . . **stellar color**
 RT color-color diagram
 color-magnitude diagram
 stellar luminosity

stellar magnitude
 stellar spectra
 stellar spectrophotometry

stellar composition
 GS composition (property)
 . chemical composition
 . . **stellar composition**
 RT abundance
 B stars
 carbon stars
 isotope ratios
 stars
 stellar models
 stellar physics
 stellar structure

stellar convection
(added June 1992)
 GS convection
 . **stellar convection**
 . . solar convection (astronomy)
 RT Benard cells
 convection currents
 convective flow
 dynamo theory
 fluid flow
 free convection
 Rayleigh-Benard convection
 stellar activity
 stellar atmospheres
 stellar interiors
 stellar magnetic fields
 stellar physics

stellar cores
 DEF The central portion of the interior of stars.
 GS cores
 . **stellar cores**
 stellar interiors
 . **stellar cores**
 RT astrophysics
 degenerate matter
 gravitational collapse
 planetary cores
 solar interior
 stars
 stellar coronas
 stellar structure

stellar coronas
 DEF Ionized regions about stars formed by x rays emitted during stellar flares. First discovery of a stellar corona was made aboard the Dutch ANS satellite (1975) when permanent x ray emission from the star SIRIUS was detected and measured.
 GS coronas
 . **stellar coronas**
 . . solar corona
 . . . coronal holes
 . . . chromospheres
 . . . coronal loops
 RT coronal mass ejection
 ionization
 Orion nebula
 stellar atmospheres
 stellar cores

stellar Doppler shift
 USE **Doppler effect**

stellar envelopes
 UF *circumstellar matter*
 RT astrophysics
 cool stars
 ∞ envelopes
 interstellar matter
 protoplanetary disks
 R Coronae Borealis stars
 shell stars
 stellar mass accretion
 stellar mass ejection
 stellar structure
 symbiotic stars
 Wolf-Rayet stars

stellar evolution
 GS evolution (development)
 . **stellar evolution**

stellar flares

- . . star formation
- . . stellar mass accretion
- RT asteroseismology
- astrophysics
- asymptotic giant branch stars
- brown dwarf stars
- color-magnitude diagram
- cosmology
- degenerate matter
- galactic evolution
- gravitational instability
- Hertzsprung-Russell diagram
- horizontal branch stars
- interstellar extinction
- late stars
- main sequence stars
- neutral currents
- planetary evolution
- Population III stars
- pre-main sequence stars
- protoplanetary disks
- protoplanets
- protostars
- red giant stars
- solar nebula
- solar system evolution
- star formation rate
- stellar interiors
- stellar physics
- subgiant stars

stellar fields

USE **star distribution**

stellar flares

DEF Ejections of material from stars in eruptions that last from a few minutes to an hour or more.

- GS stellar activity
 - . **stellar flares**
 - . . solar flares
- RT cataclysmic variables
- flare stars
- ∞ flares
 - stellar luminosity
 - stellar physics
 - stellar radiation

stellar gravitation

- GS gravitation
 - . **stellar gravitation**
 - . . solar gravitation
- RT gravitational binding energy
- gravitational fields
- gravitational instability
- gravitational lenses
- stars
- stellar mass
- stellar systems

stellar interiors

DEF The subsurface portions of stars.

- GS **stellar interiors**
 - . solar interior
 - . stellar cores
- RT asteroseismology
- astrophysics
- convection
- gravitational collapse
- nuclear fusion
- stars
- stellar activity
- stellar atmospheres
- stellar convection
- stellar evolution
- stellar models
- stellar physics
- stellar structure

stellar luminosity

- GS electromagnetic properties
 - . optical properties
 - . . luminosity
 - . . . **stellar luminosity**
- RT brightness
- brightness distribution
- Hertzsprung-Russell diagram
- horizontal branch stars
- limb brightening
- limb darkening

- luminescence
- mass to light ratios
- red dwarf stars
- red giant stars
- starspots
- stellar activity
- stellar color
- stellar flares
- stellar parallax
- stellar physics
- Wolf-Rayet stars

stellar magnetic fields

- GS magnetic fields
 - . **stellar magnetic fields**
 - . . solar magnetic field
- RT electromagnetic fields
- interstellar magnetic fields
- magnetic field configurations
- plasmas (physics)
- pulsar magnetospheres
- starspots
- stellar activity
- stellar convection
- stellar magnetospheres

stellar magnetospheres

(added July 1988)

- GS **stellar magnetospheres**
 - . pulsar magnetospheres
- RT magnetic fields
- ∞ magnetospheres
- stellar atmospheres
- stellar magnetic fields

stellar magnitude

DEF The measure of the relative brightness of a star. Stellar magnitudes are expressed in a variety of ways, according to the method or process of observation or determination.

- GS magnitude
 - . **stellar magnitude**
- RT astronomy
- color-magnitude diagram
- ∞ intensity
- luminance
- luminous intensity
- red dwarf stars
- stars
- stellar color
- stellar parallax

stellar mass

- GS mass
 - . **stellar mass**
- RT degenerate matter
- galactic mass
- main sequence stars
- mass to light ratios
- massive stars
- novae
- stellar gravitation
- stellar temperature
- supernovae
- variable stars

stellar mass accretion

DEF Process by which a star accumulates matter as it moves through dense clouds of interstellar gas.

- GS evolution (development)
 - . stellar evolution
 - . . **stellar mass accretion**
- RT accretion disks
- cosmology
- dwarf novae
- galactic evolution
- gravitational effects
- interstellar gas
- interstellar matter
- protostars
- star formation
- stellar envelopes
- stellar physics
- symbiotic stars
- x ray binaries

stellar mass ejection

- GS ejection
 - . **stellar mass ejection**

- . . coronal mass ejection
- RT asymptotic giant branch stars
- cataclysmic variables
- dwarf novae
- magnetic clouds
- novae
- R Coronae Borealis stars
- stellar activity
- stellar envelopes
- supernovae
- variable stars
- Wolf-Rayet stars

stellar models

- GS models
 - . astronomical models
 - . . **stellar models**
- RT astronomy
- solar neutrinos
- solar oscillations
- stellar composition
- stellar interiors
- supermassive stars

stellar motions

- GS **stellar motions**
 - . stellar orbits
 - . stellar oscillations
 - . . solar oscillations
 - . stellar rotation
 - . . solar rotation
- RT companion stars
- corotation
- Doppler effect
- Doppler-Fizeau effect
- double stars
- galactic rotation
- Hipparcos satellite
- ∞ motion
 - proper motion
 - sidereal time
 - stellar parallax
 - stellar systems

stellar occultation

- GS occultation
 - . **stellar occultation**
- RT asteroid detection
- eclipsing binary stars
- lunar occultation

stellar orbits

- SN (EXCLUDES PLANETARY ORBITS)
- GS orbits
 - . **stellar orbits**
 - stellar motions
 - . **stellar orbits**
- RT celestial mechanics
- Nemesis (star)
- retrograde orbits

stellar oscillations

DEF Irregular fluctuations of the stellar atmospheres.

- GS oscillations
 - . **stellar oscillations**
 - . . solar oscillations
 - stellar motions
 - . **stellar oscillations**
 - . . solar oscillations
- RT asteroseismology
- astronomical models
- astronomy
- astrophysics
- atmospheric models
- cataclysmic variables
- Mira variables
- stars
- stellar activity
- symbiotic stars
- variable stars

stellar parallax

DEF The subtended angle at a star formed by the mean radius of the Earth's orbit; it indicates distance to a star.

- GS parallax
 - . **stellar parallax**
- RT astrometry
- binary stars

Hipparcos satellite
solar parallax
stellar luminosity
stellar magnitude
stellar motions

stellar physics

DEF A term that encompasses the physical properties of stars, such as luminosity, size, mass, density, temperature, chemical composition, evolution, activity, etc.

GS astrophysics

. stellar physics

. . solar physics

RT

asteroseismology

local thermodynamic equilibrium

nuclear astrophysics

nuclear fusion

∞ science

starquakes

stellar activity

stellar composition

stellar convection

stellar evolution

stellar flares

stellar interiors

stellar luminosity

stellar mass accretion

stellar radiation

stellar rotation

stellar structure

supernovae

stellar radiation

GS extraterrestrial radiation

. stellar radiation

. . stellar winds

RT

cosmic rays

electromagnetic radiation

galactic radiation

gamma ray bursts

Herbig-Haro objects

interstellar extinction

interstellar radiation

light curve

microwave emission

polarized electromagnetic radiation

∞ radiation

radiative transfer

radio bursts

radio stars

solar radiation

starspots

stellar activity

stellar flares

stellar physics

x ray stars

stellar rotation

GS

gyration

. rotation

. . stellar rotation

. . . solar rotation

stellar motions

. stellar rotation

. . solar rotation

RT

angular momentum

corotation

planetary rotation

starquakes

stellar physics

stellar seismology

(added March 2001)

USE **asteroseismology**

stellar spectra

GS spectra

. radiation spectra

. . electromagnetic spectra

. . . stellar spectra

. . . . solar spectra

RT

absorption spectra

astronomical spectroscopy

color-color diagram

continuous spectra

cool stars

emission spectra

F stars

G stars

Herbig-Haro objects
Hertzsprung-Russell diagram
horizontal branch stars
infrared spectra
K stars
line spectra
molecular spectra
peculiar stars
Seyfert galaxies
stellar color
symbiotic stars
ultraviolet spectra
visible spectrum
x ray spectra

stellar spectrophotometry

GS optical measurement

. photometry

. . astronomical photometry

. . . stellar spectrophotometry

. . . spectrophotometry

. . . stellar spectrophotometry

spectroscopy

. astronomical spectroscopy

. . stellar spectrophotometry

. spectrophotometry

. . stellar spectrophotometry

RT

color-color diagram

horizontal branch stars

infrared photometry

peculiar stars

spectroscopic telescopes

stellar color

superhumps (astronomy)

stellar structure

RT

chromosphere

coronal holes

dense plasmas

metallic stars

peculiar stars

solar atmosphere

solar corona

solar interior

starquakes

stellar composition

stellar cores

stellar envelopes

stellar interiors

stellar physics

∞ structures

supermassive stars

stellar systems

SN (EXCLUDES PLANETARY SYSTEMS)

DEF Gravitationally bound groups of stars.

SN (Excludes planetary systems).

GS

celestial bodies

. stellar systems

RT

binary stars

galactic clusters

galactic rotation

galactic structure

galaxies

gravitational collapse

gravitational effects

interacting galaxies

Nemesis (star)

Sigma Orionis

star clusters

star distribution

stellar gravitation

stellar motions

triple stars

stellar temperature

GS temperature

. stellar temperature

RT

cool stars

stellar mass

symbiotic stars

stellar winds

GS extraterrestrial radiation

. stellar radiation

. . stellar winds

particles

. charged particles

. . energetic particles

. . . plasmas (physics)

. . . . space plasmas

. . . . stellar winds

. corpuscular radiation

. . energetic particles

. . . plasmas (physics)

. . . . space plasmas

. . . . stellar winds

RT

chromosphere

cosmic plasma

galactic winds

intergalactic media

interstellar gas

radiation pressure

solar wind

solar wind velocity

stellarators

DEF Experimental thermonuclear devices where containment in a magnetic field is achieved by closing the field upon itself and thus allowing the particles to perform endless spiral motion.

GS

nuclear reactors

. fusion reactors

. . stellarators

RT

helical windings

heliotrons

magnetohydrodynamics

pinch effect

plasma control

thermal instability

thermonuclear power generation

thermonuclear reactions

toroidal plasmas

Stellite (trademark)

UF

Haynes Stellite

RT

chromium alloys

cobalt alloys

tungsten alloys

stem cells

(added August 2004)

DEF Relatively undifferentiated cells that retain the ability to divide and proliferate throughout postnatal life to provide progenitor cells that can differentiate into specialized cells

GS

cells (biology)

. stem cells

RT

biotechnology

cell division

culture techniques

cytology

stems

RT

plants (botany)

stencil processes

RT

printing

reproduction (copying)

step faults

USE **geological faults**

step functions

GS

functions (mathematics)

. step functions

RT

dynamic response

frequency response

intervals

ramp functions

reaction time

∞ steps

step recovery diodes

DEF Varactors in which forward voltage injects carriers across the junction, but before the carriers can combine, the voltage reverses and carriers return to their origin in a group. The result is an abrupt cessation of reverse current and a harmonic rich waveform.

GS

electronic equipment

. diodes

. . semiconductor diodes

. . . junction diodes

. . . . step recovery diodes

. solid state devices

. . semiconductor devices

. . . junction diodes

. . . . step recovery diodes

stepped leaders

RT switching

stepped leaders

(added August 1999)

GS electric current
. electric discharges
. lightning
. . . leaders (meteorology)
. . . . **stepped leaders**

steppes

GS landforms
. **steppes**
RT arid lands
desertification
grasslands
plains

stepping motors

DEF Motors whose rotations are in short and essentially uniform angular movements rather than a continuous motion.

GS electromechanical devices
. electric motors
. . **stepping motors**
motors
. electric motors
. . **stepping motors**

RT actuators
servocontrol
servomechanisms

stepping switches

GS switches
. electric switches
. . **stepping switches**

∞ steps

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT backward facing steps
programming (scheduling)
stairs
step functions

STEREO (observatory)

(added July 2007)

DEF Two nearly identical space-based observatories traveling in offset orbits to provide 3-D stereoscopic images of the sun. Launched on October 26, 2006 as part of NASA's Solar Terrestrial Probes Program, the observatories will be used to characterize coronal mass ejections, energetic particle acceleration in the low corona and interplanetary medium, and improve the determination of the structure of the ambient solar wind.

UF *Solar Terrestrial Relations Observatory*

GS observatories
. astronomical observatories
. . solar observatories
. . . **STEREO (observatory)**

RT coronal mass ejection
solar activity
solar terrestrial interactions
space missions
stereoscopy

stereochemistry

DEF Chemistry dealing with the arrangement of atoms and molecules in three dimensions.

RT carbohydrates
∞ chemistry
enantiomers
isomers
optical activity
spatial distribution
x ray analysis

stereography

USE **stereophotography**

stereolithography

USE **lithography**

stereophonics

DEF The use of two sound channels to mimic normal hearing. Stereophonic satellite

broadcasting has now been developed.

RT acoustics
hearing

stereophotography

UF *stereography*
stereoscopic photography

GS imagery
. photography
. . stereoscopy
. . . **stereophotography**

RT aerial photography
black and white photography
cinematography
color photography
Mapsat
photogrammetry
SPOT (French satellite)

stereoscopic photography

USE **stereophotography**

stereoscopic vision

GS vision
. **stereoscopic vision**
RT binocular vision
stereoscopy

stereoscopy

GS imagery
. photography
. . **stereoscopy**
. . . stereophotography
RT STEREO (observatory)
stereoscopic vision

stereotelevision

GS communication equipment
. **stereotelevision**
telecommunication
. **stereotelevision**
television systems
. **stereotelevision**
RT closed circuit television
color television
communicating
educational television
satellite television
spacecraft television

sterilization

GS cleaning
. **sterilization**
. . chemical sterilization
. . spacecraft sterilization
RT air purification
antifouling
antiseptics
bactericides
baking
decontamination
fumigation
gnatobiotics
housekeeping (spacecraft)
ionizing radiation
mercury lamps
pasteurizing
purification
ultraviolet radiation

sterilization effects

RT chemical effects
corrosion
decontamination
degradation
∞ deoxidation
∞ effects
radiation effects
spacecraft sterilization
temperature effects
thermal degradation

sterns

USE **afterbodies**

sternum

GS anatomy
. musculoskeletal system
. . bones
. . . **sternum**

RT thorax

steroids

GS organic compounds
. lipids
. . **steroids**
. . . cholesterol
. . . corticosteroids
. . . . aldosterone
. . . . hydrocorticosteroid
. cortisone
. glucocorticoids
. estrogens
. . . prostaglandins
RT antibiotics
hormones

stethoscopes

GS medical equipment
. **stethoscopes**
RT physicians

stiction

(added May 2003)

DEF Adhesion between two bodies in contact due to surface forces.

GS surface properties
. adhesion
. . **stiction**
RT friction
interfacial energy

Stieltjes integral

GS analysis (mathematics)
. real variables
. . measure and integration
. . . **Stieltjes integral**
RT probability theory

stiff structures

USE **rigid structures**

stiffening

RT reinforcement (structures)
ribs (supports)
webs (supports)

stiffness

DEF The ratio of change of force (or torque) to the corresponding change in translational (or rotational) displacement of an elastic element.

GS mechanical properties
. **stiffness**
RT bending
deformation
flexibility
modulus of elasticity
∞ rigidity
softness
structural stability

stiffness matrix

GS algebra
. vector spaces
. . matrices (mathematics)
. . . **stiffness matrix**
RT structural analysis
structural members

stigmatism

GS electromagnetic properties
. optical properties
. . **stigmatism**
RT astigmatism
focusing
lens design
lenses

stilbene

GS organic compounds
. hydrocarbons
. . **stilbene**
RT dyes
hexanitrostilbene

stills

GS separators
. **stills**
RT concentrators

distillation equipment

stimulants

- GS drugs
 - . **stimulants**
 - . . atropine
 - . . caffeine
 - . . central nervous system stimulants
 - . . norepinephrine
- RT aminophylline
- epinephrine
- strychnine

stimulated emission

- GS emission
 - . **stimulated emission**
- RT argon lasers
- carbon dioxide lasers
- carbon lasers
- carbon monoxide lasers
- coherent electromagnetic radiation
- coherent light
- electron emission
- electron pumping
- gallium arsenide lasers
- gas lasers
- gas masers
- HCN lasers
- interstellar masers
- lasers
- light emission
- masers
- nuclear pumping
- optical pumping
- particle emission
- photoelectric emission
- population inversion
- rapid ballistics identification
- rare gas-halide lasers
- self sustained emission
- surface emitting lasers
- TEA lasers
- two-wavelength lasers
- ultrashort pulsed lasers
- ultraviolet lasers

stimulated emission devices

- UF *quantum generators*
- GS **stimulated emission devices**
 - . lasers
 - . . airborne lasers
 - . . argon lasers
 - . . atmospheric lasers
 - . . carbon lasers
 - . . chemical lasers
 - . . . HCL lasers
 - . . . HCL argon lasers
 - . . . chemical oxygen-iodine lasers
 - . . continuous wave lasers
 - . . distributed feedback lasers
 - . . free electron lasers
 - . . gamma ray lasers
 - . . gas lasers
 - . . . carbon dioxide lasers
 - . . . carbon monoxide lasers
 - . . . DF lasers
 - . . . excimer lasers
 - . . . HCL lasers
 - . . . HCL argon lasers
 - . . . HCN lasers
 - . . . helium-neon lasers
 - . . . HF lasers
 - . . . nitrogen lasers
 - . . . rare gas-halide lasers
 - . . . krypton fluoride lasers
 - xenon chloride lasers
 - xenon fluoride lasers
 - . . . TEA lasers
 - . . . ultraviolet lasers
 - . . gasdynamic lasers
 - . . glass lasers
 - . . high power lasers
 - . . . Nova Laser System
 - . . . Shiva laser system
 - . . infrared lasers
 - . . injection lasers
 - . . quantum cascade lasers
 - . . iodine lasers
 - . . . chemical oxygen-iodine lasers
 - . . liquid lasers

- . . metal vapor lasers
- . . neodymium lasers
- . . nuclear pumped lasers
- . . organic lasers
- . . . dye lasers
- . . plasmadynamic lasers
- . . pulsed lasers
- . . . Q switched lasers
- . . . ultrashort pulsed lasers
- . . . ultraviolet lasers
- . . Raman lasers
- . . ring lasers
- . . semiconductor lasers
- . . . aluminum gallium arsenide lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . YLF lasers
- . . . solar-pumped lasers
- . . solid state lasers
- . . . aluminum gallium arsenide lasers
- . . . DBR lasers
- . . . fiber lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . ruby lasers
- . . . YAG lasers
- . . . YLF lasers
- . . spaceborne lasers
- . . surface emitting lasers
- . . tunable lasers
- . . two-wavelength lasers
- . . waveguide lasers
- . . . fiber lasers
- . . x ray lasers
- . . masers
- . . gas masers
- . . . hydrogen masers
- . . interstellar masers
- . . proton masers
- . . traveling wave masers
- . . water masers

- RT amplifiers
- coherent electromagnetic radiation
- diffraction radiation
- electron pumping
- ∞ generators
- laser arrays
- laser cavities
- laser pumping
- laser weapons
- lasing
- light transmission
- nuclear pumping
- optical pumping
- rapid ballistics identification
- subharmonic generators
- transient oscillations

stimulation

- GS **stimulation**
 - . auditory stimuli
 - . sensory stimulation
- RT activation
- activation (biology)
- actuation
- cloud seeding
- gas injection
- initiation
- pressurizing
- starting

∞ **stimuli**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT arousal
- auditory stimuli
- caloric stimuli
- electric stimuli
- motivation
- psychological factors
- subliminal stimuli
- visual stimuli
- zeitgebers

Stirling cycle

DEF A theoretical heat engine cycle in which heat is added at constant volume, fol-

lowed by isothermal expansion with heat addition. The heat is then rejected at constant volume, followed by isothermal compression with heat rejection.

- GS cycles
 - . thermodynamic cycles
 - . . **Stirling cycle**
- RT Carnot cycle
- solar dynamic power systems
- Stirling engines

Stirling engines

- GS engines
 - . external combustion engines
 - . . **Stirling engines**
 - . . piston engines
 - . . **Stirling engines**
- RT automobile engines
- engine design
- engine tests
- free-piston engines
- linear alternators
- Stirling cycle

stirring

- RT aeration
- dispersing
- friction stir welding
- mixers
- suspending (mixing)
- swirling

stishovite

- DEF A mineral consisting essentially of silicon trioxide.
- GS chalcogenides
 - . oxides
 - . . dioxides
 - . . . silicon dioxide
 - quartz
 - **stishovite**
 - . . silicon oxides
 - . . . silicon dioxide
 - . . . quartz
 - **stishovite**
- minerals
 - . quartz
 - . . **stishovite**
- silicon compounds
 - . silicon oxides
 - . . silicon dioxide
 - . . . quartz
 - **stishovite**
- RT coesite
- Earth crust
- Earth mantle
- rutile

stochastic processes

DEF Ordered sets of observations in one or more dimensions, each being considered as a sample of one item from a probability distribution. Used for Poisson process.

- UF *poisson process*
- GS **stochastic processes**
 - . Markov processes
 - . . Markov chains
 - . . random processes
 - . . random walk
- RT ∞ applications of mathematics
- attractors (mathematics)
- autoregressive moving average
- chaos
- coherence coefficient
- decision theory
- differential games
- ergodic process
- events
- Fokker-Planck equation
- game theory
- information theory
- Kakutani theorem
- Kalman-Schmidt filtering
- martingales
- mathematical models
- Monte Carlo method
- operations research
- probability theory
- queueing theory
- random errors

stockpiling

- random noise
- random signals
- state estimation
- statistical analysis
- ∞ statistics
- time dependence
- time functions
- time series analysis

stockpiling

- RT accumulations
- collection
- inventory management
- logistics
- reserves
- ∞ storage
- strategic materials

stoichiometry

- RT chemical reactions
- ∞ chemistry
- ∞ composition
- composition (property)
- formulations
- material balance
- phase diagrams

Stokes flow

- GS fluid flow
 - . incompressible flow
 - . . **Stokes flow**
 - . viscous flow
 - . . **Stokes flow**
- RT Oseen approximation
- steady flow

∞ Stokes law

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT laws
 - Maxwell equation
 - Stokes law (fluid mechanics)
 - Stokes theorem (vector calculus)

Stokes law (fluid mechanics)

- RT settling
- ∞ Stokes law
- viscosity

Stokes law of radiation

- GS laws
 - . radiation laws
 - . . **Stokes law of radiation**
- RT incident radiation
- luminescence
- ∞ radiation
- wavelengths

Stokes theorem (vector calculus)

- GS algebra
 - . vector spaces
 - . . **Stokes theorem (vector calculus)**
 - theorems
 - . **Stokes theorem (vector calculus)**
- RT ∞ Stokes law

Stokes-Beltrami equation

- RT ∞ equations
 - Laplace equation
 - stream functions (fluids)

STOL aircraft

- USE **short takeoff aircraft**

stomach

- GS anatomy
 - . digestive system
 - . . gastrointestinal system
 - . . . **stomach**
- RT abdomen

stones (rocks)

- USE **rocks**

stony meteorites

- GS celestial bodies
 - . meteorites
 - . . **stony meteorites**
 - . . . achondrites
 - . . . Bondoc meteorite

- chassignites
- Kapoeta achondrite
- nakhlites
- Norton County achondrite
- shergottites
- SNC meteorites
- ureilites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- ureilites
- . . . chondrites
- . . . Bruderheim meteorite
- . . . carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- . . . Harleton meteorite
- . . . Hvittis chondrite
- . . . Okhansk meteorite
- . . . Pantar chondrites
- . . . Pribram meteorite
- . . . tektites
- . . . australites
- . . . bediasites
- . . . Tungusk meteorite

RT

- coesite
- iron meteorites
- Lazarev meteorite
- meteoritic composition
- meteoritic microstructures
- schreibersite
- stony-iron meteorites

stony-iron meteorites

- (added December 1988)

- GS celestial bodies
 - . meteorites
 - . . **stony-iron meteorites**
- RT iron meteorites
- stony meteorites

stopcocks

- USE **cocks**

stopping

- UF *terminating*
- GS **stopping**
 - . thrust termination
- RT blocking
- cancellation
- closing
- constrictions
- containment
- damping
- deceleration
- delay
- elimination
- ∞ holding
- ∞ inhibition
- optimization
- plugs
- prevention
- ∞ reduction
- retarding
- sealing

stopping power

- RT absorbers (materials)
- absorption cross sections
- ∞ cross sections
- density (mass/volume)
- neutron cross sections
- radiation absorption
- radiation shielding

- scattering cross sections

storage propellants

- GS consumables (spacecraft)
- . **storage propellants**
- propellants
- . **storage propellants**
- RT cryogenic rocket propellants
- gaseous rocket propellants
- gelled rocket propellants
- ground support equipment
- high temperature propellants
- hydrocarbon fuels
- hypergolic rocket propellants
- liquid rocket propellants
- propellant additives
- propellant decomposition
- propellant evaporation
- propellant sensitivity
- propellant storability
- propellant storage
- rocket propellants
- solid propellants
- space storage

∞ storage

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT buffer storage
- computer storage devices
- core storage
- cryogenic fluid storage
- data storage
- disposal
- document storage
- energy storage
- external store separation
- external stores
- fluid filled shells
- handling equipment
- inventories
- inventory controls
- inventory management
- ion storage
- liquid filled shells
- logistics
- logistics management
- magnetic storage
- materials handling
- missile silos
- missile storage
- packaging
- pipelines
- preserving
- propellant storage
- racks (frames)
- recording
- reserves
- retaining
- safety
- space storage
- stockpiling
- storage tanks
- stowage (onboard equipment)
- underground storage
- waste disposal
- wing-fuselage stores

storage batteries

- SN (RECHARGEABLE BATTERIES)
- UF *secondary batteries*
- GS electrochemical cells
 - . electric batteries
 - . . **storage batteries**
 - . . . lead acid batteries
 - . . . nickel cadmium batteries
 - . . . nickel hydrogen batteries
 - . . . nickel zinc batteries
 - . . . silver cadmium batteries
 - . . . silver hydrogen batteries
 - . . . silver zinc batteries
 - . . . zinc-bromide batteries
 - . . . zinc-chlorine batteries
- RT alkaline batteries
- battery chargers
- charge efficiency
- dry cells
- electrolytes
- lithium batteries

- metal air batteries
- nickel iron batteries
- nonaqueous electrolytes
- primary batteries
- pulse charging
- regenerative fuel cells
- storage rings (particle accelerators)**
 - UF *electron ring accelerators*
 - GS particle accelerators
 - . cyclic accelerators
 - . . synchrotrons
 - . . . **storage rings (particle accelerators)**
 - RT ∞ accelerators
 - Q values (nuclear physics)
 - ∞ rings
 - superconducting super collider
- storage stability**
 - GS life (durability)
 - . **storage stability**
 - stability
 - . **storage stability**
 - RT decomposition
 - liquid sloshing
 - long term effects
 - static stability
 - surface stability
 - thermal stability
- storage tanks**
 - GS tanks (containers)
 - . **storage tanks**
 - RT cryogenic fluid storage
 - cryogenic tanks
 - cylindrical tanks
 - expulsion bladders
 - external tanks
 - fuel tanks
 - pipelines
 - pressure vessels
 - propellant tanks
 - space storage
 - spherical tanks
 - ∞ storage
 - tank geometry
 - underground storage
 - wing-fuselage stores
- store release*
 - USE **external store separation**
- storm damage**
 - GS damage
 - . **storm damage**
 - RT cyclones
 - flood control
 - floods
 - gusts
 - hailstorms
 - hurricanes
 - landslides
 - precipitation (meteorology)
 - rainstorms
 - snow cover
 - storm surges
 - storms
 - thunderstorms
 - tornadoes
 - tropical storms
 - typhoons
 - wind (meteorology)
- storm enhancement**
 - GS weather modification
 - . **storm enhancement**
 - RT climatology
 - hailstorms
 - precipitation (meteorology)
 - rainstorms
 - snowstorms
 - storms
 - storms (meteorology)
- storm suppression**
 - GS weather modification
 - . **storm suppression**
 - RT climatology
 - hailstorms
- ice prevention
- precipitation (meteorology)
- rainstorms
- snowstorms
- storms
- storm surges**
 - RT coasts
 - hurricanes
 - ocean surface
 - oceanography
 - storm damage
 - storms (meteorology)
 - surges
- storms**
 - GS **storms**
 - . ionospheric storms
 - . . sudden ionospheric disturbances
 - . magnetic storms
 - . . polar substorms
 - . noise storms
 - . solar storms
 - . storms (meteorology)
 - . . cyclones
 - . . . hurricanes
 - Anna hurricane
 - . . . typhoons
 - . . downbursts
 - . . . microbursts (meteorology)
 - . . dust storms
 - . . hailstorms
 - . . rainstorms
 - . . . thunderstorms
 - . . snowstorms
 - . . tornadoes
 - . . tropical storms
 - . . . hurricanes
 - Anna hurricane
 - . . . typhoons
 - RT climatology
 - cold fronts
 - ∞ disturbances
 - flood damage
 - floods
 - fronts (meteorology)
 - gusts
 - precipitation (meteorology)
 - snow cover
 - solar terrestrial interactions
 - storm damage
 - storm enhancement
 - storm suppression
 - sudden storm commencements
 - warm fronts
 - weather forecasting
 - wind (meteorology)
- storms (meteorology)**
 - GS storms
 - . **storms (meteorology)**
 - . . cyclones
 - . . . hurricanes
 - Anna hurricane
 - . . . typhoons
 - . . downbursts
 - . . . microbursts (meteorology)
 - . . dust storms
 - . . hailstorms
 - . . rainstorms
 - . . . thunderstorms
 - . . snowstorms
 - . . tornadoes
 - . . tropical storms
 - . . . hurricanes
 - Anna hurricane
 - . . . typhoons
 - RT Alpine meteorology
 - climatology
 - cyclogenesis
 - flight conditions
 - flood control
 - flood damage
 - flood predictions
 - floods
 - GOES 13
 - ground wind
 - gusts
 - hail
 - ice
- meteorological parameters
- meteorology
- precipitation (meteorology)
- snow
- snow cover
- squalls
- storm enhancement
- storm surges
- watersheds
- weather forecasting
- wind (meteorology)
- StormSat satellite**
 - DEF A synchronous Earth-pointing satellite for severe storms studies. Used for Severe Storms Observing Satellite.
 - UF *Severe Storms Observing Satellite*
 - GS artificial satellites
 - . synchronous satellites
 - . . **StormSat satellite**
 - RT NASA programs
- Stoss-and-Lee topography*
 - USE **glacial drift**
- STOVL aircraft**
 - (added July 1991)
 - UF *short takeoff & vertical landing aircraft*
 - RT fighter aircraft
 - lift augmentation
 - powered lift aircraft
 - short takeoff aircraft
 - V/STOL aircraft
 - vertical landing
- stowage (onboard equipment)**
 - RT logistics
 - onboard equipment
 - portable equipment
 - provisioning
 - space logistics
 - space rations
 - ∞ storage
- straight wings*
 - USE **rectangular wings**
- strain aging*
 - USE **precipitation hardening**
- strain distribution**
 - GS distribution (property)
 - . **strain distribution**
 - RT crack propagation
 - deformation
 - elastic deformation
 - fracture mechanics
 - plastic deformation
 - strain measurement
 - strain rate
 - stress concentration
 - stress distribution
 - stress-strain relationships
- strain energy methods**
 - GS structural analysis
 - . energy methods
 - . . **strain energy methods**
 - RT ∞ energy
 - ∞ methodology
 - seismic energy
- strain energy release rate**
 - GS rates (per time)
 - . **strain energy release rate**
 - RT elastic deformation
 - elastic properties
 - relaxation (mechanics)
 - strain rate
 - stress relaxation
- strain fatigue*
 - USE **fatigue (materials)**
- strain gage accelerometers**
 - GS measuring instruments
 - . accelerometers
 - . . **strain gage accelerometers**

strain gage balances

RT pressure gages

strain gage balances

GS measuring instruments
. indicating instruments
. . weight indicators
. . . **strain gage balances**
RT pressure gages

strain gages

DEF Instruments used to measure the strain of distortion in a member or test specimen (such as a structural part) subjected to a force.

GS measuring instruments
. **strain gages**
RT cable force recorders
deformeters
elastometers
extensometers
flight load recorders
mechanical measurement
piezoelectric gages
pressure gages
rosette shapes
shock measuring instruments
strain measurement
stress measurement
temperature inversions
tensometers
transducers
weight indicators

strain hardening

GS hardening (materials)
. work hardening
. . **strain hardening**
RT aging (materials)
aging (metallurgy)
precipitation hardening
residual stress
shot peening
stress relieving
temperature inversions

strain measurement

RT ∞ measurement
shearography
smart structures
strain distribution
strain gages
strain rate
stress-strain diagrams
stress-strain relationships
structural strain

strain rate

GS rates (per time)
. **strain rate**
RT impact tests
loading rate
mechanical properties
Portevin-le Chatelier effect
strain distribution
strain energy release rate
strain measurement
temperature inversions

strain softening

USE **plastic deformation**

straits

DEF Relatively narrow waterways connecting two larger bodies of water.
GS passageways
. **straits**
. . Torres Strait
RT canals
Gibraltar
lakes
seas
water
waterways

strakes

GS structural members
. **strakes**
RT aerodynamic configurations
hulls (structures)
longerons
metal strips

rectangular panels
reinforcement (structures)
water tunnel tests

strands

RT cables (ropes)
ceramic fibers
cordage
fibers
 ∞ filaments
mesh
yarns

strange attractors

DEF Abstract geometrical objects in theoretical physics that represent motion which is bounded but not periodic. Their detailed behavior is sensitive to external perturbations, but their overall qualitative behavior is stable. They are of particular interest in the study of turbulence.

GS attractors (mathematics)
. **strange attractors**
RT chaos
fractals
imbeddings (mathematics)
iterative solution
nonlinear systems
numerical stability
perturbation theory
 ∞ physics
recursive functions
state vectors
theoretical physics
turbulence

strangeness

RT hyperons
mesons
parity
quantum mechanics

strapdown inertial guidance

GS guidance (motion)
. inertial guidance
. . **strapdown inertial guidance**
RT inertial navigation

straps

RT anchors (fasteners)
 ∞ bands
clamps
fasteners
holders

strata

UF *stratified layers*
GS **strata**
. substrates
RT anticlines
bedrock
beds (geology)
crossbedding (geology)
flat layers
folds (geology)
geosynclines
 ∞ layers
stratification
synclines
underground acoustics

strategic materials

DEF Critical raw materials whose foreign source of supply is uncertain and subject to potential cutoff. Examples of such materials are chromium, cobalt, manganese, and platinum group metals.

RT chromium
cobalt
manganese
 ∞ materials
metals
stockpiling
technology assessment

strategy

RT decision theory
deployment
electronic warfare
game theory
 ∞ operations

operations research
risk
warfare

stratification

GS **stratification**
. atmospheric stratification
. intercalation
RT anticlines
bedrock
crossbedding (geology)
flat layers
folds (geology)
geosynclines
 ∞ layers
static stability
strata
stratified flow
stratigraphy
synclines
temperature gradients
thermoclines

stratified flow

GS fluid flow
. laminar flow
. . **stratified flow**
RT baroclinic waves
baroclinity
coaxial flow
flow geometry
shear flow
stratification

stratified layers

USE **strata**

stratigraphy

DEF That branch of geology which treats of the formation, composition, sequence, and correlation of the stratified rocks as part of the Earth's crust.

GS **stratigraphy**
. magnetostratigraphy
RT anticlines
bedrock
beds (geology)
crossbedding (geology)
 ∞ formation
formations
geochronology
geology
geophysics
geosynclines
hydrogeology
mines (excavations)
paleontology
particle tracks
petrology
plateaus
regolith
rocks
sedimentary rocks
stratification
synclines
wells

stratocumulus clouds

GS clouds (meteorology)
. **stratocumulus clouds**
RT cumulus clouds
stratus clouds

Stratofortress aircraft

USE **B-52 aircraft**

Stratojet aircraft

USE **B-47 aircraft**

stratopause

SN (ALTITUDE APPROXIMATELY 50 KM)
GS Earth atmosphere
. middle atmosphere
. . stratosphere
. . . **stratopause**
RT mesopause

- mesosphere
- Stratoscope 1 telescope*
USE **stratoscope telescopes**
- Stratoscope 2 telescope*
USE **stratoscope telescopes**
- stratoscope telescopes**
UF *Stratoscope 1 telescope*
Stratoscope 2 telescope
GS telescopes
. spectroscopic telescopes
. . **stratoscope telescopes**
RT balloons
reflecting telescopes
refracting telescopes
- stratosphere**
SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 15 AND 50 KM)
DEF Region of the atmosphere between the troposphere and mesosphere, having a lower boundary about 8 km. at the poles to 15 km. at the equator and an upper boundary of about 50 km.
GS Earth atmosphere
. middle atmosphere
. . **stratosphere**
. . . ozonosphere
. . . stratopause
RT chemosphere
homosphere
ice clouds
isothermal layers
stratospheric warming
- stratosphere radiation**
DEF Any infrared radiation involved in the complex infrared exchange continually proceeding within the stratosphere.
GS atmospheric radiation
. **stratosphere radiation**
RT corpuscular radiation
electromagnetic radiation
∞ radiation
sky radiation
tropospheric radiation
- Stratospheric Aerosol & Gas Experiment*
USE **SAGE satellite**
- Stratospheric Observatory for IR Astronomy*
USE **SOFIA (airborne observatory)**
- stratospheric warming**
(added October 1988)
DEF A temperature rise in the global stratosphere.
GS heating
. atmospheric heating
. . **stratospheric warming**
RT anomalous temperature zones
atmospheric heat budget
atmospheric temperature
climate change
global warming
isothermal layers
stratosphere
- Stratotanker aircraft*
USE **C-135 aircraft**
- stratus clouds**
GS clouds (meteorology)
. **stratus clouds**
RT fog
nimbostratus clouds
stratocumulus clouds
- streak cameras**
DEF Cameras for measuring radiation pulses by deflection of an electron beam.
GS optical equipment
. cameras
. . **streak cameras**
photographic equipment
. cameras
. . **streak cameras**
RT camera shutters
cinematography
- lenses
- streak photography**
DEF The process of taking a time exposure photograph of a tracer particle in a fluid; the photograph reveals the motion of each tracer particle in the form of a streak which may be interpreted as a velocity vector.
GS imagery
. photography
. . **streak photography**
RT cameras
electro-optical photography
high speed cameras
imaging techniques
- stream functions (fluids)**
RT incompressible flow
potential theory
Stokes-Beltrami equation
streams
two dimensional flow
- streamline flow*
USE **laminar flow**
- streamlined bodies**
GS symmetrical bodies
. **streamlined bodies**
. . fairings
RT aerodynamic configurations
airfoils
axisymmetric bodies
∞ bodies
bodies of revolution
missile bodies
ogives
slender bodies
streamlining
towed bodies
- streamlining**
RT acoustic streaming
air flow
aircraft design
aircraft structures
airfoil profiles
airfoils
fairings
fluid dynamics
friction reduction
helicopter design
hydrofoils
∞ profiles
skin friction
streamlined bodies
- streams**
DEF Bodies of flowing water, great or small, contained within channels as well as uncontained fluids such as air.
GS **streams**
. gas streams
RT air flow
alluvium
aquifers
Delaware River Basin (US)
fluid flow
gas flow
hydrology
hydrology models
International Hydrological Decade
Lake Erie
Lake Huron
Lake Michigan
Lake Ontario
Lake Superior
limnology
meanders
rapids
reservoirs
rivers
stream functions (fluids)
surface water
Susquehanna River Basin (MD-NY-PA)
wadis
- streets**
RT highways
- intersections
pavements
roads
∞ tunnels
urban planning
urban research
- ∞ **strength**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cold strength
compressive strength
creep rupture strength
creep strength
dispersion strengthening
electric field strength
fiber strength
field strength
flexural strength
fracture strength
high strength
impact strength
load carrying capacity
mechanical properties
microyield strength
muscular strength
notch strength
residual strength
shear strength
tensile strength
weld strength
yield strength
- strength of materials*
USE **mechanical properties**
- streptococcus**
GS microorganisms
. bacteria
. . **streptococcus**
- streptomycetes**
GS microorganisms
. bacteria
. . **streptomycetes**
- streptomycin**
GS drugs
. antibiotics
. . **streptomycin**
- stress (biology)**
DEF The effect of a physiological, psychological, or mental load on a biological organism which causes fatigue and tends to degrade proficiency.
GS **stress (biology)**
. acceleration stresses (physiology)
. . centrifuging stress
. . flight stress (biology)
. . space flight stress
. plant stress
. stress (psychology)
RT acclimatization
anxiety
deprivation
exercise physiology
fatigue (biology)
pathological effects
psychological effects
- stress (physiology)**
GS **stress (physiology)**
. acceleration stresses (physiology)
. . centrifuging stress
RT acceleration (physics)
acclimatization
aeroembolism
angina pectoris
anoxia
biodynamics
deprivation
exercise physiology
fatigue (biology)
flight stress (biology)
gravitational physiology
homeostasis
hyperkinesia
hypoxia
lower body negative pressure

stress (psychology)

muscular fatigue
Palmar sweat index
physiology
pressure breathing
space flight stress
stress (psychology)
underwater physiology

stress (psychology)

UF *mental stress*
GS stress (biology)
. **stress (psychology)**
RT fatigue (biology)
flight stress (biology)
mental performance
Palmar sweat index
psychological effects
psychological factors
psychology
space flight stress
space psychology
stress (physiology)
workloads (psychophysiology)

stress analysis

UF *stress calculations*
GS **stress analysis**
. Schwartz method
. x ray stress analysis
RT Airy function
∞ analyzing
bending moments
bending theory
boundary element method
Castigliano variational theorem
combined stress
construction
creep analysis
Donnell equations
energy methods
Euler buckling
∞ flight stress
fringe multiplication
inelastic stress
influence coefficient
interference fit
isoparametric finite elements
mechanical engineering
Michell theorem
Moire fringes
moments of inertia
NASTRAN
photoelastic analysis
photoelasticity
Reissner theory
Saint Venant principle
shallow shell equations
S-N diagrams
stresses
structural analysis
structural design
structural engineering
temperature inversions

stress calculations

USE **stress analysis**

stress concentration

DEF In structures, a localized area of high stress.
GS distribution (property)
. stress distribution
. . **stress concentration**
RT combined stress
concentrating
crack initiation
cracking (fracturing)
Elber equation
fatigue (materials)
fatigue tests
force distribution
fringe multiplication
hole distribution (mechanics)
hole geometry (mechanics)
impact strength
impact tests
loads (forces)
mechanical properties
micromechanics
Moire fringes

moment distribution
notch strength
notch tests
perforated plates
perforated shells
plane stress
Saint Venant principle
strain distribution
stresses
stress-strain relationships
structural strain

stress corrosion

GS corrosion
. **stress corrosion**
. . stress corrosion cracking
RT cracking (fracturing)
fretting corrosion
intergranular corrosion
metal fatigue
salt spray tests
transgranular corrosion

stress corrosion cracking

GS corrosion
. stress corrosion
. . **stress corrosion cracking**
fracturing
. cracking (fracturing)
. . **stress corrosion cracking**
RT corrosion tests
crack closure
crack initiation
crack propagation
metal fatigue

stress cycles

DEF A variation of stress with time, repeated periodically and identically.
GS cycles
. **stress cycles**
mechanical properties
. **stress cycles**
RT cyclic loads
Elber equation
fatigue (materials)
fatigue life
fatigue tests
S-N diagrams
stresses
variable amplitude loading

stress distribution

UF *stress fields*
GS distribution (property)
. **stress distribution**
. . stress concentration
RT crack propagation
force distribution
fracture mechanics
interlaminar stress
strain distribution
stress intensity factors
stress-strain relationships
transverse loads

stress fields

USE **stress distribution**

stress functions

UF *von Mises theory*
GS functions (mathematics)
. **stress functions**
RT fracturing

stress intensity factors

DEF Load-induced variables in tension, compression, and/or shear which are conducive to crack initiation and propagation and fatigue fracture in materials.
RT bending theory
combined stress
crack initiation
crack propagation
cracking (fracturing)
edge cracks
force distribution
fracture mechanics
hole geometry (mechanics)
loads (forces)

notch strength
plane strain
stress distribution
tensile stress

stress measurement

GS mechanical measurement
. **stress measurement**
. . x ray stress measurement
RT deformeters
extensometers
photoelastic analysis
shearography
S-N diagrams
strain gages
tensometers
vibration measurement

stress propagation

GS transmission
. **stress propagation**
RT elastic waves
plastic deformation
∞ propagation

stress ratio

DEF The ratio of the minimum stress to the maximum stress occurring in one stress cycle.
GS mechanical properties
. **stress ratio**
ratios
. **stress ratio**
RT fatigue (materials)
fatigue tests
modular ratios
pressure ratio
S-N diagrams

stress relaxation

DEF The decrease in stress after a given time at constant strain.
GS mechanical properties
. **stress relaxation**
relaxation (mechanics)
. **stress relaxation**
RT anelasticity
Bordoni peaks
creep analysis
creep diagrams
creep properties
ductility
fatigue (materials)
plastic deformation
plastic flow
plastic memory
plastic properties
∞ recovery
residual stress
shear properties
strain energy release rate
stresses
temperature inversions

stress relieving

GS heat treatment
. **stress relieving**
relieving
. **stress relieving**
RT alloys
annealing
fatigue (materials)
∞ recovery
residual stress
stabilization
strain hardening
tempering

stress rupture strength

USE **creep rupture strength**

stress tensors

DEF Complete sets of stress components in a solid or fluid medium.
GS algebra
. tensors
. . **stress tensors**
RT continuum mechanics
elastic properties
fracture mechanics
plastic properties

structural design

stress waves

- GS elastic waves
- . **stress waves**
- RT acoustic emission
- shock layers
- shock waves
- stresses
- temperature inversions
- wave propagation
- ∞ waves

stressed-skin structures

- RT monocoque structures
- skin (structural member)
- spherical shells
- ∞ structures
- thin walled shells

stresses

DEF The forces per unit area of a body that tends to produce a deformation.

- GS **stresses**
- . axial stress
- . combined stress
- . critical loading
- . interlaminar stress
- . photostresses
- . plane stress
- . residual stress
- . Reynolds stress
- . shear stress
- . . torsional stress
- . tensile stress
- . thermal stresses
- . triaxial stresses
- . vibrational stress

- RT buckling
- cracks
- creep properties
- destruction
- fatigue (materials)
- ∞ flight stress
- impact
- loads (forces)
- mechanical properties
- microyield strength
- prestressing
- rolling contact loads
- shear properties
- stress analysis
- stress concentration
- stress cycles
- stress relaxation
- stress waves
- structural strain
- temperature inversions
- transverse loads
- triboluminescence
- x ray stress analysis
- yield strength

stress-strain diagrams

- GS diagrams
- . **stress-strain diagrams**
- RT axial strain
- Hookes law
- inelastic stress
- modulus of elasticity
- Poisson ratio
- Portevin-le Chatelier effect
- proportional limit
- shape memory alloys
- shear properties
- strain measurement
- structural strain
- yield strength

stress-strain relationships

DEF Relationship between the stress or load on a structure, structural member, or a specimen, and the strain or deformation that follows.

- RT elastic deformation
- interlaminar stress
- plane strain
- plastic deformation
- Portevin-le Chatelier effect
- ∞ relationships

- residual stress
- strain distribution
- strain measurement
- stress concentration
- stress distribution
- structural strain
- yield strength

stress-strain-time relations

- RT creep diagrams
- Newtonian fluids
- thermoviscoelasticity

stretch forming

- RT bulging
- cold working
- ∞ drawing
- metal drawing
- metal working
- stretching

stretchers

- GS medical equipment
- . **stretchers**
- RT first aid

stretching

- UF *dilatation*
- RT cold working
- deep drawing
- dilatational waves
- distortion
- ∞ drawing
- ductility
- elastic deformation
- elongation
- metal working
- plastic deformation
- stretch forming
- tempering
- ∞ tension
- winding

striated muscle
(added December 2004)
USE **skeletal muscle**

striation

DEF A fracture surface marking consisting of a separation of the advancing crack front into separate fracture planes.

- RT grooving
- musculoskeletal system
- riblets
- shatter cones
- skeletal muscle

string theory

- SN (DOES NOT INCLUDE CLASSICAL STRING THEORY)
- UF *superstring theory*
- RT bosons
- cosmology
- field theory (physics)
- gauge theory
- grand unified theory
- gravitation theory
- large-scale structure of the universe
- particle theory
- quantum chromodynamics
- quantum theory
- relativity
- supersymmetry
- theoretical physics
- unified field theory

stringers

DEF Slender, lightweight, lengthwise fill-in structural members in a rocket body, or the like, serving to reinforce and give shape to the skin.

- GS structural members
- . **stringers**
- RT longerons
- reinforcement (structures)
- structural stability

strings

- RT assemblies

cordage

∞ **strip**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT airports
- circuits
- display devices
- metal strips
- ribbons
- runways

strip mining

- GS mining
- . **strip mining**
- RT clays
- coal
- Earth resources
- excavation
- exploitation
- lunar mining
- mineral deposits
- mines (excavations)
- soils

strip transmission lines

- GS transmission lines
- . **strip transmission lines**
- . . . microstrip transmission lines
- RT antenna feeds
- metal strips
- transmission circuits

∞ **stripping**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT anodic stripping
- ion stripping
- paint removal
- peeling
- stripping (distillation)

stripping (distillation)

- GS distillation
- . **stripping (distillation)**
- RT ∞ separation
- ∞ stripping
- vaporizing

stroboscopes

- GS optical equipment
- . **stroboscopes**
- RT ballistic cameras
- high speed cameras
- optical measurement
- synchronism
- time measurement
- velocity measurement

stroke volume

- (added March 1991)
- GS output
- . cardiac output
- . . **stroke volume**
- RT blood volume
- cardiovascular system
- heart function
- heart rate
- physiological tests

∞ **strokes**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cerebral vascular accidents
- thermodynamic cycles

stroking tests

- GS vibration tests
- . damping tests
- . . **stroking tests**
- RT dynamic response
- frequency response
- modal response
- shock spectra
- structural vibration
- ∞ tests
- transient response

strong interactions (field theory)

wave excitation

strong interactions (field theory)

DEF One of the fundamental interactions of elementary particles, primarily responsible for nuclear forces and other interactions among hadrons.

GS particle interactions
. elementary particle interactions
. high energy interactions
. . . **strong interactions (field theory)**

RT field theory (physics)
grand unified theory
∞ interactions
nuclear interactions
nuclear reactions
quantum chromodynamics
standard model (particle physics)
∞ theories
weak interactions (field theory)

strongly coupled plasmas

DEF Highly compressed and collisional plasmas with electron densities of order 10 to the 24th power per cubic centimeter or more. The mean kinetic and potential energies of particles in the plasma are typically of the same order of magnitude.

GS particles
. charged particles
. energetic particles
. . . plasmas (physics)
. . . . collisional plasmas
. **strongly coupled plasmas**
. . . . dense plasmas
. **strongly coupled plasmas**
. corpuscular radiation
. energetic particles
. . . plasmas (physics)
. . . . collisional plasmas
. **strongly coupled plasmas**
. . . . dense plasmas
. **strongly coupled plasmas**

RT controlled fusion
cosmic plasma
coupled modes
dusty plasmas
high temperature plasmas
inertial confinement fusion
magnetohydrodynamic stability
plasma compression
plasma conductivity
plasma density
plasma equilibrium
plasma focus

strontium

GS chemical elements
. **strontium**
. . . strontium isotopes
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90
metals
. **strontium**
. . . strontium isotopes
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90

strontium 85

GS chemical elements
. nuclides
. isotopes
. . . radioactive isotopes
. . . . **strontium 85**
. . . . strontium isotopes
. **strontium 85**
. strontium
. . . strontium isotopes
. . . **strontium 85**
metals
. strontium
. . . strontium isotopes

. . . **strontium 85**

strontium 87

GS chemical elements
. nuclides
. isotopes
. . . strontium isotopes
. . . . **strontium 87**
. strontium
. . . strontium isotopes
. . . **strontium 87**
metals
. strontium
. . . strontium isotopes
. . . **strontium 87**

strontium 88

GS chemical elements
. nuclides
. isotopes
. . . radioactive isotopes
. . . . **strontium 88**

strontium 89

GS chemical elements
. nuclides
. isotopes
. . . radioactive isotopes
. . . . **strontium 89**
. . . strontium isotopes
. . . . **strontium 89**
. strontium
. . . strontium isotopes
. . . **strontium 89**
metals
. strontium
. . . strontium isotopes
. . . **strontium 89**

strontium 90

GS chemical elements
. nuclides
. isotopes
. . . radioactive isotopes
. . . . **strontium 90**
. . . strontium isotopes
. . . . **strontium 90**
. strontium
. . . strontium isotopes
. . . **strontium 90**
metals
. strontium
. . . strontium isotopes
. . . **strontium 90**

strontium bromides

GS halogen compounds
. bromine compounds
. . . bromides
. . . . **strontium bromides**
. halides
. . . bromides
. . . . **strontium bromides**
. . . metal halides
. . . . **strontium bromides**
strontium compounds
. **strontium bromides**

strontium compounds

GS **strontium compounds**
. strontium bromides
. strontium fluorides
. strontium oxides
. strontium sulfides
. strontium titanates
. strontium zirconates
RT ∞ alkaline earth compounds
∞ chemical compounds
∞ metal compounds

strontium fluorides

GS halogen compounds
. fluorine compounds
. . . fluorides
. . . metal fluorides
. . . . **strontium fluorides**
. halides
. . . fluorides
. . . metal fluorides
. . . . **strontium fluorides**

. . . metal halides
. . . metal fluorides
. . . . **strontium fluorides**
strontium compounds
. **strontium fluorides**

strontium isotopes

GS chemical elements
. nuclides
. isotopes
. . . **strontium isotopes**
. . . . strontium 85
. . . . strontium 87
. . . . strontium 89
. . . . strontium 90
. strontium
. . . **strontium isotopes**
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90
metals
. strontium
. . . **strontium isotopes**
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90

strontium oxides

(added June 1992)
GS chalcogenides
. oxides
. . . metal oxides
. . . **strontium oxides**
strontium compounds
. **strontium oxides**
RT ∞ alkaline earth compounds
BSCCO superconductors
∞ chemical compounds
high temperature superconductors
∞ metal compounds
mixed oxides
superconductors (materials)

strontium sulfides

GS chalcogenides
. sulfides
. . . inorganic sulfides
. . . **strontium sulfides**
strontium compounds
. **strontium sulfides**
sulfur compounds
. sulfides
. . . inorganic sulfides
. . . **strontium sulfides**

strontium titanates

GS strontium compounds
. **strontium titanates**
titanium compounds
. titanates
. . . **strontium titanates**

strontium zirconates

GS strontium compounds
. **strontium zirconates**
zirconium compounds
. zirconates
. . . **strontium zirconates**

Strouhal number

DEF A nondimensional number occurring in the study of periodic or quasiperiodic variations in the wake of objects immersed in a fluid stream.

GS dimensionless numbers
. **Strouhal number**
ratios
. **Strouhal number**

RT backwash
buffeting
flow characteristics
flow distribution
flow stability
Froude number
oscillating flow
slipstreams
turbulence
unsteady flow

vortices
wakes

structural analysis
 UF *membrane analogy*
membrane theory
 GS **structural analysis**
 . dynamic structural analysis
 . . flutter analysis
 . energy methods
 . . Bernstein energy principle
 . . strain energy methods
 . equilibrium methods
 . matrix methods
 RT ∞ analyzing
 Castigliano variational theorem
 computational mechanics
 construction
 continuum modeling
 creep analysis
 design optimization
 Euler-Bernoulli beams
 hole geometry (mechanics)
 influence coefficient
 J integral
 loading moments
 megamechanics
 Michell theorem
 Mindlin plates
 modular ratios
 moment distribution
 NASTRAN
 orbital space tests
 patch tests
 plate theory
 shape functions
 shape optimization
 solid mechanics
 stiffness matrix
 stress analysis
 Trefftz method

structural basins
 UF *basins*
closed basins
depressions (topography)
sinks (geology)
 GS landforms
 . **structural basins**
 . . cirques (landforms)
 . . Great Basin (US)
 . . Kalahari Basin (Africa)
 . . karst
 . . . sinkholes
 . . . kettles (geology)
 . . Lake Champlain Basin (NY-VT)
 . . river basins
 . . . Atchafalaya River Basin (LA)
 . . . Chena River Basin (AK)
 . . . Columbia River Basin (ID-OR-WA)
 . . . Delaware River Basin (US)
 . . . Feather River Basin (CA)
 . . . Missouri River Basin (US)
 . . . Susquehanna River Basin (MD-NY-PA)
 . . . Wabash River Basin (IL-IN-OH)
 . . . wadis
 . . watersheds
 . . Williston Basin (North America)
 RT geology
 seamounts
 valleys

structural beams
 USE **beams (supports)**

structural design
 GS **structural design**
 . pressure vessel design
 RT aeroelastic research wings
 aircraft design
 airframe materials
 architecture
 breakwaters
 computer aided design
 construction
 ∞ design
 design optimization
 helicopter design

lofting
materials selection
missile design
plant design
product development
satellite design
shape optimization
ship hulls
shock spectra
space station structures
spacecraft design
spacecraft structures
stress analysis
stress tensors
substructures
tensegrity structures
underwater structures
weight reduction

structural design criteria
 GS criteria
 . **structural design criteria**
 RT aerodynamic loads
 axial compression loads
 axial loads
 bending moments
 compression loads
 cyclic loads
 ∞ design
 design optimization
 dynamic loads
 geotechnical engineering
 gust loads
 impact loads
 landing loads
 loads (forces)
 mass distribution
 moment distribution
 pressure distribution
 random loads
 rolling contact loads
 shape optimization
 shock loads
 static loads
 thrust loads
 transient loads
 vibratory loads

structural dynamics
 USE **dynamic structural analysis**

structural engineering
 RT aeronautical engineering
 aerospace engineering
 construction
 ∞ engineering
 geotechnical engineering
 megamechanics
 modular ratios
 smart structures
 stress analysis

structural failure
 GS failure
 . **structural failure**
 RT bending
 buckling
 collapse
 cracking (fracturing)
 creep properties
 deformation
 fatigue (materials)
 fracturing
 load carrying capacity
 mechanical properties
 system failures

structural fatigue
 USE **fatigue (materials)**

structural foundations
 USE **foundations**

structural influence coefficients
 UF *SIC (coefficient)*
 GS coefficients
 . influence coefficient

. . **structural influence coefficients**

structural materials
 USE **construction materials**

structural members
 GS **structural members**
 . beams (supports)
 . . box beams
 . . cantilever beams
 . . curved beams
 . . Euler-Bernoulli beams
 . . I beams
 . . rectangular beams
 . . Timoshenko beams
 . columns (supports)
 . . tapered columns
 . girders
 . longerons
 . membrane structures
 . . skin (structural member)
 . plates (structural members)
 . . anisotropic plates
 . . annular plates
 . . cantilever plates
 . . circular plates
 . . corrugated plates
 . . elastic plates
 . . end plates
 . . flat plates
 . . girder webs
 . . metal plates
 . . . boiler plate
 . . Mindlin plates
 . . orthotropic plates
 . . perforated plates
 . . plastic plates
 . . porous plates
 . . rectangular plates
 . . reinforced plates
 . . thick plates
 . . thin plates
 . saddles (supports)
 . strakes
 . stringers
 . struts
 . trusses
 . wing panels
 RT aircraft construction materials
 airframe materials
 bars
 ∞ channels
 clamped structures
 ∞ components
 concretes
 construction
 ∞ construction materials
 fasteners
 foundations
 guy wires
 joints (junctions)
 masonry
 pylon mounting
 pylons
 rectangular panels
 reinforcement (structures)
 rods
 slabs
 smart structures
 stiffness matrix
 ∞ structures
 substructures
 thick walls

structural properties (geology)
 UF *lineament*
 GS geology
 . **structural properties (geology)**
 RT Earth core
 Earth crust
 Earth mantle
 Earth planetary structure
 Earth surface
 fissures (geology)
 geophysics
 Great Basin (US)
 hydrology
 inliers (landforms)
 landforms
 neotectonics

structural reliability

- planetary composition
- plates (tectonics)
- ∞ properties
- rock mechanics
- shatter cones
- sinkholes
- subduction (geology)

structural reliability

- GS reliability
- . **structural reliability**
- RT aircraft reliability
- component reliability
- cumulative damage
- quality control

structural rigidity

USE **structural stability**

structural stability

- UF *structural rigidity*
- GS mechanical properties
- . dimensional stability
- . . **structural stability**
- . . . shell stability
- stability
- . static stability
- . . dimensional stability
- . . . **structural stability**
- shell stability
- RT aircraft stability
- aspect ratio
- combustion vibration
- hybrid structures
- load carrying capacity
- longerons
- plastic properties
- reinforcement (structures)
- resonance testing
- ∞ rigidity
- rotor stator interactions
- stiffness
- stringers
- wave resistance

structural strain

- RT axial strain
- bending
- buckling
- cracking (fracturing)
- deflection
- deformation
- elastic deformation
- failure
- load carrying capacity
- moments of inertia
- plastic deformation
- prestressing
- reinforcement (structures)
- rupturing
- shear strain
- shearing
- strain measurement
- stress concentration
- stresses
- stress-strain diagrams
- stress-strain relationships
- system failures
- temperature inversions
- twisting
- volumetric strain
- warpage

structural vibration

- GS vibration
- . **structural vibration**
- . . bending vibration
- . . breathing vibration
- . . flutter
- . . . panel flutter
- . . . subsonic flutter
- . . . supersonic flutter
- . . . transonic flutter
- . . linear vibration
- . . missile vibration
- . . self induced vibration
- . . . panel flutter
- . . . subsonic flutter
- . . . supersonic flutter
- . . . transonic flutter

- . . torsional vibration
- RT airfoil oscillations
- clamped structures
- earthquake resistant structures
- flexible spacecraft
- flutter analysis
- gyrodampers
- Mindlin plates
- random vibration
- resonant vibration
- rotor dynamics
- shaking
- shock spectra
- stroking tests
- vibration tests

structural weight

- GS weight (mass)
- . **structural weight**
- RT mass ratios
- materials selection
- NEW MOONS project
- weight analysis
- weight reduction

structured grids (mathematics)

- (added May 1995)
- DEF In computational fluid dynamics, grid systems where the flowfield is discretized into quadrilateral elements for two-dimensional fields, and hexahedral elements for three-dimensional fields. In this type of grid system the grid points can be associated with grid lines in an ordered manner.
- GS coordinates
- . computational grids
- . . **structured grids (mathematics)**
- . . . multiblock grids
- RT computational fluid dynamics
- grid generation (mathematics)
- ∞ nets
- smoothing
- unstructured grids (mathematics)

structured programming

- (added December 1989)
- GS computer programming
- . **structured programming**
- RT computer aided design
- computer programs
- data structures
- ∞ programming
- programming languages
- software engineering

∞ structures

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aircraft structures
- architecture
- atomic structure
- breakwaters
- bridges (structures)
- clamped structures
- composite structures
- concrete structures
- configuration interaction
- crystal structure
- Earth planetary structure
- earthquake resistant structures
- expandable structures
- fine structure
- folding structures
- foundations
- frames
- galactic structure
- honeycomb structures
- hulls (structures)
- hybrid structures
- hyperfine structure
- inflatable structures
- intramolecular structures
- isotensoid structures
- large space structures
- membrane structures
- microstructure
- missile structures
- molecular structure
- monocoque structures

- planar structures
- redundant components
- rigid structures
- ring structures
- sandwich structures
- smart structures
- space erectable structures
- space station structures
- spacecraft structures
- steel structures
- stellar structure
- stressed-skin structures
- structural members
- substructures
- tanks (containers)
- tensegrity structures
- towers
- trusses
- unimolecular structures
- variable geometry structures
- welded structures
- wooden structures

struts

- GS structural members
- . **struts**
- RT chassis
- columns (supports)
- frames
- pylons
- supports
- trusses

strychnine

- GS bases (chemical)
- . alkaloids
- . . **strychnine**
- nitrogen compounds
- . alkaloids
- . . **strychnine**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- **strychnine**
- poisons
- . **strychnine**
- RT stimulants

STS

USE **space transportation system**

STS-1

USE **Space Transportation System 1 flight**

STS-2

USE **Space Transportation System 2 flight**

STS-3

USE **Space Transportation System 3 flight**

STS-4

USE **Space Transportation System 4 flight**

students

- UF *trainees*
- RT education
- instructors
- learning
- training evaluation
- universities

studies

USE **investigation**

studs (structural members)

- RT anchors (fasteners)
- bolts
- columns (supports)
- fasteners
- holders
- lugs
- pins
- screws

walls

stunt flying
USE **aerobatics**

Sturm-Liouville operator
USE **Sturm-Liouville theory**

Sturm-Liouville theory
UF *Sturm-Liouville operator*
GS analysis (mathematics)
. real variables
. . . **Sturm-Liouville theory**
RT differential equations
Lamb waves
Lame wave equations
∞ theories

styluses
USE **pens**

styphnates
GS explosives
. **styphnates**
RT ∞ chemical compounds
∞ initiators
initiators (explosives)

styrenes
GS **styrenes**
. polystyrene
. . . styrofoam (trademark)
RT Buna (trademark)

styrofoam (trademark)
GS plastics
. polystyrene
. . . **styrofoam (trademark)**
styrenes
. polystyrene
. . . **styrofoam (trademark)**
vinyl polymers
. polystyrene
. . . **styrofoam (trademark)**
RT foams
∞ polymers

subarctic regions
GS Northern Hemisphere
. Arctic regions
. . . **subarctic regions**
regions
. polar regions
. . . Arctic regions
. . . **subarctic regions**
. remote regions
. . . Arctic regions
. . . **subarctic regions**

subassemblies
DEF Assemblies that are component parts of larger assemblies. Used for subcircuits.
GS assemblies
. **subassemblies**
RT accessories
∞ components

subaudible frequencies
GS frequencies
. **subaudible frequencies**
range (extremes)
. frequency ranges
. . . **subaudible frequencies**
RT acoustic frequencies
frequency distribution
harmonics
zero sound

subcarrier waves
USE **carrier waves**

subcircuits
USE **circuits**

subcontracts
DEF Any contracts, other than prime contracts, entered into by a prime contractor or subcontractor calling for supplies or services required for the performance of any one or more prime contracts.
GS contracts

. **subcontracts**
RT agreements
contract management
contract negotiation
contractors
estimates
grants
options
procurement

subcritical flow
DEF Open channel flow having a low velocity and a Froude number less than unity (also described as tranquil or streaming flow).
GS fluid flow
. **subcritical flow**
RT critical flow
flow characteristics
gas flow
liquid flow
multiphase flow
orifice flow
pipe flow
pressure gradients
single-phase flow
steady flow
steam flow
supercritical flow
turbulent flow
uniform flow
unsteady flow

subcritical mass
GS mass
. **subcritical mass**
RT critical mass
nuclear fission
nuclear reactions

subdivisions
RT ∞ division
∞ groups
∞ sections
set theory
subgroups
subsidiaries

subduction (geology)
DEF Descent of one tectonic unit under another. Most commonly used for descent of a slab of lithosphere, but appropriate at any scale.
GS geology
. **subduction (geology)**
RT Earth mantle
earthquakes
lithosphere
neotectonics
plates (tectonics)
seismology
structural properties (geology)
tectonics

subdwarf stars
GS celestial bodies
. stars
. . . **subdwarf stars**
RT dwarf stars
main sequence stars
red dwarf stars
white dwarf stars

subgiant stars
DEF Celestial bodies whose position on the Hertzsprung-Russell (H-R) diagram is intermediate between that of the main-sequence stars and normal giants of the same spectral type.
GS celestial bodies
. stars
. . . **subgiant stars**
RT carbon stars
dwarf stars
giant stars
late stars
M stars
main sequence stars
stellar evolution

supergiant stars

subgravity
USE **microgravity**

subgroups
UF *sublattices*
GS algebra
. group theory
. . homomorphisms
. . . **subgroups**
RT matrices (mathematics)
number theory
probability theory
set theory
subdivisions
subsidiaries

subharmonic generators
RT damping
∞ generators
harmonic generators
harmonic oscillators
harmonics
oscillators
signal generators
stimulated emission devices

SUBIC project
USE **Submarine Integrated Control project**

subjects
GS classifications
. **subjects**
RT handbooks
information retrieval
textbooks

sublattices
USE **lattices (mathematics) subgroups**

sublayers
USE **substrates**

sublethal dosage
GS dosage
. **sublethal dosage**
RT drugs

sublimation
DEF The transition of a substance directly from the solid state to the vapor state, or vice versa, without passing through the intermediate liquid state.
GS phase transformations
. vaporizing
. . **sublimation**
RT ablation
beneficiation
condensing
crystallization
desorption
diffusion
evaporation
gas-metal interactions
gas-solid interfaces
phase change materials
purification
pyrometallurgy
refining
∞ separation
vapor pressure

subliminal stimuli
RT psychology
sensory stimulation
∞ stimuli

submarine cables
GS transmission lines
. **submarine cables**
RT ∞ cables
coaxial cables
communication cables
power lines

submarine hydrothermal vents
(added March 2005)
UF *black smokers (oceanography)*

Submarine Integrated Control project

deep-sea hydrothermal vents
seafloor hydrothermal vents
white smokers (oceanography)

RT crystallization
deep water
geochemistry
hydrothermal systems
mid-ocean ridges
mineralogy
ocean bottom
oceanography
sea floor spreading
volcanic eruptions

Submarine Integrated Control project

UF *SUBIC project*
GS programs
. projects
. . **Submarine Integrated Control project**

RT ∞ control

submarine propulsion

GS propulsion
. marine propulsion
. . underwater propulsion
. . . **submarine propulsion**

submarines

DEF Any self-powered underwater craft or towed underwater barges and arrays.

GS water vehicles
. ships
. . **submarines**
. . . ballistic missile submarines
. . . guided missile submarines
. . . trident submarine
. underwater vehicles
. . **submarines**
. . . ballistic missile submarines
. . . guided missile submarines
. . . trident submarine

RT antiship missiles
antiship warfare
antisubmarine warfare
∞ military vehicles
navy
nuclear powered ships
Seafarer project
ship hulls
submerged bodies

submerged bodies

GS **submerged bodies**
. diving (underwater)
. underwater research laboratories

RT submarines
torpedoes
towed bodies
underwater engineering
underwater photography
underwater structures
underwater vehicles
water immersion

submerging

UF *immersion*
RT baths
dipping
quenching (cooling)
sinking
∞ soaking
water immersion
weightlessness simulation
wetting

submersible aircraft

RT ∞ aircraft
antisubmarine warfare aircraft
light aircraft
∞ military aircraft
reconnaissance aircraft
research aircraft
water takeoff and landing aircraft

Submillimeter Wave Astronomy Satellite

(added November 2000)

DEF A NASA Small Explorer Project (SMEX) satellite designed to study the chemical composition, energy balance, and structure of

interstellar gas clouds and the processes that lead to the formation of stars and planets. Its primary objective is to survey water, molecular oxygen, carbon, and isotopic carbon monoxide emission in a variety of galactic star forming regions.

UF *Explorer 74 satellite*
SWAS (satellite)
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Submillimeter Wave Astronomy Satellite**
. . Explorer satellites
. . . **Submillimeter Wave Astronomy Satellite**
. . small scientific satellites
. . . **Submillimeter Wave Astronomy Satellite**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Submillimeter Wave Astronomy Satellite**

RT interstellar chemistry
interstellar matter
molecular clouds
spaceborne astronomy
star formation
submillimeter waves

submillimeter waves

SN (BELOW 1 MILLIMETER)
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . **submillimeter waves**

RT beams (radiation)
electromagnetic noise
far infrared radiation
frequencies
Large Deployable Reflector
microwaves
millimeter waves
Submillimeter Wave Astronomy Satellite
wavelengths

subminiaturization

GS miniaturization
. **subminiaturization**

RT electronic modules
microminiaturization
miniature electronic equipment
printed circuits

suborbital flight

RT ∞ flight
manned space flight
orbits
parabolic flight
rocket flight
space flight
weightlessness

subreflectors

RT Cassegrain antennas
conductors
reflector antennas
reflectors
scanners

Subroc missile

GS missiles
. ballistic missiles
. . **Subroc missile**
. surface to surface missiles
. . fleet ballistic missiles
. . . **Subroc missile**
. underwater to surface missiles
. . **Subroc missile**

RT underwater trajectories

subroutine libraries (computers)

GS computer programs
. computer systems programs
. . **subroutine libraries (computers)**

RT subroutines

subroutines

DEF A set of instructions necessary to direct a computer to carry out a well defined mathematical or logical operation; a subunit of a routine, usually coded in such a manner that it can be treated as a black box by the routine using it.

GS computer programs
. **subroutines**
data conversion routines
. **subroutines**

RT compilers
parsing algorithms
subroutine libraries (computers)
user manuals (computer programs)

subsets (mathematics)

USE **set theory**

subsidence

RT isostasy
mines (excavations)
settling

subsidiaries

RT ∞ division
∞ sections
subdivisions
subgroups

∞ subsonic aircraft

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ aircraft
flying platforms
general aviation aircraft
GETOL aircraft
gliders
ground effect machines
helicopters
jet aircraft
light aircraft
paragliders
passenger aircraft
rotary wing aircraft
short takeoff aircraft
supersonic aircraft
tandem wing aircraft
training aircraft
transport aircraft
turbo-prop aircraft
utility aircraft
vertical takeoff aircraft
water takeoff and landing aircraft

subsonic flow

DEF Flow of a fluid, as air over an airfoil, at speeds less than acoustic velocity.

GS fluid flow
. **subsonic flow**

RT aerodynamics
compressible flow
flow velocity
gas flow
incompressible flow
Karman vortex street
Ringleb flow
transonic flow

subsonic flutter

GS vibration
. structural vibration
. . flutter
. . . **subsonic flutter**
. . self induced vibration
. . . **subsonic flutter**

RT transonic flutter

subsonic speed

SN (LESS THAN MACH 1)
GS rates (per time)
. **subsonic speed**
velocity
. **subsonic speed**
velocity

RT acoustic velocity
low speed

- transonic speed
- subsonic wind tunnels**
 GS test facilities
 . wind tunnels
 . . low speed wind tunnels
 . . . **subsonic wind tunnels**
 RT blowdown wind tunnels
 hypersonic wind tunnels
 rectangular wind tunnels
 supersonic wind tunnels
 transonic wind tunnels
- substances*
 USE **materials**
- substitutes**
 UF *substitution*
 RT alternatives
 replacing
 variations
- substitution*
 USE **substitutes**
- substrates**
 UF *sublayers*
 GS strata
 . **substrates**
 RT coatings
 laminates
 ∞ layers
 metallizing
 photomasks
 plating
 ply orientation
 primers (coatings)
- substructures**
 RT floors
 foundations
 structural design
 structural members
 ∞ structures
 supports
 undercarriages
 walls
- subtraction**
 GS number theory
 . **subtraction**
 RT arithmetic
 computation
 Gaussian elimination
- subtropical regions*
 USE **temperate regions**
tropical regions
- suburban areas**
 RT cities
 land use
 megalopolises
 regional planning
 residential areas
 rural areas
- subzero temperature**
 GS temperature
 . **subzero temperature**
 RT absolute zero
 atmospheric temperature
 cold acclimatization
 cold tolerance
 cold weather
- Success project**
 GS programs
 . projects
 . . **Success project**
 weapon systems
 . **Success project**
- succinimides**
 GS nitrogen compounds
 . amides
 . . **succinimides**
 . imides
- . . **succinimides**
- succinonitrile**
(added April 2004)
 DEF A four-carbon straight chain dinitrile compound. A transparent, organic material with structure and growth characteristics similar to metals and alloys.
 UF *butanedinitrile*
ethylene cyanide
 GS cyanides
 . **succinonitrile**
 nitrogen compounds
 . nitriles
 . . **succinonitrile**
 organic compounds
 . ethylene compounds
 . . **succinonitrile**
 . nitriles
 . . **succinonitrile**
- sucrose**
 GS organic compounds
 . carbohydrates
 . . sugars
 . . . **sucrose**
- suction**
 RT evacuating (vacuum)
 pressure effects
 pressure gradients
 vacuum
 vacuum apparatus
 vacuum pumps
- Sud Aviation aircraft**
 GS **Sud Aviation aircraft**
 . Alouette helicopters
 . . SA-330 helicopter
 . . SE-3160 helicopter
 . Concorde aircraft
 . SA-321 helicopter
 . SE-210 aircraft
 RT ∞ aircraft
- Sud Aviation SA-321 helicopter*
 USE **SA-321 helicopter**
- Sud Aviation SA-330 helicopter*
 USE **SA-330 helicopter**
- Sud Aviation SE-210 aircraft*
 USE **SE-210 aircraft**
- Sud Aviation SE-3160 helicopter*
 USE **SE-3160 helicopter**
- Sudan**
 GS nations
 . **Sudan**
 RT Africa
- sudden enhancement of atmospheric**
 GS electromagnetic interference
 . radio frequency interference
 . . electromagnetic noise
 . . . atmospheric
 **sudden enhancement of atmospheric**
- sudden ionospheric disturbances**
 DEF Complex combinations of sudden changes in the conditions of the ionosphere and the effects of these changes. Used for geomagnetic crotchets and SID (ionospheric disturbances).
 UF *geomagnetic crotchets*
SID (ionospheric disturbances)
 GS ionospheric disturbances
 . ionospheric storms
 . . **sudden ionospheric disturbances**
 storms
 . ionospheric storms
 . . **sudden ionospheric disturbances**
 RT ∞ disturbances
 magnetic disturbances
 magnetic storms
 solar activity effects
- traveling ionospheric disturbances
- sudden storm commencements**
 RT magnetic disturbances
 magnetic storms
 solar activity effects
 solar corpuscular radiation
 solar flares
 storms
- sugar beets**
 GS farm crops
 . **sugar beets**
 plants (botany)
 . **sugar beets**
 RT agriculture
 botany
 crop growth
 crop vigor
 Earth resources
 farmlands
 irrigation
 seeds
 sugars
- sugar cane**
 GS farm crops
 . **sugar cane**
 plants (botany)
 . **sugar cane**
 RT agriculture
 botany
 crop growth
 crop vigor
 Earth resources
 farmlands
 ∞ food
 irrigation
 seeds
- sugars**
 GS organic compounds
 . carbohydrates
 . . **sugars**
 . . . dextrans
 . . . inositols
 . . . lactose
 . . . mannitol
 . . . monosaccharides
 . . . sucrose
 hexoses
 galactose
 glucose
 pentose
 ribose
 xylose
 RT ∞ food
 sugar beets
- suggestion**
 GS recommendations
 . **suggestion**
 RT hypnosis
- Suhl effect**
 RT carrier injection
 ∞ effects
 electrons
 excitons
 holes (electron deficiencies)
 magnetic fields
 n-type semiconductors
 recombination reactions
- suitability**
 RT acceptability
 compatibility
- suits**
 GS clothing
 . **suits**
 . . pressure suits
 . . . space suits
 extravehicular mobility units
 RT garments

Sukhoi aircraft

Sukhoi aircraft

(added September 1995)

RT ∞ aircraft

sulfates

GS sulfur compounds
. **sulfates**
. . alum
. . ammonium sulfates
. . barite
. . hydroxylamine sulfate
. . lithium sulfates
. . magnesium sulfates
. . . hexahedrite
. . sodium sulfates
RT gypsum
sulfuric acid

sulfation

DEF The introduction into an organic molecule of the sulfuric ester group (or its salts) -O-SO₃H, where the sulfur is linked through an oxygen atom to the parent molecule.

GS chemical reactions

. **sulfation**

RT hydrometallurgy
sulfidation

sulfidation

DEF The reaction of a metal or alloy with a sulfur-containing species to produce a sulfur compound that forms on or beneath the surface of the metal or alloy.

GS chemical reactions

. **sulfidation**

RT corrosion resistance
gas-metal interactions
heat resistant alloys
nickel alloys
sulfation
sulfides

sulfides

GS chalcogenides
. **sulfides**
. . disulfides
. . . carbon disulfide
. . inorganic sulfides
. . . barium sulfides
. . . bismuth sulfides
. . . cadmium sulfides
. . . calcium sulfides
. . . copper sulfides
. . . hydrogen sulfide
. . . indium sulfides
. . . lead sulfides
. . . molybdenum sulfides
. . . . molybdenum disulfides
. . . polysulfides
. . . strontium sulfides
. . . zinc sulfides
. . . . wurtzite
. . . . zincblende
. . pyrites
. . pyrrhotite
. . troilite
sulfur compounds
. **sulfides**
. . disulfides
. . . carbon disulfide
. . inorganic sulfides
. . . barium sulfides
. . . bismuth sulfides
. . . cadmium sulfides
. . . calcium sulfides
. . . copper sulfides
. . . hydrogen sulfide
. . . indium sulfides
. . . lead sulfides
. . . molybdenum sulfides
. . . . molybdenum disulfides
. . . polysulfides
. . . strontium sulfides
. . . zinc sulfides
. . . . wurtzite
. . . . zincblende
. . pyrites
. . pyrrhotite
. . troilite
RT sulfidation

thioplastics

sulfites

GS sulfur compounds
. **sulfites**
. . hydrosulfites
. . sodium sulfites

sulfonates

GS esters
. **sulfonates**
sulfur compounds
. **sulfonates**
RT ∞ salts

sulfones

GS sulfur compounds
. **sulfones**
RT sulfonic acid

sulfonic acid

GS acids
. **sulfonic acid**
RT sulfones
sulfur compounds

sulfur

GS chemical elements
. **sulfur**
. . sulfur isotopes

sulfur chlorides

GS halogen compounds
. chlorine compounds
. . chlorides
. . . **sulfur chlorides**
. . halides
. . chlorides
. . . **sulfur chlorides**
sulfur compounds
. **sulfur chlorides**

sulfur compounds

GS **sulfur compounds**
. organic sulfur compounds
. sulfates
. . alum
. . ammonium sulfates
. . barite
. . hydroxylamine sulfate
. . lithium sulfates
. . magnesium sulfates
. . . hexahedrite
. . sodium sulfates
. sulfides
. . disulfides
. . . carbon disulfide
. . inorganic sulfides
. . . barium sulfides
. . . bismuth sulfides
. . . cadmium sulfides
. . . calcium sulfides
. . . copper sulfides
. . . hydrogen sulfide
. . . indium sulfides
. . . lead sulfides
. . . molybdenum sulfides
. . . . molybdenum disulfides
. . . polysulfides
. . . strontium sulfides
. . . zinc sulfides
. . . . wurtzite
. . . . zincblende
. . pyrites
. . pyrrhotite
. . troilite
. sulfites
. . hydrosulfites
. . sodium sulfites
. sulfonates
. sulfones
. sulfur chlorides
. sulfur fluorides
. . sulfur hexafluoride
. sulfur oxides
. . sulfur dioxides
. sulfuric acid
. thiazine (trademark)
. thiols
. . cysteine

. . dimercaprol
RT bloedite
∞ chemical compounds
∞ Group 6A compounds
sulfonic acid

sulfur dioxides

GS chalcogenides
. oxides
. . dioxides
. . . **sulfur dioxides**
. . sulfur oxides
. . . **sulfur dioxides**
sulfur compounds
. sulfur oxides
. . **sulfur dioxides**

sulfur fluorides

GS halogen compounds
. fluorine compounds
. . fluorides
. . . **sulfur fluorides**
. . . . sulfur hexafluoride
. . halides
. . fluorides
. . . **sulfur fluorides**
. . . . sulfur hexafluoride
sulfur compounds
. **sulfur fluorides**
. . sulfur hexafluoride

sulfur hexafluoride

(added September 1993)
GS gases
. **sulfur hexafluoride**
halogen compounds
fluorine compounds
. fluorides
. . sulfur fluorides
. . . **sulfur hexafluoride**
. . halides
. . fluorides
. . . sulfur fluorides
. . . . **sulfur hexafluoride**
sulfur compounds
sulfur fluorides
. **sulfur hexafluoride**
RT ∞ chemical compounds
dielectrics
infrared spectroscopy
laser materials
working fluids

sulfur isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **sulfur isotopes**
. sulfur
. . **sulfur isotopes**

sulfur oxides

GS chalcogenides
. oxides
. . **sulfur oxides**
. . . sulfur dioxides
sulfur compounds
. **sulfur oxides**
. . sulfur dioxides
RT acid rain
dioxides

sulfuric acid

GS acids
. **sulfuric acid**
sulfur compounds
. **sulfuric acid**
RT sulfates

sum rules

GS rules
. **sum rules**
RT sums

summaries

GS **summaries**
. abstracts
. prelaunch summaries
RT annotations
bibliographies

- documentation
- indexes (documentation)
- information dissemination
- postlaunch reports
- reports
- summer**
- GS seasons
- RT autumn
- hot weather
- solstices
- spring (season)
- winter
- sumps**
- RT drainage
- pits (excavations)
- waste disposal
- sums**
- RT algebra
- amount
- arithmetic
- computation
- series (mathematics)
- sum rules
- sun**
- DEF The star at the center of the solar system, around which the planets, asteroids, and comets revolve. It is a G-type star. Used for solar disk.
- UF *solar disk*
- GS celestial bodies
- . stars
- . . G stars
- . . . **sun**
- . . main sequence stars
- . . . **sun**
- RT AOSO
- ASTE C solar turboelectric generator
- celestial mechanics
- GRIST (telescope)
- light sources
- OSO
- photosphere
- planets
- satellite solar energy conversion
- satellite solar power stations
- solar activity
- solar activity effects
- solar arrays
- solar atmosphere
- solar atriums
- solar auxiliary power units
- solar blankets
- solar cells
- solar collectors
- solar compasses
- solar constant
- solar cooling
- solar corona
- solar corpuscular radiation
- solar cosmic rays
- solar cycles
- solar eclipses
- solar electric propulsion
- solar electrons
- solar energy
- solar energy absorbers
- solar energy conversion
- solar flares
- solar flux
- solar flux density
- solar furnaces
- solar generators
- solar granulation
- solar gravitation
- solar heating
- solar houses
- solar instruments
- solar interior
- solar limb
- solar longitude
- solar magnetic field
- Solar Maximum Mission
- Solar Maximum Mission-A
- Solar Mesosphere Explorer
- solar nebula
- solar neighborhood
- solar neutrinos
- solar oblateness
- solar observatories
- solar orbits
- solar oscillations
- solar parallax
- solar physics
- solar ponds (heat storage)
- solar position
- solar power satellites
- solar powered aircraft
- solar probes
- solar prominences
- solar propulsion
- solar protons
- solar radar echoes
- solar radiation
- Solar Radiation 1 satellite
- Solar Radiation 3 satellite
- solar radiation shielding
- solar radio bursts
- solar reflectors
- solar rotation
- solar sails
- solar sea power plants
- solar sensors
- solar simulation
- solar simulators
- solar spectra
- solar spectrometers
- solar storms
- solar system
- solar system evolution
- solar temperature
- solar terrestrial interactions
- solar thermal propulsion
- solar total energy systems
- solar velocity
- solar wind
- solar wind velocity
- solar x-rays
- sunlight
- Ulysses mission
- sun sensors*
- USE **solar sensors**
- Sunblazer space probe**
- GS unmanned spacecraft
- . space probes
- . . solar probes
- . . . **Sunblazer space probe**
- RT multistage rocket vehicles
- solid propellant rocket engines
- sunflowers**
- DEF Any of a number of tall related plants having yellow, daisylike flowers with yellow, brown, purple, or almost black disks containing seeds from which an oil is extracted.
- GS farm crops
- . **sunflowers**
- plants (botany)
- . **sunflowers**
- RT agriculture
- crop identification
- ∞ crops
- Earth resources
- sunglasses**
- RT eye protection
- eyepieces
- goggles
- optical filters
- visors
- sunlight**
- GS electromagnetic radiation
- . light (visible radiation)
- . . **sunlight**
- extraterrestrial radiation
- . solar radiation
- . . **sunlight**
- RT black body radiation
- circumsolar radiation
- climatology
- cloud cover
- infrared radiation
- insolation
- sky
- sky brightness
- sky radiation
- solar energy
- solar heating
- sun
- thermal radiation
- ultraviolet radiation
- Umkehr effect
- zodiacal light
- sunrise**
- DEF The crossing of the visible horizon by the upper limb of the ascending sun.
- RT morning
- ∞ science
- sunset
- terminator lines
- sunset**
- DEF The crossing of the visible horizon by the upper limb of the descending sun.
- RT evening
- ∞ science
- sunrise
- terminator lines
- sunspot cycle**
- DEF A cycle with an average length of 11. 1 years but varying between 7 and 17 years in the number and area of sunspots, as given by the relative sunspot number. This number rises from a minimum of 0 to 10 to a maximum of 50 to 140 about 4 years later, and then declines more slowly.
- GS cycles
- . solar cycles
- . . **sunspot cycle**
- RT solar activity
- starspots
- stellar activity
- sunspots**
- DEF Relatively dark areas on the surface of the sun consisting of dark central umbras surrounded by penumbras which are intermediate in brightness between the umbras and the surrounding photosphere.
- GS stellar activity
- . solar activity
- . . **sunspots**
- . starspots
- . . **sunspots**
- RT faculae
- magnetic disturbances
- photosphere
- solar cycles
- solar flares
- solar terrestrial interactions
- twenty-seven day variation
- Sunyaev-Zeldovich effect**
- DEF Compton scattering of microwave radiation in the vicinity of galaxy clusters resulting in fluctuations in the cosmic microwave background radiation (CMBR).
- UF *S-Z effect*
- RT anisotropy
- Compton effect
- cosmic gases
- cosmic microwave background radiation
- ∞ effects
- galactic clusters
- intergalactic media
- microwave scattering
- radio astronomy
- relie radiation
- Super Sabre aircraft*
- USE **F-100 aircraft**
- superalloys*
- USE **heat resistant alloys**
- supercapacitors*
- (added September 2003)
- USE **electrochemical capacitors**
- supercavitating flow**
- UF *supercavitation*

superchargers

- GS fluid flow
 - . turbulent flow
 - . . cavitation flow
 - . . . **supercavitating flow**
- RT hydrofoil oscillations

supercavitation

- USE **supercavitating flow**

superchargers

- UF *supercharging*
turbochargers
- GS compressors
 - . **superchargers**
- RT air intakes
blowers
centrifugal compressors
compressing
internal combustion engines
turbochargers
turbomachinery

supercharging

- USE **superchargers**

SuperCobra

(added April 1997)

- USE **AH-1W helicopter**

supercomputers

- DEF Computers with very large capacity and very high speed.
- GS data processing equipment
 - . computers
 - . . **supercomputers**
 - . . . Connection Machine
 - . . . Cray computers
- RT architecture (computers)
grid computing (computer networks)
hypercube multiprocessors
multiprocessing (computers)
parallel processing (computers)

superconducting cavity resonators

(added December 1992)

- GS resonators
 - . cavity resonators
 - . . **superconducting cavity resonators**
 - superconducting devices
 - . **superconducting cavity resonators**
- RT microwave oscillators
oscillators
superconducting films
superconducting magnets

superconducting devices

(added December 1992)

- GS **superconducting devices**
 - . SIS (superconductors)
 - . squid (detectors)
 - . superconducting cavity resonators
 - . superconducting magnets
- RT Josephson effect
superconducting films
superconducting power transmission
superconducting super collider
tunnel junctions

superconducting films

(added April 1989)

- RT BSCCO superconductors
- ∞ films
 - laser deposition
 - pulsed laser deposition
 - semiconducting films
 - superconducting cavity resonators
 - superconducting devices
 - superconductors (materials)
 - thick films
 - thin films
 - YBCO superconductors

superconducting magnets

- GS magnets
 - . electromagnets
 - . . **superconducting magnets**
 - superconducting devices
 - . **superconducting magnets**

- RT cryogenic magnets
flux pumps
high field magnets
high temperature superconductors
magnet coils
magnetic energy storage
superconducting cavity resonators
superconducting super collider

superconducting power transmission

- RT ∞ conductivity
 - cryogenics
 - electric power transmission
 - high temperature superconductors
 - low temperature physics
 - power lines
 - superconducting devices
 - transition temperature
 - transmission lines

superconducting quantum interferometers

- USE **squid (detectors)**

superconducting super collider

- GS particle accelerators
 - . **superconducting super collider**
- RT storage rings (particle accelerators)
superconducting devices
superconducting magnets

superconductivity

DEF A property of many elements, alloys, and compounds by virtue of which their electrical resistivity vanishes and they become strongly diamagnetic under appropriate conditions. Used for Meissner effect.

- UF *Meissner effect*
- GS electrical properties
 - . electrical resistivity
 - . . **superconductivity**
 - . . . Kondo effect
 - transport properties
 - . electrical resistivity
 - . . **superconductivity**
 - . . . Kondo effect
- RT Abrikosov theory
BCS theory
Bloch band
- ∞ conductivity
 - critical current
 - cryogenics
 - cryotrons
 - electron phonon interactions
 - electron tunneling
 - flux pinning
 - flux pumps
 - gallium alloys
 - high temperature superconductors
 - Josephson junctions
 - Landau factor
 - Landau-Ginzburg equations
 - low temperature physics
- ∞ solid state physics
 - spin glass
 - transition temperature
 - trapped magnetic fields
 - vector currents
 - vortices
 - YBCO superconductors

superconductor insulator superconductors

- USE **SIS (superconductors)**

superconductors (materials)

DEF Materials that exhibit superconductivity under appropriate conditions.

