Recent Developments in NNDC Web Service

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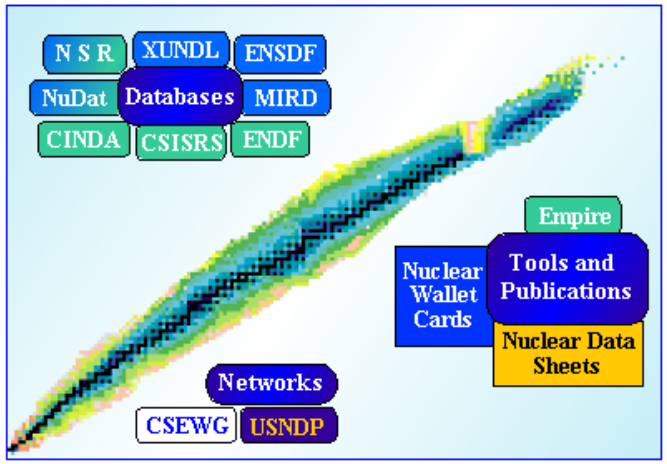
NNDC Web Portal



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- Nuclear Structure and Decay Tools
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- Networks and Links
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- Publications
- Meetings

Nuclear Wallet Cards 2005 New CSEWG & USNDP Meetings '2005

Site Index - Search the NNDC: go

AMDC Atomic Mass Data Center, **Q-value Calculator**

CapGam Thermal Neutron Capture γ-rays

CINDA Computer Index of Nuclear (reaction) Data

CSEWG Cross Section Evaluation Working Group

CSISRS alias EXFOR Nuclear reaction experimental data

Empire Nuclear reaction model code

ENDF Evaluated Nuclear (reaction) Data File

ENSDF Evaluated Nuclear Structure Data File

For NMMSS & DoE NMIRDC safeguards & inventory decay data standards

IRDF International Reactor Dosimetry File

MIRD Medical Internal Radiation Dose

NSR Nuclear Science References

Nuclear Data Sheets Nuclear structure and decay data journal

Nuclear Wallet Cards Ground and isomeric states properties

Nuclear Wallet Cards for Homeland Security

NuDat Nuclear structure and decay data

RIPL Reference Input Parameter Library

USNDP U.S. Nuclear Data Program

XUNDL Experimental Un-evaluated Nuclear Data List

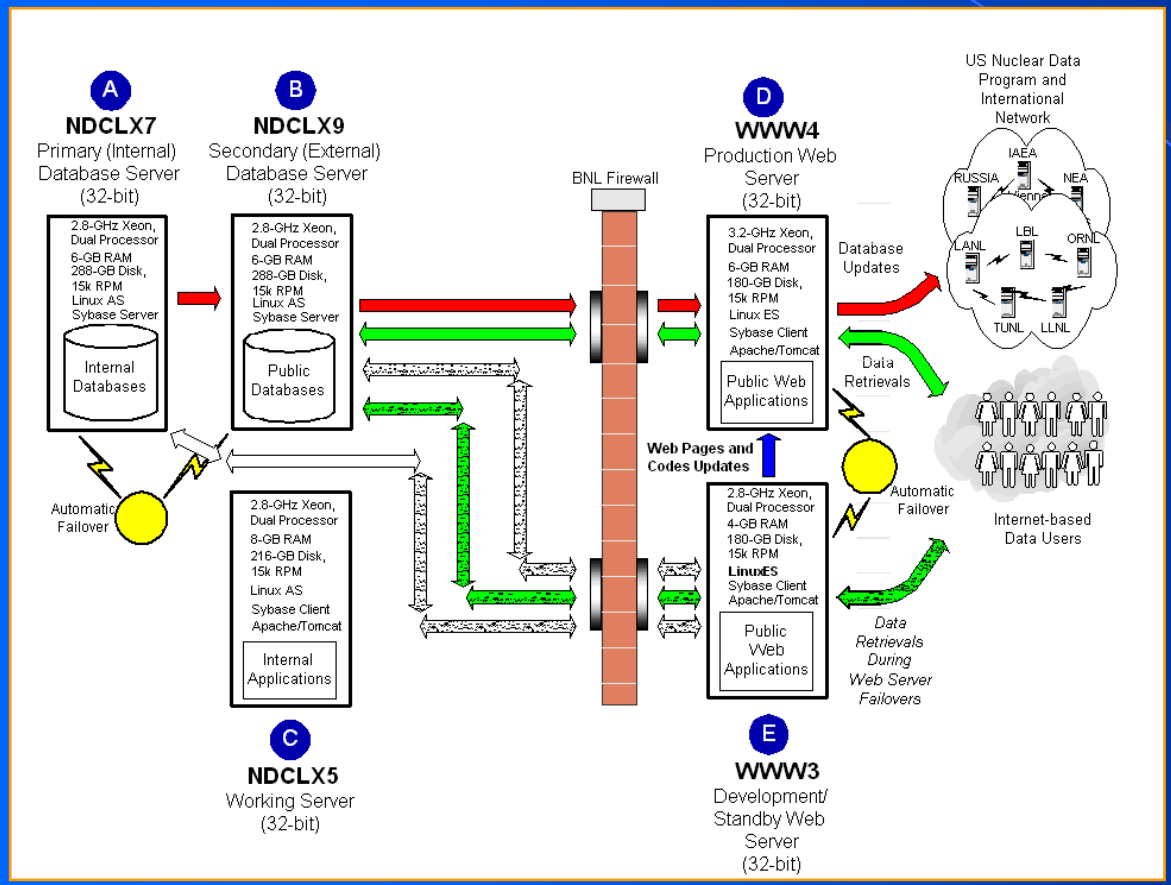
Coming March 2006: **Atlas of Neutron Resonances**

