# XML Product Data Services Query Parameters and Options

## About

Several XML data services are currently available from OSTI collections. These services search Conference information, Geothermal data and legacy Geothermal data, Hydropower data, Vehicle Technologies data, Information Bridge data, Energy Citations Database data, and DOepatents Database data.

## Getting Started

Each XML data service is available from the URLs listed below.

| *Data Service Name* | *XML Data Service URL* |
|---|---|
| Conference Information | http://www.osti.gov/conference/ |
| Geothermal/Geothermal Legacy Data | http://www.osti.gov/geoxml/ |
| Hydropower Data | http://www.osti.gov/hydroxml/ |
| FreedomCAR/FCVT Data | http://www.osti.gov/fcvtxml/ |
| Information Bridge Data | http://www.osti.gov/bridge/ibxml/ |
| Energy Citations Database Data | http://www.osti.gov/energycitations/ecdxml/ |
| DOepatents Database Data | http://www.osti.gov/doepatents/xml |

Each of these services accepts parameters on the search URL request to specify search criteria.

## Using the XML Data Services

The parameters for each service are: ?CriteriaKeyword= where CriteriaKeyword is replaced by one of the criteria keywords listed below.

| *Criteria Keyword* | *Data/Field Searched* |
|---|---|
| searchFor | all metadata fields |
| Biblio | bibliographic metadata fields (Title, Authors, Subject, etc.) |
| FullText | search within document full text |
| Author | search within author/creators only |
| Title | search within document titles only |

| *Criteria Keyword* | *Data/Field Searched* |
|---|---|
| Language | search within document publication language |
| Country | search by document publication country |
| Subject | search within document keywords/subject |
| Identifier | search within document identifying numbers (e.g., DOE contract number, etc.) |
| Type | search for publication type (e.g., Book, Conference, Technical Report, etc.) |
| PubDateFrom | limit results to documents published after the specified date (in MM/DD/YYYY format) |
| PubDateTo | limit results to documents published before the specified date (in MM/DD/YYYY format) |

**Example**

The URL for a search on “hydrogen” in Conference Information would be:

http://www.osti.gov/conference/?searchFor=hydrogen

## Wildcards

Queries using wildcard operators can be performed. The asterisk (*) is used to search for words with spelling variations or contain a specified pattern of characters.

**Example**

The following URL will return all the items with “sustain” and any words with “sustain” as a stem in the title.

http://www.osti.gov/conference/?Title=sustain*

The URL returns the following truncated results.

```
<?xml version="1.0" ?>
- <results queryid="0">
  <count exact="false">839</count>
  <display start="1" end="25" />
- <row rownumber="1">
  <ostiid>4222013</ostiid>
  <identifier>4222013</identifier>
  <title>Current sustained by a travelling wave with phase velocity increasing in time</title>
  <authors>Midzuno, Y.</authors>
  <pubdate>1974 Jan 01</pubdate>
  <sponsororg />
  <researchorg>Nagoya Univ., Japan</researchorg>
  <language>English</language>
  <entrydate>2001 Jun 03</entrydate>
  <resourcetype>Conference</resourcetype>
```

```
  <citation>http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=4222013</citation>
    </row>
- <row rownumber="2">
  <ostiid>4199609</ostiid>
  <identifier>4199609</identifier>
  <title>Sustained and transient boiling flow instabilities in a cross-connected four-parallel-channel
      upflow system</title>
  <authors>Kakac, S.;Veziroglu, T.N.;Akyuzlu, K.;Berkol, O.</authors>
  <pubdate>1974 Jan 01</pubdate>
  <sponsororg />
  <researchorg>Middle East Technical Univ., Ankara</researchorg>
  <language>English</language>
  <entrydate>2001 Jun 03</entrydate>
  <resourcetype>Conference</resourcetype>
  <citation>http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=4199609</citation>
    </row>
- <row rownumber="3">
  <ostiid>4216424</ostiid>
  <identifier>4216424</identifier>
  <title>Interpretation of the Yoder--Griffis--Crooker observations of sustained-load cracking in Ti--
      6Al--4V</title>
  <authors>Krafft, J.M.</authors>
  <pubdate>1974 Oct 01</pubdate>
  <sponsororg />
  <researchorg>Naval Research Lab., Washington, DC</researchorg>
  <language>English</language>
  <entrydate>2001 Jun 03</entrydate>
  <resourcetype>Conference</resourcetype>
  <citation>http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=4216424</citation>
    </row>
```

However, some wildcard searches may prove to be too broad and will not return records. If the following search parameters were entered, then the term would expand too far and the server would not return any results because it exceeds the 15,000 term threshold.

http://www.osti.gov/conference/?Title=en*

The URL returns the following error.