- GS conductors
 - . **superconductors (materials)**
 - . . high temperature superconductors
 - . . . BSCCO superconductors
 - . . . YBCO superconductors
 - . . heavy fermion superconductors
 - . . organic superconductors
- RT Abrikosov theory
carrier mobility
critical current
cryogenic computer storage
cryotrons
electron gas
energy storage

- flux quantization
- fullerides
- heavy fermion systems
- Josephson effect
- pinning
- proximity effect (electricity)
- solid state devices
- squid (detectors)
- strontium oxides
- superconducting films
- thermodynamic coupling

supercooling

- UF *undercooling*
- GS cooling
 - . **supercooling**
- RT aging (metallurgy)
Aitken nuclei
condensing
convection clouds
crystallization
heat treatment
mechanical properties
nucleation
quenching (cooling)
supersaturation

supercritical airfoils

- GS airfoils
 - . **supercritical airfoils**
 - . . supercritical wings
- RT airfoil profiles

supercritical flow

- GS fluid flow
 - . **supercritical flow**
- RT critical flow
flow characteristics
gas flow
liquid flow
multiphase flow
orifice flow
pipe flow
pressure gradients
single-phase flow
steady flow
steam flow
subcritical flow
turbulent flow
unsteady flow

supercritical fluids

- RT fluid mechanics
- ∞ fluids
 - solubility
 - supercritical pressures

supercritical pressures

- GS pressure
 - . **supercritical pressures**
 - thermodynamic properties
 - . thermophysical properties
 - . . **supercritical pressures**
- RT critical pressure
high pressure
liquid phases
supercritical fluids
vapor phases
vapor pressure

supercritical wings

- GS airfoils
 - . supercritical airfoils
 - . . **supercritical wings**
 - . wings
 - . . **supercritical wings**
- RT CL-600 challenger aircraft
spanloader aircraft
wing profiles
- ∞ winged vehicles

superfluid flow

- USE **superfluidity**

superfluidity

- UF *superfluid flow*
- RT Bose-Einstein condensates
compressible fluids
- ∞ fluids
 - incompressible fluids

- Kelvin-Helmholtz instability
liquid helium
liquid helium 2
many body problem
quantum statistics
two fluid models
viscosity
vortices
- superfortress aircraft*
USE **B-50 aircraft**
- supergiant stars**
GS celestial bodies
. stars
. . . **supergiant stars**
. . . R Coronae Borealis stars
RT giant stars
K stars
M stars
massive stars
Mira variables
subgiant stars
- supergravity**
GS gravitation theory
. **supergravity**
RT broken symmetry
cosmology
field theory (physics)
gauge invariance
gauge theory
gravitinos
gravitons
group theory
lie groups
particle theory
quantum theory
relativity
supersymmetry
theoretical physics
unified field theory
Yang-Mills theory
- superharmonics**
GS harmonics
. **superharmonics**
RT cycles
frequencies
Mach number
supersonic wind tunnels
supersonics
- superheating**
GS heating
. **superheating**
RT steam
- superheterodyne receivers**
GS communication equipment
. radio receivers
. . . **superheterodyne receivers**
radio equipment
. radio receivers
. . . **superheterodyne receivers**
receivers
. radio receivers
. . . **superheterodyne receivers**
RT beat frequencies
heterodyning
- superhigh frequencies**
SN (3 TO 30 GHz)
UF *KU band*
S band
X band
GS frequencies
. radio frequencies
. . . microwave frequencies
. . . . **superhigh frequencies**
RT C band
centimeter waves
unified S band
VSAT (network)
- superhumps (astronomy)**
(added October 1998)
RT accretion disks
astronomical photometry
binary stars
- cataclysmic variables
dwarf novae
eclipsing binary stars
stellar spectrophotometry
- superhybrid materials**
DEF Composites of polymers, boron-aluminum, and titanium.
GS composite materials
. **superhybrid materials**
. . . graphite-epoxy composites
RT boron-epoxy composites
carbon fiber reinforced plastics
fiber composites
hybrid composites
∞ materials
reinforcing fibers
- superimposition (mathematics)*
USE **superposition (mathematics)**
- superlattices**
DEF Crystals grown by depositing semiconductors in layers whose thickness is measured in atoms.
GS crystal lattices
. **superlattices**
semiconductors (materials)
. **superlattices**
RT antiphase boundaries
crystal dislocations
crystal structure
gallium arsenides
lattice parameters
quantum Hall effect
- supermagnets*
USE **high field magnets**
- supermassive stars**
DEF Stars with masses exceeding about 50 times that of the sun.
GS celestial bodies
. stars
. . . **supermassive stars**
RT degenerate matter
massive stars
Population III stars
stellar models
stellar structure
- supernova 1987A**
GS celestial bodies
. stars
. . . variable stars
. . . . supernovae
. **supernova 1987A**
RT Magellanic clouds
- supernova remnants**
RT black holes (astronomy)
magnetars
neutron stars
North Polar Spur (astronomy)
pulsars
red dwarf stars
soft gamma repeaters
supernovae
white dwarf stars
white holes (astronomy)
- supernovae**
GS celestial bodies
. stars
. . . variable stars
. . . . **supernovae**
. supernova 1987A
RT Crab nebula
gravitational collapse
nebulae
novae
Opik theory
Orion nebula
stellar mass
stellar mass ejection
stellar physics
- supernova remnants
superoxides
USE **inorganic peroxides**
- superplastic forming**
(added July 1994)
UF *SPF (materials)*
RT bonding
elastoplasticity
metal working
plastic deformation
superplasticity
- superplasticity**
GS mechanical properties
. plastic properties
. . . **superplasticity**
RT creep properties
crystal dislocations
elongation
eutectic alloys
heat resistant alloys
plastic deformation
plastic flow
superplastic forming
- superposition (mathematics)**
UF *superimposition (mathematics)*
RT equivalent circuits
linear circuits
∞ mathematics
∞ nets
network analysis
network synthesis
- superpressure balloons**
DEF Meteorological balloons consisting of nonextensible envelopes designed to withstand higher internal pressure differentials than external ones. Such balloons will maintain constant elevations until sufficient gas diffuses from them to cause a change in buoyancy. Used for constant volume balloons and tetroons.
UF *constant volume balloons*
tetroons
GS expandable structures
. inflatable structures
. . balloons
. . . high altitude balloons
. . . . **superpressure balloons**
RT balloon sounding
meteorological balloons
- superrotation**
DEF The generally more rapid relative motions found in the very tenuous regions of the atmosphere at heights around 300 km. The density of the atmosphere decreases rapidly with height and more than 95 percent of the mass of the atmosphere is contained within the troposphere and lower stratosphere. These regions of the atmosphere rotate faster on average than the underlying solid Earth.
GS gyration
. rotation
. . **superrotation**
RT atmospheric circulation
Earth atmosphere
Earth rotation
rotating fluids
- supersaturation**
RT condensing
crystallization
heat treatment
Mayer problem
precipitation (chemistry)
precipitation hardening
quenching (cooling)
solid solutions
supercooling
- supersonic aircraft**
SN (AIRCRAFT DESIGNED TO FLY AT SPEEDS ABOVE MACH 1 AND BELOW MACH 5)
UF *transonic aircraft*
GS **supersonic aircraft**
. A-5 aircraft
. B-58 aircraft

supersonic airfoils

- . B-70 aircraft
- . Boeing 733 aircraft
- . D-558 aircraft
- . F-4 aircraft
- . F-5 aircraft
- . F-8 aircraft
- . F-14 aircraft
- . F-15 aircraft
- . F-16 aircraft
- . F-17 aircraft
- . F-22 aircraft
- . F-100 aircraft
- . F-101 aircraft
- . F-102 aircraft
- . F-104 aircraft
- . F-106 aircraft
- . F-111 aircraft
- . Firebee 2 target drone aircraft
- . G-95/4 aircraft
- . Jaguar aircraft
- . MiG aircraft
- . Mirage aircraft
 - . . . Mirage 3 aircraft
- . Nord 1500 aircraft
- . P-1154 aircraft
- . Saab 37 aircraft
- . SR-71 aircraft
- . supersonic transports
 - . . . CL-823 aircraft
 - . . . Concorde aircraft
 - . . . L-2000 aircraft
 - . . . supersonic commercial air transport
 - Boeing 2707 aircraft
 - TU-144 aircraft
 - . T-38 aircraft
 - . TSR-2 aircraft
 - . VJ-101 aircraft
 - . X-1 aircraft
 - . X-2 aircraft
 - . X-3 aircraft
 - . X-15 aircraft
 - . X-32 aircraft
- RT ∞ aircraft
 - . attack aircraft
 - . fighter aircraft
 - . hypersonic aircraft
 - . jet aircraft
 - . passenger aircraft
 - . reconnaissance aircraft
 - . research aircraft
- ∞ subsonic aircraft
- supersonic cruise aircraft research
- supersonics
- sweptback wings
- transport aircraft
- trapezoidal tail surfaces
- variable cycle engines
- variable stream control engines

supersonic airfoils

- GS airfoils
 - . **supersonic airfoils**
- RT sweepback
- sweptback tail surfaces
- sweptback wings

supersonic boundary layers

- GS boundary layers
 - . **supersonic boundary layers**
- RT fluid flow
- laminar boundary layer
- supersonics
- turbulent boundary layer
- two dimensional boundary layer

supersonic combustion

- GS combustion
 - . **supersonic combustion**
- RT engines
- fuel combustion

supersonic combustion ramjet engines

- UF *scramjet engines*
- scramjets*
- GS engines
 - . air breathing engines
 - . . . gas turbine engines
 - . . . jet engines
 - ramjet engines

- **supersonic combustion ramjet engines**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- ramjet engines
- **supersonic combustion ramjet engines**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- ramjet engines
- **supersonic combustion ramjet engines**

RT combustion

- . missiles
- . ramjet missiles
- . rocket-based combined-cycle engines

∞ SCRAM

- . X-43 vehicle

supersonic commercial air transport

- UF *SCAT*
- GS commercial aircraft
 - . **supersonic commercial air transport**
 - . . Boeing 2707 aircraft
 - . . TU-144 aircraft
 - . supersonic aircraft
 - . . supersonic transports
 - . . **supersonic commercial air transport**
 - . . . Boeing 2707 aircraft
 - . . . TU-144 aircraft

supersonic compressors

DEF Compressors in which supersonic velocity is imparted to the fluid relative to the rotor blades, the stator blades, or to both the rotor and the stator blades, producing oblique shock waves over the blades to obtain a high pressure rise.

- GS compressors
 - . **supersonic compressors**
- RT oblique shock waves
- transonic compressors
- turbocompressors

supersonic cruise aircraft research

- UF *SCAR program*
- GS programs
 - . NASA programs
 - . . **supersonic cruise aircraft research**
- RT ∞ aircraft
- supersonic aircraft
- supersonic transports

supersonic diffusers

DEF Diffusers designed to reduce the velocity and increase the pressure of fluid moving at supersonic velocities.

- RT air intakes
- ∞ diffusers
- exhaust diffusers
- flow stability
- vaneless diffusers

supersonic drag

- GS aerodynamic characteristics
 - . aerodynamic drag
 - . . **supersonic drag**
 - . aerodynamic forces
 - . aerodynamic drag
 - . . **supersonic drag**
 - . dynamic characteristics
 - . drag
 - . . friction drag
 - . . . aerodynamic drag
 - **supersonic drag**
 - . . . pressure drag
 - . . . **supersonic drag**
 - . friction
 - . . flow resistance
 - . . friction drag
 - . . . aerodynamic drag
 - **supersonic drag**
 - . skin friction
 - . . friction drag
 - . . . aerodynamic drag

- . . . **supersonic drag**
- RT interference drag
- wave drag

supersonic flight

- RT caustic lines
- ∞ flight
- hypersonic flight
- jet lag
- Mach cones
- missiles
- rocket flight
- sonic booms
- supersonics
- transonic flight

supersonic flow

DEF In aerodynamics, flow of a fluid over a body at speeds greater than the acoustic velocity and in which the shock waves start at the surface of the body.

- GS fluid flow
 - . **supersonic flow**
 - . . supersonic jet flow
- RT aerodynamics
- compressibility effects
- compressible flow
- flow velocity
- gas flow
- Godunov method
- hypersonic flow
- hypervelocity flow
- Mach cones
- Prandtl-Meyer expansion
- secondary injection
- shock waves
- transonic flow
- wedge flow
- wind tunnels

supersonic flow inlets

USE **supersonic inlets**

supersonic flutter

- GS vibration
 - . structural vibration
 - . . flutter
 - . . . **supersonic flutter**
 - . . . self induced vibration
 - . . . **supersonic flutter**
- RT missile vibration
- transonic flutter

supersonic heat transfer

- GS transmission
 - . heat transmission
 - . . heat transfer
 - . . . aerodynamic heat transfer
 - **supersonic heat transfer**
- RT hypersonic heat transfer
- supersonics

supersonic inlets

- UF *supersonic flow inlets*
- transonic inlets*
- GS intake systems
 - . air intakes
 - . . **supersonic inlets**
- RT bypass ratio
- hypersonic inlets
- inlet airframe configurations
- inlet flow
- internal compression inlets
- nose inlets
- side inlets

supersonic jet flow

- GS fluid flow
 - . jet flow
 - . . **supersonic jet flow**
 - . . supersonic flow
 - . . **supersonic jet flow**
- RT gas flow
- nozzle flow
- screech tones

supersonic low altitude missile

- UF *SLAM*
- GS missiles
 - . ramjet missiles

. . **supersonic low altitude missile**
 . surface to surface missiles
 . . **supersonic low altitude missile**
 RT nuclear ramjet engines
 Pluto reactors
 ramjet engines
supersonic nozzles
 DEF Converging diverging nozzles designed to accelerate a fluid to supersonic speed.
 RT coaxial nozzles
 conical nozzles
 convergent-divergent nozzles
 hypersonic nozzles
 ∞ nozzles
 rocket nozzles
 screech tones
 sonic nozzles
 transonic nozzles
 variable stream control engines
 wind tunnel nozzles
supersonic speed
 SN (BETWEEN MACH 1 AND 4. 9)
 GS rates (per time)
 . **supersonic speed**
 velocity
 . **supersonic speed**
 RT acoustic velocity
 high speed
 hypersonic speed
 hypersonics
 supersonics
 transonic speed
supersonic test apparatus
 RT hypersonic test apparatus
 supersonics
 ∞ test equipment
 wind tunnel apparatus
supersonic transports
 GS supersonic aircraft
 . **supersonic transports**
 . . CL-823 aircraft
 . . Concorde aircraft
 . . L-2000 aircraft
 . . supersonic commercial air transport
 . . . Boeing 2707 aircraft
 . . . TU-144 aircraft
 RT cargo aircraft
 commercial aircraft
 passenger aircraft
 supersonic cruise aircraft research
supersonic turbines
 UF *transonic turbines*
 GS turbomachinery
 . turbines
 . . **supersonic turbines**
 RT gas turbine engines
 gas turbines
 rotor stator interactions
supersonic wakes
 GS wakes
 . **supersonic wakes**
 RT aircraft wakes
 hypersonic wakes
supersonic wind tunnels
 GS test facilities
 . wind tunnels
 . . **supersonic wind tunnels**
 RT blowdown wind tunnels
 hypersonic wind tunnels
 hypervelocity wind tunnels
 low density wind tunnels
 shock tunnels
 slotted wind tunnels
 subsonic wind tunnels
 superharmonics
 transonic wind tunnels
supersonics
 DEF Specifically, the study of aerodynamics of supersonic speeds.
 GS mechanics (physics)
 . fluid mechanics

. . fluid dynamics
 . . . gas dynamics
 aerodynamics
 **supersonics**
 RT aerothermodynamics
 hypersonics
 Mach cones
 superharmonics
 supersonic aircraft
 supersonic boundary layers
 supersonic flight
 supersonic heat transfer
 supersonic speed
 supersonic test apparatus
superstring theory
 USE **string theory**
supersymmetry
 GS symmetry
 . **supersymmetry**
 RT bosons
 broken symmetry
 cosmology
 fermions
 field theory (physics)
 gauge theory
 grand unified theory
 gravitation theory
 group theory
 lie groups
 particle theory
 quantum theory
 string theory
 supergravity
 theoretical physics
 unified field theory
supine position
 RT acceleration protection
 head up tilt
 prone position
 rest
 sitting position
 tilt-table test
supplements
 GS documents
 . **supplements**
 RT contracts
 extensions
 indexes (documentation)
 motion pictures
 records
 reports
supplying
 RT commerce
 consumption
 demand (economics)
 filling
 injection
 input
 marketing
 output
support interference
 RT antenna radiation patterns
 ∞ interference
 supports
 vibration effects
support systems
 GS **support systems**
 . ground operational support system
 . ground support systems
 . life support systems
 . . biopaks
 . . closed ecological systems
 . . emergency life sustaining systems
 . . . AEPS
 . . . portable life support systems
 . . . AEPS
 . . . IMLSS
 . decision support systems
 . pilot support systems
 RT self sealing
 services

∞ systems
supports
 UF *mounts*
stands
 GS **supports**
 . pylons
 . saddles (supports)
 . tripods
 RT bearings
 carriages
 chassis
 foundations
 frames
 gimbals
 ∞ headers
 lugs
 pivots
 ∞ platforms
 pylon mounting
 racks (frames)
 reinforcement (structures)
 shafts (machine elements)
 struts
 substructures
 support interference
 ∞ sustaining
 trusses
suppression
 USE **retarding**
suppressors
 GS **suppressors**
 . echo suppressors
 RT absorbers (materials)
 additives
 attenuators
 baffles
 circuit protection
 damping
 infrared suppression
 inhibitors
 insulation
 isolators
 mufflers
 neutralizers
 noise reduction
 retardants
 shielding
 silencers
 squelch circuits
surface acoustic wave devices
 UF *S-A-W devices*
 RT acoustic delay lines
 bulk acoustic wave devices
 ∞ devices
 electroacoustic transducers
 electroacoustics
 interdigital transducers
 microsonics
 signal processing
 sound waves
 ultrasonic wave transducers
surface cooling
 GS cooling
 . **surface cooling**
 RT convective heat transfer
 evaporative cooling
 film cooling
 radiant cooling
 radiative heat transfer
 ∞ surfaces
 sweat cooling
 temperature
surface cracks
 UF *crazing*
 GS fractures (materials)
 . cracks
 . . **surface cracks**
 surface properties
 . **surface cracks**
 RT crack closure
 crack geometry
 crack initiation
 crack propagation
 edge cracks

surface defects

microcracks
solid surfaces
∞ surfaces

surface defects

GS defects
. **surface defects**
surface properties
. **surface defects**
RT caustics (optics)
crack initiation
crystal defects
crystal dislocations
fatigue (materials)
mechanical properties
point defects
∞ surfaces

surface diffusion

GS diffusion
. **surface diffusion**
RT adatoms
molecular diffusion
∞ surfaces
thermal diffusion

surface distortion

GS distortion
. **surface distortion**
RT ∞ surface geometry
∞ surfaces
warpage

surface effect ships

DEF Vessels using ground effect principle and having submerged rigid sidewalls (sealants). Used for SES.

UF *SES*
GS surface vehicles
. **surface effect ships**
water vehicles
. ships
. . **surface effect ships**
RT captured air bubble vehicles
∞ effects
research vehicles
∞ surfaces
SWATH (ship)
∞ vehicles
wing-in-ground effect vehicles

surface emitting lasers

(added March 1992)
GS stimulated emission devices
. lasers
. . **surface emitting lasers**
RT laser arrays
lasing
light emitting diodes
semiconductor lasers
solid state lasers
stimulated emission
waveguide lasers

surface energy

GS surface properties
. **surface energy**
thermodynamic properties
. **surface energy**
RT activation energy
electron energy
∞ energy
interfacial energy
interfacial tension
proton energy
∞ surfaces
thermophysical properties

surface finishing

GS surface treatment
. **surface finishing**
RT cleaning
coating
coatings
corrosion prevention
corrosion resistance
electroplating
electropolishing
finishes
machining

metal finishing
metal grinding
metal polishing
metal spraying
metal surfaces
micromachining
polishing
protective coatings
shot peening
solid surfaces
sputtering
∞ surfaces
wear

∞ surface geometry

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT concavity
convexity
Cosserat surfaces
flat surfaces
flatness
geometry
Lambert surface
lofting
planforms
shapes
surface distortion
surface layers
surface properties
surface reactions
surface roughness
surface stability
∞ surfaces

surface interactions

USE **surface reactions**

surface ionization

GS ionization
. **surface ionization**
RT ionizers
∞ surfaces

surface layers

RT atmospheric stratification
barrier layers
boundary layer thickness
boundary layers
crystal surfaces
∞ layers
lunar surface
monomolecular films
oxide films
solar granulation
∞ surface geometry
surface treatment
∞ surfaces
thermoclines
∞ transition layers

Surface Meteorology and Solar Energy project

(added October 2007)

DEF A 10-year project to produce and archive a global data set of the Earth's radiation budget (shortwave and longwave) using International Satellite Cloud Climatology Project (ISCCP) data and radiative transfer models. The SSE data sets contain insolation and meteorology data intended to aid in the development of renewable energy systems.

UF *SSE project*
GS programs
. projects
. . **Surface Meteorology and Solar Energy project**

RT data products
Earth radiation budget
insolation
long wave radiation
radiative transfer
remote sensing
renewable energy
satellite observation
short wave radiation
solar energy

surface navigation

UF *marine navigation*

GS navigation
. **surface navigation**
RT celestial navigation
dead reckoning
Decca navigation
digital navigation
hyperbolic navigation
inertial navigation
LORAC navigation system
loran
nautical charts
navigation aids
radar navigation
radio navigation
ships
∞ surfaces
unmanned ground vehicles

surface noise interactions

RT acoustic excitation
acoustic scattering
aeroacoustics
aerodynamic noise
Ffowcs Williams-Hawkings equation
rotor stator interactions
turbulence

surface plasmon resonance

(added April 2004)

DEF A condition of resonance in which the propagation of surface plasmon waves occurs at the interface of a dielectric with a highly reflective metal.

RT plasmons

surface pressure

USE **pressure**

surface properties

UF *Bardeen approximation*
GS **surface properties**
. adhesion
. . stiction
. adsorptivity
. coefficient of friction
. interfacial tension
. spectral reflectance
. surface cracks
. surface defects
. surface energy
. surface roughness
. surface stability
. surface temperature
. . land surface temperature
. . sea surface temperature
. . skin temperature (non-biological)
. . wall temperature

RT absorptance
albedo
atomic force microscopy
bidirectional reflectance
coarseness
coating
coatings
color
contact potentials
contact resistance
corrosion
Cosserat surfaces
diffusion
effervescence
emissivity
evanescence
finishes
flat surfaces
foaming
friction
hardness
hot corrosion
hydrophobicity
interfaces
Jupiter red spot
lunar albedo
lunar surface
lunar topography
mechanical properties
metal surfaces
optical properties
permeability
∞ physical properties

- planar structures
- planetary surfaces
- profilometers
- ∞ properties
- reflectance
- roughness
- selenography
- solid surfaces
- solid-solid interfaces
- sorption
- ∞ surface geometry
- surface tension driven convection
- surface treatment
- ∞ surfaces
- textures
- viscosity
- void ratio
- wettability

Surface Radiation Budget project

(added October 2007)

DEF A 12-year project to produce and archive a global data set of shortwave and long-wave Earth surface and top of the atmosphere parameters using International Satellite Cloud Climatology Project (ISCCP) and Earth Radiation Budget Experiment (ERBE) data. The SRB data sets contain three hourly, daily, and monthly averages of surface longwave and shortwave radiative properties, cloud amount, and meteorological properties computed using models.

UF *SRB project*

- GS programs
- . projects
- . . **Surface Radiation Budget project**

- RT data products
- Earth radiation budget
- long wave radiation
- radiative transfer
- remote sensing
- satellite observation
- short wave radiation

surface reactions

- UF *surface interactions*
- RT chemical reactions
- erosion
- fluid-solid interactions
- gas-liquid interactions
- interfaces
- metal surfaces
- metal-water reactions
- spacecraft glow
- ∞ surface geometry
- ∞ surfaces
- surfactants
- vaporizing

surface roughness

DEF The deviation of the topography of an actual surface from an ideal atomically smooth and planar surface.

- GS roughness
- . **surface roughness**
- surface properties
- . **surface roughness**
- RT coarseness
- friction
- lunar topography
- machining
- mechanical properties
- profilometers
- runway conditions
- ∞ surface geometry
- ∞ surfaces
- topography

surface roughness effects

- RT ∞ effects
- friction drag
- reflectance
- separated flow
- speckle patterns
- ∞ surfaces

surface stability

- GS stability
- . **surface stability**

- surface properties
- . **surface stability**
- RT coarseness
- dynamic stability
- interfacial tension
- motion stability
- static stability
- storage stability
- ∞ surface geometry
- ∞ surfaces
- thermal stability

surface temperature

- GS surface properties
- . **surface temperature**
- . . land surface temperature
- . . sea surface temperature
- . . skin temperature (non-biological)
- . . wall temperature
- temperature
- . **surface temperature**
- . . land surface temperature
- . . sea surface temperature
- . . skin temperature (non-biological)
- . . wall temperature
- RT coarseness
- geothermal anomalies
- ocean temperature
- ∞ surfaces
- temperature sensitive paints
- thermoclines
- water temperature

surface tension

- USE **interfacial tension**

surface tension driven convection

- (added December 1995)*
- GS convection
- . **surface tension driven convection**
- . . Marangoni convection
- RT capillary flow
- convective flow
- interfacial tension
- ∞ microgravity applications
- oscillating flow
- surface properties

surface to air missiles

- UF *ground-to-air missiles*
- GS missiles
- . **surface to air missiles**
- . . Blue Goose missile
- . . BOMARC missiles
- . . . BOMARC A missile
- . . . BOMARC B missile
- . . Chaparral missile
- . . Hawk missile
- . . Mauler missile
- . . Nike missiles
- . . . Nike-Ajax missile
- . . . Nike-Hercules missile
- . . . Nike-Zeus missile
- . . Patriot missile
- . . Redeye missile
- . . Sprint missile
- . . Talos missile
- . . tartar missile
- . . terrier missile
- RT air to air missiles
- air to surface missiles
- antiaircraft missiles
- antimissile missiles
- Nike X systems
- ramjet missiles
- ∞ rockets
- Sentinel system
- space weapons
- Spartan missile
- ∞ surfaces

surface to surface missiles

- GS missiles
- . **surface to surface missiles**
- . . antitank missiles
- . . . Shillelagh missiles
- . . . tow missiles
- . . Corporal missile
- . . cruise missiles
- . . . Navaho missile

- . . . Tomahawk missiles
- . . fleet ballistic missiles
- . . . Polaris A1 missile
- . . . Polaris A2 missile
- . . . Polaris A3 missile
- . . . Poseidon missiles
- . . . Subroc missile
- . . intercontinental ballistic missiles
- . . . Atlas ICBM
- Atlas D ICBM
- Atlas E ICBM
- Atlas F ICBM
- . . . Minuteman ICBM
- . . . MX missile
- . . . Titan ICBM
- Titan 1 ICBM
- Titan 2 ICBM
- . . intermediate range ballistic missiles
- . . . Blue Streak missile
- . . . Jupiter missile
- . . . polaris missiles
- Polaris A1 missile
- Polaris A2 missile
- Polaris A3 missile
- . . Lance missile
- . . Mace missiles
- . . Pershing missile
- . . Regulus missile
- . . sergeant missiles
- . . short range ballistic missiles
- . . supersonic low altitude missile
- . . V-1 missile
- RT air to surface missiles
- ballistic missiles
- Harpoon missile
- ramjet missiles
- ∞ rockets
- ∞ surfaces

surface to surface rockets

- GS rocket vehicles
- . **surface to surface rockets**
- . . Honest John rocket vehicle
- . . Little John rocket vehicle
- RT ∞ rockets
- ∞ surfaces

surface treatment

- (added April 1990)*
- GS **surface treatment**
- . surface finishing
- RT anodizing
- coating
- corrosion prevention
- paint removal
- surface layers
- surface properties
- ∞ treatment

surface vehicles

- GS **surface vehicles**
- . aircraft carriers
- . automated transit vehicles
- . . automated guideway transit vehicles
- . boats
- . . lifeboats
- . captured air bubble vehicles
- . cargo ships
- . . Savannah nuclear ship
- . . tanker ships
- . . dollies
- . electric hybrid vehicles
- . lunar surface vehicles
- . . lunar mobile laboratories
- . . lunar roving vehicles
- . . . Lunokhod lunar roving vehicles
- . . . manned lunar surface vehicles
- . magnetic levitation vehicles
- . motor vehicles
- . . automated mixed traffic vehicles
- . . automobiles
- . . . electric automobiles
- . . . electric motor vehicles
- . . . electric automobiles
- . . tractors
- . . . crawler tractors
- . . . tracked vehicles
- . . trucks
- . . . tank trucks

surface water

- . nuclear powered ships
- . . Savannah nuclear ship
- . roadway powered vehicles
- . roving vehicles
- . . lunar roving vehicles
- . . . Lunokhod lunar roving vehicles
- . . . manned lunar surface vehicles
- . . Mars roving vehicles
- . . . Marsokhod Mars roving vehicles
- . satellite communications ships
- . sleds
- . . rocket propelled sleds
- . surface effect ships
- . SWATH (ship)
- . tanks (combat vehicles)
- . transporter
- . unmanned ground vehicles
- . walking machines
- RT amphibious vehicles
- ∞ bicycle
- ground effect machines
- rail transportation
- rails
- ships
- ∞ surfaces
- underwater vehicles
- urban transportation
- ∞ vehicles
- vehicular tracks
- water vehicles

surface water

DEF All the waters on the surface of the Earth including fresh and salt water, ice and snow.

- GS water
- . **surface water**
- RT Earth resources
- ground water
- lakes
- polynyas
- ponds
- rivers
- streams
- ∞ surfaces
- water sampling

surface waves

- SN (EXCLUDES SURFACE RADIO WAVES)
- GS **surface waves**
- . capillary waves
- . . gravity waves
- . . . baroclinic waves
- . . ripples
- . electromagnetic surface waves
- . evanescent waves
- . Sommerfeld waves
- RT bow waves
- cnoidal waves
- crustal fractures
- elastic waves
- internal waves
- lee waves
- liquid surfaces
- Love waves
- microsonics
- P waves
- S waves
- sea roughness
- seismic waves
- splashing
- ∞ surfaces
- tropospheric waves
- tsunami waves
- water currents
- water waves
- ∞ waves

surface-active agents

USE **surfactants**

∞ surfaces

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *curved surfaces*
- lifting surfaces*
- RT air to surface missiles
- airfield surface movements
- airport surface detection equipment

Apollo Lunar Surface Experiments

Package

- area
- cold surfaces
- control surfaces
- Cosserat surfaces
- crystal surfaces
- Earth surface
- EASEP
- electromagnetic surface waves
- elevators (control surfaces)
- external surface currents
- Fermi surfaces
- flaps (control surfaces)
- flat surfaces
- horizontal tail surfaces
- hot surfaces
- interfaces
- interfacial tension
- Lambert surface
- liquid surfaces
- LSSM
- lunar surface
- lunar surface vehicles
- manned lunar surface vehicles
- Mars surface
- Mars surface samples
- menisci
- metal surfaces
- minimal surfaces
- ocean surface
- planetary surfaces
- satellite surfaces
- sizing (surface treatment)
- solid surfaces
- surface cooling
- surface cracks
- surface defects
- surface diffusion
- surface distortion
- surface effect ships
- surface energy
- surface finishing
- ∞ surface geometry
- surface ionization
- surface layers
- surface navigation
- surface properties
- surface reactions
- surface roughness
- surface roughness effects
- surface stability
- surface temperature
- surface to air missiles
- surface to surface rockets
- surface vehicles
- surface water
- surface waves
- sweptback tail surfaces
- T tail surfaces
- tabs (control surfaces)
- tail surfaces
- Townsend avalanche
- trapezoidal tail surfaces
- two dimensional bodies
- under surface blowing
- underwater to surface missiles
- upper surface blowing
- upper surface blown flaps
- Venus surface
- wear

surfactants

DEF A material that improves the emulsifying, dispersing, wetting, or other surface-modifying properties of liquids. Used for surface-active agents.

UF *surface-active agents*

RT admixtures

- ∞ agents
- detergents
- hydrophobicity
- monomolecular films
- plasticizers
- retardants
- soaps
- surface reactions

zwitterions

surgeons

- GS personnel
- . medical personnel
- . . **surgeons**
- . . . flight surgeons

surgery

- GS medical science
- . **surgery**
- . . labyrinthectomy
- RT clinical medicine
- heart implantation
- ∞ operations
- skin grafts
- transplantation
- veterinary medicine

surges

DEF Transient rises in power or pressure such as a brief rise in the discharge pressure of a rotary compressor. Used for transients (surges).

UF *transients (surges)*

- RT circuit protection
- fluid flow
- overvoltage
- storm surges
- variations
- water hammer
- ∞ waves

surgical instruments

- GS medical equipment
- . **surgical instruments**
- RT ∞ instruments
- needles

Surinam

- GS nations
- . **Surinam**
- RT Caribbean region
- Netherlands
- South America

surveillance

- GS **surveillance**
- . space surveillance (ground based)
- . space surveillance (spaceborne)
- RT command and control
- conical scanning
- crime
- detection
- Earth resources
- forest fire detection
- ice mapping
- ice reporting
- inspection
- observation
- panoramic scanning
- radar scanning
- reconnaissance
- scanning
- situational awareness
- target acquisition
- target recognition
- targets
- visual observation

surveillance radar

- GS radar
- . **surveillance radar**
- . . airborne surveillance radar
- . . . Cobra Dane (radar)
- . . . multistatic radar
- RT air traffic control
- airport surface detection equipment
- coherent radar
- continuous wave radar
- digital radar systems
- Doppler radar
- meteorological radar
- pulse radar
- radar approach control
- radar tracking
- radarscopes
- satellite-borne radar
- search radar
- space-time adaptive processing

- synthetic aperture radar
- tracking radar
- surveying*
- USE **surveys**
- Surveyor 1 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 1 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 1 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 1 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 2 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 2 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 2 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 2 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 3 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 3 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 3 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 3 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 4 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 4 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 4 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 4 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 5 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 5 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 5 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 5 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor 6 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 6 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 6 lunar probe**
 - unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Surveyor lunar probes
- **Surveyor 6 lunar probe**
- RT Atlas Centaur launch vehicle
- Surveyor 7 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - . . Surveyor lunar probes
 - . . . **Surveyor 7 lunar probe**
 - soft landing spacecraft
 - . Surveyor lunar probes
 - . . **Surveyor 7 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Surveyor lunar probes
 - **Surveyor 7 lunar probe**
 - RT Atlas Centaur launch vehicle
- Surveyor lunar probes**
 - GS lunar spacecraft
 - . lunar probes
 - . . **Surveyor lunar probes**
 - . . Surveyor 1 lunar probe
 - . . . Surveyor 2 lunar probe
 - . . . Surveyor 3 lunar probe
 - . . . Surveyor 4 lunar probe
 - . . . Surveyor 5 lunar probe
 - . . . Surveyor 6 lunar probe
 - . . . Surveyor 7 lunar probe
 - soft landing spacecraft
 - . **Surveyor lunar probes**
 - . . Surveyor 1 lunar probe
 - . . Surveyor 2 lunar probe
 - . . Surveyor 3 lunar probe
 - . . Surveyor 4 lunar probe
 - . . Surveyor 5 lunar probe
 - . . Surveyor 6 lunar probe
 - . . Surveyor 7 lunar probe
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . **Surveyor lunar probes**
 - Surveyor 1 lunar probe
 - Surveyor 2 lunar probe
 - Surveyor 3 lunar probe
 - Surveyor 4 lunar probe
 - Surveyor 5 lunar probe
 - Surveyor 6 lunar probe
 - Surveyor 7 lunar probe
- Surveyor project**
 - GS programs
 - . lunar programs
 - . . **Surveyor project**
 - . NASA programs
 - . . NASA space programs
 - . . . **Surveyor project**
 - . projects
 - . . **Surveyor project**
 - . space programs
 - . . NASA space programs
 - . . . **Surveyor project**
 - RT Atlas Centaur launch vehicle
 - Centaur project
 - lunar landing
 - lunar probes
 - lunar spacecraft
 - soft landing
 - soft landing spacecraft
- surveys**
 - UF *surveying*
 - GS **surveys**
 - . geodetic surveys
 - . geological surveys
 - . sky surveys (astronomy)
 - . wage surveys
 - RT accuracy
 - construction
 - ∞ cross sections
 - data acquisition
 - data management
 - datum (elevation)
 - exploration
 - general overviews
 - geometry
 - layouts
- loran
- mapping
- maps
- photogrammetry
- position (location)
- reconnaissance
- soil mapping
- ∞ statistics
- survival**
 - RT aircraft survivability
 - civil defense
 - closed ecological systems
 - desert adaptation
 - kits
 - life support systems
 - lunar shelters
 - shelters
 - spacecraft survivability
- survival equipment**
 - RT AEPS
 - aircraft survivability
 - Assured Crew Return Vehicle
 - consumables (spacecrew supplies)
 - emergency life sustaining systems
 - ∞ equipment
 - lifeboats
 - onboard equipment
 - oxygen supply equipment
 - rafts
- susceptibility (magnetism)*
- USE **magnetic permeability**
- suspending (hanging)**
 - GS **suspending (hanging)**
 - . hindlimb suspension
 - . magnetic suspension
 - RT gyroscope fluids
 - mounting
 - suspension systems (vehicles)
 - ∞ suspensions
- suspending (mixing)**
 - GS mixing
 - . **suspending (mixing)**
 - RT aeration
 - agitation
 - colliding
 - dispersing
 - dispersions
 - entrainment
 - ferrofluids
 - homogenizing
 - shaking
 - stirring
 - ∞ suspensions
- suspension systems (vehicles)**
 - RT bearings
 - flotation
 - levitation
 - magnetic levitation vehicles
 - riding quality
 - shock absorbers
 - springs (elastic)
 - steering
 - suspending (hanging)
 - ∞ suspensions
 - ∞ systems
 - toroidal wheels
 - undercarriages
 - vehicle wheels
 - vehicular tracks
 - vibration isolators
- ∞ **suspensions**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF A two-phase system consisting of a finely divided solid dispersed in a solid, liquid, or gas.
 - RT Brownian movements
 - dispersions
 - ferrofluids
 - solid suspensions
 - suspending (hanging)
 - suspending (mixing)

Susquehanna River Basin (MD-NY-PA)

suspension systems (vehicles)

Susquehanna River Basin (MD-NY-PA)

- GS landforms
 - . structural basins
 - . . river basins
 - . . . **Susquehanna River Basin (MD-NY-PA)**
- RT Maryland
 - New York
 - Pennsylvania
 - ivers
 - streams
 - valleys

sustainer rocket engines

DEF Rocket engines that maintain the velocity of the rocket once it has achieved its programmed velocity by use of boosters or other engines.

- GS engines
 - . rocket engines
 - . . **sustainer rocket engines**
- RT booster rocket engines
 - ducted rocket engines
 - electric rocket engines
 - electrostatic engines
 - electrothermal engines
 - hybrid propellant rocket engines
 - internal combustion engines
 - ion engines
 - launch vehicles
 - liquid air cycle engines
 - liquid propellant rocket engines
 - nuclear engine for rocket vehicles
 - nuclear rocket engines
 - restartable rocket engines
 - solid propellant rocket engines
 - stage separation
- ∞ sustaining
 - turbo-rocket engines
 - TX-354 engine

∞ sustaining

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT life support systems
 - supports
 - sustainer rocket engines

swaging

- RT cold working
 - metal working
 - stamping

swallowing

- RT drinking
 - eating
 - ingestion (biology)

swamps

USE **marshlands**

Swan bands

- GS spectra
 - . spectral bands
 - . . **Swan bands**
- RT ∞ bands
 - carbon compounds
 - chemical bonds
 - emission spectra
 - molecular spectra

swarming

- RT bees
 - ∞ motion

SWAS (satellite)

(added November 2000)

USE **Submillimeter Wave Astronomy Satellite**

swash

USE **splashing**

SWATH (ship)

DEF Small waterplane area twin hull concept extension of hydrofoils for improving seaworthiness and speed. Used for Small Waterplane Area Twin Hull.

UF *Small Water Plane Area Twin Hull*

- GS surface vehicles
 - . **SWATH (ship)**
 - water vehicles
 - . ships
 - . . **SWATH (ship)**
- RT captured air bubble vehicles
 - hulls (structures)
 - surface effect ships
 - ∞ vehicles

swath width

DEF The width of the area covered by an imaging sensor determined by the geometry of the instrument.

- RT agricultural aircraft
 - flight paths
 - remote sensing
 - satellite observation

Swaziland

- GS nations
 - . **Swaziland**
- RT Africa
 - Republic of South Africa

sweat

- GS body fluids
 - . **sweat**
 - secretions
 - . **sweat**
- RT perspiration

sweat cooling

DEF A process by which a body having a porous surface is cooled by forced flow of coolant through the surface from the interior. Used for transpiration cooling.

- UF *transpiration cooling*
- GS cooling
 - . evaporative cooling
 - . . **sweat cooling**
- RT film cooling
 - liquid cooling
 - surface cooling

sweating

USE **perspiration**

Sweden

- GS nations
 - . **Sweden**
- RT Europe
 - JAS-39 aircraft
 - Scandinavia
 - Swedish space program

Swedish space program

- GS programs
 - . space programs
 - . . European space programs
 - . . . **Swedish space program**
- RT Sweden

sweep angle

- GS geometry
 - . Euclidean geometry
 - . . angles (geometry)
 - . . . **sweep angle**
 - sweepback
 - leading edge sweep
- RT aerodynamic stalling
 - angle of attack
 - boundary layer separation
 - Mach number

sweep circuits

- GS circuits
 - . **sweep circuits**
- RT frequency scanning
 - oscilloscopes
 - sampling

sweep effect

- RT ∞ effects
 - force distribution
 - lift
 - ∞ loading

wing loading

sweep frequency

- UF *electron sweeping*
- GS frequencies
 - . **sweep frequency**
- RT carrier frequencies
 - frequency analyzers
 - frequency scanning
 - frequency synchronization
 - oscilloscopes
 - television transmission

sweepback

- UF *sweepback angles*
- GS geometry
 - . Euclidean geometry
 - . . angles (geometry)
 - . . . sweep angle
 - **sweepback**
 - leading edge sweep
- RT supersonic airfoils

sweepback angles

USE **sweepback**

swelling

- RT distortion
 - expansion
 - growth
 - increasing
 - inflating
 - spreading

swept forward wings

- GS airfoils
 - . wings
 - . . swept wings
 - . . . **swept forward wings**
 - trapezoidal wings
 - planforms
 - . wing planforms
 - . . **swept forward wings**
 - . . . trapezoidal wings
- RT sweepback wings
 - variable sweep wings
 - X-29 aircraft

swept wings

- UF *cranked wings*
 - diamond wings*
 - tapered wings*
- GS airfoils
 - . wings
 - . . **swept wings**
 - . . . swept forward wings
 - trapezoidal wings
 - sweptback wings
 - arrow wings
 - delta wings
 - trapezoidal wings
- RT fixed wings
 - spanloader aircraft
 - unswept wings
 - wing planforms

sweptback tail surfaces

- GS assemblies
 - . tail assemblies
 - . . **sweptback tail surfaces**
 - planforms
 - . **sweptback tail surfaces**
 - tail surfaces
 - . **sweptback tail surfaces**
- RT control surfaces
 - hypersonic aircraft
 - rudders
 - stabilizers (fluid dynamics)
 - supersonic airfoils
 - ∞ surfaces
 - T tail surfaces
 - trapezoidal tail surfaces

sweptback wings

- GS airfoils
 - . wings
 - . . swept wings
 - . . . **sweptback wings**
 - arrow wings
 - delta wings

- . . . trapezoidal wings
 - planforms
 - . wing planforms
 - . . **sweptback wings**
 - . . . arrow wings
 - . . . delta wings
 - . . . trapezoidal wings
 - RT hypersonic aircraft
 - supersonic aircraft
 - supersonic airfoils
 - swept forward wings
 - variable sweep wings
- Swift observatory**
(added August 2005)
- DEF A MIDEEX (Medium-class Explorer) program satellite launched on November 20, 2004 for rapid observation of gamma ray bursts and their afterglows in gamma ray, x ray, ultraviolet, and optical wavelengths.
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Swift observatory**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Swift observatory**
 - RT afterglows
 - gamma ray astronomy
 - gamma ray bursts
 - gamma ray sources (astronomy)
 - gamma ray telescopes
 - spaceborne astronomy
 - spaceborne telescopes
 - spectral counterparts (astronomy)
 - ultraviolet telescopes
 - x ray telescopes
- swimming**
- RT physical exercise
 - physical fitness
- swimming pool reactors**
- GS nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . **swimming pool reactors**
 - RT ∞ reactors
- swine**
- SN (EXCLUDES GUINEA PIGS)
 - UF *pigs (swine)*
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . **swine**
 - RT grazing
 - livestock
- swing tail assemblies**
- GS assemblies
 - . tail assemblies
 - . . **swing tail assemblies**
 - RT afterbodies
 - aircraft parts
 - aircraft structures
- swing wings**
- GS airfoils
 - . wings
 - . . **swing wings**
 - RT aircraft parts
 - aircraft structures
 - wing planforms
 - wing profiles
- swingby technique**
- UF *gravity assist trajectories*
 - RT Comet Nucleus Tour
 - flyby missions
 - gravitational effects
 - interplanetary transfer orbits
 - orbital mechanics
 - planetary orbits
 - round trip trajectories
 - spacecraft trajectories
- swirling**
- RT agitation
- centrifuging
 - dispersing
 - foaming
 - mixing
 - ∞ separation
 - shaking
 - stirring
- swirling wakes*
- USE **turbulent wakes**
- Swiss space program**
- GS programs
 - . space programs
 - . . European space programs
 - . . . **Swiss space program**
 - RT Switzerland
- switches**
- GS **switches**
 - . capacitance switches
 - . electric relays
 - . electric switches
 - . . cryotrons
 - . . stepping switches
 - . . thermostats
 - . . vacuum arc switches
 - . pressure switches
 - . switching circuits
 - . . fluid switching elements
 - . . . trigatrons
 - RT circuit breakers
 - dropouts
 - echo suppressors
 - electric connectors
 - electric contacts
 - interruption
 - selectors
 - switching
- switching**
- GS **switching**
 - . beam switching
 - . magnetic switching
 - . microwave switching
 - . optical switching
 - . packet switching
 - RT code division multiple access
 - interruption
 - sequencing
 - step recovery diodes
 - switches
 - time division multiple access
- switching circuits**
- UF *electronic switches*
 - switching elements*
 - GS circuits
 - . **switching circuits**
 - . . fluid switching elements
 - switches
 - . **switching circuits**
 - . . fluid switching elements
 - RT ARPA computer network
 - capacitance switches
 - cascode devices
 - circuit breakers
 - current regulators
 - duplex operation
 - duplexers
 - electric relays
 - electric switches
 - gates (circuits)
 - latch-up
 - logic circuits
 - matrices (circuits)
 - microwave switching
 - multivibrators
 - optical bistability
 - optical switching
 - packet switching
 - selectors
 - squelch circuits
 - vacuum arc switches
- voltage regulators
- switching elements*
- USE **switching circuits**
- switching theory**
- RT Boolean algebra
 - branching (mathematics)
 - communication theory
 - commutation
 - logic design
 - network synthesis
 - packet switching
 - sequencing
 - ∞ theories
 - topology
- Switzerland**
- GS nations
 - . **Switzerland**
 - RT Alps Mountains (Europe)
 - Europe
 - Swiss space program
- swivels**
- RT bearings
 - gimbals
 - hinges
 - hooks
 - joints (junctions)
 - pivots
- syenite**
- GS rocks
 - . igneous rocks
 - . . **syenite**
 - RT soils
 - trachyte
- syllables**
- RT messages
 - psycholinguistics
 - semantics
 - signal transmission
- symbiosis**
- DEF The intimate living together of two organisms of different species, for mutual benefit.
- RT ecology
 - lichens
- symbiotic stars**
- GS celestial bodies
 - . stars
 - . . double stars
 - . . . binary stars
 - **symbiotic stars**
 - . . . **symbiotic stars**
 - . . . **symbiotic stars**
 - . . . **symbiotic stars**
 - . . . **symbiotic stars**
 - RT absorption spectra
 - eclipsing binary stars
 - emission spectra
 - flare stars
 - M stars
 - novae
 - stellar envelopes
 - stellar mass accretion
 - stellar oscillations
 - stellar spectra
 - stellar temperature
- symbolic programming**
- GS computer programming
 - . **symbolic programming**
 - RT coding
 - computer assisted instruction
 - context free languages
 - language programming
 - mnemonics
- symbols**
- UF *characters*
 - letters (symbols)*
 - signs (symbols)*
 - GS **symbols**
 - . alphanumeric characters
 - . . digits
 - . . . binary digits

symmetrical bodies

RT abbreviations
alphabets
character recognition
∞ codes
coding
color
data processing
high level languages
languages
legibility
∞ mathematics
message processing
messages
mnemonics
nomenclatures
perception
reading
semantics
∞ signals
units of measurement
visibility

symmetrical bodies
GS **symmetrical bodies**
. axisymmetric bodies
. . . power law bodies
. bodies of revolution
. . . conical bodies
. . . slender cones
. . . cylindrical bodies
. . . rotating cylinders
. . . parabolic bodies
. . . power law bodies
. . . spheres
. . . celestial sphere
. . . concentric spheres
. . . falling spheres
. . . Poincare spheres
. . . rotating spheres
. . . toruses
. ellipsoids
. lenticular bodies
. streamlined bodies
. . . fairings

RT axes of rotation
blunt bodies
∞ bodies
cones
finned bodies
flared bodies
geoids
ogives
slender bodies
spinning unguided rocket trajectory

symmetry
UF *axisymmetry*
GS **symmetry**
. broken symmetry
. . . CP violation
. chirality
. supersymmetry

RT antisymmetry
asymmetry
congruences
continuity (mathematics)
eccentricity
enantiomers
geometry
grand unified theory
isotropism
quantiles
shapes

symmetry breaking
USE **broken symmetry**

sympathetic nervous system
GS anatomy
. nervous system
. . . autonomic nervous system
. . . **sympathetic nervous system**

RT ∞ systems

sympathomimetics
USE **adrenergics**

Symphonie satellites
GS artificial satellites
. communication satellites

. . . **Symphonie satellites**
RT Arcomsat
broadcasting
European space programs
French satellites
international cooperation
radio transmission
satellite television
synchronous satellites
telephony

symposia
USE **conferences**

symptomology
GS medical science
. **symptomology**
RT diseases
signs and symptoms

symptoms
USE **signs and symptoms**

synapses
RT acetylcholine
nerves
nervous system
neuromuscular transmission
neurons
neurotransmitters
syncoders

synchrocyclotrons
GS particle accelerators
. cyclic accelerators
. . . **synchrocyclotrons**
. cyclotrons
. . . **synchrocyclotrons**

RT bevatron
synchrotrons

synchronism
DEF The relationship between two or more periodic quantities of the same frequency when the phase difference between them is zero or constant at a predetermined value. Used for beat and synchronization.
UF *beat*
synchronization
GS **synchronism**
. bit synchronization
. frequency synchronization
. time synchronization

RT coincidence circuits
Dining Philosophers Problem
phase detectors
stroboscopes
synchronizers
synchronizing
time
time measurement

synchronization
USE **synchronism**

synchronized oscillators
GS oscillators
. **synchronized oscillators**

RT frequency synchronization
phase locked systems
synchrosopes

synchronizers
RT heliostats
pulse radar
servomotors
synchronism

Synchronous Communication Satellites
USE **SYNCOM satellites**

Synchronous Communications Satellite Proj
SN (SYNCHRONOUS COMMUNICATIONS SATELLITE PROJECT)
GS programs
. NASA programs
. . . NASA space programs
. . . **Synchronous Communications Satellite Proj**
. projects

. . . **Synchronous Communications Satellite Proj**
. space programs
. . . NASA space programs
. . . **Synchronous Communications Satellite Proj**

RT communication satellites
twenty-four hour orbits

synchronous detectors
USE **correlators**

Synchronous Earth Observatory satellite
UF *SEOS*
GS artificial satellites
. meteorological satellites
. . . **Synchronous Earth Observatory satellite**
. . . SMS 1
. . . SMS 2
. synchronous satellites
. . . **Synchronous Earth Observatory satellite**
. . . SMS 1
. . . SMS 2

RT early warning systems
Landsat satellites
NASA programs
programs
satellite observation
SEASAT satellites
Synchronous Meteorological Satellite
technology utilization

Synchronous Meteorological Satellite
UF *SMS*
GS artificial satellites
. meteorological satellites
. . . **Synchronous Meteorological Satellite**
. . . SMS 1
. . . SMS 2
. synchronous satellites
. . . **Synchronous Meteorological Satellite**
. . . SMS 1
. . . SMS 2

RT communication satellites
Synchronous Earth Observatory satellite

synchronous motors
GS electromechanical devices
. electric motors
. . . **synchronous motors**
motors
. electric motors
. . . **synchronous motors**

RT asynchronous motors
induction motors

synchronous platforms
DEF Space platforms whose rotation is synchronized with that of Earth. Used for geostationary platforms.
UF *geostationary platforms*
GS space platforms
. **synchronous platforms**

RT communication satellites
geosynchronous orbits
∞ platforms
synchronous satellites

synchronous satellites
DEF Equatorial west-to-east satellites orbiting the Earth at an altitude of approximately 35,900 kilometers, at which they make one revolution in 24 hours, synchronous with the Earth's rotation. Used for geostationary satellites.
UF *geostationary satellites*
GS artificial satellites
. **synchronous satellites**
. . . AEROS satellite
. . . Aerosat satellites
. . . Anik satellites
. . . Anik 1
. . . Anik 2
. . . Anik 3
. . . GOES satellites

. . . GOES 1
 . . . GOES 2
 . . . GOES 3
 . . . GOES 4
 . . . GOES 5
 . . . GOES 6
 . . . GOES 7
 . . . GOES 8
 . . . GOES 9
 . . . GOES 10
 . . . GOES 13
 . . Miranda satellite
 . . SIRIO satellite
 . . StormSat satellite
 . . Synchronous Earth Observatory satellite
 . . . SMS 1
 . . . SMS 2
 . . Synchronous Meteorological Satellite
 . . . SMS 1
 . . . SMS 2
 . . SYNCOM satellites
 . . . Early Bird satellites
 . . . SYNCOM 1 satellite
 . . . SYNCOM 2 satellite
 . . . SYNCOM 3 satellite
 . . . SYNCOM 4 satellite
 . . TD satellites
 . . . TD-1 satellite
 RT active satellites
 Arcomsat
 Canadian space program
 communication satellites
 Communications Technology Satellite
 military spacecraft
 navigation satellites
 passive satellites
 Refsat
 stationary orbits
 Symphonie satellites
 synchronous platforms
 twenty-four hour orbits

synchrophasing
 RT aircraft noise
 noise reduction
 propeller blades
 synchronism

synchrophasotrons
 GS particle accelerators
 . **synchrophasotrons**
 RT ∞ accelerators
 synchrotrons

synchrosopes
 GS circuits
 . phase detectors
 . . **synchrosopes**
 RT correlators
 measuring instruments
 oscilloscopes
 synchronized oscillators

synchrotron radiation
 GS electromagnetic radiation
 . nonthermal radiation
 . . **synchrotron radiation**
 . polarized electromagnetic radiation
 . . **synchrotron radiation**
 polarized radiation
 . polarized electromagnetic radiation
 . . **synchrotron radiation**
 RT bremsstrahlung
 extraterrestrial radiation
 ∞ radiation
 radiation protection
 synchrotrons
 x rays

synchrotrons
 DEF Devices for accelerating particles, ordinarily electrons, in a circular orbit in an increasing magnetic field by means of an alternating field applied in a synchronism with the orbital motion.
 GS particle accelerators
 . cyclic accelerators
 . . **synchrotrons**

. . . bevatron
 . . . storage rings (particle accelerators)
 RT betatrons
 cyclotrons
 electron accelerators
 ion accelerators
 microtrons
 synchrocyclotrons
 synchrophasotrons
 synchrotron radiation

synclines
 UF *synclinoria*
 RT anticlines
 domes (geology)
 geological faults
 geosynclines
 ∞ layers
 strata
 stratification
 stratigraphy

synclinoria
 USE **synclines**

syncoders
 RT bionics
 neurons
 synapses

SYNCOM 1 satellite
 GS artificial satellites
 . active satellites
 . . SYNCOM satellites
 . . . **SYNCOM 1 satellite**
 . communication satellites
 . . SYNCOM satellites
 . . . **SYNCOM 1 satellite**
 . synchronous satellites
 . . SYNCOM satellites
 . . . **SYNCOM 1 satellite**
 RT Delta launch vehicle

SYNCOM 2 satellite
 GS artificial satellites
 . active satellites
 . . SYNCOM satellites
 . . . **SYNCOM 2 satellite**
 . communication satellites
 . . SYNCOM satellites
 . . . **SYNCOM 2 satellite**
 . synchronous satellites
 . . SYNCOM satellites
 . . . **SYNCOM 2 satellite**
 RT Delta launch vehicle

SYNCOM 3 satellite
 GS artificial satellites
 . active satellites
 . . SYNCOM satellites
 . . . **SYNCOM 3 satellite**
 . communication satellites
 . . SYNCOM satellites
 . . . **SYNCOM 3 satellite**
 . synchronous satellites
 . . SYNCOM satellites
 . . . **SYNCOM 3 satellite**
 RT Delta launch vehicle

SYNCOM 4 satellite
 DEF A geosynchronous communications satellite that was deployed on Space Shuttle STS 51A in November 1984.
 GS artificial satellites
 . active satellites
 . . SYNCOM satellites
 . . . **SYNCOM 4 satellite**
 . communication satellites
 . . SYNCOM satellites
 . . . **SYNCOM 4 satellite**
 . synchronous satellites
 . . SYNCOM satellites
 . . . **SYNCOM 4 satellite**

SYNCOM apogee engines
 GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **SYNCOM apogee engines**

. . Vernier engines
 . . . **SYNCOM apogee engines**
 . torpedo engines
 . . Vernier engines
 . . . **SYNCOM apogee engines**

SYNCOM satellites
 UF *Synchronous Communication Satellites*
 GS artificial satellites
 . active satellites
 . . **SYNCOM satellites**
 . . . Early Bird satellites
 . . . SYNCOM 1 satellite
 . . . SYNCOM 2 satellite
 . . . SYNCOM 3 satellite
 . . . SYNCOM 4 satellite
 . communication satellites
 . . **SYNCOM satellites**
 . . . Early Bird satellites
 . . . SYNCOM 1 satellite
 . . . SYNCOM 2 satellite
 . . . SYNCOM 3 satellite
 . . . SYNCOM 4 satellite
 . synchronous satellites
 . . **SYNCOM satellites**
 . . . Early Bird satellites
 . . . SYNCOM 1 satellite
 . . . SYNCOM 2 satellite
 . . . SYNCOM 3 satellite
 . . . SYNCOM 4 satellite
 . synchronous satellites
 . . **SYNCOM satellites**
 . . . Early Bird satellites
 . . . SYNCOM 1 satellite
 . . . SYNCOM 2 satellite
 . . . SYNCOM 3 satellite
 . . . SYNCOM 4 satellite
 RT Thor Delta launch vehicle

syncope
 UF *fainting*
 GS **syncope**
 . blackout (physiology)
 . . blackout prevention
 RT unconsciousness

syndromes
 USE **signs and symptoms**

syngas
 (added January 2002)
 USE **synthesis gas**

synoptic measurement
 RT ∞ measurement
 nephanalysis

synoptic meteorology
 DEF The study and analysis of weather information gathered at the same time.
 GS meteorology
 . **synoptic meteorology**
 RT air masses
 anticyclones
 cold fronts
 cyclones
 fronts (meteorology)
 meteorological charts
 nephanalysis
 teleconnections (meteorology)
 warm fronts
 weather forecasting

syntax
 GS linguistics
 . **syntax**
 RT format
 grammars
 ∞ interpretation
 languages
 natural language processing
 orthography
 parsing algorithms
 psycholinguistics
 semantics
 sentences
 speech

syntectic alloys
 DEF Metallic composite materials characterized by a reversible convertibility of their solid phases into two liquid phases by the application of heat.
 GS alloys
 . **syntectic alloys**
 RT eutectics

synthane

liquid phases
metals
phase transformations
solid phases

synthane

UF *synthetic methane*
GS fuels

. chemical fuels
. hydrocarbon fuels
. . . **synthane**
. . . synthetic fuels
. . . **synthane**

RT automobile fuels
carbon dioxide
carbon monoxide
coal
coal gasification
gasification
hydrogen
lignite
methane

∞ synthesis

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT biosynthesis
chemical reactions
decision theory
∞ design
network synthesis
nuclear fusion
operations research
plasma jet synthesis
synthesis (chemistry)
synthetic fuels
systems engineering

synthesis (chemistry)

DEF The application of chemical reactions to obtain desired chemical products.

GS **synthesis (chemistry)**

. polymerization
. . copolymerization
. . dimerization
. electrochemical synthesis

RT addition resins
chemical reactions

∞ chemistry
cycloaddition
Fischer-Tropsch process
operations research
reaction intermediates
self assembly

∞ synthesis
synthesis gas
synthetic fibers
synthetic fuels
synthetic resins
synthetic rubbers
systems engineering

synthesis gas

(added January 2002)

DEF A mixture of gases produced as feedstock for the synthesis of chemical compounds, for example, hydrogen and carbon monoxide used as the starting material for the production of ammonia derivatives, methanol, and hydrocarbons.

UF *syngas*
GS gases

. **synthesis gas**

RT catalysts
coal derived gases
coal gasification
fuel production
synthesis (chemistry)
synthetic fuels

synthesizers

RT chemical reactors
frequency synthesizers

synthetic aperture radar

DEF Active microwave sensors providing all-weather, high resolution imagery. Used for imaging radar.

GS radar

. **synthetic aperture radar**

. . Shuttle Imaging Radar
. . side-looking radar
RT airborne radar
Earthnet
Envisat-1 satellite
ground penetrating radar
imaging radar
Magellan spacecraft (NASA)
microwave imagery
microwave sensors
radar equipment
Radarsat
satellite-borne radar
surveillance radar
synthetic apertures
Venus orbiting imaging radar (spacecraft)

synthetic apertures

DEF In radar technology, the simulations of large antennas by correcting the phase and magnitude of the return signals from smaller antennas, permitting the use of lower frequencies for airborne radars.

GS openings

. apertures

. . **synthetic apertures**

RT imaging techniques
synthetic aperture radar

synthetic arrays

GS arrays

. **synthetic arrays**

RT antenna radiation patterns
apertures
distribution (property)

∞ patterns

Shuttle Imaging Radar

synthetic fibers

GS fibers

. **synthetic fibers**

. . aramid fibers
. . . Kevlar (trademark)
. . ceramic fibers
. . Dacron (trademark)
. . Fortisan (trademark)
. . glass fibers
. . Nylon (trademark)
. . rayon
. . Vycor

RT addition resins

flame retardants
Kevlar (trademark)
polyacrylonitrile
polybenzimidazole
polyesters
reinforcing fibers
synthesis (chemistry)
wet spinning

synthetic food

DEF Mixture of roughage, vitamins, minerals, etc., closely approximating natural foods in appearance, taste, and nutrition.

RT amino acids

biosynthesis
carbohydrates
cellulose
eating
fats

∞ food

food intake
nutritional requirements
protein metabolism
proteins
taste

synthetic fuels

GS fuels

. chemical fuels
. . **synthetic fuels**
. . . gasohol (fuel)
. . . synthane

RT chemical reactions

clean fuels
Fischer-Tropsch process
hydrocarbon fuels
liquid fuels

∞ synthesis

synthesis (chemistry)
synthesis gas

synthetic metals

DEF Materials which do not occur in nature but have the appearance and physical properties of true metals.

RT crystal lattices

dendrimers
graphite
organometallic compounds

synthetic methane

USE **synthane**

synthetic resins

GS plastics

. **synthetic resins**

. . addition resins
. . . acrylic resins
. . . vinyl copolymers
. . polyester resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate
. . thermoplastic resins
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
. . thermosetting resins
. . epoxy resins
. . . phenolic epoxy resins
. . . furan resins
. . . polyamide resins
. . . . Kevlar (trademark)
. . . . Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins
resins

. **synthetic resins**

. . addition resins
. . acrylic resins
. . vinyl copolymers
. . polyester resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate
. . thermoplastic resins
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
. . thermosetting resins
. . epoxy resins
. . . phenolic epoxy resins
. . furan resins
. . . polyamide resins
. . . . Kevlar (trademark)
. . . . Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins

RT polyethylenes

∞ polymers

polypropylene
polystyrene
polytetrafluoroethylene
polyvinyl alcohol
polyvinyl chloride
synthesis (chemistry)
teflon (trademark)

synthetic rubbers

GS elastomers

. rubber

. . **synthetic rubbers**

. . . Adiprene (trademark)
. . . Buna (trademark)
. . . silicone rubber
. . . . RTV-40 rubber (trademark)
. . . . RTV-60 rubber (trademark)
. . . Viton rubber (trademark)
. . . vulcanized elastomers
. . . . RTV-40 rubber (trademark)
. . . . RTV-60 rubber (trademark)
. . . chloroprene resins

RT latex

polybutadiene
polyisobutylene
polyisoprenes

- solithanes
- synthesis (chemistry)
- synthetic vision*
- USE **enhanced vision**
- syntony**
- DEF The situation of two or more oscillating circuits having the same resonant frequency.
- RT frequency synchronization
oscillations
resonance
- syphilis**
- GS diseases
. infectious diseases
. . bacterial diseases
. . . **syphilis**
- Syria**
- GS nations
. **Syria**
- RT Asia
- syringes**
- GS laboratory equipment
. **syringes**
medical equipment
. **syringes**
- RT bulbs
- ∞ equipment
fluid flow
pipes (tubes)
transfusion
- System 10 computer*
- USE **PDP 10 computer**
- system effectiveness**
- GS effectiveness
. **system effectiveness**
- RT modulation transfer function
optical transfer function
reliability
reliability engineering
- ∞ systems
systems engineering
systems health monitoring
systems integration
- system failures**
- GS failure
. **system failures**
- RT ∞ breakdown
deterioration
downtime
fatigue (materials)
fault detection
malfunctions
short circuits
structural failure
structural strain
- ∞ systems
wear
- system generated electromagnetic pulses**
- DEF Electromagnetic fields generated by the emission of a large electronic current from a metallic body in space caused by the incidence on its surface of strong ionizing radiation pulses (usually x ray) from space. Used for SGEMP.
- UF *SGEMP*
- GS electromagnetic fields
. **system generated electromagnetic pulses**
electromagnetic radiation
. electromagnetic pulses
. . **system generated electromagnetic pulses**
pulsed radiation
. electromagnetic pulses
. . **system generated electromagnetic pulses**
pulses
. electromagnetic pulses
. . **system generated electromagnetic pulses**
- RT electric current
electric pulses
electromagnetic interference
- electronic equipment
- external surface currents
- extraterrestrial radiation
- ionizing radiation
- plasma sheaths
- satellite communication
- spacecraft charging
- spacecraft communication
- x rays
- system identification**
- DEF The technology of modeling plants and processes from their dynamic response.
- GS estimating
. **system identification**
identifying
. **system identification**
systems analysis
. **system identification**
- RT complex systems
control systems design
dynamic response
estimates
fuzzy systems
mathematical models
maximum likelihood estimates
observability (systems)
optimization
parameter identification
parameterization
prediction analysis techniques
probability theory
reliability engineering
statistical analysis
steepest descent method
- ∞ systems
systems engineering
- systematic errors**
(added April 1997)
- DEF Non-random and often predictable errors due to some physical law or caused by flaws in a measurement process.
- GS errors
. **systematic errors**
- RT error analysis
instrument compensation
instrument errors
random errors
- ∞ **systems**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Advanced Vidicon Camera System (AVCS)
aerospace systems
afferent nervous systems
African rift system
air cushion landing systems
Airborne Integrated Reconnaissance System
aircraft fuel systems
aircraft hydraulic systems
all-weather landing systems
Aloha system
annular suspension and pointing system
Apollo extension system
ascent propulsion systems
Astroguide Navigation System
Atmospheric & Oceanographic Inform Sys
automated pilot advisory system
automated radar terminal system
automatic traffic advisory and resolution
autonomic nervous system
Ballistic Missile Early Warning System
Beacon Collision Avoidance System
binary systems (materials)
Bioastronautical Orbital Space System
biocontrol systems
cardiovascular system
celestial reference systems
Central Electronic Management System
central nervous system
central nervous system depressants
- central nervous system stimulants
- chokes (fuel systems)
- closed ecological systems
- complex systems
- computer systems design
- computer systems performance
- computer systems programs
- computer systems simulation
- cooling systems
- cybernetics
- data base management systems
- data systems
- Defense Communications Satellite System
- defense communications system (DCS)
- descent propulsion systems
- digestive system
- digital command systems
- digital systems
- discrete address beacon system
- disk operating system (DOS)
- display devices
- distributed parameter systems
- domestic satellite communications systems
- early warning systems
- Earth Resources Information System
- Earth terminal measurement system
- Earth-Moon system
- ecosystems
- efferent nervous systems
- EISCAT radar system (Europe)
- ∞ elastic systems
- electronic recording systems
- emergency life sustaining systems
- endocrine systems
- end-to-end data systems
- escape systems
- exhaust systems
- fail-safe systems
- feed systems
- feedback
- Fleet Satellite Communication System
- fuel systems
- fuzzy systems
- gastrointestinal system
- genitourinary system
- Global Positioning System
- Goddard Trajectory Determination System
- ground operational support system
- ground support systems
- guidance (motion)
- hardening (systems)
- hematopoietic system
- hybrid navigation systems
- hydraulic equipment
- hydroplanes (surfaces)
- hydrothermal systems
- ∞ hyperbolic systems
- IFF systems (identification)
- ignition systems
- IMLSS
- inertial reference systems
- information adaptive system
- information systems
- instrument landing systems
- intake systems
- integrated energy systems
- integrated global ocean station systems
- International System of Units intravascular system
- jettison systems
- launch escape systems
- life support systems
- Light Airborne Multipurpose System
- linear systems
- LOCATES system
- LORAC navigation system
- lubrication systems
- lumped parameter systems
- Lunar Exploration System for Apollo
- man machine systems
- man operated propulsion systems
- management information systems
- management systems
- metal-gas systems

methoxy systems
 microwave landing systems
 microwave scanning beam landing system
 MIMO (control systems)
 minitrack system
 Miros system
 missile systems
 Modular Integrated Utility System
 musculoskeletal system
 NASA Interactive Planning System
 National Airspace Utilization System
 National Aviation System
 National Oceanic Satellite System
 navigation
 needs (data system)
 nervous system
 Nike X systems
 NOESS
 nonlinear systems
 Nova Laser System
 observability (systems)
 Omega Navigation System
 on-line systems
 operating systems (computers)
 optical relay systems
 payload deployment & retrieval system
 peripheral nervous system
 phase locked systems
 piggyback systems
 planetary systems
 PLAT system
 pneumatic equipment
 pointing control systems
 polystation doppler tracking system
 portable life support systems
 post boost propulsion system
 propulsion system configurations
 propulsion system performance
 public address systems
 quality control
 radio relay systems
 Ranger block 3 television system
 rapid transit systems
 ∞ reference systems
 remote manipulator system
 reproductive systems
 respiratory system
 rotor systems research aircraft
 Safeguard system
 SAGE air defense system
 satellite navigation systems
 self adaptive control systems
 self organizing systems
 Sentinel system
 Shiva laser system
 SISO (control systems)
 SNAP
 solar system
 solar total energy systems
 space detection and tracking system
 space transportation system
 Space Transportation System flights
 support systems
 suspension systems (vehicles)
 sympathetic nervous system
 system effectiveness
 system failures
 system identification
 systems analysis
 systems engineering
 systems integration
 systems management
 systems simulation
 systems stability
 telecommunication
 telegraph systems
 teletypewriter systems
 television systems
 TERCOM
 ternary systems
 TIROS operational satellite system
 total energy systems
 TRADEX radar system
 transcontinental systems
 transfer functions
 transoceanic systems
 Typhon weapon system

uncertain systems
 unmanned aircraft systems
 vacuum systems
 variable mass systems
 vortex advisory system
 warning systems
 weapon system management
 weapon systems

systems analysis

GS **systems analysis**
 . system identification
 RT ∞ analyzing
 block diagrams
 bond graphs
 complex systems
 computer programming
 computer systems programs
 computer systems simulation
 control systems design
 feasibility analysis
 fuzzy systems
 man machine systems
 mathematical models
 modulation transfer function
 observability (systems)
 operating costs
 operations research
 optical transfer function
 parameter identification
 preflight analysis
 procedures
 program verification (computers)
 sensitivity analysis
 simulation
 sociology
 statistical analysis
 ∞ systems
 trajectory analysis
 weight analysis
 weight reduction

systems compatibility

GS compatibility
 . **systems compatibility**
 RT interoperability
 reliability
 reliability engineering

systems design

USE **systems engineering**

systems engineering

DEF The process of applying science and technology to the study and planning of a system so that the relationships of various parts of the system and the use of various subsystems are fully established before designs are committed.

UF *systems design*
 GS **systems engineering**
 . computer systems design
 . control systems design
 RT aerospace systems
 aircraft design
 ∞ automation
 bionics
 bond graphs
 communicating
 concurrent engineering
 contract management
 ∞ control
 critical path method
 cybernetics
 data processing
 decision making
 decision theory
 ∞ design
 design optimization
 electrical engineering
 ∞ engineering
 experiment design
 flight management systems
 forecasting
 functional design specifications
 human factors engineering
 information theory
 life cycle costs
 man machine systems
 management

management planning
 mathematical models
 mechanization
 missile design
 modularity
 multidisciplinary design optimization
 observability (systems)
 operational problems
 ∞ operations
 operations research
 optical transfer function
 orbit spectrum utilization
 parameter identification
 reliability
 reliability engineering
 research and development
 reverse engineering
 satellite design
 software engineering
 spacecraft design
 statistical analysis
 ∞ statistics
 ∞ synthesis
 synthesis (chemistry)
 system effectiveness
 system identification
 ∞ systems
 systems integration

Systems for Nuclear Auxiliary Power
 USE **SNAP**

systems health monitoring

(added July 1995)

SN ((NOT USED FOR PHYSIOLOGICAL, PSYCHOLOGICAL, OR BIOLOGICAL SYSTEMS))
 UF *health and usage monitoring systems*
 RT component reliability
 engine monitoring instruments
 expert systems
 fault detection
 life (durability)
 propulsion system performance
 service life
 smart structures
 software reliability
 system effectiveness

systems integration

DEF The combining of subsystems each with numerous interfaces for the input and output of data and each with specified functions vital to the planned success of the main system.

RT airborne/spaceborne computers
 avionics
 control systems design
 digital systems
 interoperability
 system effectiveness
 ∞ systems
 systems engineering
 systems simulation
 systems-on-a-chip

systems management

GS management
 . **systems management**
 RT industrial management
 information systems
 man machine systems
 management methods
 operations research
 ∞ systems

systems simulation

DEF The simulation of any dynamic system.
 GS simulation
 . **systems simulation**
 . . computer systems simulation
 RT analog simulation
 computerized simulation
 dynamic models
 dynamical systems
 flight simulation
 hardware-in-the-loop simulation
 mathematical models
 model reference adaptive control
 operations research
 ∞ systems

systems integration

systems stability

GS stability
 . **systems stability**
 RT control stability
 dynamic stability
 equations of motion
 ∞ equilibrium
 flow stability
 loop transfer recovery
 MIMO (control systems)
 SISO (control systems)
 ∞ systems
 unsteady state

systems-on-a-chip

(added May 2001)

DEF Single electronic chips that incorporate the multiple functional elements comprising a complete system; usually include processor core, I/O subsystems, and memory elements, and may include mixed-signal and mixed-

technology subsystems.

UF *SOAC (electronics)*
SoC (microelectronics)
 GS chips (electronics)
 . **systems-on-a-chip**
 RT application specific integrated circuits
 large scale integration
 microelectronics
 microminiaturized electronic devices
 microoptoelectromechanical systems
 RISC processors
 systems integration

systole

GS heart function
 . **systole**
 rates (per time)
 . **systole**
 RT blood flow
 blood pressure
 cardiac ventricles
 cardiovascular system
 diastole

heart rate
 systolic pressure

systolic arrays

GS arrays
 . **systolic arrays**
 RT algorithms
 architecture (computers)
 chips (electronics)
 computation
 parallel processing (computers)
 very large scale integration

systolic pressure

GS pressure
 . blood pressure
 . . **systolic pressure**
 RT systole

S-Z effect

(added July 2000)

USE **Sunyaev-Zeldovich effect**

T

T shape

- UF *tee*
- GS shapes
 - . **T shape**
- RT beams (supports)

T tail surfaces

- GS assemblies
 - . tail assemblies
 - . . . **T tail surfaces**
 - tail surfaces
 - . **T tail surfaces**
- RT control surfaces
 - stabilizers (fluid dynamics)
- ∞ surfaces
 - sweptback tail surfaces

T Tauri stars

- GS celestial bodies
 - . stars
 - . . . protostars
 - pre-main sequence stars
 - **T Tauri stars**
 - variable stars
 - **T Tauri stars**
- RT Herbig-Haro objects
 - star formation
 - Taurus constellation

T-2 aircraft

- UF *buckeye aircraft*
 - T2J aircraft*
 - YT-2 aircraft*
- GS attack aircraft
 - . **T-2 aircraft**
 - jet aircraft
 - . **T-2 aircraft**
 - monoplanes
 - . **T-2 aircraft**
 - North American aircraft
 - . **T-2 aircraft**
 - single engine aircraft
 - . **T-2 aircraft**
 - training aircraft
 - . **T-2 aircraft**
- RT ∞ aircraft

T2J aircraft

- USE **T-2 aircraft**

T3J aircraft

- USE **T-39 aircraft**

T-28 aircraft

- UF *Trojan aircraft*
- GS monoplanes
 - . **T-28 aircraft**
 - North American aircraft
 - . **T-28 aircraft**
 - single engine aircraft
 - . **T-28 aircraft**
 - training aircraft
 - . **T-28 aircraft**
- RT ∞ aircraft

T-33 aircraft

- UF *F-80 aircraft*
 - Shooting Star aircraft*
- GS jet aircraft
 - . **T-33 aircraft**
 - Lockheed aircraft
 - . **T-33 aircraft**
 - monoplanes
 - . **T-33 aircraft**
 - single engine aircraft
 - . **T-33 aircraft**
 - training aircraft
 - . **T-33 aircraft**
- RT ∞ aircraft

T-34 engine

- GS engines
 - . air breathing engines
 - . . . gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-34 engine**
 - aircraft engines

- . . . **T-34 engine**
- . . . internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-34 engine**
 - turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-34 engine**
- RT C-133 aircraft

T-37 aircraft

- GS Cessna aircraft
 - . **T-37 aircraft**
 - jet aircraft
 - . **T-37 aircraft**
 - monoplanes
 - . **T-37 aircraft**
 - training aircraft
 - . **T-37 aircraft**
- RT A-37 aircraft
 - ∞ aircraft

T-38 aircraft

- UF *Talon aircraft*
- GS jet aircraft
 - . **T-38 aircraft**
 - monoplanes
 - . **T-38 aircraft**
 - Northrop aircraft
 - . **T-38 aircraft**
 - supersonic aircraft
 - . **T-38 aircraft**
 - training aircraft
 - . **T-38 aircraft**
- RT ∞ aircraft

T-38 engine

- GS engines
 - . air breathing engines
 - . . . gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-38 engine**
 - aircraft engines
 - **T-38 engine**
 - internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-38 engine**
 - turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-38 engine**

T-39 aircraft

- UF *Sabreliner aircraft*
 - T3J aircraft*
- GS jet aircraft
 - . **T-39 aircraft**
 - monoplanes
 - . **T-39 aircraft**
 - North American aircraft
 - . **T-39 aircraft**
 - passenger aircraft
 - . **T-39 aircraft**
 - training aircraft
 - . **T-39 aircraft**
 - utility aircraft
 - . **T-39 aircraft**
- RT ∞ aircraft
 - cargo aircraft

T-53 engine

- GS engines
 - . air breathing engines
 - . . . gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines

- **T-53 engine**
- internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-53 engine**
 - turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-53 engine**
- RT helicopter engines

T-55 engine

- GS engines
 - . air breathing engines
 - . . . gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-55 engine**
 - aircraft engines
 - **T-55 engine**
 - internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-55 engine**
 - turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-55 engine**
- RT helicopter engines

T-56 engine

- GS engines
 - . air breathing engines
 - . . . gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-56 engine**
 - internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-56 engine**
 - turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-56 engine**
- RT C-130 aircraft

T-58 engine

- GS engines
 - . air breathing engines
 - . . . gas turbine engines
 - **T-58 engine**
 - internal combustion engines
 - gas turbine engines
 - turbine engines
 - gas turbine engines
 - **T-58 engine**
- RT aircraft engines
 - helicopter engines
 - vertical takeoff aircraft

T-63 engine

- GS engines
 - . air breathing engines
 - . . . gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-63 engine**
 - aircraft engines
 - **T-63 engine**
 - internal combustion engines
 - gas turbine engines

- . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-63 engine**
- . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-63 engine**
- RT helicopter engines
- T-64 engine**
 - GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-64 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-64 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-64 engine**
- RT helicopter engines
- T-74 engine**
 - GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-74 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-74 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-74 engine**
- RT helicopter engines
- T-76 engine**
 - GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-76 engine**
 - . aircraft engines
 - . . **T-76 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-76 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-76 engine**
- RT helicopter engines
- T-78 engine**
 - GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-78 engine**
 - . aircraft engines
 - . . **T-78 engine**
- . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-78 engine**
- . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-78 engine**
- tables (data)
 - DEF (1) An array of data, each item of which may be unambiguously identified by means of one or more arguments. (2) A collection of data in which each item is uniquely identified by a label, by its position relative to the other items, or by some other means.
 - GS **tables (data)**
 - . conversion tables
 - . interference factor table
 - . mathematical tables
 - RT air data systems
 - astronomical catalogs
 - ∞ data
 - data acquisition
 - data management
 - data processing
 - data recording
 - data reduction
 - data retrieval
 - printouts
 - spreadsheets
 - statistical analysis
 - ∞ statistics
 - ∞ tabulation
 - tabulation processes
- tablets
 - RT briquets
 - ∞ capsules
 - molds
- tabs (control surfaces)
 - GS airfoils
 - . **tabs (control surfaces)**
 - control surfaces
 - . **tabs (control surfaces)**
 - RT aerial rudders
 - aileron
 - ∞ control
 - elevators (control surfaces)
 - elevons
 - rudders
 - stabilizers (fluid dynamics)
 - ∞ surfaces
- tabulating
 - USE **tabulation processes**
- ∞ tabulation
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT tables (data)
 - tabulation processes
- tabulation processes
 - UF *tabulating*
 - RT data processing
 - data recording
 - tables (data)
 - ∞ tabulation
- Tacan**
 - DEF A two dimensional navigation system which provides azimuth and distance to a fixed ground station for navigation in piloted aircraft. Used for tactical air navigation.
 - UF *tactical air navigation*
 - GS navigation
 - . radio navigation
 - . . **Tacan**
 - RT air navigation
 - all-weather air navigation
 - flight paths
 - navigation aids
 - radar navigation
- solar compasses
- tachistoscopes**
 - RT visual perception
- tachometers**
 - GS display devices
 - . speed indicators
 - . . **tachometers**
 - measuring instruments
 - . indicating instruments
 - . . speed indicators
 - . . . **tachometers**
 - RT aircraft instruments
 - angular velocity
 - timing devices
 - velocity measurement
- tachycardia**
 - GS diseases
 - . **tachycardia**
 - rates (per time)
 - . heart rate
 - . . **tachycardia**
- tachyons**
 - GS particles
 - . elementary particles
 - . . hypothetical particles
 - . . . **tachyons**
- tachypnea**
 - GS rates (per time)
 - . respiratory rate
 - . . **tachypnea**
- tackiness**
 - RT adhesion
- TACT program**
 - UF *Transonic Aircraft Technology Program*
 - GS programs
 - . NASA programs
 - . . **TACT program**
 - RT ∞ aeronautics
 - ∞ aircraft
- tactical air navigation*
 - USE **Tacan**
- tactics**
 - RT attacking (assaulting)
 - deployment
 - evasive actions
 - military operations
 - military technology
 - obstacle avoidance
- tactile discrimination**
 - GS discrimination
 - . sensory discrimination
 - . . **tactile discrimination**
 - perception
 - . sensory perception
 - . . touch
 - . . . **tactile discrimination**
 - RT tactile sensors (robotics)
- tactile sensation*
 - USE **touch**
- tactile sensors (robotics)**
 - (added January 1991)
 - GS robot sensors
 - . **tactile sensors (robotics)**
 - RT end effectors
 - manipulators
 - robots
 - ∞ sensors
 - servomechanisms
 - tactile discrimination
 - teleoperators
 - touch
- Tafel law**
 - GS laws
 - . **Tafel law**
 - RT electrodes
 - electrolysis
 - Ficks equation

polarization (charge separation)

tagging

USE **marking**

TAGN

UF *triaminoguanidinenitrate*
 GS oxidizers
 . rocket oxidizers
 . . **TAGN**
 propellants
 . rocket propellants
 . . **TAGN**
 RT explosives

Taguchi methods

(added September 2000)

DEF Quality engineering methodology, developed by Genichi Taguchi, for minimizing a product's sensitivity to uncontrollable system disturbances by simultaneously varying both design and disturbance parameters. The method incorporates a special set of arrays called orthogonal arrays that define the minimal number of experiments that would provide the full information for all factors that affect the performance parameter.

GS quality control
 . **Taguchi methods**
 RT design analysis
 experiment design
 multidisciplinary design optimization
 optimization
 parameter identification
 reliability engineering
 statistical analysis
 total quality management

tail assemblies

DEF The rear part of a body, as of an aircraft or a rocket. The tail surfaces of an aircraft or rocket. Used for empennage, tail mountings, tails (assemblies), and vertical tails.

UF *empennage*
tail mountings
tails (assemblies)
vertical tails

GS assemblies
 . **tail assemblies**
 . . horizontal tail surfaces
 . . sweptback tail surfaces
 . . swing tail assemblies
 . . T tail surfaces
 . . trapezoidal tail surfaces

RT aerial rudders
 afterbodies
 aircraft parts
 aircraft structures
 airfoils
 airframes
 boattails
 body-wing and tail configurations
 ∞ boom
 control surfaces
 elevators (control surfaces)
 fins
 hydrofoils
 marine rudders
 missile structures
 rudders
 sails
 stabilizers (fluid dynamics)
 vanes

tail mountings

USE **tail assemblies**

tail planes

USE **horizontal tail surfaces**

tail rotors

GS rotating bodies
 . rotors
 . . **tail rotors**
 . . . helicopter tail rotors
 RT helicopter control
 rotary wings

∞ rotor blades

tail surfaces

GS **tail surfaces**
 . horizontal tail surfaces
 . sweptback tail surfaces
 . T tail surfaces
 . trapezoidal tail surfaces
 RT control surfaces
 elevators (control surfaces)
 rudders
 stabilizers (fluid dynamics)
 ∞ surfaces

tailless aircraft

UF *flying wing aircraft*
 GS **tailless aircraft**
 . AVRO 707 aircraft
 . B-58 aircraft
 . F-102 aircraft
 . F-106 aircraft
 . FD 2 aircraft
 . HP-115 aircraft
 . Mirage 3 aircraft
 . SC-1 aircraft
 . Vulcan aircraft
 . X-36 aircraft
 . X-45 aircraft
 RT ∞ aircraft
 blended-wing-body configurations
 jet aircraft
 ∞ low wing aircraft
 ∞ military aircraft
 monoplanes
 research aircraft

tailoring

USE **design**

tails (assemblies)

USE **tail assemblies**

Taiwan

UF *Republic of China*
 GS nations
 . **Taiwan**
 RT Asia
 China
 Chinese space program
 Chinese spacecraft
 Hong Kong

Tajikistan

(added August 1993)
 GS nations
 . **Tajikistan**
 RT Asia

takeoff

DEF The action of a rocket vehicle departing from its launch pad. The action of an aircraft as it becomes airborne.

GS **takeoff**
 . vertical takeoff
 RT air traffic control
 ascent
 climbing flight
 JATO engines
 landing
 maneuvers
 runways

takeoff runs

RT aircraft performance
 distance
 runway alignment
 short takeoff aircraft

takeoff systems

USE **aircraft launching devices**

talc

UF *steatite*
 GS magnesium compounds
 . **talc**
 minerals
 . **talc**
 silicon compounds
 . silicates
 . . sodium silicates

. . . **talc**
 sodium compounds
 . sodium silicates
 . . **talc**

talking

GS speech
 . **talking**
 RT sentences
 signal transmission

Talon aircraft

USE **T-38 aircraft**

Talos missile

GS missiles
 . surface to air missiles
 . . **Talos missile**
 RT Bumblebee project
 liquid propellant rocket engines
 multistage rocket vehicles
 solid propellant rocket engines

tandem mirrors

GS mirrors
 . magnetic mirrors
 . . **tandem mirrors**
 RT fusion reactors
 mirror fusion
 plasma control
 thermal barriers (plasma control)

tandem rotor helicopters

GS V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **tandem rotor helicopters**
 CH-46 helicopter
 CH-47 helicopter
 H-25 helicopter
 RT ∞ aircraft

tandem wing aircraft

DEF An aircraft configuration having two wings of similar span, mounted in tandem.
 GS **tandem wing aircraft**
 . X-19 aircraft
 . X-22A aircraft
 RT ∞ aircraft
 biplanes
 canard configurations
 dual wing configurations
 jet aircraft
 joined wings
 research aircraft
 ∞ subsonic aircraft
 X-22 aircraft

tangential blowing

(added October 1996)

GS blowing
 . **tangential blowing**
 RT boundary layer control
 chords (geometry)
 circulation control airfoils
 jet flaps
 lift augmentation
 spanwise blowing
 wing slots

tangents

GS analysis (mathematics)
 . real variables
 . . periodic functions
 . . . trigonometric functions
 **tangents**
 functions (mathematics)
 . transcendental functions
 . . periodic functions
 . . . trigonometric functions
 **tangents**
 geometry
 . Euclidean geometry
 . . analytic geometry
 . . . **tangents**
 RT chords (geometry)

tangling

RT confusion
 entrapment

- mixing
- tank geometry**
 - GS geometry
 - . **tank geometry**
 - RT liquid sloshing
 - propellant tanks
 - storage tanks
 - tanks (containers)
 - ullage
- tank trucks**
 - GS surface vehicles
 - . motor vehicles
 - . . trucks
 - . . . **tank trucks**
 - RT ∞ tankers
 - trailers
- tanker aircraft**
 - GS transport aircraft
 - . **tanker aircraft**
 - RT air to air refueling
 - ∞ aircraft
 - aircraft fuels
 - bomber aircraft
 - fuel tanks
 - ∞ military aircraft
 - ∞ tankers
 - Valiant aircraft
- tanker ships**
 - GS surface vehicles
 - . cargo ships
 - . . **tanker ships**
 - water vehicles
 - . ships
 - . . cargo ships
 - . . . **tanker ships**
 - RT artificial harbors
 - deepwater terminals
 - harbors
 - marine transportation
 - offshore docking
 - offshore platforms
 - shipyards
 - ∞ tankers
 - wharves
- tanker terminals**
 - RT artificial harbors
 - cargo ships
 - deepwater terminals
 - marine technology
 - oceanography
 - offshore docking
 - offshore platforms
 - ship terminals
 - ∞ tankers
 - terminal facilities
 - transportation
- ∞ **tankers**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT artificial harbors
 - deepwater terminals
 - offshore docking
 - offshore platforms
 - tank trucks
 - tanker aircraft
 - tanker ships
 - tanker terminals
 - transportation energy
- tanks (combat vehicles)**
 - GS surface vehicles
 - . **tanks (combat vehicles)**
 - RT armed forces
 - military operations
 - ∞ military vehicles
 - ordnance
 - ∞ vehicles
 - weapons
- tanks (containers)**
 - GS **tanks (containers)**
 - . bunkers (fuel)
 - . cylindrical tanks
 - . external tanks
- . fuel tanks
 - . . wing tanks
 - . cryogenic tanks
 - . propellant tanks
 - . spherical tanks
 - . storage tanks
- RT basins (containers)
 - bottles
 - chemical reactors
 - ∞ containers
 - drums (containers)
 - fluid filled shells
 - liquid filled shells
 - materials handling
 - pipe nozzles
 - pressure vessels
 - receivers
 - ∞ structures
 - tank geometry
 - towers
 - wing-fuselage stores
- tantalum**
 - GS chemical elements
 - . **tantalum**
 - . . tantalum isotopes
 - metals
 - . refractory metals
 - . . **tantalum**
 - . . . tantalum isotopes
 - transition metals
 - . . **tantalum**
 - . . . tantalum isotopes
 - refractory materials
 - . refractory metals
 - . . **tantalum**
 - . . . tantalum isotopes
- tantalum alloys**
 - GS alloys
 - . heat resistant alloys
 - . . refractory metal alloys
 - . . . **tantalum alloys**
 - refractory materials
 - . refractory metal alloys
 - . . **tantalum alloys**
 - RT hafnium alloys
- tantalum carbides**
 - GS carbon compounds
 - . carbides
 - . . **tantalum carbides**
 - tantalum compounds
 - . **tantalum carbides**
- tantalum compounds**
 - GS **tantalum compounds**
 - . tantalum carbides
 - . tantalum nitrides
 - . tantalum oxides
 - RT ∞ chemical compounds
 - ∞ Group 5B compounds
 - ∞ metal compounds
- tantalum isotopes**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **tantalum isotopes**
 - . tantalum
 - . . **tantalum isotopes**
 - metals
 - . refractory metals
 - . . tantalum
 - . . . **tantalum isotopes**
 - transition metals
 - . . tantalum
 - . . . **tantalum isotopes**
 - refractory materials
 - . refractory metals
 - . . tantalum
 - . . . **tantalum isotopes**
- tantalum nitrides**
 - GS nitrogen compounds
 - . nitrides
 - . . metal nitrides
 - . . . **tantalum nitrides**
 - tantalum compounds
- . **tantalum nitrides**
- tantalum oxides**
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **tantalum oxides**
 - tantalum compounds
 - . **tantalum oxides**
- Tanzania**
 - GS nations
 - . **Tanzania**
 - RT Africa
- tape recorders**
 - UF *magnetic tape recorders*
 - GS recording instruments
 - . **tape recorders**
 - . . video tape recorders
 - RT data recorders
 - electronic recording systems
 - magnetic tape transports
 - magnetic tapes
 - ∞ recorders
 - recording heads
- taper*
 - USE **tapering**
- tapered columns**
 - GS structural members
 - . columns (supports)
 - . . **tapered columns**
- tapered wings*
 - USE **swept wings**
- tapering**
 - UF *taper*
 - RT convergence
 - deceleration
 - ∞ reduction
- ∞ **tapes**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT adhesives
 - audio tapes
 - computer compatible tapes
 - fasteners
 - heat tapes
 - magnetic tapes
 - plastic tapes
 - playbacks
 - punched tapes
 - ribbons
 - seals (stoppers)
 - splicing
 - video tapes
- taps**
 - RT cutters
 - drills
 - machine tools
 - tools
- tar sands**
 - GS resources
 - . Earth resources
 - . . **tar sands**
 - sediments
 - . sands
 - . . **tar sands**
 - soils
 - . sands
 - . . **tar sands**
 - RT distillation
 - oil exploration
 - oil fields
 - oils
 - tars
- TARE (data reduction)*
 - USE **data reduction**
- target acquisition**
 - DEF The process of optically, manually, mechanically, or electronically orienting tracking

target drone aircraft

systems in the direction and range to lock on a target.

- GS acquisition
 - . **target acquisition**
- RT detection
 - high alt target and background measurement
 - MATTS (systems)
 - missile detection
 - moving target indicators
 - multiple target tracking
 - sound ranging
 - surveillance
 - targets

target drone aircraft

- GS drone vehicles
 - . drone aircraft
 - . . **target drone aircraft**
 - . . . Firebee 2 target drone aircraft
 - . . . Jindivik target aircraft
 - . . . pilotless aircraft
 - . . . drone aircraft
 - . . . **target drone aircraft**
 - . . . Firebee 2 target drone aircraft
 - . . . Jindivik target aircraft
- RT ∞ aircraft
 - ∞ military aircraft
 - remotely piloted vehicles
 - targets

target masking

DEF Technique used in vision contrast discrimination testing involving the ratio of the luminance of a target (object) to the luminance of the background, especially when light and dark adaptation are factors.

- GS masking
 - . **target masking**
- RT countermeasures
 - stealth technology
 - targets

target penetration

USE **terminal ballistics**

target recognition

- GS detection
 - . **target recognition**
 - recognition
 - . **target recognition**
- RT discrimination
 - laser target designators
 - missile detection
 - missile signatures
 - multiple target tracking
 - multistatic radar
 - nap-of-the-earth navigation
 - radar homing missiles
 - radar signatures
 - signature analysis
 - signatures
 - stealth technology
 - surveillance
 - targets
 - TRADEX radar system

target simulators

- GS simulators
 - . **target simulators**
- RT computerized simulation
 - display devices
 - scene generation

target thickness

- GS dimensions
 - . **target thickness**
- RT particle accelerator targets
 - targets
 - thickness

target tracking

USE **tracking (position)**

targets

DEF Objects or points toward which something is directed. Objects which reflect a sufficient amount of a radiated signal to produce an echo signal on detection equipment. Used for towed targets.

- UF *towed targets*
- GS **targets**
 - . Jindivik target aircraft
 - . laser targets
 - . particle accelerator targets
 - . radar targets
 - . . radar target scatter site program
- RT Airborne Integrated Reconnaissance System
 - command and control
 - detection
 - Firebee 2 target drone aircraft
 - irradiation
 - laser target designators
 - laser target interactions
 - line of sight
 - microballoons
 - ∞ missions
 - multiple target tracking
 - radar echoes
 - Sandpiper target missile
 - surveillance
 - target acquisition
 - target drone aircraft
 - target masking
 - target recognition
 - target thickness

tars

- GS products
 - . petroleum products
 - . . **tars**
- RT asphalt
 - gums (substances)
 - pitch (material)
 - tar sands

tartar missile

- GS missiles
 - . anti-aircraft missiles
 - . . **tartar missile**
 - . surface to air missiles
 - . . **tartar missile**
- RT AJ-10 engine
 - Bumblebee project
 - solid propellant rocket engines

task complexity

- GS complexity
 - . **task complexity**
- RT costs
 - ∞ performance
 - quality control
 - scheduling

task planning (robotics)

- (added December 1990)
- GS planning
 - . **task planning (robotics)**
- RT robotics
 - robots
 - scheduling
 - tasks
 - teleoperators
 - telerobotics

tasks

- UF *jobs*
- GS **tasks**
 - . auditory tasks
 - . visual tasks
- RT costs
 - crew procedures (inflight)
 - crew procedures (preflight)
 - ∞ elements
 - matrix management
 - physical work
 - projects
 - quality control
 - retraining
 - scheduling
 - task planning (robotics)
 - ∞ tests

Tasmania

- GS landforms
 - . islands
 - . . **Tasmania**

RT Australia

taste

- UF *gustatory perception*
- GS perception
 - . sensory perception
 - . . **taste**
- RT chemoreceptors
 - synthetic food

TATB

- UF *triaminotrinetrobenzene*
- GS explosives
 - . **TATB**
 - propellants
 - . rocket propellants
 - . . **TATB**
- RT rocket oxidizers

Taurid meteoroids

- GS celestial bodies
 - . meteoroid showers
 - . . **Taurid meteoroids**
 - . meteoroids
 - . . **Taurid meteoroids**

Taurus constellation

- GS constellations
 - . **Taurus constellation**
- RT Crab nebula
 - Pleiades cluster
 - T Tauri stars

tautomers

- RT congeners
 - isomers

taxiing

- RT air traffic control
 - airfield surface movements
 - runways

taxonomy

- RT classifications
 - ∞ classifying
 - ∞ science
 - ∞ zoology

Taylor instability

- GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . flow stability
 - **Taylor instability**
 - . flow characteristics
 - . . flow stability
 - . . . **Taylor instability**
 - stability
 - . dynamic stability
 - . . motion stability
 - . . . flow stability
 - **Taylor instability**
- RT density distribution
 - Goertler instability
 - interface stability
 - perturbation theory
 - rotating fluids
 - two dimensional flow

Taylor manifest anxiety scale

- RT anxiety
 - physiological tests
 - psychological effects
 - psychological tests

Taylor series

- UF *Taylor theorem*
- GS analysis (mathematics)
 - . calculus
 - . . series (mathematics)
 - . . . power series
 - **Taylor series**
 - MacLaurin series
 - real variables
 - . . . series (mathematics)
 - . . . power series
 - **Taylor series**
 - MacLaurin series

- RT theorems
- Taylor theorem*
USE **Taylor series**
- Taylor-Goertler instability*
USE **Goertler instability**
- TCG (tracking)*
USE **transponder control group**
- TCV program*
USE **Terminal Configured Vehicle Program**
- TD satellites**
GS artificial satellites
. ESA satellites
. . . **TD satellites**
. . . TD-1 satellite
. synchronous satellites
. . . **TD satellites**
. . . TD-1 satellite
ESA spacecraft
. ESA satellites
. . . **TD satellites**
. . . TD-1 satellite
- TD-1 satellite**
GS artificial satellites
. ESA satellites
. . . TD satellites
. . . **TD-1 satellite**
. synchronous satellites
. . . TD satellites
. . . **TD-1 satellite**
ESA spacecraft
. ESA satellites
. . . TD satellites
. . . **TD-1 satellite**
- TDMA*
USE **time division multiple access**
- TDR satellites**
DEF Orbiting communications satellites, developed by NASA to relay data from satellite sensors to groundstations and to track the satellites in orbit.
UF *Tracking and Data Relay Satellites*
GS artificial satellites
. communication satellites
. . . **TDR satellites**
RT autonomous spacecraft clocks
communicating
data transmission
radio relay systems
satellite networks
satellite transmission
telecommunication
telemetry
- TEA lasers**
UF *transversely excited atmospheric lasers*
GS stimulated emission devices
. lasers
. . . gas lasers
. . . **TEA lasers**
RT atmospheric lasers
carbon dioxide lasers
carbon monoxide lasers
chemical lasers
gas masers
HF lasers
laser modes
pulsed lasers
stimulated emission
- teachers*
USE **instructors**
- teaching*
USE **education**
- teaching machines**
GS training devices
. **teaching machines**
RT learning
machine learning
- ∞ machinery
- teams**
RT bureaus (organizations)
federations
institutions
organizations
projects
university program
- tearing**
RT mechanical properties
rupturing
shredding
- tearing modes (plasmas)**
DEF Explosive reconnections of energetic particle accelerations at high voltages in the magnetosphere during substorms.
RT ballooning modes
modes
plasmas (physics)
- technetium**
GS chemical elements
. **technetium**
metals
. transition metals
. . . **technetium**
- technetium compounds**
GS **technetium compounds**
. technetium fluorides
RT ∞ chemical compounds
 ∞ Group 7B compounds
 ∞ metal compounds
- technetium fluorides**
GS halogen compounds
. fluorine compounds
. . . fluorides
. . . **technetium fluorides**
. halides
. . . fluorides
. . . **technetium fluorides**
. metal halides
. . . **technetium fluorides**
technetium compounds
. **technetium fluorides**
- technetium isotopes**
GS chemical elements
. nuclides
. . . isotopes
. . . **technetium isotopes**
metals
. transition metals
. . . **technetium isotopes**
- technical writing**
RT abstracts
documentation
editing
records
specifications
translating
- techniques*
USE **methodology**
- technological forecasting**
GS predictions
. forecasting
. . . **technological forecasting**
. . . Delphi method (forecasting)
. . . pattern method (forecasting)
. . . probe method (forecasting)
. . . profile method (forecasting)
RT aerospace technology transfer
estimating
technology transfer
- technologies**
GS **technologies**
. biotechnology
. . . tissue engineering
. bubble technique
. energy technology
. . . geothermal technology
. marine technology
. military technology
- . nanotechnology
. reactor technology
. small satellite technology
- RT industries
low gravity manufacturing
manufacturing
nucleonics
space manufacturing
technology assessment
technology utilization
urban development
- technology assessment**
GS assessments
. **technology assessment**
RT Canadian space program
Communications Technology Satellite
Delphi method (forecasting)
evaluation
feasibility analysis
industries
manufacturing
pattern method (forecasting)
probe method (forecasting)
profile method (forecasting)
strategic materials
technologies
value
- technology feasibility spacecraft**
GS unmanned spacecraft
. **technology feasibility spacecraft**
RT scientific satellites
 ∞ spacecraft
- technology transfer**
DEF The process of converting scientific findings from research laboratories and governmental activities into commercially viable products.
GS **technology transfer**
. aerospace technology transfer
commercialization
RT communicating
communication
documentation
documents
information flow
information management
information transfer
reports
selective dissemination of information
space commercialization
Starsite program
technological forecasting
technology utilization
transferring
- technology utilization**
GS utilization
. **technology utilization**
RT aerospace technology transfer
Canadian space program
Communications Technology Satellite
control configured vehicles
data products
general overviews
Indian space program
industries
information transfer
laser applications
manufacturing
NASA programs
patent applications
research and development
Synchronous Earth Observatory
satellite
technologies
technology transfer
- tectonic movement*
USE **tectonics**
- tectonics**
DEF A branch of geology dealing with the broad architecture of the upper part of the Earth's crust, that is, the regional assembling of structural or deformational features, a study of their mutual relations, their origin, and their

teetering

historical evolution. Used for tectonic movement.