FY2005 Highlights

Nuclear Data Portal was launched on April 19, 2004. In FY2005 the following improvements were made:

- Web server was migrated from Tomcat 4 to Tomcat 5
- Improved Web Interfaces for ENSDF/XUNDL, NSR, NuDat
- New features for ENDF and EXFOR/CSISRS databases
- New applications development: Empire 2.19, QCalc, Nuclear Wallet Cards 2005, …
- New template for NNDC Web pages
- Use of new technologies such as Macromedia Flush
- Contact Us Option
- Positive user response 777,686 data retrievals, 62.5% increase compare to FY2004

Post-Migration Project Status



To satisfy cyber security needs Tomcat Web server was upgraded from version 4 to 5.

More details will be presented in the next talk by R. Arcilla.

Improved Web Interfaces

JavaScript Technologies in NuDat

NuDat 2.1

NuDat allows to search and plot nuclear structure and nuclear decay data interactively. More...

Search Options:

Levels and Gammas

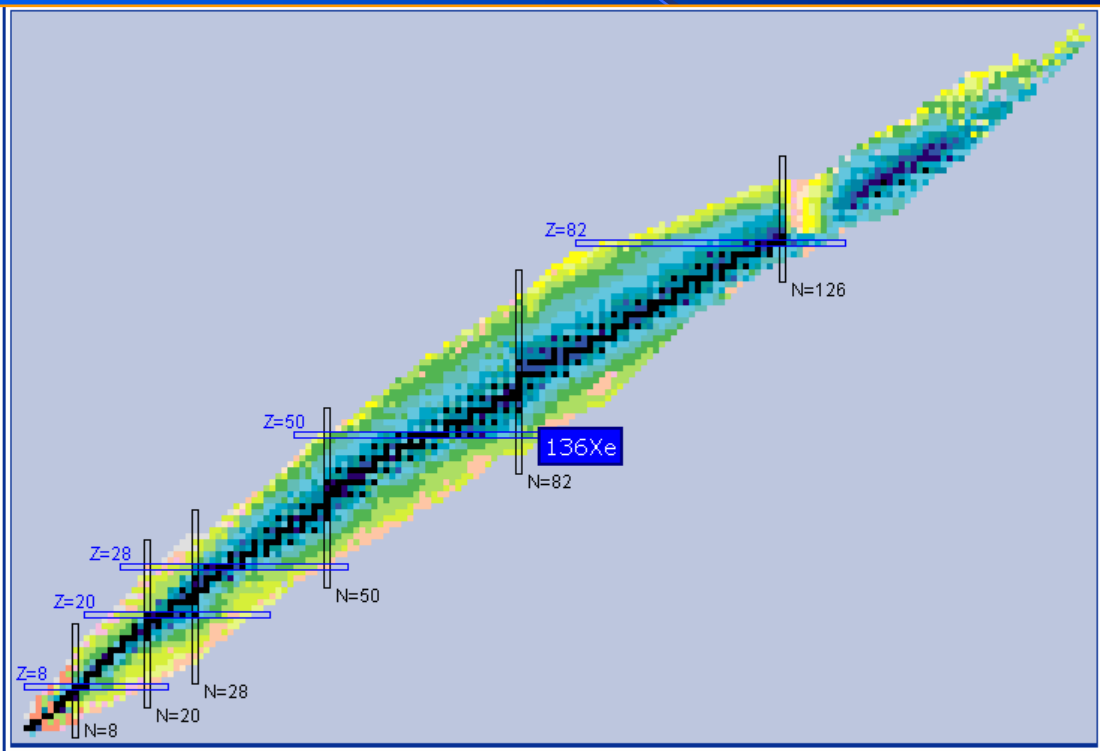
Search on ground and excited states level properties (energy, half-life, spin and parity, decay modes) and gamma-ray information (energy, branching ratio, multipolarity)