**An Error Occurred**

There was a processing error performing your request.

This page appears when something happens that was not foreseen in this system?s design. It could be something in your query or some unexpected event in the system. Please try again.

**Error Message:**

```
SQL Error: Results.lookup(): ORA-20000: Oracle Text error:
DRG-10800: query failed:
DRG-51030: wildcard query expansion resulted in too many terms
```

```
ORA-06512: at "CTXSYS.DRUE", line 160
ORA-06512: at "CTXSYS.CTX_QUERY", line 111
ORA-06512: at "DUB_CORE.QUICK_COUNT", line 11
```

## Search Requests with Spaces

Search requests with spaces should be separated by a "+".

**Example**

The URL for a search on the "Kyoto agreement" in Conference Information would be:

http://www.osti.gov/conference/?searchFor=kyoto+agreements

The URL returns the following truncated results.

```
   <?xml version="1.0" ?>
- <results queryid="3">
  <count exact="false">364</count>
  <display start="1" end="25" />
- <row rownumber="1">
  <ostiid>20634211</ostiid>
  <identifier>20634211</identifier>
  <title>Study of Cluster-size Effect on Damage Formation</title>
  <authors>Aoki, Takaaki; Seki, Toshio [Ion Beam Engineering Experimental Laboratory, Kyoto
       University (Japan); Collaborative Research Center for Cluster Ion Beam Process Technology
       (Japan)];Nakai, Atsuko; Matsuo, Jiro; Takaoka, Gikan [Ion Beam Engineering Experimental
       Laboratory, Kyoto University (Japan)]</authors>
  <pubdate>2003 Aug 26</pubdate>
  <sponsororg />
  <researchorg />
  <language>English</language>
  <entrydate>2006 Feb 16</entrydate>
  <resourcetype>Journal Article</resourcetype>
  <citation>http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=20634211</citation>
    </row>
- <row rownumber="2">
  <ostiid>2132</ostiid>
  <identifier>SAND98-2214</identifier>
  <title>New Horizons and New Strategies in Arms Control</title>
  <authors>Brown, J. editor</authors>
  <pubdate>1998 Dec 04</pubdate>
  <sponsororg>USDOE</sponsororg>
  <researchorg>Sandia National Laboratories, Albuquerque, NM, and Livermore, CA</researchorg>
  <language>English</language>
  <entrydate>2006 Mar 30</entrydate>
  <resourcetype>Conference</resourcetype>
  <fulltext>http://www.osti.gov/energycitations/servlets/purl/2132-Ze1Jja/webviewable/</fulltext>
  <citation>http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=2132</citation>
    </row>
```

## Search Requests with Multiple Search Terms

The Boolean AND operator is used to search for multiple terms within one field.

**Example**

The following URL searches conference data containing both the words “range” and “sustainability” in the title.

http://www.osti.gov/conference/?Title=range%20AND%20sustainability

The *%20* characters must be added before and after the AND operator.

The URL returns the following result.

```
<?xml version="1.0" ?>
- <results queryid="8">
  <count exact="true">1</count>
  <display start="1" end="1" />
- <row rownumber="1">
  <ostiid>751541</ostiid>
  <identifier>DOE/NV/11718--384-ABS</identifier>
  <title>Range sustainability: Assessment and reclamation of arid plant communities and training
      area design for mission sustainability</title>
  <authors>Ostler, W.K.</authors>
  <pubdate>1999 Dec 01</pubdate>
  <sponsororg>US Department of Energy (US)</sponsororg>
  <researchorg>Bechtel Nevada Corp. (US)</researchorg>
  <language>English</language>
  <entrydate>2001 May 06</entrydate>
  <resourcetype>Conference</resourcetype>
  <fulltext>http://www.osti.gov/energycitations/servlets/purl/751541-M1L0A2/webviewable/</fulltext>
  <citation>http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=751541</citation>
    </row>
    </results>
```