UF *tectonic movement*

GS geology

. **tectonics**

. . . neotectonics

RT

asthenosphere
core-mantle boundary

∞ depression

Earth movements

Earth planetary structure

fissures (geology)

geophysics

plates (tectonics)

sea floor spreading

subduction (geology)

TED

USE **transferred electron devices**

Tedlar (*trademark*)

USE **polyvinyl fluoride**

tee

USE **T shape**

teetering

RT ∞ motion

teeth

SN (EXCLUDES GEAR TEETH AND OTHER MECHANICAL DEVICES)

GS anatomy

. digestive system

. . **teeth**

RT

dental calculi

dentistry

mastication

mouth

oral hygiene

tooth diseases

teflon (trademark)

GS halogen compounds

. fluorine compounds

. . fluoro compounds

. . . difluoro compounds

. . . . polytetrafluoroethylene

. **teflon (trademark)**

. . . fluorine organic compounds

. . . . fluorohydrocarbons

. polytetrafluoroethylene

. **teflon (trademark)**

. . . . fluoropolymers

. polytetrafluoroethylene

. **teflon (trademark)**

organic compounds

. fluorine organic compounds

. . fluorohydrocarbons

. . . polytetrafluoroethylene

. . . . **teflon (trademark)**

. . . fluoropolymers

. . . . polytetrafluoroethylene

. **teflon (trademark)**

. hydrocarbons

. . fluorohydrocarbons

. . . polytetrafluoroethylene

. . . . **teflon (trademark)**

plastics

. polytetrafluoroethylene

. . **teflon (trademark)**

RT ∞ polymers

resins

synthetic resins

Tektite project

GS programs

. NASA programs

. . NASA space programs

. . . **Tektite project**

. space programs

. . NASA space programs

. . . **Tektite project**

tektites

DEF Small glassy bodies containing no crystals, composed of at least 65 percent silicon dioxide, bearing no relation to the geological formations in which they occur, and believed to be of extraterrestrial origin.

GS celestial bodies

. meteorites

. . stony meteorites

. . . **tektites**

. . . . australites

. bediasites

RT

chondrites

coesite

Cyrrillid meteoroids

meteoritic composition

meteoritic microstructures

micrometeorites

natural satellites

telechirics

USE **remote handling**

telecommunication

DEF Any transmission, emission, or reception of signs, signals, writings, images, sounds, or information of any nature by wire, radio, visual, or electromagnetic systems.

UF *communication systems*

GS **telecommunication**

. aircraft communication

. broadcasting

. closed circuit television

. color television

. communication

. . facsimile communication

. . . automatic picture transmission

. . line of sight communication

. . optical communication

. . . free-space optical communication

. . ship to shore communication

. . underwater communication

. . voice communication

. . . telephony

. . quantum communication

. data links

. Defense Communications Satellite System

. Fleet Satellite Communication System

. defense communications system (DCS)

. educational television

. electronic mail

. ground-air-ground communication

. multichannel communication

. multiple access

. . Aloha system

. . carrier sense multiple access

. . code division multiple access

. . demand assignment multiple access

. . frequency division multiple access

. . time division multiple access

. packet transmission

. . Aloha system

. PLAT system

. pulse communication

. . digital spacecraft television

. radio communication

. . radio relay systems

. . . code division multiple access

. . . time division multiple access

. . radio telegraphy

. . radio telemetry

. . . pulse frequency modulation telemetry

. . telephony

. radiotelephones

. single channel per carrier transmission

. space communication

. . extraterrestrial communication

. . interplanetary communication

. . lunar communication

. . . circumlunar communication

. . spacecraft communication

. . . reentry communication

. . . satellite communication

. . spacecraft antennas

. spacecraft television

. . digital spacecraft television

. . Ranger block 3 television system

. . satellite television

. stereotelevision

. telemetry

. . biotelemetry

. . P.A.C.M. telemetry

. . PCM telemetry

. . radio telemetry

. . . pulse frequency modulation telemetry

. . transoceanic communication

. . video communication

. . video conferencing

. . teleconferencing

. . telemedicine

. . wideband communication

. . wireless communication

. . . computer conferencing

. . . HET experiment

. . . video conferencing

RT

access control

antennas

ARPA computer network

automatic repeat request

∞ channels

code division multiplexing

communicating

communication networks

communication satellites

computers

data compression

data processing

data sampling

data transmission

demodulation

∞ detectors

digital systems

direct broadcast satellites

electromagnetic radiation

frequency division multiplexing

information theory

INMARSAT satellites

interfaces

interphones

modulation

Molniya satellites

Morse code

NASCOM network

networks

onboard equipment

packet switching

point to point communication

satellite antennas

Seafarer project

signal detection

signal detectors

signal encoding

signal transmission

∞ signals

∞ systems

TDR satellites

telegraph systems

teletypewriter systems

television systems

transcontinental systems

transmission

transmission circuits

transmission lines

transmission rate (communications)

transmitters

transoceanic systems

video data

VSAT (network)

Westar satellites

wide area networks

teleconferencing

GS telecommunication

. **teleconferencing**

. . computer conferencing

. . HET experiment

. . video conferencing

RT

communication satellites

conferences

multichannel communication

multimedia

satellite networks

telemedicine

teleconnections (meteorology)

DEF Statistically significant temporal correlations between meteorological parameters at widely separated points.

- RT climatology
correlation
data correlation
Earth atmosphere
meteorological parameters
meteorology
secular variations
significance
spatial distribution
statistical analysis
statistical correlation
synoptic meteorology
temporal distribution
- telegraph systems**
UF *telegraphy*
RT pulse communication
radio communication
single channel per carrier
transmission
∞ systems
telecommunication
teleprinters
teletypewriters
Westar satellites
- telegraphy*
USE **telegraph systems**
- telemedicine**
(added May 1997)
DEF The use of telecommunication technologies as a medium for providing medical services (diagnostic, therapeutic, education, and research) by health care professionals to sites that are remote from the provider.
GS telecommunication
. **telemedicine**
RT aerospace medicine
biotelemetry
diagnosis
medical electronics
medical equipment
medical science
medical services
teleconferencing
- telemeters*
USE **telemetry**
- telemetry**
DEF The science of measuring a quantity or quantities, transmitting the results to a distant station, and there interpreting, indicating, and/or recording the quantities measured. Used for telemeters.
UF *telemeters*
GS telecommunication
. **telemetry**
. . . biotelemetry
. . . P.A.C.M. telemetry
. . . PCM telemetry
. . . radio telemetry
. . . pulse frequency modulation
telemetry
transmission
. signal transmission
. . **telemetry**
. . . biotelemetry
. . . P.A.C.M. telemetry
. . . PCM telemetry
. . . radio telemetry
. . . pulse frequency modulation
telemetry
RT Advanced Range Instrumentation
Aircraft
communication equipment
data compression
data links
data retrieval
data transmission
decommutators
differential pulse code modulation
in-flight monitoring
measuring instruments
pulse communication
radio communication
ship to shore communication
signal processing
- single channel per carrier
transmission
spiral antennas
TDR satellites
time division multiplexing
trajectory measurement
transponder control group
weather data recorders
wireless communication
- teleoperator maneuvering system*
USE **teleoperators**
- teleoperators**
DEF Remotely controlled mobility modules which incorporate sensory and manipulative subsystems for the purpose of extending the human operators skills and cognitive capabilities into hostile or remote environments.
UF *teleoperator maneuvering system*
GS control equipment
. **teleoperators**
RT human factors engineering
man machine systems
manipulators
remote control
remote handling
robotics
tactile sensors (robotics)
task planning (robotics)
telerobotics
torque sensors (robotics)
- telephones**
GS **telephones**
. radiotelephones
RT earphones
telephony
utilities
- telephony**
GS telecommunication
. communication
. . voice communication
. . . **telephony**
. . radio communication
. . **telephony**
transmission
. **telephony**
RT communication equipment
crosstalk
echo suppressors
Iridium network
radiotelephones
single channel per carrier
transmission
sound transmission
Symphonie satellites
telephones
verbal communication
- telephotometers*
USE **telephotometry**
- telephotometry**
DEF The body of principles and techniques concerned with measuring atmospheric extinction using various types of telephotometers. Used for telephotometers.
UF *telephotometers*
GS optical measurement
. photometry
. . **telephotometry**
RT astronomical photometry
optical measuring instruments
photometers
transmissometers
- teleprinters**
GS printers
. **teleprinters**
typewriters
. teletypewriters
. . **teleprinters**
RT keying
printers (data processing)
receivers
- telegraph systems
- telerobotics**
(added December 1990)
GS robotics
. **telerobotics**
RT manipulators
orbital servicing
remote control
robot dynamics
robots
space tools
task planning (robotics)
teleoperators
- Telesat Canada 3*
USE **Anik 3**
- Telesat Canada A*
USE **Anik 1**
- Telesat Canada B*
USE **Anik 2**
- Telesat Canada C*
USE **Anik 3**
- telescopes**
UF *astronomical telescopes*
GS **telescopes**
. celescopes
. circumsolar telescopes
. gamma ray telescopes
. . Fermi Gamma-ray Space
Telescope
. grazing incidence telescopes
. . GRIST (telescope)
. heliometers
. . pyroheliometers
. infrared telescopes
. . Large Deployable Reflector
. . Space Infrared Telescope Facility
. manned orbital telescopes
. . Apollo telescope mount
. particle telescopes
. radio telescopes
. . kilometer wave orbiting telescope
. . Very Large Array (VLA)
. . Very Long Baseline Array (VLBA)
. reflecting telescopes
. . Large Deployable Reflector
. Starsat telescope
. refracting telescopes
. Schmidt telescopes
. spaceborne telescopes
. . Constellation-X
. . Fermi Gamma-ray Space
Telescope
. . German Infrared Laboratory
. . Hubble Space Telescope
. . Infrared Space Observatory (ISO)
. . James Webb Space Telescope
. . Large Deployable Reflector
. . LIRTS (telescope)
. . solar optical telescope
. . Space Infrared Telescope Facility
. . Starlab
. . Starsat telescope
. . X Ray Astrophysics Facility
. . XMM-Newton telescope
. spectroscopic telescopes
. . multispectral tracking telescopes
. . stratoscope telescopes
. ultraviolet telescopes
. . Starlab
. x ray telescopes
. . Constellation-X
. . X Ray Astrophysics Facility
. . XMM-Newton telescope
RT anisoplanatism
antennas
astronomical observatories
astronomy
balloon-borne instruments
binoculars
Cassegrain optics
coronagraphs
etalons
eyepieces
lenses

Telesto

mirrors
multi-anode microchannel arrays
optical coatings
optical equipment
optical measuring instruments
optical transfer function
periscopes
reflectors
Schmidt cameras
seeing (astronomy)
solar instruments
spaceborne astronomy
ultraviolet astronomy

telescoping structures

USE **folding structures**

Telesto

(added January 1996)

DEF A natural satellite of Saturn orbiting at a mean distance of 294,660 kilometers.

GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Telesto**

RT Saturn (planet)

teletypewriter systems

RT facsimile communication
microwave transmission
 ∞ systems
telecommunication
teletypewriters

teletypewriters

GS typewriters
. **teletypewriters**
. . teleprinters
RT keying
receivers
telegraph systems
teletypewriter systems

television cameras

GS optical equipment
. cameras
. . **television cameras**
photographic equipment
. cameras
. . **television cameras**
television equipment
. **television cameras**
RT camera tubes
closed circuit television
digital cameras
Lallemand cameras
optical scanners
orthicons
raster scanning
return beam vidicons
satellite television

television equipment

GS **television equipment**
. image dissector tubes
. monoscopes
. television cameras
. television receivers
RT cathode ray tubes
diplexers
 ∞ equipment
. flying spot scanners
. orthicons
. picture tubes
. video equipment

television receivers

GS receivers
. **television receivers**
television equipment
. **television receivers**
RT closed circuit television
tuners

television reception

GS signal reception
. **television reception**
RT color television
radio receivers
radio reception

∞ receiving

television systems

GS **television systems**
. Advanced Vidicon Camera System (AVCS)
. cable television
. closed circuit television
. color television
. digital television
. . digital spacecraft television
. educational television
. high definition television
. PLAT system
. spacecraft television
. . digital spacecraft television
. . Ranger block 3 television system
. . satellite television
. stereotelevision
RT communication equipment
Earth terminals
facsimile communication
imaging techniques
orbit spectrum utilization
radio communication
space communication
 ∞ systems
telecommunication
video communication
video conferencing
video data

television transmission

GS transmission
. electromagnetic wave transmission
. . **television transmission**
. . signal transmission
. . **television transmission**
RT automatic picture transmission
cable television
closed circuit television
color television
digital television
direct broadcast satellites
double sideband transmission
high definition television
line of sight communication
Molniya satellites
radio transmitters
satellite television
satellite transmission
single sideband transmission
smear
spacecraft television
sweep frequency
time division multiplexing
transmitters
wave propagation

Tellegen theory

USE **gyrators**
network analysis
network synthesis

telluric currents

DEF Large scale surges of electric charges within the Earth's crust, associated with disturbances of the ionosphere. Used for earth currents.

UF *Earth currents*
GS electric current
. **telluric currents**
electricity
. geoelectricity
. . **telluric currents**
RT atmospheric electricity
auroral electrojets
dynamo theory
field aligned currents
geomagnetic micropulsations

telluric lines

DEF Absorption lines in a solar spectrum produced by constituents of the atmosphere of the Earth itself rather than by gases in the outer solar atmosphere such as those responsible for the Fraunhofer lines.

GS spectra
. radiation spectra
. . absorption spectra

. . . **telluric lines**
. . electromagnetic spectra
. . . line spectra
. . . . **telluric lines**
. . spectral bands
. . absorption spectra
. . . **telluric lines**
RT H lines

tellurides

GS chalcogenides
. **tellurides**
. . bismuth tellurides
. . cadmium tellurides
. . indium tellurides
. . lanthanum tellurides
. . lead tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
. . tin tellurides
. . zinc tellurides
tellurium compounds
. **tellurides**
. . bismuth tellurides
. . cadmium tellurides
. . indium tellurides
. . lanthanum tellurides
. . lead tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
. . tin tellurides
. . zinc tellurides
RT intermetallics

tellurium

GS chemical elements
. metalloids
. . **tellurium**
. . . tellurium isotopes
. . nuclides
. . isotopes
. . . **tellurium**
. . . . tellurium isotopes

tellurium 119

USE **tellurium isotopes**

tellurium alloys

GS alloys
. **tellurium alloys**

tellurium compounds

GS **tellurium compounds**
. tellurides
. . bismuth tellurides
. . cadmium tellurides
. . indium tellurides
. . lanthanum tellurides
. . lead tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
. . tin tellurides
. . zinc tellurides
RT ∞ chemical compounds
 ∞ Group 6A compounds

tellurium isotopes

UF *tellurium 119*
GS chemical elements
. metalloids
. . tellurium
. . . **tellurium isotopes**
. . nuclides
. . isotopes
. . . tellurium
. . . . **tellurium isotopes**

tellurometers

GS measuring instruments
. distance measuring equipment
. . **tellurometers**
RT geodimeters
range finders

telomeres

(added October 2004)

DEF Terminal section of a chromosome involved in chromosomal replication and stability.
RT chromosome aberrations
chromosomes

genes

Telstar 1 satellite
 GS artificial satellites
 . Telstar satellites
 . . **Telstar 1 satellite**

Telstar 2 satellite
 GS artificial satellites
 . Telstar satellites
 . . **Telstar 2 satellite**

Telstar project
 GS programs
 . projects
 . . **Telstar project**

RT artificial satellites
 communication satellites
 Comsat program

Telstar satellites
 GS artificial satellites
 . **Telstar satellites**
 . . Telstar 1 satellite
 . . Telstar 2 satellite

RT Comsat program
 Thor Delta launch vehicle

TEM (microscopy)
 USE **transmission electron microscopy**

Tempel 1 comet
 (added July 2005)
 GS celestial bodies
 . comets
 . . **Tempel 1 comet**

RT Deep Impact Mission
 hypervelocity impact
 hypervelocity projectiles
 impact damage
 projectile cratering
 Tempel 2 comet

Tempel 2 comet
 DEF A comet for which a spacecraft rendezvous had been planned for 1988 because of its accessible orbit. It has been replaced by a planned spacecraft rendezvous with the Wild 2 comet in 1994.

GS celestial bodies
 . comets
 . . **Tempel 2 comet**

RT ∞ coma
 meteoroids
 solar system
 Tempel 1 comet

temper (metallurgy)
 RT cold working
 ductility
 hardness
 heat treatment
 tempering

temperate regions
 UF *midlatitudes*
subtropical regions

GS regions
 . **temperate regions**

RT climatology
 geography
 polar regions
 tropical regions

temperature
 DEF In general, the intensity of heat as measured on some definite temperature scale by means of any of various types of thermometers. In statistical mechanics, a measure of translational molecular kinetic energy (with three degrees of freedom). In thermodynamics, the integrating factor of the differential equation referred to as the first law of thermodynamics. Used for body temperature (non-biological).

UF *body temperature (non-biological)*

GS **temperature**
 . absolute zero
 . ambient temperature
 . atmospheric temperature
 . . auroral temperature

. . ionospheric temperature
 . body temperature
 . brightness temperature
 . combustion temperature
 . critical temperature
 . Curie temperature
 . flame temperature
 . gas temperature
 . glass transition temperature
 . high temperature
 . ignition temperature
 . . flash point
 . inlet temperature
 . ion temperature
 . low temperature
 . . cryogenic temperature
 . lunar temperature
 . neel temperature
 . noise temperature
 . operating temperature
 . planetary temperature
 . plasma temperature
 . room temperature
 . satellite temperature
 . skin temperature (biology)
 . solar temperature
 . space temperature
 . spin temperature
 . stagnation temperature
 . stellar temperature
 . subzero temperature
 . surface temperature
 . . land surface temperature
 . . sea surface temperature
 . . skin temperature (non-biological)
 . . wall temperature
 . transition temperature
 . water temperature
 . . ocean temperature
 . . . sea surface temperature

RT ablative materials
 adiabatic conditions
 air conditioning
 biological effects
 climatology
 comfort
 convective flow
 electron energy
 emissivity
 environments
 free convection
 geotemperature
 Gibbs-Helmholtz equations
 heat
 heat shielding
 heat storage
 heating
 humidity
 isotherms
 lapse rate
 melting points
 meteorology
 ocean thermal energy conversion
 refrigerating
 Saha equations
 surface cooling
 temperature compensation
 temperature control
 temperature dependence
 temperature distribution
 temperature effects
 temperature gradients
 temperature inversions
 temperature measurement
 temperature measuring instruments
 temperature probes
 temperature profiles
 temperature ratio
 temperature scales
 temperature sensors
 tephigrams
 thermal absorption
 thermal analysis
 thermal blooming
 thermal boundary layer
 thermal buckling
 thermal comfort
 thermal conductivity
 thermal conductivity gages

thermal conductors
 thermal control coatings
 thermal cycling tests
 thermal decomposition
 thermal degradation
 thermal diffusion
 thermal diffusivity
 thermal dissociation
 thermal emission
 thermal energy
 thermal environments
 thermal expansion
 thermal fatigue
 thermal instability
 thermal insulation
 thermal mapping
 thermal neutrons
 thermal noise
 thermal plasmas
 thermal pollution
 thermal protection
 thermal radiation
 thermal reactors
 thermal resistance
 thermal resources
 thermal shock
 thermal simulation
 thermal stability
 thermal stresses
 thermal vacuum tests
 thermodynamic efficiency
 thermodynamic properties
 ventilation

temperature compensation
 GS instrument compensation
 . **temperature compensation**

RT ∞ compensation
 temperature

temperature control
 UF *heat regulation*

RT air conditioning
 automatic control
 automatic control valves
 capillary pumped loops
 chemical reaction control
 combustion control
 ∞ control
 controllers
 cooling
 cooling systems
 cryostats
 engine control
 environmental control
 environmental engineering
 exhaust systems
 heat shielding
 heating
 heating equipment
 high temperature tests
 infrared suppression
 low temperature tests
 manual control
 plasma cooling
 refrigerating
 refrigerating machinery
 remote control
 reusable heat shielding
 space cooling (buildings)
 space heating (buildings)
 spacecraft temperature
 temperature
 thermal control coatings
 thermal cycling tests
 thermal insulation
 thermochromic coatings
 thermometers
 thermoregulation
 thermostats
 transpiration
 ventilation
 water heating

temperature dependence
 DEF The characteristic of a material which is dependent on changes in the ambient temperature.

GS dependence
 . **temperature dependence**

temperature distribution

RT heat affected zone
hot corrosion
miscibility gap
temperature
temperature effects
thermal degradation
thermal stability

temperature differences

USE **temperature gradients**

temperature distribution

UF *temperature fields*
GS distribution (property)
. **temperature distribution**
RT air conditioning
cooling
cooling systems
environmental engineering
field theory (physics)
heat treatment
heating
isothermal flow
isothermal layers
isotherms
ocean temperature
refrigerating
satellite temperature
temperature
thermal mapping
thermal resources
thermal shock
thermal stresses
thermography
ventilation
vertical distribution
water temperature

temperature effects

UF *heat effects*
photothermotropism
Richardson-Dushman equation
thermal effects
thermotropism
RT ablation
absolute zero
chemical effects
∞ effects
Ettingshausen effect
glass transition temperature
heat affected zone
jet blast effects
magnetic effects
Nernst-Ettingshausen effect
Peltier effects
pressure effects
∞ radiation
reentry effects
Seebeck effect
shape memory alloys
solar granulation
sterilization effects
temperature
temperature dependence
thermal buckling
thermal degradation
thermal dissociation
thermal resistance
thermal stresses
thermogravimetry
thermoluminescence
thermophoresis
thermoplasticity
time temperature parameter

temperature fields

USE **temperature distribution**

temperature gradients

UF *temperature differences*
GS gradients
. **temperature gradients**
. . thermoclines
RT atmospheric temperature
bathythermographs
Chapman-Enskog theory
convective heat transfer
isothermal layers
isotherms
nonisothermal processes

ocean temperature
potential gradients
stratification
temperature
thermal analysis
thermal mapping
thermocapillary migration
thermomigration
thermophoresis

temperature indicators

USE **indicating instruments**
temperature measuring instruments

temperature instruments

USE **temperature measuring instruments**

temperature inversions

GS inversions
. **temperature inversions**
RT air pollution
atmospheric temperature
bending
birefringence
buckling
cracking (fracturing)
cracks
creep properties
deflection
deformation
displacement
distortion
failure
fatigue (materials)
internal pressure
lapse rate
mechanical properties
meteorological parameters
meteorology
photoelastic analysis
plastic deformation
pressure
pressure effects
residual stress
Saint Venant principle
shear properties
shrinkage
strain gages
strain hardening
strain rate
stress analysis
stress relaxation
stress waves
stresses
structural strain
temperature
tensile deformation
∞ tension
tephigrams
torsion
volumetric strain
x ray stress analysis
yield strength

temperature measurement

UF *pyrometry*
thermometry
RT anomalous temperature zones
bolometers
brightness temperature
crayons
gas temperature
high temperature
in situ measurement
∞ measurement
noise temperature
nonintrusive measurement
pyrometers
radiation pyrometers
resistance thermometers
satellite temperature
sound detecting and ranging
temperature
temperature sensitive paints
thermocouple pyrometers
thermocouples
thermography
thermometers

wind tunnel calibration

temperature measuring instruments

UF *temperature indicators*
temperature instruments
thermograms
GS measuring instruments
. **temperature measuring instruments**
. . bathythermographs
. . optical pyrometers
. . pneumatic probes
. . pyrometers
. . . radiation pyrometers
. . . thermocouple pyrometers
. . temperature probes
. . thermometers
. . . resistance thermometers
RT anomalous temperature zones
bolometers
bomb calorimeters
calorimeters
drop calorimeters
flame calorimeters
flame probes
temperature
thermistors
thermocouples
thermopiles
thermostats
transducers
temperature probes
GS measuring instruments
. temperature measuring instruments
. . **temperature probes**
RT temperature
thermocouples

temperature profiles

RT heat transfer
temperature
thermal analysis

temperature ratio

GS ratios
. **temperature ratio**
RT data correlation
heat transfer
temperature

temperature scales

UF *fahrenheit temperature scale*
international practical temperature
RT absolute zero
anomalous temperature zones
calibrating
∞ scale
standards
temperature
thermometers

temperature sensitive paints

(added January 2003)
DEF Luminescent paints which react differentially to temperature by emitting varying amounts of visible light.
GS coatings
. paints
. . **temperature sensitive paints**
RT aerodynamic heating
fluorescence
heat transfer
luminescence
nonintrusive measurement
surface temperature
temperature measurement
thermal analysis
thermochromic coatings

temperature sensors

GS **temperature sensors**
. thermistors
RT anomalous temperature zones
temperature

tempering

GS heat treatment
. **tempering**
RT annealing

- ∞ drawing
hardening (materials)
laser annealing
metal working
normalizing (heat treatment)
stress relieving
stretching
temper (metallurgy)
- templates**
RT lofting
molds
∞ patterns
- temporal distribution**
DEF The statistical distribution based on time of phenomena, occurrences or events.
RT annual variations
spatial distribution
teleconnections (meteorology)
time dependence
∞ time response
- temporal logic**
(added October 1994)
DEF A logic that can express properties involving the sequencing of events in time.
RT discriminant analysis (statistics)
∞ logic
logic programming
mathematical logic
sequential analysis
temporal resolution
- temporal resolution**
DEF The precision with which an optical instrument or a system differentiates between time intervals. Used for multitemporal analysis.
UF *multitemporal analysis*
GS resolution
. **temporal resolution**
RT spatial resolution
temporal logic
- tendencies**
RT ∞ inclination
- tendons**
GS anatomy
. musculoskeletal system
. . . muscles
. . . **tendons**
RT connective tissue
fibroblasts
- tenite**
RT cellulose
molding materials
- Tenma satellite**
(added June 1992)
GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . **Tenma satellite**
Japanese spacecraft
. **Tenma satellite**
observatories
. astronomical observatories
. . . astronomical satellites
. . . **Tenma satellite**
RT Japanese space program
x ray astronomy
x ray spectra
x ray stars
- Tennessee**
GS nations
. United States
. . . **Tennessee**
RT Great Smoky Mountains (NC-TN)
Tennessee Valley (AL-KY-TN)
- Tennessee Valley (AL-KY-TN)**
GS valleys
. **Tennessee Valley (AL-KY-TN)**
RT Alabama
Kentucky
- Tennessee
tensegric structures
(added January 2001)
USE **tensegrity structures**
- tensegrity structures**
(added January 2001)
DEF A class of prestressed structures whose shape is guaranteed by the interaction between a continuous network of members in tension and a discontinuous network of members in compression. These members can serve simultaneously as sensors, actuators, and load carrying elements. The word tensegrity is a contraction of "tensional integrity".
UF *tensegric structures*
tensile-integrity structures
RT isotensoid structures
prestressing
smart structures
structural design
∞ structures
- tensile creep**
GS mechanical properties
. creep properties
. . . **tensile creep**
RT plastic deformation
shear creep
- tensile deformation**
GS deformation
. **tensile deformation**
RT elastic deformation
elongation
plastic deformation
temperature inversions
- tensile properties**
GS mechanical properties
. **tensile properties**
. . . tensile strength
RT elastic properties
high strength alloys
∞ properties
- tensile strength**
DEF The property of solid material that indicates its ability to withstand a uniaxial tensile load.
GS mechanical properties
. tensile properties
. . . **tensile strength**
RT ductility
elastic properties
elongation
fiber strength
high strength
hysteresis
load carrying capacity
Poisson ratio
residual strength
resilience
shear strength
∞ strength
toughness
- tensile stress**
DEF Normal stress tending to lengthen the body in the direction in which it acts.
GS stresses
. **tensile stress**
RT axial stress
high strength
hoops
interfacial tension
stress intensity factors
∞ tension
triaxial stresses
- tensile tests**
RT destructive tests
fatigue tests
load tests
specimen geometry
static tests
- ∞ tests
tensile-integrity structures
(added January 2001)
USE **tensegrity structures**
- tensiometers**
GS measuring instruments
. **tensiometers**
RT cable force recorders
mechanical measurement
- ∞ **tension**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT blood pressure
interfacial tension
partial pressure
stretching
temperature inversions
tensile stress
- tensometers**
GS measuring instruments
. **tensometers**
RT deformeters
extensometers
strain gages
stress measurement
weight indicators
- tensor analysis**
GS geometry
. differential geometry
. . . **tensor analysis**
RT relativity
scalars
scalers
tensors
- tensor fields*
USE **tensors**
- tensors**
DEF Arrays of functions which obey certain laws of transformation. A one row or one column tensor array is a vector. Used for tensor fields and transformation tensors.
UF *tensor fields*
transformation tensors
GS algebra
. **tensors**
. . . stress tensors
RT field theory (physics)
Jordan form
scalars
tensor analysis
- tephigrams**
GS diagrams
. **tephigrams**
RT atmospheric turbulence
entropy
lapse rate
temperature
temperature inversions
thermodynamic properties
- terbium**
GS chemical elements
. rare earth elements
. . . **terbium**
. . . terbium isotopes
metals
. rare earth elements
. . . **terbium**
. . . terbium isotopes
RT terbium compounds
- terbium 155*
USE **terbium isotopes**
- terbium 161*
USE **terbium isotopes**
- terbium compounds**
GS rare earth compounds
. **terbium compounds**

terbium isotopes

RT terbium

terbium isotopes

- UF *terbium 155*
terbium 161
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **terbium isotopes**
 - . rare earth elements
 - . . terbium
 - . . . **terbium isotopes**
- metals
 - . rare earth elements
 - . . terbium
 - . . . **terbium isotopes**

TERCOM

- UF *Terrain Contour Matching Navigation System*
- GS navigation aids
 - . **TERCOM**
 - onboard equipment
 - . airborne equipment
 - . . **TERCOM**
 - . aircraft equipment
 - . . **TERCOM**
- RT display devices
flight instruments
map matching guidance
navigation instruments
- ∞ systems
video landmark acquisition and tracking

terephthalate

- GS **terephthalate**
 - . polyethylene terephthalate
- RT carboxylic acids
dicarboxylic acids

terminal area energy management

- DEF Automated guidance and landing system for the Space Shuttle orbiter.
- GS management
 - . **terminal area energy management**
- RT digital techniques
Space Shuttle orbiters
space transportation
spacecraft landing

terminal ballistics

- DEF That branch of ballistics dealing with the motion and behavior of projectiles at the termination of their flight, or in striking and penetrating a target. Used for penetration ballistics, projectile penetration, and target penetration.
- UF *penetration ballistics*
projectile penetration
target penetration
- GS ballistics
 - . **terminal ballistics**
- RT energy transfer
fragmentation
impact velocity
missiles
penetration
precision guided projectiles
projectiles

Terminal Configured Vehicle Program

- DEF NASA Program for determining configurations for short haul transport aircraft, including V/STOL and VTOL aircraft. Used for TCV program.
- UF *TCV program*
- GS programs
 - . NASA programs
 - . . **Terminal Configured Vehicle Program**
- RT aircraft design
automatic control
automatic flight control
automatic landing control
electronic control
feedback control

∞ vehicles

terminal facilities

- GS **terminal facilities**
 - . ship terminals
- RT artificial harbors
deepwater terminals
- ∞ facilities
 - harbors
 - offshore docking
 - offshore platforms
 - site selection
 - tanker terminals
- ∞ terminals
 - transportation
 - wharves

terminal guidance

- GS guidance (motion)
 - . **terminal guidance**
 - . . laser guidance
- RT autonomous docking
command guidance
descent trajectories
entry guidance (STS)
glide paths
homing
inertial guidance
midcourse guidance
proportional navigation
reentry
reentry guidance
reentry trajectories
reentry vehicles
rendezvous guidance
spacecraft guidance

terminal velocity

- DEF The maximum velocity attainable, especially by a free falling body, under given conditions.
- GS rates (per time)
 - . **terminal velocity**
 - velocity
 - . **terminal velocity**
- RT gravitation
impact velocity

∞ terminals

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT connectors
data processing terminals
electric terminals
- ∞ headers
 - jumpers
 - outlets
 - ship terminals
 - terminal facilities

terminating

USE **stopping**

terminator lines

- RT ∞ lines
 - lunar phases
- ∞ phases
 - sunrise
 - sunset

terminology

- RT abbreviations
dictionaries
indexing (information science)
nomenclatures
thesauri
words (language)

terms

- RT indexing (information science)
information theory
thesauri
words (language)

ternary alloys

- GS alloys
 - . **ternary alloys**
 - . . Astroloy (trademark)
- RT alloying
antiphase boundaries

cluster variation method

ternary systems

- RT alloys
 - binary systems (materials)
 - solid solutions
- ∞ systems

ternary systems (digital)

USE **digital systems**

terpenes

- DEF A class of unsaturated organic compounds having the empirical formula C₁₀H₁₆ occurring in most essential oils and oleoresinous plants. Structurally the important terpenes and their derivatives are classified as monocyclic (dipentene), bicyclic (pinene), and acyclic (myrcene).
- GS **terpenes**
 - . abscisic acid
 - . azulene
 - . camphor
 - . mecamlamine
 - . menthol
 - . turpentine
- RT aliphatic hydrocarbons
alkenes
carotenoids

terphenyls

- GS phenyls
 - . **terphenyls**

Terra spacecraft

(added June 1999)

- DEF First in a series of EOS (Earth Observing System) spacecraft developed to advance the understanding of the ways that the Earth's lands, oceans, air, ice, and life function as a total environmental system. The spacecraft carries five high-resolution instruments: the Advanced Spaceborne Thermal Emission Radiometer (ASTER), the Clouds and the Earth Radiant Energy System (CERES), the Multi-Angle Imaging Spectroradiometer (MISR), the Moderate Resolution Imaging Spectroradiometer (MODIS), and the Measurements of Pollution in the Troposphere (MOPITT) instrument.
- UF *AM-1 (EOS) spacecraft*
EOS AM-1 spacecraft
- GS artificial satellites
 - . **Terra spacecraft**
 - Earth Observing System (EOS)
 - . **Terra spacecraft**
- RT Aqua spacecraft
Aura spacecraft
CERES (experiment)
data products
Earth observations (from space)
MISR (radiometry)
MODIS (radiometry)
remote sensing

terraces (landforms)

- GS landforms
 - . **terraces (landforms)**
 - . . plateaus
 - . . . Allegheny Plateau (US)
 - . . . Colorado Plateau (US)
 - . . . Great Basin (US)
 - . . . mesas
 - buttes
 - . . . piedmonts
 - . . . Central Piedmont (US)
- RT formations
mountains

terradynamics

- RT ∞ dynamics
 - Earth surface
 - geodynamics
 - projectiles
 - sea floor spreading

terraforming

(added September 1993)

- RT environmental engineering
exobiology
lunar bases

- lunar environment
 - manned Mars missions
 - Mars (planet)
 - Mars environment
 - Mars surface
 - moon
 - planetary atmospheres
 - planetary environments
 - space colonies
 - space habitats
 - Venus surface
- terrain**
- UF *landscape*
 - GS *topography*
 - . **terrain**
 - RT digital elevation models
 - geomorphology
 - landforms
 - landmarks
- terrain analysis**
- UF *SATAN (sensor)*
 - RT ∞ analyzing
 - change detection
 - digital elevation models
 - Earth analogs
 - Earth resources
 - EROS (satellites)
 - geographic applications program
 - hologrammetry
 - mapping
 - multisensor fusion
 - nap-of-the-earth navigation
 - photogrammetry
 - reconnaissance
 - satellite surfaces
 - soil mapping
 - soil sampling
 - video landmark acquisition and tracking
- Terrain Contour Matching Navigation System*
- USE **TERCOM**
- terrain following**
- (added February 1995)
- DEF The flight path of an aircraft, helicopter, or missile at a constant altitude above the terrain or highest obstacle. The altitude constantly changes to conform to the varying height of the terrain and/or obstacles.
- GS maneuvers
 - . **terrain following**
 - navigation
 - . air navigation
 - . . . nap-of-the-earth navigation
 - . . . **terrain following**
 - RT attack aircraft
 - cruise missiles
 - evasive actions
 - flight envelopes
 - hovering
 - low altitude
 - map matching guidance
 - military helicopters
 - obstacle avoidance
 - penetration
- terrestrial dust belt**
- GS particles
 - . dust
 - . . **terrestrial dust belt**
 - RT ∞ belts
 - cosmic dust
 - gegenstein
 - meteoroid dust clouds
 - micrometeoroids
 - zodiacal dust
- terrestrial magnetism*
- USE **geomagnetism**
- terrestrial planets**
- DEF The four small planets nearest the sun (Earth, Mercury, Venus, and Mars).
- GS celestial bodies
 - . planets
 - . . **terrestrial planets**
 - . . . Earth (planet)
- . . . Mars (planet)
 - . . . Mercury (planet)
 - . . . Venus (planet)
 - RT celestial mechanics
 - Mercury surface
 - planetary environments
 - planetology
 - solar system
- terrestrial radiation**
- SN (EXCLUDES ATMOSPHERIC RADIATION AND REFLECTED VISIBLE LIGHT)
 - UF *Earth radiation*
 - GS electromagnetic radiation
 - . **terrestrial radiation**
 - RT atmospheric radiation
 - CERES (experiment)
 - Earth (planet)
 - Earth albedo
 - Earth radiation budget
 - Earth radiation budget experiment
 - extraterrestrial radiation
 - far infrared radiation
 - greenhouse effect
 - infrared radiation
 - MISR (radiometry)
 - near infrared radiation
 - planetary radiation
 - ∞ radiation
 - tropospheric radiation
- terrier missile**
- GS missiles
 - . antiaircraft missiles
 - . . **terrier missile**
 - . surface to air missiles
 - . . **terrier missile**
 - RT Bumblebee project
 - multistage rocket vehicles
 - solid propellant rocket engines
- terrorism**
- (added December 2001)
- DEF The use of violence, or threat of violence directed at civilian populations with the intention of intimidating or coercing a particular group, organization, or government, often for ideological or political reasons.
- GS crime
 - . **terrorism**
 - RT air piracy
 - aircraft safety
 - airport security
 - biological weapons
 - computer information security
 - explosives detection
 - flight safety
 - sabotage
 - security
 - violence
- Tertiary Period**
- (added June 1989)
- GS Cenozoic Era
 - . **Tertiary Period**
 - RT Cretaceous Period
 - Cretaceous-Tertiary boundary
 - geochronology
 - paleontology
 - Quaternary period
- tesseral harmonics**
- GS analysis (mathematics)
 - . functional analysis
 - . . harmonic analysis
 - . . . **tesseral harmonics**
 - harmonics
 - . **tesseral harmonics**
 - RT satellite perturbation
- test beds*
- USE **test stands**
- test chambers**
- DEF Places, sections, or rooms having special characteristics where a person or object is subjected to experiment, as an altitude chamber. Used for environmental chambers.
- UF *environmental chambers*
 - GS compartments
- . **test chambers**
 - . . anechoic chambers
 - . . pressure chambers
 - . . . hyperbaric chambers
 - . . . vacuum chambers
 - . . reverberation chambers
 - RT ∞ capsules
 - ∞ chambers
 - cryogenic wind tunnels
 - environment models
 - environment simulators
 - environmental control
 - environmental laboratories
 - environmental tests
 - thermal vacuum tests
 - vacuum tests
 - wind tunnels
- ∞ **test equipment**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *checkout equipment*
 - testers*
 - testing machines*
 - RT analyzers
 - astrionics
 - automatic test equipment
 - avionics
 - ∞ capsules
 - CEFOAM checkout equipment
 - centrifuges
 - checkout
 - dynamometers
 - Earth terminal measurement system
 - electronic equipment tests
 - ∞ equipment
 - fatigue testing machines
 - free flight test apparatus
 - frequency analyzers
 - geophysical fluid flow cells
 - ground support equipment
 - Hartmann-Sprenger tubes
 - hypersonic test apparatus
 - impact testing machines
 - load testing machines
 - measuring instruments
 - monoscopes
 - onboard equipment
 - rocket propelled sleds
 - samplers
 - simulators
 - supersonic test apparatus
 - test facilities
 - test pattern generators
 - test stands
 - wind tunnel models
 - wind tunnels
- test facilities**
- GS **test facilities**
 - . anechoic chambers
 - . Central Atlantic Regional Ecol Test Site
 - . engine testing laboratories
 - . environmental laboratories
 - . hydraulic test tunnels
 - . reverberation chambers
 - . rocket test facilities
 - . test ranges
 - . . ballistic ranges
 - . . missile ranges
 - . test stands
 - . Transient Reactor Test Facility
 - . wind tunnels
 - . . blowdown wind tunnels
 - . . combustion wind tunnels
 - . . cryogenic wind tunnels
 - . . hypersonic wind tunnels
 - . . . cascade wind tunnels
 - . . . hotshot wind tunnels
 - . . . plasma jet wind tunnels
 - . . . shock tunnels
 - . . hypervelocity wind tunnels
 - . . . cascade wind tunnels
 - . . . hotshot wind tunnels
 - . . . plasma jet wind tunnels
 - . . . shock tunnels
 - . . low density wind tunnels
 - . . low speed wind tunnels

test firing

- . . . subsonic wind tunnels
- . . . rectangular wind tunnels
- . . . slotted wind tunnels
- . . . supersonic wind tunnels
- . . . transonic wind tunnels
- . . . trisonic wind tunnels

RT ∞ facilities

- flight simulators
- laboratories
- models
- motion simulators
- research facilities
- shock tubes
- simulators
- solar simulators
- spacecraft cabin simulators
- ∞ test equipment
- ∞ tests

test firing

DEF The firing of a rocket engine, either live or static, with the purpose of making controlled observations of the engine or of an engine component.

GS firing (igniting)

- . **test firing**
- . . static firing

RT

- engine tests
- fuel tests
- ground tests
- missile tests
- prefiring tests
- prelaunch tests
- rocket firing
- rocket test facilities
- static tests
- ∞ tests

test pattern generators

DEF Image-processing software.

RT ∞ faults

- ∞ generators
- ∞ patterns
- ∞ test equipment

test pilots

GS personnel

- . flying personnel
- . . pilots (personnel)
- . . . aircraft pilots
- **test pilots**
- . operators (personnel)
- . . pilots (personnel)
- . . . aircraft pilots
- **test pilots**

RT ∞ pilots

test ranges

GS ranges (facilities)

- . **test ranges**
- . . ballistic ranges
- . . missile ranges
- test facilities
- . **test ranges**
- . . ballistic ranges
- . . missile ranges

RT

- downrange
- downrange measurement
- range safety
- rocket test facilities

test stands

DEF Stationary platforms or tables, together with any testing apparatus attached thereto, for testing or proving engines or instruments.

UF test beds

GS test facilities

- . **test stands**

RT

- engine tests
- flame deflectors
- prefiring tests
- prelaunch tests
- rocket test facilities
- ∞ test equipment

test vehicles

GS test vehicles

- . flight test vehicles

RT ∞ aircraft

- altitude tests

- ∞ ballistic vehicles

- ∞ capsules

- electric motor vehicles

- high altitude tests

- hypersonic vehicles

- launch vehicles

- missile tests

- missiles

- reentry vehicles

- research aircraft

- rocket vehicles

- ∞ spacecraft

- ∞ tests

- towed bodies

- ∞ vehicles

testers

USE **test equipment**

testes

GS anatomy

- . genitourinary system
- . . reproductive systems
- . . . sex glands
- gonads
- **testes**
- . glands (anatomy)
- . . endocrine glands
- . . . gonads
- **testes**
- . . sex glands
- . . . gonads
- **testes**

testing

USE **tests**

testing machines

USE **test equipment**

testing time

GS time

- . **testing time**

RT

- burning time
- engine tests
- fatigue tests
- flight time
- ∞ tests
- turnaround (STS)
- windows (intervals)

∞ tests

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF pretests

testing

RT accelerated life tests

- acceptability
- accuracy
- adhesion tests
- altitude tests
- approach and landing tests (STS)
- bend tests
- captive tests
- checkout
- chemical analysis
- chemical tests
- cold flow tests
- cold weather tests
- compression tests
- computational chemistry
- confidence limits
- corrosion test loops
- corrosion tests
- creep tests
- crew procedures (inflight)
- crew procedures (preflight)
- damping tests
- destructive tests
- drop tests
- dynamic tests
- education
- electric equipment tests
- electronic equipment tests
- employment
- engine tests
- environmental tests
- errors
- evaluation
- examination

- extrapolation

- fatigue tests

- field tests

- flight stability tests

- flight tests

- fuel tests

- full scale tests

- ground tests

- hardness tests

- high altitude tests

- high temperature tests

- impact tests

- in vitro methods and tests

- in vivo methods and tests

- intelligence tests

- laboratories

- load tests

- low temperature tests

- lubricant tests

- ∞ materials tests

- median (statistics)

- missile tests

- nondestructive tests

- notch tests

- orbital space tests

- patch tests

- performance tests

- personality tests

- physiological tests

- prefiring tests

- preflight analysis

- prelaunch tests

- program verification (computers)

- propellant tests

- proving

- psychological tests

- qualifications

- quality

- quality control

- railroad humping tests

- rank tests

- reactor startup tests

- records

- reliability

- resonance testing

- Rorschach tests

- salt spray tests

- sampling

- selection

- self tests

- shock tests

- Snellen tests

- space electric rocket tests

- Space Transportation System flights

- space vehicle checkout program

- spin tests

- stability tests

- static tests

- statistical tests

- stroking tests

- tasks

- tensile tests

- test facilities

- test firing

- test vehicles

- testing time

- thermal cycling tests

- thermal vacuum tests

- ultrasonic tests

- vacuum tests

- vibration tests

- water tunnel tests

- wear tests

- weld tests

- wind tunnel stability tests

- wind tunnel tests

- wing flow method tests

- x ray inspection

tethered balloons

UF kite balloons

GS expandable structures

- . inflatable structures

- . . balloons

- . . . **tethered balloons**

RT meteorological balloons

- reels

tethered satellites

DEF Concept for scientific payloads suspended at altitudes of 120 km from Space Shuttle orbiters flying at 200-km altitude; control system would permit deployment and retrieval of the tethered satellites.

- GS artificial satellites
 - . **tethered satellites**
- RT reels

tethering

- RT orbital rendezvous
- reels
- tetherlines

tetherlines

- RT anchors (fasteners)
- ∞ cables
- ∞ lines
 - tethering
 - towed bodies
 - umbilical connectors

Tethys

DEF One of the natural satellites of Saturn orbiting at a mean distance of 295,000 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . icy satellites
 - . . . **Tethys**
 - . . . Saturn satellites
 - . . . **Tethys**
- RT Saturn (planet)

tetrabutyls

- GS alkyl compounds
 - . **tetrabutyls**
- RT dibutyl compounds
- organometallic compounds

tetrachlorides

- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **tetrachlorides**
 - . halides
 - . . chlorides
 - . . . **tetrachlorides**

tetrachloromethane

USE **carbon tetrachloride**

tetracyclines

- GS drugs
 - . antibiotics
 - . . **tetracyclines**
 - organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **tetracyclines**

tetrad theory

- RT chromosomes
- meiosis
- spores
- ∞ theories

tetraethyl orthocarbonates

- GS carbon compounds
 - . carbonates
 - . . **tetraethyl orthocarbonates**

tetraethyl orthosilicate

DEF An oxidation inhibiting coating used on the wing leading edges and nose cap of the Space Shuttle.

- GS adhesives
 - . **tetraethyl orthosilicate**
- RT ethyl compounds
- glues
- silicates

tetrafluorohydrazine

- GS halogen compounds
 - . fluorine compounds
 - . . fluoro compounds
 - . . . **tetrafluorohydrazine**
 - hydrazines
 - . **tetrafluorohydrazine**
 - organic compounds

- . amines
- . . **tetrafluorohydrazine**
- RT rocket oxidizers

tetragons

- GS geometry
 - . Euclidean geometry
 - . . polygons
 - . . . **tetragons**
 - parallelograms
 - rhomboids
 - rectangles
 - squares (mathematics)
 - trapezoids

tetrahedrons

- GS geometry
 - . Euclidean geometry
 - . . polyhedrons
 - . . . **tetrahedrons**
- RT triangles

tetrahydrofuran

DEF In organic chemistry, an intermediate and a solvent for polyvinyl chloride. Used for butylene oxides.

- UF *butylene oxides*
- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . furans
 - **tetrahydrofuran**
 - solvents
 - . **tetrahydrofuran**
 - RT additives
 - ∞ chemical compounds
 - plastics
 - polyvinyl chloride

tetranitrotetraazacyclooctane

USE **HMX**

tetraphenyls

- GS phenyls
 - . polyphenyls
 - . . **tetraphenyls**

tetrazoles

- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **tetrazoles**

tetrodes

- RT electron tubes
- pentodes
- semiconductor devices
- transistors
- triodes

tetroons

USE **superpressure balloons**

tetryl

- GS explosives
 - . **tetryl**
 - nitrogen compounds
 - . nitro compounds
 - . . **tetryl**
 - organic compounds
 - . amines
 - . . **tetryl**
 - propellants
 - . **tetryl**

texas

- GS nations
 - . United States
 - . . **texas**
- RT Gulf of Mexico
- Houston (TX)
- Lake Texoma (OK-TX)
- Rio Grande (North America)

textbooks

- GS documents
 - . **textbooks**
 - educational resources
 - . **textbooks**
- RT education
- handbooks

- knowledge
- learning
- libraries
- manuals
- subjects

textiles

- GS **textiles**
 - . cotton fibers
 - . linen
 - . rayon
- RT clothing
- cotton
- fabrics
- fibers
- vapor barrier clothing
- wet spinning

texts

- GS documents
 - . **texts**
- RT format
- records

textures

DEF The structural qualities of surfaces determined by the interrelation of their elements.

- RT curl (materials)
- fineness
- Gabor filters
- mechanical properties
- porosity
- surface properties

TF-30 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **TF-30 engine**
 - aircraft engines
 - . . **TF-30 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **TF-30 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **TF-30 engine**

TF-34 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **TF-34 engine**
 - aircraft engines
 - . . **TF-34 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **TF-34 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **TF-34 engine**
 - convertible fan-shaft engines

TF-41 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **TF-41 engine**
 - aircraft engines

TH-55 helicopter

- .. **TF-41 engine**
- . internal combustion engines
- .. gas turbine engines
- ... jet engines
- ... turbojet engines
- ... turboprop engines
- ... **TF-41 engine**
- . turbine engines
- .. gas turbine engines
- ... jet engines
- ... turbojet engines
- ... turboprop engines
- ... **TF-41 engine**

TFX aircraft

USE **F-111 aircraft**

TH-55 helicopter

- GS Hughes aircraft
- . **TH-55 helicopter**
- V/STOL aircraft
- . rotary wing aircraft
- .. helicopters
- ... **TH-55 helicopter**

Thailand

- GS nations
- . **Thailand**
- RT Asia

thalamus

- GS anatomy
- . nervous system
- .. central nervous system
- ... brain
- ... diencephalon
- ... **thalamus**

thallium

- GS chemical elements
- . **thallium**
- .. thallium isotopes
- metals
- . **thallium**
- .. thallium isotopes
- RT thallium compounds

thallium alloys

- GS alloys
- . **thallium alloys**

thallium compounds

- RT ∞ metal compounds
- thallium

thallium isotopes

- GS chemical elements
- . nuclides
- .. isotopes
- ... **thallium isotopes**
- . thallium
- .. **thallium isotopes**
- metals
- . thallium
- .. **thallium isotopes**

thawing

USE **melting**

THC (oceanography)

(added February 2002)

USE **thermohaline circulation**

Thebe

(added January 1996)

DEF A natural satellite of Jupiter orbiting at a mean distance of 221,900 kilometers.

- GS celestial bodies
- . natural satellites
- .. Jupiter satellites
- ... **Thebe**
- RT Jupiter (planet)

thematic mappers (LANDSAT)

DEF Landsat multispectral scanners designed to acquire data to categorize the Earth's surface. Particular emphasis was placed on agricultural applications and land use.

- GS optical equipment
- . optical scanners
- .. multispectral band scanners

... **thematic mappers (LANDSAT)**

remote sensors

. **thematic mappers (LANDSAT)**

scanners

. optical scanners

.. multispectral band scanners

... **thematic mappers (LANDSAT)**

RT Landsat 4

Landsat 5

remote sensing

thematic mapping

thematic mapping

GS mapping

. **thematic mapping**

RT cadastral mapping

data products

maps

photogeology

photomapping

photomaps

thematic mappers (LANDSAT)

Themis project

GS programs

. projects

.. **Themis project**

theodolites

DEF Optical instruments which consist of a sighting telescope, mounted so that it is free to rotate around horizontal and vertical axes, and graduated scales so that the angle of rotation may be measured. The telescope is usually fitted with a right angle prism so that the observer continues to look horizontally into the eyepiece, whatever the variation of the elevation angle.

GS measuring instruments

. optical measuring instruments

.. transits

... **theodolites**

... cinetheodolites

optical equipment

. optical measuring instruments

.. transits

... **theodolites**

... cinetheodolites

RT sextants

Theodorsen transformation

RT airfoil profiles

complex variables

conformal mapping

coordinate transformations

Joukowski transformation

pressure distribution

theorem proving

GS problem solving

. **theorem proving**

proving

. **theorem proving**

RT artificial intelligence

computer programming

predicate calculus

theorems

theorems

UF *lemmas*

GS **theorems**

. addition theorem

. Bayes theorem

. Bernoulli theorem

. binomial theorem

. Castigliano variational theorem

. duality theorem

. equipartition theorem

. existence theorems

. Floquet theorem

. Gauss-Markov theorem

. Hellmann-Feynman theorem

. Kakutani theorem

. Lebesgue theorem

. Liouville theorem

. Michell theorem

. Pomeranchuk theorem

. Poynting theorem

. reciprocal theorems

. reciprocity theorem

. Richards theorem

. Riesz theorem

. Schauder fixpoint theorem

. similarity theorem

.. Lagrange similarity hypothesis

. Stokes theorem (vector calculus)

. uniqueness theorem

. virial theorem

RT hypotheses

mathematical logic

∞ mathematics

Taylor series

theorem proving

theoretical physics

GS **theoretical physics**

. Newton Theory

. quantum theory

.. Bohr theory

RT astrophysics

broken symmetry

charm (particle physics)

electrophysics

flavor (particle physics)

geophysics

grand unified theory

naked singularities

nuclear physics

∞ physics

plasma physics

radio physics

∞ science

∞ solid state physics

strange attractors

string theory

supergravity

supersymmetry

unified field theory

Yang-Mills theory

∞ **theories**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT Abrikosov theory

assumptions

atomic theory

automata theory

BCS theory

Bellman theory

bending theory

Bessel-Bredichin theory

bimetric theories

Bogoliubov theory

Bohr theory

Born-Infeld theory

catastrophe theory

Chapman-Enskog theory

communication theory

control theory

Crocco-Lee theory

Debye-Huckel theory

decision theory

density functional theory

diffusion theory

dynamo theory

Dyson theory

Eyring theory

field mode theory

field theory (algebra)

field theory (physics)

finite difference theory

flow theory

fluctuation theory

Foster theory

game theory

gauge theory

geometrical theory of diffraction

Gestalt theory

Glauber theory

goal theory

graph theory

gravitation theory

Griffith crack

group theory

Hansen lunar theory

Heisenberg theory

Hill lunar theory

homotopy theory

Hueckel theory

hypotheses
 information theory
 Jeans theory
 kinetic theory
 Kolmogorov theory
 learning theory
 Malkus theory
 Manning theory
 matrix theory
 Michaelis theory
 mixing length flow theory
 molecular theory
 momentum theory
 Newton Theory
 nonadiabatic theory
 number theory
 numerical differentiation
 Opik theory
 orthogonal multiplexing theory
 particle theory
 perturbation theory
 physical optics
 piston theory
 plate theory
 population theory
 potential theory
 probability theory
 quantum chromodynamics
 quantum theory
 queueing theory
 Reissner theory
 relativistic theory
 S matrix theory
 saddle points (game theory)
 set theory
 shell theory
 spectral theory
 statistical decision theory
 strong interactions (field theory)
 Sturm-Liouville theory
 switching theory
 tetrad theory
 transport theory
 vinti theory
 weak interactions (field theory)
 Yang-Mills theory
 Young-Helmholtz theory

therapy

GS **therapy**
 . chemotherapy
 . gene therapy
 . massaging
 . psychotherapy
 . radiation therapy
 RT cures
 diseases
 healing
 medical equipment
 patients
 respirators
 skin grafts

thermal absorption

GS energy absorption
 . **thermal absorption**
 . . polar cap absorption
 RT ablation
 ∞ absorption
 atmospheric attenuation
 charring
 gray gas
 heat sinks
 pyrolysis
 temperature

thermal accommodation coefficients
 USE **accommodation coefficient**

thermal agitation
 USE **thermal energy**

thermal analysis

DEF A general term covering a group of related techniques whereby the dependence of the parameters of any physical property of a substance or temperature is measured. Used for differential thermal analysis and DTA (analysis).
 UF *differential thermal analysis*
 DTA (analysis)

RT ∞ analyzing
 heat transmission
 temperature
 temperature gradients
 temperature profiles
 temperature sensitive paints

thermal barriers (plasma control)

RT ∞ barriers
 fusion reactors
 mirror fusion
 plasma control
 tandem mirrors

thermal batteries

GS electric generators
 . direct power generators
 . . primary batteries
 . . . **thermal batteries**
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . **thermal batteries**
 RT alkaline batteries
 dry cells

thermal blooming

UF *laser beam defocusing*
thermal defocusing
 GS thermal lensing
 . **thermal blooming**
 RT laser cutting
 laser heating
 laser outputs
 lasers
 photon beams
 temperature

thermal boundary layer

GS boundary layers
 . **thermal boundary layer**
 RT hypersonic boundary layer
 laminar boundary layer
 Rayleigh-Benard convection
 temperature
 turbulent boundary layer

thermal buckling

GS buckling
 . **thermal buckling**
 RT expansion
 temperature
 temperature effects
 thermal expansion

thermal comfort

DEF That condition which expresses satisfaction with the thermal environment and which is measured by such factors as air temperature, relative humidity, air velocity, etc.
 RT heat stroke
 temperature
 thermal environments

thermal conductivity

DEF Time rate of unidirectional heat transfer per unit area, in the steady-state, between parallel planes separated by unit distance, per unit difference of temperature of the planes.
 GS thermodynamic properties
 . thermophysical properties
 . . **thermal conductivity**
 transport properties
 . **thermal conductivity**
 RT air conductivity
 atmospheric conductivity
 conductive heat transfer
 ∞ conductivity
 Fourier law
 hot-wire flowmeters
 Lewis numbers
 specific heat
 temperature
 thermohydraulics

thermal conductivity gages

SN (GAGES FOR MEASURING THERMAL CONDUCTIVITY--EXCLUDES GAGES USING THERMAL CONDUCTIVITY TO MEASURE OTHER PROPERTIES OR VARIABLES)

GS measuring instruments
 . **thermal conductivity gages**
 RT temperature

thermal conductors

GS conductors
 . **thermal conductors**
 RT ∞ conduction
 conductive heat transfer
 electric conductors
 temperature

thermal control coatings

GS coatings
 . **thermal control coatings**
 RT ablative materials
 ∞ control
 heat shielding
 reentry shielding
 reusable heat shielding
 temperature
 temperature control
 thermochromic coatings

thermal convection

USE **free convection**

thermal currents

USE **convective flow**

thermal cycling tests

RT closed cycles
 cooling
 environmental tests
 fatigue tests
 heating
 temperature
 temperature control
 ∞ tests
 thermodynamic properties

thermal decomposition

DEF The breaking apart of complex molecules into simpler units by the application of heat.
 GS chemical reactions
 . **thermal decomposition**
 . . pyrolysis
 decomposition
 . **thermal decomposition**
 . . pyrolysis
 RT ablation
 endothermic reactions
 exothermic reactions
 temperature
 thermochemistry
 thermogravimetry

thermal defocusing

USE **thermal blooming**

thermal degradation

DEF Impairment of properties caused by exposure to heat.
 GS degradation
 . **thermal degradation**
 RT pyrolysis
 sterilization effects
 temperature
 temperature dependence
 temperature effects

thermal diffusion

GS diffusion
 . **thermal diffusion**
 thermodynamic properties
 . thermophysical properties
 . . **thermal diffusion**
 RT Chapman-Enskog theory
 ∞ conduction
 convective flow
 electron diffusion
 gas heating
 gaseous diffusion
 heat transfer
 Kirkendall effect
 Peclet number
 ∞ separation
 Soret coefficient
 surface diffusion

thermal diffusivity

temperature
thermochemistry
thermohydraulics
viscosity

thermal diffusivity

DEF The ratio of thermal conductivity of a substance to the product of its density and specific heat. Common units for this property are sq cm/s or sq ft/h.

GS thermodynamic properties
. thermophysical properties
. . **thermal diffusivity**
transport properties
. **thermal diffusivity**

RT photothermal deflection spectroscopy
temperature
viscosity

thermal dissociation

GS chemical reactions
. **thermal dissociation**
dissociation

. **thermal dissociation**

RT cracking (chemical engineering)
decomposition
degradation
gas dissociation
heat of dissociation
hydrogen production
ionization
plasmas (physics)
temperature
temperature effects

thermal effects

USE **temperature effects**

thermal efficiency

USE **thermodynamic efficiency**

thermal emission

DEF The process by which a body emits electromagnetic radiation as a consequence of its temperature only.

GS emission
. **thermal emission**
. . thermionic emission

RT electron emission
emissivity
exhaust emission
incandescence
infrared absorption
temperature

thermal energy

UF *thermal agitation*

RT cogeneration

∞ energy

free energy
geothermal energy conversion
geothermal resources
heat
heat of fusion
heat of solution
internal energy
kinetic energy
lattice vibrations
photothermal conversion
solar thermal electric power plants
temperature
thermophotovoltaic conversion

thermal energy storage

USE **heat storage**

thermal environments

GS environments
. **thermal environments**

RT adiabatic conditions
aerospace environments
heat stroke
high temperature environments
life support systems
low temperature environments
lunar environment
planetary environments
satellite temperature
spacecraft environments
temperature

thermal comfort

thermal expansion

DEF The increase in the dimensions or the volume of a body due to change in temperature.

GS expansion
. **thermal expansion**
thermodynamic properties
. **thermal expansion**
RT Boussinesq approximation
dilatometry
extensometers
Grüneisen constant
heat transfer
high temperature tests
low temperature tests
neel temperature
∞ physical properties
temperature
thermal buckling
thermophysical properties
warpage

thermal fatigue

DEF In metals, fracture resulting from the presence of temperature gradients which vary with time in such a manner as to produce cyclic stresses in a structure.

UF *high temperature fatigue*

GS fatigue (materials)

. **thermal fatigue**

RT high temperature environments
metal fatigue
temperature

thermal gravimetry

USE **thermogravimetry**

thermal instability

DEF The conditions of temperature gradient, thermal conductivity, and viscosity which lead to the onset of convection in a fluid.

GS thermodynamic properties

. **thermal instability**

RT clear air turbulence
combustion stability
magnetohydrodynamic stability
pyrolysis
sputtering
stellarators
temperature

thermal insulation

DEF A material applied to reduce the flow of heat.

GS insulation
. **thermal insulation**
RT air conditioning
Amberlite (trademark)
asbestos
cork (materials)
cryogenic fluid storage
heat
heat shielding
heat sinks
heat transfer
heat transmission
heating equipment
reentry shielding
refractories
refractory coatings
temperature
temperature control
Trombe walls

thermal lenses

(added November 1998)

USE **thermal lensing**

thermal lensing

(added November 1998)

UF *thermal lenses*

GS **thermal lensing**

. thermal blooming
RT atmospheric optics
focusing
laser beams
photothermal deflection spectroscopy

wave front deformation

thermal mapping

GS mapping
. **thermal mapping**
RT aerial reconnaissance
Earth resources
geothermal anomalies
geothermal resources
Heat Capacity Mapping Mission
infrared radiometers
infrared scanners
isothermal layers
isotherms
photomapping
planetary mapping
quantum well infrared photodetectors
temperature
temperature distribution
temperature gradients
thermography

thermal neutrons

DEF Neutrons in thermal equilibrium with the medium in which they exist. Used for slow neutrons.

UF *slow neutrons*

GS nuclear radiation

. **thermal neutrons**

particles
. elementary particles
. . fermions
. . . neutrons
. . . . **thermal neutrons**
. neutral particles
. . neutrons
. . . **thermal neutrons**

RT baryons

fast neutrons
nuclear reactors
temperature
thermalization (energy absorption)

thermal noise

DEF The noise at radiofrequency caused by thermal agitation in a dissipative body. Also called Johnson noise.

GS elastic waves
. sound waves
. . noise (sound)
. . . **thermal noise**
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . white noise
. . . . **thermal noise**

RT channel noise

electromagnetic noise measurement
noise temperature
shot noise
temperature

thermal plasmas

GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **thermal plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **thermal plasmas**
RT electron plasma
high temperature plasmas
plasma generators
plasma temperature
temperature

thermal pollution

DEF Environmental temperature rise due to waste heat disposal.

GS pollution

. **thermal pollution**

RT biological effects
coastal ecology
environment effects
environment pollution
environmental quality
environmental surveys
environments

- heat transfer
lakes
liquid cooling
marine biology
nuclear reactors
ocean temperature
oceans
plankton
pollution transport
seas
temperature
water pollution
water temperature
- thermal power*
USE **turbogenerators**
- thermal properties*
USE **thermodynamic properties**
- thermal protection**
GS protection
. **thermal protection**
RT ablative materials
carbon-carbon composites
heat shielding
Ludox (trademark)
radiation protection
reentry shielding
reusable heat shielding
temperature
- thermal radiation**
SN (EMITTED AS THE RESULT OF THERMAL EXCITATION OF MOLECULES)
DEF The electromagnetic radiation emitted by any substance as the result of the thermal excitation of its molecules. Thermal radiation ranges in wavelength from the longest infrared radiation to the shortest ultraviolet radiation.
GS electromagnetic radiation
. **thermal radiation**
. . . black body radiation
. . . phonon beams
RT concentrators
greenhouse effect
heat
infrared radiation
light (visible radiation)
near infrared radiation
nongray gas
nonthermal radiation
Plancks constant
planetary radiation
 ∞ radiation
radio waves
sky radiation
solar radiation
sunlight
temperature
thermodynamic properties
ultraviolet radiation
- thermal reactors**
GS nuclear reactors
. **thermal reactors**
RT ∞ reactors
temperature
- thermal resistance**
DEF The extent to which a material retains useful properties as measured during exposure of the material to a specified temperature and environment for a specified time. Used for heat resistance.
UF *heat resistance*
GS mechanical properties
. **thermal resistance**
RT carbon-carbon composites
 ∞ high resistance
high temperature lubricants
high temperature tests
 ∞ low resistance
oxidation
oxidation resistance
 ∞ resistance
specific heat
temperature
temperature effects
- thermodynamic properties
- thermal resources**
GS heat sources
. **thermal resources**
. . . geothermal resources
. . . . geysers
resources
. Earth resources
. . **thermal resources**
. . . . geothermal resources
. geysers
RT agrometeorology
atmospheric temperature
crop growth
crop vigor
geothermal technology
resources management
temperature
temperature distribution
- thermal shielding*
USE **heat shielding**
- thermal shock**
DEF The development of a steep temperature gradient and accompanying high stresses within a structure.
RT cooling
heating
high temperature tests
 ∞ shock
shock resistance
temperature
temperature distribution
thermodynamic properties
- thermal simulation**
GS simulation
. environment simulation
. . **thermal simulation**
RT altitude simulation
solar simulation
space environment simulation
temperature
- thermal sinks*
USE **heat sinks**
- thermal stability**
DEF Resistance to permanent changes in property caused solely by heat.
UF *thermostability*
GS stability
. **thermal stability**
thermodynamic properties
. thermophysical properties
. . **thermal stability**
RT dimensional stability
high temperature tests
low temperature tests
storage stability
surface stability
temperature
temperature dependence
- thermal stresses**
SN (EXCLUDES BIOLOGICAL STRESSES)
DEF Stresses in metal, resulting from non-uniform temperature distribution.
GS stresses
. **thermal stresses**
RT cooling
fatigue (materials)
heating
temperature
temperature distribution
temperature effects
- thermal vacuum tests**
GS vacuum tests
. **thermal vacuum tests**
RT environmental tests
high altitude environments
temperature
test chambers
 ∞ tests
- vacuum chambers
- thermalization (energy absorption)**
GS energy absorption
. moderation (energy absorption)
. . **thermalization (energy absorption)**
. . . neutron thermalization
RT thermal neutrons
- thermicons**
GS electron tubes
. camera tubes
. . vidicons
. . . return beam vidicons
. . . . **thermicons**
. image tubes
. . **thermicons**
optical equipment
. image converters
. image tubes
. . . **thermicons**
- thermionic cathodes**
GS electrodes
. cathodes
. . tube cathodes
. . . **thermionic cathodes**
emitters
. **thermionic cathodes**
RT hot cathodes
- thermionic conversion systems*
USE **thermionic power generation**
- thermionic converters**
GS electric generators
. direct power generators
. . **thermionic converters**
. . . SNAP 13
. . . solar blankets
RT cesium diodes
cesium plasma
 ∞ converters
fuel cells
ion production rates
magnetohydrodynamic generators
plasma power sources
radioisotope batteries
SNAP
solar cells
thermoelectric generators
- thermionic diodes**
GS electron tubes
. **thermionic diodes**
. . cesium diodes
electronic equipment
. diodes
. . **thermionic diodes**
. . . cesium diodes
RT Child-Langmuir law
perveance
semiconductor diodes
- thermionic emission**
DEF Direct ejection of electrons as the result of heating the material, which raises electron energy beyond the binding energy that holds the electron to the material. Used for Richardson-Dushman equation.
UF *Richardson-Dushman equation*
GS emission
. particle emission
. . **thermionic emission**
. thermal emission
. . **thermionic emission**
RT electron emission
ion emission
thermoelectricity
work functions
- thermionic emitters**
GS emitters
. **thermionic emitters**
- thermionic power generation**
UF *thermionic conversion systems*
RT ∞ conversion
SNAP

SNAP 13

*thermionic reactors*USE **ion engines**
nuclear rocket engines**thermionics**

DEF The study of the emission of electrons by heat.

RT cathodes
electron emission
∞ electronics
ion emission**thermistors**

DEF Electron devices employing the temperature dependent change of resistivity of a semiconductor.

GS attenuators
. resistors
. . . **thermistors**
electronic equipment
. solid state devices
. . . semiconductor devices
. . . **thermistors**
temperature sensors
. **thermistors**
RT radiometers
temperature measuring instruments
varistors**thermites**

DEF Fire-hazardous mixtures of ferric oxide and powdered aluminum; upon ignition with a magnesium ribbon, the mixtures reach temperatures up to 4000 degrees F (sufficient to soften steel).

RT aluminum oxides
Auger spectroscopy
barium ion clouds
copper oxides
ignition temperature
pyrotechnics**thermoacoustic effects***(added May 2000)*

DEF Phenomena associated with the combination of temperature, pressure and displacement oscillations caused by acoustic waves interacting with solid boundaries, such as the walls of a tube or a "stack".

RT acoustic excitation
acoustic instability
acoustics
acousto-optics
combustion stability
∞ effects
heat transfer
sound waves
thermoacoustic refrigerators
thermophysical properties**thermoacoustic refrigerators***(added May 2000)*

DEF Cooling devices in which intense sound waves in pressurized resonant cavities are used to generate temperature gradients in an array of parallel plates in the interior of a tube that serves as a heat exchanger and in which heat is drawn away by a heat sink.

GS refrigerating machinery
. refrigerators
. . . **thermoacoustic refrigerators**
RT cooling systems
refrigerating
thermoacoustic effects**thermobalances**GS measuring instruments
. indicating instruments
. . . weight indicators
. . . **thermobalances**

RT thermogravimetry

thermocapillary migration*(added September 1999)*

DEF Phenomenon where droplets (or bubbles) in a host fluid with a uniform temperature gradient migrate to the hot end of the host fluid because of the temperature dependence of

the interfacial energy of the droplets.

RT bubbles
capillary flow
drops (liquids)
electromigration
interfacial tension
Marangoni convection
microgravity
space processing
temperature gradients
thermomigration**thermochemical properties**GS chemical properties
. **thermochemical properties**
. . . heat of combustion
. . . heat of dissociation
. . . heat of formation
. . . heat of solution
. . . latent heat
. . . . heat of fusion
. . . . heat of vaporization
thermodynamic properties
. **thermochemical properties**
. . . heat of combustion
. . . heat of dissociation
. . . heat of formation
. . . heat of solution
. . . latent heat
. . . . heat of fusion
. . . . heat of vaporization
RT heat balance
∞ properties**thermochemistry**

DEF A branch of chemistry that treats the relations of heat and chemical changes.

GS **thermochemistry**
. aerothermochemistry
. combustion chemistry
RT chemical engineering
chemical reactions
∞ chemistry
combustion physics
enthalpy
entropy
heat
heat balance
heat of dissociation
heat of fusion
heat of solution
heat treatment
physical chemistry
propellant chemistry
pyrometallurgy
thermal decomposition
thermal diffusion
thermodynamic properties
thermodynamics
thermogravimetry
thermophysical properties
water splitting**thermochromatic materials**GS **thermochromatic materials**
. thermochromic coatings
RT color
colorimetry
∞ inorganic materials
∞ materials
optical properties
organic materials
solids**thermochromic coatings***(added March 2005)*

DEF Spectrally selective coatings that change their transmission and reflection properties with temperature.

UF *thermochromic films*
GS coatings
. **thermochromic coatings**
smart materials
. **thermochromic coatings**
thermochromatic materials
. **thermochromic coatings**
RT energy absorption films
energy conservation
light transmission
reflectanceselective surfaces
temperature control
temperature sensitive paints
thermal control coatings
thin films
transmittance
vanadium oxides*thermochromic films**(added March 2005)*USE **thermochromic coatings****thermoclines**GS gradients
. temperature gradients
. . . **thermoclines**
RT oceanography
sea water
sound transmission
stratification
surface layers
surface temperature
thermohaline circulation
underwater acoustics**thermocouple pyrometers**GS measuring instruments
. temperature measuring instruments
. . . pyrometers
. . . **thermocouple pyrometers**
RT galvanometers
potentiometers (instruments)
radiation pyrometers
resistance thermometers
temperature measurement
thermocouples
thermoelement ammeters**thermocouples**

DEF Devices which convert thermal energy directly into electrical energy. In its basic form it consists of two dissimilar metallic electrical conductors connected in a closed loop. Each junction forms a thermocouple.

GS **thermocouples**
. thermopiles
RT constantan
indicating instruments
Manganin (trademark)
Peltier effects
potentiometers (instruments)
Seebeck effect
temperature measurement
temperature measuring instruments
temperature probes
thermocouple pyrometers
thermoelectric generators
thermoelectricity**thermodynamic coupling**GS coupling
. **thermodynamic coupling**
RT BCS theory
electron phonon interactions
superconductors (materials)**thermodynamic cycles**GS cycles
. **thermodynamic cycles**
. . . Brayton cycle
. . . Carnot cycle
. . . Otto cycle
. . . Rankine cycle
. . . Stirling cycle
RT adiabatic conditions
closed cycles
heat engines
internal combustion engines
laser propulsion
∞ strokes
thermodynamics**thermodynamic efficiency**

DEF In thermodynamics, the ratio of the work done by a heat engine to the total heat supplied by the heat source. Used for thermal efficiency.

UF *thermal efficiency*
GS efficiency
. **thermodynamic efficiency**

RT combustion efficiency
compressor efficiency
engines
exergy
heat sources
internal combustion engines
nozzle efficiency
power efficiency
propulsion system performance
propulsive efficiency
specific impulse
temperature
thermodynamics

thermodynamic equilibrium

DEF A very general result from statistical mechanics which states that if a system is in equilibrium, all processes which can exchange energy must be exactly balanced by the reverse process so that there is no net exchange of energy.

RT acid base equilibrium
adiabatic conditions
chemical equilibrium
∞ equilibrium
heat of dissociation
isentropic processes
isochoric processes
isoenergetic processes
isothermal processes
liquid-vapor equilibrium
local thermodynamic equilibrium
statistical mechanics

thermodynamic properties

UF *thermal properties*
GS **thermodynamic properties**
. enthalpy
. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. entropy
. free energy
. . Gibbs free energy
. surface energy
. thermal expansion
. thermal instability
. thermochemical properties
. . heat of combustion
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. thermophysical properties
. . critical point
. . critical pressure
. . critical temperature
. . emissivity
. . fusibility
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. . melting points
. . pyroelectricity
. . specific heat
. . supercritical pressures
. . thermal conductivity
. . thermal diffusion
. . thermal diffusivity
. . thermal stability
. . vapor pressure
. . volatility

RT chemical properties
diffusivity
emittance
∞ equilibrium
exergy
heat
heat balance
high temperature tests
Joule-Thomson effect
optical properties

∞ physical properties
Prandtl number
propellant properties
∞ properties
∞ Seebeck effect
solubility
temperature
tephigrams
thermal cycling tests
thermal radiation
thermal resistance
thermal shock
thermochemistry
thermodynamics
thermoluminescence
zero point energy

thermodynamics

DEF Study and application of principles describing the relation of heat transfer to various forms of energy, and the behaviors of physical systems where temperature is a significant feature. Used for heat equations, thermomechanics, and thermophysics.

UF *heat equations*
thermomechanics
thermophysics

GS thermodynamics

. aerothermodynamics
. combustion physics
. nonequilibrium thermodynamics

RT aerodynamics

∞ dynamics
engines
enthalpy
entropy
∞ equations
equations of state
∞ equilibrium
ergodic process
exergy
fluid mechanics
free energy
gas dynamics
heat
heat of fusion
heat of solution
heat transfer
internal energy
irreversible processes
isotherms
Joule-Thomson effect
Kirchhoff law of radiation
mechanical engineering
molecular relaxation
Mollier diagram
nonadiabatic conditions
nongray gas
nonisothermal processes
Onsager relationship
∞ paths
Pfaff equation
photothermal conversion
physical chemistry
plasma physics
plasmas (physics)
polytropic processes
Rankine cycle
Rayleigh equations
steam
thermochemistry
thermodynamic cycles
thermodynamic efficiency
thermodynamic properties
thermoelectric cooling
unsteady state

thermoelasticity

DEF Dependence of the stress distribution of an elastic solid on its thermal state, or of its thermal conductivity on the stress distribution.

GS mechanical properties
. elastic properties
. . **thermoelasticity**
. . . aerothermoelasticity

RT aeroelasticity
aerothermodynamics
hydroelasticity
thermoelectric generators

thermoelectric materials

thermoelectric conversion systems

USE **thermoelectric power generation**

thermoelectric cooling

UF *Ettingshausen coolers*
GS cooling
. **thermoelectric cooling**
RT cryogenics
Ettingshausen effect
heat pumps
Peltier effects
refrigerating
refrigerating machinery
thermodynamics
thermoelectricity
thermomagnetic cooling

thermoelectric generators

GS electric generators
. direct power generators
. . **thermoelectric generators**
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 10A
. . . SNAP 11
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . solar sea power plants
RT ASTEC solar turboelectric generator
fuel cells
∞ generators
magnetohydrodynamic generators
nuclear auxiliary power units
photoelectric generators
radioisotope batteries
SNAP
solar cells
solar generators
space station power supplies
thermionic converters
thermocouples
thermoelasticity
thermoelectricity

thermoelectric materials

RT ∞ materials
semiconductors (materials)
thermoelasticity
thermoelectricity

Thermoelectric Outer Planet Spacecraft

USE **TOPS (spacecraft)**

thermoelectric power generation

UF *thermoelectric conversion systems*
RT ∞ conversion
nuclear auxiliary power units
radioisotope heat sources
SNAP
thermoelectricity

thermoelectric spacecraft

USE **TOPS (spacecraft)**

thermoelectricity

UF *Thomson effect*
RT Ettingshausen effect
Peltier effects
Seebeck effect
thermionic emission
thermocouples
thermoelectric cooling
thermoelectric generators
thermoelectric materials
thermoelectric power generation
thermopiles
transport properties

thermoelement ammeters

GS measuring instruments
. ammeters
. . **thermoelement ammeters**

thermography

RT thermocouple pyrometers

thermograms

USE **recording instruments**
temperature measuring instruments

thermography

DEF Technique employing heat transfer transients.

RT infrared imagery
nondestructive tests
quantum well infrared photodetectors
temperature distribution
temperature measurement
thermal mapping

thermogravimetry

UF *thermal gravimetry*
RT chemical analysis
dehydration
pyrolysis
temperature effects
thermal decomposition
thermibalances
thermochemistry

thermohaline circulation

(added February 2002)

DEF Any water movements, including convection and large-scale currents, due to the joint action of temperature and salinity.

UF *THC (oceanography)*

GS circulation
. water circulation
. . **thermohaline circulation**
RT ocean currents
ocean dynamics
ocean temperature
salinity
sea water
thermoclines
upwelling water

thermo hydraulics

RT convective heat transfer
fluid dynamics
fluid flow
heat transmission
∞ hydraulics
hydrodynamics
laminar heat transfer
radiative heat transfer
thermal conductivity
thermal diffusion
turbulent heat transfer

thermoluminescence

GS emission
. light emission
. . luminescence
. . . **thermoluminescence**
RT temperature effects
thermodynamic properties

thermomagnadynamics

USE **thermomagnetic effects**

thermomagnetic cooling

UF *Nernst generators*
GS cooling
. **thermomagnetic cooling**
RT cryogenics
Ettingshausen effect
thermoelectric cooling

thermomagnetic effects

UF *thermomagnadynamics*
thermomagnetism
GS magnetic properties
. **thermomagnetic effects**
RT ∞ effects
Ettingshausen effect
Nernst-Ettingshausen effect

thermomagnetism

USE **thermomagnetic effects**

thermomechanical treatment

DEF Combination of material-forming processes with heat treatments in order to obtain

specific material properties.

GS **thermomechanical treatment**

. hot pressing
. . hot isostatic pressing

RT heat affected zone
heat treatment
∞ metallurgy
microstructure
plastic deformation
quenching (cooling)
∞ treatment

thermomechanics

USE **thermodynamics**

thermometers

DEF Devices for measuring temperature.
GS measuring instruments
. temperature measuring instruments
. . **thermometers**
. . . resistance thermometers
RT temperature control
temperature measurement
temperature scales

thermometry

USE **temperature measurement**

thermomigration

DEF A technique for doping semiconductors in which exact amounts of known impurities are made to migrate from the cool side of a wafer of pure semiconductor material to the hotter side when the wafer is heated in an oven.

RT electromigration
heat transfer
temperature gradients
thermocapillary migration

thermonuclear energy

USE **thermonuclear power generation**

thermonuclear explosions

GS explosions
. nuclear explosions
. . **thermonuclear explosions**
RT aerial explosions
Argus project
fission weapons
nuclear devices
nuclear vulnerability
underground explosions
underwater explosions

thermonuclear power generation

UF *thermonuclear energy*
GS nuclear electric power generation
. **thermonuclear power generation**
RT Astron thermonuclear reactor
controlled fusion
electric generators
∞ energy
pinch effect
plasma generators
stellarators
zeta thermonuclear reactor

thermonuclear propulsion

USE **nuclear propulsion**

thermonuclear reactions

GS nuclear reactions
. **thermonuclear reactions**
. . nuclear fusion
. . . controlled fusion
RT Astron thermonuclear reactor
high energy interactions
magnetohydrodynamics
pinch effect
plasmas (physics)
proton-proton reactions
Q values (nuclear physics)
radioactive decay
Scylla
stellarators
zeta thermonuclear reactor

thermophiles

RT algae
fungi

mesophiles
psychrophiles

thermophilic plants

GS plants (botany)
. **thermophilic plants**
. . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
RT algae

thermophoresis

DEF A process in which particles migrate in a gas under the influence of forces created by a temperature gradient.

RT aerosols
deposition
diffusion
particle diffusion
particle motion
particle size distribution
∞ separation
temperature effects
temperature gradients

thermophotovoltaic conversion

(added May 1995)

DEF A technique for efficiently converting heat or solar energy to electrical energy using heated surfaces coated with a selective emitter material whose photon emission peaks sharply in a narrow wavelength.

GS energy conversion
. solar energy conversion
. . photothermal conversion
. . . **thermophotovoltaic conversion**
. . photovoltaic conversion
. . . **thermophotovoltaic conversion**
RT emitters
energy conversion efficiency
solar cells
spacecraft power supplies
thermal energy

thermophysical properties

GS thermodynamic properties
. **thermophysical properties**
. . critical point
. . critical pressure
. . critical temperature
. . emissivity
. . fusibility
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. . melting points
. . pyroelectricity
. . specific heat
. . supercritical pressures
. . thermal conductivity
. . thermal diffusion
. . thermal diffusivity
. . thermal stability
. . vapor pressure
. . volatility
RT Peltier effects
∞ properties
Seebeck effect
surface energy
thermal expansion
thermoacoustic effects
thermochemistry

thermophysics

USE **thermodynamics**

thermopiles

DEF Transducers for converting thermal energy directly into electrical energy, composed of pairs of thermocouples which are connected either in series or in parallel. Batteries of thermocouples connected in series to form single compact units.

GS thermocouples
. **thermopiles**
transducers
. **thermopiles**
RT Dicke radiometers

indicating instruments
 temperature measuring instruments
 thermoelectricity

thermoplastic films
 DEF Materials with a linear macromolecular structure that will repeatedly soften when heated and harden when cooled.
 GS plastics
 . synthetic resins
 . . thermoplastic resins
 . . . **thermoplastic films**
 resins
 . synthetic resins
 . . thermoplastic resins
 . . . **thermoplastic films**
 RT ∞ films

thermoplastic resins
 GS plastics
 . synthetic resins
 . . **thermoplastic resins**
 . . . PEEK
 . . . quinoxalines
 . . . thermoplastic films
 resins
 . synthetic resins
 . . **thermoplastic resins**
 . . . PEEK
 . . . quinoxalines
 . . . thermoplastic films
 RT acrylic resins
 glass fiber reinforced plastics
 polyethylenes
 polymer blends
 polystyrene
 thermoplasticity
 thermosetting resins
 vulcanized elastomers

thermoplasticity
 GS mechanical properties
 . plastic properties
 . . **thermoplasticity**
 RT Bouguer law
 temperature effects
 thermoplastic resins

thermoreceptors
 GS anatomy
 . sense organs
 . . **thermoreceptors**
 receptors (physiology)
 . **thermoreceptors**
 RT body temperature
 sensitometry
 skin (anatomy)
 thermoregulation

thermoregulation
 DEF A mechanism by which mammals and birds balance heat gain and loss in order to maintain a constant body temperature. Used for body temperature regulation.
 UF *body temperature regulation*
 RT body temperature
 cold tolerance
 hibernation
 homeostasis
 hyperthermia
 hypothermia
 metabolism
 physiology
 regulatory mechanisms (biology)
 temperature control
 thermoreceptors

thermosetting resins
 GS plastics
 . synthetic resins
 . . **thermosetting resins**
 . . . epoxy resins
 . . . phenolic epoxy resins
 . . . furan resins
 . . . polyamide resins
 Kevlar (trademark)
 Nylon (trademark)
 . . . phenolic resins
 micarta
 . . . phenolic epoxy resins

resins
 . synthetic resins
 . . **thermosetting resins**
 . . . epoxy resins
 . . . phenolic epoxy resins
 . . . furan resins
 . . . polyamide resins
 Kevlar (trademark)
 Nylon (trademark)
 . . . phenolic resins
 micarta
 . . . phenolic epoxy resins
 RT Bakelite (trademark)
 composite materials
 formica
 glass fiber reinforced plastics
 laminates
 polyester resins
 reinforced plastics
 silicone resins
 thermoplastic resins

thermosiphons
 GS regenerators
 . **thermosiphons**
 RT convective heat transfer
 free convection
 ∞ radiators
 siphoning

thermosphere
 SN (ALTITUDES ABOVE APPROXIMATELY 80 KM)
 GS Earth atmosphere
 . upper atmosphere
 . . **thermosphere**
 . . . turbopause
 RT chemosphere
 Earth ionosphere
 Earth magnetosphere
 exosphere
 heterosphere
 homosphere

thermostability
 USE **thermal stability**

thermostats
 GS control equipment
 . regulators
 . . **thermostats**
 switches
 . electric switches
 . . **thermostats**
 RT automatic control
 controllers
 cryostats
 temperature control
 temperature measuring instruments

thermotropism
 USE **anisotropy**
temperature effects

thermoviscoelasticity
 GS mechanical properties
 . elastic properties
 . . viscoelasticity
 . . . **thermoviscoelasticity**
 RT irreversible processes
 stress-strain-time relations

thesauri
 RT indexes (documentation)
 indexing (information science)
 information retrieval
 KWIC indexes
 nomenclatures
 space glossaries
 terminology
 terms
 words (language)

theses
 GS documents
 . **theses**
 RT hypotheses

theta pinch
 GS pinch effect
 . plasma pinch

. . **theta pinch**
 RT laser plasma interactions
 plasma compression
 rotating plasmas
 screw pinch
 zeta pinch

thiamine
 UF *vitamin B*
 GS organic compounds
 . coenzymes
 . . **thiamine**
 . cyclic compounds
 . . heterocyclic compounds
 . . . **thiamine**
 vitamins
 . **thiamine**

thiazine (trademark)
 GS dyes
 . **thiazine (trademark)**
 nitrogen compounds
 . **thiazine (trademark)**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **thiazine (trademark)**
 sulfur compounds
 . **thiazine (trademark)**

thick films
 RT electronic packaging
 ∞ films
 integrated circuits
 microminiaturization
 printed circuits
 semiconducting films
 superconducting films
 thin films

thick plates
 DEF Plates of steel or other material that are over two inches thick. The exact definition of dimensions that constitute thickness varies.
 GS structural members
 . plates (structural members)
 . . **thick plates**
 RT flat plates
 metal plates
 Mindlin plates
 ∞ plates
 ∞ sheets
 thickness
 thin plates

thick walls
 GS walls
 . **thick walls**
 RT boiler plate
 bulkheads
 reinforcement (structures)
 structural members
 thin walls
 wall pressure
 wall temperature

∞ **thickeners**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT thickeners (equipment)
 thickeners (materials)

thickeners (equipment)
 GS separators
 . classifiers
 . . **thickeners (equipment)**
 RT coalescing
 precipitators
 ∞ thickeners

thickeners (materials)
 RT additives
 gels
 greases
 ∞ materials
 ∞ thickeners

thickness
 GS **thickness**
 . boundary layer thickness

thickness ratio

RT airfoil profiles
depth
diameters
dimensions
film thickness
length
optical thickness
spacing
target thickness
thick plates
thickness ratio
volume

thickness ratio
GS ratios
. aspect ratio
. . . **thickness ratio**

RT airfoil profiles
airfoils
dimensional analysis
fineness ratio
thickness
thin airfoils
thin wings

thigh
GS anatomy
. limbs (anatomy)
. . leg (anatomy)
. . . **thigh**
appendages
. leg (anatomy)
. . **thigh**

thin airfoils
GS airfoils
. **thin airfoils**
. . thin wings
. . . infinite span wings

RT airfoil profiles
thickness ratio

∞ **thin bodies**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT slender bodies
thin plates
thin walls
thin wings

thin films
SN (SOLID STATE PHYSICS AND ELECTRONICS)

DEF Films having a thickness much smaller than any lateral dimension, formed by deposition of a material or by a thinning process.

GS **thin films**
. diamond films
. energy absorption films
. ferromagnetic films
. monomolecular films
. . Langmuir-Blodgett films

RT amorphous silicon
atomic force microscopy
atomic layer epitaxy
carbon nitrides
coatings
computer storage devices
copper indium selenides
electrochromism
electrode film barriers
ferroelectric materials

∞ films
heterojunctions
indium selenides
integrated circuits
integrated optics
ion plating
Langmuir turbulence
metal films
microchannel plates
microminiaturization
miniature electronic equipment
molecular electronics
nanoparticles
oxide films
parametrons
pellicle
plating
praetersonic devices

rectifiers
semiconducting films
silicon films
solid state devices

∞ solid state physics
sputtering gages
squeeze films
superconducting films
thermochromic coatings
thick films
wafers
YBCO superconductors
yttria-stabilized zirconia

thin layer chromatography

GS chemical tests
. chemical analysis
. . chromatography
. . . **thin layer chromatography**

RT gas chromatography
monomolecular films

thin plates

SN (EXCLUDES THIN SURFACE COATINGS AND FILMS)

GS structural members
. plates (structural members)
. . **thin plates**

RT diaphragms (mechanics)
flat plates
foils (materials)
metal plates
panels
parallel plates
∞ plates
∞ sheets
thick plates
∞ thin bodies

thin walled shells

GS shells (structural forms)
. **thin walled shells**

RT cylindrical shells
membrane structures
metal shells
orthotropic shells
reinforced shells
skin (structural member)
spherical shells
stressed-skin structures
toroidal shells

thin walls

GS walls
. **thin walls**

RT bulkheads
diaphragms (mechanics)
partitions (structures)
skin (structural member)
thick walls
∞ thin bodies

thin wings

GS airfoils
. thin airfoils
. . **thin wings**
. . . infinite span wings
. wings
. . **thin wings**
. . . infinite span wings

RT airfoil profiles
fixed wings
flexible wings
thickness ratio
∞ thin bodies
uncambered wings

thinners

USE **solvents**

thiols

UF *dithiols*
mercaptan
mercapto compounds

GS sulfur compounds
. **thiols**
. . cysteine
. . dimercaprol

RT alcohols
∞ chemical compounds

phenols

thiophenes

(added January 1995)

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **thiophenes**

RT benzene
drugs
furans
pyrroles

thioplastics

RT elastomers
plastics
sulfides

thioureas

GS nitrogen compounds
. amides
. . ureas
. . . **thioureas**

thiuronium

GS nitrogen compounds
. amides
. . ureas
. . . **thiuronium**
organic compounds
. amines
. . **thiuronium**

thixotropic propellants

USE **gelled rocket propellants**

thixotropy

DEF The property of material that enables it to stiffen in a relatively short time on standing, but upon agitation or manipulation to change to a very soft consistency or to a fluid of high viscosity, the process being completely reversible.