Nuclear Wallet Cards

Search on ground and isomeric states level properties, neutron resonance parameters and thermal cross sections

Decay Radiation

Search on radiation type, energy, intensity and dose following nuclear decay



Ground and isomeric state information for $^{136}_{54}Xe$

E(level) (MeV)	Jπ	Δ(MeV)	$T_{1/2}$	Abundance	Decay Modes
0.0	0+	-86.4251	> 2.4E+21 y	8.857% *33*	$2\beta^-$

A list of levels and a level scheme are available

New Features for EXFOR/CSISRS

Direct links to Journals & Tabulated Format

Request #4715
EXFOR Data Search... SQL... Reading...
Results: Reactions: 8 Datasets: 144 Output...

Data Selection

Submit | Reset

Data for Output: ○ Selected ○ Unselected ◉ All
Output Formats: ☑ EXFOR ☑ Bibliography ☐ Plot
Computational Output: 1) TAB ☐ 2) C4 ☐ +plot ☐
Narrow Energy (optional), eV: Min: ☐ Max: ☐

n		Year	Author-1	Energy range,eV		Points	
○ 1)			13-AL-27(N,TOT),,SIG				
	Quantity: [CS] Cross section						
1	☐	1994	G.Rohr+	2.50e+5	2.00e+7	49709	C
2	☐	1993	R.W.Finlay+	5.29e+6	6.00e+8	474	J
3	☐	1991	J.R.Morales+	1.76e+7	1.98e+7	2	J
4	☐	1990	L.Koester+	1.97e+3	1.97e+3	1	J
5	☐	1988	J.Franz+	1.60e+8	5.75e+8	22	J
6	☐	1984	M.Ohkubo	9.84e+3	9.35e+5	1010	W
7	☐			7.12e+2	7.88e+4	927	
8	☐	1983	M.S.Gordon+	2.50e+7	4.50e+7	0	P
9	☐	1981	V.E.Zhitarev+	2.05e-1	4.84e-1	8	J
10	☐	1980	D.C.Larson+	2.00e+6	8.06e+7	685	C
11	☐	1979	L.Koester+	1.26e+0	5.19e+0	2	J
12	☐	1979	B.Grabcev+	4.00e-3	8.35e-2	15	J
13	☐	1977	R.B.Royer+	1.86e+5	1.86e+5	1	J
14	☐	1977	J.A.Harvey+	7.00e-3	2.56e+4	1052	W
15	☐			1.10e-2	2.59e+4	5055	
16	☐	1975	P.V.R.Murthy+	3.40e+10	2.73e+11	7	J
17	☐	1975	U.N.Singh+	4.06e+3	4.19e+5	432	J
18	☐	1975	D.R.Waymire+	5.22e+6	7.24e+6	20	J,NP/A,272,107,750127 @i X4 T4 20671002
19	☐	1975	R.Maggi Ortega	1.84e+7	2.20e+7	11	R,INIS-MF-1743,7505 @i X4 T4 30378006
20	☐	1974	R.B.Schwartz+	4.95e+5	1.61e+7	3384	R,NBS-MONO-138,197401 @i X4 T4 10004002