RT gelation
gels
liquefaction
nonNewtonian flow

∞ physical properties
semisolids
solubility
viscosity

Thomas-Fermi model

UF *Thomas-Fermi theory*

GS models
. mathematical models
. . **Thomas-Fermi model**

RT atomic structure
electron distribution
plasma composition
quantum statistics

Thomas-Fermi theory

USE **Thomas-Fermi model**

Thomson effect

USE **thermoelectricity**

Thomson scattering

GS scattering
. wave scattering
. . electromagnetic scattering
. . . **Thomson scattering**

RT electromagnetic radiation

Thor Able rocket vehicle

GS launch vehicles
. Thor launch vehicles
. . **Thor Able rocket vehicle**
. Thorad launch vehicles
. . **Thor Able rocket vehicle**
rocket vehicles
. multistage rocket vehicles
. . Thor launch vehicles
. . . **Thor Able rocket vehicle**
. Thorad launch vehicles
. . **Thor Able rocket vehicle**

RT Explorer 6 satellite
liquid propellant rocket engines
Pioneer 1 space probe
Pioneer 5 space probe

- solid propellant rocket engines
- TIROS 1 satellite
- Thor Agena launch vehicle**
 - GS launch vehicles
 - . Thor launch vehicles
 - . . **Thor Agena launch vehicle**
 - . Thorad launch vehicles
 - . . . **Thor Agena launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . Thor launch vehicles
 - . . . **Thor Agena launch vehicle**
 - . Thorad launch vehicles
 - . . . **Thor Agena launch vehicle**
 - RT Agena A rocket vehicle
 - Agena B Ranger Program
 - Agena rocket vehicles
 - Discoverer satellites
 - Explorer 31 satellite
 - Explorer 34 satellite
 - Explorer 35 satellite
 - Explorer 36 satellite
 - liquid propellant rocket engines
 - Nimbus 1 satellite
 - Nimbus 2 satellite
 - Nimbus satellites
 - OGO-3
- Thor Delta launch vehicle**
 - UF *Echo 1 carrier rocket*
 - GS launch vehicles
 - . Thor launch vehicles
 - . . **Thor Delta launch vehicle**
 - . Thorad launch vehicles
 - . . . **Thor Delta launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - . . Thor launch vehicles
 - . . . **Thor Delta launch vehicle**
 - . Thorad launch vehicles
 - . . . **Thor Delta launch vehicle**
 - RT Ariel satellites
 - Echo 1 satellite
 - Explorer satellites
 - liquid propellant rocket engines
 - OSO
 - Relay satellites
 - solid propellant rocket engines
 - SYNCOM satellites
 - Telstar satellites
- Thor launch vehicles**
 - GS launch vehicles
 - . **Thor launch vehicles**
 - . . Thor Able rocket vehicle
 - . . Thor Agena launch vehicle
 - . . Thor Delta launch vehicle
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **Thor launch vehicles**
 - . . . Thor Able rocket vehicle
 - . . . Thor Agena launch vehicle
 - . . . Thor Delta launch vehicle
 - RT liquid propellant rocket engines
 - solid propellant rocket engines
 - Thorad launch vehicles
 - ∞ vehicles
- Thorad launch vehicles**
 - GS launch vehicles
 - . **Thorad launch vehicles**
 - . . Thor Able rocket vehicle
 - . . Thor Agena launch vehicle
 - . . Thor Delta launch vehicle
 - rocket vehicles
 - . **Thorad launch vehicles**
 - . . Thor Able rocket vehicle
 - . . Thor Agena launch vehicle
 - . . Thor Delta launch vehicle
 - RT liquid propellant rocket engines
 - Thor launch vehicles
 - ∞ vehicles
- thorax**
 - GS anatomy
 - . **thorax**
 - RT breast
 - chest
 - diaphragm (anatomy)
- sternum
- viscera
- thorium**
 - GS chemical elements
 - . actinide series
 - . . **thorium**
 - . . . thorium isotopes
 - metals
 - . actinide series
 - . . **thorium**
 - . . . thorium isotopes
 - RT nuclear fuels
- thorium 228*
- USE **thorium isotopes**
- thorium 230*
- USE **thorium isotopes**
- thorium 234*
- USE **thorium isotopes**
- thorium alloys**
 - GS alloys
 - . **thorium alloys**
 - RT nuclear fuels
- thorium compounds**
 - GS actinide series compounds
 - . **thorium compounds**
 - . . thorium fluorides
 - . . thorium oxides
 - RT ceramic nuclear fuels
 - ∞ chemical compounds
 - ∞ metal compounds
 - nuclear fuels
- thorium fluorides**
 - GS actinide series compounds
 - . thorium compounds
 - . . **thorium fluorides**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **thorium fluorides**
 - . halides
 - . . fluorides
 - . . . metal fluorides
 - **thorium fluorides**
 - . metal halides
 - . . metal fluorides
 - **thorium fluorides**
- thorium isotopes**
 - UF *thorium 228*
 - thorium 230*
 - thorium 234*
 - GS chemical elements
 - . actinide series
 - . . thorium
 - . . . **thorium isotopes**
 - . nuclides
 - . . isotopes
 - . . . **thorium isotopes**
 - metals
 - . actinide series
 - . . thorium
 - . . . **thorium isotopes**
- thorium oxides**
 - GS actinide series compounds
 - . thorium compounds
 - . . **thorium oxides**
 - chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **thorium oxides**
 - RT dioxides
- thoron*
- USE **radon isotopes**
- threads**
 - SN (EXCLUDES TEXTILES AND FILAMENTARY FORMS)
 - RT bolts
 - nuts (fasteners)
- threat evaluation**
 - DEF The evaluation of the potential harm of an approaching aircraft or other objects.
 - RT aircraft hazards
 - aircraft safety
 - collision avoidance
 - midair collisions
 - radar tracking
 - situational awareness
 - warning systems
- three axis stabilization**
 - DEF Maintenance of a stable platform in a desired 3-axis orientation in inertial space by utilizing gyros and accelerometers and which is independent of vehicle motion.
 - GS stabilization
 - . **three axis stabilization**
 - RT inertial platforms
 - satellite attitude control
 - satellite orientation
 - stabilized platforms
- three body problem**
 - DEF That problem in classical celestial mechanics which treats the motion of a small body, usually with negligible mass, relative to and under the gravitational influence of two other finite point masses.
 - RT celestial mechanics
 - four body problem
 - many body problem
 - orbits
 - perturbation
 - ∞ problems
 - retrograde orbits
 - triple stars
 - Trojan asteroids
 - Trojan orbits
 - two body problem
- three dimensional bodies**
 - RT aerodynamic configurations
 - ∞ bodies
 - boundary value problems
 - flow distribution
- three dimensional boundary layer**
 - GS boundary layers
 - . **three dimensional boundary layer**
 - RT axisymmetric flow
 - boundary layer transition
 - compressible boundary layer
 - laminar boundary layer
 - ∞ layers
 - secondary flow
 - turbulent boundary layer
 - velocity distribution
- three dimensional composites**
 - GS composite materials
 - . **three dimensional composites**
 - RT braided composites
 - fiber composites
 - ∞ materials
 - woven composites
- three dimensional flow**
 - GS fluid flow
 - . parallel flow
 - . . **three dimensional flow**
 - . . . Karman-Bodewadt flow
 - . . . secondary flow
 - translational motion
 - . three dimensional motion
 - . . **three dimensional flow**
 - . . . Karman-Bodewadt flow
 - . . . secondary flow
 - RT axial flow
 - conical flow
 - flow geometry
 - helical flow
 - one dimensional flow
 - Roshko prediction
 - spherical waves
 - two dimensional flow

three dimensional models

wedge flow

three dimensional models

(added August 1988)

GS models

. **three dimensional models**

RT computational grids
computer aided design
computerized simulation
mathematical models
rapid prototyping
two dimensional models

three dimensional motion

GS translational motion

. **three dimensional motion**

. . three dimensional flow
. . . Karman-Bodewadt flow
. . . secondary flow

RT degrees of freedom
optical flow (image analysis)

threshold currents

GS electric current

. **threshold currents**

RT lasers
threshold voltage
∞ thresholds

threshold detectors (dosimeters)

GS measuring instruments
. radiation measuring instruments
. . radiation detectors
. . . dosimeters

. . . . **threshold detectors (dosimeters)**

RT ionization chambers
∞ thresholds

threshold gates

GS circuits
. gates (circuits)
. . **threshold gates**
. logic circuits
. . **threshold gates**

RT ∞ thresholds
trigger circuits

threshold logic

GS mathematical logic
. set theory
. . **threshold logic**

RT gates (circuits)
∞ logic
logic circuits
∞ thresholds
transistor logic
trigger circuits

threshold shift

USE **thresholds**

threshold voltage

DEF The threshold energy necessary to remove an electron from the bound position to the conduction band in solid state devices.

GS potential energy
. electric potential
. . **threshold voltage**

RT photovoltages
photovoltaic effect
semiconductor junctions
silicon junctions
solid state devices
threshold currents
∞ thresholds
volt-ampere characteristics

∞ thresholds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

DEF Generally, the minimum values of signals that can be detected by the systems or sensors under consideration. Used for threshold shift.

UF *threshold shift*

RT doors
entrances
noise threshold
resolution

responses
sensitivity
threshold currents
threshold detectors (dosimeters)
threshold gates
threshold logic
threshold voltage
thresholds (perception)

thresholds (perception)

UF *sensory thresholds*
RT acuity
adaptation
audiometry
auditory perception
auditory sensation areas
auditory stimuli
chronaxy
frequency response
hearing
light adaptation
limen
neurology
perception
photosensitivity
sensitivity
∞ thresholds
vision
visual perception

throats

SN (NON BIOLOGICAL)
DEF The narrowest portion of a constricted duct, as in a diffuser, or a venturi tube. SN (non biological).
RT carburetors
∞ channels
chokes (restrictions)
ducts
nozzle geometry
nozzle inserts
nozzle walls
orifices

thrombin

GS biopolymers
. proteins
. . enzymes
. . . **thrombin**
body fluids
. blood
. . **thrombin**
organic compounds
. proteins
. . enzymes
. . . **thrombin**
RT blood coagulation
fibrin
fibrinogen
hemostatics
prothrombin
thromboplastin

thrombocytes

RT blood coagulation
clotting

thrombopenia

GS diseases
. **thrombopenia**
RT coagulation

thromboplastin

GS body fluids
. blood
. . **thromboplastin**
RT blood coagulation
clotting
hemostatics
homeostasis
platelets
thrombin

thrombosis

GS diseases
. **thrombosis**
RT blood coagulation
infarction

myocardial infarction

throttling

RT Joule-Thomson effect
variable thrust

throwing

RT ejection
spreading

thrust

DEF The pushing or pulling force developed by an aircraft engine or a rocket engine. The force exerted in any direction by a fluid jet or by a powered screw, as, the thrust of an antitorque rotor. Specifically in rocketry, $F(\text{thrust}) = mv$ where m is propellant mass flow and v is exhaust velocity relative to the vehicle. Used for thrust power.

UF *thrust power*

GS **thrust**

. high thrust
. jet thrust
. leading edge thrust
. low thrust
. . microthrust
. rocket thrust
. . retrothrust
. static thrust
. variable thrust

RT acceleration (physics)

auxiliary propulsion
burning time
dual thrust nozzles
∞ force
jet engines
nozzle thrust coefficients
∞ power
propulsion
∞ reaction
rocket engines
rocket propellants
specific impulse
total impulse

thrust augmentation

DEF The increasing of the thrust of an engine or power plant, especially of a jet engine and usually for a short period of time, over the thrust normally developed.

GS augmentation

. **thrust augmentation**

RT afterburning
Coanda effect
high thrust
secondary injection
shrouded propellers
variable thrust
water injection

thrust bearings

GS bearings
. **thrust bearings**
RT antifriction bearings
ball bearings
gas bearings
roller bearings

thrust chamber pressure

GS pressure
. **thrust chamber pressure**

thrust chambers

UF *rocket chambers*
RT arc chambers
∞ chambers
combustion chambers
divergent nozzles
rocket engine cases

thrust control

GS **thrust control**
. thrust vector control
RT attitude control
∞ control
control rockets
engine control
jet control
∞ reaction control
rocket engine control

- satellite control
turbojet engine control
variable thrust
- thrust distribution**
DEF The location of areas of upward thrust (lift) on wings, airfoils, etc.
RT aerodynamic forces
∞ distribution
force distribution
leading edges
pressure distribution
vortices
wing planforms
- thrust faults*
USE **geological faults**
- thrust loads**
GS loads (forces)
. dynamic loads
. . **thrust loads**
RT aerodynamic loads
axial compression loads
axial loads
compression loads
jet thrust
rocket thrust
structural design criteria
- thrust measurement**
GS mechanical measurement
. **thrust measurement**
RT accelerometers
dynamometers
∞ force
∞ measurement
- thrust power*
USE **thrust**
- thrust programming**
UF *optimum thrust programming*
GS scheduling
. programming (scheduling)
. . **thrust programming**
RT flight mechanics
flight optimization
flight plans
orbital mechanics
parking orbits
propulsive efficiency
trajectory control
- thrust reversal**
RT aircraft brakes
brakes (for arresting motion)
braking
deceleration
- thrust termination**
GS stopping
. **thrust termination**
RT burnout
rocket thrust
stage separation
variable thrust
- thrust vector control**
UF *TVC (control)*
GS attitude control
. directional control
. . **thrust vector control**
flight control
. **thrust vector control**
thrust control
. **thrust vector control**
RT air slew missiles
automatic control
automatic flight control
∞ control
guide vanes
gyrostabilizers
jet vanes
liquid injection
maneuverable spacecraft
missile control
nozzle thrust coefficients
rocket engines
secondary injection
- spacecraft control
variable thrust
Vernier engines
X-31 aircraft
- ∞ **thrusters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ion engines
magnetoplasmadynamic thrusters
pulsed inductive thrusters
pulsed plasma thrusters
rocket engines
- thrust-weight ratio**
GS ratios
. **thrust-weight ratio**
RT acceleration (physics)
mass ratios
pressure ratio
rocket engines
- thulium**
GS chemical elements
. rare earth elements
. . **thulium**
. . . thulium isotopes
metals
. rare earth elements
. . **thulium**
. . . thulium isotopes
- thulium 171*
USE **thulium isotopes**
- thulium compounds**
GS rare earth compounds
. **thulium compounds**
RT ∞ chemical compounds
∞ metal compounds
- thulium isotopes**
UF *thulium 171*
GS chemical elements
. nuclides
. . isotopes
. . . **thulium isotopes**
. rare earth elements
. . thulium
. . . **thulium isotopes**
metals
. rare earth elements
. . thulium
. . . **thulium isotopes**
- Thunderchief aircraft*
USE **F-105 aircraft**
- thunderstorms**
DEF Local storms resulting from warm humid air rising in an unstable environment.
GS storms
. storms (meteorology)
. . rainstorms
. . . **thunderstorms**
RT anvil clouds
arc clouds
atmospherics
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
cold fronts
cumulonimbus clouds
downbursts
elves
fronts (meteorology)
hail
hailstorms
lightning
lightning suppression
microbursts (meteorology)
rain
sprites (atmospheric physics)
storm damage
warm fronts
wind (meteorology)
- thymidine**
GS acids
. **thymidine**
- bases (chemical)
. **thymidine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . **thymidine**
RT alloxan
deoxyribonucleic acid
nucleosides
- thymine**
GS acids
. **thymine**
nitrogen compounds
. **thymine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . **thymine**
RT alloxan
deoxyribonucleic acid
- thymol**
GS hydroxyl compounds
. alcohols
. . phenols
. . . **thymol**
- thymus gland**
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **thymus gland**
. immune systems
. lymphatic system
. . . **thymus gland**
- thyratrons**
GS electron tubes
. gas discharge tubes
. . **thyratrons**
microwave equipment
. **thyratrons**
rectifiers
. **thyratrons**
RT current converters (AC to DC)
silicon controlled rectifiers
thyristors
- thyristors**
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **thyristors**
. . . . silicon controlled rectifiers
rectifiers
. **thyristors**
. . silicon controlled rectifiers
RT junction transistors
p-n-p-n junctions
thyratrons
trigger circuits
triodes
- thyroid gland**
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **thyroid gland**
RT calcium metabolism
hypometabolism
thyroxine
- thyroxine**
GS acids
. amino acids
. . **thyroxine**
organic compounds
. amino acids
. . **thyroxine**
secretions
. endocrine secretions
. . hormones
. . . **thyroxine**
RT thyroid gland
- Tibet**
GS nations

tibia

. **Tibet**
RT Asia
Bhutan
Himalayas

tibia
GS anatomy
. musculoskeletal system
. . bones
. . . **tibia**
RT leg (anatomy)

TID
USE **traveling ionospheric disturbances**

tidal flats
GS landforms
. flats (landforms)
. . **tidal flats**
RT aquaculture
coasts
estuaries
fisheries
marshlands
mud
oceans
shorelines
tides

tidal oscillation
USE **tides**

tidal waves
GS water waves
. **tidal waves**
RT ocean currents
ocean surface
oceanography
sea breeze
sea roughness
seismology
tsunami waves
∞ waves
wind (meteorology)

tide powered generators
RT electric generators
energy conversion efficiency
∞ generators
ocean currents
ocean surface
oceanography
oceans
sea roughness
tidepower
tides
waterwave energy conversion
waterwave powered machines

tide powered machines
RT ∞ machinery
ocean currents
ocean surface
sea roughness
tidepower
tides
waterwave energy conversion
waterwave powered machines

tidepower
GS renewable energy
. **tidepower**
RT clean energy
Earth resources
∞ energy sources
ocean currents
ocean surface
oceanography
sea roughness
tide powered generators
tide powered machines
tides
waterwave energy
waterwave energy conversion
waterwave powered machines

tides

DEF The periodic rising and falling of the Earth's oceans and atmosphere. It results from the gravitational forces of the moon and sun

acting upon the rotating Earth. The disturbance actually propagates as a wave through the atmosphere and along the surface of the waters of the Earth. Atmospheric tides are always so designated, whereas the term tide alone commonly implies the oceanic variety. Used for tidal oscillation.

UF *tidal oscillation*
GS **tides**
. atmospheric tides
. Earth tides
. lunar tides
RT coastal currents
estuaries
flood damage
floods
ocean currents
ocean surface
oceanography
pressure ice
sea roughness
tidal flats
tide powered generators
tide powered machines
tidepower
water currents
waterwave energy conversion
waterwave powered machines
wetlands

tiebolts

GS fasteners
. bolts
. . **tiebolts**

TIG welding

USE **gas tungsten arc welding**

tightness

RT clearances
closures
proximity

tiles

DEF Ceramic surfacing units, usually relatively thin in relation to facial area, made from clay or a mixture of clay and other ceramic materials, called the body of the tile having either a "glazed" or "unglazed" face and fired above red heat in the course of manufacture to a temperature sufficiently high to produce specific physical properties and characteristics.

RT ceramics
floors
grout
Ludox (trademark)
masonry
walls

tilt

USE **attitude (inclination)**

tilt rotor aircraft

DEF A type of convertible aircraft which takes off, hovers, and lands as a helicopter but is converted into a fixed wing aircraft by the 90-degree tilting of its rotor or rotors for use as a propeller for forward flight.

GS V/STOL aircraft
. rotary wing aircraft
. . **tilt rotor aircraft**
. . . V-22 aircraft
. . . XV-15 aircraft

RT ∞ aircraft
helicopters
rotor stator interactions
tilting rotors

Tilt Rotor Research Aircraft Program

GS programs
. NASA programs
. . **Tilt Rotor Research Aircraft Program**

RT ∞ aircraft
helicopters
rotary wings
V-22 aircraft

XV-15 aircraft

tilt wing aircraft

UF *pivoted wing aircraft*
GS **tilt wing aircraft**
. CL-84 aircraft
. L-29 jet trainer
. VZ-2 aircraft
. XC-142 aircraft
RT ∞ aircraft
fan in wing aircraft
research aircraft
short takeoff aircraft
V-22 aircraft
V/STOL aircraft
vertical takeoff aircraft
X-22 aircraft

tilted propellers

GS propellers
. **tilted propellers**
RT helicopter propeller drive

tilting

USE **attitude (inclination)**

tilting rotors

GS airfoils
. wings
. . rotary wings
. . . **tilting rotors**
rotating bodies
. rotors
. . rotary wings
. . . **tilting rotors**
RT tilt rotor aircraft
V-22 aircraft
XV-3 aircraft

tiltmeters

DEF Instruments used to measure small changes in the tilt of the Earth's surface usually in relation to a liquid-level surface or to the rest position of a pendulum.

GS measuring instruments
. **tiltmeters**
RT attitude (inclination)
geophysics
seismographs

tilt-table test

(added August 2004)

DEF A test to evaluate homodynamic or cardiovascular response that uses a tilt-adjustable table to maintain a head-down or head-up body posture.

GS physiological tests
. **tilt-table test**
RT aerospace medicine
bioastronautics
cardiovascular system
gravitational physiology
head down tilt
head up tilt
hemodynamic responses
hindlimb suspension
lower body negative pressure
orthostatic tolerance
physiological responses
supine position
weightlessness simulation

timber identification

GS identifying
. **timber identification**
recognition
. **timber identification**
RT conifers
crop identification
deciduous trees
Earth resources
evaluation
forests
trees (plants)

timber inventory

GS inventories
. **timber inventory**
RT aerial photography
Earth resources

forest management
forests
infrared photography
photography
reforestation
satellite-borne photography
trees (plants)

timber vigor

RT foliage
forests
growth
timberline
trees (plants)

timberline

RT dendrochronology
forests
growth
high altitude environments
polar regions
timber vigor
trees (plants)

time

DEF The hour of the day reckoned by the position of a celestial reference point relative to a reference celestial median. Used for duration.

UF *duration*

GS **time**

. access time
. burning time
. downtime
. ephemeris time
. flight time
. MTBF
. reaction time
. . chronaxy
. relaxation time
. response time (computers)
. sidereal time
. testing time
. transit time
. universal time

RT

calendars
celestial geodesy
chronology
exposure
intervals
launch dates
month
prolongation
relativistic effects
schedules
synchronism
time measurement
units of measurement

time constant

DEF Generally, the time required for an instrument to indicate a given percentage of the final reading resulting from an input signal; the relaxation time of an instrument.

GS constants

. **time constant**
. . perceptual time constant

RT

access time
 ∞ constant
damping
dynamic characteristics
dynamic response
impedance
LC circuits
RC circuits
reaction time
relaxation time
RL circuits
RLC circuits
 ∞ time response
transfer functions
transient response

time delay

USE **time lag**

time dependence

GS dependence
. **time dependence**
RT ∞ Helmholtz equations
spatial dependencies

stochastic processes
temporal distribution
 ∞ time response

time discrimination

RT comparator circuits
sensory discrimination

time division multiple access

DEF Radio transmission method in which each station of a satellite communication network is assigned a time schedule for transmission (in lieu of frequency division); a multi-element antenna with an adaptive null steering array eliminates interference. Used for TDMA.

UF *TDMA*

GS telecommunication
. multiple access
. . **time division multiple access**
. . radio communication
. . . radio relay systems
. . . **time division multiple access**
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . **time division multiple access**
RT Aloha system
channel noise
frequency division multiple access
multichannel communication
packet switching
pulse communication
satellite networks
switching
wideband communication

time division multiplexing

DEF A system for the transmission of information about two or more quantities (measurands) over a common channel by dividing available time intervals among the measurands to form a composite pulse train.

GS transmission

. multiplexing
. . **time division multiplexing**

RT

demultiplexing
frequency division multiplexing
pulse modulation
telemetry
television transmission
wavelength division multiplexing

time domain analysis

(added April 1999)

GS analysis (mathematics)

. **time domain analysis**
. . finite difference time domain
method

RT

control systems design
dynamic response
parameter identification
signal processing
 ∞ time response

time functions

GS functions (mathematics)

. **time functions**
rates (per time)
square waves
stochastic processes
wave functions
waveforms
wavelet analysis

time lag

DEF The total time between the application of a signal to a measuring instrument and the full indication of that signal within the uncertainty of the instrument. Used for chronotrons, lag (delay), and time delay.

UF *chronotrons*

lag (delay)

time delay

RT

cepstral analysis
delay
delay lines
electric relays
hysteresis
inventory controls

reaction time
refractory period
responses
schedules
 ∞ time response
transmission rate (communications)

time lapse photography

USE **chronophotography**

time marching

DEF Techniques for solving a problem with partial differential equations that have a time derivation.

RT finite difference theory
numerical analysis
spatial marching

time measurement

UF

dating
epochs
timing

GS

time measurement

RT

. clock paradox
atomic clocks
chronometers
clocks
consecutive events
frequency measurement
 ∞ measurement
oscillographs
radioactive age determination
rates (per time)
sidereal time
stroboscopes
synchronism
time
 ∞ time response
time synchronization
timing devices
velocity
velocity measurement
windows (intervals)

time measuring instruments

GS measuring instruments

. **time measuring instruments**

. . clocks
. . . atomic clocks
. . . autonomous spacecraft clocks
. . . chronometers
. . timing devices

time of flight spectrometers

GS measuring instruments

. spectrometers

. . **time of flight spectrometers**

RT

spectroscopy

time optimal control

GS automatic control

. optimal control

. . **time optimal control**

optimization

. optimal control

. . **time optimal control**

RT ∞ control

 ∞ time response

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

access time
delay
response bias
responses
temporal distribution
time constant
time dependence
time domain analysis
time lag
time measurement

time series analysis

RT ∞ applications of mathematics

autocorrelation
autoregressive moving average
correlation
curve fitting
data sampling
extrapolation

time sharing

- forecasting
- Fourier analysis
- Kalman-Schmidt filtering
- maximum entropy method
- scheduling
- ∞ statistics
- stochastic processes
- trend analysis
- trends

time sharing

DEF A mode of operation that permits two or more users to execute computer programs concurrently on the same computer system by interleaving the execution of the program. Time sharing may be implemented by time slicing, priority-based interrupts, or other scheduling methods.

RT computer programming
coordination
multiple output programs
multiprocessing (computers)
multiprogramming
pipelining (computers)
run time (computers)

time signals

DEF Accurate signals marking specified times or time intervals. They are used primarily for determining errors of timepieces. Such signals are usually sent from an observatory by radio or telegraph.

RT clock paradox
frequency standards
picosecond pulses
pulse duration
∞ signals
time synchronization
timing devices

time synchronization

(added December 1998)

GS synchronism
. **time synchronization**
RT clocks
frequency standards
frequency synchronization
Global Positioning System
time measurement
time signals
universal time

time temperature parameter

RT aging (metallurgy)
austenitic stainless steels
embrittlement
fracture mechanics
long term effects
metallography
precipitation hardening
temperature effects

timers

USE **timing devices**

timing

USE **time measurement**

timing devices

UF *timers*
GS measuring instruments
. time measuring instruments
. . . **timing devices**
RT chronometers
clock paradox
clocks
dwell
pendulums
tachometers
time measurement
time signals

Timoshenko beams

DEF Simple structural units used by Stephen Timoshenko as models in developing analysis equations for deflections and deformations of beams and columns under load.

GS structural members
. beams (supports)
. . . **Timoshenko beams**

RT columns (supports)
Euler-Bernoulli beams
trusses

tin

GS chemical elements
. **tin**
. . tin isotopes
metals
. **tin**
. . tin isotopes

tin alloys

GS alloys
. **tin alloys**
. . babbitt metal
RT bearing alloys
bismuth alloys
indium alloys
solders
stannides
Zircalloys (trademark)

tin compounds

GS **tin compounds**
. organic tin compounds
. stannates
. stannides
. . niobium stannides
. tin oxides
. tin tellurides
RT ∞ chemical compounds
∞ Group 4A compounds
∞ metal compounds

tin isotopes

GS chemical elements
. nuclides
. isotopes
. . . **tin isotopes**
. tin
. . **tin isotopes**
metals
. tin
. . **tin isotopes**

tin oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **tin oxides**
tin compounds
. **tin oxides**
RT SIS (semiconductors)

tin tellurides

GS chalcogenides
. tellurides
. . **tin tellurides**
tellurium compounds
. tellurides
. . **tin tellurides**
tin compounds
. **tin tellurides**

tip driven rotors

UF *hot cycle propulsion system*
GS airfoils
. wings
. . rotary wings
. . . **tip driven rotors**
rotating bodies
. rotors
. . rotary wings
. . . **tip driven rotors**
RT XV-9A aircraft

tip speed

GS rates (per time)
. **tip speed**
velocity
. **tip speed**
RT angular velocity
critical velocity
rotor speed

tip vanes

DEF Wing mounted rotor tips with their spans oriented approximately parallel to the local free stream to increase the capture area

and power output of the rotor.

GS rotating bodies
. rotors
. . **tip vanes**
turbomachinery
. turbines
. . wind turbines
. . . **tip vanes**

tips

GS **tips**
. blade tips
. crack tips
. nose tips
. wing tips
RT airfoil profiles
edges

tires

GS **tires**
. aircraft tires
RT blowouts
inflatable structures
landing gear
rollers
toroidal wheels
treads
vehicle wheels
wheel brakes
wheels

TIROS 1 satellite

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 1 satellite**
RT Thor Able rocket vehicle

TIROS 2 satellite

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 2 satellite**
RT Delta launch vehicle

TIROS 3 satellite

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 3 satellite**
RT Delta launch vehicle

TIROS 4 satellite

UF *TIROS D satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 4 satellite**
RT Delta launch vehicle

TIROS 5 satellite

UF *TIROS E satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 5 satellite**
RT Delta launch vehicle

TIROS 6 satellite

UF *TIROS F satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 6 satellite**
RT Delta launch vehicle

TIROS 7 satellite

UF *TIROS G satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 7 satellite**
RT Delta launch vehicle

TIROS 8 satellite

UF *TIROS H satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 8 satellite**

- RT Delta launch vehicle
- TIROS 9 satellite**
 UF *TIROS wheel satellite*
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 9 satellite**
 RT Delta launch vehicle
- TIROS 10 satellite**
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 10 satellite**
 RT Delta launch vehicle
- TIROS D satellite*
 USE **TIROS 4 satellite**
- TIROS E satellite*
 USE **TIROS 5 satellite**
- TIROS F satellite*
 USE **TIROS 6 satellite**
- TIROS G satellite*
 USE **TIROS 7 satellite**
- TIROS H satellite*
 USE **TIROS 8 satellite**
- TIROS M**
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS M**
 RT ITOS 1
 ITOS 2
 ITOS 3
 ITOS 4
 ITOS satellites
- TIROS N series satellites**
 DEF A new term for the family of satellites designed to prototype Tiros N.
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS N series satellites**
 NOAA 6 satellite
 RT Advanced Microwave Sounding Unit
 Advanced Very High Resolution Radiometer
 ITOS 1
 ITOS 2
 ITOS 3
 ITOS 4
 ITOS satellites
 NOAA 7 satellite
 TIROS operational satellite system
- TIROS operational satellite system**
 RT cloud photography
 ITOS 1
 ITOS 2
 ITOS 3
 ITOS 4
 satellite observation
 ∞ systems
 TIROS N series satellites
- TIROS project**
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **TIROS project**
 . projects
 . . **TIROS project**
 . space programs
 . . NASA space programs
 . . . **TIROS project**
 RT cloud photographs
 cloud photography
 meteorological satellites
- TIROS satellites**
 DEF A series of NASA and NOAA satellites launched to monitor the Earth's weather. Those funded by NASA are called TIROS, and those funded by NOAA are called ESSA.
- GS artificial satellites
 . meteorological satellites
 . . **TIROS satellites**
 . . . ITOS satellites
 ITOS 1
 ITOS 2
 ITOS 3
 ITOS 4
 . . . TIROS 1 satellite
 . . . TIROS 2 satellite
 . . . TIROS 3 satellite
 . . . TIROS 4 satellite
 . . . TIROS 5 satellite
 . . . TIROS 6 satellite
 . . . TIROS 7 satellite
 . . . TIROS 8 satellite
 . . . TIROS 9 satellite
 . . . TIROS 10 satellite
 . . . TIROS M
 . . . TIROS N series satellites
 NOAA 6 satellite
 RT cloud photography
 ESSA satellites
 polar orbits
 satellite observation
- TIROS wheel satellite*
 USE **TIROS 9 satellite**
- tissue culturing**
(added August 2004)
 DEF Maintaining or growing of tissue, organ primordia, or the whole or part of an organ in vitro so as to preserve its architecture and/or function. Tissue culturing includes both organ culturing and cell culturing.
 GS culture techniques
 . **tissue culturing**
 RT cell culturing
 clone cells
 culture media
 cultured cells
 microbiology
 organ culturing
 tissue engineering
- tissue engineering**
(added October 2000)
 DEF Discipline for the in vitro growth and maintenance of tissue, organ primordia, or the whole or part of an organ so as to preserve its architecture and/or function. In terms of application, the primary goal of this technology is the replacement of deficient organs.
 GS bioengineering
 . **tissue engineering**
 technologies
 . biotechnology
 . . **tissue engineering**
 RT bioreactors
 cell culturing
 cells (biology)
 clinostats
 culture media
 culture techniques
 cytology
 growth
 histology
 in vitro methods and tests
 ∞ microgravity applications
 organ culturing
 organs
 tissue culturing
 tissues (biology)
- tissues (biology)**
 GS **tissues (biology)**
 . connective tissue
 . endothelium
 . epicardium
 . epithelium
 . hypodermis
 . neuroglia
 . plantar tissues
 . scars
 . . adipose tissues
 . . bone marrow
 . . cartilage
 RT anatomy
 atrophy
- ∞ biology
 cancer
 ∞ cells
 cells (biology)
 cultivation
 cystic fibrosis
 cysts
 fibroblasts
 fibrosis
 histochemical analysis
 histology
 infarction
 macrophages
 mediastinum
 necrosis
 organs
 osteogenesis
 peritoneum
 tissue engineering
- Titan**
 DEF A satellite of Saturn orbiting at a mean distance of 1,222,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . Saturn satellites
 . . . **Titan**
 RT atmospheric composition
 Cassini mission
 Charon
 Huygens probe
 satellite atmospheres
 Saturn (planet)
 Titan atmosphere
 Triton
- Titan 1 ICBM**
 UF *SM-68 missile*
 GS missiles
 . ballistic missiles
 . . intercontinental ballistic missiles
 . . . Titan ICBM
 **Titan 1 ICBM**
 . surface to surface missiles
 . . intercontinental ballistic missiles
 . . . Titan ICBM
 **Titan 1 ICBM**
 RT LR-87-AJ-5 engine
- Titan 2 ICBM**
 UF *SM-68B missile*
 GS missiles
 . ballistic missiles
 . . intercontinental ballistic missiles
 . . . Titan ICBM
 **Titan 2 ICBM**
 . surface to surface missiles
 . . intercontinental ballistic missiles
 . . . Titan ICBM
 **Titan 2 ICBM**
 RT Hyla-Star rocket vehicle
- Titan 3 launch vehicle**
 GS launch vehicles
 . Titan launch vehicles
 . . **Titan 3 launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . Titan launch vehicles
 . . . **Titan 3 launch vehicle**
 RT manned orbital laboratories
- Titan 4 launch vehicle**
(added February 1993)
 GS launch vehicles
 . Titan launch vehicles
 . . **Titan 4 launch vehicle**
 . . . Titan 4B launch vehicle
 rocket vehicles
 . multistage rocket vehicles
 . . Titan launch vehicles
 . . . **Titan 4 launch vehicle**
 Titan 4B launch vehicle
 RT Titan Centaur launch vehicle
 ∞ vehicles
- Titan 4B launch vehicle**
(added October 1998)
 GS launch vehicles
 . Titan launch vehicles

Titan atmosphere

- . . Titan 4 launch vehicle
- . . . **Titan 4B launch vehicle**
- rocket vehicles
- . multistage rocket vehicles
- . . Titan launch vehicles
- . . . Titan 4 launch vehicle
- **Titan 4B launch vehicle**

RT Cassini mission
laser gyroscopes

Titan atmosphere

(added May 2005)

DEF The atmosphere surrounding the Saturnian satellite Titan.

- GS environments
- . extraterrestrial environments
 - . . satellite atmospheres
 - . . . **Titan atmosphere**

RT Cassini mission
Huygens probe
Saturn (planet)
Titan

Titan Centaur launch vehicle

DEF A Titan III rocket augmented with a Centaur rocket for launching spacecraft requiring high-velocity escape trajectories.

- GS launch vehicles
- . **Titan Centaur launch vehicle**
 - rocket vehicles
 - . **Titan Centaur launch vehicle**

RT Centaur launch vehicle
Titan 4 launch vehicle

Titan ICBM

- GS missiles
- . ballistic missiles
 - . . intercontinental ballistic missiles
 - . . . **Titan ICBM**
 - Titan 1 ICBM
 - Titan 2 ICBM
 - . surface to surface missiles
 - . . intercontinental ballistic missiles
 - . . . **Titan ICBM**
 - Titan 1 ICBM
 - Titan 2 ICBM

RT liquid propellant rocket engines
LR-91-AJ-5 engine
multistage rocket vehicles
YLR-91-AJ-1 engine

Titan launch vehicles

- GS launch vehicles
- . **Titan launch vehicles**
 - . . Titan 3 launch vehicle
 - . . Titan 4 launch vehicle
 - . . . Titan 4B launch vehicle
 - rocket vehicles
 - . multistage rocket vehicles
 - . . **Titan launch vehicles**
 - . . . Titan 3 launch vehicle
 - . . . Titan 4 launch vehicle
 - Titan 4B launch vehicle

RT Gemini 3 flight
Gemini 7 flight
Gemini 8 flight
Gemini 9 flight
Gemini 10 flight
Gemini 11 flight
Gemini 12 flight
liquid propellant rocket engines
solid propellant rocket engines
∞ vehicles

Titan project

- GS programs
- . NASA programs
 - . . NASA space programs
 - . . . **Titan project**
 - . projects
 - . . **Titan project**
 - . space programs
 - . . NASA space programs
 - . . . **Titan project**

RT ∞ boosters
Gemini project
Gemini spacecraft
launch vehicles
launchers

launching

titanates

- GS titanium compounds
- . **titanates**
 - . . barium titanates
 - . . ilmenite
 - . . lead titanates
 - . . . lead zirconate titanates
 - . . magnesium titanates
 - . . perovskites
 - . . strontium titanates
 - . . zirconium titanates
 - . . . lead zirconate titanates

RT euxenite

Titania

DEF A satellite of Uranus orbiting at a mean distance of 438,000 kilometers.

- GS celestial bodies
- . natural satellites
 - . . icy satellites
 - . . . **Titania**
 - . . Uranus satellites
 - . . . **Titania**

RT Uranus (planet)

titanium

- GS chemical elements
- . **titanium**
 - . . titanium isotopes
 - metals
 - . transition metals
 - . . **titanium**
 - . . . titanium isotopes

titanium alloys

- GS alloys
- . **titanium alloys**
 - . . nitinol alloys

RT aluminides

shape memory alloys
titanium aluminides
vanadium alloys

titanium aluminides

- (added June 1997)
- GS aluminum compounds
- . aluminides
 - . . **titanium aluminides**
 - titanium compounds
 - . **titanium aluminides**

RT intermetallics
titanium alloys

titanium borides

- GS boron compounds
- . borides
 - . . **titanium borides**
 - titanium compounds
 - . **titanium borides**

titanium carbides

- GS carbon compounds
- . carbides
 - . . **titanium carbides**
 - titanium compounds
 - . **titanium carbides**

RT ceramic fibers
ceramic matrix composites

titanium chlorides

- GS halogen compounds
- . chlorine compounds
 - . . chlorides
 - . . . **titanium chlorides**
 - . halides
 - . . chlorides
 - . . . **titanium chlorides**
 - . metal halides
 - . . . **titanium chlorides**
 - titanium compounds
 - . **titanium chlorides**

titanium compounds

- GS **titanium compounds**
- . titanates
 - . . barium titanates
 - . . ilmenite
 - . . lead titanates

- . . . lead zirconate titanates
- . . magnesium titanates
- . . perovskites
- . . strontium titanates
- . . zirconium titanates
- . . . lead zirconate titanates
- . titanium borides
- . titanium carbides
- . titanium chlorides
- . titanium nitrides
- . titanium oxides
- . . anatase
- . . ilmenite
- . . rutile
- . titanium aluminides

RT ∞ chemical compounds
∞ Group 4B compounds
∞ metal compounds

titanium dioxide

USE **titanium oxides**

titanium isotopes

- GS chemical elements
- . nuclides
 - . . isotopes
 - . . . **titanium isotopes**
 - . titanium
 - . . **titanium isotopes**
 - metals
 - . transition metals
 - . . titanium
 - . . . **titanium isotopes**

titanium nitrides

- GS nitrogen compounds
- . nitrides
 - . . metal nitrides
 - . . . **titanium nitrides**
 - titanium compounds
 - . **titanium nitrides**

RT ceramic matrix composites

titanium oxides

- UF *titanium dioxide*
- GS chalcogenides
- . oxides
 - . . metal oxides
 - . . . **titanium oxides**
 - anatase
 - ilmenite
 - rutile
 - titanium compounds
 - . **titanium oxides**
 - . . anatase
 - . . ilmenite
 - . . rutile

RT dioxides

titration

DEF The determination of the reactive capacity, usually of a solution, especially, the analytical process of successively adding measured amounts of a reagent (as a standard solution) to a known volume or weight of a sample or sample solution until a desired end point is reached.

GS chemical reactions

. **titration**

RT acidity
coulometers
iodimetry
ion concentration
Kjeldahl method
solutions

titrimeters

- GS measuring instruments
- . **titrimeters**

RT chemical analysis

TNO (astronomy)

(added June 2006)

USE **trans-Neptunian objects**

TNT (trinitrotoluene)

USE **trinitrotoluene**

tobacco

- GS plants (botany)
- . **tobacco**

- RT nicotine
- tocopherol**
 UF *vitamin E*
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **tocopherol**
 . lipids
 . . **tocopherol**
 vitamins
 . **tocopherol**
- Togo**
 GS nations
 . **Togo**
 RT Africa
- toilets**
 RT human wastes
 sanitation
 spacecrews
 waste disposal
- tokamak devices**
 DEF Experimental toroidal magnetic confinement devices where toroidal current runs through the plasma in order to produce fusion reactor like plasma conditions. The name is a Russian acronym for toroidal magnetic current.
 GS nuclear reactors
 . **tokamak devices**
 . . Joint European Torus
 plasma generators
 . **tokamak devices**
 . . Joint European Torus
 RT beam injection
 beta factor
 bumpy toruses
 divertors (fusion reactors)
 ∞ electric power
 limiters (fusion reactors)
 nuclear fusion
 plasma compression
 plasma control
 plasma physics
 poloidal flux
 Q values (nuclear physics)
 ∞ reactors
 spheromaks
- tolerances (mechanics)**
 DEF A group of prescribed limits for specific properties of a particular material.
 GS **tolerances (mechanics)**
 . impact tolerances
 RT acceptability
 accuracy
 allowances
 clearances
 consistency
 dimensional stability
 drift (instrumentation)
 errors
 hysteresis
 inspection
 linearity
 mechanical properties
 nondestructive tests
 precision
 quality control
 radiation tolerance
 range (extremes)
 reliability
 resolution
 sensitivity
 specifications
 stability
 standards
- tolerances (physiology)**
 GS **tolerances (physiology)**
 . acceleration tolerance
 . altitude tolerance
 . cold tolerance
 . heat tolerance
 . human tolerances
 . radiation tolerance
 RT acclimatization
 Barany chair
- biocontrol systems
 impact resistance
 noise tolerance
 orthostatic tolerance
 physiology
 range (extremes)
 ∞ resistance
- Tollmien-Schlichting waves**
(added May 1988)
 GS elastic waves
 . **Tollmien-Schlichting waves**
 RT Blasius flow
 boundary layer flow
 boundary layer transition
 laminar flow
 turbulent flow
- toluene**
 GS organic compounds
 . hydrocarbons
 . . **toluene**
 RT solvents
 xylene
- Tomahawk missiles**
 GS missiles
 . surface to surface missiles
 . . cruise missiles
 . . . **Tomahawk missiles**
 RT weapons
- tomatoes**
(added June 1990)
 GS farm crops
 . **tomatoes**
 RT agriculture
 botany
 ∞ crops
 ∞ food
 seeds
- tombolos*
 USE **bars (landforms)**
- tomography**
 DEF Technique of making radiographs of plane sections of a body or an object; its purpose is to show detail in a predetermined plane of the body, while blurring the images of structures in other planes. Used for planigraphy.
 UF *planigraphy*
 GS imagery
 . radiography
 . . **tomography**
 . . . computer aided tomography
 RT computer graphics
 ground penetrating radar
 image enhancement
 optical data processing
 x ray analysis
- TOMS**
 USE **Total Ozone Mapping Spectrometer**
- tone*
 USE **pitch**
- tongue**
 GS anatomy
 . digestive system
 . . **tongue**
 RT mouth
 voice
- Tonk meteorite**
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . carbonaceous meteorites
 carbonaceous chondrites
 **Tonk meteorite**
 . . . chondrites
 carbonaceous chondrites
- **Tonk meteorite**
- tonometry*
 USE **intraocular pressure**
pressure measurement
- tonus*
 USE **muscular tonus**
- tooling**
 RT ∞ automation
 machining
 mechanization
 setups
 tools
- tools**
 GS **tools**
 . drill bits
 . drills
 . files (tools)
 . hammers
 . . electromagnetic hammers
 . machine tools
 . . boring machines
 . . grinding machines
 . . lathes
 . . . turret lathes
 . . milling machines
 . . shapers
 . saws
 . shears
 . software development tools
 . space tools
 . wrenches
 RT antiquities
 anvils
 cutters
 fixtures
 ∞ hardware
 jigs
 kits
 ∞ machinery
 mechanical devices
 mechanization
 platens
 presses
 ∞ production
 taps
 tooling
 ultrasonic cleaning
- tooth diseases**
 UF *aerodontalgia*
 GS diseases
 . **tooth diseases**
 RT cavities
 dental calculi
 dentistry
 oral hygiene
 teeth
- TOPEX**
 DEF The NASA Ocean Surface Topography Experiment, a proposed mission to utilize satellite altimetry to map the surface topography of the ocean from which the ocean currents are derived.
 RT Gulf Stream
 maritime satellites
 ocean currents
 ocean surface
 oceanography
 Poseidon satellite
 satellite observation
 sea states
 topography
- topography**
 UF *landscape*
 GS **topography**
 . lunar topography
 . terrain
 RT altimetry
 badlands
 barren land
 beaches
 cliffs
 contour sensors
 contours

topology

- cusps (landforms)
- ∞ depression
- desertline
- deserts
- digital elevation models
- dunes
- Earth surface
- elevation
- elevation angle
- escarpments
- geodesy
- geodetic surveys
- geomorphology
- geophysics
- gulfs
- highlands
- hypsography
- isthmuses
- Jupiter red spot
- lagoons
- land
- landforms
- landmarks
- ledges
- mapping
- maria
- Mars surface
- meanders
- muskegs
- oceanography
- peaks (landforms)
- photomapping
- plains
- planetary surfaces
- ∞ profiles
- ravines
- relief maps
- satellite altimetry
- shallow water
- slopes
- stairsteps
- surface roughness
- TOPEX
- valleys
- Venus surface
- wadis

topology

- GS geometry
- . **topology**
- . . fixed points (mathematics)
- . . homotopy theory
- . . imbeddings (mathematics)
- . . invariant imbeddings
- . . links (mathematics)
- . . metric space
- . . . Hilbert space
- Sobolev space
- RT catastrophe theory
- ∞ cells
- continuity
- continuity (mathematics)
- continuums
- deformation
- dimensions
- fault trees
- fibers (mathematics)
- graph theory
- homology
- homotropy
- intervals
- isoperimetric problem
- manifolds (mathematics)
- mapping
- ∞ nets
- network synthesis
- shapes
- switching theory
- toruses
- trees (mathematics)
- Voronoi diagrams

topping cycle engines

- RT aircraft engines
- liquid hydrogen
- propulsion system configurations
- wave rotors

TOPS (spacecraft)

- UF *Thermoelectric Outer Planet Spacecraft*

- thermoelectric spacecraft*
- GS interplanetary spacecraft
- . **TOPS (spacecraft)**
- RT flyby missions
- interplanetary flight
- outer planets explorers
- space exploration
- space missions
- ∞ spacecraft

torches

- GS **torches**
- . plasma torches
- RT cutting
- pyrogen
- welding
- welding machines

Tornado aircraft

- USE **MRCA aircraft**

tornadoes

- GS storms
- . storms (meteorology)
- . . **tornadoes**
- RT atmospheric circulation
- cold fronts
- cumulonimbus clouds
- cyclones
- fronts (meteorology)
- Fujita method
- ground wind
- hurricanes
- National Severe Storms Project
- rainstorms
- storm damage
- tropical storms
- typhoons
- warm fronts
- wind (meteorology)

Toro asteroid

- GS celestial bodies
- . asteroid belts
- . . **Toro asteroid**
- . asteroids
- . . **Toro asteroid**
- RT meteoroids
- solar system
- space debris

toroidal discharge

- GS electric current
- . electric discharges
- . . Townsend discharge
- . . . gas discharges
- **toroidal discharge**
- ring discharge
- RT electrodeless discharges
- high frequencies
- plasma jets
- spectrum analysis

toroidal plasmas

- UF *plasma rings*
- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **toroidal plasmas**
- corpuscular radiation
- energetic particles
- plasmas (physics)
- **toroidal plasmas**
- RT beam injection
- beta factor
- bumpy toruses
- elliptical plasmas
- limiters (fusion reactors)
- plasma control
- plasma currents
- poloidal flux
- reverse field pinch
- ∞ rings
- rotating plasmas
- solenoids
- spheromaks

- stellarators

toroidal shells

- GS shells (structural forms)
- . **toroidal shells**
- RT metal shells
- reinforced shells
- skin (structural member)
- thin walled shells
- toroids

toroidal wheels

- DEF Doughnut-shaped wheels designed particularly for vehicles used in soft, granular soil (planetary surfaces). Used for doughnut shape wheels.
- UF *doughnut shape wheels*
- GS wheels
- . **toroidal wheels**
- RT roving vehicles
- suspension systems (vehicles)
- tires
- vehicle wheels

toroids

- RT ∞ coils
- ∞ curves
- geometry
- inductors
- ion impact
- magnet coils
- magnetic cores
- toroidal shells
- transformers

torpedo engines

- GS engines
- . **torpedo engines**
- . . turborocket engines
- . . ullage rocket engines
- . . Vernier engines
- . . . control rockets
- SYNCOM apogee engines
- RT internal combustion engines
- rocket propellants
- turbine engines
- underwater propulsion

torpedoes

- UF *RETORC (torpedoes)*
- GS explosive devices
- . **torpedoes**
- RT ammunition
- antisubmarine warfare
- ASROC engine
- bombs (ordnance)
- ∞ configurations
- countermeasures
- explosives
- hydroballistics
- missiles
- nuclear weapons
- propellants
- ∞ rockets
- sea launching
- shaped charges
- submerged bodies
- underwater trajectories
- warheads
- weapons

torque

- DEF About an axis, the product of a force and the distance of its line of action from the axis. Used for hinge moments.
- UF *hinge moments*
- GS moments
- . **torque**
- RT bending moments
- ∞ force
- loading moments
- moments of inertia
- pitching moments
- rolling moments
- rotation
- shafts (machine elements)
- torque sensors (robotics)
- torquemeters
- torsion
- torsional stress

- torsional vibration
twisting
yawing moments
- torque converters**
DEF Devices for changing the torque speed or mechanical advantage between an input shaft and an output shaft.
RT ∞ converters
power converters
transmissions (machine elements)
- torque measuring apparatus*
USE **torquemeters**
- torque motors**
GS electromechanical devices
. electric motors
. . . **torque motors**
motors
. electric motors
. . . **torque motors**
RT actuators
servomotors
transmissions (machine elements)
- torque sensors (nonrobotics)*
USE **torquemeters**
- torque sensors (robotics)**
(added January 1991)
GS robot sensors
. **torque sensors (robotics)**
RT end effectors
manipulators
robots
 ∞ sensors
servomechanisms
teleoperators
torque
torquemeters
- torquemeters**
UF *torque measuring apparatus*
torque sensors (nonrobotics)
GS measuring instruments
. **torquemeters**
RT dynamometers
mechanical measurement
torque
torque sensors (robotics)
- torquers**
GS transducers
. **torquers**
RT degrees of freedom
gyroscopes
sea keeping
- Torres Strait**
GS passageways
. straits
. . . **Torres Strait**
RT Australia
New Guinea (island)
- torsion**
RT buckling
deflection
deformation
 ∞ force
moments
temperature inversions
torque
torsional stress
torsional vibration
twisting
- torsional stress**
GS stresses
. shear stress
. . . **torsional stress**
RT torque
torsion
- torsional vibration**
GS vibration
. structural vibration
. . . **torsional vibration**
RT missile vibration
random vibration
- self induced vibration
shear strain
torque
torsion
twisting
- torso**
GS anatomy
. **torso**
RT chest
- toruses**
GS geometry
. Euclidean geometry
. . . analytic geometry
. . . **toruses**
symmetrical bodies
. bodies of revolution
. . . **toruses**
RT descriptive geometry
loops
 ∞ rings
topology
- Tory 2 reactor**
GS nuclear electric power generation
. nuclear power reactors
. . . **Tory 2 reactor**
nuclear reactors
. gas cooled reactors
. . . **Tory 2 reactor**
. nuclear power reactors
. . . **Tory 2 reactor**
. nuclear research and test reactors
. . . **Tory 2 reactor**
- Tory 2-A reactor**
GS nuclear electric power generation
. nuclear power reactors
. . . **Tory 2-A reactor**
nuclear reactors
. gas cooled reactors
. . . **Tory 2-A reactor**
. nuclear power reactors
. . . **Tory 2-A reactor**
. nuclear research and test reactors
. . . **Tory 2-A reactor**
- Tory 2-C reactor**
GS nuclear electric power generation
. nuclear power reactors
. . . **Tory 2-C reactor**
nuclear reactors
. gas cooled reactors
. . . **Tory 2-C reactor**
. nuclear power reactors
. . . **Tory 2-C reactor**
. nuclear research and test reactors
. . . **Tory 2-C reactor**
- TOS-A*
USE **ESSA 3 satellite**
- total energy systems**
DEF Energy systems which supply both electrical and heat requirements.
GS **total energy systems**
. solar total energy systems
RT integrated energy systems
phosphoric acid fuel cells
 ∞ systems
- total impulse**
(added March 2000)
DEF The integral of thrust over a given interval of time; the product of thrust and duration expressed in force-seconds; the total thrust produced by a rocket engine or motor over the entire time that its fuel is burning.
GS impulses
. **total impulse**
RT propulsion system performance
propulsive efficiency
spacecraft propulsion
specific impulse
thrust
- Total Ozone Mapping Spectrometer**
(added July 1988)
UF *TOMS*
- GS measuring instruments
. optical measuring instruments
. . . photometers
. . . . ultraviolet spectrometers
. . . . **Total Ozone Mapping Spectrometer**
. radiation measuring instruments
. . . actinometers
. . . . ultraviolet detectors
. ultraviolet spectrometers
. **Total Ozone Mapping Spectrometer**
. . . photometers
. . . . ultraviolet spectrometers
. . . . **Total Ozone Mapping Spectrometer**
. . . satellite-borne instruments
. . . **Total Ozone Mapping Spectrometer**
. spectrometers
. . . ultraviolet spectrometers
. . . **Total Ozone Mapping Spectrometer**
optical equipment
. optical measuring instruments
. . . photometers
. . . . ultraviolet spectrometers
. . . . **Total Ozone Mapping Spectrometer**
RT Antarctic regions
Nimbus 7 satellite
ozone depletion
ozonometry
- total quality management**
(added February 1992)
UF *TQM (quality control)*
GS management
. **total quality management**
quality control
. **total quality management**
RT acceptability
aircraft reliability
concurrent engineering
industrial management
management methods
production management
quality
reliability
reliability engineering
Taguchi methods
value engineering
- total variation diminishing schemes*
USE **TVD schemes**
- touch**
UF *cutaneous perception*
tactile sensation
GS perception
. sensory perception
. . . **touch**
. . . tactile discrimination
RT electrocutaneous communication
skin (anatomy)
tactile sensors (robotics)
- touchdown**
GS landing
. **touchdown**
RT aircraft landing
approach
approach and landing tests (STS)
downrange
spacecraft landing
vertical landing
vertical motion
water landing
- toughness**
DEF That property of a material by virtue of which it can absorb work.
GS mechanical properties
. **toughness**
. . . notch sensitivity
RT abrasion resistance
brittleness
compressive strength
crack initiation
ductility

tourism

fracture strength
hardness
impact tests
J integral
shear properties
tensile strength
wear resistance

tourism

(added April 1999)

GS **tourism**
. space tourism
RT industries
recreation
transportation
∞ travel

tourmaline

GS aluminum compounds
. **tourmaline**
boron compounds
. **tourmaline**
minerals
. **tourmaline**
silicon compounds
. silicates
. . . sodium silicates
. . . **tourmaline**
sodium compounds
. sodium silicates
. . **tourmaline**
RT igneous rocks

Tourmesole satellite

USE **D-2 satellites**

tourniquets

GS medical equipment
. **tourniquets**
RT blood circulation
blood flow
first aid

Toutatis asteroid

(added July 1995)

GS celestial bodies
. asteroids
. . **Toutatis asteroid**
RT asteroid belts
meteoroids

tow missiles

GS missiles
. surface to surface missiles
. . antitank missiles
. . . **tow missiles**

towed bodies

UF *drogues*
towed targets
RT aircraft brakes
∞ bodies
brakes (for arresting motion)
drag chutes
gliders
lifting bodies
parachutes
sleds
streamlined bodies
submerged bodies
test vehicles
tetherlines
towing
trailers

towed targets

USE **targets**
towed bodies

Tower Shielding Reactor 2

GS nuclear reactors
. nuclear research and test reactors
. . **Tower Shielding Reactor 2**
RT radiation shielding

towers

GS **towers**
. airport towers
. umbilical towers
RT air traffic control

antennas
bridges (structures)
columns (supports)
concrete structures
construction industry
cranes
pylons
∞ structures
tanks (containers)

towing

RT cables (ropes)
towed bodies
tractors
trailers

Townsend avalanche

UF *townsend surfaces*
GS avalanches
. **Townsend avalanche**
RT electromagnetic absorption
electron avalanche
ion impact
secondary emission
∞ surfaces

Townsend discharge

DEF A type of direct current discharge between two electrodes immersed in a gas and requiring electron emission from the cathode.

GS electric current
. electric discharges
. . **Townsend discharge**
. . . gas discharges
. . . . toroidal discharge
. . . . ring discharge
RT electrodeless discharges
ion impact

townsend surfaces

USE **Townsend avalanche**

toxic diseases

UF *poisoning (toxicology)*
GS diseases
. **toxic diseases**
. . benzene poisoning
. . beryllium poisoning
. . carbon monoxide poisoning
. . carbon tetrachloride poisoning
. . hydrocarbon poisoning
. . lead poisoning
RT Clostridium botulinum
diphtheria
hyperoxia
∞ poisoning
toxicity
toxicology

toxic hazards

GS hazards
. **toxic hazards**
RT aircraft hazards
biological hazards
flight hazards
hazardous materials
hazardous wastes
heavy metals
occupational diseases
∞ poisoning
toxicity

toxicity

GS **toxicity**
. benzene poisoning
. beryllium poisoning
. carbon monoxide poisoning
. carbon tetrachloride poisoning
. hydrocarbon poisoning
. lead poisoning
RT acidosis
alkalosis
bioavailability
chemical properties
endangered species
herbicides
hyperoxia
poisons
toxic diseases
toxic hazards

toxicology
toxins and antitoxins
virulence

toxicity and safety hazard

GS irritation
. **toxicity and safety hazard**
RT acroleins
benzene poisoning
beryllium poisoning
carbon tetrachloride poisoning
chemical properties
hazardous material disposal (in space)
hydrocarbon poisoning
intoxication
soil pollution

toxicology

RT benzene poisoning
beryllium poisoning
bioavailability
biomarkers
carbon tetrachloride poisoning
curare
endotoxins
fungicides
hazards
hemoperfusion
hydrocarbon poisoning
insecticides
intoxication
nonpoint sources
pesticides
pollution
red tide
toxic diseases
toxicity
vaccines

toxins and antitoxins

GS **toxins and antitoxins**
. endotoxins
. polybrominated biphenyls
RT biological weapons
hazardous materials
immunity
toxicity
vaccines

TQM (quality control)

USE **total quality management**

TRAAC satellite

USE **Transit Attitude Control satellite**

trace contaminants

GS contaminants
. **trace contaminants**
RT chemical elements
impurities
pollution transport
purity
∞ tracing

trace elements

RT isotopic labeling
∞ nutrients
particle tracks
siderophile elements
∞ tracers
∞ tracing

TRACE satellite

(added May 1998)

USE **Transition Region and Coronal Explorer**

∞ **tracers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ammunition
isotopic labeling
marking
trace elements

trachea

GS anatomy
. respiratory system
. . **trachea**

RT bronchi
 ∞ tubes

trachyte
 GS rocks
 . igneous rocks
 . . **trachyte**

RT soils
 syenite

∞ **tracing**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT drawings
 trace contaminants
 trace elements

tracked vehicles
 DEF Land vehicles equipped with continuous roller belts over cogged wheels for moving over rough terrain.
 GS surface vehicles
 . motor vehicles
 . . tractors
 . . . **tracked vehicles**

RT crawler tractors
 ∞ vehicles
 vehicular tracks

tracking (position)
 UF *target tracking*
tracking studies

GS **tracking (position)**
 . compensatory tracking
 . infrared tracking
 . missile tracking
 . multiple target tracking
 . optical tracking
 . photographic tracking
 . polystation doppler tracking system
 . pursuit tracking
 . radar tracking
 . radio tracking
 . . wildlife radiolocation
 . range and range rate tracking
 . space detection and tracking system
 . spacecraft tracking
 . . satellite tracking
 . . . satellite-to-satellite tracking
 . star trackers
 . . CCD star tracker
 . video landmark acquisition and tracking

RT air traffic control
 aircraft detection
 approach control
 detection
 identifying
 instrument landing systems
 laser ranger/tracker
 multispectral tracking telescopes
 position (location)
 rangefinding
 ray tracing
 satellite doppler positioning
 solar sensors
 sound localization
 sound ranging
 tracking problem
 ∞ tracks

Tracking and Data Relay Satellites
 USE **TDR satellites**

tracking antennas
 USE **directional antennas**

tracking filters
 DEF Electron devices for attenuating unwanted signals while passing desired signals, by means of phase lock techniques which reduce the effective bandwidth of the circuit and eliminate amplitude variations.
 GS electromagnetic wave filters
 . bandpass filters
 . . **tracking filters**
 . electric filters
 . . **tracking filters**

RT adaptive filters
 bandstop filters

bandwidth
 multiple target tracking
 phase locked systems
 video landmark acquisition and tracking

tracking networks
 GS networks
 . **tracking networks**
 . . Deep Space Network
 . . Global Tracking Network
 . . manned space flight network
 . . MATTS (systems)
 . . polystation doppler tracking system
 . . radar networks
 . . space detection and tracking system
 . . Space Flight Tracking and Data Network
 . . STDN (network)

RT Advanced Range Instrumentation Ship
 data acquisition
 ground support equipment
 minitrack system
 missile tracking
 Orion (radio interferometry network)
 satellite tracking
 satellite-to-satellite tracking
 spacecraft tracking

tracking problem
 DEF The problem of controlling a system so that the output follows a given path.
 RT automatic control
 control theory
 feedback control
 linear systems
 multiple target tracking
 nonlinear systems
 optimal control
 output
 ∞ problems
 tracking (position)
 trajectory control
 trajectory optimization

tracking radar
 DEF A radar used for following a target.
 GS radar
 . **tracking radar**
 . . Cobra Dane (radar)

RT coherent radar
 continuous wave radar
 digital radar systems
 monopulse radar
 pulse radar
 radar tracking
 satellite-borne radar
 search radar
 surveillance radar
 TRADEX radar system
 trajectory measurement

tracking stations
 DEF Stations set up to track objects moving through the atmosphere or space, usually by means of radio or radar.
 GS stations
 . **tracking stations**
 . . Deep Space Instrumentation Facility
 . . Global Tracking Network
 . . polystation doppler tracking system

RT ∞ fences
 ground stations
 ground support equipment
 Jodrell Bank Observatory
 ∞ mars
 minitrack system
 missile tracking
 radar networks
 satellite tracking
 space detection and tracking system
 Space Flight Tracking and Data Network
 spacecraft tracking

STDN (network)

tracking studies
 USE **tracking (position)**

∞ **tracks**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *trails*
 RT conveyors
 ground tracks
 meteor trails
 minitrack system
 particle tracks
 particle trajectories
 smoke trails
 tracking (position)
 vehicular tracks

traction
 RT adhesion
 friction
 pulling

tractors
 GS surface vehicles
 . motor vehicles
 . . **tractors**
 . . . crawler tractors
 . . . tracked vehicles

RT agriculture
 electric motor vehicles
 ground handling
 handling equipment
 lunar excavation equipment
 materials handling
 planting
 plowing
 sleds
 towing
 transportation
 trucks
 ∞ vehicles

tracts
 USE **sites**

tradeoffs
 RT decision making
 management analysis
 management planning

Trader aircraft
 USE **C-1A aircraft**

tradescantia
 GS plants (botany)
 . **tradescantia**

TRADEX radar system
 GS radar
 . **TRADEX radar system**

RT search radar
 ∞ systems
 target recognition
 tracking radar

traffic
 GS **traffic**
 . air traffic
 RT accidents
 avoidance
 harbors
 transportation

traffic control
 DEF Control of vehicular traffic such as priority highway lanes, stoplight control, rapid-transit train control, or air traffic control.
 GS **traffic control**
 . air traffic control
 . . automated en route ATC
 . . radar approach control

RT air traffic controllers (personnel)
 airport towers
 approach control
 avoidance
 collision avoidance
 ∞ control
 ground based control

tragacanth

National Aviation System

tragacanth

GS plants (botany)
. **tragacanth**

Trailblazer 1 reentry vehicle

UF *Trailblazer 1 rocket vehicle*
GS reentry vehicles
. **Trailblazer 1 reentry vehicle**
RT Honest John rocket vehicle
Lance missile
multistage rocket vehicles
Nike-Ajax missile
rocket vehicles
solid propellant rocket engines

Trailblazer 1 rocket vehicle

USE **Trailblazer 1 reentry vehicle**

Trailblazer 2 reentry vehicle

UF *Trailblazer 2 rocket vehicle*
GS reentry vehicles
. **Trailblazer 2 reentry vehicle**
RT multistage rocket vehicles
rocket vehicles
solid propellant rocket engines
TX-354 engine

Trailblazer 2 rocket vehicle

USE **Trailblazer 2 reentry vehicle**

trailers

RT automobiles
couplings
sleds
tank trucks
towed bodies
towing
trucks

trailing edge flaps

UF *variable area wings*
GS airfoils
. flaps (control surfaces)
. . wing flaps
. . . **trailing edge flaps**
brakes (for arresting motion)
. aerodynamic brakes
. . wing flaps
. . . **trailing edge flaps**
. aircraft brakes
. . wing flaps
. . . **trailing edge flaps**
control surfaces
. flaps (control surfaces)
. . wing flaps
. . . **trailing edge flaps**
drag devices
. aerodynamic brakes
. . wing flaps
. . . **trailing edge flaps**
RT jet flaps
leading edge slats
split flaps
vortex flaps

trailing edges

GS edges
. **trailing edges**
. . blunt trailing edges
RT airfoils
blunt leading edges
leading edges
sharp leading edges
vortex flaps

trails

USE **tracks**

trainees

USE **students**

trainers

USE **training devices**

training

USE **education**

training aircraft

GS **training aircraft**

. Alpha jet aircraft
. jet provost aircraft
. L-29 jet trainer
. T-2 aircraft
. T-28 aircraft
. T-33 aircraft
. T-37 aircraft
. T-38 aircraft
. T-39 aircraft
. TS-11 aircraft

RT ∞ aircraft
bomber aircraft
fighter aircraft
general aviation aircraft
jet aircraft
light aircraft
∞ military aircraft
∞ subsonic aircraft

training analysis

DEF Evaluation of all facets of instruction -- presentation methods, instructors, effectiveness of training, and testing.

RT ∞ analyzing
∞ development
education
handbooks
learning
personnel development
planning
retraining

training devices

UF *trainers*
GS **training devices**
. teaching machines
. training simulators
. . flight simulators
. . . cockpit simulators
. . spacecraft cabin simulators
RT altitude simulation
audio visual equipment
child device
cockpit simulators
∞ devices
education
educational television
flight simulators
multimedia
onboard equipment
simulators
visual aids

training evaluation

DEF Procedures for determining the effectiveness of instruction.

GS evaluation
. **training evaluation**
RT certification
examination
instructors
knowledge
learning
∞ performance
reviewing
schools
students

training simulators

UF *simulator training*
GS simulators
. **training simulators**
. . flight simulators
. . . cockpit simulators
. . spacecraft cabin simulators
training devices
. **training simulators**
. . flight simulators
. . . cockpit simulators
. . spacecraft cabin simulators
RT astronaut training
centrifuges
control simulation
flight simulation
flight training
in-flight simulation
landing simulation
lunar orbit and landing simulators
∞ missile simulators
pilot training

space flight training
virtual reality

trajectories

DEF In general, paths traced by bodies moving as a result of an externally applied force, considered in three dimensions.

GS trajectories

. abort trajectories
. ascent trajectories
. ballistic trajectories
. descent trajectories
. . reentry trajectories
. hyperbolic trajectories
. interorbital trajectories
. midcourse trajectories
. missile trajectories
. molecular trajectories
. particle trajectories
. . electron trajectories
. rendezvous trajectories
. round trip trajectories
. . circumlunar trajectories
. spacecraft trajectories
. . interplanetary trajectories
. . . Earth-Mars trajectories
. . . Earth-Mercury trajectories
. . . Earth-Venus trajectories
. . lunar trajectories
. . . circumlunar trajectories
. . . Earth-Moon trajectories
. . . moon-Earth trajectories
. spinning unguided rocket trajectory
. underwater trajectories

RT

apexes
attractors (mathematics)
ballistics
∞ curves
downrange
equations of motion
∞ flight
flight mechanics
flight optimization
flight paths
flight time
great circles
missiles
orbits
ordnance
parabolic flight
∞ paths
rocket flight
space flight
transfer orbits

trajectory analysis

RT ∞ analyzing
astrodynamics
ballistics
capture effect
celestial mechanics
equations of motion
Goddard Trajectory Determination System
impact prediction
mathematical models
numerical analysis
orbital mechanics
preflight analysis
systems analysis
trajectory planning

trajectory control

UF *range control*
GS **trajectory control**
. trajectory optimization
RT attitude control
∞ control
drift rate
guidance (motion)
homing devices
landing sites
optimal control
optimization
post boost propulsion system
range safety
thrust programming
tracking problem

- trajectory planning
- trajectory measurement**
- RT ballistic cameras
 - ballistics
 - flight mechanics
 - ∞ measurement
 - telemetry
 - tracking radar
- trajectory optimization**
- GS optimization
 - . **trajectory optimization**
 - trajectory control
 - . **trajectory optimization**
 - RT aircraft maneuvers
 - flight mechanics
 - flight optimization
 - genetic algorithms
 - Goddard Trajectory Determination System
 - pursuit-evasion games
 - tracking problem
 - trajectory planning
- trajectory planning**
(added December 1990)
- UF *path planning*
 - GS planning
 - . **trajectory planning**
 - RT robot dynamics
 - robotics
 - trajectory analysis
 - trajectory control
 - trajectory optimization
 - Voronoi diagrams
- tranquilizers**
- GS drugs
 - . **tranquilizers**
 - RT central nervous system depressants
 - hypertension
 - sedatives
- Transall C-160 aircraft*
- USE **C-160 aircraft**
- transatmospheric vehicles**
- RT aerospace planes
 - aerospace vehicles
 - ∞ aircraft
 - aircraft design
 - National Aerospace Plane Program
 - ∞ spacecraft
 - spacecraft design
 - X-30 vehicle
- transceivers*
- USE **transmitter receivers**
- transcendental functions**
- GS functions (mathematics)
 - . **transcendental functions**
 - . . exponential functions
 - . . . logarithms
 - . . . periodic functions
 - . . . trigonometric functions
 - cosine series
 - sine series
 - tangents
- transconductance**
- DEF The real part of the transadmittance. Note: Transconductance is, as most commonly used, the interelectrode transconductance between the control grid and the plate. At low frequencies, transconductance is the slope of the control-grid-to-plate transfer characteristic.
- GS electrical properties
 - . electrical impedance
 - . . electrical resistance
 - . . . **transconductance**
 - impedance
 - . electrical impedance
 - . . electrical resistance
 - . . . **transconductance**
 - RT ∞ conductivity
 - electric potential
 - electrodes
 - electron tubes
- linear circuits
- low conductivity
 - ∞ low resistance
 - ohmmeters
 - Ohms law
 - RC circuits
 - reactance
 - ∞ resistance
 - RL circuits
 - RLC circuits
 - solid electrodes
 - volt-ampere characteristics
- transcontinental systems**
- RT continents
 - ∞ systems
 - telecommunication
 - transportation
- transcription (genetics)**
(added April 2002)
- DEF Transfer of genetic information from DNA to mRNA.
- RT deoxyribonucleic acid
 - gene expression
 - gene expression regulation
 - genetics
 - ribonucleic acids
- transducers**
- DEF Devices capable of being actuated by energy from one or more other transmission systems or media and of supplying related energy to one or more other transmission systems or media as microphones or thermocouples.
- GS **transducers**
 - . digital transducers
 - . electronic transducers
 - . image transducers
 - . interdigital transducers
 - . magnetic transducers
 - . mode transformers
 - . piezoelectric transducers
 - . . piezoelectric gages
 - . . piezoresistive transducers
 - . . piezoelectric gages
 - . . pressure sensors
 - . . Bourdon tubes
 - . quartz transducers
 - . sound transducers
 - . . electroacoustic transducers
 - . . . hydrophones
 - . . . loudspeakers
 - . . . microphones
 - . thermopiles
 - . torquers
 - . ultrasonic wave transducers
 - RT bulk acoustic wave devices
 - control equipment
 - ∞ converters
 - data converters
 - ∞ detectors
 - energy conversion efficiency
 - extensometers
 - form factors
 - instrument receivers
 - instrument transmitters
 - ∞ instruments
 - measuring instruments
 - meteorological instruments
 - photoelectric cells
 - ∞ probes
 - recording instruments
 - remote sensors
 - ∞ sensors
 - strain gages
 - temperature measuring instruments
 - ultrasonic cleaning
 - vibration meters
- transearth injection**
- GS injection
 - . **transearth injection**
 - RT injection guidance
 - midcourse guidance
 - orbital mechanics
 - transfer orbits
- transequatorial propagation**
- GS transmission
 - . electromagnetic wave transmission
 - . . radio transmission
 - . . . **transequatorial propagation**
 - signal transmission
 - . . radio transmission
 - . . . **transequatorial propagation**
 - wave propagation
 - . . **transequatorial propagation**
 - RT equators
 - F 2 region
 - ∞ propagation
- transfer*
- USE **transferring**
- transfer functions**
- GS functions (mathematics)
 - . **transfer functions**
 - . . loop transfer functions
 - . . modulation transfer function
 - . . optical transfer function
 - RT amplification
 - automatic control
 - bandwidth
 - coupling coefficients
 - damping
 - dynamic characteristics
 - dynamic response
 - feedback
 - feedback circuits
 - high gain
 - impedance matching
 - logarithmic receivers
 - negative feedback
 - nonlinear feedback
 - Nyquist diagram
 - output
 - positive feedback
 - self oscillation
 - sensitivity
 - ∞ systems
 - time constant
 - transient response
- transfer of training**
- GS learning
 - . **transfer of training**
 - RT abilities
 - education
 - generalization (psychology)
- transfer orbits**
- DEF In interplanetary travel, elliptical trajectories tangent to the orbits of both the departure planet and the target planet. Used for Hohmann trajectories, Hohmann transfer orbits, and orbital transfer.
- UF *Hohmann trajectories*
 - Hohmann transfer orbits*
 - orbital transfer*
 - GS orbits
 - . elliptical orbits
 - . . **transfer orbits**
 - . . . interplanetary transfer orbits
 - . . . spacecraft orbits
 - . . **transfer orbits**
 - . . . interplanetary transfer orbits
 - RT aeroassist
 - aerobraking
 - aerocapture
 - aeromaneuvering
 - circumlunar trajectories
 - Earth orbital rendezvous
 - Earth orbits
 - Earth-Mars trajectories
 - Earth-Mercury trajectories
 - Earth-Moon trajectories
 - Earth-Venus trajectories
 - interplanetary trajectories
 - lunar orbits
 - lunar trajectories
 - moon-Earth trajectories
 - orbit insertion
 - orbital launching
 - orbital mechanics
 - parking orbits
 - planetary orbits
 - satellite orbits
 - solar orbits
 - space rendezvous

transfer tunnels

spacecraft docking
trajectories
transearth injection
transferring
translunar injection

transfer RNA

USE **ribonucleic acids**

transfer tunnels

GS passageways
. **transfer tunnels**
RT entrances
∞ tunnels

transferred electron devices

DEF Electronic equipment utilizing diodes exhibiting negative conductance and susceptance. Used for TED.

UF *TED*

GS electronic equipment
. diodes
. . . semiconductor diodes
. . . Gunn diodes
. . . **transferred electron devices**
. solid state devices
. . . semiconductor devices
. . . **transferred electron devices**

RT diffraction radiation
electron transfer
gallium arsenides
indium phosphides
microwave amplifiers
microwave oscillators

transferring

UF *transfer*

GS **transferring**

. drop transfer
RT charge transfer
electron transfer
energy transfer
exchanging
heat transfer
mass transfer
materials handling
momentum transfer
∞ shift
technology transfer
transfer orbits
transportation

transform integrals

USE **integral transformations**

transformation tensors

USE **tensors**

∞ transformations

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT Fujita method
functions (mathematics)
order-disorder transformations
phase transformations
transformations (mathematics)

transformations (mathematics)

UF *transforms*

GS **transformations (mathematics)**

. coordinate transformations
. discrete cosine transform
. Householder transformations
. integral transformations
. . . Fourier transformation
. . . fast Fourier transformations
. . . Fourier-Bessel transformations
. . . Hilbert transformation
. . . Laplace transformation
. Gabor transformation
. linear transformations

RT Fujita method
functions (mathematics)
gauge invariance
Racah coefficient
∞ transformations
wavelet analysis

transformers

GS **transformers**

. instrument transformers
. mode transformers
. voltage converters (AC to AC)

RT amplifiers
ballasts (impedances)
circuit protection
∞ converters
coupling circuits
diplexers
electric coils
electric filters
electric motors
electric reactors
electrical grounding
inductance
magnet coils
magnetic circuits
magnetic cores
oscillators
phase control
plasma control
power supply circuits
resolvers
saturable reactors
solid state devices
toroids
up-converters
voltage regulators

transforming genes

(added July 2002)

USE **oncogenes**

transforms

USE **transformations (mathematics)**

transfusion

RT blood
first aid
medical science
syringes
veins

transgranular corrosion

DEF A slow mode of failure that requires the combined action of stress and aggressive environment where the path of failure runs through the grains producing branched cracking.

GS chemical attack
. **transgranular corrosion**
corrosion

. **transgranular corrosion**

RT corrosion tests
grain boundaries
intergranular corrosion
metal fatigue
protective coatings
stress corrosion

transhorizon radio propagation

GS transmission
. electromagnetic wave transmission
. . . radio transmission
. . . **transhorizon radio propagation**
. signal transmission
. . . radio transmissions
. . . **transhorizon radio propagation**
RT radio attenuation
radio signals

transient heating

GS heating
. **transient heating**
. . . pulse heating
. . . shock heating
RT aerodynamic heating

transient loads

SN (LIMITED TO FORCE LOADS)
GS loads (forces)
. dynamic loads
. . . **transient loads**
. . . gust loads
. . . impact loads
. . . landing loads
. . . shock loads
. . . . blast loads
RT aerodynamic loads
contact loads
cyclic loads

random loads
structural design criteria

transient oscillations

GS oscillations
. **transient oscillations**
RT damping
electron oscillations
lasers
masers
pilot induced oscillation
stimulated emission devices
transverse oscillation

transient pressures

GS pressure
. **transient pressures**
RT mass flow rate
pressure sensors

Transient Reactor Test Facility

UF *TREAT (test facility)*

GS test facilities

. **Transient Reactor Test Facility**
RT nuclear research and test reactors
reactor safety
SNAP

transient response

GS dynamic characteristics
. **transient response**
responses
. dynamic response
. . . **transient response**
RT amplification
∞ compensation
damping
dynamic stability
impedance
pressure sensors
resonant frequencies
response bias
sensitivity
stroking tests
time constant
transfer functions

transients (surges)

USE **surges**

transistor amplifiers

GS amplifiers
. **transistor amplifiers**
electronic equipment
. solid state devices
. . . semiconductor devices
. . . **transistor amplifiers**
RT cascode devices
current amplifiers
differential amplifiers
feedback amplifiers
intermediate frequency amplifiers
operational amplifiers
power amplifiers
preamplifiers
transistors

transistor circuits

GS circuits
. **transistor circuits**
RT cascode devices
DTL integrated circuits
∞ electronics
hybrid circuits
integrated circuits
linear integrated circuits
logic circuits
microelectronics
printed circuits
TTL integrated circuits

transistor logic

RT Boolean algebra
∞ logic
logic circuits
logic design
threshold logic

transistors

GS electronic equipment

- . solid state devices
- .. semiconductor devices
- ... **transistors**
- bipolar transistors
- field effect transistors
- charge flow devices
- JFET
- MODFETS
- high electron mobility transistors
- MODFETS
- junction transistors
- JFET
- phototransistors
- silicon transistors
- SOS (semiconductors)
- single electron transistors

- RT cascode devices
- germanium diodes
- ion implantation
- miniaturization
- pentodes
- resonant tunneling
- SIS (semiconductors)
- tetrodes
- transistor amplifiers
- TRAPATT devices
- triodes

transistor-transistor-logic integ circuits
 USE **TTL integrated circuits**

- ∞ **transit**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT occultation
- Transit satellites
- transits

- Transit Attitude Control satellite**
- UF *TRAAC satellite*
- GS artificial satellites
- . navigation satellites
- .. **Transit Attitude Control satellite**
- RT ∞ control
- satellite attitude control

- Transit navigation system**
- GS satellite navigation systems
- . **Transit navigation system**
- RT NASA programs
- navigation satellites
- Nova satellites
- Transit satellites

- Transit satellites**
- GS artificial satellites
- . navigation satellites
- .. **Transit satellites**
- RT Discos (satellite attitude control)
- ∞ transit
- Transit navigation system

- transit time**
- SN (NOT LIMITED TO ASTRONOMICAL TIMES OF TRANSIT)
- GS time
- . **transit time**
- RT Barritt diodes
- CATT devices
- flight time
- ∞ motion

- ∞ **transition**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boundary layer transition
- ductile-brittle transition
- electron transitions
- forbidden transitions
- phase transformations

transition elements (chemistry)
 (added March 2000)
 USE **transition metals**

- transition flight**
- (added January 1990)
- RT aircraft maneuvers
- ∞ flight
- horizontal flight

- hovering
- V/STOL aircraft
- vertical flight

- transition flow**
- GS fluid flow
- . gas flow
- .. molecular flow
- ... **transition flow**
- RT boundary layer thickness
- boundary layer transition
- free molecular flow
- period doubling
- rarefied gas dynamics
- slip flow

- ∞ **transition layers**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boundary layer transition
- interlayers
- laminar flow
- plasma layers
- shear layers
- shock layers
- shock waves
- surface layers
- turbulent flow

- transition metals**
- UF *transition elements (chemistry)*
- GS metals

- . **transition metals**
- .. cadmium
- ... cadmium isotopes
- .. chromium
- ... chromium isotopes
- .. cobalt
- ... cobalt isotopes
- cobalt 58
- cobalt 60
- .. copper
- ... copper isotopes
- .. gold
- ... gold isotopes
- gold 198
- .. hafnium
- ... hafnium isotopes
- .. iridium
- ... iridium isotopes
- .. iron
- ... iron isotopes
- iron 57
- iron 58
- iron 59
- .. manganese
- ... manganese isotopes
- .. mercury (metal)
- ... mercury isotopes
- .. mercury vapor
- .. molybdenum
- .. nickel
- ... nickel isotopes
- .. niobium
- ... niobium isotopes
- niobium 95
- .. osmium
- ... osmium isotopes
- .. palladium
- .. platinum
- ... platinum isotopes
- .. rhenium
- ... rhenium isotopes
- .. rhodium
- ... rhodium isotopes
- .. ruthenium
- ... ruthenium isotopes
- .. scandium
- ... scandium isotopes
- .. silver
- ... silver isotopes
- .. tantalum
- ... tantalum isotopes
- .. technetium
- ... technetium isotopes
- .. titanium
- ... titanium isotopes
- .. tungsten
- ... tungsten isotopes

- .. vanadium
- ... vanadium isotopes
- .. yttrium
- ... yttrium isotopes
- .. zinc
- ... zinc isotopes
- .. zirconium
- ... zirconium isotopes
- zirconium 95
- RT actinide series
- complex compounds
- metal nitrides
- palladium compounds
- rare earth elements
- refractory metals
- ruthenium compounds
- shape memory alloys
- transuranium elements

- transition points**
- DEF In aerodynamics, the points of change from laminar to turbulent flow.
- RT boundary layer transition
- ∞ equilibrium
- Knudsen flow
- phase diagrams
- Reynolds number

- transition pressure**
- DEF The pressure at which phase transition occurs.
- GS pressure
- . **transition pressure**
- RT high pressure
- hydrostatic pressure
- phase transformations
- pressure effects

- transition probabilities**
- RT electron transitions
- excitation
- Fermi surfaces
- nuclear capture
- probability theory
- spectra

- Transition Region and Coronal Explorer**
- (added May 1998)
- DEF Small Explorer Mission satellite supporting the investigation of the relationships between fine-scale magnetic fields and their associated plasma structures in the transition region and lower corona of the Sun.
- UF *Explorer 73 satellite*
- TRACE satellite*
- GS artificial satellites
- . scientific satellites
- .. Explorer satellites
- ... **Transition Region and Coronal Explorer**
- .. small scientific satellites
- ... **Transition Region and Coronal Explorer**
- RT chromosphere
- SOHO Mission
- solar atmosphere
- solar corona
- solar magnetic field
- solar observatories
- solar physics
- solar transition region

- transition temperature**
- DEF An arbitrarily defined temperature within the temperature range in which metal fracture characteristics determined usually by notched tests are changing rapidly such as from primarily fibrous (shear) to primarily crystalline (cleavage) fracture. The arbitrarily defined temperature in a range in which the ductility of a material changes rapidly with temperature.
- GS temperature
- . **transition temperature**
- RT ductile-brittle transition
- glass transition temperature
- heat of fusion
- Kondo effect
- liquid phases
- melting points
- phase diagrams

transits

phase transformations
solidification
superconducting power transmission
superconductivity

transits

SN (EXCLUDES PARTIAL OR TOTAL OCCULTATION OF ONE BODY BY ANOTHER)
GS measuring instruments
. optical measuring instruments
. . . **transits**
. . . theodolites
. . . . cinetheodolites
optical equipment
. optical measuring instruments
. . . **transits**
. . . theodolites
. . . . cinetheodolites
RT compasses
sextants
∞ transit

translating

GS **translating**
. machine translation
RT decoding
documentation
∞ interpretation
languages
technical writing
∞ translators

translational motion

GS **translational motion**
. three dimensional motion
. . three dimensional flow
. . . Karman-Bodewadt flow
. . . secondary flow
RT ∞ motion
racks (gears)
rigid structures

∞ translators

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT computer programs
decoders
digital to voice translators
language programming
repeaters
translating

translucence

GS electromagnetic properties
. optical properties
. . . **translucence**
RT light transmission
opacity
optical density
transmissivity
transparence

translunar injection

GS injection
. **translunar injection**
RT injection guidance
midcourse guidance
orbital mechanics
transfer orbits

translunar space

USE **interplanetary space**

transmission

DEF Process by which radiant energy proceeds through any material or object. Used for coaxial transmission.

UF *coaxial transmission*
GS **transmission**
. demultiplexing
. electric power transmission
. electromagnetic wave transmission
. . light transmission
. . . light scattering
. . . . halos
. . microwave attenuation
. . radar transmission
. . radio transmission
. . . double sideband transmission

. . . ionospheric propagation
. . . . ionospheric F-scatter propagation
. . . microwave transmission
. . . multipath transmission
. . . short wave radio transmission
. . . single sideband transmission
. . . spread spectrum transmission
. . . transequatorial propagation
. . . transhorizon radio propagation
. . scatter propagation
. . . ionospheric F-scatter propagation
. . television transmission
. . heat transmission
. . heat transfer
. . . aerodynamic heat transfer
. . . . hypersonic heat transfer
. . . . supersonic heat transfer
. . . conductive heat transfer
. . . convective heat transfer
. . . laminar heat transfer
. . . radiative heat transfer
. . . turbulent heat transfer
. multiplexing
. . code division multiplexing
. . frequency division multiplexing
. . time division multiplexing
. . wavelength division multiplexing
. self propagation
. signal transmission
. . data transmission
. . . automatic picture transmission
. . . multiple access
. . . . Aloha system
. . . . carrier sense multiple access
. . . . code division multiple access
. . . . demand assignment multiple access
. . . . frequency division multiple access
. . . . time division multiple access
. . . packet transmission
. . . . Aloha system
. . . single channel per carrier transmission
. . microwave attenuation
. . radar transmission
. . radio transmission
. . . double sideband transmission
. . . ionospheric propagation
. . . . ionospheric F-scatter propagation
. . . microwave transmission
. . . multipath transmission
. . . short wave radio transmission
. . . single sideband transmission
. . . spread spectrum transmission
. . . transequatorial propagation
. . . transhorizon radio propagation
. . satellite transmission
. . telemetry
. . . biotelemetry
. . . P.A.C.M. telemetry
. . . PCM telemetry
. . . radio telemetry
. . . . pulse frequency modulation telemetry
. . television transmission
. . sound transmission
. . stress propagation
. . telephony
. . wave propagation
. . . acoustic propagation
. . . sound propagation
. . diffraction propagation
. . ground wave propagation
. . . ionospheric propagation
. . . ionospheric F-scatter propagation
. . light scattering
. . . halos
. . scatter propagation
. . . ionospheric F-scatter propagation
. . shock wave propagation
. . transequatorial propagation
RT absorptance
atmospheric attenuation
attenuation
broadcasting
∞ conduction

diffraction
electromagnetic absorption
electromagnetic radiation
optical filters
output
∞ propagation
radar attenuation
radio attenuation
reflection
refraction
signal reflection
telecommunication
transmissivity
transmittance
wave dispersion

transmission circuits

GS circuits
. **transmission circuits**
RT circuit protection
electric power transmission
signal stabilization
strip transmission lines
telecommunication

transmission efficiency

GS efficiency
. **transmission efficiency**
RT Aloha system
attenuation coefficients
bit error rate
carrier to noise ratios
data transmission
downlinking
electromagnetic wave transmission
frequency hopping
intersymbolic interference
network control
opacity
packet transmission
packets (communication)
power efficiency
signal transmission
transmission rate (communications)
transmittance
uplinking

transmission electron microscopy

(added December 1992)

DEF A type of electron microscopy in which the specimen transmits an electron beam focused on it. Image contrasts are formed by the scattering of electrons out of the beam. Various magnetic lenses perform functions analogous to those of ordinary lenses in light microscopy.

UF *TEM (microscopy)*

GS microscopy
. electron microscopy
. . **transmission electron microscopy**

RT electron beams
electron scattering
field emission
ion microscopes
magnetic lenses
microanalysis
phase contrast
scanning tunneling microscopy

transmission fluids

RT fluid transmission lines
∞ fluids
hydraulic fluids
working fluids

transmission lines

DEF The conductive connectons between system elements which carry signal power. (2) lines used for electric power transmission.

UF *trunks (lines)*

GS **transmission lines**

. communication cables
. . coaxial cables
. . fluid transmission lines
. . power lines
. . strip transmission lines
. . microstrip transmission lines
. . submarine cables
. . underground transmission lines
RT acoustic delay lines

- antenna couplers
- antenna feeds
- backward waves
- ∞ cables
- circuit protection
- circuits
- delta antennas
- directional couplers
- distributed amplifiers
- electric conductors
- electric current
- electric power transmission
- electric wire
- electrical engineering
- electrification
- harnesses
- impedance matching
- insulators
- ∞ lines
- mode transformers
- nonresonance
- optical fibers
- Smith chart
- standing wave ratios
- superconducting power transmission
- telecommunication
- waveguides
- wiring

transmission loss

DEF The reduction in the magnitude of some characteristic of a signal between two stated points in a transmission system.

RT attenuation
 current regulators
 electric power transmission
 insertion
 insertion loss
 losses
 lossy media
 silence
 transmission rate (communications)
 voltage regulators
 wave dispersion

transmission rate (communications)

(added July 1993)
 UF *transmission speed (communications)*
 GS rates (per time)

transmission rate (communications)

RT access time
 bit error rate
 channel capacity
 data transmission
 delay
 interprocessor communication
 satellite communication
 signal reception
 signal transmission
 telecommunication
 time lag
 transmission efficiency
 transmission loss

transmission speed (communications)

USE **transmission rate (communications)**

transmissions (machine elements)

DEF The gearing system by which power is transmitted from the engine to the live axle in an automobile. Also known as gearboxes.

UF *gearboxes*
 GS mechanical drives
 . **transmissions (machine elements)**

RT gears
 shafts (machine elements)
 torque converters
 torque motors
 vehicle wheels

transmissivity

DEF Concerning radiation incident upon the boundary between two media, transmissivity is the ratio of the radiation transmitted through the boundary to the component of radiation normal to the boundary.

GS electromagnetic properties
 . optical properties

. . . **transmissivity**
 RT absorptance
 absorptivity
 density (mass/volume)
 light scattering
 opacity
 ∞ physical properties
 translucence
 transmission
 transmittance
 transparency
 transponders
 visibility

transmissometers

GS measuring instruments
 . optical measuring instruments
 . . **transmissometers**
 optical equipment
 . optical measuring instruments
 . . **transmissometers**
 RT densitometers
 photometers
 radiance
 telephotometry
 transmittance

transmittance

DEF The ratio of the radiant flux transmitted by a medium or a body to the incident flux.

GS electromagnetic properties
 . optical properties
 . . **transmittance**
 RT absorptance
 attenuation coefficients
 density (mass/volume)
 electromagnetic absorption
 infrared absorption
 light (visible radiation)
 optical density
 photometry
 ray tracing
 reflectance
 scattering
 thermochromic coatings
 transmission
 transmission efficiency
 transmissivity
 transmissometers
 transparency

transmitter receivers

DEF Combinations of transmitters and receivers in single housings, with some components being used by both units. Used for transceivers.

UF *transceivers*
 GS communication equipment
 . radio receivers
 . . **transmitter receivers**
 radio equipment
 . radio receivers
 . . **transmitter receivers**
 . radio transmitters
 . . **transmitter receivers**
 receivers
 . radio receivers
 . . **transmitter receivers**
 transmitters
 . radio transmitters
 . . **transmitter receivers**
 RT interrogation
 transponders

transmitters

DEF Devices used for the generation of signals of any type and form which are to be transmitted. Used for senders.

UF *senders*
 GS **transmitters**
 . emergency locator transmitters
 . instrument transmitters
 . radar transmitters
 . radio transmitters
 . . radio beacons
 . . . omnidirectional radio ranges
 . . . self calibrating omnirange
 . . radiometeorographs
 . . radiosondes
 . . . ionosondes

. . . rawinsondes
 . . radiotelephones
 . . sonobuoys
 . . transmitter receivers
 . repeaters
 RT antennas
 attenuation
 duplexers
 ∞ instruments
 microphones
 receivers
 signal encoding
 telecommunication
 television transmission
 transponders

transmutation

GS nuclear reactions
 . nuclear transformations
 . . **transmutation**
 RT neutron irradiation
 neutron transmutation doping
 radiogenic materials

trans-Neptunian objects

(added June 2006)
 DEF Solar system objects that orbit the sun at an average distance that is greater than the orbital distance of Neptune.

UF *TNO (astronomy)*
 GS celestial bodies
 . **trans-Neptunian objects**
 . . Charon
 . . Pluto (planet)
 . . Quaoar
 RT asteroids
 Kuiper belt
 Oort cloud
 planetology
 solar system

transoceanic communication

GS telecommunication
 . **transoceanic communication**
 transoceanic systems
 . **transoceanic communication**
 RT facsimile communication
 radio communication
 Relay satellites

transoceanic flight

DEF Flight across an ocean.
 RT ∞ flight

transoceanic systems

GS **transoceanic systems**
 . transoceanic communication
 RT intercontinental ballistic missiles
 ocean data acquisitions systems
 ∞ systems
 telecommunication
 transportation
 world data centers

transonic aircraft

USE **supersonic aircraft**

Transonic Aircraft Technology Program

USE **TACT program**

transonic compressors

GS compressors
 . **transonic compressors**
 RT supersonic compressors
 turbocompressors

transonic flight

RT ∞ flight
 rocket flight
 sonic booms
 supersonic flight

transonic flow

DEF In aerodynamics, flow of a fluid over a body in the range just above and just below the acoustic velocity. Used for sonic flow and transsonics.

UF *sonic flow*
transonics
 GS fluid flow

transonic flutter

- . compressible flow
- . . **transonic flow**
- RT aerodynamics
- compressibility effects
- ∞ flow
- flow velocity
- gas flow
- nozzle flow
- Ringleb flow
- shock waves
- sonic nozzles
- subsonic flow
- supersonic flow
- trisonic wind tunnels
- wind tunnels

transonic flutter

- GS vibration
- . structural vibration
- . . flutter
- . . . **transonic flutter**
- . . self induced vibration
- . . . **transonic flutter**
- RT missile vibration
- subsonic flutter
- supersonic flutter

transonic inlets

USE **supersonic inlets**

transonic nozzles

- RT conical nozzles
- convergent-divergent nozzles
- hypersonic nozzles
- ∞ nozzles
- sonic nozzles
- supersonic nozzles
- wind tunnel nozzles

transonic speed

- SN (APPROXIMATELY MACH 0. 8 TO 1. 2)
- DEF The speed of a body relative to the surrounding fluid at which the flow is in some places on the body subsonic and in other places supersonic.
- GS rates (per time)
- . **transonic speed**
- velocity
- . **transonic speed**
- RT acoustic velocity
- subsonic speed
- supersonic speed

transonic turbines

USE **supersonic turbines**

transonic wind tunnels

- GS test facilities
- . wind tunnels
- . . **transonic wind tunnels**
- RT blowdown wind tunnels
- hypersonic wind tunnels
- slotted wind tunnels
- subsonic wind tunnels
- supersonic wind tunnels
- wing flow method tests

transonics

USE **transonic flow**

transparence

- UF *transparent materials*
- GS electromagnetic properties
- . optical properties
- . . **transparence**
- RT absorptance
- absorptivity
- atmospheric optics
- clarity
- density (mass/volume)
- electromagnetic absorption
- haze
- light transmission
- opacity
- optical density
- radome materials
- translucence
- transmissivity
- transmittance

turbidity

transparent materials

USE **transparence**

transpiration

DEF The passage of gas or liquid through a porous solid (usually under conditions of molecular flow). Used for fluid transpiration.

UF *fluid transpiration*

GS phase transformations

. vaporizing

. . evaporation

. . . **transpiration**

RT cooling

cooling systems

evanescence

evapotranspiration

evolution (liberation)

gas evolution

mass transfer

molecular flow

outgassing

permeating

perspiration

plant physiology

temperature control

transpiration cooling

USE **sweat cooling**

transplantation

RT clinical medicine

heart implantation

surgery

transplutonic planets

(added June 1998)

USE **hypothetical planets**

transponder control group

UF *TCG (tracking)*

RT ∞ control

radar tracking

satellite tracking

spacecraft tracking

telemetry

transponders

transponders

DEF Combined receiver and transmitter whose function is to transmit signals automatically when triggered by an interrogator. Used for responders.