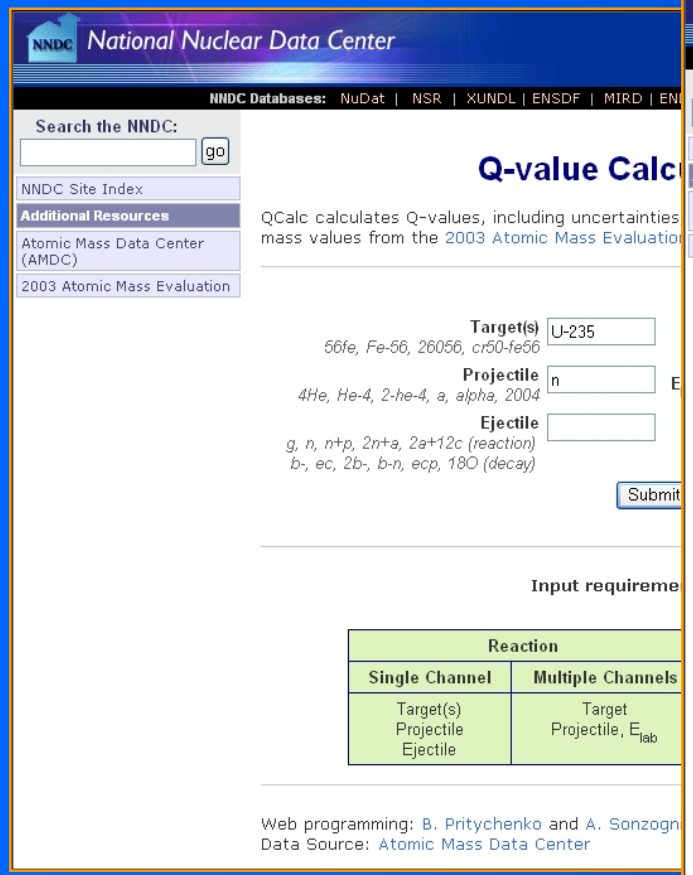
```
#AUTHORS      G.Rohr, R.Shelley, C.Nazareth, M.Moxon
#REFERENCE    Conf.on Nucl.Data for Sci.and Techn.,Gatlinburg 1994 p.215
#YEAR         1994
#TITLE        RESONANCE PARAMETERS OF AL-27 + N FROM VERY HIGH
#+            RESOLUTION TRANSMISSION MEASUREMENTS.
#REACTION     13-AL-27(N,TOT),,SIG
#QUANTITY     Cross section
#Ene,MeV      Sig,b        dSig,b
 0.25001      2.69         0.5472
 0.25002      2.441        0.5171
 0.25003      1.773        0.5109
 0.25004      3.583        0.5355
 0.25004      2.478        0.4999
 0.25005      2.666        0.5223
 0.25006      2.265        0.5046
 0.25007      2.56         0.4969
 0.25008      2.687        0.5103
 0.25009      2.107        0.5069
 0.2501       1.988        0.4896
 0.25011      2.378        0.4777
 0.25012      3.105        0.5238
 0.25012      2.169        0.47
 0.25013      2.555        0.4883
 0.25014      3.049        0.5058
 0.25015      2.15         0.461
 0.25016      3.241        0.4753
 0.25017      2.176        0.446
 0.25018      2.773        0.435
 0.25019      3.104        0.4349
 0.2502       3.173        0.4442
 0.2502       1.751        0.4079
 0.25021      3.225        0.4166
 0.25022      3.099        0.4235
 0.25023      2.196        0.404
 0.25024      2.565        0.3873
 0.25025      2.759        0.3862
 0.25026      2.645        0.3746
 0.25027      2.012        0.3622
 0.25028      2.244        0.3642
 0.25029      2.626        0.3826
 0.25029      3.405        0.4172
```

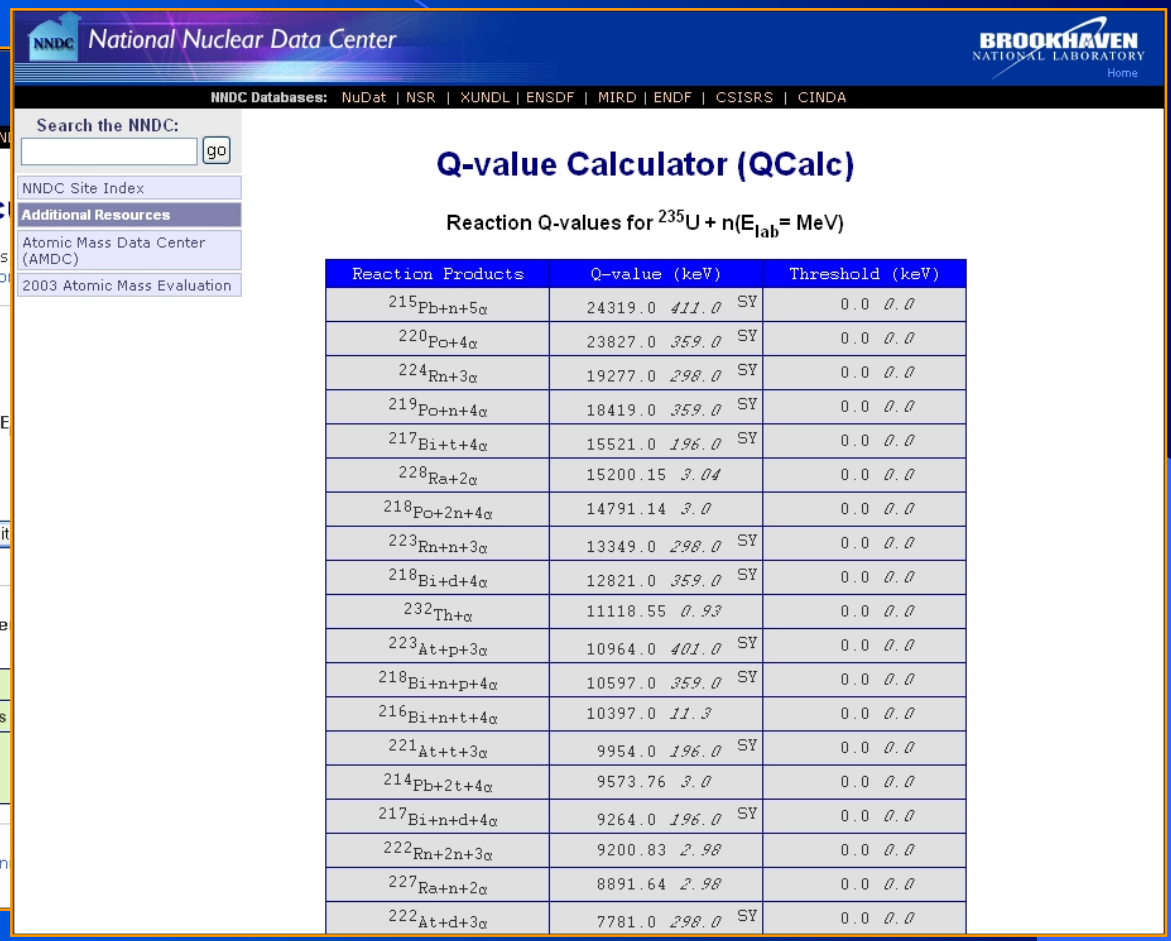
SUBENT 22331004
POINTS: 49709
Convert EXFOR to: C4 (see Guide)