UF *responders*

GS radio equipment

. **transponders**

RT air traffic control

Beacon Collision Avoidance System

interrogation

radar beacons

radar equipment

radio receivers

radio transmitters

transmissivity

transmitter receivers

transmitters

transponder control group

transport aircraft

GS **transport aircraft**

. Aladin 2 aircraft

. AN-2 aircraft

. AN-22 aircraft

. AN-24 aircraft

. Argosy MK-1 aircraft

. BAC 111 aircraft

. Boeing 707 aircraft

. Boeing 720 aircraft

. Boeing 727 aircraft

. Boeing 733 aircraft

. Boeing 737 aircraft

. Boeing 747 aircraft

. Boeing 757 aircraft

. Boeing 767 aircraft

. Boeing 777 aircraft

. Boeing 2707 aircraft

. cargo aircraft

. . Breguet 941 aircraft

. . C-1A aircraft

- . . C-2 aircraft
- . . C-5 aircraft
- . . C-9 aircraft
- . . C-15 aircraft
- . . C-17 aircraft
- . . C-33 aircraft
- . . C-35 aircraft
- . . C-46 aircraft
- . . C-47 aircraft
- . . C-54 aircraft
- . . C-118 aircraft
- . . C-119 aircraft
- . . C-121 aircraft
- . . C-123 aircraft
- . . C-124 aircraft
- . . C-130 aircraft
- . . C-131 aircraft
- . . C-133 aircraft
- . . C-135 aircraft
- . . C-140 aircraft
- . . C-141 aircraft
- . . C-160 aircraft
- . . CH-21 helicopter
- . . CL-44 aircraft
- . . DC 3 aircraft
- . . DC 7 aircraft
- . . P-160 aircraft
- . . P-166 aircraft
- . . spanloader aircraft
- . . YC-14 aircraft
- . CH-3 helicopter
- . CH-34 helicopter
- . CH-46 helicopter
- . CH-47 helicopter
- . CH-54 helicopter
- . CL-84 aircraft
- . CL-823 aircraft
- . Concorde aircraft
- . CV-880 aircraft
- . DC 8 aircraft
- . DC 9 aircraft
- . DC 10 aircraft
- . DH 121 aircraft
- . DH 125 aircraft
- . DHC 2 aircraft
- . DHC 4 aircraft
- . DHC 5 aircraft
- . DO-31 aircraft
- . DO-328 aircraft
- . Electra aircraft
- . European Airbus
- . . A-300 aircraft
- . . A-310 aircraft
- . . A-320 aircraft
- . . A-330 aircraft
- . . A-340 aircraft
- . . A-380 aircraft
- . F-27 aircraft
- . F-28 transport aircraft
- . G-1 aircraft
- . G-222 aircraft
- . H-19 helicopter
- . H-53 helicopter
- . H-56 helicopter
- . HC-3 helicopter
- . HFB-320 aircraft
- . IL-14 aircraft
- . IL-76 aircraft
- . IL-86 aircraft
- . IL-96 aircraft
- . L-1011 aircraft
- . L-2000 aircraft
- . light intratheater transport
- . light transport aircraft
- . Lockheed model 18 aircraft
- . MD 11 aircraft
- . MD 80 aircraft
- . MH-262 aircraft
- . Mystere 20 aircraft
- . Mystere 50 aircraft
- . S-58 helicopter
- . S-61 helicopter
- . SA-330 helicopter
- . SC-5 aircraft
- . SC-7 aircraft
- . SH-3 helicopter
- . SH-4 helicopter
- . short haul aircraft
- . . C-8A augmentor wing aircraft

- . . Cessna 402B aircraft
- . . Mercure aircraft
- . Boeing 717 aircraft
- . tanker aircraft
- . TU-124 aircraft
- . TU-144 aircraft
- . TU-154 aircraft
- . TU-204 aircraft
- . UH-34 helicopter
- . UH-60A helicopter
- . UH-61A helicopter
- . VC-10 aircraft
- . very large transport aircraft
- . Viscount aircraft
- . XC-142 aircraft
- . YS-11 aircraft
- RT air transportation
- ∞ aircraft
- commercial aircraft
- general aviation aircraft
- jet aircraft
- light aircraft
- ∞ low wing aircraft
- ∞ military aircraft
- passenger aircraft
- rotary wing aircraft
- ∞ subsonic aircraft
- supersonic aircraft
- ∞ transport vehicles
- turbofan aircraft
- turboprop aircraft
- utility aircraft
- V/STOL aircraft
- water takeoff and landing aircraft

transport coefficients

USE **transport properties**

transport properties

- UF *transport coefficients*
- GS **transport properties**
 - . atmospheric conductivity
 - . . ionospheric conductivity
 - . carrier mobility
 - . . electron mobility
 - . . hole mobility
 - . diffusion coefficient
 - . . Soret coefficient
 - . electrical resistivity
 - . . ionospheric conductivity
 - . . magneto-resistivity
 - . . photoconductivity
 - . . plasma conductivity
 - . . superconductivity
 - . . . Kondo effect
 - . gaseous diffusion
 - . . gaseous self-diffusion
 - . ionic mobility
 - . thermal conductivity
 - . thermal diffusivity
 - . viscosity
 - . . eddy viscosity
 - . . gas viscosity
- RT binary fluids
- Boltzmann transport equation
- ∞ conductivity
- diffusion
- flow coefficients
- Hall effect
- Hall resistance
- heat transfer
- high temperature tests
- kinetic theory
- Lighthill gas model
- mobility
- ∞ physical properties
- pollution transport
- ∞ properties
- radiation transport
- Seebeck effect
- ∞ solid state physics
- thermoelectricity

transport theory

- GS kinetic theory
 - . **transport theory**
 - . . Chapman-Enskog theory
 - . . Eyring theory
 - . . mixing length flow theory
- RT Boltzmann transport equation

- diffusion theory
- gas transport
- integral equations
- molecular interactions
- Monte Carlo method
- pollution transport
- reaction-diffusion equations
- ∞ theories

∞ **transport vehicles**

- SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT crawler tractors
- ground effect machines
- rapid transit systems
- ships
- transport aircraft
- ∞ vehicles

transportation

- GS **transportation**
 - . air transportation
 - . marine transportation
 - . rail transportation
 - . rapid transit systems
 - . space transportation
 - . . space transportation system
 - . . . Advanced Launch System (STS)
 - . . . Saenger space transportation system
 - . urban transportation
- RT artificial harbors
- automated guideway transit vehicles
- automated transit vehicles
- cargo
- contractors
- conveyors
- deepwater terminals
- delivery
- distributing
- ∞ distribution
- electric automobiles
- evacuating (transportation)
- freight costs
- freighters
- handling equipment
- hauling
- highways
- logistics
- materials handling
- missiles
- motor vehicles
- offshore docking
- offshore platforms
- packaging
- passengers
- pipelines
- riding quality
- roads
- routes
- services
- site selection
- tanker terminals
- terminal facilities
- tourism
- tractors
- traffic
- transcontinental systems
- transferring
- transoceanic systems
- transportation networks
- ∞ travel
- trucks

transportation energy

- RT allocations
- cargo
- commercial energy
- distributing
- domestic energy
- economic factors
- ∞ energy
- energy conversion
- engines
- fuels
- hauling
- industrial energy
- ships
- ∞ tankers

trucks

transportation networks

- DEF Networks of highways, railways, subways, etc., for the movement of passenger and cargo.
- RT highways
- intersections
- rapid transit systems
- roads
- transportation

transporter

- GS surface vehicles
- . **transporter**
- RT ∞ containers
- ∞ vehicles

transputers

- (added August 1989)
- GS data processing equipment
- . computers
- . . **transputers**
- RT architecture (computers)
- distributed processing
- interprocessor communication
- microprocessors
- parallel processing (computers)

transuranium elements

DEF Elements above uranium in the periodic table, that is, with an atomic number greater than 92.

- GS chemical elements
- . actinide series
- . . **transuranium elements**
- . . . americium
- americium isotopes
- americium 241
- . . . berkelium
- . . . californium
- californium isotopes
- . . . curium
- curium isotopes
- curium 242
- curium 244
- . . . einsteinium
- . . . fermium
- . . . lawrencium
- . . . mendelevium
- . . . neptunium
- neptunium isotopes
- nobelium
- . . . plutonium
- plutonium isotopes
- plutonium 238
- plutonium 239
- plutonium 240
- plutonium 241
- plutonium 244
- . . . sergenium
- . . . nuclides
- . . . isotopes
- . . . radioactive isotopes
- **transuranium elements**
- americium
- americium isotopes
- americium 241
- berkelium
- californium
- californium isotopes
- curium
- curium isotopes
- curium 242
- curium 244
- einsteinium
- fermium
- lawrencium
- mendelevium
- neptunium
- neptunium isotopes
- nobelium
- plutonium
- plutonium isotopes
- plutonium 238
- plutonium 239
- plutonium 240
- plutonium 241
- plutonium 244
- sergenium

transverse acceleration

metals
. actinide series
. . . **transuranium elements**
. . . americium
. . . . americium isotopes
. americium 241
. . . . berkelium
. . . . californium
. . . . californium isotopes
. . . . curium
. curium isotopes
. curium 242
. curium 244
. . . . einsteinium
. . . . fermium
. . . . lawrencium
. . . . mendeleevium
. . . . neptunium
. . . . neptunium isotopes
. . . . nobelium
. . . . plutonium
. plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
. . . . sergenium
RT transition metals

transverse acceleration
GS rates (per time)
. acceleration (physics)
. . **transverse acceleration**
RT ∞ acceleration
acceleration measurement
acceleration stresses (physiology)
angular acceleration
transverse momentum

transverse loads
(added June 1992)
GS loads (forces)
. **transverse loads**
RT dynamic loads
force distribution
load distribution (forces)
loading moments
shear stress
static loads
stress distribution
stresses

transverse momentum
(added June 1999)
GS momentum
. **transverse momentum**
RT angular momentum
elementary particle interactions
particle motion
transverse acceleration

transverse oscillation
DEF Oscillation in which the direction of motion of the particles is perpendicular to the direction of advance of the oscillatory motion in contrast with longitudinal oscillation, in which the direction of motion in the same as that of advance. Used for transverse vibration.
UF *transverse vibration*
GS oscillations
. **transverse oscillation**
. . H waves
RT gamma rays
harmonic oscillation
lateral oscillation
stable oscillations
transient oscillations

transverse vibration
USE **transverse oscillation**

transverse waves
DEF Waves in which the direction of displacement at each point of the medium is parallel to the wave front.
GS **transverse waves**
. H waves
RT elastic waves
electromagnetic radiation

gamma rays
longitudinal waves
magnetohydrodynamic flow
plane waves
radio waves
S waves
SH waves
vibration mode
wave packets
 ∞ waves

transversely excited atmospheric lasers
USE **TEA lasers**

TRAP program

GS programs
. **TRAP program**
RT plasma control
 ∞ radiation

TRAPATT devices

UF *trapped plasma avalanche triggered transit*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **TRAPATT devices**
RT avalanche diodes
 ∞ devices
diodes
transistors

TRAPATT diodes

USE **avalanche diodes**

trapezoidal tail surfaces

GS assemblies
. tail assemblies
. . **trapezoidal tail surfaces**
planforms
. **trapezoidal tail surfaces**
tail surfaces
. **trapezoidal tail surfaces**
RT control surfaces
horizontal tail surfaces
hypersonic aircraft
rudders
stabilizers (fluid dynamics)
supersonic aircraft
 ∞ surfaces
sweptback tail surfaces

trapezoidal wings

GS airfoils
. wings
. . low aspect ratio wings
. . . **trapezoidal wings**
. . . swept wings
. . . . swept forward wings
. . . . **trapezoidal wings**
. . . . sweptback wings
. **trapezoidal wings**
planforms
. wing planforms
. . swept forward wings
. . . **trapezoidal wings**
. . . sweptback wings
. . . . **trapezoidal wings**

trapezoids

GS geometry
. Euclidean geometry
. . polygons
. . . tetragons
. . . . **trapezoids**

trapped magnetic fields

GS magnetic fields
. **trapped magnetic fields**
RT flux pinning
magnetically trapped particles
plasma control
superconductivity
trapping

trapped particles

GS particles
. **trapped particles**
. . magnetically trapped particles
. . . radiation belts

. . . . artificial radiation belts
. . . . inner radiation belt
. . . . outer radiation belt
. . . . proton belts
RT charged particles
electron precipitation
laser cooling
proton precipitation
trapping

trapped plasma avalanche triggered transit

USE **TRAPATT devices**

trapped vortices

(added August 1989)
DEF Air flow in rotary motion but trapped relative to leading edge vortex separation, which increases not only lift but also drag. The trapped vortices result in thrust and reduced drag. Used for vortex traps.

UF *vortex traps*

GS vortices

. **trapped vortices**

RT counterflow
flow distribution
mixing
rotating fluids
rotating liquids
turbulent mixing
turbulent wakes
vortex rings
vorticity

trapping

GS **trapping**
. cryotrapping
RT conduction bands
crystal defects
flux pinning
ion storage
phosphorescence
radiation belts
trapped magnetic fields
trapped particles

traps

GS **traps**
. cold traps
. ion traps (instrumentation)
. vapor traps
RT concentrators
entrapment
separators
valves

∞ travel

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT distance
harbors
logistics
range (extremes)
tourism
transportation

traveling charge

GS electric charge
. **traveling charge**
RT electrostatics
energy dissipation
field theory (physics)

traveling ionospheric disturbances

DEF Atmospheric gravity waves originating at the auroral oval or at the terminator with speeds of 1000 km/hour over the Earth's surface. Due to interaction between the neutral atmosphere and the ionosphere, they result in temporary enhancements and depletions of the ionosphere that travel with the gravity waves.

UF *TID*

GS ionospheric disturbances
. **traveling ionospheric disturbances**

RT gravity waves
ionospheric currents
ionospheric propagation
ionospheric storms
ionospheric tilts
magnetic variations

sudden ionospheric disturbances

traveling salesman problem

- RT operations research
- probability theory
- ∞ problems
- statistical analysis

traveling solvent method

- SN (LIMITED TO CRYSTAL GROWTH TECHNIQUES)
- GS growth
 - . crystal growth
 - . . **traveling solvent method**
- RT additives
 - carrier injection
 - electroepitaxy
- ∞ methodology

traveling wave amplifiers

- GS amplifiers
 - . **traveling wave amplifiers**
- RT amplifier design
- power amplifiers
- traveling wave tubes

traveling wave masers

- GS stimulated emission devices
 - . masers
 - . . **traveling wave masers**
- RT amplifiers
 - cavity resonators
 - coherent electromagnetic radiation

traveling wave modulation

- GS modulation
 - . **traveling wave modulation**
- RT lasers
 - light modulation
 - wave diffraction

traveling wave tubes

DEF Electron tubes in which streams of electrons interact continuously or repeatedly with guided electromagnetic waves moving substantially in synchronism with them, and in such a way that there is a net transfer of energy from the streams to the waves. Used for crestatrons and helix tubes.

- UF *crestatrons*
- helix tubes*
- GS electron tubes
 - . vacuum tubes
 - . . microwave tubes
 - . . . **traveling wave tubes**
 - backward wave tubes
 - helitrons
 - carcinotrons
 - microwave equipment
 - . microwave tubes
 - . . **traveling wave tubes**
 - . . . backward wave tubes
 - helitrons
 - carcinotrons
- RT backward waves
 - Brillouin flow
 - crossed field amplifiers
 - cyclotron resonance devices
 - electron bunching
 - magnetostatic amplifiers
 - magnetrons
 - microwave oscillators
 - oscillations
 - scalloping
 - traveling wave amplifiers

traveling waves

- GS **traveling waves**
 - . solitary waves
- RT backward waves
 - elastic waves
 - electromagnetic radiation
 - nonresonance
 - phase velocity
 - plane waves
 - radio waves

trays

- RT ∞ buckets
- ∞ containers

∞ plates

treadmills

- RT physical exercise
- physical fitness
- physical work
- physiological tests

treads

- RT stairways
- tires
- vehicular tracks

TREAT (test facility)

USE **Transient Reactor Test Facility**

∞ **treatment**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *conditioning (treating)*
- RT air conditioning
 - clinical medicine
 - heat treatment
 - prewhitening
 - sewage treatment
 - surface treatment
 - thermomechanical treatment
 - waste treatment
 - water treatment

tree ring dating

USE **dendrochronology**

∞ **trees**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT conifers
- trees (mathematics)
- trees (plants)

trees (mathematics)

- GS **trees (mathematics)**
 - . fault trees
- RT analysis (mathematics)
 - circuits
 - graph theory
 - graphs (charts)
- ∞ nets
 - Petri nets
 - sneak circuit analysis
 - topology
- ∞ trees

trees (plants)

DEF Woody plants having one well defined stem and a more or less definitely formed crown, usually attaining a height of at least 8 feet.

- GS plants (botany)
 - . **trees (plants)**
 - . . citrus trees
 - . . conifers
 - . . deciduous trees
- RT balsa
 - canopies (vegetation)
 - chaparral
 - clearings (openings)
 - defoliants
 - defoliation
 - dendrochronology
 - forests
 - geobotany
 - herbicides
 - logging (industry)
 - Masonite (trademark)
 - orchards
 - phreatophytes
 - plywood
 - silviculture
 - timber identification
 - timber inventory
 - timber vigor
 - timberline
- ∞ trees
 - vegetation
 - wood

Trefftz method

(added July 1998)

DEF Boundary-type approximation scheme for the solution of boundary value problems for

partial differential equations.

- UF *hybrid-Trefftz finite element method*
- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . boundary element method
 - **Trefftz method**
- RT bending theory
 - boundary conditions
 - boundary value problems
 - finite element method
 - partial differential equations
 - plate theory
 - structural analysis

trellis coding

(added August 1991)

DEF A 'sliding window' method of encoding a binary data stream into a sequence of real numbers that are input to a noisy transmission channel.

- GS coding
 - . signal encoding
 - . . **trellis coding**
- RT binary codes
 - channel noise
- ∞ codes
 - concatenated codes
 - convolution integrals
 - phase modulation
 - phase shift keying

tremors

- RT earthquake resistance
 - earthquakes
 - paralysis
 - Parkinson disease
 - Rouse belts

trend analysis

(added May 1989)

DEF A management tool for evaluating variation in data with the ultimate objective of forecasting future events based upon an examination of past results.

- GS information analysis
 - . **trend analysis**
- RT ∞ analyzing
 - data mining
 - failure analysis
 - performance prediction
 - prediction analysis techniques
 - regularity
 - reliability analysis
 - statistical analysis
 - time series analysis
 - trends

trends

- RT extrapolation
 - forecasting
 - growth
 - periodic variations
- ∞ projection
 - time series analysis
 - trend analysis

Tresca flow

- GS fluid flow
 - . plastic flow
 - . . **Tresca flow**
- RT ductility
 - stability
 - yield point

triacetin

- GS acetates
 - . **triacetin**
 - esters
 - . **triacetin**
- RT acetic acid
 - glycerols
 - plasticizers
 - solvents

triaminoguanidinenitrate

USE **TAGN**

triaminoguanidinium azide

GS nitrogen compounds

triangles

- . azides (organic)
- . . **triaminoguanidinium azide**
- organic compounds
- . amines
- . . diamines
- . . . guanidines
- **triaminoguanidinium azide**

triaminotrinitrobenzene
USE **TATB**

triangles

- GS geometry
- . Euclidean geometry
- . . polygons
- . . . **triangles**
- RT tetrahedrons
- trigonometry

triangular wings

USE **delta wings**

triangulation

- RT angles (geometry)
- mapping
- navigation
- trigonometry
- wildlife radiolocation

triatomic molecules

- GS molecules
- . polyatomic molecules
- . . **triatomic molecules**
- RT diatomic molecules

triaxial stresses

- UF *triaxiality*
- GS stresses
- . **triaxial stresses**
- RT mechanical properties
- tensile stress

triaxiality

USE **triaxial stresses**

tribolia

- GS animals
- . invertebrates
- . . arthropods
- . . . insects
- Coleoptera
- beetles
- **tribolia**

tribology

- DEF Science of friction, wear, and lubrication.
- RT abrasion
- corrosion
- erosion
- erosive burning
- fretting
- friction
- interfacial tension
- lubrication
- triboluminescence
- tribometers
- vapor phase lubrication
- wear

triboluminescence

- DEF The emission of light caused by application of mechanical energy to a solid.
- GS emission
- . light emission
- . . luminescence
- . . . photoluminescence
- **triboluminescence**
- RT fluorescence
- friction
- mechanical properties
- photoluminescent bands
- stresses
- tribology

tribometers

(added September 2002)

- DEF Instruments and related methods for determining the degree of friction between two bodies.
- GS measuring instruments

. tribometers

- RT friction
- friction measurement
- ∞ instruments
- lubricant tests
- sliding friction
- tribology
- wear tests

tribometry

(added September 2002)

USE **friction measurement**

tributaries

- RT drainage patterns
- Earth resources
- estuaries
- rivers

trichlorides

USE **chlorides**

trichloroethylene

(added September 1995)

- GS halogen compounds
- . chlorine compounds
- . . **trichloroethylene**
- organic compounds
- . ethylene compounds
- . . chloroethylene
- . . . **trichloroethylene**
- RT cleaning
- reduction (chemistry)
- solvents

Trident aircraft

USE **DH 121 aircraft**

trident submarine

- GS water vehicles
- . ships
- . . submarines
- . . . **trident submarine**
- . underwater vehicles
- . . submarines
- . . . **trident submarine**
- RT navy
- nuclear propulsion

trienes

- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkenes
- **trienes**

triethyl compounds

- GS alkyl compounds
- . **triethyl compounds**
- RT ∞ chemical compounds
- diethyl compounds
- ethyl compounds

trifluoroamine oxide

- GS halogen compounds
- . fluorine compounds
- . . fluoro compounds
- . . . fluorine organic compounds
- fluoroamines
- **trifluoroamine oxide**
- organic compounds
- . amines
- . . fluoroamines
- . . . **trifluoroamine oxide**
- . fluorine organic compounds
- . . fluoroamines
- . . . **trifluoroamine oxide**

trigatrons

- GS switches
- . **trigatrons**
- RT ∞ gas tubes
- pulse modulation
- spark gaps
- trigger circuits

trigger circuits

- DEF Circuits that have two conditions of stability, with means for passing from one to the other when certain conditions are satisfied, ei-

ther spontaneously or through application of an external stimulus.

- GS circuits
- . **trigger circuits**
- RT anticoincidence detectors
- bistable circuits
- gates (circuits)
- multivibrators
- threshold gates
- threshold logic
- thyristors
- trigatrons

triggers

USE **actuators**

trigonometric functions

- GS analysis (mathematics)
- . real variables
- . . periodic functions
- . . . **trigonometric functions**
- cosine series
- sine series
- tangents
- functions (mathematics)
- . transcendental functions
- . . periodic functions
- . . . **trigonometric functions**
- cosine series
- sine series
- tangents
- RT Fresnel integrals
- sine waves
- trigonometry

trigonometry

- GS geometry
- . Euclidean geometry
- . . analytic geometry
- . . . **trigonometry**
- RT angles (geometry)
- ∞ science
- triangles
- triangulation
- trigonometric functions

trim (balance)

USE **aerodynamic balance**

trimers

- GS oligomers
- . **trimers**
- prepolymers
- . **trimers**
- RT dimers
- monomers

trimethadione

- GS drugs
- . **trimethadione**
- ketones
- . **trimethadione**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . **trimethadione**

trimethyl compounds

- GS alkyl compounds
- . **trimethyl compounds**
- RT ∞ chemical compounds
- dimethyl compounds
- methyl compounds

Trinidad and Tobago

- GS landforms
- . islands
- . . West Indies
- . . . **Trinidad and Tobago**
- nations
- . **Trinidad and Tobago**
- RT Caribbean region
- South America

trinitramine

- GS nitrogen compounds
- . **trinitramine**
- organic compounds
- . amines

- . . **trinitramine**
- trinitro compounds**
 - GS nitrogen compounds
 - . nitro compounds
 - . . **trinitro compounds**
 - RT ∞ chemical compounds
- trinitrotoluene**
 - UF *TNT (trinitrotoluene)*
 - GS explosives
 - . **trinitrotoluene**
 - . nitrogen compounds
 - . nitro compounds
 - . . nitrobenzenes
 - . . . **trinitrotoluene**
 - RT exposure
- trinitrotriazocyclohexane*
 - USE **RDX**
- triodes**
 - RT CATT devices
 - diodes
 - electron tubes
 - microwave tubes
 - semiconductor devices
 - tetrodes
 - thyristors
 - transistors
- triols**
 - GS hydroxyl compounds
 - . alcohols
 - . . **triols**
 - . . . cyanuric acid
- triphenyl silicon**
 - GS organic compounds
 - . organic silicon compounds
 - . . **triphenyl silicon**
 - silicon compounds
 - . organic silicon compounds
 - . . **triphenyl silicon**
- triphenyls**
 - GS organic compounds
 - . hydrocarbons
 - . . **triphenyls**
 - phenyls
 - . polyphenyls
 - . . **triphenyls**
- triple axis spectrometers*
 - USE **neutron spectrometers**
- triple stars**
 - (added October 1988)
 - GS celestial bodies
 - . stars
 - . . **triple stars**
 - RT binary stars
 - companion stars
 - stellar systems
 - three body problem
- triplet excitation*
 - USE **atomic energy levels**
- triplet state*
 - USE **atomic energy levels**
- tripods**
 - GS supports
 - . **tripods**
 - RT optical equipment
- tripropellants*
 - USE **liquid rocket propellants**
- trisonic wind tunnels**
 - DEF Wind tunnels designed for subsonic, transonic, and supersonic flows.
 - GS test facilities
 - . wind tunnels
 - . . **trisonic wind tunnels**
 - RT slotted wind tunnels
 - transonic flow
- wind tunnel tests
- tritium**
 - UF *hydrogen 3*
 - GS chemical elements
 - . hydrogen
 - . . hydrogen isotopes
 - . . . **tritium**
 - . nuclides
 - . . isotopes
 - . . . hydrogen isotopes
 - **tritium**
 - radioactive isotopes
 - **tritium**
 - gases
 - . hydrogen
 - . . hydrogen isotopes
 - . . . **tritium**
 - RT heavy water
 - nuclear fuels
- Triton**
 - DEF One of the two satellites of the planet Neptune, with a diameter of about 4800 kilometers, orbiting at a mean distance of 354,000 kilometers.
 - GS celestial bodies
 - . natural satellites
 - . . Neptune satellites
 - . . . **Triton**
 - RT Galilean satellites
 - Neptune (planet)
 - Neptune atmosphere
 - satellite atmospheres
 - Titan
- tritons**
 - GS ions
 - . **tritons**
 - particles
 - . charged particles
 - . . energetic particles
 - . . . nuclei (nuclear physics)
 - **tritons**
 - corpuscular radiation
 - energetic particles
 - nuclei (nuclear physics)
 - **tritons**
 - RT alpha particles
 - protons
- trivalent ions**
 - GS ions
 - . **trivalent ions**
 - RT free radicals
 - positive ions
 - valence
- TRMM satellite**
 - (added May 1998)
 - DEF Satellite supporting the joint US-Japanese Tropical Rainfall Measuring Mission (TRMM) to explore tropical rainfall and its effects on the Earth energy budget, general circulation, and climate. The TRMM satellite represents the first dual deployment of a precipitation radar and passive microwave radiometer on an Earth-viewing satellite.
 - UF *Tropical Rainfall Measuring Mission sat*
 - GS artificial satellites
 - . meteorological satellites
 - . . **TRMM satellite**
 - . scientific satellites
 - . . **TRMM satellite**
 - RT atmospheric circulation
 - CERES (experiment)
 - Earth radiation budget
 - equatorial atmosphere
 - rain
 - tropical meteorology
- trochoids*
 - USE **pivots**
- troilite**
 - GS chalcogenides
 - . sulfides
 - . . pyrrhotite
 - . . . **troilite**
- iron compounds
 - . pyrrhotite
 - . . **troilite**
 - minerals
 - . pyrrhotite
 - . . **troilite**
 - sulfur compounds
 - . sulfides
 - . . pyrrhotite
 - . . . **troilite**
 - RT iron meteorites
 - meteoritic composition
- Trojan aircraft*
 - USE **T-28 aircraft**
- Trojan asteroids**
 - (added August 2000)
 - DEF Any asteroid that orbits in the Lagrange points of another (larger) body. In particular, those asteroids with a revolution period approximately equal to that of Jupiter (1:1 resonance) and clustered at either of the two Lagrange points--60 degrees ahead of or behind the Jupiter. Most asteroids of this group are named after the heroes of the Trojan War.
 - GS celestial bodies
 - . asteroids
 - . . **Trojan asteroids**
 - RT Jupiter (planet)
 - Lagrangian equilibrium points
 - three body problem
 - Trojan orbits
- Trojan orbits**
 - GS orbits
 - . **Trojan orbits**
 - RT celestial mechanics
 - many body problem
 - three body problem
 - Trojan asteroids
- Trombe walls**
 - DEF Structures with passive solar collectors in the walls.
 - GS walls
 - . **Trombe walls**
 - RT energy technology
 - heat storage
 - phase change materials
 - radiative heat transfer
 - solar energy absorbers
 - solar heating
 - solar houses
 - thermal insulation
- tropical meteorology**
 - GS meteorology
 - . **tropical meteorology**
 - RT agrometeorology
 - el Nino
 - equatorial atmosphere
 - GARP Atlantic Tropical Experiment
 - intertropical convergent zones
 - intraseasonal variations
 - Madden-Julian Oscillation
 - meteorological parameters
 - quasi-biennial oscillation
 - TRMM satellite
- Tropical Rainfall Measuring Mission sat*
 - (added May 1998)
 - USE **TRMM satellite**
- tropical regions**
 - UF *jungles*
 - low latitudes*
 - subtropical regions*
 - tropics*
 - GS regions
 - . **tropical regions**
 - . . Amazon region (South America)
 - . . . intertropical convergent zones
 - RT climatology
 - equatorial atmosphere
 - equatorial regions
 - GARP Atlantic Tropical Experiment
 - geography
 - hot weather
 - laterites

tropical storms

Lomonosov current
meteorology
rain forests
temperate regions
Virgin Islands

tropical storms

GS storms
. storms (meteorology)
. . . **tropical storms**
. . . . hurricanes
. . . . Anna hurricane
. . . . typhoons
RT atmospheric circulation
cyclones
meteorology
storm damage
tornadoes

tropics

USE **tropical regions**

tropism

GS **tropism**
. aeolotropism
. geotropism
. gravitropism
. gyrotropism
. neurotropism

tropopause

SN (ALTITUDE APPROXIMATELY 15 TO 20 KM)
DEF The boundary between the troposphere and the stratosphere, usually characterized by an abrupt change of lapse rate. The change is in the direction of increased atmospheric stability from regions below to regions above the tropopause. Its height varies from 15 to 20 kilometers in the tropics to about 10 kilometers in polar regions. In polar regions in winter it is often difficult or impossible to determine just where the tropopause lies, since under some conditions there is no abrupt change in lapse rate at any height.
GS Earth atmosphere
. lower atmosphere
. . . troposphere
. . . . **tropopause**
RT diurnal variations
isothermal layers
middle atmosphere

troposphere

SN (GROUND LEVEL TO APPROXIMATELY 15 KM)
DEF That portion of the atmosphere from the Earth's surface to the stratosphere; that is, the lowest 10 to 20 kilometers of the atmosphere. The troposphere is characterized by decreasing temperature with height, appreciable vertical wind motion, appreciable water vapor content, and weather. Dynamically, the troposphere can be divided into the following layers: surface boundary layer, Ekman layer, and free atmosphere.
GS Earth atmosphere
. lower atmosphere
. . . **troposphere**
. . . . tropopause
RT chemosphere
homosphere
Intasat satellite

tropospheric radiation

SN (EXCLUDES TERRESTRIAL RADIATION)
GS atmospheric radiation
. **tropospheric radiation**
electromagnetic radiation
. **tropospheric radiation**
RT ∞ radiation
sky radiation
stratosphere radiation
terrestrial radiation

tropospheric scattering

GS scattering
. wave scattering
. . . atmospheric scattering
. . . . **tropospheric scattering**
RT light scattering

wideband communication

tropospheric waves

SN (EXCLUDES RADIO WAVES)
DEF Radio waves that are propagated by reflection from a place of abrupt change in the dielectric constant or its gradient in the troposphere.

GS tropospheric waves

. planetary waves
RT elastic waves
lee waves
radio waves
surface waves
 ∞ waves

tropyl compounds

GS bases (chemical)
. alkaloids
. . . **tropyl compounds**
nitrogen compounds
. alkaloids
. . . **tropyl compounds**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . alkaloids
. **tropyl compounds**
RT ∞ chemical compounds

troubleshooting

USE **maintenance**

troughs

RT canals
ditches
irrigation
low pressure

trucks

SN (EXCLUDES UNDERCARRIAGES)
UF *vans*
GS surface vehicles
. motor vehicles
. . . **trucks**
. . . . tank trucks
RT antiskid devices
automobiles
cargo
delivery
dollies
electric motor vehicles
ground handling
hauling
materials handling
 ∞ military vehicles
recovery vehicles
tractors
trailers
transportation
transportation energy

truncation (mathematics)

USE **approximation**

truncation errors

DEF In computations, the errors resulting from the use of only a finite number of terms of an infinite series or from the approximation of operations in the infinitesimal calculus by operations in the calculus of finite differences.

GS analysis (mathematics)
. numerical analysis
. . . **truncation errors**
errors
. **truncation errors**
RT ill-conditioned problems
(mathematics)
precision

trunks (lines)

USE **transmission lines**

trunnions

USE **shafts (machine elements)**

trusses

GS structural members
. **trusses**
RT arches
beams (supports)

construction industry
frames
girders
I beams
Integrated Truss Structure P1
Integrated Truss Structure S1
Integrated Truss Structure Z1
loops
Maxwell-Mohr method
megamechanics
 ∞ structures
struts
supports
Timoshenko beams

trypanosome

GS animals
. protozoa
. . . Flagellata
. . . . **trypanosome**
microorganisms
. protozoa
. . . Flagellata
. . . . **trypanosome**
parasites
. **trypanosome**
RT parasitic diseases

trypsin

GS biopolymers
. proteins
. . . enzymes
. . . . **trypsin**
organic compounds
. proteins
. . . enzymes
. . . . **trypsin**
RT pancreas

tryptamines

GS organic compounds
. amines
. . . **tryptamines**
. . . . melatonin
. . . . serotonin
. . . . cyclic compounds
. . . . heterocyclic compounds
. indoles
. **tryptamines**
. melatonin
. serotonin

tryptophan

GS acids
. amino acids
. . . **tryptophan**
. . . . carboxylic acids
. . . . **tryptophan**
nitrogen compounds
. **tryptophan**
organic compounds
. amino acids
. . . **tryptophan**
. . . . carboxylic acids
. . . . **tryptophan**
. cyclic compounds
. heterocyclic compounds
. indoles
. **tryptophan**

TS-11 aircraft

UF *Iskra aircraft*
Polish TS-11 aircraft
GS jet aircraft
. **TS-11 aircraft**
monoplanes
. **TS-11 aircraft**
training aircraft
. **TS-11 aircraft**
RT ∞ aircraft

TSR-2 aircraft

UF *BAC TSR 2 aircraft*
attack aircraft
GS **TSR-2 aircraft**
BAC aircraft
. **TSR-2 aircraft**
jet aircraft
. **TSR-2 aircraft**
monoplanes

. **TSR-2 aircraft**
 reconnaissance aircraft
 . **TSR-2 aircraft**
 supersonic aircraft
 . **TSR-2 aircraft**
 RT ∞ aircraft

tsunami waves
 DEF A series of waves of extremely long length and period typically caused by a sudden vertical displacement of a large area of the sea floor during an undorsa earthquake.
 RT Earth movements
 earthquake damage
 earthquakes
 frontal waves
 seismic waves
 shock waves
 surface waves
 tidal waves
 water waves

TTL integrated circuits
 SN (TRANSISTOR-TRANSISTOR-LOGIC INTEGRATED CIRCUITS)
 UF *transistor-transistor-logic integ circuits*
 GS circuits
 . integrated circuits
 . . **TTL integrated circuits**
 RT electronic packaging
 large scale integration
 microminiaturization
 molecular electronics
 transistor circuits

TU-104 aircraft
 UF *Camel aircraft*
 GS commercial aircraft
 . **TU-104 aircraft**
 jet aircraft
 . **TU-104 aircraft**
 monoplanes
 . **TU-104 aircraft**
 passenger aircraft
 . **TU-104 aircraft**
 Tupolev aircraft
 . **TU-104 aircraft**
 RT ∞ aircraft
 TU-154 aircraft

TU-124 aircraft
 UF *Cookpot aircraft*
 GS commercial aircraft
 . **TU-124 aircraft**
 jet aircraft
 . **TU-124 aircraft**
 monoplanes
 . **TU-124 aircraft**
 passenger aircraft
 . **TU-124 aircraft**
 transport aircraft
 . **TU-124 aircraft**
 Tupolev aircraft
 . **TU-124 aircraft**
 RT ∞ aircraft
 turbofan engines

TU-134 aircraft
 GS commercial aircraft
 . **TU-134 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **TU-134 aircraft**
 monoplanes
 . **TU-134 aircraft**
 passenger aircraft
 . **TU-134 aircraft**
 Tupolev aircraft
 . **TU-134 aircraft**
 RT ∞ aircraft

TU-144 aircraft
 GS commercial aircraft
 . supersonic commercial air transport
 . . **TU-144 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **TU-144 aircraft**
 passenger aircraft
 . **TU-144 aircraft**

supersonic aircraft
 . supersonic transports
 . . supersonic commercial air transport
 . . . **TU-144 aircraft**
 transport aircraft
 . **TU-144 aircraft**
 RT ∞ aircraft

TU-154 aircraft
 GS commercial aircraft
 . **TU-154 aircraft**
 jet aircraft
 . **TU-154 aircraft**
 transport aircraft
 . **TU-154 aircraft**
 Tupolev aircraft
 . **TU-154 aircraft**
 RT ∞ aircraft
 cargo aircraft
 passenger aircraft
 TU-104 aircraft

TU-204 aircraft
(added September 1994)
 GS commercial aircraft
 . **TU-204 aircraft**
 jet aircraft
 . **TU-204 aircraft**
 passenger aircraft
 . **TU-204 aircraft**
 transport aircraft
 . **TU-204 aircraft**
 Tupolev aircraft
 . **TU-204 aircraft**
 RT ∞ aircraft

tube anodes
 GS electrodes
 . anodes
 . . **tube anodes**
 RT cathodes
 electrode materials
 electron guns

tube cathodes
 GS electrodes
 . cathodes
 . . **tube cathodes**
 . . . cold cathodes
 . . . hot cathodes
 . . . photocathodes
 . . . thermionic cathodes
 . . . tunnel cathodes
 RT cold cathode tubes
 electron guns
 hollow cathodes

tube grids
 GS electrodes
 . **tube grids**
 RT bias
 electron guns
 electron tubes
 ∞ grids
 ionizers

tube heat exchangers
 GS heat exchangers
 . **tube heat exchangers**
 RT regenerators

tube lasers
 DEF Stimulated emission devices activated with shock tubes.
 RT chemical lasers
 gasdynamic lasers
 laser outputs
 pulsed lasers
 shock tubes
 waveguide lasers

tuberculosis
 GS diseases
 . infectious diseases
 . . bacterial diseases
 . . . **tuberculosis**
 . respiratory diseases

. . **tuberculosis**

∞ **tubes**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT Bourdon tubes
 bronchi
 burettes
 cannulae
 capillary tubes
 circular tubes
 ducts
 electron tubes
 eustachian tubes
 Hilsch tubes
 hoses
 linings
 manifolds
 microwave tubes
 nanotubes
 pipes (tubes)
 pitot tubes
 shock tubes
 siphons
 trachea
 Venturi tubes

tubing
 USE **pipes (tubes)**

tubular fullerenes
(added September 2001)
 USE **carbon nanotubes**

Tully-Fisher relation
(added March 2004)
 DEF A correlation for spiral galaxies between their luminosity and rotational velocity that can be used to calculate the distance to the galaxy or associated galactic cluster.
 RT cosmology
 distance
 galactic rotation
 luminosity
 spiral galaxies

tumbling motion
 DEF An attitude situation in which the vehicle continues on its flight, but turns end over end about its center of mass.
 RT attitude stability
 coning motion
 destabilization
 mixers
 ∞ motion
 rotating environments
 satellite rotation
 ∞ separation
 spacecraft motion
 spacecraft stability

tumor suppressor genes
(added June 2004)
 DEF Genes that inhibit expression of the tumorigenic phenotype. They are normally involved in holding cellular growth in check. When tumor suppressor genes are inactivated or lost, a barrier to normal proliferation is removed and unregulated growth is possible.
 GS genes
 . **tumor suppressor genes**
 RT cancer
 neoplasms
 tumor suppressor proteins
 tumors

tumor suppressor proteins
(added June 2004)
 DEF Proteins that are normally involved in holding cellular growth in check. Deficiencies or abnormalities in these proteins may lead to unregulated cell growth and tumor development.
 GS biopolymers
 . proteins
 . . **tumor suppressor proteins**
 organic compounds
 . proteins
 . . **tumor suppressor proteins**
 RT cancer
 neoplasms

tumors

tumor suppressor genes
tumors

tumors

GS diseases
. **tumors**
. . . neoplasms
. . . . cancer
. leukemias
RT cysts
occupational diseases
tumor suppressor genes
tumor suppressor proteins

tunable filters

(added June 1995)

DEF Filters consisting generally of combinations of capacitors, inductors, and resistors that have been selected in such a way as to present a relative minimum (maximum) impedance to one or more specific frequencies.

RT acousto-optics
adaptive filters
charge transfer devices
crystal filters
electric filters
electro-optics
∞ filters
microwave filters
optical filters
radio filters
tuning

tunable lasers

DEF Stimulated emission devices with selectable frequency output.

GS stimulated emission devices

. lasers
. . **tunable lasers**

RT DBR lasers
diffraction radiation
light modulation
optical communication
tuning
wiggler magnets

tundra

DEF A treeless, level or gently undulating plain characteristic of arctic and subarctic regions. It usually has a marshy surface which supports a growth of mosses, lichens, and numerous low shrubs underlain by a dark, mucky soil and permafrost.

GS land
. plains
. . **tundra**
landforms
. plains
. . **tundra**

RT Arctic regions
Asia
geography
North America

turners

GS **turners**
. waveguide tuners
RT radio receivers
resonance probes
resonant frequencies
television receivers

tungstates

GS tungsten compounds
. **tungstates**
. . calcium tungstates
. . lead tungstates
. . zinc tungstates

tungsten

UF *wolfram*
GS chemical elements
. **tungsten**
metals
. refractory metals
. . **tungsten**
. transition metals
. . **tungsten**
refractory materials
. refractory metals

. . **tungsten**

tungsten alloys

GS alloys
. heat resistant alloys
. . refractory metal alloys
. . . **tungsten alloys**
refractory materials
. refractory metal alloys
. . **tungsten alloys**
RT hafnium alloys
Stellite (trademark)

tungsten carbides

GS carbon compounds
. carbides
. . **tungsten carbides**
tungsten compounds
. **tungsten carbides**

tungsten chlorides

GS halogen compounds
. chlorine compounds
. . chlorides
. . . **tungsten chlorides**
. halides
. . chlorides
. . . **tungsten chlorides**
. metal halides
. . tungsten halides
. . . **tungsten chlorides**
tungsten compounds
. tungsten halides
. . **tungsten chlorides**

tungsten compounds

GS **tungsten compounds**
. tungstates
. . calcium tungstates
. . lead tungstates
. . zinc tungstates
. tungsten carbides
. tungsten halides
. . tungsten chlorides
. . tungsten fluorides
. tungsten oxides
. . scheelite
RT ∞ chemical compounds
∞ Group 6B compounds
∞ metal compounds

tungsten fluorides

GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **tungsten fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **tungsten fluorides**
. metal halides
. . metal fluorides
. . . . **tungsten fluorides**
. . tungsten halides
. . . . **tungsten fluorides**
tungsten compounds
. tungsten halides
. . **tungsten fluorides**

tungsten halides

GS halogen compounds
. halides
. . metal halides
. . . **tungsten halides**
. . . . tungsten chlorides
. . . . tungsten fluorides
tungsten compounds
. **tungsten halides**
. tungsten chlorides
. tungsten fluorides

tungsten inert gas welding

USE **gas tungsten arc welding**

tungsten isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **tungsten isotopes**

metals
. refractory metals
. . **tungsten isotopes**
. transition metals
. . . **tungsten isotopes**
refractory materials
. refractory metals
. . **tungsten isotopes**

tungsten oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **tungsten oxides**
. . . . scheelite
tungsten compounds
. **tungsten oxides**
. scheelite

Tungusk meteorite

UF *Tunguska event*
GS celestial bodies
. meteorites
. . stony meteorites
. . . **Tungusk meteorite**
RT meteorite collisions
meteorite craters

Tunguska event

USE **Tungusk meteorite**

tuning

GS **tuning**
. Schuler tuning
RT automatic frequency control
automatic gain control
dye lasers
frequency pulling
mistuning (turbomachinery)
Q factors
resonance
resonant frequencies
resonators
tunable filters
tunable lasers

tuning fork gyroscopes

GS gyroscopes
. **tuning fork gyroscopes**
RT resonators

Tunisia

GS nations
. **Tunisia**
RT Africa

tunnel cathodes

GS electrodes
. cathodes
. . tube cathodes
. . . **tunnel cathodes**
RT cold cathode tubes
cold cathodes
electron tubes
hollow cathodes
∞ tunnels

tunnel diodes

UF *Esaki diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **tunnel diodes**
. . . . resonant tunneling diodes
RT electron tunneling
junction diodes
MIM diodes
negative conductance
negative resistance circuits
resonant tunneling
tunnel junctions
∞ tunnels

tunnel junctions

(added September 1993)

DEF An electronic device having an extremely thin potential barrier to electron flow, so that the transport characteristic (the current-voltage flow) is primarily governed by the quantum-mechanical tunneling process which

permits electrons to penetrate the barrier.

RT barrier layers
electron tunneling
heterojunctions
Josephson junctions
photoconductors
quantum electronics
semiconductor devices
semiconductor junctions
single electron transistors
solar cells
superconducting devices
tunnel diodes

tunnel resistors

USE **electron tunneling resistors**

∞ **tunneling**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT electron tunneling
resonant tunneling
tunneling (excavation)

tunneling (excavation)

GS excavation
. **tunneling (excavation)**

RT bedrock
construction
drainage
drilling
jacks (lifts)
lining processes
rocks
soils

∞ tunneling
underground structures

∞ **tunnels**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT gaps
hydraulic test tunnels
lunar shelters
passageways
streets
transfer tunnels
tunnel cathodes
tunnel diodes
wind tunnels

Tupolev aircraft

GS **Tupolev aircraft**
. TU-104 aircraft
. TU-124 aircraft
. TU-134 aircraft
. TU-154 aircraft
. TU-204 aircraft
RT ∞ aircraft

turbidity

GS electromagnetic properties
. optical properties
. . **turbidity**
RT absorbance
clarity
haze
light transmission
opacity
optical density
∞ properties
solubility
transparence

turbine blades

DEF The blades of a turbine wheel.

GS turbomachine blades
. **turbine blades**

RT ∞ blades
compressor blades
engine parts
fan blades
rotor blades (turbomachinery)
rotor stator interactions
stator blades

turbines

turbine engines

DEF Engines incorporating a turbine as a principal component; especially gas turbine engines.

GS engines

. **turbine engines**

. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . T-58 engine
. . . ramjet engines
. . . . integral rocket ramjets
. . . . low volume ramjet engines
. . . . pulsejet engines
. . . . supersonic combustion ramjet engines
. . . . turboramjet engines
. . . . turbojet engines
. . . . Bristol-Siddeley Olympus 593 engine
. . . . Bristol-Siddeley Viper engine
. . . . ducted fan engines
. . . . J-33 engine
. . . . J-34 engine
. . . . J-47 engine
. . . . J-52 engine
. . . . J-57 engine
. . . . J-58 engine
. . . . J-65 engine
. . . . J-69-T-25 engine
. . . . J-71 engine
. . . . J-73 engine
. . . . J-75 engine
. . . . J-79 engine
. . . . J-85 engine
. . . . J-93 engine
. . . . RA-28 engine
. . . . turbofan engines
. Bristol-Siddeley BS 53 engine
. CF-700 engine
. convertible fan-shaft engines
. J-97 engine
. TF-30 engine
. TF-34 engine
. TF-41 engine
. turboprop engines
. T-34 engine
. T-38 engine
. T-53 engine
. T-55 engine
. T-56 engine
. T-63 engine
. T-64 engine
. T-74 engine
. T-76 engine
. T-78 engine
. turboramjet engines

RT aircraft engines

automobile engines
convergent nozzles
gas bearings
integral rocket ramjets
torpedo engines

turbine exhaust nozzles

GS exhaust nozzles

. **turbine exhaust nozzles**

RT conical nozzles
convergent-divergent nozzles

turbine instruments

RT flowmeters

∞ instruments
turbomachinery

turbine pumps

UF *turbopumps*

GS pumps
. axial flow pumps
. . **turbine pumps**
turbomachinery
. **turbine pumps**
RT centrifugal pumps
fuel pumps
jet pumps
preburners
turbines

turbocompressors

turbine wheels

DEF Multivaned wheels or rotors, especially in gas turbine engines, rotated by the impulse from or reaction to a fluid passing across the vanes. Used for rotor disks and turborotors.

UF *rotor disks*

turborotors

GS rotating bodies

. rotors

. . **turbine wheels**

wheels

. **turbine wheels**

RT compressor rotors
engine parts
hydraulic equipment
impellers
turbines
turbomachine blades
water wheels

turbines

GS turbomachinery

. **turbines**

. . axial flow turbines
. . gas turbines
. . shrouded turbines
. . steam turbines
. . supersonic turbines
. . two stage turbines
. . wind turbines
. . . tip vanes

RT engines

geothermal energy conversion
geothermal energy extraction
impellers
impulse generators
jet engine fuels
jet propulsion

∞ nozzles

refractories
rotating generators
rotors
stators
turbine blades
turbine pumps
turbine wheels
turbogenerators
turboshafts

turbochargers

USE **superchargers**
turbocompressors

turbocompressors

UF *axial compressors*
axial flow compressors
multistage compressors
turbochargers

GS compressors

. **turbocompressors**

turbomachinery

. **turbocompressors**

RT centrifugal compressors
centrifugal pumps
compressor blades
compressor rotors
rotating stalls
rotors
superchargers
supersonic compressors
transonic compressors
turbine pumps
turbofans

turboconverters

USE **turbogenerators**

turboelectric conversion

USE **turbogenerators**

turbofan aircraft

GS jet aircraft
. **turbofan aircraft**
. . A-7 aircraft
. . BAC 111 aircraft
. . Boeing 707 aircraft
. . Boeing 717 aircraft
. . Boeing 720 aircraft

turbofan engines

- .. Boeing 727 aircraft
- .. Boeing 733 aircraft
- .. Boeing 737 aircraft
- .. Boeing 757 aircraft
- .. Boeing 767 aircraft
- .. C-141 aircraft
- .. CL-600 challenger aircraft
- .. Concorde aircraft
- .. CV-990 aircraft
- .. DC 8 aircraft
- .. DH 121 aircraft
- .. DO-31 aircraft
- .. F-5 aircraft
- .. F-28 transport aircraft
- .. F-111 aircraft
- .. IL-62 aircraft
- .. Mystere 20 aircraft
- .. P-1127 aircraft
- .. P-1154 aircraft
- .. Saab 37 aircraft
- .. Saab 105 aircraft
- .. SE-210 aircraft
- .. TU-134 aircraft
- .. TU-144 aircraft
- RT ∞ aircraft
- C-135 aircraft
- ∞ low wing aircraft
- passenger aircraft
- transport aircraft
- turboprop aircraft

turbofan engines

- GS engines
 - .. air breathing engines
 - .. gas turbine engines
 - ... jet engines
 - ... turbojet engines
 - **turbofan engines**
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - .. internal combustion engines
 - .. gas turbine engines
 - ... jet engines
 - ... turbojet engines
 - **turbofan engines**
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - .. turbine engines
 - .. gas turbine engines
 - ... jet engines
 - ... turbojet engines
 - **turbofan engines**
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
- RT B-52 aircraft
- Boeing 747 aircraft
- Boeing 767 aircraft
- C-5 aircraft
- C-17 aircraft
- C-141 aircraft
- DC 10 aircraft
- ducted fan engines
- L-1011 aircraft
- Mystere 50 aircraft
- P-1127 aircraft
- P-1154 aircraft
- TU-124 aircraft
- turbofans
- turboprop engines

turbofans

DEF Turbojet engines in which additional propulsive thrust is gained by extending a por-

tion of the compressor or turbine blades outside the inner engine cases.

- GS turbomachinery
 - .. **turbofans**
- RT ducted fans
 - ∞ fans
 - lift fans
 - turbocompressors
 - turbofan engines

turbogenerators

- UF *thermal power*
 - turboconverters*
 - turboelectric conversion*
- GS electric generators
 - .. rotating generators
 - ... **turbogenerators**
 - ... ASTEC solar turboelectric generator
 - turbomachinery
 - .. **turbogenerators**
 - .. ASTEC solar turboelectric generator
- RT AC generators
 - ∞ conversion
 - ∞ electric power
 - electrical engineering
 - gas turbine engines
 - gas turbines
 - ∞ generators
 - geothermal energy conversion
 - geothermal energy extraction
 - geothermal energy utilization
 - hydroelectric power stations
 - hydroelectricity
 - SNAP
 - SNAP 1
 - SNAP 2
 - SNAP 8
 - solar generators
 - space power reactors
 - space power unit reactors
 - steam turbines
 - turbines
 - wind turbines

turbojet aircraft

USE **jet aircraft**

turbojet engine control

- GS engine control
 - .. **turbojet engine control**
- RT aircraft control
 - .. automatic control
 - ∞ control
 - flight control
 - fuel control
 - remote control
 - servocontrol
 - thrust control

turbojet engines

DEF Jet engines incorporating a turbine driven air compressor to take in and compress the air for the combustion of fuel (or for heating by a nuclear reactor), the gases of combustion (or the heated air) being used both to rotate the turbine and create a thrust producing jet.

- GS engines
 - .. air breathing engines
 - .. gas turbine engines
 - ... jet engines
 - **turbojet engines**
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine

- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- .. turboramjet engines
- .. internal combustion engines
- .. gas turbine engines
- ... jet engines
- **turbojet engines**
- Bristol-Siddeley Olympus 593 engine
- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
- J-34 engine
- J-47 engine
- J-52 engine
- J-57 engine
- J-58 engine
- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
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- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- .. turbine engines
- .. gas turbine engines
- ... jet engines
- **turbojet engines**
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- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
- J-34 engine
- J-47 engine
- J-52 engine
- J-57 engine
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- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines

- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- RT convergent nozzles
- Hound Dog missile
- jet aircraft
- Mace missiles
- quail missile
- ramjet engines
- Regulus missile

turbomachine blades

- GS **turbomachine blades**
 - . compressor blades
 - . rotor blades (turbomachinery)
 - . stator blades
 - . turbine blades
- RT airfoils
- ∞ blades
- ∞ buckets
- cascade flow
- fan blades
- impellers
- mistuning (turbomachinery)
- paddles
- rotors
- turbine wheels
- vanes

turbomachinery

- GS **turbomachinery**
 - . centrifugal compressors
 - . centrifugal pumps
 - . J-33 engine
 - . turbine pumps
 - . turbines
 - . axial flow turbines
 - . gas turbines
 - . shrouded turbines
 - . steam turbines
 - . supersonic turbines
 - . two stage turbines
 - . wind turbines
 - . tip vanes
 - . turbocompressors
 - . turbofans
 - . turbogenerators
 - . ASTEC solar turboelectric generator
- RT blowers
- compressors
- ∞ machinery
- pumps
- rotating generators
- rotor dynamics
- superchargers
- turbine instruments
- wave rotors

turbopause

- GS Earth atmosphere
 - . upper atmosphere
 - . thermosphere
 - . . . **turbopause**
- RT atmospheric circulation
- atmospheric physics
- atmospheric turbulence

turboprop aircraft

- GS jet aircraft
 - . **turboprop aircraft**
 - . . AN-22 aircraft
 - . . AN-24 aircraft
 - . . Argosy MK-1 aircraft

- . . ATR-72 aircraft
- . . Breguet 941 aircraft
- . . Breguet 1150 aircraft
- . . C-2 aircraft
- . . C-130 aircraft
- . . C-133 aircraft
- . . C-160 aircraft
- . . CL-44 aircraft
- . . CL-84 aircraft
- . . DHC 5 aircraft
- . . DO-328 aircraft
- . . E-2 aircraft
- . . Electra aircraft
- . . F-27 aircraft
- . . G-222 aircraft
- . . HS-748 aircraft
- . . MH-262 aircraft
- . . OV-1 aircraft
- . . OV-10 aircraft
- . . P-3 aircraft
- . . SC-5 aircraft
- . . Viscount aircraft
- . . YS-11 aircraft

- RT ∞ aircraft
 - general aviation aircraft
 - ∞ low wing aircraft
 - passenger aircraft
 - ∞ subsonic aircraft
 - transport aircraft
 - turbofan aircraft

turboprop engines

- UF *Dart turboprop engines*
- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **turboprop engines**
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **turboprop engines**
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **turboprop engines**
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
- RT C-160 aircraft
- contrarotating propellers
- E-2 aircraft
- P-3 aircraft
- prop-fan technology
- turbofan engines

XC-142 aircraft

turbopumps

USE **turbine pumps**

turboramjet engines

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - ramjet engines
 - **turboramjet engines**
 - turbojet engines
 - **turboramjet engines**
 - internal combustion engines
 - gas turbine engines
 - jet engines
 - ramjet engines
 - **turboramjet engines**
 - turbojet engines
 - **turboramjet engines**
 - turbine engines
 - gas turbine engines
 - jet engines
 - ramjet engines
 - **turboramjet engines**
 - turbojet engines
 - **turboramjet engines**
- RT ∞ hybrid rocket engines

turborocket engines

- GS engines
 - . rocket engines
 - . . **turborocket engines**
 - . . . torpedo engines
 - **turborocket engines**
- RT booster rocket engines
- hydrazine engines
- hydrogen oxygen engines
- liquid air cycle engines
- restartable rocket engines
- sustainer rocket engines

turborotors

USE **turbine wheels**

turboshfts

- GS shafts (machine elements)
 - . rotating shafts
 - . . **turboshfts**
- RT convertible fan-shaft engines
- rotors
- turbines
- wave rotors

Turbo-Skyvan aircraft

USE **SC-7 aircraft**

turbulence

DEF A state of fluid flow in which the instantaneous velocities exhibit irregular and apparently random fluctuations so that in practice only statistical properties can be recognized and subjected to analysis.

GS **turbulence**

- . atmospheric turbulence
- . . clear air turbulence
- . . . gusts
- . . . low level turbulence
- . . . homogeneous turbulence
- . . . isotropic turbulence
- . . . low turbulence
- . . . magnetohydrodynamic turbulence
- . . . plasma turbulence
- Langmuir turbulence

RT

- aerodynamic drag
- atmospheric effects
- backwash
- boundary layer control
- boundary layer transition
- flow characteristics
- fluid dynamics
- gas streams
- micrometeorology
- mixing
- ∞ motion
- nonuniformity
- panel method (fluid dynamics)
- period doubling
- sea roughness

turbulence effects

- slipstreams
- steady flow
- strange attractors
- Strouhal number
- surface noise interactions
- turbulent boundary layer
- turbulent flow
- unsteady flow
- vertical air currents
- vortex filaments
- vortices
- vorticity
- wakes
- wind effects

turbulence effects

- RT aerodynamic stability
- buffeting
- ∞ effects
- flutter
- seeing (astronomy)
- separated flow

turbulence meters

- UF *hot-wire turbulence meters*
- GS measuring instruments
- . **turbulence meters**
- RT hot-wire flowmeters

turbulence models

(added September 1988)

- GS models
- . mathematical models
- . . **turbulence models**
- . . . Baldwin-Lomax turbulence model
- . . . k-epsilon turbulence model
- . . . k-omega turbulence model
- RT computational fluid dynamics
- flow equations
- large eddy simulation
- magnetohydrodynamic simulation
- mixing length flow theory
- renormalization group methods
- Reynolds averaging
- turbulent boundary layer
- turbulent combustion
- turbulent flow

turbulent boundary layer

DEF The layer in which the Reynolds stresses are much larger than the viscous stresses. When the Reynolds number is sufficiently high, there is a turbulent layer adjacent to the laminar boundary layer.

- GS boundary layers
- . **turbulent boundary layer**
- RT Baldwin-Lomax turbulence model
- boundary layer transition
- compressible boundary layer
- Ekman layer
- hypersonic boundary layer
- incompressible boundary layer
- k-epsilon turbulence model
- k-omega turbulence model
- laminar boundary layer
- ∞ layers
- mixing layers (fluids)
- Reynolds stress
- riblets
- supersonic boundary layers
- thermal boundary layer
- three dimensional boundary layer
- turbulence
- turbulence models
- two dimensional boundary layer

turbulent combustion

(added September 1992)

DEF Combustion or combustible flow in which turbulence is superimposed on the main movement of the flame fronts resulting in random, unpredictable fluctuations.

- GS combustion
- . **turbulent combustion**
- RT chemical explosions
- combustible flow
- combustion physics
- combustion stability
- flame propagation
- flames

- fuel combustion
- oxidation
- premixed flames
- propellant combustion
- reacting flow
- turbulence models
- turbulent flames
- turbulent flow

turbulent diffusion

- UF *eddy diffusion*
- GS diffusion
- . **turbulent diffusion**
- RT atmospheric diffusion
- atmospheric turbulence
- clear air turbulence
- counterflow

turbulent flames

(added June 1997)

- GS flames
- . **turbulent flames**
- RT combustible flow
- flame propagation
- flame stability
- premixed flames
- turbulent combustion
- turbulent flow

turbulent flow

DEF Fluid motion in which random motions of parts of the fluid are superimposed upon a simple pattern of flow. All or nearly all fluid flow displays some degree of turbulence. The opposite is laminar flow.

- GS fluid flow
- . **turbulent flow**
- . . cavitation flow
- . . . supercavitating flow
- RT aerodynamic interference
- aerodynamics
- annular flow
- atmospheric turbulence
- Baldwin-Lomax turbulence model
- Blasius flow
- boundary layer transition
- closure law
- combustible flow
- counterflow
- critical flow
- direct numerical simulation
- eddy viscosity
- flow characteristics
- flow stability
- fluid amplifiers
- free convection
- gas flow
- gust alleviators
- inviscid flow
- isotropic turbulence
- k-epsilon turbulence model
- Kolmogorov theory
- k-omega turbulence model
- Lagrange similarity hypothesis
- laminar flow
- large eddy simulation
- liquid flow
- mass flow
- mixing length flow theory
- multiphase flow
- nonuniform flow
- open channel flow
- orifice flow
- particle laden jets
- period doubling
- pipe flow
- pressure oscillations
- reacting flow
- recirculative fluid flow
- Reynolds number
- Reynolds stress
- rotating fluids
- single-phase flow
- steady flow
- steam flow
- subcritical flow
- supercritical flow
- Tollmien-Schlichting waves
- ∞ transition layers
- turbulence

- turbulence models
- turbulent combustion
- turbulent flames
- two phase flow
- uniform flow
- viscous drag
- viscous flow
- vortex avoidance
- vortex breakdown
- vortices
- vorticity transport hypothesis

turbulent heat transfer

- GS transmission
- . heat transmission
- . . heat transfer
- . . . **turbulent heat transfer**
- RT aerodynamic heat transfer
- convective heat transfer
- laminar heat transfer
- thermohydraulics

turbulent jets

- RT fluid amplifiers
- jet streams (meteorology)
- ∞ jets

turbulent mixing

- GS mixing
- . **turbulent mixing**
- RT agitation
- laminar mixing
- mixing layers (fluids)
- mixing length flow theory
- recirculative fluid flow
- trapped vortices
- vortices

turbulent wakes

- UF *swirling wakes*
- GS wakes
- . **turbulent wakes**
- . . slipstreams
- . . . propeller slipstreams
- RT aircraft wakes
- laminar wakes
- trapped vortices
- vortex advisory system
- vortex sheets
- vortex streets

Turing machines

DEF Mathematical models of devices that change their internal states and read from, write on, and move potentially infinite tapes, all in accordance with their present states, thereby constituting models for computerlike behavior. Invented in the 1930s, they are named after their inventor, A.M. Turing. Used for finite-state machines.

- UF *finite-state machines*
- RT automata theory
- cellular automata
- digital computers
- ∞ machinery
- mathematical logic
- quantum computation
- self organizing systems

Turkey

- GS nations
- . **Turkey**
- RT Black Sea
- Europe
- Turkish space program

turkeys

- GS animals
- . vertebrates
- . . birds
- . . . **turkeys**
- RT livestock

Turkish space program

(added August 1990)

- GS programs
- . space programs
- . . European space programs
- . . . **Turkish space program**

- RT Turkey
- Turkmenistan**
(added August 1993)
GS nations
. **Turkmenistan**
RT Asia
- turnaround (STS)**
DEF The intervals between flights of the shuttle orbiters.
RT downtime
flight time
launch dates
schedules
sequencing
spacecraft maintenance
testing time
- turning flight**
UF *banking flight*
GS **turning flight**
. minor circle turning flight
RT aerodynamic balance
aircraft maneuvers
aircraft stability
climbing flight
 ∞ flight
flight paths
horizontal flight
lateral oscillation
lateral stability
maneuvers
momentum
roll
yaw
- turnstile antennas**
DEF Antennas composed of two dipole antennas, normal to each other, with their axes intersecting at their midpoints. Usually, the currents are equal and in phase quadrature.
GS antennas
. omnidirectional antennas
. . **turnstile antennas**
arrays
. antenna arrays
. . **turnstile antennas**
RT dipole antennas
 ∞ grids
wire grid lenses
- turpentine**
GS solvents
. **turpentine**
terpenes
. **turpentine**
RT paints
- ∞ **turret**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT gun turrets
turret lathes
- turret lathes**
GS tools
. machine tools
. . lathes
. . . **turret lathes**
RT ∞ turret
- turtles**
GS animals
. vertebrates
. . reptiles
. . . **turtles**
- Tutor aircraft*
USE **CL-41 aircraft**
- TVC (control)*
USE **thrust vector control**
- TVD schemes**
(added August 1989)
UF *total variation diminishing schemes*
GS analysis (mathematics)
. numerical analysis
. . approximation
- . . . **TVD schemes**
RT computational fluid dynamics
essentially non-oscillatory schemes
finite difference theory
finite volume method
- twenty-four hour orbits**
GS orbits
. Earth orbits
. . **twenty-four hour orbits**
. spacecraft orbits
. . satellite orbits
. . . **twenty-four hour orbits**
RT circular orbits
equatorial orbits
geosynchronous orbits
orbital mechanics
PAS
planetary orbits
polar orbits
stationary orbits
Synchronous Communications
Satellite Proj
synchronous satellites
- twenty-seven day variation**
GS variations
. **twenty-seven day variation**
RT solar cycles
solar rotation
starspots
sunspots
- twilight glow**
GS atmospheric radiation
. sky radiation
. . airglow
. . . **twilight glow**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . airglow
. . . . **twilight glow**
RT dayglow
night
night sky
- twinning**
GS **twinning**
. mechanical twinning
RT crystal defects
crystal growth
crystal structure
grain boundaries
stacking fault energy
- twisted wings**
GS airfoils
. wings
. . **twisted wings**
RT cambered wings
fixed wings
flexible wings
ring wings
uncambered wings
- twisting**
UF *pretwisting*
RT bending
buckling
deformation
distortion
kinking
structural strain
torque
torsion
torsional vibration
warpage
winding
- twitching**
RT involuntary actions
muscles
muscular function
- two body orbits*
USE **two body problem**
- two body problem**
DEF That problem in classical celestial mechanics which treats of the relative motion of two point masses under their mutual gravitational attraction. Used for two body orbits.
UF *two body orbits*
RT binary stars
celestial mechanics
Earth-Moon system
Hylleraas coordinates
many body problem
orbital mechanics
orbits
perturbation
 ∞ problems
Roche limit
three body problem
- two dimensional bodies**
RT ∞ bodies
 ∞ cross sections
ducted bodies
mathematical models
 ∞ surfaces
- two dimensional boundary layer**
GS boundary layers
. **two dimensional boundary layer**
RT laminar boundary layer
supersonic boundary layers
turbulent boundary layer
- two dimensional flow**
GS fluid flow
. **two dimensional flow**
. . Couette flow
. . Ringleb flow
RT axial flow
Blasius flow
capillary waves
coaxial flow
flow geometry
Hartmann flow
one dimensional flow
Prandtl-Meyer expansion
radial flow
Rayleigh waves
steady flow
stream functions (fluids)
Taylor instability
three dimensional flow
wall flow
wedge flow
- two dimensional jets**
RT jet flow
jet mixing flow
 ∞ jets
wall flow
- two dimensional models**
(added August 1988)
GS models
. **two dimensional models**
RT computerized simulation
mathematical models
three dimensional models
- two fluid models**
RT Boltzmann distribution
liquid helium
magnetohydrodynamic flow
mixing layers (fluids)
rotating plasmas
shock wave propagation
superfluidity
- two phase flow**
GS fluid flow
. multiphase flow
. . **two phase flow**
RT gas flow
laminar flow
liquid flow
particle image velocimetry
 ∞ pressure drop
single-phase flow
solids flow

two reflector antennas

turbulent flow

two phase systems

USE **binary systems (materials)**

two photon coherent states

USE **squeezed states (quantum theory)**

two reflector antennas

GS antennas
 . directional antennas
 . reflector antennas
 . . . **two reflector antennas**
RT Cassegrain antennas
 radio antennas
 reflectometers
 reflectors

two stage plasma engines

GS engines
 . rocket engines
 . . electric rocket engines
 . . . plasma engines
 **two stage plasma engines**
RT electric propulsion
 plasmas (physics)

two stage turbines

GS turbomachinery
 . turbines
 . . **two stage turbines**
RT gas turbine engines
 gas turbines
 steam turbines

two-wavelength lasers

GS stimulated emission devices
 . lasers
 . . **two-wavelength lasers**
RT coherent light
 dye lasers
 laser outputs
 masers
 molecular oscillators
 quantum amplifiers
 stimulated emission

TX-33-39 engine

USE **XM-33 engine**

TX-77 engine

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **TX-77 engine**
RT Lance missile

TX-354 engine

UF *Castor 2 engine*
GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **TX-354 engine**
RT booster rocket engines
 Little Joe 2 launch vehicle
 RAM B launch vehicle
 Scout launch vehicle
 sustainer rocket engines
 Trailblazer 2 reentry vehicle
 XM-33 engine

Tycho crater

GS craters
 . lunar craters
 . . **Tycho crater**
RT meteorite craters

type 2 bursts

GS bursts
 . radio bursts
 . . solar radio bursts
 . . . **type 2 bursts**
 electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . radio bursts
 solar radio bursts
 **type 2 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 2 bursts**

. . . radio emission
. . . . radio bursts
. solar radio bursts
. **type 2 bursts**
. . . . solar radio emission
. solar radio bursts
. **type 2 bursts**
emission
 . radio emission
 . . radio bursts
 . . . solar radio bursts
 **type 2 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 2 bursts**
extraterrestrial radiation
 . extraterrestrial radio waves
 . . radio bursts
 . . . solar radio bursts
 **type 2 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 2 bursts**
 . solar radiation
 . . solar radio emission
 . . . solar radio bursts
 **type 2 bursts**

type 3 bursts

GS bursts
 . radio bursts
 . . solar radio bursts
 . . . **type 3 bursts**
 electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . radio bursts
 solar radio bursts
 **type 3 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 3 bursts**
 . radio emission
 . . radio bursts
 . . . solar radio bursts
 **type 3 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 3 bursts**
emission
 . radio emission
 . . radio bursts
 . . . solar radio bursts
 **type 3 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 3 bursts**
extraterrestrial radiation
 . extraterrestrial radio waves
 . . radio bursts
 . . . solar radio bursts
 **type 3 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 3 bursts**
 . solar radiation
 . . solar radio emission
 . . . solar radio bursts
 **type 3 bursts**

type 4 bursts

GS bursts
 . radio bursts
 . . solar radio bursts
 . . . **type 4 bursts**
 electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . radio bursts
 solar radio bursts
 **type 4 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 4 bursts**
 . . radio emission
 . . . radio bursts
 solar radio bursts
 **type 4 bursts**
 . . solar radio emission

. . . . solar radio bursts
. **type 4 bursts**
emission
 . radio emission
 . . radio bursts
 . . . solar radio bursts
 **type 4 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 4 bursts**
 . . . solar radio bursts
 **type 4 bursts**
extraterrestrial radiation
 . extraterrestrial radio waves
 . . radio bursts
 . . . solar radio bursts
 **type 4 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 4 bursts**
 . solar radiation
 . . solar radio emission
 . . . solar radio bursts
 **type 4 bursts**

type 5 bursts

GS bursts
 . radio bursts
 . . solar radio bursts
 . . . **type 5 bursts**
 electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . radio bursts
 solar radio bursts
 **type 5 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 5 bursts**
 . . radio emission
 . . . radio bursts
 solar radio bursts
 **type 5 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 5 bursts**
 . radio emission
 . . radio emission
 . . . radio bursts
 solar radio bursts
 **type 5 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 5 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 5 bursts**
 . . solar radiation
 . . . solar radio emission
 solar radio bursts
 **type 5 bursts**
 . . . solar radio bursts
 **type 5 bursts**
 **type 5 bursts**
 . . . solar radio bursts
 **type 5 bursts**
 **type 5 bursts**
 . . . solar radio bursts
 **type 5 bursts**
 **type 5 bursts**

typewriters

GS **typewriters**
 . automatic typewriters
 . teletypewriters
 . . teleprinters
RT printers

typhoid

GS diseases
 . infectious diseases
 . . bacterial diseases
 . . . **typhoid**

Typhon weapon system

GS weapon systems
 . **Typhon weapon system**
RT Bumblebee project
 ∞ systems

typhoons

GS storms
 . storms (meteorology)
 . . cyclones
 . . . **typhoons**
 . . . tropical storms

... **typhoons**
RT atmospheric circulation
hurricanes
marine meteorology
meteorology
storm damage
tornadoes

typhus
GS diseases

. infectious diseases
. . bacterial diseases
. . . **typhus**

tyrosine
GS acids
. amino acids
. . **tyrosine**

organic compounds
. amino acids
. . **tyrosine**
RT enzyme activity
liver

U

U bends

- GS pipes (tubes)
 - . **U bends**
- RT fittings

U spin space

- GS algebra
 - . vector spaces
 - . . **U spin space**
- RT matrices (mathematics)
 - quantum mechanics

U tubes

- USE **manometers**

U-2 aircraft

- UF *ER-2 aircraft*
 - Lockheed U-2 aircraft*
 - WU-2 aircraft*
- GS jet aircraft
 - . **U-2 aircraft**
 - Lockheed aircraft
 - . **U-2 aircraft**
 - monoplanes
 - . **U-2 aircraft**
 - reconnaissance aircraft
 - . **U-2 aircraft**
 - research vehicles
 - . research aircraft
 - . . **U-2 aircraft**
 - utility aircraft
 - . **U-2 aircraft**
 - RT ∞ aircraft

U-10 aircraft

- UF *Courier aircraft*
 - L-28 aircraft*
- GS Helio aircraft
 - . **U-10 aircraft**
 - light aircraft
 - . **U-10 aircraft**
 - monoplanes
 - . **U-10 aircraft**
 - passenger aircraft
 - . **U-10 aircraft**
 - utility aircraft
 - . **U-10 aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **U-10 aircraft**
 - RT ∞ aircraft

U.S.S.R.

- UF *Soviet Union*
- GS nations
 - . **U.S.S.R.**
- RT Asia
 - Barents Sea
 - Black Sea
 - Caucasus Mountains (U.S.S.R.)
 - Europe
 - Kurile Islands
 - Moscow
 - Sea of Okhotsk
 - Siberia

U.S.S.R. space program

- GS programs
 - . space programs
 - . . **U.S.S.R. space program**
- RT Apollo Soyuz test project
 - Automatic Universal Orbiting Stations
 - Buran space shuttle
 - GLONASS
 - international cooperation
 - international relations
 - International Satellite Geodesy Experiment
 - lunar retroreflectors
 - Lunik 19 lunar probe
 - Lunik 22 lunar probe
 - Lunik lunar probes
 - Lunokhod lunar roving vehicles
 - Mars 1 spacecraft
 - Mars 2 spacecraft
 - Mars 3 spacecraft
 - Mars 4 Spacecraft
 - Mars 5 spacecraft
 - Mars 6 spacecraft

- Mars 7 spacecraft
- Mir space station
- Molniya satellites
- Proton satellites
- Russian Space Program
- Salyut space station
- Soyuz spacecraft
- Vega project
- Venera 8 satellite
- Venera 10 satellite
- Venera 11 satellite
- Venera 12 satellite
- Venera satellites

UARS (satellite)

- USE **Upper Atmosphere Research Satellite (UARS)**

UAS

- (added August 2007)
- USE **unmanned aircraft systems**

UBV spectra

- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **UBV spectra**
- RT color-color diagram

Udimet alloys

- GS alloys
 - . heat resistant alloys
 - . . **Udimet alloys**
 - . nickel alloys
 - . . **Udimet alloys**

UFO

- USE **unidentified flying objects**

Uganda

- GS nations
 - . **Uganda**
- RT Africa

UGV (vehicles)

- (added July 2002)
- USE **unmanned ground vehicles**

UH-1 helicopter

- UF *HU-1 helicopter*
 - Iroquois helicopter*
 - RH-2 helicopter*
 - YHU-1 helicopter*
 - YUH-1 helicopter*
- GS Bell aircraft
 - . **UH-1 helicopter**
 - utility aircraft
 - . **UH-1 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-1 helicopter**
 - RT UH-60A helicopter
 - UH-61A helicopter

UH-2 helicopter

- UF *HU2K-1 helicopter*
 - Kaman UH-2A helicopter*
 - Seasprite helicopter*
- GS Kaman aircraft
 - . **UH-2 helicopter**
 - utility aircraft
 - . **UH-2 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-2 helicopter**

UH-12 helicopter

- USE **OH-23 helicopter**

UH-13 helicopter

- USE **OH-13 helicopter**

UH-34 helicopter

- UF *HUS-1 helicopter*
 - Seahorse helicopter*

- GS Sikorsky aircraft
 - . **UH-34 helicopter**
 - transport aircraft
 - . **UH-34 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-34 helicopter**
 - RT S-58 helicopter

UH-60A helicopter

- UF *YUH-60A helicopter*
- GS Sikorsky aircraft
 - . **UH-60A helicopter**
 - transport aircraft
 - . **UH-60A helicopter**
 - utility aircraft
 - . **UH-60A helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-60A helicopter**
 - RT helicopter design
 - UH-1 helicopter

UH-61A helicopter

- UF *YUH-61A helicopter*
- GS Sikorsky aircraft
 - . **UH-61A helicopter**
 - transport aircraft
 - . **UH-61A helicopter**
 - utility aircraft
 - . **UH-61A helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-61A helicopter**
 - RT helicopter design
 - UH-1 helicopter

UHTREX (nuclear reactors)

- USE **high temperature nuclear reactors**

Uhuru satellite

- UF *Explorer 42 satellite*
- GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Uhuru satellite**
- RT galactic radiation
 - SAS
 - satellite observation
 - x ray astronomy
 - x ray stars

UK 4 satellite

- GS artificial satellites
 - . scientific satellites
 - . . UK satellites
 - . . . **UK 4 satellite**

UK satellites

- UF *United Kingdom satellites*
- GS artificial satellites
 - . scientific satellites
 - . . **UK satellites**
 - . . . Ariel 4 satellite
 - . . . Ariel 5 satellite
 - . . . Miranda satellite
 - . . . UK 4 satellite
- RT Infrared Astronomy Satellite
 - Skyнет satellites
 - UK space program

UK space program

- GS programs
 - . space programs
 - . . European space programs
 - . . . **UK space program**
- RT HOTOL launch vehicle
 - UK satellites
 - United Kingdom

Ukraine

- (added August 1993)
- GS nations

- . **Ukraine**
- RT Europe
 - Ukrainian space program
- Ukrainian space program**
 - (added January 1999)
 - GS programs
 - . space programs
 - . . **Ukrainian space program**
 - RT Ukraine
 - Zenit launch vehicles
- ulcers**
 - GS diseases
 - . **ulcers**
 - RT cancer
- ullage**
 - DEF The amount that a container, such as a fuel tank, lacks of being full.
 - RT fuel tank pressurization
 - fuel tanks
 - interface stability
 - liquid sloshing
 - propellant tanks
 - splashing
 - tank geometry
 - ullage rocket engines
- ullage rocket engines**
 - GS engines
 - . rocket engines
 - . . **ullage rocket engines**
 - . torpedo engines
 - . . **ullage rocket engines**
 - RT solid propellant rocket engines
 - ullage
- ULM (light modulation)*
 - USE **ultrasonic light modulation**
- ulna**
 - GS anatomy
 - . musculoskeletal system
 - . . bones
 - . . . **ulna**
 - RT arm (anatomy)
 - elbow (anatomy)
- ultra short wave radio equipment*
 - USE **very high frequency radio equipment**
- ultracapacitors*
 - (added September 2003)
 - USE **electrochemical capacitors**
- ultrahigh frequencies**
 - SN (300 TO 3000 MHZ)
 - UF *L band*
 - S band*
 - GS frequencies
 - . radio frequencies
 - . . **ultrahigh frequencies**
 - . . . P band
 - RT decimeter waves
 - EISCAT radar system (Europe)
 - Fleet Satellite Communication System
 - low frequencies
 - passive L-band radiometers
 - praetersonic devices
 - unified S band
 - very high frequency radio equipment
- ultrahigh vacuum**
 - GS pressure
 - . vacuum
 - . . **ultrahigh vacuum**
 - RT high vacuum
 - low density research
 - residual gas
 - vacuum apparatus
 - vacuum tests
- ultralight aircraft**
 - DEF An aircraft for one person weighing less than 254 pounds with a top speed of 55 knots and a maximum stalling speed of 24 knots.
 - RT ∞ aircraft
 - hang gliders
- light aircraft
 - man powered aircraft
 - ∞ winged vehicles
- ultralow frequencies*
 - USE **extremely low frequencies**
- ultralow temperature*
 - USE **cryogenic temperature**
- ultrapure metals**
 - GS metals
 - . **ultrapure metals**
 - RT crystal lattices
 - impurities
 - purification
 - purity
 - single crystals
 - space processing
 - vapor deposition
 - zone melting
- ultrashort pulsed lasers**
 - GS stimulated emission devices
 - . lasers
 - . . pulsed lasers
 - . . . **ultrashort pulsed lasers**
 - RT glass lasers
 - laser applications
 - light amplifiers
 - pulse duration
 - quantum amplifiers
 - stimulated emission
- ultrasonic agitation**
 - GS agitation
 - . **ultrasonic agitation**
 - RT ultrasonics
- ultrasonic cleaning**
 - GS cleaning
 - . **ultrasonic cleaning**
 - RT acoustics
 - cavitation flow
 - cleaners
 - etching
 - fluid flow
 - grinding machines
 - machine tools
 - piezoelectric transducers
 - polishing
 - tools
 - transducers
 - ultrasonic processing
 - ultrasonics
- ultrasonic densimeters**
 - DEF Density measuring instruments utilizing ultrasonic devices (sensors).
 - GS measuring instruments
 - . densimeters
 - . . **ultrasonic densimeters**
 - RT density (mass/volume)
 - density measurement
 - ∞ instruments
 - ∞ measurement
- ultrasonic flaw detection**
 - GS detection
 - . **ultrasonic flaw detection**
 - RT acoustic imaging
 - ∞ detectors
 - examination
 - identifying
 - inspection
 - nondestructive tests
 - quality control
 - ultrasonic scanners
- ultrasonic grinding machines*
 - USE **ultrasonic machining**
- ultrasonic light modulation**
 - UF *ULM (light modulation)*
 - GS modulation
 - . light modulation
 - . . **ultrasonic light modulation**
 - RT Bragg cells
- ultrasonics
 - ultrasonic machining**
 - UF *ultrasonic grinding machines*
 - GS machining
 - . **ultrasonic machining**
 - RT ultrasonics
 - ultrasonic processing**
 - (added June 1998)
 - DEF The use of ultrasonic radiation to synthesize a compound or material, or alter the structure, properties, or form of a material.
 - UF *sonochemistry*
 - ultrasonic treatment*
 - RT ∞ processing
 - ultrasonic cleaning
 - ultrasonics
 - ultrasonic radiation**
 - UF *ultrasonic waves*
 - GS elastic waves
 - . **ultrasonic radiation**
 - RT acoustic frequencies
 - coherent acoustic radiation
 - magnetoelastic waves
 - ∞ radiation
 - sound waves
 - ultrasonics
 - underwater acoustics
 - ultrasonic scanners**
 - GS scanners
 - . **ultrasonic scanners**
 - RT acoustics
 - imaging techniques
 - measuring instruments
 - scanning
 - ultrasonic flaw detection
 - ultrasonics
 - ultrasonic soldering**
 - UF *sonic soldering*
 - GS soldering
 - . **ultrasonic soldering**
 - RT brazing
 - ∞ joining
 - ultrasonic welding
 - ultrasonics
 - ultrasonic spectroscopy**
 - GS spectroscopy
 - . **ultrasonic spectroscopy**
 - RT cracks
 - nondestructive tests
 - spectrum analysis
 - ultrasonic tests**
 - RT acoustic measurement
 - acoustic sounding
 - dynamic modulus of elasticity
 - Lamb waves
 - ∞ materials tests
 - nondestructive tests
 - SH waves
 - ∞ tests
 - ultrasonics
 - ultrasonic treatment*
 - (added June 1998)
 - USE **ultrasonic processing**
 - ultrasonic wave transducers**
 - GS transducers
 - . **ultrasonic wave transducers**
 - RT electroacoustics
 - electronic transducers
 - microphones
 - piezoelectric actuators
 - piezoelectric motors
 - pressure sensors
 - sonar
 - surface acoustic wave devices
 - ultrasonics
 - underwater acoustics
 - ultrasonic waves*
 - USE **ultrasonic radiation**
 - ultrasonic welding**
 - GS welding

ultrasonics

- . pressure welding
- . . **ultrasonic welding**
- RT spot welds
- ultrasonic soldering
- ultrasonics

ultrasonics

DEF The technology of sound at frequencies above the audio frequency range.

- RT acoustics
- electroacoustics
- ultrasonic agitation
- ultrasonic cleaning
- ultrasonic light modulation
- ultrasonic machining
- ultrasonic processing
- ultrasonic radiation
- ultrasonic scanners
- ultrasonic soldering
- ultrasonic tests
- ultrasonic wave transducers
- ultrasonic welding

ultraviolet absorption

- GS energy absorption
- . radiation absorption
- . . electromagnetic absorption
- . . . **ultraviolet absorption**
- RT ∞ absorption
- ultraviolet detectors

ultraviolet astronomy

DEF Use of special optical instruments for the observation of astronomical phenomena in the ultraviolet spectrum.

- GS astronomy
- . **ultraviolet astronomy**
- RT electromagnetic radiation
- Extreme Ultraviolet Explorer satellite
- Hubble Space Telescope
- Lyman alpha radiation
- Lyman beta radiation
- Spartan satellites
- Starsat telescope
- telescopes
- ultraviolet telescopes

ultraviolet detectors

- GS measuring instruments
- . radiation measuring instruments
- . . actinometers
- . . . **ultraviolet detectors**
- ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- ultraviolet spectrophotometers
- RT ∞ detectors
- photometers
- radiometers
- ultraviolet absorption
- ultraviolet radiation
- ultraviolet spectra
- x ray detectors

ultraviolet emission

- (added August 1991)
- GS electromagnetic radiation
- . ultraviolet radiation
- . . **ultraviolet emission**
- emission
- . **ultraviolet emission**
- RT emission spectra
- spectral emission
- ultraviolet spectra

ultraviolet filters

- GS electromagnetic wave filters
- . optical filters
- . . **ultraviolet filters**
- RT bandpass filters
- electric filters
- infrared filters

ultraviolet imagery

- (added January 1997)
- GS imagery
- . **ultraviolet imagery**
- . . ultraviolet photography
- RT ultraviolet photometry

ultraviolet telescopes

ultraviolet lasers

- UF *UV lasers*
- GS stimulated emission devices
- . lasers
- . . gas lasers
- . . . **ultraviolet lasers**
- . . . pulsed lasers
- **ultraviolet lasers**
- RT coherent light
- laser outputs
- light amplifiers
- light transmission
- masers
- molecular oscillators
- nitrogen lasers
- quantum amplifiers
- stimulated emission
- xenon chloride lasers

ultraviolet light

USE **ultraviolet radiation**

ultraviolet lithography

USE **lithography**

ultraviolet microscopy

- GS microscopy
- . **ultraviolet microscopy**
- RT microscopes

ultraviolet photography

- GS imagery
- . photography
- . . **ultraviolet photography**
- . ultraviolet imagery
- . . **ultraviolet photography**
- RT aerial photography
- cameras
- color photography
- faint object camera
- infrared photography
- radar photography

ultraviolet photometry

- GS imagery
- . photography
- . . **ultraviolet photometry**
- optical measurement
- . photometry
- . . **ultraviolet photometry**
- RT black and white photography
- ultraviolet imagery

ultraviolet radiation

DEF Electromagnetic radiation of shorter wavelength than visible radiation; roughly, radiation in the wavelength interval from 100 to 4000 angstroms. Used for ultraviolet light.

- UF *ultraviolet light*
- GS electromagnetic radiation
- . **ultraviolet radiation**
- . . extreme ultraviolet radiation
- . . far ultraviolet radiation
- . . . Lyman alpha radiation
- . . . Lyman beta radiation
- . . near ultraviolet radiation
- . . ultraviolet emission
- RT beams (radiation)
- black body radiation
- Cerenkov radiation
- coherent electromagnetic radiation
- coronal holes
- dayglow
- IUE
- microchannels
- monochromatic radiation
- polarized electromagnetic radiation
- ∞ radiation
- Seyfert galaxies
- solar radiation
- sterilization
- sunlight
- thermal radiation
- ultraviolet detectors
- Umkehr effect

ultraviolet reflection

- GS reflection

. **ultraviolet reflection**

- RT infrared reflection
- radio echoes
- reflectometers
- spread reflection

ultraviolet spectra

- GS spectra
- . radiation spectra
- . . electromagnetic spectra
- . . . **ultraviolet spectra**
- RT absorption spectra
- emission spectra
- Herzberg bands
- high dispersion spectrographs
- light (visible radiation)
- line spectra
- Lyman spectra
- molecular spectra
- radio spectroscopy
- solar spectra
- stellar spectra
- ultraviolet detectors
- ultraviolet emission

ultraviolet spectrographs

USE **ultraviolet spectrometers**

ultraviolet spectrometers

- UF *ultraviolet spectrographs*
- GS measuring instruments
- . optical measuring instruments
- . . photometers
- . . . **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . radiation measuring instruments
- . . actinometers
- . . . ultraviolet detectors
- **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . . photometers
- . . . **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . spectrometers
- . . **ultraviolet spectrometers**
- . . . high dispersion spectrographs
- . . . Total Ozone Mapping Spectrometer
- optical equipment
- . optical measuring instruments
- . . photometers
- . . . **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- RT Ebert spectrometers
- Solar Maximum Mission
- solar spectrometers

ultraviolet spectrophotometers

- GS measuring instruments
- . optical measuring instruments
- . . photometers
- . . . **ultraviolet spectrophotometers**
- . . . spectrophotometers
- **ultraviolet spectrophotometers**
- . radiation measuring instruments
- . . actinometers
- . . . spectrophotometers
- **ultraviolet spectrophotometers**
- ultraviolet detectors
- **ultraviolet spectrophotometers**
- . . photometers
- . . . **ultraviolet spectrophotometers**
- optical equipment
- . optical measuring instruments
- . . photometers
- . . . **ultraviolet spectrophotometers**
- . . . spectrophotometers

- . . . **ultraviolet spectrophotometers**
- ultraviolet spectroscopy**
 - GS spectroscopy
 - . **ultraviolet spectroscopy**
 - RT absorption spectroscopy
 - astronomical spectroscopy
 - molecular spectroscopy
 - optogalvanic spectroscopy
 - radio spectroscopy
 - spectroscopic analysis
 - spectrum analysis
 - vacuum spectroscopy
 - x ray spectroscopy
- ultraviolet telescopes**
 - DEF Optical telescopes designed to collect ultraviolet light (wavelengths not capable of passing through Earth's atmosphere) and as such must be used in space.
 - GS telescopes
 - . **ultraviolet telescopes**
 - . . Starlab
 - RT far ultraviolet radiation
 - spaceborne astronomy
 - Swift observatory
 - ultraviolet astronomy
 - ultraviolet imagery
 - x ray astronomy
- Ulysses mission**
 - DEF A proposed ESA/NASA mission using the STS for orbital launching of two spin-stabilized spacecraft equipped with instruments for solar and astrophysical observations. Used for International Solar Polar Mission.
 - UF *International Solar Polar Mission*
 - GS space missions
 - . **Ulysses mission**
 - RT Inertial Upper Stage
 - mission planning
 - ∞ missions
 - Solar Maximum Mission
 - solar probes
 - sun
- umbilical connectors**
 - GS connectors
 - . **umbilical connectors**
 - RT bundles
 - extravehicular activity
 - tetherlines
- umbilical towers**
 - GS towers
 - . **umbilical towers**
 - RT gantry cranes
 - launching pads
- umbras**
 - DEF The darkest parts of shadows in which light is completely cut off by intervening objects. Lighter parts surrounding the umbras, in which the light is only partly cut off, are called penumbras. The darker central portions of sun spots, surrounded by lighter penumbra.
 - RT eclipses
 - penumbras
 - shadows
- Umbriel**
 - DEF A satellite of Uranus orbiting at a mean distance of 267,000 kilometers.
 - GS celestial bodies
 - . natural satellites
 - . . Uranus satellites
 - . . . **Umbriel**
 - RT Uranus (planet)
- Umkehr effect**
 - DEF Due to the presence of the ozone layer, an anomaly of the relative zenith intensities of scattered sunlight at certain wavelengths in the ultraviolet as the sun approaches the horizon.
 - RT ∞ effects
 - light scattering
 - ozonosphere
 - sunlight
- ultraviolet radiation
- Umklapp process**
 - RT electron scattering
 - phonon beams
 - phonons
 - photon-electron interaction
 - ∞ processes
- uncambered wings**
 - GS airfoils
 - . wings
 - . . **uncambered wings**
 - . . . ring wings
 - RT cambered wings
 - fixed wings
 - thin wings
 - twisted wings
- uncertain systems**
 - (added June 2000)
 - RT control systems design
 - control theory
 - fuzzy systems
 - linear systems
 - nonlinear systems
 - probability theory
 - ∞ systems
- unconsciousness**
 - GS **unconsciousness**
 - . blackout (physiology)
 - . . blackout prevention
 - . narcosis
 - RT anesthesia
 - ∞ coma
 - syncope
- uncontrolled reentry (spacecraft)**
 - DEF The descent into a denser atmosphere of a spacecraft in an elliptical orbit due to aerodynamic drag and other perturbation forces. The gradually increasing deceleration causes some kinetic energy to be converted into atmospheric heat. The centrifugal force decreases and gravity pulls the spacecraft further into the atmosphere. The spacecraft eventually burns.
 - GS atmospheric entry
 - . reentry
 - . . hypersonic reentry
 - . . . **uncontrolled reentry (spacecraft)**
 - . . spacecraft reentry
 - . . . **uncontrolled reentry (spacecraft)**
 - RT aerodynamic heating
 - Cosmos 954 satellite
 - descent
 - flight paths
 - plasma sheaths
 - spacecraft breakup
 - spacecraft survivability
- uncoupled modes**
 - DEF Modes of vibration that can exist in systems concurrently with and independently of other modes.
 - GS modes
 - . vibration mode
 - . . **uncoupled modes**
 - RT coupled modes
 - couples
 - modes (standing waves)
- undamped oscillations**
 - GS oscillations
 - . **undamped oscillations**
 - RT airfoil oscillations
 - flapping
 - flutter
 - resonant vibration
 - stable oscillations
 - wing oscillations
- under surface blowing**
 - DEF Use of jets blowing on the underside of airfoils for variations in pressure distribution.
 - GS blowing
 - . **under surface blowing**
 - RT aerodynamic characteristics
- aircraft configurations
- circulation control airfoils
- lift
- ∞ surfaces
- upper surface blowing
- undercarriages**
 - GS frames
 - . **undercarriages**
 - RT carriages
 - carts
 - chassis
 - dollies
 - landing gear
 - substructures
 - suspension systems (vehicles)
- undercooling*
- (added May 1999)
- USE **supercooling**
- underground acoustics**
 - DEF The sounding of subsoils, rocks, etc., for mineralogy and other exploratory purposes.
 - RT acoustic sounding
 - exploration
 - minerals
 - strata
- underground communication**
 - GS communicating
 - . **underground communication**
 - RT radio communication
- underground explosions**
 - GS explosions
 - . **underground explosions**
 - RT chemical explosions
 - gas explosions
 - mines (excavations)
 - nuclear explosions
 - seismic waves
 - thermonuclear explosions
- underground radio antenna grid (navy)*
- USE **Seafarer project**
- underground storage**
 - RT decommissioning
 - mines (excavations)
 - missile storage
 - propellant storage
 - ∞ storage
 - storage tanks
 - waste management
- underground structures**
 - DEF Subterranean construction of tunnels, passageways, chambers, or excavations.
 - RT caves
 - excavation
 - foundations
 - mines (excavations)
 - mining
 - passageways
 - tunneling (excavation)
- underground transmission lines**
 - GS transmission lines
 - . **underground transmission lines**
 - RT circuits
 - electric power transmission
 - ∞ lines
 - power lines
- underwater acoustics**
 - UF *hydroacoustics*
 - underwater sound*
 - GS acoustics
 - . **underwater acoustics**
 - RT acoustic scattering
 - coherent acoustic radiation
 - deep scattering layers
 - echo sounding
 - elastic waves
 - flow noise
 - LOFAR
 - noise (sound)
 - shock waves
 - sonar

underwater breathing apparatus

- sonobuoys
- sound fixing and ranging
- sound transducers
- thermoclines
- ultrasonic radiation
- ultrasonic wave transducers

underwater breathing apparatus

- GS breathing apparatus
 - . **underwater breathing apparatus**
- RT argon-oxygen atmospheres
- bioengineering
- helium-oxygen atmospheres
- life support systems

underwater communication

- GS telecommunication
 - . communication
 - . . **underwater communication**
- RT Seafarer project
- shock waves
- sonar
- sonobuoys
- sound transducers

underwater engineering

- RT breakwaters
- ∞ engineering
- submerged bodies

underwater explosions

- GS explosions
 - . **underwater explosions**
- RT antisubmarine warfare
- chemical explosions
- hydroballistics
- nuclear explosions
- thermonuclear explosions

underwater optics

- RT diffraction patterns
- diffraction propagation
- geometrical optics
- opacity
- optical density
- optical paths
- ∞ optics
- refractivity

underwater photography

- GS imagery
 - . photography
 - . . **underwater photography**
- RT cameras
- color photography
- sea water
- seas
- submerged bodies

underwater physiology

DEF The study of the bodily responses to the environmental stresses of the underwater milieu such as pressure, temperature and immersion effects.

- GS physiology
 - . **underwater physiology**
- RT diving (underwater)
- ∞ science
- stress (physiology)

underwater propulsion

- GS propulsion
 - . marine propulsion
 - . . **underwater propulsion**
 - . . . submarine propulsion
- RT aeroquatic vehicles
- chemical propulsion
- electric propulsion
- nuclear propulsion
- propeller drive
- torpedo engines

underwater research laboratories

- GS laboratories
 - . **underwater research laboratories**
 - research vehicles
 - . **underwater research laboratories**
 - submerged bodies
 - . **underwater research laboratories**
 - water vehicles

- . underwater vehicles
- . . **underwater research laboratories**
- RT bathymeters
- ocean data acquisitions systems
- oceanography

underwater resources

- DEF Earth resources (minerals, petroleum, etc.) within or under the oceans.
- GS resources
 - . Earth resources
 - . . **underwater resources**
- RT crude oil
- dredging
- fossil fuels
- geothermal resources
- marine resources
- mineral deposits
- ocean bottom
- oceanography
- oil exploration
- sea water
- water resources

underwater sound

USE **underwater acoustics**

underwater structures

- RT breakwaters
- structural design
- submerged bodies

underwater tests

- GS environmental tests
 - . **underwater tests**
 - . . neutral buoyancy simulation
- RT corrosion tests
- diving (underwater)
- water immersion

underwater to surface missiles

- GS missiles
 - . **underwater to surface missiles**
 - . . Subroc missile
- RT ∞ surfaces

underwater trajectories

- GS trajectories
 - . **underwater trajectories**
- RT antisubmarine warfare
- hydroballistics
- missile trajectories
- Subroc missile
- torpedoes

underwater vehicles

- GS water vehicles
 - . **underwater vehicles**
 - . . submarines
 - . . . ballistic missile submarines
 - . . . guided missile submarines
 - . . . trident submarine
 - . . underwater research laboratories
- RT aeroquatic vehicles
- boats
- ∞ military vehicles
- research vehicles
- ships
- submerged bodies
- surface vehicles
- ∞ vehicles

uniaxial strain

USE **axial strain**

unidentified flying objects

- UF *UFO*
- RT ∞ aircraft
- extraterrestrial intelligence
- ∞ spacecraft
- ∞ vehicles

unified field theory

DEF Any theory which attempts to express gravitational theory and electromagnetic theory within a single unified framework; usually, an attempt to generalize Einstein's general theory of gravitation alone to a theory of gravitation and classical electromagnetism.