Energy (eV)		
Min 250010	Max 1.9998e+07	Reset
From 250010	To 1.9998e+07	Submit

New Applications Development

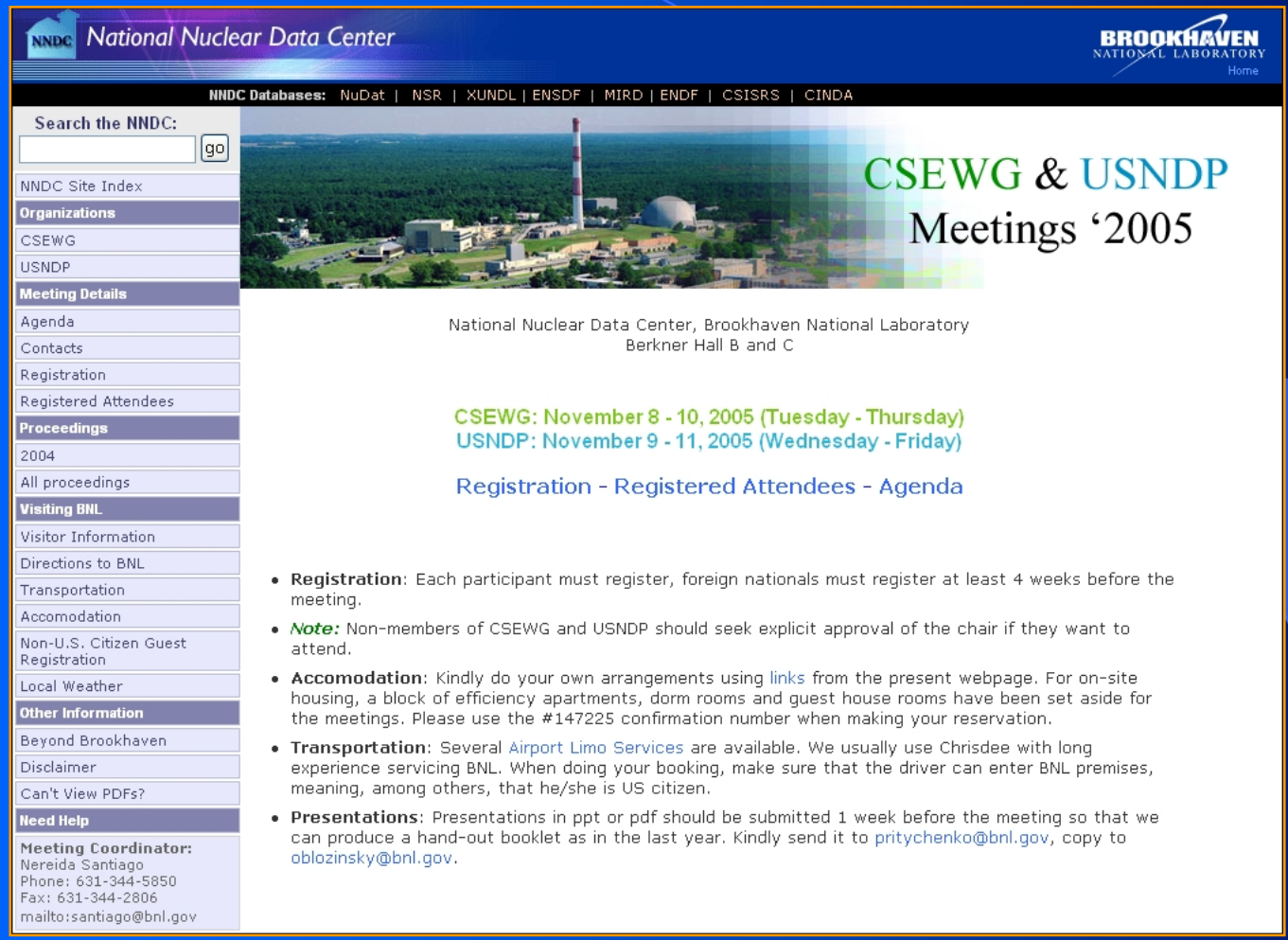
Utilize 2003 AME for Nuclear Reaction & Structure





Reaction Products	Q-value (keV)		Threshold (keV)
$^{215}Pb+n+5\alpha$	24319.0 *411.0*	SY	0.0 *0.0*
$^{220}Po+4\alpha$	23827.0 *359.0*	SY	0.0 *0.0*
$^{224}Rn+3\alpha$	19277.0 *298.0*	SY	0.0 *0.0*
$^{219}Po+n+4\alpha$	18419.0 *359.0*	SY	0.0 *0.0*
$^{217}Bi+t+4\alpha$	15521.0 *196.0*	SY	0.0 *0.0*
$^{228}Ra+2\alpha$	15200.15 *3.04*		0.0 *0.0*
$^{218}Po+2n+4\alpha$	14791.14 *3.0*		0.0 *0.0*
$^{223}Rn+n+3\alpha$	13349.0 *298.0*	SY	0.0 *0.0*
$^{218}Bi+d+4\alpha$	12821.0 *359.0*	SY	0.0 *0.0*
$^{232}Th+\alpha$	11118.55 *0.93*		0.0 *0.0*
$^{223}At+p+3\alpha$	10964.0 *401.0*	SY	0.0 *0.0*
$^{218}Bi+n+p+4\alpha$	10597.0 *359.0*	SY	0.0 *0.0*
$^{216}Bi+n+t+4\alpha$	10397.0 *11.3*		0.0 *0.0*
$^{221}At+t+3\alpha$	9954.0 *196.0*	SY	0.0 *0.0*
$^{214}Pb+2t+4\alpha$	9573.76 *3.0*		0.0 *0.0*
$^{217}Bi+n+d+4\alpha$	9264.0 *196.0*	SY	0.0 *0.0*
$^{222}Rn+2n+3\alpha$	9200.83 *2.98*		0.0 *0.0*
$^{227}Ra+n+2\alpha$	8891.64 *2.98*		0.0 *0.0*
$^{222}At+d+3\alpha$	7781.0 *298.0*	SY	0.0 *0.0*

New Web Template



NNDC National Nuclear Data Center

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- NNDC Site Index
- **Organizations**
- CSEWG
- USNDP
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- Agenda
- Contacts
- Registration
- Registered Attendees
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- All proceedings
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- Directions to BNL
- Transportation
- Accomodation
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Meeting Coordinator:
Nereida Santiago
Phone: 631-344-5850
Fax: 631-344-2806
mailto:santiago@bnl.gov