- GS field theory (physics)
- . gauge theory
- . . **unified field theory**
- . . . electroweak model
- . . . standard model (particle physics)
- RT electromagnetic fields
- electromagnetic interactions
- electromagnetism
- gravitation theory
- gravitational fields
- particle theory
- plasma physics
- relativity
- string theory
- supergravity
- supersymmetry
- theoretical physics

unified S band

- RT Apollo spacecraft
- carrier frequencies
- circumlunar communication
- communication equipment
- differential pulse code modulation
- manned space flight network
- pulse code modulation
- satellite communication
- spacecraft communication
- spacecraft tracking
- superhigh frequencies
- ultrahigh frequencies

uniform flow

- GS fluid flow
 - . **uniform flow**
 - . . Blasius flow
- RT aerodynamics
- gas flow
- heat transmission
- laminar flow
- liquid flow
- mass flow
- multiphase flow
- nonuniform flow
- pipe flow
- pressure gradients
- quasi-steady states
- single-phase flow
- solids flow
- steady flow
- steam flow
- subcritical flow
- turbulent flow
- unsteady flow

unimolecular structures

- RT molecular structure
- ∞ structures

unionization

- RT federations
- organizing
- personnel
- ∞ unions

∞ unions

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Boolean algebra
- unionization
- unions (connectors)

unions (connectors)

- GS connectors
 - . **unions (connectors)**
- RT couplings
- fasteners
- fittings
- joints (junctions)
- linkages
- ∞ unions

uniphase flow

USE **single-phase flow**

unipolar transistors

USE **field effect transistors**

uniqueness

- RT abnormalities

ill-conditioned problems
 (mathematics)
 ill-posed problems (mathematics)
 singularity (mathematics)

uniqueness theorem
 GS theorems
 . **uniqueness theorem**
 RT algebra
 complex variables
 geometry
 number theory
 probability theory
 real variables

United Arab Emirates
 GS nations
 . **United Arab Emirates**

United Kingdom
 UF *Great Britain*
 GS nations
 . **United Kingdom**
 . . England
 . . Gibraltar
 . . Northern Ireland
 . . Scotland
 . . Wales
 RT English Channel
 Europe
 UK space program

United Kingdom satellites
 USE **UK satellites**

United Nations
 RT communities
 developing nations
 European Union
 federations
 international cooperation
 international law
 nations
 organizations
 politics
 sea law
 World Meteorological Organization

United States
 UF *USA (United States)*
 GS nations
 . **United States**
 . . Alabama
 . . Alaska
 . . Arizona
 . . Arkansas
 . . California
 . . Colorado
 . . Connecticut
 . . Delaware
 . . District of Columbia
 . . Florida
 . . Georgia
 . . Guam
 . . Hawaii
 . . Idaho
 . . Illinois
 . . Indiana
 . . Iowa
 . . Kansas
 . . Kentucky
 . . Louisiana
 . . Maine
 . . Maryland
 . . Massachusetts
 . . Michigan
 . . Minnesota
 . . Mississippi
 . . Missouri
 . . Montana
 . . Nebraska
 . . Nevada
 . . New Hampshire
 . . New Jersey
 . . New Mexico
 . . New York
 . . North Carolina
 . . North Dakota
 . . Ohio
 . . Oklahoma

. . Oregon
 . . Pennsylvania
 . . Puerto Rico
 . . Rhode Island
 . . South Carolina
 . . South Dakota
 . . Tennessee
 . . Texas
 . . Utah
 . . Vermont
 . . Virgin Islands
 . . Virginia
 . . Washington
 . . West Virginia
 . . Wisconsin
 . . Wyoming

RT Aleutian Islands (US)
 Cascade Range (CA-OR-WA)
 Central Atlantic Region (US)
 Great Lakes (North America)
 Great Plains Corridor (North America)
 International Field Year for Great
 Lakes
 International Hydrological Decade
 Missouri River (US)
 New England (US)
 North America
 Pacific Northwest (US)
 Panama Canal Zone
 Rocky Mountains (North America)
 Southern California

units of measurement
 DEF Precisely stated quantities in terms of
 which the magnitudes of other quantities of the
 same kind can be stated. f shichrms of which the
 magnitude of other Precisely specified quanti-
 ties in te
 GS **units of measurement**
 . International System of Units
 RT conversion tables
 dimensional analysis
 dimensions
 ∞ measurement
 metrication
 metrology
 month
 parameterization
 sidereal time
 symbols
 time

unity
 RT homogeneity
 stability

Unity connecting module
(added November 1998)
 DEF Component of the International Space
 Station providing six ports that serve as con-
 necting points for other station modules and
 framework elements.
 GS modules
 . space station modules
 . **Unity connecting module**
 RT Integrated Truss Structure Z1
 International Space Station
 spacecraft docking

Univac 80 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . **Univac 80 computer**
 . . Univac computers
 . . **Univac 80 computer**

Univac 418 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . **Univac 418 computer**
 . . Univac computers
 . . **Univac 418 computer**

Univac 490 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . **Univac 490 computer**

. . Univac computers
 . . **Univac 490 computer**

Univac 494 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . **Univac 494 computer**
 . . Univac computers
 . . **Univac 494 computer**

Univac 1100 series computers
 GS data processing equipment
 . computers
 . . analog computers
 . . **Univac 1100 series computers**
 Univac 1105 computer
 Univac 1106 computer
 Univac 1107 computer
 Univac 1108 computer
 Univac 1110 computer
 . . digital computers
 . . **Univac 1100 series computers**
 Univac 1105 computer
 Univac 1106 computer
 Univac 1107 computer
 Univac 1108 computer
 Univac 1110 computer
 . . Univac computers
 . . **Univac 1100 series computers**
 Univac 1105 computer
 Univac 1106 computer
 Univac 1107 computer
 Univac 1108 computer
 Univac 1110 computer

Univac 1105 computer
 GS data processing equipment
 . computers
 . . analog computers
 Univac 1100 series computers
 **Univac 1105 computer**
 . . digital computers
 Univac 1100 series computers
 **Univac 1105 computer**
 . . Univac computers
 Univac 1100 series computers
 **Univac 1105 computer**

Univac 1106 computer
 GS data processing equipment
 . computers
 . . analog computers
 Univac 1100 series computers
 **Univac 1106 computer**
 . . digital computers
 Univac 1100 series computers
 **Univac 1106 computer**
 . . Univac computers
 Univac 1100 series computers
 **Univac 1106 computer**

Univac 1107 computer
 GS data processing equipment
 . computers
 . . analog computers
 Univac 1100 series computers
 **Univac 1107 computer**
 . . digital computers
 Univac 1100 series computers
 **Univac 1107 computer**
 . . Univac computers
 Univac 1100 series computers
 **Univac 1107 computer**

Univac 1108 computer
 GS data processing equipment
 . computers
 . . analog computers
 Univac 1100 series computers
 **Univac 1108 computer**
 . . digital computers
 Univac 1100 series computers
 **Univac 1108 computer**
 . . Univac computers
 Univac 1100 series computers
 **Univac 1108 computer**

Univac 1110 computer
 GS data processing equipment

Univac 1230 computer

- . computers
- .. analog computers
- ... Univac 1100 series computers
- **Univac 1110 computer**
- .. digital computers
- ... Univac 1100 series computers
- **Univac 1110 computer**
- .. Univac computers
- ... Univac 1100 series computers
- **Univac 1110 computer**

Univac 1230 computer

- GS data processing equipment
- . computers
- .. digital computers
- ... **Univac 1230 computer**
- .. Univac computers
- ... **Univac 1230 computer**

Univac computers

- GS data processing equipment
- . computers
- .. **Univac computers**
- ... Univac 1100 series computers
- Univac 1105 computer
- Univac 1106 computer
- Univac 1107 computer
- Univac 1108 computer
- Univac 1110 computer
- ... Univac 80 computer
- ... Univac 418 computer
- ... Univac 490 computer
- ... Univac 494 computer
- ... Univac 1230 computer
- ... Univac Larc computer
- RT digital computers

Univac Larc computer

- GS data processing equipment
- . computers
- .. digital computers
- ... **Univac Larc computer**
- .. Univac computers
- ... **Univac Larc computer**

universal time

DEF Time defined by the rotational motion of the Earth and determined from the apparent diurnal motions which reflect this rotation; because of variations in the rate of rotation, universal time is not rigorously uniform. Also called Greenwich mean time.

- GS time
- . **universal time**
- RT ephemeris time
- time synchronization

universe

- UF *metagalaxy*
- RT big bang cosmology
- celestial bodies
- cosmology
- ∞ cosmos
- dark energy
- dark matter
- large-scale structure of the universe
- relic radiation

universities

- UF *colleges*
- RT education
- instructors
- learning
- schools
- students

university program

- GS programs
- . **university program**
- RT bureaus (organizations)
- investigation
- NASA programs
- teams

UNIX (operating system)

- (*added October 1988*)
- GS computer programs
- . computer systems programs
- .. operating systems (computers)
- ... **UNIX (operating system)**

- RT computer programming
- software engineering
- workstations

unloading

- RT ∞ discharge
- disposal
- dumping
- ejection
- emptying
- evacuating (transportation)
- expulsion
- loading operations
- materials handling
- releasing
- removal
- spreading

unloading waves

- GS elastic waves
- . **unloading waves**

unmanned aerial vehicles

- USE **pilotless aircraft**

unmanned aircraft systems

(*added August 2007*)

DEF Pilotless flight systems consisting of an unmanned aircraft, sensors, payloads, communications equipment carried on board the aircraft, and ground control stations that control the flight of the aircraft and receive information collected and transmitted by the payloads.

- UF *UAS*
- RT aerial reconnaissance
- ∞ military aircraft
- pilotless aircraft
- reconnaissance aircraft
- remotely piloted vehicles
- ∞ systems

unmanned ground vehicles

(*added July 2002*)

DEF Ground vehicles using remote or autonomous control.

- UF *UGV (vehicles)*
- GS surface vehicles
- . **unmanned ground vehicles**
- RT autonomous navigation
- remotely piloted vehicles
- robot control
- robotics
- roving vehicles
- surface navigation

unmanned spacecraft

- GS **unmanned spacecraft**
- . Echo 2 satellite
- . HEAO 1
- . HEAO 2
- . HEAO 3
- . HOTOL launch vehicle
- . Pioneer Venus spacecraft
- .. Pioneer Venus 1 spacecraft
- .. Pioneer Venus 2 spacecraft
- ... Pioneer Venus 2 entry probes
- Pioneer Venus 2 night probe
- Pioneer Venus 2 sounder probe
- ... Pioneer Venus 2 transporter bus
- . space probes
- .. Explorer 18 satellite
- .. Giotto mission
- .. Jupiter probes
- ... Galileo probe
- ... Galileo spacecraft
- .. lunar probes
- ... Lunik lunar probes
- Lunik 2 lunar probe
- Lunik 3 lunar probe
- Lunik 9 lunar probe
- Lunik 10 lunar probe
- Lunik 11 lunar probe
- Lunik 12 lunar probe
- Lunik 13 lunar probe
- Lunik 14 lunar probe
- Lunik 16 lunar probe
- Lunik 17 lunar probe
- Lunik 19 lunar probe
- Lunik 20 lunar probe
- Lunik 22 lunar probe

- ... Ranger lunar probes
- Ranger 1 lunar probe
- Ranger 2 lunar probe
- Ranger 3 lunar probe
- Ranger 4 lunar probe
- Ranger 5 lunar probe
- Ranger 6 lunar probe
- Ranger 7 lunar probe
- Ranger 8 lunar probe
- Ranger 9 lunar probe
- Ranger lunar landing vehicles
- ... Surveyor lunar probes
- Surveyor 1 lunar probe
- Surveyor 2 lunar probe
- Surveyor 3 lunar probe
- Surveyor 4 lunar probe
- Surveyor 5 lunar probe
- Surveyor 6 lunar probe
- Surveyor 7 lunar probe
- .. Mariner space probes
- ... Mariner 1 space probe
- ... Mariner 2 space probe
- ... Mariner 3 space probe
- ... Mariner 4 space probe
- ... Mariner 5 space probe
- ... Mariner 6 space probe
- ... Mariner 7 space probe
- ... Mariner 8 space probe
- ... Mariner 9 space probe
- ... Mariner 10 space probe
- ... Mariner 11 space probe
- ... Mariner R 2 space probe
- .. Mariner spacecraft
- ... Mariner C spacecraft
- ... Mariner Venus 67 spacecraft
- .. Mars probes
- ... Advanced Recon Electric Spacecraft
- ... Mariner 3 space probe
- ... Mariner 4 space probe
- ... Mariner 6 space probe
- ... Mariner 7 space probe
- ... Mariner 8 space probe
- ... Mariner 9 space probe
- ... Mars 1 spacecraft
- ... Mars 2 spacecraft
- ... Mars 3 spacecraft
- ... Mars 4 Spacecraft
- ... Mars 5 spacecraft
- ... Mars 6 spacecraft
- ... Mars 7 spacecraft
- ... Mars Observer
- ... Mars Pathfinder
- ... Viking 1975 entry vehicle
- ... Viking spacecraft
- ... Viking 1 spacecraft
- Viking lander 1
- Viking orbiter 1
- ... Viking 2 spacecraft
- Viking lander 2
- Viking orbiter 2
- ... Viking lander spacecraft
- Viking lander 1
- Viking lander 2
- ... Viking orbiter spacecraft
- Viking orbiter 1
- Viking orbiter 2
- ... Viking orbiter 1975
- ... Mars Climate Orbiter
- ... Mars Express
- ... Mars Global Surveyor
- ... Mars Polar Lander
- ... Mars Reconnaissance Orbiter
- ... Nozomi Mars Orbiter
- ... Phobos spacecraft
- ... Phoenix Mars Lander
- ... Zond 2 space probe
- .. Pioneer space probes
- ... Pioneer 1 space probe
- ... Pioneer 2 space probe
- ... Pioneer 3 space probe
- ... Pioneer 4 space probe
- ... Pioneer 5 space probe
- ... Pioneer 6 space probe
- ... Pioneer 7 space probe
- ... Pioneer 8 space probe
- ... Pioneer 9 space probe
- ... Pioneer 10 space probe
- ... Pioneer 11 space probe

- ... Pioneer Venus 2 entry probes
 - ... Pioneer Venus 2 night probe
 - ... Pioneer Venus 2 sounder probe
 - ... solar probes
 - ... Helios 1
 - ... Helios 2
 - ... Helios A
 - ... Helios B
 - ... Starprobe spacecraft
 - ... Sunblazer space probe
 - ... Venus probes
 - ... Magellan spacecraft (NASA)
 - ... Mariner 1 space probe
 - ... Mariner 2 space probe
 - ... Mariner 5 space probe
 - ... Mariner 10 space probe
 - ... Pioneer Venus 2 spacecraft
 - ... Pioneer Venus 2 entry probes
 - ... Pioneer Venus 2 night probe
 - ... Pioneer Venus 2 sounder probe
 - ... Pioneer Venus 2 transporter bus
 - ... Venera satellites
 - ... Venera 2 satellite
 - ... Venera 3 satellite
 - ... Venera 4 satellite
 - ... Venera 5 satellite
 - ... Venera 6 satellite
 - ... Venera 7 satellite
 - ... Venera 8 satellite
 - ... Venera 9 satellite
 - ... Venera 10 satellite
 - ... Venera 11 satellite
 - ... Venera 12 satellite
 - ... Zond 1 space probe
 - ... Zond 3 space probe
 - ... Zond 4 space probe
 - ... Zond 5 space probe
 - ... Zond 6 space probe
 - ... Zond 7 space probe
 - ... Zond 8 space probe
 - ... Huygens probe
 - ... MESSENGER (spacecraft)
 - ... Microwave Anisotropy Probe
 - ... Voyager 1 spacecraft
 - ... Voyager 2 spacecraft
 - ... technology feasibility spacecraft
 - ... Zond space probes
 - ... Zond 1 space probe
 - ... Zond 2 space probe
 - ... Zond 3 space probe
 - ... Zond 4 space probe
 - ... Zond 5 space probe
 - ... Zond 6 space probe
 - ... Zond 7 space probe
 - ... Zond 8 space probe
 - RT artificial satellites
 - autonomous docking
 - communication satellites
 - geophysical satellites
 - gravity gradient satellites
 - inflatable spacecraft
 - interplanetary spacecraft
 - lunar landing modules
 - lunar satellites
 - lunar spacecraft
 - manned spacecraft
 - Mariner program
 - meteorological satellites
 - military spacecraft
 - reconnaissance spacecraft
 - recoverable spacecraft
 - rendezvous spacecraft
 - reusable spacecraft
 - SIRS B satellite
 - space capsules
 - ∞ spacecraft
 - Voyager project
- unsaturation (chemistry)**
 DEF A state in which the atomic bonds of an organic compound's chain or ring are not completely satisfied (not saturated); unsaturation usually results in a double bond (as for olefins) or a triple bond (as for the acetylenes).
 RT chemical bonds
 ∞ chemistry
 precipitation (chemistry)
 ∞ saturation
- saturation (chemistry)
- unsteady aerodynamics**
 GS mechanics (physics)
 . fluid mechanics
 . . fluid dynamics
 . . . gas dynamics
 aerodynamics
 **unsteady aerodynamics**
 RT aerodynamic characteristics
 aerodynamic forces
 aerodynamic stability
 aeroelasticity
 aeroservoelasticity
 flutter
 flutter analysis
 unsteady flow
 wing oscillations
- unsteady flow**
 UF *pulsating flow*
 GS fluid flow
 . **unsteady flow**
 . . oscillating flow
 RT aerodynamics
 critical flow
 ∞ flow
 flow stability
 flow velocity
 gas flow
 heat transmission
 hydrodynamic coefficients
 laminar flow
 liquid flow
 mass flow
 method of characteristics
 multiphase flow
 nonequilibrium flow
 nonNewtonian flow
 nonuniform flow
 orifice flow
 pipe flow
 pressure gradients
 single-phase flow
 solids flow
 steady flow
 steady state
 steam flow
 Strouhal number
 subcritical flow
 supercritical flow
 turbulence
 uniform flow
 unsteady aerodynamics
- unsteady state**
 RT ∞ equilibrium
 fluid dynamics
 metastable state
 nonequilibrium conditions
 stability
 steady state
 systems stability
 thermodynamics
- unstructured grids (mathematics)**
(added May 1995)
 DEF In computational fluid dynamics, grid systems where the flowfield is discretized into triangular-shaped elements for two-dimensional fields, and tetrahedral elements for three-dimensional fields. In this type of grid system the grid points cannot be associated with grid lines.
 GS coordinates
 . computational grids
 . . **unstructured grids (mathematics)**
 RT computational fluid dynamics
 finite element method
 finite volume method
 grid generation (mathematics)
 multigrid methods
 structured grids (mathematics)
- unswept wings**
 GS airfoils
 . wings
 . . **unswept wings**
 . . . infinite span wings
 . . . rectangular wings
- ... ring wings
 RT fixed wings
 swept wings
 wing planforms
- up-converters**
 DEF Parametric amplifiers characterized by the output signal frequencies being greater than the frequencies of the input signals.
 GS frequency converters
 . **up-converters**
 RT ∞ converters
 parametric frequency converters
 transformers
- updrafts*
 USE **vertical air currents**
- upgrading**
 RT beneficentia
 concentrating
 enrichment
 experience
 improvement
 promotion
 public relations
 purification
 quality
 refining
- uplinking**
 DEF The transmission of signals from ground terminals to satellites in telecommunication systems.
 RT carrier to noise ratios
 communication satellites
 downlinking
 frequency reuse
 microwave transmission
 satellite transmission
 transmission efficiency
- upper air*
 USE **upper atmosphere**
- upper atmosphere**
 DEF The general term applied to the atmosphere above the troposphere. Used for upper air.
 UF *upper air*
 GS Earth atmosphere
 . **upper atmosphere**
 . . Earth ionosphere
 . . . E region
 E-1 layer
 E-2 layer
 sporadic E layer
 . . . lower ionosphere
 D region
 . . . upper ionosphere
 F region
 F 1 region
 F 2 region
 . . exosphere
 . . thermosphere
 . . turbopause
 RT acoustic sounding
 aeronomy
 chemosphere
 field aligned currents
 heterosphere
 high altitude
 homosphere
 meteor trails
 meteorological balloons
 middle atmosphere
 ozonosphere
 plasmasphere
 proton precipitation
 radiation belts
 satellite atmospheres
 Upper Atmosphere Research Satellite (UARS)
- Upper Atmosphere Research Satellite (UARS)**
(added August 1989)
 UF *UARS (satellite)*
 GS artificial satellites
 . scientific satellites

upper ionosphere

Upper Atmosphere Research Satellite (UARS)

RT upper atmosphere

upper ionosphere

GS Earth atmosphere
. upper atmosphere
. Earth ionosphere
. . . upper ionosphere
. . . . F region
. F 1 region
. F 2 region
RT E region

upper stage rocket engines

GS engines
. rocket engines
. . . upper stage rocket engines
RT Ares 1 upper stage
Inertial Upper Stage
multistage rocket vehicles
spacecraft configurations
spinning solid upper stage
stage separation

upper surface blowing

DEF Use of jet blowing on the upper surface of airfoils to create variations in pressure distribution.

GS blowing
. upper surface blowing
RT aerodynamic characteristics
aircraft configurations
circulation control airfoils
lift
∞ surfaces
under surface blowing

upper surface blown flaps

GS airfoils
. flaps (control surfaces)
. . . externally blown flaps
. . . . upper surface blown flaps
control surfaces
. flaps (control surfaces)
. . . externally blown flaps
. . . . upper surface blown flaps
RT aircraft stability
blowing
boundary layer control
lift augmentation
lift devices
∞ surfaces

Upper Volta

USE **Burkina**

upsetting

RT cold pressing
cold working
forming techniques
hot isostatic pressing
hot pressing
hot working
pressing (forming)
stamping

upstream

RT air currents
water currents
wind direction

upwash

RT downwash
∞ draft
interference drag
interference lift

upwelling

USE **upwelling water**

upwelling water

DEF The process by which water rises from a deeper to a shallower depth. Used for upwelling.

UF *upwelling*
RT atmospheric circulation
coasts
ocean currents
thermohaline circulation

wind (meteorology)
wind direction

upwind schemes (mathematics)

(added July 1992)

GS analysis (mathematics)
. numerical analysis
. approximation
. . . upwind schemes (mathematics)
RT computational fluid dynamics
Euler equations of motion
finite difference theory

uracil

GS bases (chemical)
. uracil
nitrogen compounds
. uracil
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . pyrimidines
. uracil
RT alloxan
uridylic acid

uranium

GS chemical elements
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 232
. uranium 233
. uranium 234
. uranium 235
. uranium 238
metals
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 232
. uranium 233
. uranium 234
. uranium 235
. uranium 238
RT fissionable materials
jet membrane process
nuclear fuels
uranium plasmas

uranium 232

GS chemical elements
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 232
. nuclides
. isotopes
. radioactive isotopes
. uranium 232
. uranium isotopes
. uranium 232
metals
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 232

uranium 233

GS chemical elements
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 233
. nuclides
. isotopes
. radioactive isotopes
. uranium 233
. uranium isotopes
. uranium 233
metals
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 233
RT nuclear fuels

uranium 234

GS chemical elements
. actinide series

. . . uranium
. . . . uranium isotopes
. uranium 234
. nuclides
. isotopes
. uranium isotopes
. uranium 234
metals
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 234

uranium 235

GS chemical elements
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 235
. nuclides
. isotopes
. uranium isotopes
. uranium 235
metals
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 235
RT nuclear fuels

uranium 238

GS chemical elements
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 238
. nuclides
. isotopes
. radioactive isotopes
. uranium 238
. uranium isotopes
. uranium 238
metals
. actinide series
. . . uranium
. . . . uranium isotopes
. uranium 238
RT nuclear fuels

uranium alloys

GS alloys
. uranium alloys
RT nuclear fuel elements
nuclear fuels

uranium carbides

GS actinide series compounds
. uranium compounds
. . . uranium carbides
carbon compounds
. carbides
. . . uranium carbides
RT ceramic nuclear fuels
nuclear fuel elements
nuclear fuels

uranium compounds

GS actinide series compounds
. uranium compounds
. . . uranium carbides
. . . uranium fluorides
. . . uranium oxides
RT ceramic nuclear fuels
∞ chemical compounds
∞ metal compounds
nuclear fuels

uranium fluorides

GS actinide series compounds
. uranium compounds
. . . uranium fluorides
halogen compounds
. fluorine compounds
. . . fluorides
. . . . metal fluorides
. uranium fluorides
. halides
. fluorides
. metal fluorides
. uranium fluorides

- .. metal halides
- ... metal fluorides
- **uranium fluorides**
- uranium isotopes**
 - GS chemical elements
 - . actinide series
 - . uranium
 - ... **uranium isotopes**
 - uranium 232
 - uranium 233
 - uranium 234
 - uranium 235
 - uranium 238
 - . nuclides
 - . isotopes
 - ... **uranium isotopes**
 - uranium 232
 - uranium 233
 - uranium 234
 - uranium 235
 - uranium 238
 - metals
 - . actinide series
 - . uranium
 - ... **uranium isotopes**
 - uranium 232
 - uranium 233
 - uranium 234
 - uranium 235
 - uranium 238
- uranium oxides**
 - GS actinide series compounds
 - . uranium compounds
 - ... **uranium oxides**
 - . chalcogenides
 - . oxides
 - .. metal oxides
 - ... **uranium oxides**
 - RT ceramic nuclear fuels
 - . mixed oxides
 - . nuclear fuels
- uranium plasmas**
 - GS metals
 - . **uranium plasmas**
 - . particles
 - . charged particles
 - . energetic particles
 - ... plasmas (physics)
 - metallic plasmas
 - **uranium plasmas**
 - . corpuscular radiation
 - . energetic particles
 - ... plasmas (physics)
 - metallic plasmas
 - **uranium plasmas**
 - RT magnetohydrodynamics
 - . plasma composition
 - . plasma physics
 - . radioactive materials
 - . uranium
 - Uranus (planet)**
 - GS celestial bodies
 - . planets
 - .. gas giant planets
 - ... **Uranus (planet)**
 - RT Ariel
 - . Cordelia
 - . Miranda
 - . Oberon
 - . Puck
 - . Titania
 - . Umbriel
 - . Uranus atmosphere
 - . Uranus rings
 - . Voyager 2 spacecraft
 - Uranus atmosphere**
 - DEF The atmosphere of the planet Uranus.
 - GS environments
 - . extraterrestrial environments
 - .. planetary environments
 - ... planetary atmospheres
 - **Uranus atmosphere**
 - RT aerospace environments
 - ∞ atmospheres
 - . gas giant planets
 - hydrogen
 - methane
 - planetary ionospheres
 - Uranus (planet)
 - Uranus rings**
 - DEF Ring structures encircling the planet Uranus and similar to those of the planet Saturn.
 - GS celestial bodies
 - . planetary rings
 - .. **Uranus rings**
 - RT Jupiter rings
 - . moonlets
 - . natural satellites
 - . planetary structure
 - ∞ rings
 - . Saturn rings
 - . Uranus (planet)
 - Uranus satellites**
 - GS celestial bodies
 - . natural satellites
 - .. **Uranus satellites**
 - ... Ariel
 - ... Cordelia
 - ... Miranda
 - ... Oberon
 - ... Puck
 - ... Titania
 - ... Umbriel
 - urban areas*
 - USE **cities**
 - urban development**
 - RT cities
 - . communities
 - ∞ development
 - . economic development
 - . industrial areas
 - . land use
 - . megalopolises
 - . operations research
 - . parks
 - . planning
 - ∞ plans
 - . regional planning
 - . residential areas
 - . resources
 - . Starsite program
 - . technologies
 - urban planning**
 - GS planning
 - . regional planning
 - .. **urban planning**
 - RT census
 - . cities
 - . communities
 - . heat islands
 - . highways
 - . land management
 - . land use
 - . parks
 - . public health
 - . recreation
 - . social factors
 - . sociology
 - . Starsite program
 - . streets
 - urban research**
 - RT cities
 - . communities
 - . land use
 - . recreation
 - . social factors
 - . streets
 - urban transportation**
 - GS transportation
 - . **urban transportation**
 - RT automated guideway transit vehicles
 - . automated mixed traffic vehicles
 - . automated transit vehicles
 - . industrial areas
 - . megalopolises
 - . rail transportation
 - . rapid transit systems
 - . regional planning
 - surface vehicles
 - ureas**
 - GS nitrogen compounds
 - . amides
 - .. **ureas**
 - ... difluorourea
 - ... thioureas
 - ... thiuronium
 - RT diuretics
 - . fertilizers
 - . urine
 - ureilites**
 - (added December 1988)
 - GS celestial bodies
 - . meteorites
 - .. stony meteorites
 - ... achondrites
 - **ureilites**
 - ... carbonaceous meteorites
 - **ureilites**
 - RT meteoritic diamonds
 - urethanes**
 - GS esters
 - . Carbamates (tradename)
 - .. **urethanes**
 - . poisons
 - . pesticides
 - . insecticides
 - .. Carbamates (tradename)
 - **urethanes**
 - RT cyanates
 - uric acid**
 - GS acids
 - . **uric acid**
 - . fungicides
 - . xanthines
 - .. **uric acid**
 - . nitrogen compounds
 - . xanthines
 - .. **uric acid**
 - . organic compounds
 - . cyclic compounds
 - . heterocyclic compounds
 - ... purines
 - xanthines
 - **uric acid**
 - RT alloxan
 - uridylic acid**
 - GS acids
 - . **uridylic acid**
 - . organic compounds
 - . nucleotides
 - .. **uridylic acid**
 - . organic phosphorus compounds
 - .. **uridylic acid**
 - . phosphorus compounds
 - . organic phosphorus compounds
 - .. **uridylic acid**
 - . phosphates
 - .. **uridylic acid**
 - RT amino acids
 - . nucleic acids
 - . uracil
 - urinalysis**
 - GS chemical tests
 - . chemical analysis
 - .. **urinalysis**
 - RT diabetes mellitus
 - . physiological tests
 - . urine
 - urination**
 - UF *micturition*
 - RT diuresis
 - . urine
 - . water balance
 - urine**
 - GS body fluids
 - . **urine**
 - . wastes
 - . liquid wastes
 - .. **urine**
 - . metabolic wastes

urography

- . . human wastes
- . . . **urine**
- RT antidiuretics
- creatinine
- excretion
- feces
- hematuria
- kidneys
- ureas
- urinalysis
- urination

urography

- GS imagery
- . photography
- . . **urography**
- . radiography
- . . **urography**
- RT black and white photography

urolithiasis

- GS diseases
- . **urolithiasis**
- RT calculi
- kidneys
- urology

urology

- GS medical science
- . **urology**
- RT bladder
- genitourinary system
- kidneys
- urolithiasis

Uruguay

- GS nations
- . **Uruguay**
- RT South America

US Laboratory Module (ISS)
(added February 2001)

- USE **Destiny Laboratory Module**

US-2A aircraft

- USE **S-2 aircraft**

USA (United States)

- USE **United States**

user manuals (computer programs)

- GS documents
- . handbooks
- . . **user manuals (computer programs)**
- . manuals
- . . **user manuals (computer programs)**
- RT computer programs
- programs
- report generators
- ∞ routines
- subroutines

user requirements

- GS requirements

- . **user requirements**
- RT commerce lab
- human-computer interface
- international cooperation
- specifications

user-computer interface

- USE **human-computer interface**

USNS Kingsport

- USE **satellite communications ships**

Utah

- GS nations
- . United States
- . . **Utah**
- RT Colorado Plateau (US)
- Colorado River (North America)
- Great Basin (US)
- Great Salt Lake (UT)

uterus

- GS anatomy
- . genitourinary system
- . . reproductive systems
- . . . **uterus**

utilities

- RT ∞ electric equipment
- ∞ electric power
- garbage
- industries
- integrated energy systems
- logistics
- Modular Integrated Utility System
- services
- site selection
- telephones
- waste disposal
- water

utility aircraft

- GS **utility aircraft**
- . BO-105 helicopter
- . DHC 4 aircraft
- . DHC 5 aircraft
- . HH-43 helicopter
- . S-2 aircraft
- . Saab 105 aircraft
- . T-39 aircraft
- . U-2 aircraft
- . U-10 aircraft
- . UH-1 helicopter
- . UH-2 helicopter
- . UH-60A helicopter
- . UH-61A helicopter
- . XV-8A aircraft
- . Z-37 aircraft
- RT ∞ aircraft
- biplanes
- cargo aircraft
- commercial aircraft
- general aviation aircraft
- helicopters
- light aircraft

- ∞ military aircraft
- observation aircraft
- reconnaissance aircraft
- ∞ subsonic aircraft
- transport aircraft
- V/STOL aircraft
- water takeoff and landing aircraft

utilization

- UF *application*
- GS **utilization**
- . coal utilization
- . geothermal energy utilization
- . laser applications
- . . laser ablation
- . . laser annealing
- . . laser cooling
- . . laser cutting
- . . laser deposition
- . . . pulsed laser deposition
- . . laser drilling
- . . laser fusion
- . . laser guidance
- . . laser guide stars
- . . laser heating
- . . laser induced fluorescence
- . . laser interferometry
- . . laser machining
- . . laser microscopy
- . . laser power beaming
- . . laser propulsion
- . . laser spectroscopy
- . . . optogalvanic spectroscopy
- . . laser ranging
- . . laser weapons
- . . laser welding
- . . . satellite laser ranging
- . reuse
- . . software reuse
- . in situ resource utilization
- . technology utilization
- . waste energy utilization
- . waste utilization
- . windpower utilization
- RT consumption
- depletion
- efficiency

utricle

- RT plants (botany)
- seeds

UV Ceti stars

- USE **flare stars**

UV lasers

- USE **ultraviolet lasers**

Uzbekistan

- (added August 1993)
- GS nations
- . **Uzbekistan**
- RT Asia

V

V band

USE **extremely high frequencies**

V grooves

GS grooves
 . **V grooves**
 . . riblets
 RT machining
 micromachining
 notches

V-1 missile

GS missiles
 . surface to surface missiles
 . . **V-1 missile**
 RT liquid propellant rocket engines
 pulsejet engines

V-2 missile

GS missiles
 . ballistic missiles
 . . **V-2 missile**
 RT liquid propellant rocket engines

V-3 aircraft

USE **XV-3 aircraft**

V-4 aircraft

USE **XV-4 aircraft**

V-5 aircraft

USE **XV-5 aircraft**

V-9 aircraft

USE **XV-9A aircraft**

V-22 aircraft

(added September 1990)

DEF A Bell/Boeing developed tilt rotor aircraft, nicknamed "Osprey", and designed for light multiservice use. Used for Osprey aircraft.

UF *Osprey aircraft*
 GS Bell aircraft
 . **V-22 aircraft**
 Boeing aircraft
 . **V-22 aircraft**
 V/STOL aircraft
 . rotary wing aircraft
 . . tilt rotor aircraft
 . . . **V-22 aircraft**
 RT ∞ aircraft
 helicopters
 ∞ military aircraft
 rotary wings
 Tilt Rotor Research Aircraft Program
 tilt wing aircraft
 tilting rotors

V/STOL aircraft

DEF A hybrid form of heavier-than-air aircraft that is capable, by virtue of one or more horizontal rotors or units acting as rotors, of taking off, hovering, and landing as, or in a fashion similar to, a helicopter, and once aloft, and moving forward, capable, by means of a mechanical conversion of one sort or another, of flying as a fixed-wing aircraft, especially in its higher speed ranges. Used for convertiplanes and steep gradient aircraft.

UF *convertiplanes*
steep gradient aircraft

GS **V/STOL aircraft**
 . CL-84 aircraft
 . DO-31 aircraft
 . FV-12A aircraft
 . G-95/4 aircraft
 . G-222 aircraft
 . L-29 jet trainer
 . P-1127 aircraft
 . P-1154 aircraft
 . rotary wing aircraft
 . . autogyros
 . . . Avian 2/180 autogyro
 . . . helicopters
 . . . Alouette helicopters
 SA-330 helicopter
 SE-3160 helicopter
 . . . Bell 214A helicopter
 . . . compound helicopters

. . . . S-67 helicopter
 . . . H-17 helicopter
 . . . heavy lift helicopters
 . . . CH-62 helicopter
 . . . light helicopters
 . . . OH-4 helicopter
 . . . OH-5 helicopter
 . . . OH-6 helicopter
 . . . OH-58 helicopter
 . . . military helicopters
 . . . AH-1G helicopter
 . . . AH-1S helicopter
 . . . AH-1W helicopter
 . . . AH-63 helicopter
 . . . AH-64 helicopter
 . . . BO-105 helicopter
 . . . CH-3 helicopter
 . . . CH-21 helicopter
 . . . CH-34 helicopter
 . . . CH-46 helicopter
 . . . CH-47 helicopter
 . . . CH-54 helicopter
 . . . CH-62 helicopter
 . . . H-19 helicopter
 . . . H-43 helicopter
 . . . H-53 helicopter
 . . . H-54 helicopter
 . . . H-56 helicopter
 . . . H-60 Helicopter
 . . . HC-3 helicopter
 . . . HH-43 helicopter
 . . . HH-65 helicopter
 . . . OH-4 helicopter
 . . . OH-5 helicopter
 . . . OH-6 helicopter
 . . . OH-13 helicopter
 . . . OH-23 helicopter
 . . . OH-58 helicopter
 . . . P-531 helicopter
 . . . QH-50 helicopter
 . . . S-67 helicopter
 . . . SA-321 helicopter
 . . . SA-330 helicopter
 . . . SH-3 helicopter
 . . . SH-4 helicopter
 . . . Sikorsky Whirlwind helicopter
 . . . UH-1 helicopter
 . . . UH-2 helicopter
 . . . UH-34 helicopter
 . . . UH-60A helicopter
 . . . UH-61A helicopter
 . . . Westland Whirlwind helicopter
 . . . XV-9A aircraft
 . . . rigid rotor helicopters
 . . . CH-3 helicopter
 . . . F-28 helicopter
 . . . XH-51 helicopter
 . . . S-58 helicopter
 . . . S-61 helicopter
 . . . tandem rotor helicopters
 . . . CH-46 helicopter
 . . . CH-47 helicopter
 . . . H-25 helicopter
 . . . EH-101 helicopter
 . . . TH-55 helicopter
 . . rotor systems research aircraft
 . . tilt rotor aircraft
 . . V-22 aircraft
 . . XV-15 aircraft
 . . short takeoff aircraft
 . . Aladin 2 aircraft
 . . Breguet 940 aircraft
 . . Breguet 941 aircraft
 . . C-8A augmentor wing aircraft
 . . C-15 aircraft
 . . C-123 aircraft
 . . DHC 4 aircraft
 . . DHC 5 aircraft
 . . Questol aircraft
 . . U-10 aircraft
 . . vertical takeoff aircraft
 . . flying platforms
 . . SC-1 aircraft
 . . VJ-101 aircraft
 . . VZ-8 aircraft
 . . X-13 aircraft
 . . X-14 aircraft
 . . X-19 aircraft

. . X-22 aircraft
 . . X-22A aircraft
 . . XC-142 aircraft
 . . XV-4 aircraft
 . . XV-11A aircraft
 . . VZ-2 aircraft
 . . X-32 aircraft
 . . X-35 aircraft
 . . XV-3 aircraft
 . . XV-5 aircraft
 . . XV-8A aircraft
 RT ∞ aircraft
 antisubmarine warfare aircraft
 attack aircraft
 commercial aircraft
 convertible fan-shaft engines
 drone aircraft
 fan in wing aircraft
 fighter aircraft
 ground effect machines
 heliports
 hovering
 jet aircraft
 ∞ military aircraft
 passenger aircraft
 reconnaissance aircraft
 research aircraft
 short haul aircraft
 STOVL aircraft
 tilt wing aircraft
 transition flight
 transport aircraft
 utility aircraft
 vertical flight
 Weser aircraft
 Westland aircraft

vacancies (crystal defects)

DEF Vacant sites in a crystal structure due to the absence of an atom or ion from its normal structural position.

GS defects
 . crystal defects
 . . point defects
 . . . **vacancies (crystal defects)**
 Frenkel defects

RT antisite defects
 binding energy
 holes (electron deficiencies)
 square wells

vaccines

GS **vaccines**
 . inoculum
 RT acquired immunodeficiency syndrome
 antibodies
 antigens
 antiserums
 bacteriology
 biocompatibility
 diseases
 drugs
 epidemiology
 human immunodeficiency virus
 inoculation
 toxicology
 toxins and antitoxins

vacillation

RT dithers
 human reactions

vacuum

DEF A given space filled with gas at pressures below atmospheric pressure. Used for aspiration.

UF *aspiration*
 GS pressure
 . **vacuum**
 . . high vacuum
 . . low vacuum
 . . ultrahigh vacuum
 RT aerospace environments
 boundary layer control
 evacuating (vacuum)
 getters
 high pressure
 Knudsen flow

vacuum apparatus

- low pressure
- mean free path
- offgassing
- outgassing
- pressure measurement
- refraction
- suction

vacuum apparatus

- GS **vacuum apparatus**
 - . vacuum chambers
 - . vacuum furnaces
 - . vacuum gages
 - . . ionization gages
 - . . . alphas
 - . . . Bayard-Alpert ionization gages
 - . . . Penning gages
 - . . . Philips ionization gages
 - . . . Knudsen gages
 - . . . McLeod gages
 - . . . Pirani gages
 - . vacuum pumps
 - . . condensation pumps
 - . . ion pumps
 - . . molecular pumps
- RT cold traps
- diffusion pumps
- high vacuum
- low density research
- residual gas
- suction
- ultrahigh vacuum
- vacuum arc switches

vacuum arc switches

- GS switches
 - . electric switches
 - . . **vacuum arc switches**
- RT airborne equipment
- switching circuits
- vacuum apparatus
- vacuum effects

vacuum chambers

- UF *low pressure chambers*
- GS compartments
 - . test chambers
 - . . pressure chambers
 - . . . **vacuum chambers**
 - vacuum apparatus
 - . **vacuum chambers**
- RT altitude simulation
- ∞ chambers
 - high altitude environments
 - high altitude pressure
 - hyperbaric chambers
 - pressure
 - space environment simulation
 - space simulators
 - thermal vacuum tests
 - wind tunnel drives

vacuum deposition

- GS deposition
 - . vapor deposition
 - . . **vacuum deposition**
- RT ceramic coatings
- diamond films
- electroless deposition
- ion plating

vacuum effects

- RT cold welding
- ∞ effects
 - environments
 - offgassing
 - pressure effects
 - space manufacturing
 - vacuum arc switches

vacuum furnaces

- GS heating equipment
 - . furnaces
 - . . **vacuum furnaces**
 - vacuum apparatus
 - . **vacuum furnaces**
- RT solar furnaces

vacuum gages

- GS measuring instruments

- . pressure gages
- . . **vacuum gages**
- . . . ionization gages
- alphas
- Bayard-Alpert ionization gages
- Penning gages
- Philips ionization gages
- Knudsen gages
- McLeod gages
- Pirani gages
- vacuum apparatus
- . **vacuum gages**
- . . ionization gages
- . . . alphas
- . . . Bayard-Alpert ionization gages
- . . . Penning gages
- . . . Philips ionization gages
- . . . Knudsen gages
- . . . McLeod gages
- . . . Pirani gages

- RT barometers
- manometers
- orbitrons
- pressure measurement

vacuum melting

- GS phase transformations
- . melting
- . . **vacuum melting**

- RT arc melting
- induction heating
- levitation
- powder metallurgy
- zone melting

vacuum pumps

- GS pumps
 - . **vacuum pumps**
 - . . condensation pumps
 - . . ion pumps
 - . . molecular pumps
 - vacuum apparatus
 - . **vacuum pumps**
 - . . condensation pumps
 - . . ion pumps
 - . . molecular pumps
- RT compressors
- cryopumping
- diffusion pumps
- ejectors
- evacuating (vacuum)
- jet pumps
- materials handling
- outgassing
- suction

vacuum spectroscopy

- GS spectroscopy
 - . **vacuum spectroscopy**
- RT gas spectroscopy
- inductively coupled plasma mass spectrometry
- infrared spectroscopy
- magnetic spectroscopy
- mass spectroscopy
- molecular spectroscopy
- nuclear radiation spectroscopy
- spectroscopic analysis
- ultraviolet spectroscopy
- x ray spectroscopy

vacuum systems

DEF Chambers having walls capable of withstanding atmospheric pressure and having an opening through which the gas can be removed through a pipe or manifold to a pumping system. The pumping system may or may not be considered as part of the vacuum system.

- RT ampoules
- ∞ systems

vacuum tests

- GS **vacuum tests**
 - . thermal vacuum tests
- RT high vacuum
- hypobaric atmospheres
- test chambers
- ∞ tests

ultrahigh vacuum

vacuum tube oscillators

- GS electron tubes
 - . vacuum tubes
 - . . **vacuum tube oscillators**
 - oscillators
 - . **vacuum tube oscillators**
- RT autodynes
- frequency modulation photomultipliers
- microwave oscillators

vacuum tubes

DEF Electron tubes evacuated to such a degree that their electrical characteristics are essentially unaffected by the presence of residual gas or vapor.

- GS electron tubes
 - . **vacuum tubes**
 - . . cathode ray tubes
 - . . . monoscopes
 - . . . picture tubes
 - . . . cesium diodes
 - . . . microwave tubes
 - . . . telescopes
 - . . . cyclotron resonance devices
 - . . . klystrons
 - . . . magnetrons
 - nigotrons
 - planotrons
 - traveling wave tubes
 - backward wave tubes
 - helitrons
 - carcinotrons
 - vacuum tube oscillators
- RT pentodes
- perveance
- residual gas

vacuum ultraviolet radiation

USE **far ultraviolet radiation**

vadose water

- GS water
 - . **vadose water**
- RT coastal water
- evapotranspiration
- Lake Texoma (OK-TX)
- nearshore water
- river basins
- soils
- water tables

valence

DEF numbers representing the combining or displacing power of an atom, number of electrons lost, gained or shared by an atom in a compound, number of hydrogen atoms with which an atom will combine, or which it will displace. The valance of an element is the ratio of the atomic weight to the equivalent weight.

- GS **valence**
 - . octets
- RT chemical bonds
- conduction electrons
- ion charge
- ions
- positive ions
- quantum wells
- trivalent ions

valeric acid

- GS acids
 - . carboxylic acids
 - . . fatty acids
 - . . . **valeric acid**
 - organic compounds
 - . carboxylic acids
 - . . fatty acids
 - . . . **valeric acid**

Valiant aircraft

- UF *Vickers Valiant aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **Valiant aircraft**
 - BAC aircraft
 - . **Valiant aircraft**
 - jet aircraft
 - . **Valiant aircraft**

- monoplanes
. Valiant aircraft
 RT ∞ aircraft
 reconnaissance aircraft
 tanker aircraft
- validation**
 USE **proving**
- validity**
 RT acceptability
 accuracy
 adequacy
 consistency
 correlation
 existence
 mathematical models
 precision
 quality
 reliability
 simulation
 standards
 statistical tests
 variability
- Valkyrie aircraft*
 USE **B-70 aircraft**
- valleys**
 UF *intermontane floors*
rift valleys
rills
 GS **valleys**
 . Coachella Valley (CA)
 . Death Valley (CA)
 . Imperial Valley (CA)
 . Magdalena-Cauca Valley (Colombia)
 . Palo Verde Valley (CA)
 . Potomac River Valley (MD-VA-WV)
 . Sacramento Valley (CA)
 . San Joaquin Valley (CA)
 . Shenandoah Valley (VA)
 . St Lawrence Valley (North America)
 . Tennessee Valley (AL-KY-TN)
 RT canyons
 Delaware River Basin (US)
 erosion
 meanders
 Missouri River (US)
 ravines
 rivers
 structural basins
 Susquehanna River Basin
 (MD-NY-PA)
 topography
 wadis
 watersheds
- Valsalva exercise**
 DEF The procedure of raising the pressure in the nasopharynx by forcible expiration with the mouth closed and nostrils pinched, in order to clear the eustachian tubes. Used for valsalva maneuver.
 UF *Valsalva maneuver*
 RT respiration
- Valsalva maneuver*
 USE **Valsalva exercise**
- value**
 GS **value**
 . Q values (nuclear physics)
 RT amount
 assessments
 costs
 damage assessment
 estimates
 estimating
 evaluation
 figure of merit
 level (quantity)
 norms
 ranking
 technology assessment
- value engineering**
 RT concurrent engineering
 cost analysis
 cost estimates
- cost incentives
 cost reduction
 design analysis
 economic analysis
 ∞ engineering
 incentive techniques
 life cycle costs
 management planning
 quality control
 reliability engineering
 standards
 total quality management
- valves**
 UF *hydraulic valves*
 GS **valves**
 . automatic control valves
 . . pressure regulators
 . . relief valves
 . butterfly valves
 . . dampers (valves)
 . cocks
 . control valves
 . fuel valves
 . gas valves
 . heart valves
 . . artificial heart valves
 . solenoid valves
 RT balls
 chokes (restrictions)
 closures
 diverters
 engine parts
 hydraulic equipment
 packings (seals)
 pneumatic circuits
 pneumatic equipment
 seals (stoppers)
 traps
 water hammer
- Vampire aircraft*
 USE **DH 115 aircraft**
- Vampire MK 35 aircraft**
 GS attack aircraft
 . fighter aircraft
 . . **Vampire MK 35 aircraft**
 Hawker Siddeley aircraft
 . **Vampire MK 35 aircraft**
 jet aircraft
 . **Vampire MK 35 aircraft**
 single engine aircraft
 . **Vampire MK 35 aircraft**
 RT ∞ aircraft
 bomber aircraft
 Harrier aircraft
- Van Allen radiation belts*
 USE **radiation belts**
- Van Biesbroeck star**
 GS celestial bodies
 . stars
 . . late stars
 . . . cool stars
 M stars
 **Van Biesbroeck star**
- Van de Graaff accelerators**
 DEF Electrostatic machines in which an electrical charge is carried into the high voltage terminal by a belt made of insulating materials moving at high speed. The particles are then accelerated along a discharge path through a vacuum tube by the potential difference between the insulated terminal and the grounded end of the accelerator.
 GS particle accelerators
 . **Van de Graaff accelerators**
 RT ∞ accelerators
 electron accelerators
- Van der Waals forces**
 RT dipole moments
 ∞ force
 interatomic forces
- intermolecular forces
- Van Slyke method**
 GS chemical tests
 . chemical analysis
 . . gas analysis
 . . . **Van Slyke method**
 . . quantitative analysis
 . . . **Van Slyke method**
 RT ∞ methodology
- vanadates**
 GS vanadium compounds
 . **vanadates**
 . . calcium vanadates
 RT metal oxides
 vanadium oxides
- vanadium**
 GS chemical elements
 . **vanadium**
 . . vanadium isotopes
 metals
 . transition metals
 . . **vanadium**
 . . . vanadium isotopes
 RT vanadium alloys
- vanadium alloys**
 GS alloys
 . **vanadium alloys**
 RT aluminum alloys
 microstructure
 titanium alloys
 vanadium
- vanadium carbides**
 GS carbon compounds
 . carbides
 . . **vanadium carbides**
 vanadium compounds
 . **vanadium carbides**
- vanadium compounds**
 GS **vanadium compounds**
 . vanadates
 . . calcium vanadates
 . vanadium carbides
 . vanadium oxides
 . vanadyl compounds
 RT ∞ chemical compounds
 ∞ Group 5B compounds
 ∞ metal compounds
- vanadium isotopes**
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **vanadium isotopes**
 . vanadium
 . . **vanadium isotopes**
 metals
 . transition metals
 . . vanadium
 . . . **vanadium isotopes**
- vanadium oxides**
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **vanadium oxides**
 vanadium compounds
 . **vanadium oxides**
 RT thermochromic coatings
 vanadates
- vanadyl compounds**
 GS vanadium compounds
 . **vanadyl compounds**
 RT ∞ chemical compounds
 ∞ metal compounds
- vanadyl radical**
 GS ions
 . molecular ions
 . . **vanadyl radical**
 . positive ions
 . . cations
 . . . **vanadyl radical**
 radicals

vaneless diffusers

. **vanadyl radical**

vaneless diffusers
 RT compressors
 ∞ diffusers
 exhaust diffusers
 pumps
 supersonic diffusers

vanes
 GS **vanes**
 . guide vanes
 . . jet vanes
 . wind vanes
 RT airfoils
 ∞ blades
 compressor blades
 control surfaces
 fins
 impellers
 nose fins
 stator blades
 tail assemblies
 turbomachine blades
 windpower utilization
 windpowered generators
 windpowered pumps

Vanguard 1 satellite
 GS artificial satellites
 . geodetic satellites
 . . **Vanguard 1 satellite**
 . Vanguard satellites
 . . **Vanguard 1 satellite**

vanguard 2 launch vehicle
 GS launch vehicles
 . **vanguard 2 launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . **vanguard 2 launch vehicle**
 RT liquid propellant rocket engines
 solid propellant rocket engines
 Viking rocket vehicle
 X-248 engine

Vanguard 2 satellite
 GS artificial satellites
 . meteorological satellites
 . . **Vanguard 2 satellite**
 . Vanguard satellites
 . . **Vanguard 2 satellite**

Vanguard 3 satellite
 GS artificial satellites
 . geophysical satellites
 . . **Vanguard 3 satellite**
 . Vanguard satellites
 . . **Vanguard 3 satellite**

Vanguard project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Vanguard project**
 . projects
 . . **Vanguard project**
 . space programs
 . . NASA space programs
 . . . **Vanguard project**
 RT X-405 engine

Vanguard satellites
 GS artificial satellites
 . **Vanguard satellites**
 . . Vanguard 1 satellite
 . . Vanguard 2 satellite
 . . Vanguard 3 satellite
 RT geodetic satellites
 geophysical satellites
 International Geophysical Year
 meteorological satellites

vans
 USE **trucks**

vapor barrier clothing
 DEF Impermeable garments used with respirators as life support systems in toxic environments (caustic chemicals, etc.).

GS clothing
 . protective clothing
 . . **vapor barrier clothing**

RT ∞ barriers
 life support systems
 textiles

vapor deposition
 UF *chemical vapor deposition*
CVD (deposition)
 GS deposition
 . **vapor deposition**
 . . metalorganic chemical vapor deposition
 . . vacuum deposition
 RT atomic layer epitaxy
 coating
 coatings
 crystal growth
 diamond films
 electroless deposition
 laser deposition
 metal vapors
 metallizing
 nanostructure growth
 pulsed laser deposition
 ultrapure metals
 vaporizers
 vaporizing

vapor generators
 USE **vaporizers**

vapor jets
 GS fluid jets
 . **vapor jets**
 RT air jets
 gas flow
 jet flow
 plasma jets

vapor liquid equilibrium
 USE **liquid-vapor equilibrium**

vapor phase epitaxy
 DEF A crystal growth process whereby an element or a compound is deposited as a thin layer on a slice of substrate single crystal material by the vapor phase technique.
 GS growth
 . crystal growth
 . . epitaxy
 . . . **vapor phase epitaxy**
 RT atomic layer epitaxy
 crystal structure
 liquid phase epitaxy
 liquid phases

vapor phase lubrication
(added August 1996)
 DEF The use of an organic liquid that is vaporized into a flowing air stream directed to sliding surfaces where lubrication is needed. The organic vapor reacts at the concentrated contact sliding area generating a lubricous deposit. This deposit has been characterized as a thin polymeric film that can provide effective lubrication temperatures greater than 400 degrees Celsius.
 GS lubrication
 . **vapor phase lubrication**
 RT boundary lubrication
 lubrication systems
 ∞ sliding contact
 squeeze films
 tribology

vapor phases
 UF *gas phases*
 RT association reactions
 critical pressure
 gases
 gas-metal interactions
 gas-solid interfaces
 hydrogen clouds
 liquid phases
 liquid-gas mixtures
 liquids
 liquid-vapor interfaces
 metal-gas systems

phase diagrams
 ∞ phases
 prevaporization
 solids
 supercritical pressures
 vapors
 volatility

vapor pressure
 DEF The pressure exerted by the molecules of a given vapor. For a pure confined vapor, it is that vapor's pressure on the walls of its containing vessel; and for a vapor mixed with other vapors or gases, it is that vapor's contribution to the total pressure (i.e., its partial pressure).
 GS pressure
 . **vapor pressure**
 thermodynamic properties
 . thermophysical properties
 . . **vapor pressure**
 RT Dalton law
 flash point
 fuel tank pressurization
 Henry law
 humidity
 interfacial tension
 liquid-gas mixtures
 liquid-vapor interfaces
 partial pressure
 Raoult law
 sublimation
 supercritical pressures
 volatility

vapor trails
 USE **contrails**

vapor traps
 GS traps
 . **vapor traps**
 RT cold traps
 getters
 ion traps (instrumentation)

vaporization heat
 USE **heat of vaporization**

vaporizers
 UF *vapor generators*
 GS heating equipment
 . **vaporizers**
 . . evaporators
 RT boilers
 cavity vapor generators
 colloidal generators
 columns (process engineering)
 condensers (liquefiers)
 gas generators
 ∞ generators
 ∞ heaters
 separators
 sprayers
 vapor deposition
 vaporizing
 vapors

vaporizing
 UF *volatilization*
 GS phase transformations
 . **vaporizing**
 . . boiling
 . . . film boiling
 . . . nucleate boiling
 Leidenfrost phenomenon
 . . evaporation
 . . . evapotranspiration
 . . . propellant evaporation
 . . . transpiration
 . . flashing (vaporizing)
 . . prevaporization
 . . sublimation
 RT ablation
 concentrating
 desalinization
 distillation
 evolution (liberation)
 gasification
 heat of vaporization
 heating
 ∞ separation

spraying
stripping (distillation)
surface reactions
vapor deposition
vaporizers
vapors
volatility

vapors

DEF Gases whose temperatures are below their critical temperatures, so that they can be condensed to the liquid or solid state by increase of pressure alone.

GS **vapors**

. cesium vapor
. metal vapors
. . mercury vapor
. . sodium vapor
. water vapor

RT

cavity vapor generators
combustion products
condensates
exhaust gases
fumes
gases
haze detection
hydrogen clouds
liquid-vapor equilibrium
prevaporization
smoke
vapor phases
vaporizers
vaporizing

varactor diode circuits

GS circuits

. **varactor diode circuits**

RT

diodes

varactor diodesUF *varactors*

GS electronic equipment

. diodes

. . semiconductor diodes

. . . **varactor diodes**

. solid state devices

. . semiconductor devices

. . . **varactor diodes**

RT

junction diodes
parametric diodes
varistors

*varactors*USE **varactor diodes****variability**

RT consistency

continuity

convergence

correlation

covariance

∞ dispersion

∞ eccentricity

∞ equilibrium

factor analysis

heterogeneity

linearity

nonlinearity

periodic variations

quality

quality control

range (extremes)

regression analysis

reliability

sampling

stability

standard deviation

standardization

validity

∞ variable

variance (statistics)

∞ **variable**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *factors*

RT complex variables

dependent variables

form factors

independent variables

Latin square method

race factors

random variables

real variables

social factors

variability

variable amplitude loading*(added September 1993)*

GS loads (forces)

. dynamic loads

. . **variable amplitude loading**

RT

cyclic loads

load tests

∞ loading

loading rate

random loads

stress cycles

*variable area wings*USE **trailing edge flaps****variable cycle engines**UF *VCE*

GS engines

. aircraft engines

. . **variable cycle engines**

RT

coaxial nozzles

convertible fan-shaft engines

supersonic aircraft

variable stream control engines

variable geometry structures

RT expandable structures

folding structures

inflatable structures

mission adaptive wings

∞ structures

*variable lift*USE **lift****variable mass systems**

GS kinetics

. **variable mass systems**

RT equations of motion

∞ mass balance

mass distribution

∞ systems

variable pitch propellersUF *constant speed propellers*

GS propellers

. **variable pitch propellers**

RT

helicopter propeller drive

pitch (inclination)

*Variable Specific Impulse Magnetoplasma Rocket**(added December 2000)*USE **VASIMR (propulsion system)****variable stars**

GS celestial bodies

. stars

. . **variable stars**

. . . cataclysmic variables

. . . cepheid variables

. . . flare stars

. . . irregular variable stars

. . . R Coronae Borealis stars

. . . Lambda Tauri stars

. . . Mira variables

. . . Omicron Ceti star

. . . novae

. . . dwarf novae

. . . Hercules nova

. . . semiregular variable stars

. . . supernovae

. . . supernova 1987A

. . . symbiotic stars

. . . T Tauri stars

RT

binary stars

companion stars

eclipsing binary stars

periodic variations

solar oscillations

stellar mass

stellar mass ejection

stellar oscillations

variable stream control engines

DEF Advanced, moderate bypass-ratio turbofan configurations that use duct burner thrust augmentation and coannular nozzles for jet noise reduction.

GS engines

. aircraft engines

. . **variable stream control engines**

RT ∞ control

engine control

supersonic aircraft

supersonic nozzles

variable cycle engines

variable sweep wingsUF *M wings**ogee wings**W wings*

GS

airfoils

. wings

. . **variable sweep wings**

planforms

. wing planforms

. . **variable sweep wings**

RT

arrow wings

Boeing 733 aircraft

delta wings

F-111 aircraft

folding structures

mission adaptive wings

ogee shape

swept forward wings

sweptback wings

variable thrust

GS thrust

. **variable thrust**

RT

control rockets

high thrust

jet control

jet thrust

low thrust

low thrust propulsion

microthrust

rocket thrust

throttling

thrust augmentation

thrust control

thrust termination

thrust vector control

∞ **variance**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF A measure of the precision of a measurement based on summing the squares of the deviations from individual determinations from the average and dividing by the degrees of freedom.

RT analysis of variance

degrees of freedom

multivariate statistical analysis

variance (statistics)

variance (statistics)

GS statistical analysis

. **variance (statistics)**

. . analysis of variance

. . multivariate statistical analysis

. . . bivariate analysis

. . . covariance

. . . orthogonality

. . . regression analysis

. . . regression coefficients

RT

confidence limits

correlation

Cramer-Rao bounds

distribution moments

experiment design

factor analysis

Gauss-Markov theorem

goodness of fit

heterogeneity

homogeneity

kriging

mean

moments

variational principles

quality control
range (extremes)
standard deviation
variability
∞ variance

variation method

USE **calculus of variations**

variational principles

RT calculus of variations
∞ dynamics
equilibrium methods
irreversible processes
Onsager phenomenological coefficient
Rayleigh-Ritz method

variations

UF *fluctuation*
GS **variations**
. magnetic variations
. . geomagnetic pulsations
. . . geomagnetic micropulsations
. . nocturnal variations
. periodic variations
. . alternations
. . annual variations
. . diurnal variations
. . intraseasonal variations
. . nocturnal variations
. . secular variations
. . . Madden-Julian Oscillation
. . quasi-biennial oscillation
. twenty-seven day variation
. wind variations
RT alternatives
asymmetry
deflection
deviation
differences
displacement
distortion
divergence
eccentricity
gradients
micropulsations
perturbation
revisions
substitutes
surges

variometers

DEF Instruments for comparing magnetic forces, especially of the Earth's magnetic field. Used for magnetovariographs.
UF *magnetovariographs*
GS measuring instruments
. magnetometers
. . **variometers**
RT geomagnetism

varistors

DEF Two electrode semiconductor devices having a voltage dependent nonlinear resistance.
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **varistors**
RT resistors
thermistors
varactor diodes

varnishes

RT fillers
finishes
paints
primers (coatings)
protective coatings
sealers
sprayed coatings

vascular system

USE **cardiovascular system**

VASIMR (propulsion system)

(added November 2000)
DEF A high-power, RF-driven magneto-plasma rocket system capable of I(sp) thrust modulation at constant power. The VASIMR

utilizes radiofrequency (RF) power both to generate a high-density plasma in a helicon source and to accelerate the plasma ions to high velocity by ion cyclotron resonance heating (ICRH). The system features a magnetic nozzle, which accelerates the plasma particles by converting their azimuthal energy into directed momentum.

UF *Variable Specific Impulse Magnetoplasma Rocket*

GS engines
. rocket engines
. . electric rocket engines
. . . plasma engines
. . . . **VASIMR (propulsion system)**
RT magnetic nozzles
plasma heating
plasma propulsion
radio frequency heating
spacecraft propulsion

vasoconstriction

RT angiotensins
blood vessels
body temperature
cold tolerance
ischemia
reflexes
sneezing

vasoconstrictor drugs

UF *pressors*
GS drugs
. **vasoconstrictor drugs**
. . hypertension
. . serotonin
RT angiotensins
pharmacology
vasopressins

vasodilation

RT blood vessels
body temperature
congestion
reflexes
vasodilator agents

vasodilator agents

(added August 2004)
DEF Drugs used to cause dilation of the blood vessels.
GS drugs
. **vasodilator agents**
RT acetylcholine
blood circulation
blood vessels
vasodilation

vasomotor nervous system

USE **nervous system**

vasopressins

(added August 2004)
DEF Octapeptide antidiuretic hormones released by the neurohypophysis of all vertebrates (chemical composition varies with species). They control water metabolism and balance by regulating lung, gill, kidney, etc., and water loss, and also contract smooth muscle. They may also be neurotransmitters. Also included are synthetic vasopressin derivatives. Vasopressins are used pharmacologically as renal agents, vasoconstrictor agents, and hemostatics.

GS neurotransmitters
. **vasopressins**
organic compounds
. peptides
. . **vasopressins**
secretions
. endocrine secretions
. . hormones
. . . pituitary hormones
. . . . **vasopressins**

RT diuresis
hemostatics
metabolism
pituitary gland
renal function

vasoconstrictor drugs

Vatican City

GS cities
. **Vatican City**
nations
. **Vatican City**
RT Europe
Italy

VATOL aircraft

SN (VERTICAL ATTITUDE TAKEOFF AND LANDING AIRCRAFT)
DEF Vertical attitude takeoff and landing aircraft. Used for vertical attitude takeoff-landing aircraft and XBQM-180A aircraft.
UF *vertical attitude takeoff-landing aircraft*
XBQM-180A aircraft
RT ∞ aircraft
delta wings
remotely piloted vehicles
vertical landing
vertical takeoff aircraft

VAX computers

GS data processing equipment
. computers
. . digital computers
. . . **VAX computers**
. . . . VAX-11 series computers
. VAX-11/780 computer

VAX-11 series computers

GS data processing equipment
. computers
. . digital computers
. . . VAX computers
. . . . **VAX-11 series computers**
. VAX-11/780 computer

VAX-11/780 computer

GS data processing equipment
. computers
. . digital computers
. . . VAX computers
. . . . VAX-11 series computers
. **VAX-11/780 computer**

VC-10 aircraft

UF *Vickers 1100 aircraft*
Vickers VC-10 aircraft
GS BAC aircraft
. **VC-10 aircraft**
commercial aircraft
. **VC-10 aircraft**
jet aircraft
. **VC-10 aircraft**
monoplanes
. **VC-10 aircraft**
passenger aircraft
. **VC-10 aircraft**
transport aircraft
. **VC-10 aircraft**
RT ∞ aircraft
cargo aircraft

VCE

USE **variable cycle engines**

VCO

USE **voltage controlled oscillators**

vector analysis

GS analysis (mathematics)
. calculus
. . **vector analysis**
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
. . real variables
. . **vector analysis**
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
geometry
. **vector analysis**
. . collinearity
. . coplanarity
. . curl (vectors)

- ... vorticity
- RT differential equations
- Euler-Cauchy equations
- flux vector splitting
- gradients
- Poynting theorem
- resultants
- stability derivatives
- vector calculus*
- USE **vector spaces**
- vector control*
- USE **directional control**
- vector currents**
- RT current algebra
- parity
- radioactive decay
- superconductivity
- vector dominance model**
- GS models
- . **vector dominance model**
- RT hadrons
- high energy interactions
- nucleons
- photoneutrons
- photoproduction
- vector mesons**
- GS particles
- . elementary particles
- . . bosons
- . . . mesons
- **vector mesons**
- rho-mesons
- sigma-mesons
- . . hadrons
- . . . mesons
- **vector mesons**
- rho-mesons
- sigma-mesons
- . nuclear particles
- . . bosons
- . . . mesons
- **vector mesons**
- rho-mesons
- sigma-mesons
- vector processing (computers)**
- (added July 1989)
- GS data processing
- . **vector processing (computers)**
- RT multiprocessing (computers)
- parallel processing (computers)
- pipelining (computers)
- vector quantization**
- (added June 1989)
- RT coding
- data compression
- digital techniques
- image processing
- vectors (mathematics)
- voice data processing
- vector spaces**
- UF *Grassmann algebra*
- vector calculus*
- GS algebra
- . **vector spaces**
- . . Banach space
- . . . Hilbert space
- Sobolev space
- . . matrices (mathematics)
- . . . adjoints
- . . . canonical forms
- . . . eigenvalues
- . . . eigenvectors
- . . . Hessian matrices
- . . . Jordan form
- . . . stiffness matrix
- . . Stokes theorem (vector calculus)
- . . U spin space
- . . vectors (mathematics)
- . . . eigenvectors
- . . . state vectors
- . . . vorticity
- RT analysis (mathematics)
- Chaplygin equation
- Hermitian polynomial
- hodographs
- Kakutani theorem
- linear transformations
- vectorcardiography**
- GS bioengineering
- . biometrics
- . . cardiography
- . . . **vectorcardiography**
- RT electrocardiography
- phonocardiography
- vectors (mathematics)**
- DEF Quantities such as force, velocity, or acceleration, which have both magnitude and direction at each point in space, as opposed to scalar which has magnitude only. Such quantities may be represented geometrically by an arrow of length proportional to its magnitude, pointing in the assigned direction.
- GS algebra
- . vector spaces
- . . **vectors (mathematics)**
- . . . eigenvectors
- . . . state vectors
- . . . vorticity
- RT dyadics
- flux vector splitting
- function space
- Schwartz inequality
- vector quantization
- Vega launch vehicle**
- UF *Vega rocket vehicle*
- GS launch vehicles
- . **Vega launch vehicle**
- rocket vehicles
- . multistage rocket vehicles
- . . **Vega launch vehicle**
- RT Atlas D ICBM
- liquid propellant rocket engines
- Vega project**
- RT flyby missions
- Halley's comet
- international cooperation
- U.S.S.R. space program
- Venera satellites
- Venus (planet)
- Vega rocket vehicle*
- USE **Vega launch vehicle**
- Vegard-Kaplan bands**
- GS spectra
- . spectral bands
- . . **Vegard-Kaplan bands**
- RT ∞ bands
- emission spectra
- molecular spectra
- nitrogen
- vegetables**
- GS **vegetables**
- . potatoes
- . spinach
- RT angiosperms
- ∞ food
- leguminous plants
- planting
- seeds
- vegetation**
- GS **vegetation**
- . canopies (vegetation)
- RT bioconversion
- biomass energy production
- Earth resources
- locusts
- normalized difference vegetation index
- oases
- plants (botany)
- rain forests
- resources
- sea grasses
- trees (plants)
- vegetation growth**
- GS growth
- . **vegetation growth**
- . . crop growth
- RT agriculture
- biochemistry
- botany
- crop vigor
- ecology
- fertilizers
- gravitropism
- hydroponics
- irrigation
- photosynthetically active radiation
- phytochrome
- plant physiology
- plant roots
- plant stress
- soil moisture
- soil science
- soils
- vegetative index
- vegetative index**
- DEF Linear combinations of spectral band responses in digital count, reflectance factor, or voltage to determine the vigor, greenness and/or biomass of the vegetation. Observations can be made by satelliteborne, aircraftborne, truck mounted, or hand held spectrometers.
- GS ratios
- . indexes (ratios)
- . . **vegetative index**
- . . . leaf area index
- . . . normalized difference vegetation index
- RT AgRISTARS project
- atmospheric attenuation
- atmospheric effects
- atmospheric optics
- atmospheric scattering
- canopies (vegetation)
- color
- correction
- crop identification
- crop inventories
- geographic distribution
- image enhancement
- imaging techniques
- multispectral band scanners
- radiometric correction
- reflectance
- remote sensing
- satellite imagery
- satellite observation
- spectral reflectance
- vegetation growth
- vehicle wheels**
- GS wheels
- . **vehicle wheels**
- . . nose wheels
- RT aircraft tires
- brakes (for arresting motion)
- landing gear
- mechanical drives
- rollers
- shafts (machine elements)
- suspension systems (vehicles)
- tires
- toroidal wheels
- transmissions (machine elements)
- wheel brakes
- ∞ **vehicles**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *craft*
- rotating vehicles*
- RT amphibious vehicles
- Arcas rocket vehicles
- Arcon rocket vehicle
- Argo rocket vehicles
- Astrobee rocket vehicles
- Atlas Agena launch vehicles
- Atlas launch vehicles
- automated guideway transit vehicles

vehicular tracks

automated mixed traffic vehicles
Automated Transfer Vehicle
automated transit vehicles
automobiles
∞ ballistic vehicles
boostglide vehicles
captured air bubble vehicles
control configured vehicles
crawler tractors
drone vehicles
electric hybrid vehicles
electric motor vehicles
engines
Europa launch vehicles
flight test vehicles
∞ flight vehicles
ground effect machines
heavy lift launch vehicles
HOTOL launch vehicle
hovering rocket vehicles
hydroplanes (vehicles)
hypersonic vehicles
intraorbit transfer vehicles
Juno launch vehicles
Kappa rocket vehicles
Lambda rocket vehicles
launch vehicles
low observable reentry vehicles
lunar flying vehicles
lunar roving vehicles
lunar surface vehicles
Lunokhod lunar roving vehicles
magnetic levitation vehicles
manned lunar surface vehicles
Mars roving vehicles
Marsokhod Mars roving vehicles
∞ military vehicles
missiles
motor vehicles
multiengine vehicles
multistage rocket vehicles
Nike rocket vehicles
Nike-Hydac rocket vehicle
Nike-Iroquois rocket vehicle
Nova launch vehicles
nuclear engine for rocket vehicles
orbit transfer vehicles
Ranger lunar landing vehicles
recoverable launch vehicles
recovery vehicles
reentry vehicles
remotely piloted vehicles
research vehicles
reusable launch vehicles
rocket vehicles
roving vehicles
Saturn launch vehicles
single stage rocket vehicles
single stage to orbit vehicles
Skua rocket vehicles
∞ spacecraft
Standard Launch Vehicles
surface effect ships
surface vehicles
SWATH (ship)
tanks (combat vehicles)
Terminal Configured Vehicle Program
test vehicles
Thor launch vehicles
Thorad launch vehicles
Titan 4 launch vehicle
Titan launch vehicles
tracked vehicles
tractors
∞ transport vehicles
transporter
underwater vehicles
unidentified flying objects
Veronique rocket vehicles
water vehicles
∞ winged vehicles

vehicular tracks

RT idlers
surface vehicles
suspension systems (vehicles)
tracked vehicles
∞ tracks

treads

veins

GS anatomy
. circulatory system
. . . cardiovascular system
. . . . blood vessels
. **veins**
RT arteries
bifurcation (biology)
transfusion

veins (petrology)

(added June 2001)
DEF A relatively thin mass of mineral that fills a crack or joint in a host rock.
RT inclusions
meteoritic composition
mineral deposits
minerals
rock intrusions
rocks

Vela satellites

GS artificial satellites
. **Vela satellites**
military spacecraft
. **Vela satellites**
RT Fishbowl Operation
high altitude nuclear detection
high altitude tests
nuclear explosions
nuclear radiation
post-blast nuclear radiation
radiation detectors
radiation measuring instruments
satellite observation

velardenite

USE **gehlenite**

velocity

DEF Rate of motion. Rate of motion in a straight line is called linear speed, whereas change of direction per unit time is called angular speed. Used for speed.

UF *speed*

GS **velocity**
. acoustic velocity
. airspeed
. angular velocity
. critical velocity
. escape velocity
. exhaust velocity
. flow velocity
. . solar wind velocity
. ground speed
. group velocity
. high speed
. hypersonic speed
. landing speed
. light speed
. low speed
. orbital velocity
. phase velocity
. propagation velocity
. radial velocity
. relativistic velocity
. rotor speed
. solar velocity
. subsonic speed
. supersonic speed
. terminal velocity
. tip speed
. transonic speed
. wind velocity
. . solar wind velocity
. impact velocity
RT acceleration (physics)
body kinematics
de Broglie wavelengths

∞ dynamics
Fermat principle
kinematics
kinetics
loading rate
∞ motion
perceptual time constant
pressure measurement
relativistic effects

solitary waves
time measurement

velocity coupling

DEF The response of the burning propellant surface to the local velocity which would include both mean flow as well as acoustic velocity (both being parallel to the burning surface).
RT burning rate
combustion stability
coupling
propellant combustion

velocity distribution

UF *velocity fields*
velocity profiles
GS distribution (property)
. **velocity distribution**
RT circulation distribution
flow distribution
flow velocity
galactic rotation
Orr-Sommerfeld equations
Pohlhausen method
pressure distribution
shock wave profiles
three dimensional boundary layer

velocity errors

GS errors
. **velocity errors**
RT escape velocity
orbital velocity
position errors

velocity fields

USE **velocity distribution**

velocity measurement

UF *anemometry*
GS mechanical measurement
. **velocity measurement**
. . particle image velocimetry
. . wind velocity measurement
RT acceleration measurement
accelerometers
anemometers
drag force anemometers
flow measurement
flow velocity
flowmeters
hot-film anemometers
hot-wire anemometers
Hubble constant
Hubble diagram
laser anemometers
laser doppler velocimeters
∞ measurement
pitot tubes
pressure measurement
radial velocity
solar wind velocity
sonic anemometers
speed indicators
stroboscopes
tachometers
time measurement
Venturi tubes
vortex precession

velocity modulation

GS modulation
. **velocity modulation**
RT bunching
cavity resonators
electron bunching
electron tubes

velocity profiles

USE **velocity distribution**

veneers

RT coatings
finishes
laminates
masonry

Venera 2 satellite

GS artificial satellites
. Soviet satellites

Veneziano model

- Venera 6 satellite
- Venera 7 satellite
- Venera 8 satellite
- Venera 9 satellite
- Venera 10 satellite
- Venera 11 satellite
- Venera 12 satellite
- RT U.S.S.R. space program
- Vega project

Veneziano model

- GS models
 - . mathematical models
 - . . **Veneziano model**
- RT elementary particle interactions

Venezuela

- GS nations
 - . **Venezuela**
- RT South America

Venn diagrams

- GS diagrams
 - . **Venn diagrams**
- RT analysis (mathematics)
- geometry
- mathematical logic

Venom aircraft

- USE **DH 112 aircraft**

ventilation

- RT air conditioning
- air cooling
- air filters
- air flow
- air intakes
- air purification
- blowers
- comfort
- cooling
- cooling systems
- draft (gas flow)
- ducts
- environmental engineering
- exhaust systems
- exhausting
- life support systems
- refrigerating
- temperature
- temperature control
- temperature distribution
- ventilators
- venting
- vents

ventilation fans

- RT blowers
- cooling
- cooling systems
- ducted fans
- fan blades
- ∞ fans
- ventilators

ventilators

- RT air ducts
- air intakes
- blowers
- ∞ diffusers
- exhaust systems
- ventilation
- ventilation fans
- vents

venting

- RT breathing vibration
- cooling
- ∞ discharge
- evacuating (vacuum)
- exhausting
- flushing
- purgig
- releasing
- relief valves
- ∞ separation
- ventilation

vents

ventral sections

- RT abdomen

vents

- GS outlets
- . **vents**
- RT annular ducts
- apertures
- cavities
- chimneys
- cooling systems
- ducts
- evacuating (vacuum)
- exhaust systems
- flues
- gates (openings)
- louvers
- ∞ nozzles
- openings
- ports (openings)
- relief valves
- slotted wind tunnels
- ventilation
- ventilators
- venting
- windows (apertures)

VentureStar launch vehicle

(added June 1999)

DEF Reusable single-stage-to-orbit launch vehicle employing linear aerospike engines, and having a payload capacity roughly equivalent to that of the Space Shuttle; developed in coordination with the X-33 advanced technology demonstrator vehicle.

- GS aerospace vehicles
 - . aerospace planes
 - . . **VentureStar launch vehicle**
 - maneuverable spacecraft
 - . aerospace planes
 - . . **VentureStar launch vehicle**
 - reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft
 - . . . aerospace planes
 - **VentureStar launch vehicle**
 - soft landing spacecraft
 - . aerospace planes
 - . . **VentureStar launch vehicle**
- RT aerospike engines
- commercial spacecraft
- X-33 reusable launch vehicle

Venturi tubes

DEF Short tubes of smaller diameter in the middle than at the ends. When fluids flow through such tubes, the pressure decreases as the diameters become smaller, the amount of decrease being proportional to the speed of flow and the amount of restriction.

- RT ∞ detectors
- flow measurement
- flowmeters
- gas meters
- measuring instruments
- orifices
- pitot tubes
- pressure gradients
- pressure measurement
- ∞ tubes
- velocity measurement

Venus (planet)

- GS celestial bodies
 - . planets
 - . . terrestrial planets
 - . . . **Venus (planet)**
- RT planetary craters
- Vega project
- Venera 8 satellite
- Venera 10 satellite
- Venera 11 satellite
- Venera 12 satellite

Venus atmosphere

- GS environments
 - . extraterrestrial environments
 - . . planetary environments

. . . planetary atmospheres

. . . . **Venus atmosphere**

- Venus clouds
- RT aerospace environments
- ionopause
- planetary ionospheres
- planetary meteorology
- Venera 11 satellite
- Venera 12 satellite
- Venus orbiting imaging radar (spacecraft)

Venus clouds

- GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . planetary atmospheres
 - Venus atmosphere
 - **Venus clouds**
- RT atmospheric models
- cloud cover
- cloud physics
- ∞ clouds
- greenhouse effect

Venus fly trap rocket vehicle

- GS rocket vehicles
 - . sounding rockets
 - . . **Venus fly trap rocket vehicle**
- RT cosmic dust
- extraterrestrial matter

Venus orbiting imaging radar (spacecraft)

DEF A spacecraft also known as VOIR whose mission is to obtain synthetic aperture radar (SAR) images of at least 70% of the surface of Venus as well as information on the gravity field of the planet, nature of its inertial composition and dynamics of its atmosphere and interaction with the solar wind.

- GS radar
 - . **Venus orbiting imaging radar (spacecraft)**
- RT Magellan project (NASA)
- Magellan spacecraft (NASA)
- synthetic aperture radar
- Venus atmosphere
- Venus probes
- Venus surface

Venus probes

- GS interplanetary spacecraft
 - . **Venus probes**
 - . . Magellan spacecraft (NASA)
 - . . Mariner 1 space probe
 - . . Mariner 2 space probe
 - . . Mariner 5 space probe
 - . . Mariner 10 space probe
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . . Pioneer Venus 2 transporter bus
 - . . Venera satellites
 - . . . Venera 2 satellite
 - . . . Venera 3 satellite
 - . . . Venera 4 satellite
 - . . . Venera 5 satellite
 - . . . Venera 6 satellite
 - . . . Venera 7 satellite
 - . . . Venera 8 satellite
 - . . . Venera 9 satellite
 - . . . Venera 10 satellite
 - . . . Venera 11 satellite
 - . . . Venera 12 satellite
 - . . Zond 1 space probe
 - . . Zond 3 space probe
 - . . Zond 4 space probe
 - . . Zond 5 space probe
 - . . Zond 6 space probe
 - . . Zond 7 space probe
 - . . Zond 8 space probe
 - unmanned spacecraft
 - . space probes
 - . . **Venus probes**
 - . . . Magellan spacecraft (NASA)
 - . . . Mariner 1 space probe
 - . . . Mariner 2 space probe
 - . . . Mariner 5 space probe
 - . . . Mariner 10 space probe

- ... Pioneer Venus 2 spacecraft
 - ... Pioneer Venus 2 entry probes
 - ... Pioneer Venus 2 night probe
 - ... Pioneer Venus 2 sounder probe
 - ... Pioneer Venus 2 transporter bus
 - ... Venera satellites
 - ... Venera 2 satellite
 - ... Venera 3 satellite
 - ... Venera 4 satellite
 - ... Venera 5 satellite
 - ... Venera 6 satellite
 - ... Venera 7 satellite
 - ... Venera 8 satellite
 - ... Venera 9 satellite
 - ... Venera 10 satellite
 - ... Venera 11 satellite
 - ... Venera 12 satellite
 - ... Zond 1 space probe
 - ... Zond 3 space probe
 - ... Zond 4 space probe
 - ... Zond 5 space probe
 - ... Zond 6 space probe
 - ... Zond 7 space probe
 - ... Zond 8 space probe
 - RT Magellan project (NASA)
 - Mariner program
 - Mariner Venus 67 spacecraft
 - Mars probes
 - outer planets explorers
 - Sputnik 5 satellite
 - Venus orbiting imaging radar (spacecraft)
 - Voyager project
- Venus radar echoes**
- GS echoes
 - ... radar echoes
 - ... **Venus radar echoes**
- Venus Radar Mapper*
- USE **Magellan spacecraft (NASA)**
- Venus Radar Mapper Project*
- USE **Magellan project (NASA)**
- Venus surface**
- DEF The surface features and/or composition of the planet Venus.
 - GS planetary surfaces
 - ... **Venus surface**
 - RT cloud cover
 - extraterrestrial environments
 - Magellan project (NASA)
 - Magellan spacecraft (NASA)
 - planetary craters
 - solar system
 - ∞ surfaces
 - terraforming
 - topography
 - Venera 11 satellite
 - Venera 12 satellite
 - Venus orbiting imaging radar (spacecraft)
- verbal communication**
- GS communicating
 - ... **verbal communication**
 - ... conversation
 - RT acoustics
 - languages
 - lectures
 - phonetics
 - telephony
 - voice communication
 - voice data processing
 - words (language)
- verification (proving)*
- USE **proving**
- vermiculite**
- DEF An aggregate used in lightweight insulating concrete, formed by heating and expanding a micaceous mineral.
 - GS clays
 - ... **vermiculite**
 - minerals
 - ... **vermiculite**
 - RT insulation
- mica
 - packaging
 - silicates
- Vermont**
- GS nations
 - ... United States
 - ... **Vermont**
 - RT Lake Champlain Basin (NY-VT)
 - St Lawrence Valley (North America)
- Verneuil process**
- DEF Method of single-crystal growth in which powder is dropped through an oxy-hydrogen flame, falling molten on crystal seed.
 - GS growth
 - ... crystal growth
 - ... **Verneuil process**
 - RT Czochralski method
 - ruby lasers
- Vernier engines**
- DEF Rocket engines of small thrust used primarily to obtain a fine adjustment in the velocity and trajectory of a rocket vehicle just after the thrust cutoff of the last sustainer engine, and used secondarily to add thrust to a booster or sustainer engine.
 - GS engines
 - ... rocket engines
 - ... **Vernier engines**
 - ... control rockets
 - ... SYNCOM apogee engines
 - ... torpedo engines
 - ... **Vernier engines**
 - ... control rockets
 - ... SYNCOM apogee engines
 - RT electric rocket engines
 - electrostatic engines
 - hybrid propellant rocket engines
 - internal combustion engines
 - launch vehicles
 - liquid propellant rocket engines
 - MA-2 engine
 - MA-3 engine
 - MA-5 engine
 - microrocket engines
 - restartable rocket engines
 - solid propellant rocket engines
 - thrust vector control
- vernine*
- USE **guanosines**
- Veronique rocket vehicles**
- GS rocket vehicles
 - ... single stage rocket vehicles
 - ... **Veronique rocket vehicles**
 - ... sounding rockets
 - ... **Veronique rocket vehicles**
 - RT liquid propellant rocket engines
 - ∞ vehicles
- versatility**
- RT compatibility
 - flexibility
- vertebrae**
- GS anatomy
 - ... musculoskeletal system
 - ... bones
 - ... spine
 - ... **vertebrae**
 - RT intervertebral disks
 - neck (anatomy)
- vertebral column*
- USE **spine**
- vertebrates**
- GS animals
 - ... **vertebrates**
 - ... amphibia
 - ... frogs
 - ... birds
 - ... chickens
 - ... pigeons
 - ... turkeys
 - ... waterfowl
 - ... fishes
- ... schools (fish)
 - ... sharks
 - ... mammals
 - ... bats
 - ... bears
 - ... cats
 - ... cattle
 - ... calves
 - ... deer
 - ... caribous
 - ... goats
 - ... horses
 - ... marine mammals
 - ... dolphins
 - ... manatees
 - ... porpoises
 - ... seals (animals)
 - ... whales
 - ... moles
 - ... primates
 - ... apes
 - ... chimpanzees
 - ... baboons
 - ... human beings
 - ... monkeys
 - ... rodents
 - ... guinea pigs
 - ... hamsters
 - ... mice
 - ... jerboas
 - ... knockout mice
 - ... pocket mice
 - ... rabbits
 - ... rats
 - ... squirrels
 - ... ground squirrels
 - ... dogs
 - ... sheep
 - ... swine
 - ... wolves
 - ... reptiles
 - ... lizards
 - ... snakes
 - ... turtles
 - RT homeotherms
- vertical air currents**
- UF *updrafts*
 - GS fluid flow
 - ... gas flow
 - ... air flow
 - ... air currents
 - ... **vertical air currents**
 - RT atmospheric circulation
 - convection clouds
 - convection currents
 - downbursts
 - lee waves
 - microbursts (meteorology)
 - mixing height
 - soaring
 - turbulence
 - wind (meteorology)
 - winds aloft
- vertical attitude takeoff-landing aircraft*
- USE **VATOL aircraft**
- vertical distribution**
- GS distribution (property)
 - ... spatial distribution
 - ... **vertical distribution**
 - ... star distribution
 - RT electron distribution
 - horizontal distribution
 - ion distribution
 - pressure distribution
 - radiation distribution
 - temperature distribution
 - wind profiles
- vertical fins*
- USE **fins**
- vertical flight**
- RT balloon flight
 - climbing flight
 - ∞ flight
 - flight paths
 - hovering

vertical junction solar cells

rocket flight
transition flight
V/STOL aircraft

vertical junction solar cells

DEF Solar cells made from wafers on which narrow grooves are formed using a preferential KOH etch. The grooved region is radiation tolerant.

GS electric generators
. direct power generators
. . . photoelectric generators
. . . . photovoltaic cells
. solar cells
. **vertical junction solar cells**
. solar generators
. . solar cells
. . . **vertical junction solar cells**
electronic equipment
. solid state devices
. . semiconductor devices
. . . photovoltaic cells
. . . . solar cells
. **vertical junction solar cells**
photoelectric cells
. photovoltaic cells
. . solar cells
. . . **vertical junction solar cells**
RT wafers

vertical landing

UF *vertical takeoff and landing*
VTOL
GS landing
. **vertical landing**
RT aircraft landing
spacecraft landing
STOVL aircraft
touchdown
VATOL aircraft

vertical motion

RT falling
∞ motion
touchdown

vertical motion simulators

DEF Vibration machines which produce mechanical oscillations parallel to the vertical axis.
GS simulators
. vibration simulators
. . **vertical motion simulators**
RT ∞ motion
shakers
shock simulators
vibratory loads

vertical orientation

DEF The attitude of an object in reference to a plane which is parallel to the direction of gravity (determined with a plumbline).

RT alignment
attitude (inclination)
directional stability
dynamic stability
horizontal orientation
lateral stability
∞ orientation
stabilization

vertical perception

GS perception
. sensory perception
. . **vertical perception**
RT body sway test
gravireceptors
oculogravic illusions
∞ orientation
otolith organs
∞ space orientation
vestibular tests

vertical stabilizers

USE **stabilizers (fluid dynamics)**

vertical tails

USE **stabilizers (fluid dynamics)**
tail assemblies

vertical takeoff

UF *vertical takeoff and landing*

VTOL
GS takeoff
. **vertical takeoff**

vertical takeoff aircraft

UF *VTOL aircraft*
GS V/STOL aircraft
. **vertical takeoff aircraft**
. . flying platforms
. . . SC-1 aircraft
. . . VJ-101 aircraft
. . . VZ-8 aircraft
. . . X-13 aircraft
. . . X-14 aircraft
. . . X-19 aircraft
. . . X-22 aircraft
. . . X-22A aircraft
. . . XC-142 aircraft
. . . XV-4 aircraft
. . . XV-11A aircraft
RT ∞ aircraft
Bell 214A helicopter
CF-700 engine
circulation control rotors
compound helicopters
convertible fan-shaft engines
Cushioncraft ground effect machine
fan in wing aircraft
GETOL aircraft
helicopters
lift fans
lifting rotors
∞ military aircraft
powered lift aircraft
research aircraft
rotary wing aircraft
short takeoff aircraft
∞ subsonic aircraft
T-58 engine
tilt wing aircraft
VATOL aircraft
∞ winged vehicles

vertical takeoff and landing

USE **vertical landing**
vertical takeoff

vertices

USE **apexes**

vertigo

DEF The sensation that the outer world is revolving about the person (objective vertigo) or that he himself is moving in space (subjective vertigo). The word frequently is used erroneously as a synonym for dizziness or giddiness to indicate an unpleasant sensation of disturbed relations to surrounding objects in space.

GS signs and symptoms

vertigo

RT Barany chair
ear pressure test
vestibular tests

Vertical rockets

(added August 1995)
GS rocket vehicles
. sounding rockets
. . **Vertikal rockets**
RT rocket sounding
Russian Space Program

Vertol military helicopters

USE **Boeing aircraft**

very high frequencies

SN (30 TO 300 MHZ)
GS frequencies
. radio frequencies
. . **very high frequencies**
. . . P band
RT decametric waves
low frequencies
maximum usable frequency

very high frequency radio equipment

UF *ultra short wave radio equipment*
GS radio equipment
. **very high frequency radio equipment**

RT radio astronomy
ultrahigh frequencies

very high speed integrated circuits

USE **VHSIC (circuits)**

Very Large Array (VLA)

DEF A synthetic aperture radio telescope, consisting of 27 parabolic antennas each of which is 25 meters in diameter. The system when connected together is capable of arcsecond resolution with high sensitivity resulting in the world's most powerful radio telescope. Operated by the National Radio Astronomy Observatory, it is located in Socorro, New Mexico.

GS radio equipment
. radio telescopes
. . **Very Large Array (VLA)**
telescopes
. radio telescopes
. . **Very Large Array (VLA)**

RT antenna arrays
radio astronomy

very large scale integration

DEF A very complex integrated circuit, which contains ten thousand or more individual devices, such as basic logic gates and transistors, placed on a single semiconductor chip. Used for VLSI.

UF *VLSI*
GS circuits
. integrated circuits
. . **very large scale integration**
microelectronics
. **very large scale integration**

RT application specific integrated circuits
architecture (computers)
chips (electronics)
hardware description languages
large scale integration
molecular electronics
RISC processors
systolic arrays

very large transport aircraft

(added November 1998)

DEF Aircraft capable of a maximum takeoff weight greater than 400 metric tons (881,600 lbs) or having a seating capacity greater than 660.

UF *VLTA (aircraft)*
GS transport aircraft
. **very large transport aircraft**
RT cargo aircraft
passenger aircraft

very long base interferometry

DEF The simultaneous observation of radio sources by two radio telescopes spaced very far apart to enhance angular resolution. The signals are recorded on magnetic tapes and combined electronically on a computer. Used for VLBI.

UF *VLBI*
GS interferometry
. **very long base interferometry**
RT astronomical interferometry
diffraction patterns
etalons
interferometers
null zones
Quasat
radio astronomy
radio interferometers
Very Long Baseline Array (VLBA)

Very Long Baseline Array (VLBA)

DEF A transcontinental radio telescope, being developed by the National Radio Astronomy Observatory, to consist of ten dedicated and automated 25-meter (82 foot) diameter antennas distributed from Hawaii to St. Croix, Virgin Islands.

GS radio equipment
. radio telescopes
. . **Very Long Baseline Array (VLBA)**
telescopes
. radio telescopes

- . . **Very Long Baseline Array (VLBA)**
- RT antenna arrays
- radio astronomy
- very long base interferometry
- very low frequencies**
- SN (3 TO 30 KHZ)
- GS frequencies
 - . radio frequencies
 - . . low frequencies
 - . . . **very low frequencies**
- RT audio frequencies
- Earth-ionosphere waveguide
- very small aperture terminals*
- USE **VSAT (network)**
- ∞ **vessels**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT blood vessels
- ∞ capsules
 - fluid filled shells
 - liquid filled shells
 - navy
 - pressure vessels
 - ships
- Vesta asteroid**
- GS celestial bodies
 - . asteroids
 - . . **Vesta asteroid**
- RT asteroid belts
- meteoroids
- solar system
- space debris
- vestibular nystagmus**
- GS eye movements
 - . nystagmus
 - . . **vestibular nystagmus**
 - reflexes
 - . **vestibular nystagmus**
- RT anatomy
- eye (anatomy)
- ophthalmology
- vestibular tests**
- GS physiological tests
 - . **vestibular tests**
- RT body sway test
- Coriolis effect
- ear pressure test
- head down tilt
- head movement
- vertical perception
- vertigo
- vestibules**
- GS anatomy
 - . sense organs
 - . . ear
 - . . . labyrinth
 - **vestibules**
- RT morphology
- passageways
- semicircular canals
- vests**
- RT clothing
- garments
- veterinary medicine**
- DEF The branch of medical practice dealing with the treatment of diseases and injuries of animals.
- GS medical science
 - . **veterinary medicine**
- RT ∞ biology
 - diagnosis
 - diseases
 - epidemiology
 - immunology
 - injuries
- ∞ medicine
 - pathology
 - pharmacology
- surgery
- VFR (rules)*
- USE **visual flight rules**
- VHDL (computers)*
- USE **hardware description languages**
- VHF omnirange navigation**
- UF *omnirange navigation*
- VOR systems*
- GS navigation
 - . radio navigation
 - . . **VHF omnirange navigation**
- RT air navigation
- navigation aids
- radio direction finders
- solar compasses
- VHSIC (circuits)**
- DEF Chips being developed by a DOD program to provide high speed MIL spec VLSI device for use in military systems. Used for very high speed integrated circuits.
- UF *very high speed integrated circuits*
- GS circuits
 - . integrated circuits
 - . . **VHSIC (circuits)**
- RT chips (electronics)
- large scale integration
- signal processing
- viability**
- RT animals
- carbon cycle
- crop vigor
- germination
- growth
- plants (botany)
- seeds
- vibration**
- DEF Motion due to a continuous change in the magnitude of a given force which reverses its direction with time. Motion of an oscillating body during one complete cycle; two oscillations. Used for jitter.
- UF *jitter*
- GS **vibration**
 - . combustion vibration
 - . forced vibration
 - . free vibration
 - . lattice vibrations
 - . POGO effects
 - . random vibration
 - . resonant vibration
 - . structural vibration
 - . . bending vibration
 - . . breathing vibration
 - . . flutter
 - . . . panel flutter
 - . . . subsonic flutter
 - . . . supersonic flutter
 - . . . transonic flutter
 - . . linear vibration
 - . . missile vibration
 - . . self induced vibration
 - . . . panel flutter
 - . . . subsonic flutter
 - . . . supersonic flutter
 - . . . transonic flutter
 - . . torsional vibration
- RT acoustics
- airfoil oscillations
- amplitudes
- antinodes
- compacting
- cyclic loads
- displacement
- ∞ dynamics
 - elastic waves
 - fatigue (materials)
 - flapping
 - harmonics
 - isolators
 - mechanical oscillators
 - mechanical shock
 - mistuning (turbomachinery)
 - modes (standing waves)
- ∞ motion
- nodes (standing waves)
- nutation
- oscillating cylinders
- oscillations
- oscillators
- resonance
- shaking
- shock resistance
- spacecraft motion
- standing waves
- vibrational stress
- vibratory loads
- vibratory polishing
- ∞ waves
- wing oscillations
- vibration dampers*
- USE **vibration isolators**
- vibration damping**
- GS damping
 - . **vibration damping**
- RT acoustics
- attenuation
- DAST program
- elastic damping
- flexible spacecraft
- gyrodampers
- harmonic control
- magnetic damping
- magnetorheological fluids
- molecular relaxation
- nonoscillatory action
- nonstabilized oscillation
- piezoelectric actuators
- shock absorbers
- smart materials
- vibration effects**
- GS **vibration effects**
 - . POGO effects
- RT ∞ effects
 - support interference
 - vibrational stress
- vibration isolators**
- DEF Resilient supports that tend to isolate systems from steady state excitation. Used for vibration dampers and vibration protection.
- UF *vibration dampers*
- vibration protection*
- GS isolators
 - . **vibration isolators**
- RT ∞ absorbers
 - acoustic retrofitting
 - cushions
- ∞ dampers
 - dampers (valves)
 - damping
 - energy absorption
 - noise reduction
 - oscillation dampers
 - shock absorbers
 - springs (elastic)
 - suspension systems (vehicles)
- vibration measurement**
- GS mechanical measurement
 - . **vibration measurement**
- RT cepstral analysis
- damping tests
- frequency analyzers
- frequency measurement
- ∞ measurement
 - stress measurement
- vibration meters**
- UF *vibrometers*
- GS measuring instruments
 - . **vibration meters**
 - . . seismographs
 - . . . lunar seismographs
- RT accelerometers
- transducers
- vibration mode**
- DEF In a system undergoing vibration, a characteristic pattern assumed by the system in which the motion of every particle is simple

vibration perception

harmonic with the same frequency. Used for mode of vibration.