CSEWG & USNDP Meetings '2005

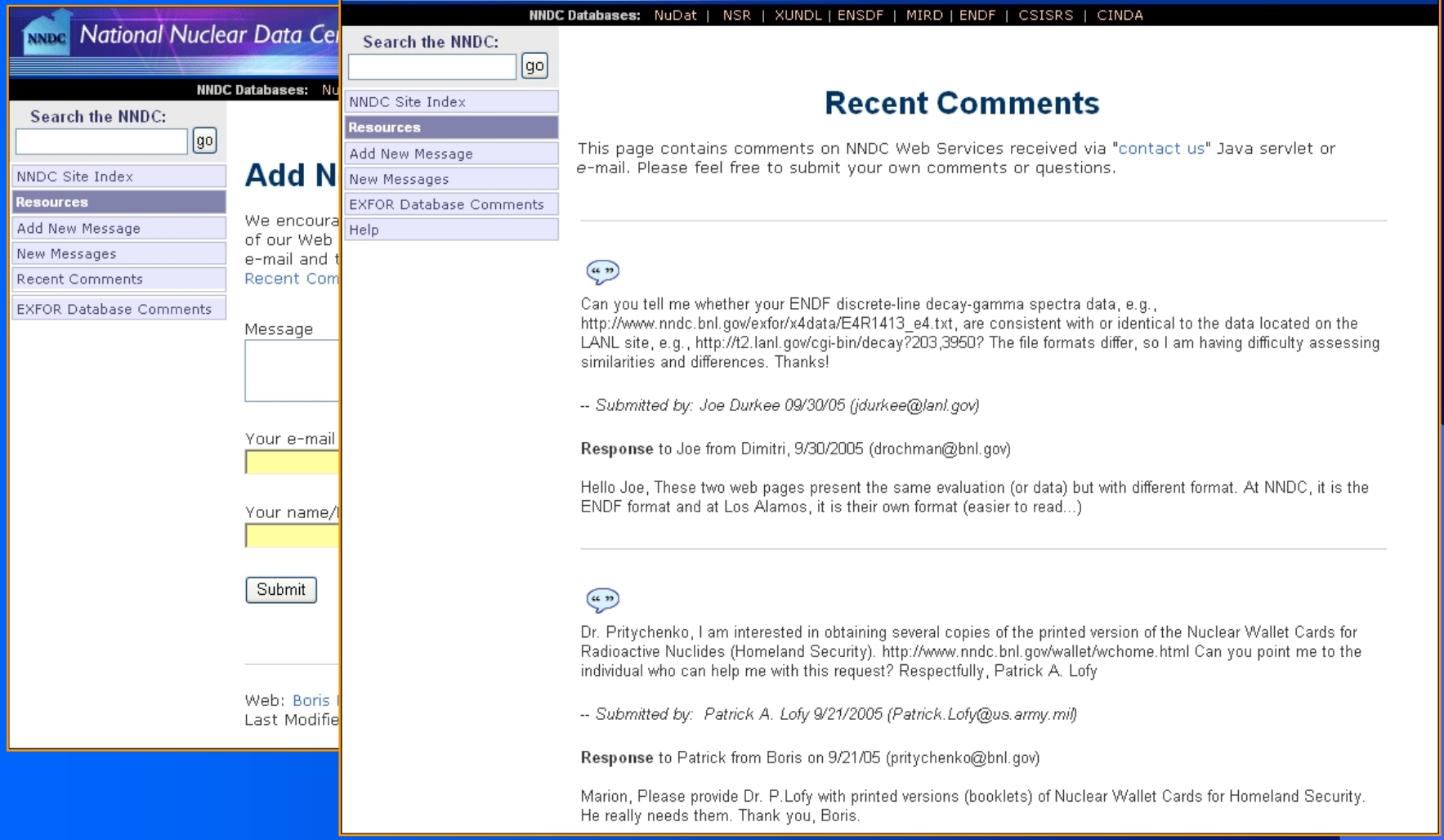
National Nuclear Data Center, Brookhaven National Laboratory
Berkner Hall B and C

CSEWG: November 8 - 10, 2005 (Tuesday - Thursday)
USNDP: November 9 - 11, 2005 (Wednesday - Friday)

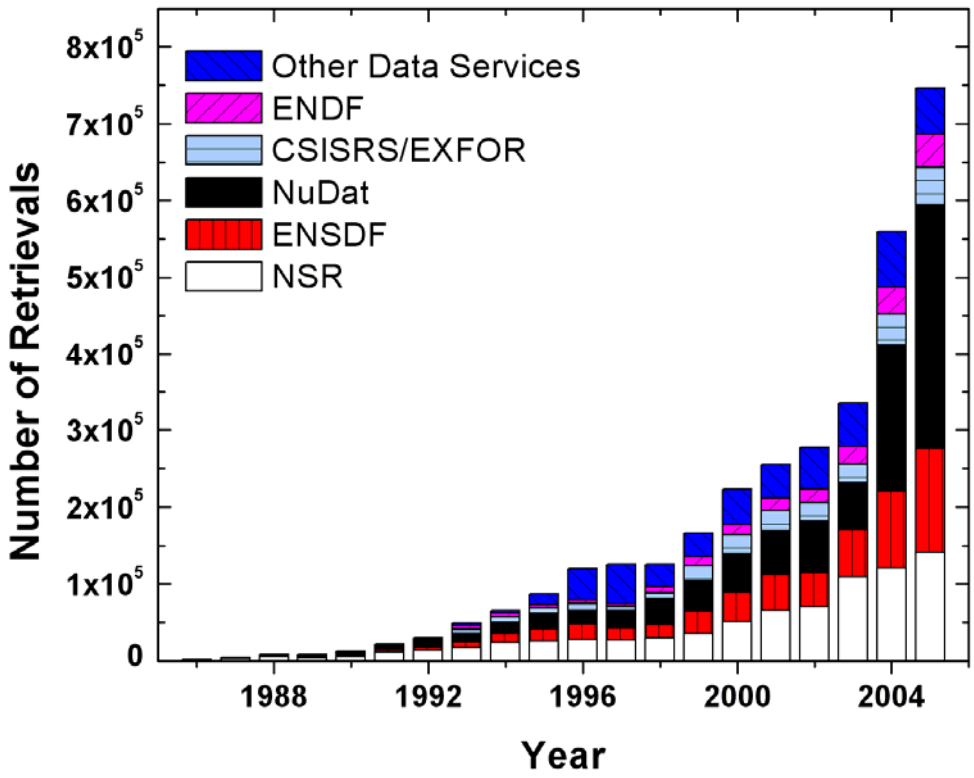
Registration - Registered Attendees - Agenda

- **Registration**: Each participant must register, foreign nationals must register at least 4 weeks before the meeting.
- ***Note:*** Non-members of CSEWG and USNDP should seek explicit approval of the chair if they want to attend.
- **Accomodation**: Kindly do your own arrangements using links from the present webpage. For on-site housing, a block of efficiency apartments, dorm rooms and guest house rooms have been set aside for the meetings. Please use the #147225 confirmation number when making your reservation.
- **Transportation**: Several Airport Limo Services are available. We usually use Chrisdee with long experience servicing BNL. When doing your booking, make sure that the driver can enter BNL premises, meaning, among others, that he/she is US citizen.
- **Presentations**: Presentations in ppt or pdf should be submitted 1 week before the meeting so that we can produce a hand-out booklet as in the last year. Kindly send it to pritychenko@bnl.gov, copy to oblozinsky@bnl.gov.

Contact US, http://www.nndc.bnl.gov/guestbook



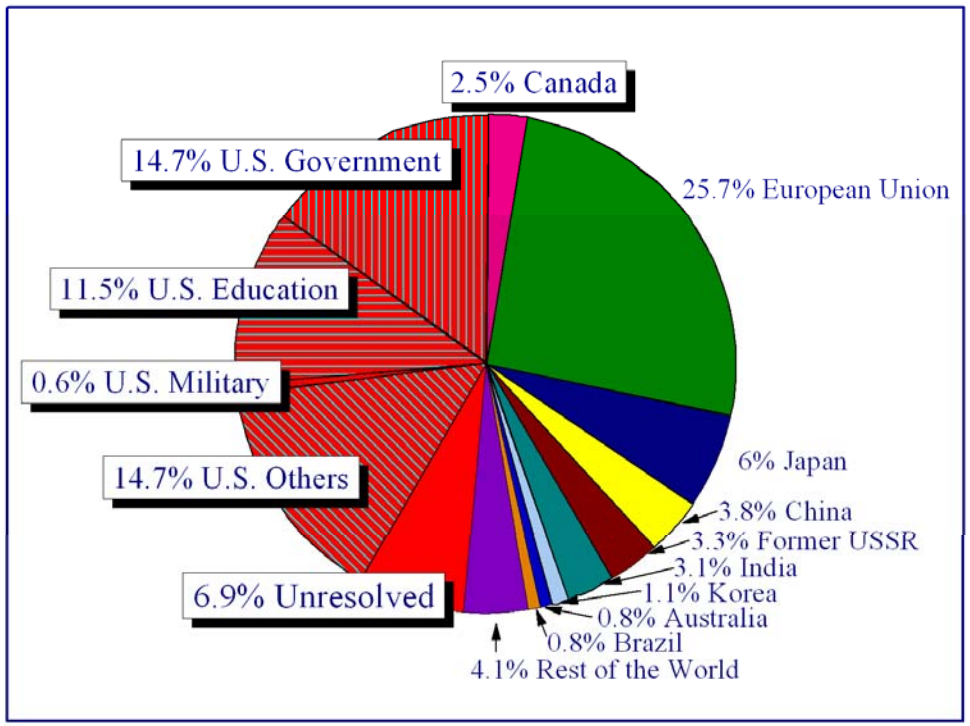
2005 Web Statistics



Portal was launched on April 19, 2004:

- Number of retrievals from 338K in 2003 to 560K in 2004, 66% calendar year increase
- Estimated number of retrievals for 2005 in 750 – 800 K range
- Number of database retrievals in FY2005 is 777,686

Geographical Distribution of NNDC Users in 2004



- USA - 41.87%
- EU - 25.72%
- Japan - 6.06%
- China - 3.75%
- Russia - 3.28%
- India - 3.13%
- Canada - 2.47%
- Korea - 1.09%
- Australia - 0.78%
- Brazil - 0.77%

FY2005 Web Service Conclusion & Outlook

- NNDC successfully operated Nuclear Data Web services during FY2005
- We have to increase NNDC Web Services usage
- New Web applications & product development
- Improve and simplify NNDC database interfaces (MIRD, ENSDF, …)
- Improve user friendliness, i.e. Experimental Nuclear Reaction Data instead of Cross Section Information Storage & Retrieval System (CSISRS)
- Increase NNDC customer base (U.S. Education, Homeland Security, Nuclear Astrophysics)
- Proactive Customer Care with Contact Us option