- UF *mode of vibration*
- GS modes
 - . **vibration mode**
 - . . uncoupled modes
- RT airfoil oscillations
 - free vibration
 - linear vibration
 - mode transformers
 - transverse waves

vibration perception

- GS perception
 - . sensory perception
 - . . **vibration perception**

vibration protection

USE **vibration isolators**

vibration simulators

- UF *vibration testing machines*
- GS simulators
 - . **vibration simulators**
 - . . vertical motion simulators
- RT flutter
 - ∞ machinery
 - shakers
 - shock simulators
 - vibratory loads

vibration testing machines

USE **vibration simulators**

vibration tests

- GS **vibration tests**
 - . damping tests
 - . . stroking tests
- RT destructive tests
 - dynamic tests
 - electronic equipment tests
 - engine tests
 - environmental tests
 - flight tests
 - flutter
 - mechanical engineering
 - oscillations
 - resonance testing
 - shock tests
 - stability tests
 - static tests
 - structural vibration
 - ∞ tests

vibrational freezing

- GS phase transformations
 - . freezing
 - . . **vibrational freezing**

vibrational frequencies (molecular)

USE **vibrational spectra**

vibrational frequencies (structural)

USE **resonant frequencies**

vibrational relaxation

USE **molecular relaxation**

vibrational spectra

- UF *vibrational frequencies (molecular)*
- GS molecular properties
 - . molecular spectra
 - . . **vibrational spectra**
 - spectra
 - . molecular spectra
 - . . **vibrational spectra**
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **vibrational spectra**
- RT electronic spectra
 - energy spectra
 - molecular relaxation
 - Raman spectra
 - rotational spectra
 - vibrational states

vibrational states

(added December 1993)

SN (LIMITED TO MOLECULAR ENERGY LEVELS - EXCLUDES VIBRATION

MODES/CONDITIONS OF STRUCTURES

- GS OR VEHICLES)
 - level (quantity)
 - . energy levels
 - . . molecular energy levels
 - . . . **vibrational states**
 - molecular properties
 - . molecular energy levels
 - . . **vibrational states**
- RT molecular excitation
 - vibrational spectra

vibrational stress

- GS stresses
 - . **vibrational stress**
- RT flutter
 - vibration
 - vibration effects
 - vibratory loads

vibratory loads

- GS loads (forces)
 - . dynamic loads
 - . . **vibratory loads**
- RT aerodynamic loads
 - cyclic loads
 - structural design criteria
 - vertical motion simulators
 - vibration
 - vibration simulators
 - vibrational stress

vibratory polishing

- GS polishing
 - . **vibratory polishing**
- RT metallography
 - vibration

vibrocardiography

USE **phonocardiography**

vibrometers

USE **vibration meters**

VIC method

USE **vortex in cell technique**

Vickers 1100 aircraft

USE **VC-10 aircraft**

Vickers hardness

(added October 2001)

DEF The hardness of a material as determined by the Vickers hardness test, which interprets the degree of penetration made by a load-variable diamond pyramid stylus.

- UF *diamond pyramid hardness*
- GS mechanical properties
 - . hardness
 - . . **Vickers hardness**
- RT hardness tests

Vickers Scimitar aircraft

USE **Scimitar aircraft**

Vickers Valiant aircraft

USE **Valiant aircraft**

Vickers VC-10 aircraft

USE **VC-10 aircraft**

Victor MK-1 aircraft

- GS attack aircraft
 - . bomber aircraft
 - . . **Victor MK-1 aircraft**
 - Handley Page aircraft
 - . **Victor MK-1 aircraft**
 - jet aircraft
 - . **Victor MK-1 aircraft**
 - monoplanes
 - . **Victor MK-1 aircraft**
 - reconnaissance aircraft
 - . **Victor MK-1 aircraft**
- RT ∞ aircraft

video communication

- GS telecommunication
 - . **video communication**
 - . . video conferencing
- RT high definition television
 - multimedia

television systems

video signals

video compression

(added September 1993)

- UF *compressed video*
- GS data compression
 - . **video compression**
- RT analog data
 - digital data
 - digital television
 - discrete cosine transform
 - image motion compensation
 - image processing
 - signal encoding
 - video conferencing
 - video data
 - video signals

video conferencing

(added August 2000)

- UF *video teleconferencing*
- GS telecommunication
 - . teleconferencing
 - . . **video conferencing**
 - . video communication
 - . . **video conferencing**
- RT communication networks
 - conferences
 - television systems
 - video compression
 - video data

video data

- RT analog data
 - ∞ data
 - data converters
 - data transmission
 - digital data
 - display devices
 - high definition television
 - multimedia
 - radar data
 - smear
 - telecommunication
 - television systems
 - video compression
 - video conferencing
 - video disks
 - video signals

video disks

DEF Disks, usually the size of long-playing stereo records, which store video data. The data is recorded by one of two techniques: the capacitance method, in which the disk has spiral grooves and is read by a contact stylus, and the optical method, which uses lasers in both the recording and playback of the data.

- GS documents
 - . records
 - . . **video disks**
- RT data recorders
 - data recording
 - data storage
 - disks (shapes)
 - magnetic disks
 - memory (computers)
 - optical data storage materials
 - optical disks
 - optical memory (data storage)
 - playbacks
 - video data
 - video equipment

video equipment

- GS **video equipment**
 - . picture tubes
 - . video tape recorders
- RT Advanced Vidicon Camera System (AVCS)
 - audio visual equipment
 - camera tubes
 - cathode ray tubes
 - compensators
 - digital cameras
 - display devices
 - flying spot scanners
 - motion pictures
 - optical equipment

oscilloscopes
 recording heads
 television equipment
 video disks
 vidicons

video landmark acquisition and tracking
 DEF Shuttle era system for earth-feature identification, acquisition, and tracking.
 GS tracking (position)
 . **video landmark acquisition and tracking**
 RT avionics
 image correlators
 map matching guidance
 scene analysis
 signatures
 TERCOM
 terrain analysis
 tracking filters

video signals
 DEF Signals with a bandwidth of over 20 kilohertz.
 RT signal processing
 signal transmission
 ∞ signals
 video communication
 video compression
 video data

video tape recorders
(added January 1990)
 GS recording instruments
 . tape recorders
 . . **video tape recorders**
 video equipment
 . **video tape recorders**
 RT multimedia
 video tapes

video tapes
(added April 1989)
 RT audio tapes
 cinematography
 ∞ films
 information
 magnetic tapes
 motion pictures
 multimedia
 photographs
 photography
 ∞ tapes
 video tape recorders
 visual aids

video teleconferencing
(added August 2000)
 USE **video conferencing**

vidicons
 DEF Television pickup tubes utilizing photo-conductors as the sensing elements.
 GS electron tubes
 . camera tubes
 . . **vidicons**
 . . . return beam vidicons
 . . . thermicons
 RT Advanced Vidicon Camera System (AVCS)
 fiber optics
 pixels
 video equipment

Vietnam
 UF *North Vietnam*
Republic of Vietnam
South Vietnam
 GS nations
 . **Vietnam**
 RT Asia
 Southeast Asia

view effects
 SN (LIMITED TO EFFECTS OF CHANGE IN ANGULAR SIZE OF FIELD OF VIEW UPON RECEPTORS OF RADIATION)
 DEF Effects of change in angular size of field of view upon receptors of radiation.
 RT angular correlation
 ∞ effects

radiant flux density
 radiation measuring instruments
 radiative heat transfer
 viewing

viewing
 GS **viewing**
 . field of view
 RT display devices
 periscopes
 view effects
 visibility
 vision

Vigilante aircraft
 USE **A-5 aircraft**

vignetting
 RT defects
 focusing
 lenses

Viking 1 spacecraft
 GS interplanetary spacecraft
 . Mars probes
 . . Viking spacecraft
 . . . **Viking 1 spacecraft**
 Viking lander 1
 Viking orbiter 1
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . Viking spacecraft
 **Viking 1 spacecraft**
 Viking lander 1
 Viking orbiter 1
 RT interplanetary trajectories
 space exploration
 space flight

Viking 2 spacecraft
 GS interplanetary spacecraft
 . Mars probes
 . . Viking spacecraft
 . . . **Viking 2 spacecraft**
 Viking lander 2
 Viking orbiter 2
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . Viking spacecraft
 **Viking 2 spacecraft**
 Viking lander 2
 Viking orbiter 2
 RT interplanetary trajectories
 space exploration
 space flight

Viking 1975 entry vehicle
 GS interplanetary spacecraft
 . Mars probes
 . . **Viking 1975 entry vehicle**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . **Viking 1975 entry vehicle**
 RT Mars landing
 soft landing

Viking lander 1
 GS interplanetary spacecraft
 . Mars probes
 . . Viking spacecraft
 . . . Viking 1 spacecraft
 **Viking lander 1**
 Viking lander spacecraft
 **Viking lander 1**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . Viking spacecraft
 Viking 1 spacecraft
 **Viking lander 1**
 Viking lander spacecraft
 **Viking lander 1**
 RT interplanetary trajectories
 Mars surface samples
 space exploration

space flight

Viking lander 2
 GS interplanetary spacecraft
 . Mars probes
 . . Viking spacecraft
 . . . Viking 2 spacecraft
 **Viking lander 2**
 Viking lander spacecraft
 **Viking lander 2**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . Viking spacecraft
 Viking 2 spacecraft
 **Viking lander 2**
 Viking lander spacecraft
 **Viking lander 2**
 Viking lander spacecraft
 **Viking lander 2**
 RT interplanetary trajectories
 Mars surface samples
 space exploration
 space flight

Viking lander spacecraft
 GS interplanetary spacecraft
 . Mars probes
 . . Viking spacecraft
 . . . **Viking lander spacecraft**
 Viking lander 1
 Viking lander 2
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . Viking spacecraft
 **Viking lander spacecraft**
 Viking lander 1
 Viking lander 2
 RT interplanetary trajectories
 space exploration
 space flight

Viking Mars program
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Viking Mars program**
 . . . space programs
 . . . NASA space programs
 . . . **Viking Mars program**
 RT space exploration
 Viking spacecraft

Viking orbiter 1
 GS interplanetary spacecraft
 . Mars probes
 . . Viking spacecraft
 . . . Viking 1 spacecraft
 **Viking orbiter 1**
 Viking orbiter spacecraft
 **Viking orbiter 1**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . Viking spacecraft
 Viking 1 spacecraft
 **Viking orbiter 1**
 Viking orbiter spacecraft
 **Viking orbiter 1**
 RT interplanetary trajectories
 space exploration
 space flight
 ∞ spacecraft

Viking orbiter 2
 GS interplanetary spacecraft
 . Mars probes
 . . Viking spacecraft
 . . . Viking 2 spacecraft
 **Viking orbiter 2**
 Viking orbiter spacecraft
 **Viking orbiter 2**
 unmanned spacecraft
 . space probes
 . . Mars probes
 . . . Viking spacecraft
 Viking 2 spacecraft
 **Viking orbiter 2**
 Viking orbiter spacecraft
 **Viking orbiter 2**
 RT interplanetary trajectories

Viking orbiter 1975

- space exploration
- space flight
- ∞ spacecraft

Viking orbiter 1975

- GS interplanetary spacecraft
 - . Mars probes
 - . . . Viking spacecraft
 - Viking orbiter spacecraft
 - **Viking orbiter 1975**
- unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . Viking spacecraft
 - Viking orbiter spacecraft
 - **Viking orbiter 1975**

Viking orbiter spacecraft

- GS interplanetary spacecraft
 - . Mars probes
 - . . Viking spacecraft
 - . . . **Viking orbiter spacecraft**
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
- unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . Viking spacecraft
 - **Viking orbiter spacecraft**
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
- RT interplanetary trajectories
 - planetary orbits
 - space exploration
 - space flight
- ∞ spacecraft

Viking rocket vehicle

- GS rocket vehicles
 - . single stage rocket vehicles
 - . . **Viking rocket vehicle**
- RT liquid propellant rocket engines
 - sounding rockets
 - vanguard 2 launch vehicle

Viking spacecraft

- DEF A collective term for the composite Viking orbiter-lander space vehicle.

- GS interplanetary spacecraft
 - . Mars probes
 - . . **Viking spacecraft**
 - . . . Viking 1 spacecraft
 - Viking lander 1
 - Viking orbiter 1
 - Viking 2 spacecraft
 - Viking lander 2
 - Viking orbiter 2
 - Viking lander spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking orbiter spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
- unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Viking spacecraft**
 - Viking 1 spacecraft
 - Viking lander 1
 - Viking orbiter 1
 - Viking 2 spacecraft
 - Viking lander 2
 - Viking orbiter 2
 - Viking lander spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking orbiter spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
- RT Viking Mars program

vineyards

- RT agriculture
 - blight
 - botany
 - crop growth

- crop vigor
- ∞ crops
- Earth resources
 - farm crops
- ∞ food
 - irrigation
 - plants (botany)
 - wines

vinti theory

- GS perturbation theory
 - . **vinti theory**
- RT geodesy
 - orbit perturbation
- ∞ theories

vinyl copolymers

- GS copolymers
 - . **vinyl copolymers**
 - plastics
 - . synthetic resins
 - . . addition resins
 - . . . **vinyl copolymers**
 - resins
 - . synthetic resins
 - . . addition resins
 - . . . **vinyl copolymers**
 - vinyl polymers
 - . **vinyl copolymers**
- RT additives
 - copolymerization
- ∞ polymers

vinyl cyanide

- USE **acrylonitriles**

vinyl ethylene

- USE **butadiene**

vinyl polymers

- GS **vinyl polymers**
 - . polymethyl methacrylate
 - . polystyrene
 - . polyvinyl chloride
 - . polyvinyl fluoride
 - . vinyl copolymers
 - . . styrofoam (trademark)
 - . . polyvinyl alcohol
 - . vinylidene
- RT ∞ polymers

vinyl radical

- GS radicals
 - . **vinyl radical**
- RT free radicals

vinylidene

- UF *polyvinylidene*
- GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkenes
 - ethylene
 - **vinylidene**
 - vinyl polymers
 - . **vinylidene**

violence

- GS **violence**
 - . attacking (assaulting)
- RT crime
 - disorders
 - police
 - terrorism
 - warfare

viral diseases

- SN (EXCLUDES PLANT DISEASES)
- GS diseases
 - . infectious diseases
 - . . **viral diseases**
 - . . . acquired immunodeficiency syndrome
 - . . . influenza
 - . . . poliomyelitis
 - . . . smallpox
- RT encephalitis
 - hepatitis
 - human immunodeficiency virus
 - meningitis

- pneumonia
- viruses

Virgin Islands

- GS landforms
 - . islands
 - . . West Indies
 - . . . **Virgin Islands**
- nations
 - . United States
 - . . **Virgin Islands**
- RT archipelagoes
 - Caribbean region
 - Caribbean Sea
 - tropical regions

Virginia

- GS nations
 - . United States
 - . . **Virginia**
- RT Allegheny Plateau (US)
 - Assateague Island (MD-VA)
 - Chesapeake Bay (US)
 - Delmarva Peninsula (DE-MD-VA)
 - Potomac River Valley (MD-VA-WV)
 - Shenandoah Valley (VA)
 - Wallops Island

Virgo galactic cluster

- DEF A cluster of galaxies nearest to the Milky Way Galaxy, centered in the constellation Virgo and about 16 million light-years from Earth. Used for Virgo star cluster.

- UF *Virgo star cluster*
- GS celestial bodies
 - . galactic clusters
 - . . **Virgo galactic cluster**
 - . . . galaxies
 - **Virgo galactic cluster**
- RT agglomeration
 - barred galaxies
- ∞ clusters
 - disk galaxies
 - elliptical galaxies
 - local group (astronomy)
 - spiral galaxies
 - star clusters
 - star distribution
 - stars

Virgo star cluster

- USE **Virgo galactic cluster**

virial coefficients

- GS coefficients
 - . **virial coefficients**
- RT equations of state
 - intermolecular forces
 - virial theorem

virial theorem

- GS theorems
 - . **virial theorem**
- RT kinetic energy
 - kinetic equations
 - missing mass (astrophysics)
 - statistical mechanics
 - virial coefficients

virtual memory systems

- RT computer systems design
 - data management
 - data storage
 - magnetic storage

virtual properties

- RT accuracy
 - ∞ physical properties
 - ∞ properties

virtual reality

- (added February 1992)
- DEF An artificial reality that projects the user into a three dimensional space generated by the computer.
- UF *VR (virtual reality)*
- RT cockpit simulators
 - computerized simulation
 - environment simulation
 - flight simulation

- human-computer interface
 - man machine systems
 - motion simulation
 - simulation
 - space environment simulation
 - training simulators
- virulence**
- RT biological weapons
 - human immunodeficiency virus
 - microorganisms
 - toxicity
 - viruses
- viruses**
- GS microorganisms
 - . **viruses**
 - . . adenoviruses
 - . . bacteriophages
 - . . human immunodeficiency virus
 - RT biological weapons
 - ∞ blisters
 - interferon
 - protobiology
 - viral diseases
 - virulence
- viscera**
- SN (FOR SPECIFIC ORGANS SEE ANATOMY)
 - GS organs
 - . **viscera**
 - RT abdomen
 - anatomy
 - peritoneum
 - thorax
- viscoelastic cylinders**
- RT ∞ cylinders
 - cylindrical bodies
 - cylindrical shells
- viscoelastic damping**
- DEF The absorption of oscillatory motions by materials which are viscous while exhibiting certain elastic properties.
 - GS damping
 - . elastic damping
 - . . **viscoelastic damping**
 - . viscous damping
 - . . **viscoelastic damping**
 - elastodynamics
 - . elastic damping
 - . . **viscoelastic damping**
- viscoelastic flow*
- USE **viscoelasticity**
- viscoelasticity**
- DEF Property of materials that strain under stress partly elastically and partly viscously, that is, whose strain is partly dependent on time and magnitude of stress. Used for viscoelastic flow.
 - UF *viscoelastic flow*
 - GS mechanical properties
 - . elastic properties
 - . . **viscoelasticity**
 - . . . photoviscoelasticity
 - . . . thermoviscoelasticity
 - RT hydroelasticity
 - hysteresis
 - Maxwell fluids
 - nonNewtonian flow
 - nonNewtonian fluids
 - plastic flow
 - relaxation (mechanics)
 - squeeze films
 - viscoplasticity
 - viscous damping
- viscometers**
- GS measuring instruments
 - . **viscometers**
 - RT rotating cylinders
 - viscometry
 - viscosity
- viscometry**
- RT rotating cylinders
 - viscometers
 - viscosity
- viscous drag
 - viscous flow
- viscoplastic flow*
- USE **viscoplasticity**
- viscoplasticity**
- UF *viscoplastic flow*
 - GS mechanical properties
 - . plastic properties
 - . . **viscoplasticity**
 - RT hysteresis
 - nonNewtonian flow
 - nonNewtonian fluids
 - plastic anisotropy
 - plastic flow
 - relaxation (mechanics)
 - viscoelasticity
 - viscous damping
- viscopumps**
- GS pumps
 - . **viscopumps**
 - RT viscous flow
- viscosity**
- DEF That molecular property of a fluid which enables it to support tangential stresses for a finite time and thus to resist deformation; the ratio of shear stress divided by shearing strain.
 - GS transport properties
 - . **viscosity**
 - . . eddy viscosity
 - . . gas viscosity
 - RT density (mass/volume)
 - flow characteristics
 - flow resistance
 - internal friction
 - low Reynolds number
 - ∞ motion
 - ∞ physical properties
 - rheology
 - similitude law
 - solubility
 - Stokes law (fluid mechanics)
 - superfluidity
 - surface properties
 - thermal diffusion
 - thermal diffusivity
 - thixotropy
 - viscometers
 - viscometry
 - viscous flow
- Viscount aircraft**
- GS BAC aircraft
 - . **Viscount aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **Viscount aircraft**
 - monoplanes
 - . **Viscount aircraft**
 - passenger aircraft
 - . **Viscount aircraft**
 - transport aircraft
 - . **Viscount aircraft**
 - RT ∞ aircraft
- viscous damping**
- DEF The dissipation of energy that occurs when a particle in a vibrating system is resisted by a force that has a magnitude proportional to the magnitude of the velocity of the particle and direction opposite to the direction of the particle.
 - GS damping
 - . **viscous damping**
 - . . viscoelastic damping
 - RT elastic damping
 - resonance testing
 - viscoelasticity
 - viscoplasticity
- viscous drag**
- GS dynamic characteristics
 - . drag
 - . . friction drag
 - . . . **viscous drag**
 - friction
 - . flow resistance
- . . friction drag
 - . . . **viscous drag**
 - . skin friction
 - . . friction drag
 - . . . **viscous drag**
 - RT eddy viscosity
 - Hartmann number
 - laminar flow
 - turbulent flow
 - viscometry
- viscous flow**
- DEF The flow of a fluid through a duct under conditions such that the mean free path is very small in comparison with the smallest dimensions of a transverse section of the duct. This flow may be either laminar or turbulent.
 - GS fluid flow
 - . **viscous flow**
 - . . boundary layer flow
 - . . . reattached flow
 - . . . secondary flow
 - . . . separated flow
 - . . . boundary layer separation
 - . . Couette flow
 - . . Karman-Bodewadt flow
 - . . Stokes flow
 - RT aerodynamics
 - barotropic flow
 - Brinkman number
 - eddy viscosity
 - ∞ flow
 - flow characteristics
 - gas flow
 - inviscid flow
 - Knudsen flow
 - laminar flow
 - magnetohydrodynamic shear heating
 - Maxwell fluids
 - Milne-Thomson method
 - Navier-Stokes equation
 - Pohlhausen method
 - Prandtl number
 - Reynolds number
 - turbulent flow
 - viscometry
 - viscopumps
 - viscosity
 - wedge flow
- viscous fluids**
- DEF Fluids whose molecular viscosity is sufficiently large to make the viscous forces a significant part of the total force field in the fluid.
 - RT flow stability
 - ∞ fluids
 - Maxwell fluids
 - Navier-Stokes equation
 - Newtonian fluids
 - nonNewtonian fluids
 - Oseen approximation
 - semisolids
 - squeeze films
 - weightless fluids
- visibility**
- UF *invisibility*
 - GS **visibility**
 - . low visibility
 - RT appearance
 - brightness
 - ceilings (meteorology)
 - character recognition
 - color
 - contrast
 - darkening
 - enhanced vision
 - fog
 - glare
 - gaze
 - human factors engineering
 - illuminance
 - image contrast
 - legibility
 - light (visible radiation)
 - light transmission
 - luminescence
 - luminosity
 - night flights (aircraft)
 - opacity

visible infrared spin scan radiometer

- optical properties
- perception
- radiance
- reading
- resolution
- retinal adaptation
- sensitivity
- smoke
- symbols
- transmissivity
- viewing
- vision
- visual control
- visual observation
- whiteout

visible infrared spin scan radiometer

DEF A radiometer used for satellite sounding of the atmosphere.

GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . infrared detectors
. infrared radiometers
. **visible infrared spin scan radiometer**
. . infrared instruments
. . . infrared detectors
. . . . infrared radiometers
. **visible infrared spin scan radiometer**

RT atmospheric sounding
satellite sounding
satellite-borne instruments

visible radiation

USE **light (visible radiation)**

visible spectrum

DEF The range of wavelengths of visible radiation; display or graph of the intensity of visible radiation emitted or absorbed by a material as a function of wavelength or some related parameter.

GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **visible spectrum**

RT ∞ absorption
absorption spectra
astronomical spectroscopy
auroral spectroscopy
cathodoluminescence
emission spectra
gas spectroscopy
light (visible radiation)
line spectra
molecular spectra
solar spectra
spectral bands
spectroscopy
stellar spectra

vision

UF *macular vision*

GS **vision**
. binocular vision
. color vision
. enhanced vision
. monocular vision
. night vision
. peripheral vision
. stereoscopic vision

RT adaptation
anastigmatism
blindness
brightness
choroid membranes
color
conjunctiva
contrast
cornea
dark adaptation
eye (anatomy)
eye dominance
flash blindness
glare
heterophoria
human factors engineering

- hyperopia
- illusions
- images
- legibility
- light adaptation
- miosis
- myopia
- oculomotor nerves
- ophthalmodynamometry
- optometry
- perception
- phosphene
- presbyopia
- pupils
- resolution
- retina
- retinal adaptation
- retinal images
- thresholds (perception)
- viewing
- visibility
- visual acuity

visors

RT eye protection
radiation protection
sunglasses

visual accommodation

RT accommodation

visual acuity

DEF Keeness of perception and sharpness of vision.

GS acuity
. **visual acuity**
. . hyperopia

RT peripheral vision
Snellen tests
vision

visual aids

RT ∞ aids
audio visual equipment
audio visual material
charts
diagrams
display devices
drawings
multimedia
photographs
training devices
video tapes

visual control

GS manual control
. **visual control**

RT aircraft control
approach control
attitude control

∞ control
display devices
guidance (motion)
missile control
remote control
runway lights
servocontrol
spacecraft control
visibility

visual discrimination

GS discrimination
. sensory discrimination
. . **visual discrimination**
perception
. sensory perception
. . visual perception
. . . **visual discrimination**

RT ∞ recovery

visual displays

USE **display devices**

visual fields

RT field of view

∞ fields
peripheral vision
retina
retinal images
Saccadic eye movements

space perception

visual flight

RT air navigation
collision avoidance

∞ flight
flight conditions
flight paths
flight safety
landing
whiteout

visual flight rules

UF *VFR (rules)*

GS rules
. flight rules
. . **visual flight rules**

visual observation

GS observation
. **visual observation**

RT optical tracking
surveillance
visibility
visual perception
visual tasks

visual perception

UF *sight*

GS perception
. sensory perception
. . **visual perception**
. . . critical flicker fusion
. . . space perception
. . . . autokinesis
. . . visual discrimination

RT afterimages
blinking
brightness discrimination
elevator illusion
motion perception

∞ orientation
perceptual errors

∞ space orientation
tachistoscopes
thresholds (perception)
visual observation
visual tasks

visual photometry

DEF A subjective approach to the problem of photometry, wherein the human eye is used as the sensing instrument; to be distinguished from photoelectric photometry.

GS optical measurement
. photometry
. . **visual photometry**

visual pigments

GS pigments
. **visual pigments**

RT dark adaptation
photoreceptors
photosensitivity
retina

visual signals

RT beacons
cues
luminaires
optical communication

∞ signals

visual stimuli

RT perceptual errors

∞ signals
∞ stimuli
visual tasks
zeitgebers

visual tasks

GS tasks
. **visual tasks**

RT eye movements
human performance
visual observation
visual perception

- visual stimuli
- visual tracking*
USE **optical tracking**
- visualization of flow*
USE **flow visualization**
- vitamin A*
USE **retinene**
- vitamin B*
USE **thiamine**
- vitamin B 2*
USE **riboflavin**
- vitamin B 6*
USE **pyridoxine**
- vitamin B 12*
USE **cyanocobalamin**
- vitamin B complex*
USE **biotin**
- vitamin C*
USE **ascorbic acid**
- vitamin D*
USE **calciferol**
- vitamin E*
USE **tocopherol**
- vitamin G*
USE **riboflavin**
- vitamin K*
USE **phyloquinone**
- vitamin M*
USE **folic acid**
- vitamin P*
USE **bioflavonoids**
- vitamins**
GS **vitamins**
. ascorbic acid
. bioflavonoids
. biotin
. calciferol
. carnitine
. cyanocobalamin
. folic acid
. nicotinamide
. nicotinic acid
. phyloquinone
. pyridoxine
. retinene
. riboflavin
. thiamine
. tocopherol
RT ascorbic acid metabolism
choline
drugs
∞ food
∞ nutrients
- Viterbi decoders**
GS decoders
. **Viterbi decoders**
RT coding
decoding
signal encoding
signal processing
- Viton rubber (trademark)**
GS copolymers
. **Viton rubber (trademark)**
elastomers
. rubber
. . . synthetic rubbers
. . . **Viton rubber (trademark)**
RT fluorohydrocarbons
- vitreous materials**
RT frit
glass
∞ inorganic materials
∞ materials
- metallic glasses
porcelain
vitrification
- vitrification**
DEF Formation of a glassy or noncrystalline material.
RT ceramics
glass
porcelain
solidification
vitreous materials
- VJ-101 aircraft**
GS jet aircraft
. **VJ-101 aircraft**
monoplanes
. **VJ-101 aircraft**
single engine aircraft
. **VJ-101 aircraft**
supersonic aircraft
. **VJ-101 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **VJ-101 aircraft**
RT ∞ aircraft
- vlasov equations**
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **vlasov equations**
RT ∞ equations
stability
- VLBI**
USE **very long base interferometry**
- VLF emission recorders**
RT atmospheric radiation
atmospherics
cosmic rays
electromagnetic radiation
planetary radiation
∞ recorders
recording instruments
- VLSI**
USE **very large scale integration**
- VLTA (aircraft)**
(added November 1998)
USE **very large transport aircraft**
- VOC (organic chemistry)**
(added March 2000)
USE **volatile organic compounds**
- vocal cords**
GS anatomy
. respiratory system
. . larynx
. . . **vocal cords**
RT glottis
- vocoders**
RT bandpass filters
computers
digital to voice translators
frequency modulation
messages
radio communication
scrambling (communication)
signal reception
speech baseband compression
voice communication
voice data processing
- voice**
RT audio frequencies
speech
tongue
- voice communication**
GS telecommunication
. communication
. . **voice communication**
. . . telephony
RT acoustics
conversation
- echo suppressors
ground-air-ground communication
multimedia
radio communication
radiotelephones
reentry communication
scrambling (communication)
single channel per carrier
transmission
single sideband transmission
speech
speech baseband compression
verbal communication
vocoders
voice control
voice data processing
wireless communication
words (language)
- voice control**
SN (DEVICE OPERATION BY VOICE)
DEF Using the voice to activate devices which respond or operate by means of speech recognition. SN (device operation by voice).
RT bioengineering
∞ control
robotics
robots
speech recognition
voice communication
voice data processing
- voice data processing**
GS data processing
. **voice data processing**
. . cepstral analysis
RT artificial intelligence
∞ data
digital to voice translators
signal encoding
single channel per carrier
transmission
vector quantization
verbal communication
vocoders
voice communication
voice control
- Voice of America**
RT broadcasting
radio transmission
- void ratio**
UF *compactness*
GS ratios
. **void ratio**
RT ∞ conductivity
density (mass/volume)
free flow
hole distribution (mechanics)
packing density
permeability
porosity
reactor cores
surface properties
voids
- voids**
RT buoyancy
cavities
crack geometry
crack opening displacement
defects
inclusions
infiltration
interstices
percolation
permeability
porosity
void ratio
- Voigt effect**
RT birefringence
∞ effects
optical paths
refraction
Zeeman effect

volatile organic compounds

volatile organic compounds

(added March 2000)

DEF Any compounds of carbon (excluding carbon oxides, carbonic acid, metallic carbonates and carbides, and carbon-nitrogen compounds) that are readily vaporizable; any of such compounds that participate in atmospheric photochemical reactions, or that are considered indoor, local, regional, or global contaminants.

UF *VOC (organic chemistry)*

GS organic compounds

. **volatile organic compounds**

RT air pollution

air quality

contaminants

exhaust emission

indoor air pollution

ozone

photochemical reactions

volatility

GS thermodynamic properties

. thermophysical properties

. . **volatility**

RT coal gasification

evaporation

flash point

prevaporization

vapor phases

vapor pressure

vaporizing

volatilization

USE **vaporizing**

volcanic eruptions

(added October 2001)

DEF The sudden ejection of solid, liquid, or gaseous matter from a volcanic vent or fissure.

UF *eruptions (volcanology)*

RT calderas

effluents

lava

magma

submarine hydrothermal vents

volcanoes

volcanology

volcanics

USE **volcanology**

volcanoes

DEF Naturally occurring vents or fissures at the Earth's surface through which erupt molten, solid, and gaseous materials.

UF *active volcanoes*

GS geology

. **volcanoes**

. . Mars volcanoes

landforms

. **volcanoes**

. . Mars volcanoes

RT basalt

calderas

cones (volcanoes)

effusives

geomorphology

geothermal resources

lava

mountains

orography

paleomagnetism

petrology

Rouse belts

volcanic eruptions

volcanology

volcanology

UF *volcanics*

GS geology

. **volcanology**

RT basalt

calderas

cones (volcanoes)

effusives

geomorphology

lava

Mars volcanoes

mountains

orography

paleomagnetism

petrogenesis

petrology

Rouse belts

volcanic eruptions

volcanoes

voltage

USE **electric potential**

voltage amplifiers

GS amplifiers

. **voltage amplifiers**

RT

current amplifiers

feedback amplifiers

magnetic amplifiers

preamplifiers

volt-ampere characteristics

voltage breakdown

USE **electrical faults**

voltage controlled oscillators

DEF An oscillator whose frequency of oscillation can be varied by changing an applied voltage. Used for VCO.

UF *VCO*

GS oscillators

. **voltage controlled oscillators**

RT

circuits

electric control

electric networks

frequency modulation

frequency stability

microwave oscillators

voltage regulators

voltage converters (AC to AC)

GS transformers

. **voltage converters (AC to AC)**

RT

alternating current

auxiliary power sources

∞ converters

∞ electric equipment

∞ electric power

∞ power supplies

voltage converters (DC to DC)

RT auxiliary power sources

∞ converters

direct current

electric batteries

∞ electric equipment

∞ electric power

∞ power supplies

power supply circuits

voltage generators

RT

arc generators

electrostatic generators

function generators

∞ generators

signal generators

voltage measurement

USE **electrical measurement**

voltage regulators

GS control equipment

. regulators

. . **voltage regulators**

RT

avalanche diodes

circuit protection

controllers

current regulators

electric switches

electronic control

power factor controllers

power supply circuits

switching circuits

transformers

transmission loss

voltage controlled oscillators

voltage variation indicators

USE **voltmeters**

volt-ampere characteristics

RT capacitance-voltage characteristics

∞ characteristics

electric current

electric potential

∞ electronics

linear circuits

Ohm's law

open circuit voltage

optogalvanic spectroscopy

proximity effect (electricity)

quantum efficiency

short circuit currents

threshold voltage

transconductance

voltage amplifiers

Volterra equations

GS analysis (mathematics)

. functional analysis

. . integral equations

. . . **Volterra equations**

RT ∞ equations

nonlinearity

∞ radiation

voltmeters

UF *voltage variation indicators*

GS measuring instruments

. **voltmeters**

. . millivoltmeters

RT

ammeters

coulometers

electrometers

potentiometers (instruments)

volume

GS **volume**

. body volume (biology)

RT

area

∞ capacity

dimensions

frustums

geometry

isochoric processes

rates (per time)

thickness

volumetric analysis

weight (mass)

volume fraction

USE **concentration (composition)**

volumetric analysis

GS chemical tests

. chemical analysis

. . **volumetric analysis**

RT

analytical chemistry

gas analysis

quantitative analysis

volume

volumetric efficiency

RT energy conversion efficiency

engine design

fuel-air ratio

laser outputs

volumetric strain

GS fatigue (materials)

. **volumetric strain**

RT

deformation

structural strain

temperature inversions

voluntary muscle

(added December 2004)

USE **skeletal muscle**

vomiting

RT motion sickness

nausea

Von Karman equation

GS flow equations

. **Von Karman equation**

RT ∞ equations

flow stability

Karman vortex street

vortex breakdown

vortex streets

- vorticity equations
- von Mises theory*
USE **stress functions**
- von Zeipel method**
RT equations of motion
Hamiltonian functions
∞ methodology
perturbation theory
- Voodoo aircraft*
USE **F-101 aircraft**
- VOR systems*
USE **VHF omnirange navigation**
- Voronoi diagrams**
(added October 2000)
DEF In computational geometry, a partitioning of a space containing a finite set of points, P, in such a way that each partition contains a single point in P and the subspace for which it is the nearest point from the set. Some applications include regional planning, image analysis, and robot path planning.
GS diagrams
. **Voronoi diagrams**
RT computational geometry
geometry
grid generation (mathematics)
image analysis
partitions (mathematics)
spatial distribution
topology
trajectory planning
- vortex advisory system**
DEF Display system which compares measured on-minute-average wind magnitudes and direction with the wind-rose criterion to predict wake vorticity and to indicate to the air traffic controller (with a red or green light) when the interarrival spacings for landings may be reduced to the 3 nautical mile limit.
RT air traffic control
aircraft approach spacing
aircraft wakes
∞ systems
turbulent wakes
vortex alleviation
- vortex alleviation**
DEF The alteration of airfoil configurations to change the airflow patterns directly behind the wings to eliminate or inhibit the vertical motion which directly affects the aircraft immediately following, during closely spaced landings.
RT aircraft wakes
drag devices
gust alleviators
protuberances
riblets
spoilers
vortex advisory system
vortices
wakes
winglets
- vortex avoidance**
DEF Schemes which involve airborne or ground-based equipment to track, monitor, and/or predict vortex behavior which might affect the approach and landing operations.
GS avoidance
. **vortex avoidance**
RT aerodynamic stability
air traffic control
aircraft approach spacing
aircraft landing
buffeting
gusts
rotation
safety
turbulent flow
vortices
winglets
- vortex breakdown**
RT flow stability
- turbulent flow
Von Karman equation
vortex flaps
- vortex columns*
USE **vortices**
- vortex disturbances*
USE **vortices**
- vortex filaments**
DEF The fine-scale structure of turbulent flow; the small non energy containing eddies convected at mean freestream velocities.
RT ∞ filaments
flow stability
fluid dynamics
horseshoe vortices
turbulence
vortex in cell technique
vortices
- vortex flaps**
DEF Leading edge flap designs for highly swept wings, in which the leading edge tabs, which are counter reflected, cause vortices to form on the flap. The trapped vortices cause significantly improved wind flow characteristics.
GS airfoils
. flaps (control surfaces)
. . wing flaps
. . . **vortex flaps**
brakes (for arresting motion)
. aerodynamic brakes
. . wing flaps
. . . **vortex flaps**
. aircraft brakes
. . wing flaps
. . . **vortex flaps**
control surfaces
. flaps (control surfaces)
. . wing flaps
. . . **vortex flaps**
drag devices
. aerodynamic brakes
. . wing flaps
. . . **vortex flaps**
RT aerodynamic drag
jet flaps
leading edge flaps
leading edges
lift augmentation
separated flow
trailing edge flaps
trailing edges
vortex breakdown
vortices
wing loading
- vortex flow*
USE **vortices**
- vortex generation*
USE **vortex generators**
- vortex generators**
UF *vortex generation*
RT airfoil fences
boundary layer control
boundary layer separation
∞ generators
Hilsch tubes
horseshoe vortices
inlet flow
vortices
wing slots
- vortex in cell technique**
(added April 1993)
UF *VIC method*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **vortex in cell technique**
RT computational fluid dynamics
fast Fourier transformations
finite difference theory
∞ methodology
particle in cell technique
Poisson equation
- vortex filaments
vortices
- vortex injectors**
GS injectors
. **vortex injectors**
- vortex lattice method**
(added April 1992)
RT boundary conditions
computational fluid dynamics
flow velocity
flux vector splitting
lattices (mathematics)
panel method (fluid dynamics)
vortices
- vortex precession**
RT flow velocity
flowmeters
precession
velocity measurement
vortices
- vortex rings**
RT horseshoe vortices
∞ rings
trapped vortices
vortices
- vortex shedding**
DEF Periodic separation of a fluid flowing past an unstreamlined body.
GS mechanics (physics)
. fluid mechanics
. . fluid dynamics
. . . **vortex shedding**
RT shedding
vortices
- vortex sheets**
RT aircraft design
flow distribution
rotating fluids
∞ sheets
turbulent wakes
vortices
vorticity
- vortex streets**
DEF Two parallel rows of alternately placed vortices along the wake of an obstacle in a fluid of moderate Reynolds number.
GS **vortex streets**
. Karman vortex street
RT discontinuity
∞ sheets
turbulent wakes
Von Karman equation
vortices
- vortex traps*
USE **trapped vortices**
- vortex tubes*
USE **Hilsch tubes**
vortices
- vortex-blade interaction*
USE **blade-vortex interaction**
- vortices**
DEF In fluids, circulations drawing their energy from flows of much larger scale and brought about by pressure irregularities. Used for eddies, rotational flow, vortex columns, vortex disturbances, vortex flow, and vortex tubes.
UF *eddies*
rotational flow
vortex columns
vortex disturbances
vortex flow
vortex tubes
GS **vortices**
. horseshoe vortices
. trapped vortices
. wing tip vortices
RT Abrikosov theory
agitation
Biot-Savart law
blade-vortex interaction

vorticity

- cavitation flow
- counterflow
- ∞ disturbances
- divergence
- flow distortion
- flow stability
- fluid flow
- Goertler instability
- Hilsch tubes
- Kolmogorov theory
- large eddy simulation
- meteorological solenoids
- mixing
- planetary waves
- recirculative fluid flow
- rotating fluids
- rotating liquids
- rotation
- secondary flow
- Strouhal number
- superconductivity
- superfluidity
- thrust distribution
- turbulence
- turbulent flow
- turbulent mixing
- vortex alleviation
- vortex avoidance
- vortex filaments
- vortex flaps
- vortex generators
- vortex in cell technique
- vortex lattice method
- vortex precession
- vortex rings
- vortex shedding
- vortex sheets
- vortex streets
- vorticity
- wakes

vorticity

- UF *enstrophy*
- GS algebra
 - . vector spaces
 - . vectors (mathematics)
 - . . . **vorticity**
- analysis (mathematics)
 - . calculus
 - . . vector analysis
 - . . . curl (vectors)
 - **vorticity**
 - . real variables
 - . . vector analysis
 - . . . curl (vectors)
 - **vorticity**
- geometry
 - . vector analysis
 - . . curl (vectors)
 - . . . **vorticity**
- RT atmospheric circulation
- Beltrami flow
- Crocco method
- flow stability
- Helmholtz vorticity equation
- horseshoe vortices
- potential flow
- secondary flow
- trapped vortices
- turbulence
- vortex sheets
- vortices

vorticity equations

- DEF Dynamic equations for the rate of change on the vorticity of a parcel, obtained by taking the curl of the vector equation of motion.
- GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . **vorticity equations**
 - Helmholtz vorticity equation
- flow equations
 - . **vorticity equations**
 - . . Helmholtz vorticity equation
- RT ∞ equations
- Karman vortex street

Von Karman equation

vorticity transport hypothesis

- GS hypotheses
 - . **vorticity transport hypothesis**
- RT conservation equations
- eddy currents
- mixing length flow theory
- turbulent flow

Voskhod 1 spacecraft

- GS manned spacecraft
 - . voskhod manned spacecraft
 - . . **Voskhod 1 spacecraft**
- reentry vehicles
 - . recoverable spacecraft
 - . . voskhod manned spacecraft
 - . . . **Voskhod 1 spacecraft**
- soft landing spacecraft
 - . voskhod manned spacecraft
 - . . **Voskhod 1 spacecraft**

Voskhod 2 spacecraft

- GS manned spacecraft
 - . voskhod manned spacecraft
 - . . **Voskhod 2 spacecraft**
- reentry vehicles
 - . recoverable spacecraft
 - . . voskhod manned spacecraft
 - . . . **Voskhod 2 spacecraft**
- soft landing spacecraft
 - . voskhod manned spacecraft
 - . . **Voskhod 2 spacecraft**

voskhod manned spacecraft

- GS manned spacecraft
 - . **voskhod manned spacecraft**
 - . . Voskhod 1 spacecraft
 - . . Voskhod 2 spacecraft
- reentry vehicles
 - . recoverable spacecraft
 - . . **voskhod manned spacecraft**
 - . . . Voskhod 1 spacecraft
 - . . . Voskhod 2 spacecraft
- soft landing spacecraft
 - . **voskhod manned spacecraft**
 - . . Voskhod 1 spacecraft
 - . . Voskhod 2 spacecraft
- RT space capsules

Vostok 1 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 1 spacecraft**
- reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 1 spacecraft**
- soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 1 spacecraft**

Vostok 2 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 2 spacecraft**
- reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 2 spacecraft**
- soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 2 spacecraft**

Vostok 3 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 3 spacecraft**
- reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 3 spacecraft**
- soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 3 spacecraft**

Vostok 4 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 4 spacecraft**

- reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 4 spacecraft**
- soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 4 spacecraft**

Vostok 5 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 5 spacecraft**
- reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 5 spacecraft**
- soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 5 spacecraft**

Vostok 6 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 6 spacecraft**
- reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 6 spacecraft**
- soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 6 spacecraft**

Vostok spacecraft

- GS manned spacecraft
 - . **Vostok spacecraft**
 - . . Vostok 1 spacecraft
 - . . Vostok 2 spacecraft
 - . . Vostok 3 spacecraft
 - . . Vostok 4 spacecraft
 - . . Vostok 5 spacecraft
 - . . Vostok 6 spacecraft
- reentry vehicles
 - . recoverable spacecraft
 - . . **Vostok spacecraft**
 - . . . Vostok 1 spacecraft
 - . . . Vostok 2 spacecraft
 - . . . Vostok 3 spacecraft
 - . . . Vostok 4 spacecraft
 - . . . Vostok 5 spacecraft
 - . . . Vostok 6 spacecraft
- soft landing spacecraft
 - . **Vostok spacecraft**
 - . . Vostok 1 spacecraft
 - . . Vostok 2 spacecraft
 - . . Vostok 3 spacecraft
 - . . Vostok 4 spacecraft
 - . . Vostok 5 spacecraft
 - . . Vostok 6 spacecraft
- RT space capsules

voting

- RT governments
- law (jurisprudence)
- minorities
- politics
- sovereignty

vowels

- RT consonants (speech)
- grammars
- languages
- words (language)

Voyager 1 spacecraft

- DEF A spacecraft launched in the 1977 Voyager mission.
- GS interplanetary spacecraft
 - . **Voyager 1 spacecraft**
- unmanned spacecraft
 - . space probes
 - . . **Voyager 1 spacecraft**
- RT flyby missions
 - Grand Tours
 - Jupiter (planet)
 - Jupiter probes
 - Jupiter rings

∞ spacecraft

Voyager 2 spacecraft
 DEF A spacecraft launched in the 1977 Voyager mission.
 GS interplanetary spacecraft
 . **Voyager 2 spacecraft**
 unmanned spacecraft
 . space probes
 . . **Voyager 2 spacecraft**
 RT flyby missions
 Grand Tours
 Jupiter (planet)
 Jupiter probes
 Neptune (planet)
 Saturn (planet)
 ∞ spacecraft
 Uranus (planet)

Voyager 1977 mission
 DEF The launching of two advanced three-axis attitude stabilized spacecraft for the exploration of Jovian and Saturnian environments including investigation of the gravitational fields, atmospheric dynamics, and magnetospheres of these planets.
 GS space missions
 . flyby missions
 . . Grand Tours
 . . . **Voyager 1977 mission**
 RT interplanetary spacecraft
 Jupiter (planet)
 Jupiter probes
 ∞ missions
 solar system
 space probes

Voyager project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Voyager project**
 . projects
 . . **Voyager project**
 . space programs
 . . NASA space programs
 . . . **Voyager project**
 RT Mars probes
 Saturn project
 space probes
 unmanned spacecraft
 Venus probes

Voyageur helicopter
 USE **CH-46 helicopter**

VR (virtual reality)
 USE **virtual reality**

VSAT (network)
 UF *very small aperture terminals*
 GS data processing equipment
 . data processing terminals
 . . **VSAT (network)**
 networks
 . communication networks
 . . **VSAT (network)**
 . satellite networks

. . **VSAT (network)**
 RT Aloha system
 apertures
 ARPANET computer network
 computer networks
 data links
 data transmission
 distributed processing
 Earth terminals
 interprocessor communication
 local area networks
 microwave transmission
 needs (data system)
 personal computers
 random access
 superhigh frequencies
 telecommunication

VTOL
 USE **vertical landing**
vertical takeoff

VTOL aircraft
 USE **vertical takeoff aircraft**

Vulcan aircraft
 UF *AVRO 698 aircraft*
 GS attack aircraft
 . bomber aircraft
 . . **Vulcan aircraft**
 Hawker Siddeley aircraft
 . **Vulcan aircraft**
 jet aircraft
 . **Vulcan aircraft**
 tailless aircraft
 . **Vulcan aircraft**
 RT ∞ aircraft
 AVRO 707 aircraft
 Harrier aircraft

vulcanizates
 USE **vulcanized elastomers**

vulcanized elastomers
 UF *gum vulcanizates*
vulcanizates
 GS elastomers
 . rubber
 . . synthetic rubbers
 . . . **vulcanized elastomers**
 RTV-40 rubber (trademark)
 RTV-60 rubber (trademark)
 RT addition resins
 polyether resins
 thermoplastic resins
 vulcanizing

vulcanizing
 DEF A chemical reaction in which the physical properties of a rubber are changed in the direction of decreased plastic flow, less surface tackiness, and increased tensile strength by reacting it with sulfur or other suitable agents.
 GS crosslinking
 . **vulcanizing**
 RT curing

vulcanized elastomers

vulnerability
 GS **vulnerability**
 . nuclear vulnerability
 RT aircraft reliability
 aircraft survivability
 airport security
 durability
 integrity
 life (durability)
 obstacle avoidance
 penetration
 piercing
 reliability
 ∞ resistance
 security
 sensitivity
 spacecraft defense
 spacecraft survivability
 stability

Vycor
 GS fibers
 . synthetic fibers
 . . **Vycor**
 glass
 . **Vycor**
 semiconductors (materials)
 . **Vycor**
 RT glass fibers
 ∞ materials
 silicon dioxide

VZ-2 aircraft
 GS Boeing aircraft
 . **VZ-2 aircraft**
 research vehicles
 . research aircraft
 . . **VZ-2 aircraft**
 tilt wing aircraft
 . **VZ-2 aircraft**
 V/STOL aircraft
 . **VZ-2 aircraft**
 RT ∞ aircraft

VZ-8 aircraft
 UF *Airgeep aircraft*
 GS light aircraft
 . **VZ-8 aircraft**
 Piasecki aircraft
 . **VZ-8 aircraft**
 research vehicles
 . research aircraft
 . . **VZ-8 aircraft**
 V/STOL aircraft
 . vertical takeoff aircraft
 . . **VZ-8 aircraft**
 RT ∞ aircraft
 flying platforms

VZ-10 aircraft
 USE **XV-4 aircraft**

VZ-11 aircraft
 USE **XV-5 aircraft**

VZ-12 aircraft
 USE **P-1127 aircraft**

W

W stars
USE **Wolf-Rayet stars**

W wings
USE **variable sweep wings**

W2F aircraft
USE **E-2 aircraft**

Wabash River Basin (IL-IN-OH)

GS landforms
 . structural basins
 . . river basins
 . . . **Wabash River Basin (IL-IN-OH)**

RT Illinois
 Indiana
 Ohio
 rivers

wadis

DEF A term used in the desert regions of Southwest Asia and Northern Africa for a stream bed or channel, or a steep sided and bouldery ravine, gully or valley, or a dry wash, that is usually dry except during the rainy season and that often forms an oasis.

GS landforms
 . structural basins
 . . river basins
 . . . **wadis**

RT arid lands
 desertification
 rivers
 streams
 topography
 valleys
 water runoff

wafers

RT microelectronics
 microminiaturization
 miniaturization
 photomasks
 semiconductor devices
 solid state devices
 thin films
 vertical junction solar cells

wage surveys

GS reports
 . **wage surveys**
 surveys
 . . **wage surveys**

RT cost analysis
 cost estimates
 cost reduction
 employee relations
 finance
 personnel

wakefulness

RT alertness
 sleep deprivation

wakes

GS **wakes**
 . aircraft wakes
 . . helicopter wakes
 . . slipstreams
 . . . propeller slipstreams
 . hypersonic wakes
 . laminar wakes
 . near wakes
 . supersonic wakes
 . turbulent wakes
 . . slipstreams
 . . . propeller slipstreams

RT backwash
 base flow
 bubbles
 cavitation flow
 contrails
 downwash

∞ draft
 drag
 ground effect (aerodynamics)
 horseshoe vortices
 Strouhal number
 turbulence

vortex alleviation
vortices

Wales

(added November 1989)
GS nations
 . United Kingdom
 . . **Wales**

RT Europe

walking

GS locomotion
 . **walking**

RT gait
 physical exercise
 running

walking machines

GS surface vehicles
 . **walking machines**

RT astronaut maneuvering equipment
 gait
 lunar surface vehicles

∞ machinery
 manned lunar surface vehicles
 prosthetic devices

wall flow

GS fluid flow
 . **wall flow**

RT boundary layer flow
 channel flow
 conical flow
 discharge coefficient
 ducted flow
 Goertler instability
 heat transmission
 Manning theory
 two dimensional flow
 two dimensional jets

wall jets

RT fluid amplifiers
 jet boundaries
 jet flow
 jet vanes

∞ jets

wall pressure

GS pressure
 . **wall pressure**

RT boundary layers
 pressure distribution
 pressure vessels
 thick walls

wall temperature

GS surface properties
 . surface temperature
 . . **wall temperature**
 temperature
 . surface temperature
 . . **wall temperature**

RT Brinkman number
 operating temperature
 thick walls

Wallops Island

GS landforms
 . islands
 . . **Wallops Island**

RT Atlantic Ocean
 Virginia

walls

UF *cold walls*

GS **walls**
 . bulkheads
 . nozzle walls
 . porous walls
 . thick walls
 . thin walls
 . Trombe walls
 . wind tunnel walls

RT ∞ barriers
 buildings
 curtains
 enclosures
 floors

gates (openings)
housings
limiters (fusion reactors)
panels
partitions (structures)
sandwich structures
sheaths
shells (structural forms)
sides
studs (structural members)
substructures
tiles

Walsh function

GS analysis (mathematics)
 . complex variables
 . . orthogonal functions
 . . . **Walsh function**
 functions (mathematics)
 . orthogonal functions
 . . **Walsh function**

RT fast Fourier transformations
 Fourier transformation
 functional analysis
 matrices (mathematics)

WAN

USE **wide area networks**

Wankel engines

GS engines
 . internal combustion engines
 . . rotary engines
 . . . **Wankel engines**

RT aircraft engines
 automobile engines
 piston engines

war games

GS games
 . **war games**

RT digital simulation
 game theory
 mathematical models
 operations research
 simulation

warfare

GS **warfare**
 . antiship warfare
 . antisubmarine warfare
 . chemical warfare
 . combat
 . electronic warfare
 . nuclear warfare
 . attacking (assaulting)

RT B-1 aircraft
 chemical defense
 evasive actions
 infiltration
 international law
 ordnance
 peacetime
 politics
 strategy
 violence

warheads

DEF Originally the parts of the missile carrying the explosive, chemical, or other charge intended to damage the enemy. By extension, the term is sometimes used as synonymous with payload or nose cone.

GS weapons
 . **warheads**
 . . nuclear warheads
 . . precision guided projectiles

RT ammunition
 antiship warfare
 bombs (ordnance)
 explosive devices
 explosives

∞ fuses
 fuses (ordnance)
 missile components
 missiles
 nose cones
 nuclear devices
 nuclear weapons

- payloads
- projectiles
- ∞ rockets
- shaped charges
- torpedoes
- warm blooded animals*
- USE **homeotherms**
- warm fronts**
- GS fronts (meteorology)
 - . **warm fronts**
- RT air masses
- cold fronts
- ∞ fronts
- meteorological parameters
- meteorology
- storms
- synoptic meteorology
- thunderstorms
- tornadoes
- weather forecasting
- warming*
- USE **heating**
- warning**
- RT accident prevention
- auditory signals
- bells
- civil defense
- collision avoidance
- detection
- ∞ detectors
- early warning systems
- fire prevention
- horns
- mine detectors
- monitors
- protection
- safety
- safety devices
- warning devices*
- USE **warning systems**
- warning signals*
- USE **warning systems**
- Warning Star aircraft*
- USE **C-121 aircraft**
- warning systems**
- UF *alarms*
- collision warning devices*
- warning devices*
- warning signals*
- GS **warning systems**
 - . early warning systems
 - . . Ballistic Missile Early Warning System
- RT . mine detectors
- accident prevention
- auditory signals
- avoidance
- bells
- civil defense
- collision avoidance
- detection
- ∞ detectors
- display devices
- explosions
- false alarms
- fire prevention
- fires
- gas detectors
- hazards
- head-up displays
- horns
- monitors
- National Severe Storms Project
- pollution monitoring
- protection
- public address systems
- safety
- safety devices
- safety management
- sanitation
- sirens
- sound generators
- ∞ systems
- threat evaluation
- warpage**
- RT bending
- buckling
- camber
- damage
- deformation
- distortion
- growth
- heaving
- plastic deformation
- shrinkage
- structural strain
- surface distortion
- thermal expansion
- twisting
- ∞ **washers**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT washers (cleaners)
- washers (spacers)
- washers (cleaners)**
- RT cleaners
- concentrators
- extraction
- separators
- ∞ washers
- washing
- washers (spacers)**
- GS fasteners
- . **washers (spacers)**
- RT inserts
- separators
- spacers
- ∞ washers
- washing**
- UF *scrubbing*
- GS cleaning
- . **washing**
- . . bathing
- RT beneficiation
- decontamination
- dissolving
- distillation
- elution
- flushing
- housekeeping (spacecraft)
- purification
- scrubbers
- ∞ separation
- washers (cleaners)
- waste water
- Washington**
- GS nations
 - . United States
 - . . **Washington**
- RT Cascade Range (CA-OR-WA)
- Columbia River Basin (ID-OR-WA)
- washout (radioactivity)*
- USE **fallout**
- WASP sounding rocket**
- UF *high altitude sounding projectile*
- window atmosphere sounding projectile*
- GS rocket vehicles
 - . multistage rocket vehicles
 - . . **WASP sounding rocket**
 - . . sounding rockets
 - . . **WASP sounding rocket**
- RT Loki rocket vehicle
- solid propellant rocket engines
- Waspaloy**
- GS alloys
 - . heat resistant alloys
 - . . **Waspaloy**
 - . . nickel alloys
 - . . **Waspaloy**
- RT chromium alloys
- cobalt alloys
- wrought alloys
- waste disposal**
- GS disposal
 - . **waste disposal**
 - . . composting
 - . . hazardous material disposal (in space)
- management
- . waste management
- . . **waste disposal**
- . . . composting
- . . . hazardous material disposal (in space)
- RT air pollution
- deep well injection (wastes)
- dewatering
- dilution
- dissipation
- drainage
- effluents
- elimination
- environment effects
- environment pollution
- environment protection
- environmental chemistry
- environmental cleanup
- environmental engineering
- environmental surveys
- exhaust gases
- exhaust systems
- garbage
- hazardous materials
- hazardous wastes
- human wastes
- incinerators
- industrial wastes
- landfills
- manures
- materials handling
- metabolic wastes
- mines (excavations)
- Modular Integrated Utility System
- pipelines
- plasma core reactors
- pollution
- ponds
- radioactive wastes
- sanitation
- sewage
- sewage treatment
- sewers
- soil pollution
- solid wastes
- space flight feeding
- ∞ storage
- sumps
- toilets
- utilities
- wastes
- water pollution
- waste energy utilization**
- GS utilization
 - . **waste energy utilization**
- RT boilers
- burners
- chimneys
- cogeneration
- energy conversion
- exergy
- exhaust gases
- furnaces
- heat transfer
- heating
- incinerators
- lighting equipment
- ovens
- solid wastes
- space heating (buildings)
- waste heat
- wastes
- waste heat**
- RT energy technology
- heat exchangers
- heat pumps

waste management

waste energy utilization

waste management

(added March 1997)

GS management

. **waste management**

. . waste disposal

. . . composting

. . . hazardous material disposal (in space)

. . waste treatment

. . . sewage treatment

. . waste utilization

RT environment management

environmental engineering

landfills

life support systems

materials recovery

reclamation

recycling

sanitation

underground storage

wastes

waste treatment

DEF The processing of waste materials (liquid and solid) with chemicals, high temperature, chopping, grinding, and filtering equipment, bacterial action, dryers, separators, for conversion to useful products.

GS management

. waste management

. . **waste treatment**

. . . sewage treatment

RT

bacteria

composting

environmental cleanup

garbage

residues

sludge

∞ treatment

wastes

waste utilization

GS management

. waste management

. . **waste utilization**

utilization

. **waste utilization**

RT

biomass energy production

composting

hydrocarbon fuel production

industrial wastes

landfills

manures

renewable energy

solid wastes

wastes

waste water

GS wastes

. liquid wastes

. . **waste water**

water

. **waste water**

RT

bathing

cleaning

flushing

industrial wastes

residues

washing

water cooled reactors

wastes

GS **wastes**

. garbage

. industrial wastes

. liquid wastes

. . urine

. . waste water

. manures

. metabolic wastes

. . human wastes

. . . feces

. . . urine

. hazardous wastes

. radioactive wastes

. sewage

. solid wastes

RT

activated sludge

air pollution

beneficiation

by-products

combustion products

contaminants

debris

effluents

environment effects

exhaust gases

forest fires

fumes

gas recovery

impurities

leakage

losses

nonpoint sources

organic wastes (fuel conversion)

pollution

residues

scrap

sewers

slags

sludge

waste disposal

waste energy utilization

waste management

waste treatment

waste utilization

watches

USE **clocks**

water

DEF Dihydrogen oxide (molecular formula H₂O). The word is used ambiguously to refer to the chemical compound in general and to its liquid phase; when the former is meant, the term water substance is often used.

GS **water**

. cold water

. deep water

. fresh water

. heavy water

. inland waters

. . ground water

. extraterrestrial water

. light water

. nearshore water

. . coastal water

. polywater

. potable water

. sea water

. shallow water

. shoals

. springs (water)

. surface water

. vadose water

. waste water

RT

aquifers

arroyos

bay ice

body fluids

cavitation flow

fiords

humidity

hydrates

∞ hydraulics

hydrodynamics

hydrogen bonds

hydrogen compounds

hydrology

hydromechanics

hydrostatics

ice

isthmuses

Lake Erie

Lake Huron

lake ice

Lake Michigan

Lake Ontario

Lake Superior

laterites

life support systems

limnology

liquids

moderators

moisture

moisture content

muskegs

oxides

peninsulas

pollution

precipitation (meteorology)

runway conditions

slush

sounds (topographic features)

steam

straits

utilities

water sampling

water splitting

watersheds

wharves

windpowered pumps

water balance

GS balance

. material balance

. . **water balance**

RT

body fluids

edema

∞ equilibrium

homeostasis

hydrometeorology

lysimeters

osmosis

urination

water circulation

GS circulation

. **water circulation**

. . water currents

. . . ocean currents

. . . . coastal currents

. el Nino

. Gulf Stream

. Lomonosov current

. . thermohaline circulation

RT

lakes

oceanography

pollution transport

wind effects

water color

GS electromagnetic properties

. optical properties

. . color

. . . **water color**

RT

Coastal Zone Color Scanner

dissolved organic matter

lakes

ocean color scanner

oceans

rivers

Sea-viewing Wide Field-of-view

Sensor

water consumption

GS consumption

. **water consumption**

RT

drought

irrigation

seepage

water content

USE **moisture content**

water cooled reactors

UF *physical constants testing reactor*

GS nuclear reactors

. liquid cooled reactors

. . **water cooled reactors**

. . . boiling water reactors

. . . . experimental boiling water

reactors

. . . . Halden Boiling Water Reactor

. . . . Los Alamos Water Boiler

Reactor

. . . . Pathfinder nuclear reactor

. . . . Spert reactors

. . . heavy water reactors

. . . . heavy water components test

reactors

. . . . plutonium recycle test reactor

. . . . zero power reactor 2

. . . light water reactors

. . . NRX reactors

. . . Plum Brook Reactor

. . . pressurized water reactors

- spectral shift control reactor
- swimming pool reactors
- zero power reactors
- zero power reactor 2
- zero power reactor 3
- zero power reactor 6
- zero power reactor 9
- RT chemical reactors
- nuclear engine for rocket vehicles
- ∞ reactors
- waste water

water cooling

USE **liquid cooling**

water currents

DEF Net transport of water along a definable path. Used for currents (oceanography).

UF *currents (oceanography)*

GS circulation

- . water circulation
- . . **water currents**
- . . . ocean currents
- coastal currents
- el Nino
- Gulf Stream
- Lomonosov current

RT arroyos

∞ currents

- oceanography
- rapids
- sea roughness
- sea states
- surface waves
- tides
- upstream

water cycle (hydrology)

USE **hydrological cycle**

water deprivation

GS deprivation

- . **water deprivation**

water depth

RT cnoidal waves

- coastal water
- lakes
- nearshore water
- oceans
- shallow water
- shoals

water erosion

GS erosion

- . **water erosion**

RT arroyos

- canyons
- drainage patterns
- flood damage
- rain impact damage
- ravines
- soil erosion
- wind erosion

water flow

GS fluid flow

- . liquid flow
- . . **water flow**

RT alluvium

- canals
- drainage
- drainage patterns
- flood damage
- floods
- flow measurement
- Great Lakes (North America)
- ground water
- ∞ hydraulics
- hydrodynamics
- hydrology models
- open channel flow
- pipe flow
- rapids
- watersheds

water hammer

RT hydraulic equipment

- hydrodynamics
- pipe flow

- pipelines
- rams (pumps)
- surges
- valves

water heating

DEF The heating of water by any means including solar technology.

GS heating

- . **water heating**

RT domestic energy

- geothermal energy extraction
- heat exchangers
- ∞ heaters
- heating equipment
- residential energy
- temperature control

water immersion

RT baths

- liquid cooling
- quenching (cooling)
- sinking
- ∞ soaking
- submerged bodies
- submerging
- underwater tests

water injection

GS injection

- . fluid injection
- . . liquid injection
- . . . **water injection**

RT gas injection

- perforating
- thrust augmentation

∞ **water intakes**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT air intakes

- intake systems
- manifolds
- nose inlets
- plenum chambers
- scoops
- side inlets

water jets

USE **hydraulic jets**

water landing

GS landing

- . **water landing**

RT aircraft landing

- crash landing
- ditching (landing)
- glide landings
- hard landing
- horizontal spacecraft landing
- hydroplaning
- planetary landing
- soft landing
- spacecraft landing
- spacecraft recovery
- splashing
- touchdown

water loss

RT dehydration

- drying
- evaporation
- losses

water management

GS management

- . **water management**

RT conservation

- drought
- environment management
- floods
- hydrology
- Lake Erie
- Lake Huron
- Lake Michigan
- Lake Ontario
- Lake Superior
- limnology
- potable water
- Pyramid Lake (NV)

watersheds

water masers

GS emission

- . **water masers**
- stimulated emission devices
- . masers
- . . **water masers**

RT gas lasers

- gas masers
- interstellar masers
- maser outputs

water moderated reactors

GS nuclear reactors

- . **water moderated reactors**
- . . experimental boiling water reactors
- . . heavy water components test reactors
- . . plutonium recycle test reactor

RT light water reactors

water pollution

GS pollution

- . environment pollution
- . . **water pollution**
- . . . oil pollution

RT algae

- alkalinity
- biochemical oxygen demand
- clean energy
- contamination
- dissolved organic matter
- drought
- environment effects
- environment protection
- environmental chemistry
- environmental cleanup
- environmental quality
- environmental surveys
- inland waters
- landfills
- limnology
- lysimeters
- marine resources
- oil slicks
- phytoplankton
- pollution monitoring
- pollution transport
- purity
- soil pollution
- thermal pollution
- waste disposal
- water sampling

water pressure

GS pressure

- . fluid pressure
- . . **water pressure**

RT ∞ hydraulics

- hydrodynamics
- hydrostatic pressure
- hydrostatics
- inlet pressure
- pipe flow

water purification

USE **water treatment**

water quality

GS quality

- . environmental quality
- . . **water quality**

RT alkalinity

- environment effects
- water sampling

water reclamation

UF *water recovery*

GS reclamation

- . materials recovery
- . . **water reclamation**

RT conservation

- dewatering
- drought

water resources

pollution

water recovery

USE **water reclamation**

water resources

GS resources

- . Earth resources
- . . . **water resources**
- . . . aquifers

RT environment effects

environment management

Great Lakes (North America)

ground water

hydrology

inland waters

International Hydrological Decade

lakes

limnology

oceans

ponds

potable water

precipitation (meteorology)

Pyramid Lake (NV)

rainmaking

reservoirs

sea water

underwater resources

wetlands

windpowered pumps

water runoff

RT drainage

ground water

inland waters

resources management

rivers

wadis

water sampling

(added March 1998)

DEF The process of obtaining a representative sample of water from any natural or artificial environment.

GS sampling

- . **water sampling**

RT environmental monitoring

ground water

pollution monitoring

sea water

surface water

water

water pollution

water quality

water splitting

(added September 1988)

GS splitting

- . **water splitting**

RT electrolysis

hydrogen fuels

hydrogen production

thermochemistry

water

water tables

RT aquifers

drainage

ground water

potable water

springs (water)

vadose water

watersheds

water takeoff and landing aircraft

GS **water takeoff and landing aircraft**

- . seaplanes

RT ∞ aircraft

amphibious aircraft

antisubmarine warfare aircraft

commercial aircraft

ground effect machines

hovercraft ground effect machines

light aircraft

monoplanes

passenger aircraft

reconnaissance aircraft

S-61 helicopter

sea launching

submersible aircraft

∞ subsonic aircraft

transport aircraft

utility aircraft

water temperature

GS temperature

- . **water temperature**
- . . ocean temperature
- . . . sea surface temperature

RT surface temperature

temperature distribution

thermal pollution

water treatment

UF *water purification*

RT activated carbon

adsorption

aeration

agitation

bentonite

biochemical oxygen demand

chlorination

coagulation

contaminants

corrosion prevention

demineralizing

desalinization

environmental cleanup

filtration

floculating

flotation

ion exchanging

material absorption

pollution

potable water

purification

∞ screening

settling

sewage

∞ treatment

water tunnel tests

RT air water interactions

cross flow

flow distribution

flow visualization

strakes

∞ tests

water waves

wind tunnel tests

water tunnels

USE **hydraulic test tunnels**

water vapor

DEF Water (H₂O) in gaseous form. Also called aqueous vapor.

GS vapors

- . **water vapor**

RT atmospheric moisture

dew

humidity

mixing ratios

moisture

moisture content

steam

water vehicles

GS **water vehicles**

- . boats
- . . lifeboats
- . . captured air bubble vehicles
- . ships
- . . Advanced Range Instrumentation Ship
- . . aircraft carriers
- . . cargo ships
- . . . Savannah nuclear ship
- . . . tanker ships
- . . nuclear powered ships
- . . . Savannah nuclear ship
- . . satellite communications ships
- . . submarines
- . . . ballistic missile submarines
- . . . guided missile submarines
- . . . trident submarine
- . . surface effect ships
- . . SWATH (ship)
- . . underwater vehicles
- . . submarines

. . . ballistic missile submarines

. . . guided missile submarines

. . . trident submarine

. . underwater research laboratories

RT amphibious vehicles

harbors

marine transportation

∞ military vehicles

research vehicles

shipyards

surface vehicles

∞ vehicles

water waves

GS **water waves**

- . tidal waves

RT breakwaters

capillary waves

cnoidal waves

elastohydrodynamics

frontal waves

gravity waves

hydrodynamic coefficients

littoral transport

ocean dynamics

ripples

sea roughness

sea states

surface waves

tsunami waves

water tunnel tests

waterwave energy

waterwave energy conversion

waterwave powered machines

∞ waves

water wheels

GS wheels

- . **water wheels**

RT hydroelectric power stations

turbine wheels

waterfowl

GS animals

- . vertebrates
- . . birds
- . . . **waterfowl**

RT beaches

coastal ecology

marine biology

marine environments

marshlands

migration

oceanography

wetlands

waterproofing

RT barrier layers

caulking

coatings

hydrophobicity

insulation

moisture resistance

protective coatings

sealing

weatherproofing

watersheds

UF *catchment areas*

GS landforms

- . structural basins
- . . **watersheds**

RT divides (landforms)

drainage patterns

flood control

floods

hydrogeology

hydrology

International Hydrological Decade

Missouri River Basin (US)

mountains

ponds

precipitation (meteorology)

rain

river basins

rivers

storms (meteorology)

valleys

water

water flow

water management
water tables

waterwave energy

GS renewable energy
. **waterwave energy**
RT clean energy
Earth resources
∞ energy
oceanography
tidepower
water waves
∞ waves

waterwave energy conversion

GS energy conversion
. **waterwave energy conversion**
RT ∞ conversion
Earth resources
energy conversion efficiency
∞ energy sources
ocean currents
ocean surface
oceanography
oceans
renewable energy
sea roughness
tide powered generators
tide powered machines
tidepower
tides
water waves

waterwave powered machines

RT ∞ machinery
ocean currents
ocean surface
sea roughness
tide powered generators
tide powered machines
tidepower
tides
water waves

waterways

DEF Navigable streams or canals; also channels for the passage or escape of water.

GS **waterways**
. canals
. harbors
. . . artificial harbors
RT lakes
rivers
straits

wattmeters

DEF Instruments for measuring the magnitude of the active power in an electric circuit. They are provided with a scale usually graduated in either watts, kilowatts, or megawatts. If the scale is graduated in kilowatts or megawatts, the instruments are usually designated as kilowattmeters or megawattmeters.

GS measuring instruments
. **wattmeters**
RT electrical measurement
electrometers

wave amplification

GS amplification
. **wave amplification**
RT baroclinic waves
electromagnetic radiation
∞ waves

wave attenuation

GS attenuation
. **wave attenuation**
. . . acoustic attenuation
. . . shock wave attenuation
. . . radar attenuation
. . . radio attenuation
RT atmospheric attenuation
electromagnetic absorption
electromagnetic missiles
infrared absorption
radar transmission
radio transmission

shock wave propagation

wave degradation

GS degradation
. **wave degradation**
RT attenuation
electromagnetic missiles
scattering
shock wave interaction

wave diffraction

GS diffraction
. **wave diffraction**
RT apodization
attenuation
crosstalk
diffraction radiation
Fresnel integrals
geometrical theory of diffraction
holographic optical elements
∞ interference
traveling wave modulation

wave dispersion

RT acoustic properties
atmospheric refraction
attenuation
∞ coherence
color
deflection
diffraction
∞ dispersion
elastic waves
electromagnetic radiation
fading
light transmission
optical paths
optical properties
radiation distribution
radio wave refraction
refraction
scattering
sound-sound interactions
transmission
transmission loss

wave drag

GS dynamic characteristics
. drag
. . pressure drag
. . . **wave drag**
. . . . interference drag
RT friction drag
supersonic drag

wave equations

SN (NOT EQUATIONS OF MOTION)
GS **wave equations**
. Dirac equation
. eikonal equation
. Flowcs Williams-Hawkings equation
. Klein-Gordon equation
. Korteweg-Devries equation
. Lamé wave equations
. Schroedinger equation
RT Boltzmann-Vlasov equation
density wave model
∞ equations
forbidden bands
∞ Helmholtz equations
hyperbolic differential equations
partial differential equations
quantum theory

wave excitation

GS excitation
. **wave excitation**
. . acoustic excitation
. . harmonic excitation
RT diffraction radiation
stroking tests
∞ waves

wave front deformation

GS deformation
. **wave front deformation**
RT ∞ interference

thermal lensing

wave front reconstruction

GS reconstruction
. **wave front reconstruction**
RT acoustical holography
diffractometers
holographic interferometry
holographic spectroscopy
holography
kinoform
microwave holography
photography
white light holography

wave fronts

DEF A continuous surface drawn through the most forward points in wave disturbances that have the same phase.

GS **wave fronts**
. shock fronts
RT caustic lines
eikonal equation
∞ fronts
Huygens principle
phase coherence
phase velocity
shock discontinuity
∞ waves

wave functions

GS **wave functions**
. molecular orbitals
. Pauli exclusion principle
RT density functional theory
forbidden transitions
Hartree approximation
perturbation theory
square waves
time functions

wave generation

RT electromagnetic radiation
function generators
∞ generators
harmonic generations
shock wave generators
wave rotors

wave incidence control

RT ∞ control
incident radiation

wave interaction

GS **wave interaction**
. shock wave interaction
. wave-particle interactions
RT acoustic coupling
coupling
damping
electroacoustic waves
electromagnetic interactions
four-wave mixing
∞ interactions
intermodulation
modulation
orthogonal multiplexing theory
plasma interactions
propagation modes
scattering
shock wave luminescence
shock wave profiles
shock wave propagation

wave motion

USE **waves**

wave oscillators

USE **oscillators**

wave packets

RT longitudinal waves
packets (communication)
plasma waves
quantum mechanics
transverse waves

wave propagation

UF *Kirchhoff-Huygens principle*
GS transmission

wave reflection

- . **wave propagation**
 - .. acoustic propagation
 - .. sound propagation
 - .. diffraction propagation
 - .. ground wave propagation
 - .. ionospheric propagation
 - .. ionospheric F-scatter propagation
 - .. light scattering
 - ... halos
 - .. scatter propagation
 - ... ionospheric F-scatter propagation
 - .. shock wave propagation
 - .. transequatorial propagation
- RT acoustic attenuation
- acoustic microscopes
- atmospheric attenuation
- attenuation
- automatic picture transmission
- beam waveguides
- ∞ coherence
- coherent radiation
- computational aeroacoustics
- ∞ conduction
- diffraction
- double sideband transmission
- electromagnetic absorption
- electromagnetic missiles
- electromagnetic wave transmission
- evanescent waves
- Ffowcs Williams-Hawkings equation
- geometrical acoustics
- group velocity
- Huygens principle
- hydraulic analogies
- ion acoustic waves
- Lame wave equations
- light transmission
- lossy media
- microwave attenuation
- microwave transmission
- multipath transmission
- nonadiabatic theory
- phase velocity
- plasma acceleration
- plasmaguides
- ∞ propagation
- propagation modes
- propagation velocity
- pulse diffraction
- radar attenuation
- radar transmission
- radio attenuation
- radio transmission
- refraction
- Sagnac effect
- screen effect
- shock fronts
- shock wave attenuation
- short wave radio transmission
- single sideband transmission
- sound transmission
- square waves
- stress waves
- television transmission
- waveforms
- whispering gallery modes
- Whitham rule

- wave radiation*
- USE **electromagnetic radiation**
- wave reflection**
- GS reflection
 - . **wave reflection**
 - .. Mach reflection
- RT ground effect (communications)
- reflected waves
- signal reflection
- spread reflection
- wave resistance**
- RT blast loads
- erosion
- impact strength
- ∞ resistance
- structural stability
- wave rotors**
- (added March 1998)
- DEF Rotor devices that use gasdynamic

waves to transfer energy rather than the motion of solid surfaces. Typically, they consist of a series of passages arranged on a drum which rotates about an axis. Through rotation, the ends of the passages are periodically exposed to various circumferentially arranged ports which initiate the traveling expansion or compression waves within the passages. The particular circumferential location of the ports determines the thermodynamic cycle of the working fluid.

- GS rotating bodies
 - . rotors
 - .. **wave rotors**
- RT compression waves
- energy transfer
- engine parts
- gas dynamics
- gas generators
- gas turbine engines
- topping cycle engines
- turbomachinery
- turboshafts
- wave generation

wave scattering

- GS scattering
 - . **wave scattering**
 - .. acoustic scattering
 - ... reverberation
 - .. atmospheric scattering
 - ... tropospheric scattering
 - .. electromagnetic scattering
 - ... ionospheric F-scatter propagation
 - ... light scattering
 - ... halos
 - ... microwave scattering
 - ... Mie scattering
 - ... Rayleigh scattering
 - ... Raman spectra
 - ... Thomson scattering
 - ... x ray scattering
- RT Faddeev equations
- magnetic dispersion
- reciprocity theorem
- scattering amplitude
- scatterometers
- shock fronts

waveforms

- DEF The graphical representations of waves, showing variation of amplitude with time.

- GS **waveforms**
 - . pulse amplitude
 - .. pulse duration
 - .. sawtooth waveforms
 - .. square waves
- RT form factors
- speech baseband compression
- time functions
- wave propagation

waveguide antennas

- GS antennas
 - . **waveguide antennas**
 - .. horn antennas
- RT corrugated waveguides
- dielectric waveguides
- lens antennas
- microstrip antennas
- microwave antennas
- monopulse antennas
- radant
- slot antennas
- Yagi antennas

waveguide filters

- GS electromagnetic wave filters
 - . electric filters
 - .. **waveguide filters**
- RT bandstop filters
- dielectric waveguides
- microwave filters
- radar filters
- waveguides

waveguide lasers

- DEF Pump sources for deuterium oxide lasers.
- GS stimulated emission devices
 - . lasers

.. waveguide lasers

- .. fiber lasers
- RT aluminum gallium arsenide lasers
- carbon dioxide lasers
- gallium arsenide lasers
- heterojunction devices
- infrared lasers
- laser modes
- laser outputs
- optical waveguides
- pulsed lasers
- quantum well lasers
- semiconductor lasers
- surface emitting lasers
- tube lasers

waveguide tuners

- GS tuners
 - . **waveguide tuners**
- RT impedance matching
- mode transformers
- yttrium-iron garnet

waveguide windows

- RT impedance matching
- irises (mechanical apertures)
- ∞ windows

waveguides

- GS **waveguides**
 - . beam waveguides
 - . circular waveguides
 - . Earth-ionosphere waveguide
 - . optical waveguides
 - .. optical fibers
 - ... scintillating fibers
 - . corrugated waveguides
 - . dielectric waveguides
 - . plasmaguides
 - . rectangular waveguides
- RT antenna feeds
- coaxial cables
- communication cables
- crossed fields
- electromagnetic surface waves
- gyrators
- irises (mechanical apertures)
- microwave switching
- microwave transmission
- parallel plates
- plastic fibers
- propagation modes
- Smith chart
- transmission lines
- waveguide filters

wavelength division multiplexing

- DEF The process in which each modulating wave modulates a separate subcarrier and the subcarriers are spaced in wavelengths. This term is used in optical communication where wavelength usage is preferred over frequency.

- GS transmission
 - . multiplexing
 - .. **wavelength division multiplexing**
- RT code division multiplexing
- demultiplexing
- frequency division multiplexing
- orthogonal multiplexing theory
- time division multiplexing

wavelengths

- DEF Distance in the direction of propagation of a periodic wave between two successive points at which the phase is the same (at the same time).

- GS **wavelengths**
 - . de Broglie wavelengths
- RT antinodes
- harmonics
- infrared radiation
- laser modes
- laser outputs
- longitudinal waves
- maser outputs
- millimeter waves
- nodes (standing waves)
- spectral emission
- standing waves
- Stokes law of radiation

submillimeter waves
whispering gallery modes

wavelet analysis

(added September 1993)
UF *wavelet transform*
RT cosine series
Fourier analysis
Fourier transformation
functions (mathematics)
Gabor transformation
image processing
orthonormal functions
signal analysis
signal encoding
signal processing
sine waves
time functions
transformations (mathematics)
∞ waves

wavelet transform

USE **wavelet analysis**

wave-particle interactions

(added July 1991)
GS particle interactions
. **wave-particle interactions**
wave interaction
RT **wave-particle interactions**
beam interactions
electromagnetic interactions
electrostatic waves
magnetohydrodynamic waves
magnetohydrodynamics
particle acceleration
plasma acceleration
plasma interactions
plasma waves
plasma-electromagnetic interaction
plasma-particle interactions
space plasmas

waveriders

GS aerodynamic configurations
. **waveriders**
RT airfoils
caret wings
delta wings
hypersonic flight
hypersonic vehicles
lifting bodies

∞ **waves**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *crests*
wave motion
RT baroclinic waves
breakwaters
cnoidal waves
corrugating
cylindrical waves
detonation waves
dilatational waves
eikonal equation
elastic waves
electroacoustic waves
electromagnetic radiation
electromagnetic surface waves
evanescent waves
frontal waves
gravitational waves
internal waves
ionic waves
Kelvin waves
kilometric waves
littoral transport
longitudinal waves
nodes (standing waves)
plane waves
planetary waves
refracted waves
seismic waves
SH waves
shock waves
sine waves
sound waves
spherical waves

square waves
standing waves
stress waves
surface waves
surges
tidal waves
transverse waves
tropospheric waves
vibration
water waves
waterwave energy
wave amplification
wave excitation
wave fronts
wavelet analysis

waxes

GS **waxes**
. ceresin
RT alkanes
coatings
crude oil
finishes
phase change materials

weak energy interactions

GS decay
. **weak energy interactions**
. . . weak interactions (field theory)
particle interactions
. elementary particle interactions
. . **weak energy interactions**
. . . . weak interactions (field theory)
RT beta particles
grand unified theory
gravitinos
∞ interactions
particle theory

weak interactions (field theory)

DEF One class of the fundamental interactions among elementary particles responsible for beta decay of nuclei, and for the decay of elementary particles with lifetimes greater than about 10⁻¹⁰ seconds such as muons, K mesons, and lambda hyperons; it is several orders of magnitude weaker than the strong and electromagnetic interactions and fails to conserve strangeness or parity. Used for beta interactions.

UF *beta interactions*
GS decay
. weak energy interactions
. . **weak interactions (field theory)**
nuclear reactions
. nuclear interactions
. . **weak interactions (field theory)**
particle interactions
. elementary particle interactions
. . weak energy interactions
. . . **weak interactions (field theory)**
. nuclear interactions
. . **weak interactions (field theory)**
RT CP violation
electroweak interactions (field theory)
electroweak model
field theory (physics)
grand unified theory
∞ interactions
standard model (particle physics)
strong interactions (field theory)
∞ theories

weakly interacting massive particles

(added November 1999)
DEF Hypothetical elementary particles predicted by supersymmetry theories, that interact only through gravity and weak-type interactions; postulated to account for dark matter in the Universe.
UF *cosmions*
WIMPs (astronomy)
GS particles
. elementary particles
. . hypothetical particles
. . . **weakly interacting massive particles**
RT dark matter
missing mass (astrophysics)

solar neutrinos

weapon system 107A-1
GS weapon systems
. **weapon system 107A-1**

weapon system 107A-2
GS weapon systems
. **weapon system 107A-2**

weapon system 133A
GS weapon systems
. **weapon system 133A**

weapon system 133B
GS weapon systems
. **weapon system 133B**

weapon system 315A
GS weapon systems
. **weapon system 315A**

weapon system management
GS management
. **weapon system management**
RT project management
∞ systems

weapon systems

DEF A combination of one or more weapons with all related equipment, materials, services, personnel, and means of delivery and deployment (if applicable) required for self-sufficiency.

GS **weapon systems**
. ground operational support system
. laser weapons
. missile systems
. . Nike X systems
. . Safeguard system
. Sentinel system
. Success project
. Typhon weapon system
. weapon system 107A-1
. weapon system 107A-2
. weapon system 133A
. weapon system 133B
. weapon system 315A
RT air to surface missiles
antiship missiles
fire control
Harpoon missile
∞ military aircraft
military spacecraft
missile launchers
missiles
mobile missile launchers
nuclear weapons
ordnance
∞ rockets
space weapons
∞ systems
weapons
weapons development

weapons

GS **weapons**
. guns (ordnance)
. . artillery
. . . howitzers
. . . precision guided projectiles
. . rifles
. laser weapons
. mines (ordnance)
. nuclear weapons
. . fission weapons
. . fusion weapons
. space weapons
. warheads
. . nuclear warheads
. . precision guided projectiles
. biological weapons
RT ammunition
antiquities
antiship warfare
armed forces (foreign)
armed forces (United States)
∞ ballistic vehicles
disarmament
fire control
gunnery training

weapons delivery

- military technology
- missiles
- ordnance
- Patriot missile
- projectiles
- shaped charges
- shrapnel
- tanks (combat vehicles)
- Tomahawk missiles
- torpedoes
- weapon systems
- weapons delivery
- wing-fuselage stores

weapons delivery

DEF Total requirements for locating the target, establishing the release conditions, and maintaining to the target (if required); includes the detection, recognition, and acquisition of the target, the weapons release as well as guidance.

- GS delivery
 - . **weapons delivery**
- RT air defense
 - ∞ aircraft
 - defense program
 - military technology
 - missile defense
 - nuclear weapons
 - ∞ rockets
 - space weapons
 - weapons

weapons development

- GS product development
 - . **weapons development**
- RT research and development
- weapon systems

weapons industry

- GS industries
 - . defense industry
 - . . **weapons industry**
- RT armed forces (United States)
- military technology

wear

DEF Damage to a solid surface, generally involving progressive loss of material, due to relative motion between that surface and a contacting substance or substances.

- RT abrasion
- chipping
- corrosion
- damage
- depreciation
- deterioration
- durability
- erosion
- failure
- flaking
- fretting corrosion
- friction
- grinding (material removal)
- hardness
- removal
- scoring
- sliding friction
- spalling
- surface finishing
- ∞ surfaces
- system failures
- tribology
- wear resistance

wear inhibitors

- GS inhibitors
 - . **wear inhibitors**
- RT retardants
- wear resistance

wear resistance

- GS mechanical properties
 - . **wear resistance**
 - . . abrasion resistance
- RT abrasion
- boundary lubrication
- coefficient of friction
- deterioration
- hardness

- lubricant tests
- ∞ resistance
- sliding friction
- toughness
- wear
- wear inhibitors
- wear tests

wear tests

- RT cumulative damage
- destructive tests
- erosion
- ferrography
- fretting
- friction
- hardness tests
- ∞ materials tests
- quality control
- spalling
- static tests
- ∞ tests
- tribometers
- wear resistance

weather

- UF *weather conditions*
- GS **weather**
 - . cold weather
 - . hot weather
- RT aircraft accidents
- aircraft hazards
- aircraft safety
- Alpine meteorology
- annual variations
- anvil clouds
- Atmospheric & Oceanographic Inform Sys
- atmospheric pressure
- atmospheric temperature
- cap clouds
- cirrocumulus clouds
- cirrostratus clouds
- climate
- climatology
- clouds (meteorology)
- flight hazards
- flight plans
- Global Atmospheric Research Program
- long term effects
- meteorological parameters
- meteorology
- METEOSAT satellite
- navigation aids
- precipitation (meteorology)
- runway conditions
- seasons
- solar compasses
- solar terrestrial interactions
- space weather
- wind (meteorology)

weather charts

USE **meteorological charts**

weather conditions

USE **weather**

weather control

USE **weather modification**

weather data recorders

- GS data recorders
 - . **weather data recorders**
 - measuring instruments
 - . meteorological instruments
 - . . **weather data recorders**
 - recording instruments
 - . **weather data recorders**
- RT automatic weather stations
- ∞ data
- telemetry

weather forecasting

- GS meteorology
 - . **weather forecasting**
 - . . long range weather forecasting
 - . . nowcasting
 - . . numerical weather forecasting
 - . . statistical weather forecasting

- predictions
- . forecasting
- . . **weather forecasting**
- . . . long range weather forecasting
- . . . nowcasting
- . . . numerical weather forecasting
- . . . statistical weather forecasting

RT

- air masses
- atmospheric models
- cirrus shields
- cloud cover
- cockpit weather information systems
- cold fronts
- environmental monitoring
- flight conditions
- flood predictions
- GARP Atlantic Tropical Experiment
- hindcasting
- humidity
- meteorological balloons
- meteorological flight
- meteorological radar
- meteorological satellites
- meteorological services
- nephelanalysis
- precipitation (meteorology)
- snowstorms
- storms
- storms (meteorology)
- synoptic meteorology
- warm fronts
- wind (meteorology)

weather fronts

USE **fronts (meteorology)**

weather maps

USE **meteorological charts**

weather modification

- UF *weather control*
- GS **weather modification**
 - . cloud dispersal
 - . cloud seeding
 - . fog dispersal
 - . lightning suppression
 - . rainmaking
 - . storm enhancement
 - . storm suppression
- RT artificial clouds
- cloud physics
- ∞ control
- environmental control
- heat islands
- snowstorms

weather radar

USE **meteorological radar**

weather reconnaissance aircraft

- GS reconnaissance aircraft
 - . **weather reconnaissance aircraft**
- RT ∞ aircraft
- Global Atmospheric Research Program
- meteorological instruments
- observation aircraft

weather stations

- UF *meteorological stations*
- GS stations
 - . **weather stations**
 - . . automatic weather stations
- RT ground stations
- instrument packages
- integrated global ocean station systems
- meteorological instruments
- meteorological satellites
- meteorological services
- ocean data acquisitions systems

weathering

DEF The process of disintegration and decomposition as a consequence of exposure to the atmosphere, to chemical action, and to the action of frost water and heat.

- GS exposure
 - . **weathering**
 - . . space weathering

- RT corrosion
corrosion tests
curing
damage
degradation
deterioration
Earth atmosphere
erosion
mechanical properties
rusting
soil erosion
- weatherproofing**
RT coatings
cold weather
corrosion prevention
moisture resistance
packaging
preserving
waterproofing
- weaving**
RT fabrics
sewing
woven composites
- web services**
(added May 2007)
DEF A software system designed to support interoperable machine to machine interactions over a network.
GS computer programs
. applications programs (computers)
. . **web services**
services
. **web services**
RT internets
on-line systems
service oriented architecture
World Wide Web
- web sites*
(added March 2001)
USE **websites**
- webbing**
RT fabrics
mesh
∞ webs
webs (sheets)
- Weber test**
GS physiological tests
. **Weber test**
RT auditory perception
binaural hearing
- Weber-Fechner law**
DEF An approximate psychological law relating the degree of response or sensation of a sense organ and the intensity of the stimulus. The law asserts that equal increments of sensation are associated with equal increments of the logarithm of the stimulus, or that the just noticeable difference in any sensation results from a change in the stimulus which bears a constant ratio to the value of the stimulus.
GS laws
. **Weber-Fechner law**
- ∞ **webs**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT membranes
mesh
webbing
webs (sheets)
webs (supports)
- webs (membranes)*
USE **membranes**
- webs (sheets)**
SN (EXCLUDES POLYMERIC FILMS AND STRUCTURAL REINFORCEMENTS)
RT diaphragms (mechanics)
elastic sheets
fabrics
∞ films
membranes
- netting (materials/structures)
paper (material)
papers
∞ rovings
∞ sheets
webbing
∞ webs
webs (supports)
- webs (supports)**
GS **webs (supports)**
. girder webs
RT diaphragms (mechanics)
elastic sheets
membrane structures
membranes
ribs (supports)
skin (structural member)
stiffening
∞ webs
webs (sheets)
- websites**
(added March 2001)
DEF Locations on the World Wide Web providing a collection of linked resources, usually including a homepage, and prepared and maintained as a collection of information by a person, group, or organization.
UF *web sites*
GS resources
. Internet resources
. . **websites**
RT electronic bulletin boards
electronic commerce
information dissemination
information resources management
information systems
internets
on-line systems
World Wide Web
- wedge flow**
GS fluid flow
. **wedge flow**
RT Blasius flow
conical flow
Falkner-Skan equation
flow geometry
laminar flow
shock waves
supersonic flow
three dimensional flow
two dimensional flow
viscous flow
- wedges**
RT aerodynamic configurations
airfoil profiles
airfoils
- Weibel instability**
DEF An instability of collisionless plasmas characterized by the unstable growth of transverse electromagnetic waves and large magnetic field fluctuation brought about by an anisotropic distribution of electronic velocities.
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . flow stability
. . . . magnetohydrodynamic stability
. **Weibel instability**
. flow characteristics
. . flow stability
. . . magnetohydrodynamic stability
. . . . **Weibel instability**
stability
. dynamic stability
. . motion stability
. . . flow stability
. . . . magnetohydrodynamic stability
. **Weibel instability**
RT plasma interactions
- Weibull density functions**
GS functions (mathematics)
. probability density functions
. . **Weibull density functions**
statistical analysis
- . probability density functions
. . **Weibull density functions**
RT exponential functions
fatigue tests
sampling
- Weierstrass functions**
GS analysis (mathematics)
. real variables
. . **Weierstrass functions**
RT elliptic functions
Jacobi integral
- ∞ **weight**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The force exerted on a body by gravity.
RT atomic weights
biomass
coefficients
payloads
weight (mass)
- weight (mass)**
UF *weight factors*
GS **weight (mass)**
. atomic weights
. biomass
. body weight
. organ weight
. structural weight
RT center of mass
∞ force
gravitation
loads (forces)
low molecular weights
mascons
mass
molecular weight
payloads
pressure
volume
∞ weight
- weight analysis**
RT ∞ analyzing
NEW MOONS project
preflight analysis
structural weight
systems analysis
- weight factors*
USE **weight (mass)**
- weight indicators**
UF *wind tunnel balances*
GS measuring instruments
. indicating instruments
. . **weight indicators**
. . . microbalances
. . . strain gage balances
. . . thermobalances
RT balance
mechanical measurement
pressure gages
pressure measurement
∞ scale
strain gages
tensometers
- weight measurement**
UF *microweighing*
RT density (mass/volume)
hydrometers
∞ measurement
- weight reduction**
RT aircraft design
materials selection
spacecraft design
structural design
structural weight
systems analysis
- weighting functions**
GS analysis (mathematics)
. real variables
. . measure and integration
. . . **weighting functions**
functions (mathematics)

weightless fluids

. weighting functions

RT meshfree methods
statistical mechanics

weightless fluids

RT ∞ fluids
viscous fluids

weightlessness

DEF A condition in which no acceleration, whether of gravity or other force, can be detected by an observer within the system in question. Used for zero gravity.

UF *zero gravity*

RT aerospace medicine
artificial gravity
astronaut performance

∞ astronautics
bioprocessing
blackout prevention
body weight
bone demineralization
clinorotation
containerless melts
disorientation
drop towers
electrolyte metabolism
environments
extravehicular activity
flight stress (biology)
free fall
gravitation
gravitational effects
intravehicular activity
life support systems
low weight
lower body negative pressure
microgravity
neutral buoyancy simulation
parabolic flight
space adaptation syndrome
space flight stress
space manufacturing
Space Processing Applications
Rocket
spaceborne experiments
spacecraft environments
suborbital flight

weightlessness simulation

GS simulation
. environment simulation
. . space environment simulation
. . . **weightlessness simulation**
. . . neutral buoyancy simulation

RT clinorotation
clinostats
flight simulation
head down tilt
head up tilt
hindlimb suspension
Langley complex coordinator
parabolic flight
submerging
tilt-table test

Weinberg-Salam Gauge Model

USE **electroweak model**

weld strength

GS mechanical properties
. **weld strength**

RT ∞ strength
weldability
welded joints

weld tests

RT fatigue tests
∞ tests
welded joints

weldability

RT brittleness
ductility
heat affected zone
weld strength

welded joints

GS joints (junctions)
. metal joints

. . . welded joints

RT beads
bonded joints
butt joints
friction stir welding
lap joints
riveted joints
weld strength
weld tests
welding

welded structures

GS **welded structures**
. steel structures

RT rigid structures
∞ structures

welding

DEF Joining two or more pieces of metal by applying heat, pressure, or both, with or without filler material to produce a localized union through fusion or recrystallization across the interface.

GS welding

. fusion welding
. . electric welding
. . . arc welding
. . . . gas tungsten arc welding
. . . . plasma arc welding
. . . electroslag welding
. . . flash welding
. . electron beam welding
. . gas welding
. . . brazing
. . . low temperature brazing
. . laser welding
. pressure welding
. . cold welding
. . diffusion welding
. . explosive welding
. . friction welding
. . . friction stir welding
. . ultrasonic welding

RT backups
beads
bonding
construction
fillets
flame plating
fluxes
fusibility
heat affected zone
∞ joining
metal bonding
metal-metal bonding
sealing
soldering
torches
welded joints

welding machines

RT ∞ electric equipment
electric welding
∞ machinery
torches

wells

RT aquifers
drilling
ground water
limnology
oases
springs (water)
square wells
stratigraphy

Wentzel-Kramer-Brillouin method

UF *WKB approximation*

RT de Broglie wavelengths
∞ methodology
perturbation theory
Planck's constant
Schroedinger equation

Weser aircraft

RT ∞ aircraft
helicopters
rotary wing aircraft

V/STOL aircraft

West comet

DEF A comet discovered in 1976. .

GS celestial bodies
. comets
. . **West comet**

RT solar system

West Ford project

GS programs
. projects
. . **West Ford project**

West Germany

UF *Federal Republic of Germany*

GS nations
. **West Germany**

RT Alps Mountains (Europe)
Azur satellite
Central Europe
East Germany
Europe
German Infrared Laboratory
German space program
Germany

West Indies

GS landforms
. islands
. . **West Indies**
. . . Antigua and Barbuda
. . . Bahamas
. . . Barbados
. . . Cuba
. . . Dominica
. . . Grenada
. . . Guadeloupe
. . . Haiti
. . . Jamaica
. . . Lesser Antilles
. . . Martinique
. . . Puerto Rico
. . . Trinidad and Tobago
. . . Virgin Islands

RT Atlantic Ocean
Caribbean region

West Virginia

GS nations
. United States
. . **West Virginia**

RT Allegheny Plateau (US)
Ohio River (US)
Potomac River Valley (MD-VA-WV)

Westar satellites

GS artificial satellites
. communication satellites
. . **Westar satellites**

RT point to point communication
telecommunication
telegraph systems

Western hemisphere

RT Earth (planet)
Eastern Hemisphere
geography

Westland aircraft

GS **Westland aircraft**
. P-531 helicopter
. Westland Whirlwind helicopter

RT ∞ aircraft
helicopters
rotary wing aircraft
V/STOL aircraft

Westland ground effect machines

UF *SR-N2 ground effect machine*
SR-N3 ground effect machine
SR-N5 ground effect machine
Westland SR-N2 ground effect machine
Westland SR-N2 hovercraft
Westland SR-N3 ground effect machine
Westland SR-N3 hovercraft
Westland SR-N5 ground effect machine

GS ground effect machines
 . **Westland ground effect machines**
 RT ∞ aircraft

Westland MK-10 helicopter
 USE **Westland Whirlwind helicopter**

Westland P-531 helicopter
 USE **P-531 helicopter**

Westland SR-N2 ground effect machine
 USE **Westland ground effect machines**

Westland SR-N2 hovercraft
 USE **Westland ground effect machines**

Westland SR-N3 ground effect machine
 USE **Westland ground effect machines**

Westland SR-N3 hovercraft
 USE **Westland ground effect machines**

Westland SR-N5 ground effect machine
 USE **Westland ground effect machines**

Westland Whirlwind helicopter
 UF *Westland MK-10 helicopter*
Whirlwind MK-10 helicopter
 GS V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 . . . **Westland Whirlwind helicopter**
Westland aircraft
 . **Westland Whirlwind helicopter**
 RT ∞ aircraft

wet cells
 GS electrochemical cells
 . electric batteries
 . . **wet cells**
 RT ∞ electric cells
 electrolytes
 fuel cells
 nonaqueous electrolytes
 primary batteries

wet spinning
 DEF The production of synthetic and man-made filaments by extruding the chemical solution through spinnerets into a chemical bath where they coagulate.
 RT extruding fibers
 ∞ filaments
 ∞ processing synthetic fibers
 textiles
 wetting

wetlands
 DEF Lands which have the water table at, near, or above the land surface, or which are saturated for long enough periods to promote hydrophylic vegetation and various kinds of biological activity which are adapted to the wet environment.
 GS land

. **wetlands**
 . . marshlands
 RT coastal currents
 coastal ecology
 coastal plains
 coastal water
 environment effects
 fisheries
 marine biology
 marine environments
 marine resources
 nearshore water
 oceanography
 oil pollution
 sea grasses
 shorelines
 tides
 water resources
 waterfowl

wildlife
wetness
 USE **moisture content**

wettability
 RT adhesion
 adhesion tests
 formations
 hydrophobicity
 hygroscopicity
 permeability
 porosity
 surface properties
 wetting

wetting
 RT cooling
 dipping
 foaming
 hydrophobicity
 interfacial tension
 ∞ saturation
 ∞ soaking
 soaps
 spraying
 sprinkling
 submerging
 wet spinning
 wettability

whales
 GS animals
 . vertebrates
 . . mammals
 . . . marine mammals
 . . . **whales**

wharves
 UF *piers*
 RT cargo ships
 dams
 Earth resources
 freighters
 harbors
 marine technology
 materials handling
 ∞ ports
 rivers
 ship terminals
 tanker ships
 terminal facilities
 water

wheat
 GS farm crops
 . grains (food)
 . . **wheat**
 RT crop growth
 crop vigor
 ∞ crops
 rice

Wheatstone bridges
 GS circuits
 . electric bridges
 . . wire bridge circuits
 . . . **Wheatstone bridges**
 RT measuring instruments
 ohmmeters

wheel brakes
 GS brakes (for arresting motion)
 . **wheel brakes**
 RT aircraft brakes
 aircraft safety
 antiskid devices
 controllability
 friction
 hydraulic equipment
 landing gear
 tires
 vehicle wheels

wheelchairs
 DEF Four wheeled ambulatory devices for persons with minimal or no use of lower extremities which can be either manually or electrically powered. They are often individually fitted.
 RT disabilities

human factors engineering
 locomotion
 ramps (structures)

wheels
 DEF Rims fitted with disks for affixment to axles.
 GS

wheels
 . counter-rotating wheels
 . flywheels
 . reaction wheels
 . toroidal wheels
 . turbine wheels
 . vehicle wheels
 . . nose wheels
 . water wheels
 RT bearings
 brakes (for arresting motion)
 gears
 hubs
 landing gear
 pulleys
 rollers
 rotors
 shafts (machine elements)
 spokes
 tires

whip antennas
 DEF Thin flexible monopole antennas.
 GS antennas
 . omnidirectional antennas
 . . monopole antennas
 . . . **whip antennas**
 RT radio antennas

whiplash injuries
 GS injuries
 . **whiplash injuries**
 RT back injuries
 crash injuries
 spinal cord injuries

whirl
 USE **rotation**

whirl instability
 USE **rotary stability**

whirl towers
 RT helicopter design
 hovering
 hovering stability
 parachutes
 rotary wings
 rotor aerodynamics
 spin tests

whirling
 USE **rotation**

whirling tests
 USE **spin tests**

Whirlwind MK-10 helicopter
 USE **Westland Whirlwind helicopter**

whisker composites
 UF *metal whisker reinforcement*
 GS composite materials
 . **whisker composites**
 RT aramid fiber composites
 eutectic alloys
 metal matrix composites
 reinforcing fibers

whiskers (crystals)
 GS crystals
 . **whiskers (crystals)**
 RT dendritic crystals
 fibers
 ∞ filaments

whispering gallery modes
(added September 1988)
 DEF Electromagnetic (or elastic) waves that differ in frequency by more than an order of magnitude.
 GS modes
 . propagation modes
 . . **whispering gallery modes**

whistler recorders

RT acoustic frequencies
acoustic propagation
electromagnetic radiation
electromagnetic wave transmission
wave propagation
wavelengths

whistler recorders

GS communication equipment
. radio receivers
. . . **whistler recorders**
radio equipment
. radio receivers
. . . **whistler recorders**
receivers
. radio receivers
. . . **whistler recorders**
recording instruments
. **whistler recorders**
RT sonograms

whistlers

DEF Radiofrequency electromagnetic signals generated by some lightning discharges.
GS atmospheric radiation
. ionospheric noise
. . . **whistlers**
electromagnetic interference
. radio frequency interference
. . . electromagnetic noise
. . . . atmospheric
. . . . **whistlers**
. . . ionospheric noise
. . . . **whistlers**
electromagnetic radiation
. radio waves
. . sky waves
. . . **whistlers**
RT dawn chorus
electromagnetic fields
lightning
microwaves
radio signals
sonograms

white blood cells

USE **leukocytes**

white dwarf stars

GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . **white dwarf stars**
RT cataclysmic variables
degenerate matter
dwarf novae
dwarf stars
red dwarf stars
subdwarf stars
supernova remnants
Wolf-Rayet stars

white holes (astronomy)

DEF Time-reversed black holes, expanding sources with growing intensity and photon energy.
GS celestial bodies
. stars
. . **white holes (astronomy)**
RT black holes (astronomy)
cosmology
electromagnetic radiation
event horizon
gravitational collapse
gravitational lenses
light emission
naked singularities
supernova remnants

white light holography

GS imagery
. photography
. . holography
. . . **white light holography**
RT data storage
holographic optical elements

wave front reconstruction

∞ patterns

white noise

DEF A sound or electromagnetic wave whose spectrum is continuous and uniform as a function of frequency. Used for spectral noise.
UF *spectral noise*
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . **white noise**
. . . . thermal noise
RT electromagnetic noise measurement
jamming
∞ noise
noise (sound)
noise spectra
random noise
signal to noise ratios
spectral bands

white smokers (oceanography)
(added April 2005)

USE **submarine hydrothermal vents**

whiteout

RT visibility
visual flight

Whitham rule

GS rules
. **Whitham rule**
RT shock waves
wave propagation

Whittaker functions

GS analysis (mathematics)
. real variables
. . **Whittaker functions**
functions (mathematics)
. **Whittaker functions**
RT differential equations

wicks

RT fuses (ordnance)

wide angle lenses

GS lenses
. **wide angle lenses**
optical equipment
. **wide angle lenses**
RT all sky photography
cameras
panoramic cameras

wide area networks

(added August 1995)
UF *WAN*
GS networks
. communication networks
. . **wide area networks**
. computer networks
. . **wide area networks**
RT distributed processing
local area networks
packets (communication)
telecommunication

wideband

USE **broadband**

wideband communication

GS telecommunication
. **wideband communication**
RT broadband amplifiers
code division multiple access
multiple access
point to point communication
time division multiple access
tropospheric scattering

Widmanstätten structure

GS crystal structure
. **Widmanstätten structure**
microstructure
. **Widmanstätten structure**
RT iron meteorites
metallography
meteoritic microstructures

width

GS dimensions
. **width**
RT bandwidth
∞ span

Wiener filtering

RT electric filters
optimization
statistical analysis

Wiener Hopf equations

GS analysis (mathematics)
. functional analysis
. . integral equations
. . . **Wiener Hopf equations**
RT ∞ equations

WIG vehicles

(added December 1999)

USE **wing-in-ground effect vehicles**

wiggler magnets

DEF Components used in the production of coherent x rays by the pumping of a gas with synchrotron radiation in combination with low energy photon beams.
GS magnets
. **wiggler magnets**
reflectors
. **wiggler magnets**
RT diffraction radiation
free electron lasers
laser pumping
tunable lasers

Wightman theory

USE **field theory (physics)**
quantum theory
relativistic theory

Wigner coefficient

GS coefficients
. **Wigner coefficient**
RT angular momentum
quantum mechanics

Wild 2 comet

(added March 1999)
DEF Periodic comet, discovered January 1978, relatively new to the inner Solar System due to a shift in its orbit caused by the gravitational influence of Jupiter.
GS celestial bodies
. comets
. . **Wild 2 comet**
RT Stardust Mission

wilderness

RT deserts
forests
land management
plains
remote regions
rural areas

wildlife

GS animals
. **wildlife**
RT birds
endangered species
environment effects
fishes
habitats
wetlands

wildlife radiolocation

GS tracking (position)
. radio tracking
. . **wildlife radiolocation**
RT animals
bioinstrumentation
biotelemetry
radio transmitters
remote sensors
satellite instruments
satellite observation

triangulation

zonal flow (meteorology)

supersonic test apparatus

Williston Basin (North America)

- GS landforms
 - . structural basins
 - . . **Williston Basin (North America)**
- RT Canada
 - Montana
 - North America
 - North Dakota

*WIMPs (astronomy)**(added November 1999)*

- USE **weakly interacting massive particles**

winches

- RT cranes
 - elevators (lifts)
- ∞ lifts
 - pulleys

wind (meteorology)

DEF A natural motion of the air, especially a noticeable current of air moving in the atmosphere parallel to the Earth's surface.

- GS **wind (meteorology)**
 - . circumpolar westerlies
 - . ground wind
 - . gusts
 - . monsoons
 - . sea breeze
 - . squalls
 - . winds aloft
 - . . geostrophic wind
 - . . jet streams (meteorology)

- RT aeolian tones
 - aerology
 - air currents
 - air pollution
 - Alpine meteorology
 - anemometers
 - atmospheric circulation
 - barotropic flow
 - ∞ barriers
 - blowing
 - climatology
 - cyclones
 - gravity waves
 - hot-film anemometers
 - jimsphere balloons
 - marine meteorology
 - meridional flow
 - mesoscale phenomena
 - meteorology
 - mixing height
 - pressure ice
 - ripples
 - storm damage
 - storms
 - storms (meteorology)
 - thunderstorms
 - tidal waves
 - tornadoes
 - upwelling water
 - vertical air currents
 - weather
 - weather forecasting
 - windmills (windpowered machines)
 - windpower utilization
 - windpowered generators
 - zonal flow (meteorology)

wind circulation

- USE **atmospheric circulation**

wind direction

DEF The direction from which the wind is blowing, measured in points of the compass or in azimuth degree.

- RT atmospheric circulation
 - ground wind
 - meridional flow
 - meteorological parameters
 - sea breeze
 - smoke trails
 - upstream
 - upwelling water
 - windmills (windpowered machines)
 - windpowered generators

wind effects

- RT atmospheric effects
 - dunes
 - dust storms
- ∞ effects
 - erosion
 - ground wind
 - pressure effects
 - sea breeze
 - sea roughness
 - sea states
 - soil erosion
 - turbulence
 - water circulation

wind energy

- USE **windpower utilization**

wind erosion

- GS erosion
 - . **wind erosion**
- RT atmospheric effects
 - ground wind
 - sea breeze
 - water erosion

wind measurement

- GS mechanical measurement
 - . **wind measurement**
 - . . wind velocity measurement
- RT aerodynamics
 - anemometers
 - hot-film anemometers
 - ∞ measurement
 - meteorological parameters
 - meteorology
 - QuikSCAT satellite
 - rawinsondes
 - sea breeze
 - smoke trails
 - sodar

wind pressure

- GS pressure
 - . **wind pressure**
- RT dynamic loads
 - ground wind
 - gust loads
 - loads (forces)
 - windpower utilization
 - windpowered generators

wind profiles

- RT atmospheric circulation
 - ground wind
 - ∞ profiles
 - radial distribution
 - smoke trails
 - sodar
 - vertical distribution
 - zonal flow (meteorology)

Wind River Range (WY)

- GS landforms
 - . mountains
 - . . **Wind River Range (WY)**
- RT Wyoming

wind shear

DEF A sharp change in wind speed and direction over a short distance

- UF *Dungeys wind shear mechanism*
- RT aviation meteorology
 - barotropic flow
 - clear air turbulence
 - downbursts
 - geostrophic wind
 - ground wind
 - microbursts (meteorology)

wind tunnel apparatus

- UF *wind tunnel balances*
- GS **wind tunnel apparatus**
 - . wind tunnel drives
 - . wind tunnel nozzles
- RT ∞ equipment

wind tunnel balances

- USE **weight indicators**
- wind tunnel apparatus**

wind tunnel calibration

- GS calibrating
 - . **wind tunnel calibration**
- RT measuring instruments
 - pressure measurement
 - scaling laws
 - temperature measurement

wind tunnel drives

- GS wind tunnel apparatus
 - . **wind tunnel drives**
- RT ∞ drives
 - ∞ fans
 - mechanical drives
 - plasma generators
 - pressure chambers
 - vacuum chambers

wind tunnel models

- GS models
 - . **wind tunnel models**
 - . . powered models
- RT aerodynamic configurations
 - aircraft models
 - dynamic models
 - flow visualization
 - ∞ missile simulators
 - pylon mounting
 - scale models
 - semispan models
 - shadowgraph photography
 - ∞ test equipment

wind tunnel nozzles

- GS wind tunnel apparatus
 - . **wind tunnel nozzles**
- RT conical nozzles
 - convergent-divergent nozzles
 - divergent nozzles
 - hypersonic nozzles
 - ∞ nozzles
 - supersonic nozzles
 - transonic nozzles

wind tunnel stability tests

- GS stability tests
 - . **wind tunnel stability tests**
- RT aerodynamic stability
 - aircraft stability
 - missile tests
 - spacecraft stability
 - ∞ tests

wind tunnel tests

- RT aerodynamic characteristics
 - air data systems
 - density measurement
 - flow distribution
 - pressure measurement
 - ∞ tests
 - trisonic wind tunnels
 - water tunnel tests

wind tunnel walls

- GS walls
 - . **wind tunnel walls**
- RT pressure vessels
 - reinforced shells

wind tunnels

DEF Tubelike structures or passages, sometimes continuous, together with their adjuncts, in which high speed movements of air or other gases are produced, as by fans, and within which objects such as engines or aircraft, airfoils, rockets (or models of these objects), are placed to investigate the airflow about them and the aerodynamic forces acting upon them.

- GS test facilities
 - . **wind tunnels**
 - . . blowdown wind tunnels
 - . . combustion wind tunnels
 - . . cryogenic wind tunnels
 - . . hypersonic wind tunnels

wind turbines

- . . . cascade wind tunnels
- . . . hotshot wind tunnels
- . . . plasma jet wind tunnels
- . . . shock tunnels
- . . . hypervelocity wind tunnels
- . . . cascade wind tunnels
- . . . hotshot wind tunnels
- . . . plasma jet wind tunnels
- . . . shock tunnels
- . . . low density wind tunnels
- . . . low speed wind tunnels
- . . . subsonic wind tunnels
- . . . rectangular wind tunnels
- . . . slotted wind tunnels
- . . . supersonic wind tunnels
- . . . transonic wind tunnels
- . . . trisonic wind tunnels

RT aerodynamics
exhaust flow simulation
flight simulators
gas guns
gas streams
hypersonic flow
spikes (aerodynamic configurations)
supersonic flow
test chambers
∞ test equipment
transonic flow
∞ tunnels

wind turbines

DEF Machines which convert wind energy into electricity.

GS turbomachinery
. turbines
. . **wind turbines**
. . . tip vanes

RT turbogenerators
wind velocity
windmills (windpowered machines)
windpower utilization
windpowered generators

wind vanes

GS display devices
. flow direction indicators
. . **wind vanes**
measuring instruments
. indicating instruments
. . flow direction indicators
. . . **wind vanes**
. meteorological instruments
. . **wind vanes**
vanes
. **wind vanes**
RT anemometers
hot-film anemometers

wind variations

GS variations
. **wind variations**
RT annual variations
atmospheric turbulence
diurnal variations
seasons

wind velocity

GS rates (per time)
. **wind velocity**
. . solar wind velocity
velocity
. **wind velocity**
. . solar wind velocity
RT airspeed
anemometers
flow measurement
Fujita method
ground wind
hot-film anemometers
meteorological parameters
sea roughness
wind turbines
windmills (windpowered machines)
windpower utilization
windpowered generators

wind velocity measurement

GS mechanical measurement
. velocity measurement
. . **wind velocity measurement**

. wind measurement
. . **wind velocity measurement**
RT anemometers
hot-film anemometers

Wind/GGS spacecraft

(added January 2001)

DEF One of two NASA spacecraft in the Global Geospace Science (GGS) initiative and part of the International Solar Terrestrial Physics (ISTP) program. The main purpose of the Wind spacecraft is to measure the incoming solar wind, magnetic fields, and particles, although early in its mission Wind observed the Earth foreshock region. The spacecraft was launched in November 1994.

GS artificial satellites
. geophysical satellites
. . **Wind/GGS spacecraft**
. scientific satellites
. . **Wind/GGS spacecraft**
RT Earth magnetosphere
gamma rays
interplanetary magnetic fields
Polar/GGS spacecraft
solar corpuscular radiation
solar terrestrial interactions
solar wind
space plasmas

winding

GS **winding**
. filament winding
. helical windings
. wire winding
RT cold working
leveling
metal working
spindles
spiral wrapping
stretching
twisting

windmilling

USE **autorotation**

windmills (windpowered machines)

RT electric generators
gears
ground wind
∞ machinery
mechanical drives
∞ power transmission
∞ pumping
wind (meteorology)
wind direction
wind turbines
wind velocity
windpower utilization
windpowered generators
windpowered pumps

window atmosphere sounding projectile

USE **WASP sounding rocket**

∞ windows

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT infrared windows
ports (openings)
waveguide windows
windows (apertures)
windows (intervals)

windows (apertures)

SN (EXCLUDES INTERVALS IN TIME, FREQUENCY, ENERGY AND SO ON)
RT apertures
∞ barriers
curtains
doors
ducts
openings
optical materials
ports (openings)
separators
shielding
vents
∞ windows

windshields

windows (computer programs)

(added July 1993)

GS interfaces
. graphical user interface
. . **windows (computer programs)**
RT computer graphics
operating systems (computers)
real time operation

windows (intervals)

SN (EXCLUDES INTERVALS IN SPACE CONTINUUM)
GS **windows (intervals)**
. laser windows
. launch windows
RT bandwidth
burning time
countdown
energy bands
flight time
testing time
time measurement
∞ windows

windpower utilization

UF *wind energy*
GS renewable energy
. **windpower utilization**
utilization
. **windpower utilization**
RT air currents
air masses
atmospheric circulation
clean energy
Earth resources
ground wind
sea breeze
vanes
wind (meteorology)
wind pressure
wind turbines
wind velocity
windmills (windpowered machines)
windpowered generators
windpowered pumps

windpowered generators

RT electric generators
∞ generators
ground wind
vanes
wind (meteorology)
wind direction
wind pressure
wind turbines
wind velocity
windmills (windpowered machines)
windpower utilization

windpowered pumps

GS pumps
. **windpowered pumps**
RT ponds
∞ pumping
reservoirs
vanes
water
water resources
windmills (windpowered machines)
windpower utilization

winds aloft

GS wind (meteorology)
. **winds aloft**
. . geostrophic wind
. . jet streams (meteorology)
RT circumpolar westerlies
sea breeze
vertical air currents

windscreens

USE **windshields**

windshields

UF *windscreens*
RT aircraft compartments
canopies
cockpits
environmental control

- locomotives
- shielding
- windows (apertures)
- wines**
 - GS liquids
 - . potable liquids
 - . . beverages
 - . . . **wines**
 - RT vineyards
- wing camber**
 - GS camber
 - . **wing camber**
 - RT cambered wings
 - . conical camber
 - . mission adaptive wings
- wing flaps**
 - UF *jet augmented wing flaps*
 - GS airfoils
 - . flaps (control surfaces)
 - . . **wing flaps**
 - . . . leading edge flaps
 - . . . leading edge slats
 - . . . trailing edge flaps
 - . . . vortex flaps
 - . . . brakes (for arresting motion)
 - . . . aerodynamic brakes
 - . . . **wing flaps**
 - . . . leading edge flaps
 - . . . leading edge slats
 - . . . trailing edge flaps
 - . . . vortex flaps
 - . . . control surfaces
 - . . . flaps (control surfaces)
 - . . . **wing flaps**
 - . . . leading edge flaps
 - . . . leading edge slats
 - . . . trailing edge flaps
 - . . . vortex flaps
 - . . . drag devices
 - . . . aerodynamic brakes
 - . . . **wing flaps**
 - . . . leading edge flaps
 - . . . leading edge slats
 - . . . trailing edge flaps
 - . . . vortex flaps
 - RT externally blown flaps
 - . jet flaps
 - . split flaps
 - wing flow method tests**
 - RT flight tests
 - . fluid flow
 - . ground tests
 - ∞ methodology
 - ∞ tests
 - . transonic wind tunnels
 - wing icing*
 - USE **aircraft icing**
 - wing loading**
 - GS aerodynamic forces
 - . **wing loading**
 - . loads (forces)
 - . dynamic loads
 - . . **wing loading**
 - RT aerodynamic loads
 - . aeroelasticity
 - . edge loading
 - . force distribution
 - . gust loads
 - . leading edge thrust
 - . static loads
 - . sweep effect
 - . vortex flaps
 - wing nacelle configurations**
 - DEF Aerodynamic configurations involving various arrangements of wings and nacelles (over-the-wing, etc.).
 - UF *nacelle wing configurations*
 - GS aerodynamic configurations
 - . **wing nacelle configurations**
 - RT ∞ aircraft
 - . airframes
 - . externally blown flaps
 - wing oscillations**
 - GS oscillations
 - . airfoil oscillations
 - . . **wing oscillations**
 - . . . wing rock
 - RT aerodynamic stability
 - . aeroelastic research wings
 - . flapping
 - . flutter
 - . stable oscillations
 - . undamped oscillations
 - . unsteady aerodynamics
 - . vibration
 - wing panels**
 - GS panels
 - . **wing panels**
 - . structural members
 - . **wing panels**
 - RT curved panels
 - . rectangular panels
 - . wings
 - wing planforms**
 - GS planforms
 - . **wing planforms**
 - . . channel wings
 - . . infinite span wings
 - . . swept forward wings
 - . . . trapezoidal wings
 - . . . sweptback wings
 - . . . arrow wings
 - . . . delta wings
 - . . . trapezoidal wings
 - . . . variable sweep wings
 - RT HP-115 aircraft
 - . low aspect ratio wings
 - . monoplanes
 - . oblique wings
 - . rectangular planforms
 - . slender wings
 - . swept wings
 - . swing wings
 - . thrust distribution
 - . unswept wings
 - wing profiles**
 - GS airfoil profiles
 - . **wing profiles**
 - . . wing span
 - RT aerodynamic interference
 - . GAW-1 airfoil
 - . GAW-2 airfoil
 - . mission adaptive wings
 - . monoplanes
 - . supercritical wings
 - . swing wings
 - . wings
 - wing rock**
 - (added October 1997)
 - DEF A high angle-of-attack, nonlinear, dynamic phenomenon of limited cycle motion predominantly in roll.
 - GS oscillations
 - . airfoil oscillations
 - . . wing oscillations
 - . . . **wing rock**
 - RT aerodynamic stability
 - . aircraft stability
 - . angle of attack
 - . delta wings
 - . lateral oscillation
 - . leading edges
 - . roll
 - . slender wings
 - wing roots**
 - RT aerodynamic configurations
 - . aircraft configurations
 - . drooped airfoils
 - . fairings
 - ∞ roots
 - wing slats*
 - USE **leading edge slats**
 - wing slots**
 - GS slots
 - . **wing slots**
 - . boundary layer control
 - . leading edge slats
 - . tangential blowing
 - . vortex generators
 - wing span**
 - GS airfoil profiles
 - . wing profiles
 - . . **wing span**
 - RT ∞ span
 - . spanwise blowing
 - . wings
 - wing tanks**
 - GS tanks (containers)
 - . fuel tanks
 - . . **wing tanks**
 - RT ∞ containers
 - . external store separation
 - . external stores
 - . external tanks
 - . jettison systems
 - . wing-fuselage stores
 - wing tip vortices**
 - GS vortices
 - . **wing tip vortices**
 - RT blade-vortex interaction
 - . flow distortion
 - . horseshoe vortices
 - . rotating fluids
 - wing tips**
 - GS tips
 - . **wing tips**
 - RT airfoil profiles
 - . blade tips
 - . joined wings
 - . wings
 - wing-body and tail configurations*
 - (added August 1998)
 - USE **body-wing and tail configurations**
 - wing-body configurations*
 - (added August 1998)
 - USE **body-wing configurations**
 - ∞ **winged vehicles**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT ∞ aircraft
 - . B-1 aircraft
 - . drone vehicles
 - . Firebee 2 target drone aircraft
 - . gliders
 - . hang gliders
 - . hypersonic vehicles
 - . jet aircraft
 - . launch vehicles
 - . leading edge flaps
 - . man powered aircraft
 - . missiles
 - . monoplanes
 - . recoverable launch vehicles
 - . recoverable spacecraft
 - . reentry vehicles
 - . research aircraft
 - . rocket vehicles
 - . short takeoff aircraft
 - . supercritical wings
 - . ultralight aircraft
 - ∞ vehicles
 - . vertical takeoff aircraft
 - . wings
 - wing-fuselage stores**
 - UF *fuselage-wing stores*
 - RT external store separation
 - . external stores
 - . fuselages
 - . nacelles

wing-in-ground effect vehicles

- pods (external stores)
- protuberances
- ∞ storage
- storage tanks
- tanks (containers)
- weapons
- wing tanks

wing-in-ground effect vehicles

(added December 1999)

DEF Vehicles designed to fly about half their mean chord above the surface, taking advantage of the reduced drag and increased lift caused by ground effect. These vehicles, also known as WIGs or WIGEs, normally operate above a water surface.

UF *ekranoplanes*

WIG vehicles

GS ground effect machines

. **wing-in-ground effect vehicles**

RT ground effect (aerodynamics)

surface effect ships

winglets

DEF In aerospace engineering, small nearly vertical, winglike surfaces mounted rearward above the wing tips to reduce drag coefficients at lifting conditions.

RT drag reduction

fins

protuberances

vortex alleviation

vortex avoidance

wings

wings

UF *cantilever wings*

GS airfoils

. **wings**

. . . aeroelastic research wings

. . . cambered wings

. . . caret wings

. . . channel wings

. . . cruciform wings

. . . fixed wings

. . . flexible wings

. . . . parawings

. . . GAW-1 airfoil

. . . GAW-2 airfoil

. . . joined wings

. . . low aspect ratio wings

. . . . delta wings

. . . . trapezoidal wings

. . . mission adaptive wings

. . . oblique wings

. . . rigid wings

. . . rotary wings

. . . . circulation control rotors

. . . . lifting rotors

. bearingless rotors

. rigid rotors

. tilting rotors

. tip driven rotors

. x wing rotors

. . . slender wings

. . . . infinite span wings

. . . supercritical wings

. . . swept wings

. . . . swept forward wings

. trapezoidal wings

. sweptback wings

. arrow wings

. delta wings

. trapezoidal wings

. . . swing wings

. . . thin wings

. . . . infinite span wings

. . . twisted wings

. . . uncambered wings

. . . . ring wings

. . . unswept wings

. . . . infinite span wings

. rectangular wings

. ring wings

. . . variable sweep wings

RT aircraft construction materials

aircraft parts

aircraft structures

airfoil fences

airframes

- aspect ratio
- blunt trailing edges
- body-wing and tail configurations
- body-wing configurations
- coatings
- control surfaces
- drooped airfoils
- dual wing configurations
- leading edge flaps
- missile components
- porous boundary layer control
- rotors
- spoilers
- wing panels
- wing profiles
- wing span
- wing tips
- ∞ winged vehicles
- winglets

winter

GS seasons

. **winter**

RT autumn

cold weather

equinoxes

pressure ice

solstices

spring (season)

summer

wire

DEF A rod or filament of drawn or rolled metal whose length is great in comparison with the major axis of its cross section.

GS **wire**

. electric wire

. exploding wires

. guy wires

RT

billets

cables (ropes)

∞ coils

cordage

fasteners

∞ filaments

flat conductors

jumpers

reinforcement (structures)

rods

wiring

wire bridge circuits

GS circuits

. electric bridges

. . . **wire bridge circuits**

. . . . Wheatstone bridges

RT

electric wire

exploding wires

wire cloth

UF *wire mesh*

RT

fabrics

reinforcement (structures)

∞ screens

sieves

wire grid lenses

GS lenses

. **wire grid lenses**

reticles

. **wire grid lenses**

RT

∞ grids

lens antennas

magnetic lenses

turnstile antennas

wire mesh

USE **wire cloth**

wire winding

GS winding

. **wire winding**

RT

magnet coils

wiring

wireless communication

UF *carrier systems*

GS telecommunication

. **wireless communication**

RT

aircraft communication

- closed circuit television
- communication satellites
- data links
- data transmission
- digital spacecraft television
- facsimile communication
- Iridium network
- optical communication
- radio telemetry
- signal transmission
- space communication
- spacecraft communication
- telemetry
- voice communication

wiring

SN (PROCESS--AS DISTINGUISHED FROM MATERIAL)

UF *electric wiring*

wiring systems

RT

bundles

circuits

electrical insulation

flat conductors

splicing

transmission lines

wire

wire winding

wiring systems

USE **wiring**

Wisconsin

GS nations

. United States

. . **Wisconsin**

Wiswesser notations

GS classifications

. indexes (documentation)

. . **Wiswesser notations**

coding

. **Wiswesser notations**

RT

∞ chemical compounds

∞ chemistry

identifying

molecular structure

∞ reference systems

WKB approximation

USE **Wentzel-Kramer-Brillouin method**

wolfram

USE **tungsten**

Wolf-Rayet stars

DEF Very luminous, very hot (as high as 50,000K) stars whose spectra have broad emission lines (mainly He I and He II, which are presumed to originate from material ejected from the stars at very high velocities. Some W-R spectra show emission lines due to carbon CWC stars; others show emission lines due to nitrogen (WN stars). Used for W stars and W-R stars.

UF *W stars*

W-R stars

GS

celestial bodies

. stars

. . early stars

. . . hot stars

. . . . **Wolf-Rayet stars**

RT

A stars

astrophysics

B stars

carbon stars

celestial mechanics

ejecta

helium

nitrogen

O stars

stellar envelopes

stellar luminosity

stellar mass ejection

white dwarf stars

wolves

GS animals

. vertebrates

. . mammals

. . . **wolves**

- RT dogs
- women*
USE **females**
- wood**
GS **wood**
. cork (materials)
. plywood
RT balsa
cellulose
Masonite (trademark)
organic materials
paper (material)
plants (botany)
slivers
trees (plants)
wooden structures
- wooden structures**
RT plywood
 ∞ structures
wood
- wool**
SN (LIMITED TO ANIMAL FIBERS)
GS fabrics
. **wool**
fibers
. **wool**
RT felts
hair
keratins
organic materials
sheep
yarns
- word processing**
DEF The use of a computer, often with a CRT under full-screen control, to facilitate the recording, storage, editing, updating, and organization of information in the form of words, especially sentential information.
RT computer techniques
data processing
office automation
words (language)
- words (language)**
RT abbreviations
consonants (speech)
conversation
English language
grammars
languages
messages
orthography
phonemes
phonemics
phonetics
semantics
sentences
speech
terminology
terms
thesauri
verbal communication
voice communication
vowels
word processing
- work**
GS **work**
. physical work
RT ∞ energy
heat
horsepower
kinetic energy
occupation
physical factors
- work capacity**
RT hyperkinesia
orbital workers
physical fitness
physical work
workloads (psychophysiology)
- work functions**
UF *Schottky effect*
- RT electron emission
 ∞ functions
ionization potentials
perveance
photoelectric emission
Schottky diodes
thermionic emission
- work hardening**
GS hardening (materials)
. **work hardening**
. . strain hardening
RT cold hardening
mechanical twinning
metal working
peening
shot peening
work softening
- work softening**
DEF The phenomena of a drop in the yield strength of a metal when it has been strained or cold worked at low temperature and subsequently strained at an elevated temperature to cause the dislocations to become unstable.
GS softening
. **work softening**
RT microstructure
plastic deformation
work hardening
- Workhorse helicopter*
USE **CH-21 helicopter**
- working fluids**
DEF Fluids (gas or liquid) used as the medium for the transfer of energy from one part of a system to another.
RT consumables (spacecraft)
ferrofluids
fluid power
fluid transmission lines
 ∞ fluids
high temperature fluids
hydraulic fluids
jet condensers
phase change materials
sulfur hexafluoride
transmission fluids
- workloads (psychophysiology)**
RT fatigue (biology)
human performance
mental performance
physical work
psychomotor performance
psychophysiology
stress (psychology)
work capacity
- work-rest cycle**
GS cycles
. **work-rest cycle**
RT fatigue (biology)
relaxation (physiology)
- workstations**
GS stations
. **workstations**
. . crew workstations
. . . crew experiment stations
. . . crew observation stations
RT human factors engineering
man machine systems
productivity
UNIX (operating system)
- world*
USE **Earth (planet)**
- world data centers**
RT ∞ centers
 ∞ data
data retrieval
data storage
International Geophysical Year
libraries
- transoceanic systems
- World Meteorological Organization**
GS organizations
. **World Meteorological Organization**
RT international cooperation
meteorology
United Nations
- World Weather Watch*
USE **meteorological services**
- World Wide Web**
(added July 1995)
UF *WWW*
GS networks
. communication networks
. . internets
. . . **World Wide Web**
. computer networks
. . internets
. . . **World Wide Web**
RT computer conferencing
electronic bulletin boards
electronic commerce
information transfer
Java (programming language)
protocol (computers)
web services
websites
- worms**
GS animals
. invertebrates
. . **worms**
. . . flatworms
RT infestation
larvae
Rotifera
- wound healing**
GS healing
. **wound healing**
RT injuries
- woven composites**
(added November 1992)
GS composite materials
. fiber composites
. . **woven composites**
RT braided composites
carbon fiber reinforced plastics
epoxy matrix composites
fabrics
glass fiber reinforced plastics
graphite-epoxy composites
reinforcing fibers
three dimensional composites
weaving
- W-R stars*
USE **Wolf-Rayet stars**
- Wrangell Mountains (AK)**
GS landforms
. mountains
. . **Wrangell Mountains (AK)**
RT Alaska
- ∞ **wrap**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT composite wrapping
packaging
- wraparound contact solar cells*
USE **solar cells**
- wreckage**
RT accident investigation
accidents
crashes
sabotage
spacecraft breakup
- wrenches**
GS tools

wrinkling

. wrenches

wrinkling

GS **wrinkling**
. flange wrinkling
RT buckling
deformation
distortion
kinking
∞ ridges

wrist

GS anatomy
. musculoskeletal system
. joints (anatomy)
. . . **wrist**
RT arm (anatomy)
hand (anatomy)

wrought alloys

GS alloys

. wrought alloys

RT Rene 41
Rene 63
Rene 77
Waspaloy

WU-2 aircraft

USE **U-2 aircraft**

wurtzite

GS chalcogenides
. sulfides
. . inorganic sulfides
. . . zinc sulfides
. . . . **wurtzite**
minerals
. **wurtzite**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . zinc sulfides

. . . . **wurtzite**

zinc compounds

. zinc sulfides

. . **wurtzite**

WWW

USE **World Wide Web**

WWW (meteorology)

USE **meteorological services**

Wyoming

GS nations
. United States
. . **Wyoming**
RT Bighorn Mountains (MT-WY)
Black Hills (SD-WY)
Wind River Range (WY)
Yellowstone National Park
(ID-MT-WY)

X

X band
USE **superhigh frequencies**

X mesons

GS particles
. elementary particles
. bosons
. . . mesons
. . . . meson resonance
. **X mesons**
. . . fermions
. . . . meson resonance
. **X mesons**
. . . hadrons
. . . . mesons
. meson resonance
. **X mesons**
. . . nuclear particles
. . . bosons
. . . . mesons
. meson resonance
. **X mesons**
resonance
. meson resonance
. . **X mesons**

x ray absorption

GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . **x ray absorption**

RT ∞ absorption
electron spectroscopy
x ray detectors

x ray analysis

SN (EXCLUDES X RAY STRESS ANALYSIS)
GS **x ray analysis**
. Laue method
. . x ray spectroscopy

RT ∞ analyzing
chemical analysis
crystallography
defects
fluoroscopy
lattice parameters
 ∞ materials tests
microanalysis
microbeams
radiography
radiology
stereochemistry
tomography

x ray apparatus

GS medical equipment
. **x ray apparatus**
. . lixiscopes
. . . x ray tubes

RT ∞ equipment
radiography
x ray detectors

x ray astronomy

GS astronomy
. **x ray astronomy**

RT Constellation-X
cosmic x rays
Exosat satellite
gamma ray astronomy
gamma ray bursts
Ginga satellite
Granat satellite
grazing incidence telescopes
HEAO 4
lixiscopes
radiography
ROSAT mission
SAS-3
Tenma satellite
Uhuru satellite
ultraviolet telescopes
X Ray Astrophysics Facility
x ray binaries
x ray detectors
x ray sources
x ray stars

XMM-Newton telescope

X Ray Astrophysics Facility

DEF Free-flying x ray observatory that is shuttle-launched, maintainable in orbit, and retrievable. Used for Advanced X Ray Astrophysics Facility and AXAF.

UF *Advanced X Ray Astrophysics Facility*
AXAF
Chandra X Ray Astrophysics Facility

GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **X Ray Astrophysics Facility**
observatories
. astronomical observatories
. . astronomical satellites
. . . **X Ray Astrophysics Facility**
payloads
. Space Shuttle payloads
. . **X Ray Astrophysics Facility**
telescopes
. spaceborne telescopes
. . **X Ray Astrophysics Facility**
. . x ray telescopes
. . . **X Ray Astrophysics Facility**

RT astrophysics
 ∞ facilities
spaceborne astronomy
x ray astronomy
XMM-Newton telescope

x ray binaries

DEF Bright galactic x ray sources consisting of a compact star (neutron star or black hole) accreting matter from a close companion star.

GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . **x ray binaries**
. . . x ray stars
. . . . **x ray binaries**
x ray sources
. x ray stars
. . **x ray binaries**

RT accretion disks
astrophysics
black holes (astronomy)
companion stars
cosmic x rays
eclipsing binary stars
neutron stars
stellar mass accretion
x ray astronomy
x rays

x ray density measurement

GS density measurement
. **x ray density measurement**

RT flux density

x ray detectors

(added April 1992)
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . **x ray detectors**

RT bolometers
infrared detectors
multi-anode microchannel arrays
photodiodes
photometers
radiometers
ultraviolet detectors
x ray absorption
x ray apparatus
x ray astronomy
x ray spectroscopy
x ray telescopes
x rays

x ray diffraction

GS diffraction
. **x ray diffraction**

RT crystallography
electron diffraction
Laue method
metallography

radiography
x ray optics

x ray fluorescence

GS emission
. light emission
. . luminescence
. . . fluorescence
. . . . **x ray fluorescence**
. photoluminescence
. **x ray fluorescence**

RT radiography

x ray imagery

DEF Reproduction of an object by means of focusing penetrating electromagnetic radiation (wavelengths ranging from 10-5 to 103 angstroms) coming from the object or reflected by the object. Analogous to infrared imagery, radar imagery and microwave imagery using the IR, radar and microwave frequencies.

GS imagery
. **x ray imagery**

RT imaging techniques
infrared imagery
lixiscopes
microwave imagery
radar imagery
radiography

x ray inspection

GS inspection
. **x ray inspection**

RT nondestructive tests
radiography
 ∞ tests

x ray irradiation

GS irradiation
. **x ray irradiation**

x ray lasers

GS stimulated emission devices
. lasers
. . **x ray lasers**

RT electron transitions
laser outputs

X Ray Multi-Mirror Mission
(added August 2000)

USE **XMM-Newton telescope**

x ray optics

(added January 1994)
DEF The study and application of x ray properties and phenomena that are similar to the optical characteristics of visible light.

RT geometrical optics
grazing incidence
mirrors
 ∞ optics
x ray diffraction
x ray telescopes
x rays

x ray scattering

GS scattering
. wave scattering
. . electromagnetic scattering
. . . **x ray scattering**

RT form factors

x ray sources

GS **x ray sources**
. x ray stars
. . soft gamma repeaters
. . . x ray binaries

RT cooling flows (astrophysics)
cosmic x rays
Exosat satellite
galactic bulge
gamma ray sources (astronomy)
magnetars
 ∞ radiation
ROSAT mission
spectral counterparts (astronomy)
x ray astronomy

x ray spectra

x rays

x ray spectra
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **x ray spectra**
RT Ginga satellite
North Polar Spur (astronomy)
quasars
solar spectra
stellar spectra
Tenma satellite
x ray spectrometers

X ray spectrography
USE **x ray spectroscopy**

x ray spectrometers
(added October 1996)
GS measuring instruments
. spectrometers
. . **x ray spectrometers**
RT spectroscopy
x ray spectra
x ray telescopes

X ray spectrometry
USE **x ray spectroscopy**

X Ray Spectropolarimetry Payload
USE **EXPOS (Spacelab payload)**

x ray spectroscopy
UF *X ray spectrography*
X ray spectrometry
GS spectroscopy
. **x ray spectroscopy**
x ray analysis
. **x ray spectroscopy**
RT astronomical spectroscopy
coordination number
∞ materials tests
molecular spectroscopy
radio spectroscopy
radiography
spectroscopic analysis
ultraviolet spectroscopy
vacuum spectroscopy
x ray detectors

x ray stars
DEF Stars with strong emission in the x ray portion of the electromagnetic spectrum. Used for extars.
UF *extars*
GS celestial bodies
. stars
. . **x ray stars**
. . . soft gamma repeaters
. . . x ray binaries
x ray sources
. **x ray stars**
. . soft gamma repeaters
. . x ray binaries
RT emission spectra
Ginga satellite
neutron stars
radiation sources
stellar radiation
Tenma satellite
Uhuru satellite
x ray astronomy
x ray telescopes
x rays

x ray stress analysis
GS stress analysis
. **x ray stress analysis**
RT stresses
temperature inversions

x ray stress measurement
GS mechanical measurement
. stress measurement
. . **x ray stress measurement**

x ray telescopes
GS telescopes
. **x ray telescopes**

. . Constellation-X
. . X Ray Astrophysics Facility
. . XMM-Newton telescope
RT grazing incidence telescopes
Kvant modules
radiography
ROSAT mission
Swift observatory
x ray detectors
x ray optics
x ray spectrometers
x ray stars

X Ray Timing Explorer
DEF An Explorer satellite planned for late 1993 or 1994 to consist of three experiments: a large area proportional counter, an all sky monitor, and a high energy x ray timing experiment. The package is designed to measure the time variability of x ray sources and broad band spectra.
UF *Rossi X Ray Timing Explorer*
RXTE (satellite)
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **X Ray Timing Explorer**

x ray tubes
DEF Vacuum tubes designed to produce x rays by accelerating electrons to a high velocity by means of an electrostatic field, then suddenly stopping them by collision with a target.
GS medical equipment
. x ray apparatus
. . **x ray tubes**
RT electron tubes
radiography

x rays
DEF Nonnuclear electromagnetic radiation of very short wavelength, lying within the interval of 0. 1 to 100 angstroms (between gamma rays, and ultraviolet radiation).
GS electromagnetic radiation
. **x rays**
. . cosmic x rays
. . solar x-rays
ionizing radiation
. **x rays**
. . cosmic x rays
. . solar x-rays
RT auroras
blackout (propagation)
bremsstrahlung
cosmic rays
emission spectra
extraterrestrial radiation
far ultraviolet radiation
gamma rays
monochromatic radiation
radiography
radiology
synchrotron radiation
system generated electromagnetic pulses
x ray binaries
x ray detectors
x ray optics
x ray sources
x ray stars

x wing rotors
DEF A new VTOL concept utilizing the stopped rotor X-wing aircraft.
GS airfoils
. wings
. . rotary wings
. . . **x wing rotors**
rotating bodies
. rotors
. . rotary wings
. . . **x wing rotors**
RT circulation control rotors
∞ rotor blades

X-1 aircraft
GS Bell aircraft
. **X-1 aircraft**
monoplanes

. **X-1 aircraft**
research vehicles
. research aircraft
. . **X-1 aircraft**
rocket vehicles
. rocket planes
. . **X-1 aircraft**
supersonic aircraft
. **X-1 aircraft**
RT ∞ aircraft

X-2 aircraft
GS Bell aircraft
. **X-2 aircraft**
monoplanes
. **X-2 aircraft**
research vehicles
. research aircraft
. . **X-2 aircraft**
rocket vehicles
. rocket planes
. . **X-2 aircraft**
supersonic aircraft
. **X-2 aircraft**
RT ∞ aircraft

X-3 aircraft
GS jet aircraft
. **X-3 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **X-3 aircraft**
monoplanes
. **X-3 aircraft**
research vehicles
. research aircraft
. . **X-3 aircraft**
supersonic aircraft
. **X-3 aircraft**
RT ∞ aircraft

X-5 aircraft
GS Bell aircraft
. **X-5 aircraft**
jet aircraft
. **X-5 aircraft**
monoplanes
. **X-5 aircraft**
research vehicles
. research aircraft
. . **X-5 aircraft**
RT ∞ aircraft

X-13 aircraft
GS jet aircraft
. **X-13 aircraft**
monoplanes
. **X-13 aircraft**
research vehicles
. research aircraft
. . **X-13 aircraft**
Ryan aircraft
. **X-13 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **X-13 aircraft**
RT ∞ aircraft

X-14 aircraft
GS Bell aircraft
. **X-14 aircraft**
jet aircraft
. **X-14 aircraft**
monoplanes
. **X-14 aircraft**
research vehicles
. research aircraft
. . **X-14 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **X-14 aircraft**
RT ∞ aircraft

X-15 aircraft
GS North American aircraft
. **X-15 aircraft**
research vehicles
. research aircraft
. . **X-15 aircraft**
rocket vehicles

- . rocket planes
- . . . **X-15 aircraft**
- supersonic aircraft
- . **X-15 aircraft**
- RT ∞ aircraft
- XLR-99 engine
- X-17 reentry vehicle**
- GS reentry vehicles
- . **X-17 reentry vehicle**
- RT rocket vehicles
- solid propellant rocket engines
- X-19 aircraft**
- GS Curtiss-Wright aircraft
- . **X-19 aircraft**
- research vehicles
- . research aircraft
- . . . **X-19 aircraft**
- tandem wing aircraft
- . **X-19 aircraft**
- V/STOL aircraft
- . vertical takeoff aircraft
- . . . **X-19 aircraft**
- RT ∞ aircraft
- X-20 aircraft**
- UF *Dyna-Soar space glider*
- GS Boeing aircraft
- . **X-20 aircraft**
- gliders
- . boostglide vehicles
- . . . **X-20 aircraft**
- hypersonic gliders
- . . . **X-20 aircraft**
- hypersonic vehicles
- . hypersonic aircraft
- . . . hypersonic gliders
- **X-20 aircraft**
- lifting bodies
- . lifting reentry vehicles
- . . . **X-20 aircraft**
- maneuverable spacecraft
- . **X-20 aircraft**
- reentry vehicles
- . boostglide vehicles
- . . . **X-20 aircraft**
- maneuverable reentry bodies
- . . . lifting reentry vehicles
- **X-20 aircraft**
- research vehicles
- . research aircraft
- . . . **X-20 aircraft**
- RT aerospace planes
- ∞ aircraft
- manned spacecraft
- soft landing spacecraft
- X-21 aircraft**
- GS jet aircraft
- . **X-21 aircraft**
- monoplanes
- . **X-21 aircraft**
- Northrop aircraft
- . **X-21 aircraft**
- research vehicles
- . research aircraft
- . . . **X-21 aircraft**
- RT ∞ aircraft
- boundary layer control
- laminar boundary layer
- X-21A aircraft**
- GS jet aircraft
- . **X-21A aircraft**
- monoplanes
- . **X-21A aircraft**
- Northrop aircraft
- . **X-21A aircraft**
- research vehicles
- . research aircraft
- . . . **X-21A aircraft**
- RT ∞ aircraft
- laminar flow
- X-22 aircraft**
- GS Bell aircraft
- . **X-22 aircraft**
- research vehicles
- . research aircraft
- . . . **X-22 aircraft**
- V/STOL aircraft
- . vertical takeoff aircraft
- . . . **X-22 aircraft**
- RT ∞ aircraft
- tandem wing aircraft
- tilt wing aircraft
- X-22A aircraft**
- GS research vehicles
- . research aircraft
- . . . **X-22A aircraft**
- tandem wing aircraft
- . **X-22A aircraft**
- V/STOL aircraft
- . vertical takeoff aircraft
- . . . **X-22A aircraft**
- RT ∞ aircraft
- X-24 aircraft**
- GS lifting bodies
- . lifting reentry vehicles
- . . . **X-24 aircraft**
- reentry vehicles
- . maneuverable reentry bodies
- . . . lifting reentry vehicles
- **X-24 aircraft**
- research vehicles
- . research aircraft
- . . . **X-24 aircraft**
- RT ∞ aircraft
- X-29 aircraft**
- RT ∞ aircraft
- swept forward wings
- X-30 vehicle**
- GS aerospace vehicles
- . aerospace planes
- . . . **X-30 vehicle**
- hypersonic vehicles
- . **X-30 vehicle**
- maneuverable spacecraft
- . aerospace planes
- . . . **X-30 vehicle**
- reentry vehicles
- . recoverable spacecraft
- . . . reusable spacecraft
- aerospace planes
- **X-30 vehicle**
- research vehicles
- . **X-30 vehicle**
- soft landing spacecraft
- . aerospace planes
- . . . **X-30 vehicle**
- RT National Aerospace Plane Program
- single stage to orbit vehicles
- ∞ spacecraft
- transatmospheric vehicles
- X-31 aircraft**
- (added June 1994)
- DEF A research aircraft (single-engine, delta-wing/canard configuration) designed to demonstrate enhanced fighter maneuverability (EFM) and post-stall controllability through the use of thrust vector control at very high angle-of-attack.
- GS jet aircraft
- . **X-31 aircraft**
- monoplanes
- . **X-31 aircraft**
- research vehicles
- . research aircraft
- . . . **X-31 aircraft**
- RT ∞ aircraft
- aircraft maneuvers
- canard configurations
- fighter aircraft
- thrust vector control
- X-32 aircraft**
- (added October 1998)
- DEF Experimental supersonic strike fighter developed to be configured as a conventional or short takeoff/vertical landing vehicle. Developed as part of the Joint Strike Fighter (JSF) program.
- GS Boeing aircraft
- . **X-32 aircraft**
- jet aircraft
- . **X-32 aircraft**
- research vehicles
- . research aircraft
- . . . **X-32 aircraft**
- V/STOL aircraft
- . **X-32 aircraft**
- research vehicles
- . research aircraft
- . . . **X-32 aircraft**
- supersonic aircraft
- . **X-32 aircraft**
- V/STOL aircraft
- . **X-32 aircraft**
- X-33 reusable launch vehicle**
- (added January 1996)
- GS launch vehicles
- . reusable launch vehicles
- . . . **X-33 reusable launch vehicle**
- RT liquid propellant rocket engines
- recoverable launch vehicles
- reusable spacecraft
- VentureStar launch vehicle
- X-34 reusable launch vehicle**
- (added January 1996)
- GS launch vehicles
- . reusable launch vehicles
- . . . **X-34 reusable launch vehicle**
- RT air launching
- Boeing 747 aircraft
- liquid propellant rocket engines
- recoverable launch vehicles
- reusable spacecraft
- X-35 aircraft**
- (added October 1998)
- DEF Experimental strike fighter incorporating a vertical lift fan for short takeoff/vertical landing capability. Developed as part of the Joint Strike Fighter (JSF) program.
- GS jet aircraft
- . **X-35 aircraft**
- Lockheed aircraft
- . **X-35 aircraft**
- research vehicles
- . research aircraft
- . . . **X-35 aircraft**
- V/STOL aircraft
- . **X-35 aircraft**
- X-36 aircraft**
- (added March 1996)
- GS McDonnell Douglas aircraft
- . **X-36 aircraft**
- research vehicles
- . research aircraft
- . . . **X-36 aircraft**
- tailless aircraft
- . **X-36 aircraft**
- RT ∞ aircraft
- B-2 aircraft
- flight test vehicles
- X-37 vehicle**
- (added March 2000)
- DEF NASA/Boeing experimental space plane developed to demonstrate airframe, propulsion, and operations technologies for reduced-cost reusable launch vehicles. The unpiloted X-37 can be carried into orbit by the Space Shuttle or launched by an expendable rocket, and flies in both orbital and reentry environments, operating at speeds up to 25 times the speed of sound.
- GS aerospace vehicles
- . aerospace planes
- . . . **X-37 vehicle**
- hypersonic vehicles
- . **X-37 vehicle**
- maneuverable spacecraft
- . aerospace planes
- . . . **X-37 vehicle**
- reentry vehicles
- . recoverable spacecraft
- . . . reusable spacecraft
- aerospace planes
- **X-37 vehicle**
- research vehicles
- . **X-37 vehicle**
- soft landing spacecraft
- . aerospace planes
- . . . **X-37 vehicle**
- reusable launch vehicles
- ∞ spacecraft

X-38 crew return vehicle

X-40A vehicle

X-38 crew return vehicle

(added December 1996)

GS recovery vehicles
 . **X-38 crew return vehicle**
RT Assured Crew Return Vehicle
 escape capsules
 lifeboats
 rescue operations
 return to Earth space flight
 space stations

X-40A vehicle

(added September 2001)

DEF NASA/Boeing 80-percent scale model demonstrator of the X-37 pilotless space plane, intended to evaluate systems and technologies to be used in future reusable space or launch vehicles.

GS aerospace vehicles
 . aerospace planes
 . . **X-40A vehicle**
 maneuverable spacecraft
 . aerospace planes
 . . **X-40A vehicle**
 reentry vehicles
 . recoverable spacecraft
 . . reusable spacecraft
 . . . aerospace planes
 **X-40A vehicle**
 research vehicles
 . **X-40A vehicle**
 soft landing spacecraft
 . aerospace planes
 . . **X-40A vehicle**
RT reusable launch vehicles
 X-37 vehicle

X-43 vehicle

(added September 1999)

DEF The experimental research vehicle of the NASA Hyper-X program designed to flight validate key propulsion and related technologies for air-breathing hypersonic aircraft.

GS aerospace vehicles
 . **X-43 vehicle**
 hypersonic vehicles
 . **X-43 vehicle**
 research vehicles
 . **X-43 vehicle**
RT hypersonic flight
 Pegasus air-launched booster
 supersonic combustion ramjet
 engines

X-45 aircraft

(added February 2003)

DEF An unmanned combat air vehicle (UCAV) demonstrator developed to test the use of such aircraft in enemy air-defense suppression and other strike missions. The vehicle was developed as part of a joint DARPA/U.S. Air Force/Boeing program.

GS pilotless aircraft
 . **X-45 aircraft**
 research vehicles
 . research aircraft
 . . **X-45 aircraft**
 tailless aircraft
 . **X-45 aircraft**
RT Boeing aircraft
 ∞ military aircraft
 stealth technology

X-248 engine

UF *Altair engine*
GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **X-248 engine**
RT Blue Scout rocket vehicle
 Scout launch vehicle
 vanguard 2 launch vehicle

X-254 engine

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **X-254 engine**

RT Antares rocket vehicle
 Blue Scout rocket vehicle
 Scout launch vehicle

X-258 engines

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **X-258 engines**
 X-258-B1 engine
RT Scout launch vehicle

X-258-B1 engine

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . X-258 engines
 **X-258-B1 engine**

X-259 engine

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **X-259 engine**
RT Scout launch vehicle

X-405 engine

GS engines
 . rocket engines
 . . booster rocket engines
 . . . **X-405 engine**
 . . liquid propellant rocket engines
 . . . **X-405 engine**
RT Vanguard project

xanthic acids

GS acids
 . **xanthic acids**
RT organic liquids

xanthines

GS fungicides
 . **xanthines**
 . . caffeine
 . . guanines
 . . uric acid
 nitrogen compounds
 . **xanthines**
 . . caffeine
 . . guanines
 . . uric acid
 organic compounds
 . cyclic compounds
 . heterocyclic compounds
 . . . purines
 **xanthines**
 caffeine
 guanines
 uric acid

XB-47 aircraft

USE **B-47 aircraft**

XB-70 aircraft

USE **B-70 aircraft**

XBQM-180A aircraft

USE **VATOL aircraft**

XC-142 aircraft

UF *C-142 aircraft*
GS Fairchild-Hiller aircraft
 . **XC-142 aircraft**
 jet aircraft
 . **XC-142 aircraft**
 Ling-Temco-Vought aircraft
 . **XC-142 aircraft**
 monoplanes
 . **XC-142 aircraft**
 Ryan aircraft
 . **XC-142 aircraft**
 tilt wing aircraft
 . **XC-142 aircraft**
 transport aircraft
 . **XC-142 aircraft**
 V/STOL aircraft
 . vertical takeoff aircraft
 . . **XC-142 aircraft**
RT ∞ aircraft

turboprop engines

xenon

GS chemical elements
 . rare gases
 . . **xenon**
 . . . xenon isotopes
 xenon 129
 xenon 133
 xenon 135
 gases
 . rare gases
 . . **xenon**
 . . . xenon isotopes
 xenon 129
 xenon 133
 xenon 135

xenon 129

GS chemical elements
 . nuclides
 . . isotopes
 . . . xenon isotopes
 **xenon 129**
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 129**
 gases
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 129**

xenon 133

GS chemical elements
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 **xenon 133**
 xenon isotopes
 **xenon 133**
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 133**
 gases
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 133**

xenon 135

GS chemical elements
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 **xenon 135**
 xenon isotopes
 **xenon 135**
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 135**
 gases
 . rare gases
 . . xenon
 . . . xenon isotopes
 **xenon 135**

xenon chloride lasers

DEF Rare gas-halide lasers using XeCl as the active material.

GS stimulated emission devices
 . lasers
 . . gas lasers
 . . . rare gas-halide lasers
 **xenon chloride lasers**
RT electron transitions
 excimer lasers
 laser materials
 laser outputs
 ultraviolet lasers

xenon compounds

RT ∞ chemical compounds

- ∞ rare gas compounds
- xenon fluoride lasers**
 - DEF Lasers using XeF as the active material.
 - GS stimulated emission devices
 - . lasers
 - . . gas lasers
 - . . . rare gas-halide lasers
 - **xenon fluoride lasers**
 - RT electron transitions
 - excimer lasers
 - laser materials
 - laser outputs
- xenon isotopes**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **xenon isotopes**
 - xenon 129
 - xenon 133
 - xenon 135
 - . rare gases
 - . . xenon
 - . . . **xenon isotopes**
 - xenon 129
 - xenon 133
 - xenon 135
 - gases
 - . rare gases
 - . . xenon
 - . . . **xenon isotopes**
 - xenon 129
 - xenon 133
 - xenon 135
- xenon lamps**
 - GS lighting equipment
 - . luminaires
 - . . **xenon lamps**
 - RT arc lamps
 - flash lamps
 - infrared radiation
 - mercury lamps
- xerogels**
 - (added July 1997)
 - GS gels
 - . **xerogels**
 - RT aerogels
 - porous materials
 - silica gel
 - silicon dioxide
 - sol-gel processes
- xerography**
 - GS imagery
 - . reproduction (copying)
 - . . **xerography**
 - RT electrostatic charge
 - photographs
 - photography
- XH-51 helicopter**
 - UF *aerogyro helicopters*
 - CL-595 helicopter*
 - H-51 helicopter*
 - Lockheed 186 helicopter*
 - Lockheed CL-595 helicopter*
 - GS Lockheed aircraft
 - . **XH-51 helicopter**
 - research vehicles
 - . research aircraft
 - . . **XH-51 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . rigid rotor helicopters
 - **XH-51 helicopter**
- xi hyperons**
 - GS particles
 - . elementary particles
 - . . bosons
 - . . . mesons
 - hyperons
 - **xi hyperons**
 - . . . **xi hyperons**
 - . . fermions
 - . . . baryons
 - hyperons
 - **xi hyperons**
 - . . hadrons
 - . . . baryons
 - hyperons
 - **xi hyperons**
 - . . mesons
 - . . . hyperons
 - **xi hyperons**
 - . nuclear particles
 - . . bosons
 - . . . mesons
 - hyperons
 - **xi hyperons**
 - **xi hyperons**
- XJ-34-WE-32 engine*
 - USE **J-34 engine**
- XJ-79-GE-1 engine*
 - USE **J-79 engine**
- XLR-99 engine**
 - GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **XLR-99 engine**
 - RT X-15 aircraft
- XM-6 squib*
 - USE **squibs**
- XM-8 squib*
 - USE **squibs**
- XM-33 engine**
 - UF *TX-33-39 engine*
 - GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **XM-33 engine**
 - RT Blue Scout rocket vehicle
 - EXOS sounding rocket
 - Little Joe 2 launch vehicle
 - polaris missiles
 - Scout launch vehicle
 - TX-354 engine
- XMM (telescope)*
 - (added August 2000)
 - USE **XMM-Newton telescope**
- XMM-Newton telescope**
 - (added August 2000)
 - DEF Spaceborne x-ray telescope, launched in December 1999, providing simultaneous, high-throughput non-dispersive spectroscopic imaging (EPIC instrument), medium-resolution dispersive spectroscopy (Reflection Grating Spectrometer), and optical/UV imaging and timing from a co-aligned instrument (Optical Monitor).
 - UF *X Ray Multi-Mirror Mission*
 - XMM (telescope)*
 - GS artificial satellites
 - . ESA satellites
 - . . **XMM-Newton telescope**
 - . . scientific satellites
 - . . . astronomical satellites
 - **XMM-Newton telescope**
 - ESA spacecraft
 - . ESA satellites
 - . . **XMM-Newton telescope**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **XMM-Newton telescope**
 - telescopes
 - . spaceborne telescopes
 - . . **XMM-Newton telescope**
 - . x ray telescopes
 - . . **XMM-Newton telescope**
 - RT x ray astronomy
 - X Ray Astrophysics Facility
 - XV-3 aircraft**
 - UF *V-3 aircraft*
 - GS Bell aircraft
 - . **XV-3 aircraft**
 - V/STOL aircraft
 - . **XV-3 aircraft**
 - RT ∞ aircraft
 - tilting rotors
 - XV-4 aircraft**
 - UF *Hummingbird aircraft*
 - Lockheed XV-4A aircraft*
 - V-4 aircraft*
 - VZ-10 aircraft*
 - GS jet aircraft
 - . **XV-4 aircraft**
 - Lockheed aircraft
 - . **XV-4 aircraft**
 - monoplanes
 - . **XV-4 aircraft**
 - research vehicles
 - . research aircraft
 - . . **XV-4 aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **XV-4 aircraft**
 - RT ∞ aircraft
 - XV-5 aircraft**
 - UF *V-5 aircraft*
 - VZ-11 aircraft*
 - XV-5A aircraft*
 - GS fan in wing aircraft
 - . **XV-5 aircraft**
 - jet aircraft
 - . **XV-5 aircraft**
 - monoplanes
 - . **XV-5 aircraft**
 - research vehicles
 - . research aircraft
 - . . **XV-5 aircraft**
 - Ryan aircraft
 - . **XV-5 aircraft**
 - V/STOL aircraft
 - . **XV-5 aircraft**
 - RT ∞ aircraft
 - XV-5A aircraft*
 - USE **XV-5 aircraft**
 - XV-6A aircraft*
 - USE **P-1127 aircraft**
 - XV-8A aircraft**
 - GS research vehicles
 - . research aircraft
 - . . **XV-8A aircraft**
 - Ryan aircraft
 - . **XV-8A aircraft**
 - utility aircraft
 - . **XV-8A aircraft**
 - V/STOL aircraft
 - . **XV-8A aircraft**
 - RT ∞ aircraft
 - flexible wings
 - XV-9A aircraft**
 - UF *V-9 aircraft*
 - GS Hughes aircraft
 - . **XV-9A aircraft**
 - jet aircraft
 - . **XV-9A aircraft**
 - research vehicles
 - . research aircraft
 - . . **XV-9A aircraft**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **XV-9A aircraft**
 - RT ∞ aircraft
 - tip driven rotors
 - XV-11A aircraft**
 - GS research vehicles
 - . research aircraft
 - . . **XV-11A aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **XV-11A aircraft**
 - RT ∞ aircraft
 - lift fans

XV-15 aircraft

shrouded propellers

XV-15 aircraft

DEF Experimental model of a tilt-rotor aircraft built by Bell Aircraft Company.

GS Bell aircraft

. XV-15 aircraft

V/STOL aircraft

. rotary wing aircraft

. . tilt rotor aircraft

. . . XV-15 aircraft

RT ∞ aircraft

helicopters

Tilt Rotor Research Aircraft Program

x-y plotters

GS recording instruments

. plotters

. . x-y plotters

RT digital to analog converters

xylene

DEF A mixture of Carbon 8 aromatic hydrocarbons.

GS organic compounds

. hydrocarbons

. . xylene

RT toluene

xylose

GS organic compounds

. carbohydrates

. . sugars

. . . monosaccharides

. . . . pentose

. xylose

Y

YAG (*garnet*)
USE **yttrium-aluminum garnet**

YAG lasers

GS electronic equipment
 . solid state devices
 . . solid state lasers
 . . . **YAG lasers**
 stimulated emission devices
 . lasers
 . . solid state lasers
 . . . **YAG lasers**
 RT laser heating
 laser materials
 laser outputs
 yttrium-aluminum garnet

Yagi antennas

DEF Directional antennas used on some types of radar and radio equipment consisting of an array of elemental, single wire dipole antennas and reflectors.

GS antennas
 . directional antennas
 . . **Yagi antennas**
 arrays
 . antenna arrays
 . . linear arrays
 . . . endfire arrays
 **Yagi antennas**
 RT antenna design
 dipole antennas
 directors (antenna elements)
 parasitic elements (antennas)
 waveguide antennas

Yak 40 aircraft

GS general aviation aircraft
 . **Yak 40 aircraft**
 jet aircraft
 . **Yak 40 aircraft**
 passenger aircraft
 . **Yak 40 aircraft**
 Yakovlev aircraft
 . **Yak 40 aircraft**
 RT ∞ aircraft

YAK aircraft

USE **Yakovlev aircraft**

Yakovlev aircraft

(added September 1995)
 UF **YAK aircraft**
 GS **Yakovlev aircraft**
 . Yak 40 aircraft
 RT ∞ aircraft

Yang-Mills fields

DEF Types of fields based upon Yang-Mills theory.

RT electromagnetic fields
 field theory (physics)
 gauge theory
 gravitational fields
 perturbation theory
 Yang-Mills theory

Yang-Mills theory

DEF Mathematical idea for describing interactions among elementary particles which is based on the idea of gauge invariance under a non Abelian group. Used for Casimir energy.

RT field theory (physics)
 gauge theory
 perturbation theory
 space-time functions
 statistical analysis
 supergravity
 theoretical physics
 ∞ theories
 Yang-Mills fields

yarns

RT cordage
 cotton
 fibers
 ∞ rovings
 strands

wool

YAV-8B aircraft

USE **Harrier aircraft**

yaw

UF *damping in yaw*
fish-tailing
yawmeters
 GS attitude (inclination)
 . **yaw**
 RT aerodynamic stability
 coning motion
 directional control
 directional stability
 lateral oscillation
 ∞ motion
 pitch (inclination)
 roll
 rotation
 sideslip
 skidding
 turning flight
 yawing moments

yawing moments

DEF Moments that tend to rotate aircraft, airfoils, rockets, or spacecraft about a vertical axis.

GS moments
 . stability derivatives
 . . **yawing moments**
 RT aerodynamic coefficients
 lateral oscillation
 moments of inertia
 pitching moments
 rolling moments
 torque
 yaw

yawmeters

USE **attitude indicators**
yaw

Y-Ba-Cu-O superconductors

USE **YBCO superconductors**

YBCO superconductors

(added September 1992)

UF *Y-Ba-Cu-O superconductors*

GS chalcogenides
 . oxides
 . . metal oxides
 . . . mixed oxides
 **YBCO superconductors**
 conductors
 . superconductors (materials)
 . . high temperature superconductors
 . . . **YBCO superconductors**
 RT barium oxides
 ceramics
 cermets
 copper oxides
 cuprates
 low temperature physics
 superconducting films
 superconductivity
 thin films
 yttrium oxides

YC-14 aircraft

GS transport aircraft
 . cargo aircraft
 . . **YC-14 aircraft**
 RT ∞ aircraft
 Boeing aircraft
 ∞ military aircraft

YC-15 aircraft

USE **C-15 aircraft**

YC-123 aircraft

USE **C-123 aircraft**

yeast

GS plants (botany)
 . fungi
 . . **yeast**

RT ∞ food

Yellowstone National Park (ID-MT-WY)

GS land
 . parks
 . . national parks
 . . . **Yellowstone National Park**
 (ID-MT-WY)
 RT Idaho
 Montana
 Wyoming

Yemen

GS nations
 . **Yemen**
 RT Asia

YF-12 aircraft

GS attack aircraft
 . fighter aircraft
 . . **YF-12 aircraft**
 RT ∞ aircraft
 aircraft design
 ∞ interceptors
 jet aircraft
 ∞ military aircraft
 reconnaissance aircraft
 research aircraft

YF-16 aircraft

USE **F-16 aircraft**

YF-17 aircraft

USE **F-17 aircraft**

YF-22 aircraft

USE **F-22 aircraft**

YF-102 aircraft

USE **F-102 aircraft**

YHU-1 helicopter

USE **UH-1 helicopter**

yield

RT losses
 output

yield point

UF *damage threshold*
Luder bands
 GS mechanical properties
 . plastic properties
 . . **yield point**
 RT microyield strength
 Tresca flow

yield strength

DEF The stress at which a material exhibits a specific limiting deviation from the proportionality of stress to strain. This deviation is expressed in terms of strain.

GS mechanical properties
 . **yield strength**
 . . load carrying capacity
 . . microyield strength
 RT ductile-brittle transition
 elastic properties
 fracture strength
 high strength
 J integral
 plastic deformation
 ∞ strength
 stresses
 stress-strain diagrams
 stress-strain relationships
 temperature inversions

YIG (*garnet*)

USE **yttrium-iron garnet**

YLF lasers

YJ73 turbojet engine
USE **J-73 engine**

YJ-73-GE-3 engine
USE **J-73 engine**

YJ-79 engine
USE **J-79 engine**

YJ-85 engine
USE **J-85 engine**

YJ-93 engine
USE **J-93 engine**

YJ-93-GE-3 engine
USE **J-93 engine**

YLF lasers

(added August 1990)

UF *yttrium lithium fluoride lasers*

GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . semiconductor lasers
. . . . **YLF lasers**
. . . solid state lasers
. . . **YLF lasers**
stimulated emission devices
. lasers
. . semiconductor lasers
. . . **YLF lasers**
. . . solid state lasers
. . . **YLF lasers**
RT infrared lasers

YLR-91-AJ-1 engine

GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **YLR-91-AJ-1 engine**
RT Titan ICBM

yokes

RT beam waveguides
connectors
couplers
couples
deflection
directional couplers
ferromagnetic materials
∞ joining
linkages
magnet coils

Young modulus

USE **modulus of elasticity**

Young-Helmholtz theory

RT color vision
photoreceptors
∞ theories

youth

RT adults
growth
human beings

yo-yo devices

RT angular acceleration
gyroscopic stability
satellite rotation
spin
spin reduction

yrast state

(added December 2001)

DEF An energy state in which the energy level of a nucleus is less than that of all other states with the same spin.

GS level (quantity)
. energy levels
. . **yrast state**
RT ground state
nuclear spin
nuclei (nuclear physics)

YS-11 aircraft

UF *Nihon YS-11 aircraft*
GS jet aircraft
. turboprop aircraft

. . **YS-11 aircraft**
monoplanes
. **YS-11 aircraft**
Nihon aircraft
. **YS-11 aircraft**
passenger aircraft
. **YS-11 aircraft**
transport aircraft
. **YS-11 aircraft**

YSZ

USE **yttria-stabilized zirconia**

YT-2 aircraft

USE **T-2 aircraft**

ytterbium

GS chemical elements
. rare earth elements
. . **ytterbium**
. . . ytterbium isotopes
metals
. rare earth elements
. . **ytterbium**
. . . ytterbium isotopes

ytterbium compounds

GS rare earth compounds
. **ytterbium compounds**
RT ∞ chemical compounds
∞ metal compounds

ytterbium isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **ytterbium isotopes**
. rare earth elements
. . ytterbium
. . . **ytterbium isotopes**
metals
. rare earth elements
. . ytterbium
. . . **ytterbium isotopes**

yttria-stabilized zirconia

(added February 1994)

UF YSZ
GS chalcogenides
. oxides
. . metal oxides
. . . zirconium oxides
. . . . **yttria-stabilized zirconia**
zirconium compounds
. zirconium oxides
. . **yttria-stabilized zirconia**
RT ceramics
thin films
yttrium oxides

yttrium

GS chemical elements
. rare earth elements
. . **yttrium**
. . . yttrium isotopes
metals
. rare earth elements
. . **yttrium**
. . . yttrium isotopes
. transition metals
. . **yttrium**
. . . yttrium isotopes

yttrium alloys

GS alloys
. **yttrium alloys**
RT rare earth alloys

yttrium compounds

GS **yttrium compounds**
. yttrium oxides
. yttrium-aluminum garnet
. yttrium-iron garnet
RT ∞ chemical compounds
∞ Group 3B compounds
∞ metal compounds

yttrium isotopes

GS chemical elements
. nuclides

. . isotopes
. . . **yttrium isotopes**
. rare earth elements
. . yttrium
. . . **yttrium isotopes**
metals
. rare earth elements
. . yttrium
. . . **yttrium isotopes**
. transition metals
. . yttrium
. . . **yttrium isotopes**

yttrium lithium fluoride lasers

USE **YLF lasers**

yttrium oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **yttrium oxides**
yttrium compounds
. **yttrium oxides**
RT high temperature superconductors
YBCO superconductors
yttria-stabilized zirconia

yttrium-aluminum garnet

UF *YAG (garnet)*
GS minerals
. garnets
. . **yttrium-aluminum garnet**
silicon compounds
. silicates
. . garnets
. . . **yttrium-aluminum garnet**
yttrium compounds
. **yttrium-aluminum garnet**
RT ferrites
magnetostatic amplifiers
YAG lasers

yttrium-iron garnet

UF *YIG (garnet)*
GS minerals
. garnets
. . **yttrium-iron garnet**
silicon compounds
. silicates
. . garnets
. . . **yttrium-iron garnet**
yttrium compounds
. **yttrium-iron garnet**
RT ferrites
magnetostatic amplifiers
waveguide tuners

Yugoslavia

GS nations
. **Yugoslavia**
RT Adriatic Sea
Bosnia and Herzegovina
Croatia
Europe
Serbska Republic

YUH-1 helicopter

USE **UH-1 helicopter**

YUH-60A helicopter

USE **UH-60A helicopter**

YUH-61A helicopter

USE **UH-61A helicopter**

Yukawa potential

RT meson-nucleon interactions
∞ potential

Yukon aircraft

USE **CL-44 aircraft**

Yukon Territory

GS nations
. Canada
. . **Yukon Territory**

Z

Z1 truss structure
(added October 2000)
USE **Integrated Truss Structure Z1**

Z-37 aircraft
UF *Omnipol Z-37 aircraft*
GS monoplanes
. **Z-37 aircraft**
utility aircraft
. **Z-37 aircraft**

Zaire
(added November 1997)
USE **Democratic Republic of Congo**

Zambia
GS nations
. **Zambia**
RT Africa

Zarya control module
(added November 1998)
DEF Component of the International Space Station providing propulsion, steering, and communications during the early assembly stages of the station; later serving as a docking port and fuel tank. Zarya was built by Russia under contract to the U.S. and is owned by the U.S.
GS modules
. space station modules
. . **Zarya control module**
RT International Space Station

zea mays
(added August 2004)
USE **corn**

Zeeman effect
RT ∞ effects
magnetic fields
spectroscopy
spectrum analysis
Stark effect
Voigt effect

zeitgebers
(added December 2001)
DEF Environmental cues that help keep circadian and other biological rhythms; includes sunlight, noise, social interactions, and the use of clocks.
GS cues
. **zeitgebers**
RT activity cycles (biology)
circadian rhythms
darkness
desynchronization (biology)
phenology
physiological responses
rhythm (biology)
 ∞ stimuli
visual stimuli

Zener diodes
USE **avalanche diodes**

Zener effect
RT barrier layers
carrier density (solid state)
 ∞ carriers
 ∞ effects
electric discharges
field emission

Zenit launch vehicles
(added January 1999)
GS launch vehicles
. **Zenit launch vehicles**
RT sea launching
Ukrainian space program

zenith
DEF That point of the celestial sphere vertically overhead. The point 180 deg. from the zenith is called the nadir.
RT antipodes
apexes
celestial sphere
maxima

noon
solar position

zeolites
GS silicon compounds
. silicates
. . **zeolites**
RT ion exchange resins
minerals

zero angle of attack
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . angle of attack
. . . . **zero angle of attack**

zero crossings
USE **roots of equations**

zero force curves
RT curvature
 ∞ curves
 ∞ force

zero gravity
USE **weightlessness**

zero lift
GS aerodynamic characteristics
. lift
. . **zero lift**
aerodynamic forces
. lift
. . **zero lift**
dynamic characteristics
. lift
. . **zero lift**
RT aerodynamic stalling
boundary layer separation
distribution (property)

zero point energy
DEF Kinetic energy retained by molecules of a substance at a temperature of absolute zero.
RT absolute zero
field theory (physics)
kinetic energy
thermodynamic properties

zero power reactor 2
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . heavy water reactors
. . . . **zero power reactor 2**
. . . zero power reactors
. . . . **zero power reactor 2**
. nuclear research and test reactors
. . **zero power reactor 2**

zero power reactor 3
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . zero power reactors
. . . . **zero power reactor 3**
. nuclear research and test reactors
. . **zero power reactor 3**

zero power reactor 6
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . zero power reactors
. . . . **zero power reactor 6**
. nuclear research and test reactors
. . **zero power reactor 6**

zero power reactor 9
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . zero power reactors
. . . . **zero power reactor 9**
. nuclear research and test reactors

. . **zero power reactor 9**

zero power reactors
UF *ZPR reactors*
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . **zero power reactors**
. . . . zero power reactor 2
. . . . zero power reactor 3
. . . . zero power reactor 6
. . . . zero power reactor 9

zero sound
GS acoustic properties
. sound intensity
. . **zero sound**
rates (per time)
. flux density
. . sound intensity
. . . **zero sound**
RT acoustic attenuation
acoustics
anechoic chambers
reflection
silencers
subaudible frequencies

zero sum games
(added October 1998)
GS games
. **zero sum games**
RT differential games
Markov processes
optimal control
pursuit-evasion games
saddle points (game theory)

zero-g ACPL (Spacelab)
USE **Atmospheric Cloud Physics Lab (Spacelab)**

Zeta Aurigae star
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . eclipsing binary stars
. **Zeta Aurigae star**
RT Auriga constellation

zeta pinch
DEF Type of plasma pinch produced by an electric current applied axially to a plasma cylinder in a controlled fusion reactor.
GS pinch effect
. plasma pinch
. . **zeta pinch**
RT controlled fusion
magnetohydrodynamic stability
plasma compression
plasma control
plasma electrodes
plasma focus
Q devices
rotating plasmas
screw pinch
theta pinch

zeta thermonuclear reactor
RT pinch effect
thermonuclear power generation
thermonuclear reactions

Zeus missile
USE **Nike-Zeus missile**

Ziegler catalyst
GS catalysts
. **Ziegler catalyst**
RT polymerization

Zimbabwe
UF *Rhodesia*
GS nations
. **Zimbabwe**

zinc

RT Africa

zinc
GS chemical elements
. **zinc**
. . . zinc isotopes
metals
. transition metals
. . . **zinc**
. . . . zinc isotopes
RT heavy metals

zinc alloys
GS alloys
. **zinc alloys**
RT bearing alloys
solders

zinc antimonides
GS antimony compounds
. antimonides
. . . **zinc antimonides**
zinc compounds
. **zinc antimonides**

zinc chlorides
DEF Reaction products of hydrochloric acid and zinc; white crystals soluble in water and alcohol and with a melting point of 290 degrees C.
GS halogen compounds
. chlorine compounds
. . . chlorides
. . . . **zinc chlorides**
. halides
. . . chlorides
. . . . **zinc chlorides**
. . . metal halides
. . . . **zinc chlorides**
zinc compounds
. **zinc chlorides**

zinc coatings
UF *galvanizing*
GS coatings
. metal coatings
. . . **zinc coatings**
RT protective coatings

zinc compounds
GS **zinc compounds**
. zinc antimonides
. zinc chlorides
. zinc fluorides
. zinc oxides
. zinc selenides
. zinc sulfides
. . . wurtzite
. . . zinblend
. zinc tellurides
. zinc tungstates
RT ∞ chemical compounds
∞ Group 2B compounds
∞ metal compounds

zinc fluorides
GS halogen compounds
. fluorine compounds
. . . fluorides
. . . . metal fluorides
. **zinc fluorides**
. halides
. . . fluorides
. . . . metal fluorides
. **zinc fluorides**
. . . metal halides
. . . . metal fluorides
. **zinc fluorides**
zinc compounds
. **zinc fluorides**

zinc isotopes
GS chemical elements
. nuclides
. . . isotopes
. . . . **zinc isotopes**
. zinc
. . . **zinc isotopes**
metals
. transition metals

. . . zinc
. . . . **zinc isotopes**

zinc nickel batteries
USE **nickel zinc batteries**

zinc oxides
GS chalcogenides
. oxides
. . . metal oxides
. . . . **zinc oxides**
zinc compounds
. **zinc oxides**

zinc selenides
GS chalcogenides
. selenides
. . . **zinc selenides**
selenium compounds
. selenides
. . . **zinc selenides**
zinc compounds
. **zinc selenides**
RT Schottky diodes

zinc silver batteries
USE **silver zinc batteries**

zinc silver oxide batteries
USE **silver zinc batteries**

zinc sulfides
GS chalcogenides
. sulfides
. . . inorganic sulfides
. . . . **zinc sulfides**
. wurtzite
. zinblend
sulfur compounds
. sulfides
. . . inorganic sulfides
. . . . **zinc sulfides**
. wurtzite
. zinblend
zinc compounds
. **zinc sulfides**
. . . wurtzite
. . . zinblend

zinc tellurides
GS chalcogenides
. tellurides
. . . **zinc tellurides**
tellurium compounds
. tellurides
. . . **zinc tellurides**
zinc compounds
. **zinc tellurides**

zinc tungstates
GS tungsten compounds
. tungstates
. . . **zinc tungstates**
zinc compounds
. **zinc tungstates**

zinblend
DEF Zinc sulfide, ZnS; a cubic crystal. Used for sphalerite.
UF *sphalerite*
GS chalcogenides
. sulfides
. . . inorganic sulfides
. . . . zinc sulfides
. **zinblend**
minerals
. **zinblend**
sulfur compounds
. sulfides
. . . inorganic sulfides
. . . . zinc sulfides
. **zinblend**
zinc compounds
. zinc sulfides
. . . **zinblend**

zinc-bromide batteries
DEF Electric cells in which during charge, zinc is plated on the anode and bromine is evolved at the cathode. The bromine is trans-

ferred to an external chamber for mixing and storing with an organic liquid complexing oil. During discharge, the zinc is oxidized at the anode and the complexed bromine is reduced at the cathode.
GS electrochemical cells
. electric batteries
. . . storage batteries
. . . . **zinc-bromide batteries**
RT zinc-chlorine batteries

zinc-chlorine batteries
DEF Candidate electric cells under development for electric vehicles.
GS electrochemical cells
. electric batteries
. . . storage batteries
. . . . **zinc-chlorine batteries**
RT zinc-bromide batteries

zinc-oxygen batteries
GS electric generators
. direct power generators
. . . primary batteries
. . . . metal air batteries
. **zinc-oxygen batteries**
electrochemical cells
. electric batteries
. . . primary batteries
. . . . metal air batteries
. **zinc-oxygen batteries**

zippers
DEF Slide fasteners consisting of interlockable elements each attached to one of the opposing edges of two tapes and a movable part called a 'slider' that spans the interlockable elements, which when moved in one direction causes the elements one one tape to interlock with the elements on the other tape, and when moved in the opposite direction causes the elements to disengage.
GS fasteners
. **zippers**
RT holders

Zircaloy 2 (trademark)
GS alloys
. zirconium alloys
. . . Zircalloys (trademark)
. . . . **Zircaloy 2 (trademark)**

Zircalloys (trademark)
GS alloys
. zirconium alloys
. . . **Zircalloys (trademark)**
. . . . Zircaloy 2 (trademark)
RT iron alloys
tin alloys

zirconates
GS zirconium compounds
. **zirconates**
. . . barium zirconates
. . . strontium zirconates

zirconia
USE **zirconium oxides**

zirconium
GS chemical elements
. **zirconium**
. . . zirconium isotopes
. . . . zirconium 95
metals
. transition metals
. . . **zirconium**
. . . . zirconium isotopes
. zirconium 95

zirconium 95
GS chemical elements
. nuclides
. . . isotopes
. . . . radioactive isotopes
. **zirconium 95**
. zirconium isotopes
. **zirconium 95**
. zirconium
. . . zirconium isotopes

- ... **zirconium 95**
 - metals
 - . transition metals
 - .. zirconium
 - ... zirconium isotopes
 - **zirconium 95**
- zirconium alloys**
 - GS alloys
 - . **zirconium alloys**
 - .. Zircalloys (trademark)
 - ... Zircaloy 2 (trademark)
 - RT hafnium alloys
 - lithium alloys
- zirconium carbides**
 - GS carbon compounds
 - . carbides
 - .. **zirconium carbides**
 - zirconium compounds
 - . **zirconium carbides**
- zirconium compounds**
 - GS **zirconium compounds**
 - . zirconates
 - .. barium zirconates
 - ... strontium zirconates
 - . zirconium carbides
 - . zirconium hydrides
 - . zirconium iodides
 - . zirconium nitrides
 - . zirconium oxides
 - .. yttria-stabilized zirconia
 - . zirconium titanates
 - .. lead zirconate titanates
 - . zirconium fluorides
 - RT ∞ chemical compounds
 - ∞ Group 4B compounds
 - ∞ metal compounds
- zirconium fluorides**

(added April 2004)

 - GS halogen compounds
 - . fluorine compounds
 - .. fluorides
 - ... metal fluorides
 - **zirconium fluorides**
 - . halides
 - .. fluorides
 - ... metal fluorides
 - **zirconium fluorides**
 - .. metal halides
 - ... metal fluorides
 - **zirconium fluorides**
 - zirconium compounds
 - . **zirconium fluorides**
- zirconium hydrides**
 - GS hydrogen compounds
 - . hydrides
 - .. **zirconium hydrides**
 - zirconium compounds
 - . **zirconium hydrides**
- zirconium iodides**
 - GS halogen compounds
 - . halides
 - .. metal halides
 - ... **zirconium iodides**
 - . iodine compounds
 - .. iodides
 - ... **zirconium iodides**
 - zirconium compounds
 - . **zirconium iodides**
- zirconium isotopes**
 - GS chemical elements
 - . nuclides
 - .. isotopes
 - ... **zirconium isotopes**
 - zirconium 95
 - . zirconium
 - ... **zirconium isotopes**
 - zirconium 95
 - metals
 - . transition metals
 - .. zirconium
 - ... **zirconium isotopes**
- zirconium 95
- zirconium nitrides**
 - GS nitrogen compounds
 - . nitrides
 - .. metal nitrides
 - ... **zirconium nitrides**
 - zirconium compounds
 - . **zirconium nitrides**
- zirconium oxides**
 - UF *zirconia*
 - GS chalcogenides
 - . oxides
 - .. metal oxides
 - ... **zirconium oxides**
 - yttria-stabilized zirconia
 - zirconium compounds
 - . **zirconium oxides**
 - .. yttria-stabilized zirconia
- zirconium titanates**
 - GS titanium compounds
 - . titanates
 - .. **zirconium titanates**
 - ... lead zirconate titanates
 - zirconium compounds
 - . **zirconium titanates**
 - .. lead zirconate titanates
- zodiac**
 - RT constellations
 - ecliptic
 - Scorpius constellation
 - Scutum constellation
- zodiacal dust**
 - GS celestial bodies
 - . meteoroids
 - .. micrometeoroids
 - ... meteoroid dust clouds
 - **zodiacal dust**
 - extraterrestrial matter
 - . interstellar matter
 - .. cosmic dust
 - ... interplanetary dust
 - meteoroid dust clouds
 - **zodiacal dust**
 - media
 - . interplanetary medium
 - .. interplanetary dust
 - ... meteoroid dust clouds
 - **zodiacal dust**
 - particles
 - . dust
 - .. cosmic dust
 - ... interplanetary dust
 - meteoroid dust clouds
 - **zodiacal dust**
 - RT Explorer satellites
 - micrometeorites
 - Poynting-Robertson effect
 - terrestrial dust belt
- zodiacal light**
 - GS electromagnetic radiation
 - . light (visible radiation)
 - .. **zodiacal light**
 - extraterrestrial radiation
 - . **zodiacal light**
 - RT gegenschein
 - Helios Project
 - micrometeoroids
 - night sky
 - polarized light
 - Poynting-Robertson effect
 - sky brightness
 - solar radiation
 - sunlight
- zonal circulation*
- USE **zonal flow (meteorology)**
- Zonal Earth Energy Budget Experiment*
- USE **LZEEBE satellite**
- zonal flow (meteorology)**
 - DEF The flow of air along a latitude circle; more specifically, the latitudinal (east or west) of existing flow. Used for zonal circulation.
- UF *zonal circulation*
- GS circulation
 - . atmospheric circulation
 - .. **zonal flow (meteorology)**
- RT air currents
 - annual variations
 - baroclinic instability
 - baroclinic waves
 - circumpolar westerlies
 - climatology
 - intertropical convergent zones
 - jet streams (meteorology)
 - Madden-Julian Oscillation
 - meridional flow
 - meteorology
 - middle atmosphere
 - mixing height
 - planetary waves
 - quasi-biennial oscillation
 - wind (meteorology)
 - wind direction
 - wind profiles
- zonal harmonics**
 - GS analysis (mathematics)
 - . functional analysis
 - .. harmonic analysis
 - ... **zonal harmonics**
 - harmonics
 - . **zonal harmonics**
- Zond 1 space probe**
 - GS interplanetary spacecraft
 - . Venus probes
 - .. **Zond 1 space probe**
 - Zond space probes
 - .. **Zond 1 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - .. **Zond 1 space probe**
 - unmanned spacecraft
 - . space probes
 - .. Venus probes
 - ... **Zond 1 space probe**
 - Zond space probes
 - .. **Zond 1 space probe**
- Zond 2 space probe**
 - GS interplanetary spacecraft
 - . Mars probes
 - .. **Zond 2 space probe**
 - Zond space probes
 - .. **Zond 2 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - .. **Zond 2 space probe**
 - unmanned spacecraft
 - . space probes
 - .. Mars probes
 - ... **Zond 2 space probe**
 - Zond space probes
 - .. **Zond 2 space probe**
- Zond 3 space probe**
 - GS interplanetary spacecraft
 - . Venus probes
 - .. **Zond 3 space probe**
 - Zond space probes
 - .. **Zond 3 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - .. **Zond 3 space probe**
 - unmanned spacecraft
 - . space probes
 - .. Venus probes
 - ... **Zond 3 space probe**
 - Zond space probes
 - .. **Zond 3 space probe**
- Zond 4 space probe**
 - GS interplanetary spacecraft
 - . Venus probes
 - .. **Zond 4 space probe**
 - Zond space probes
 - .. **Zond 4 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - .. **Zond 4 space probe**
 - unmanned spacecraft
 - . space probes

Zond 5 space probe

. . Venus probes
. . . **Zond 4 space probe**
. Zond space probes
. . **Zond 4 space probe**

Zond 5 space probe

GS interplanetary spacecraft
. Venus probes
. . **Zond 5 space probe**
. Zond space probes
. . **Zond 5 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 5 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 5 space probe**
. Zond space probes
. . **Zond 5 space probe**

Zond 6 space probe

GS interplanetary spacecraft
. Venus probes
. . **Zond 6 space probe**
. Zond space probes
. . **Zond 6 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 6 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 6 space probe**
. Zond space probes
. . **Zond 6 space probe**

Zond 7 space probe

GS interplanetary spacecraft
. Venus probes
. . **Zond 7 space probe**
. Zond space probes
. . **Zond 7 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 7 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 7 space probe**
. Zond space probes
. . **Zond 7 space probe**

Zond 8 space probe

GS interplanetary spacecraft
. Venus probes
. . **Zond 8 space probe**
. Zond space probes
. . **Zond 8 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 8 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 8 space probe**
. Zond space probes
. . **Zond 8 space probe**

Zond space probes

GS interplanetary spacecraft
. **Zond space probes**
. . Zond 1 space probe
. . Zond 2 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe
Soviet spacecraft
. **Zond space probes**
. . Zond 1 space probe
. . Zond 2 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe

unmanned spacecraft
. **Zond space probes**
. . Zond 1 space probe
. . Zond 2 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe
RT Mars probes

zone melting

UF *zone refining*
GS phase transformations
. freezing
. . **zone melting**
. melting
. . **zone melting**
RT arc melting
crystallization
float zones
purification
refining
∞ separation
ultrapure metals
vacuum melting

zone refining

USE **zone melting**

zones

USE **regions**

∞ zoology

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT animals
botany
entomology
∞ science
taxonomy

zoom lenses

GS lenses
. **zoom lenses**
RT lens design

zooplankton

DEF The aggregate of passively floating or
drifting animal organisms in aquatic ecosys-
tems.
GS animals
. **zooplankton**
plankton
. **zooplankton**
RT marine biology
phytoplankton

ZPR reactors

USE **zero power reactors**

Zuni rocket vehicle

GS rocket vehicles
. single stage rocket vehicles
. . **Zuni rocket vehicle**
RT solid propellant rocket engines

Zvezda Service Module

(added June 2000)
USE **Service Module (ISS)**

zwitterionic compounds

(added October 2001)
USE **zwitterions**

zwitterions

(added October 2001)
DEF Ionic compounds that include both
positive- and negative-charge components but
are neutral overall.
UF *dipolar ions*
zwitterionic compounds
RT amino acids
∞ chemical compounds
∞ dipoles
electric dipoles

polarization characteristics
polymerization
surfactants

zygotes

(added August 2004)
DEF The fertilized ovum resulting from the
fusion of a male and female gamete.
GS cells (biology)
. gametocytes
. . eggs
. . . **zygotes**
RT embryos
females
fertility
fertilization
reproduction (biology)
sex
spermatzoa

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