## Search Options

The following table lists various search options that can be used to sort results.

| *Additional Criteria Keywords* | *Search Option* |
|---|---|
| SortBy | Sort results by a field name. Valid possibilities include “publication_date”, “creator” (author), “title”, “date_entry”, and “relv” (relevance score). The default sort is based on relevance score. |
| SortOrder | Selects the direction of the sort. Should be “ASC” (ascending) or “DESC” (descending). Default is Descending order. |
| query_id | Indicate operations for an existing query that has already been run in the client session. This may be |

| *Additional Criteria Keywords* | *Search Option* |
|---|---|
| | used to request additional pages of information, or to re-sort previous queries. |
| nrows | Indicates the number of rows desired per page of results. Once this value is specified, it is retained for all other searches in the client's session. The default number of results per page is 25.<br>Note: The default number of results per page for IB and ECD data is 100. |
| page | Request a particular page of search results. The default is to return the first page of results. Usually used in conjunction with the *query_id* value to obtain additional search result pages. |

One or more search options may be specified in the URL. Specify each as with search criteria, separated by ampersands ("&"). The number of desired results per page and an option to request additional pages of information may also be specified.

## Session Mangement

After an initial query is performed, the XML returned will indicate a *query_ id* value (in <results query_id="*value*"> of the results). This *query_id* should be retained and passed back for subsequent requests pertaining to the same query (e.g., for requesting additional pages of search results, or sorting the existing query in another fashion). This Query ID is maintained for the duration of a search session, usually about 30 minutes of activity.

## Sorting

Results may be sorted by a number of specifications including: *publication_date*, *creator*, *title*, *date_entry*, and *relv* (relevance). Results can be sorted either in ascending (ASC) or descending (DESC) order.

**Example**

If a search for "hydrogen" has already been performed with a *query_id* value of 1 returned in the results XML, then the following URL would sort the query by document title in ascending order.

http://www.osti.gov/conference/?query_id=1&SortBy=title&SortOrder=ASC

Please note that specifying certain sorting criteria in addition to large result page sizes may affect query performance.

## Search Requests with Multiple Criteria

Multiple criteria keywords and sort options should be separated by the ampersand character (&).

**Example**

The following URL returns results with “energy” in the title sorted in ascending alphabetical order.

http://www.osti.gov/conference/?Title=energy&SortOrder=ASC

The URL returns the following truncated results.

```
   <?xml version="1.0" ?>
- <results queryid="0">
  <count exact="false">89769</count>
  <display start="1" end="25" />
- <row rownumber="1">
  <ostiid>1067</ostiid>
  <identifier>SAND98-2378C</identifier>
  <title>Generating High-Brightness Light Ion Beams for Inertial Fusion Energy</title>
  <authors>Adams, R.G.; Bailey, J.E.; Cuneno, M.E.; Desjarlais, M.P.; Filuk, A.B.; Hanson, D.L.;
       Johnson, D.J.; Mehlohorn, T.A.; Menge, P.R.; Olson, C.L.; Pointon, T.D. Slutz, S.A.; Vesey,
       R.A.; Welch, D.R.; Wenger, D.F.</authors>
  <pubdate>1998 Oct 22</pubdate>
  <sponsororg>USDOE</sponsororg>
  <researchorg>Sandia National Laboratories, Albuquerque, NM, and Livermore, CA</researchorg>
  <language>English</language>
  <entrydate>2006 Mar 30</entrydate>
  <resourcetype>Conference</resourcetype>
  <fulltext>http://www.osti.gov/energycitations/servlets/purl/1067-fYQoS2/webviewable/</fulltext>
  <citation>http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=1067</citation>
     </row>
- <row rownumber="2">
  <ostiid>5059</ostiid>
  <identifier>NREL/CP-500-25692</identifier>
  <title>Grid-Connected Wind Energy Technology: Progress and Prospects</title>
  <authors>Parsons, B.</authors>
  <pubdate>1998 Nov 19</pubdate>
  <sponsororg>US Department of Energy (US)</sponsororg>
  <researchorg>National Renewable Energy Lab., Golden, CO (US)</researchorg>
  <language>English</language>
  <entrydate>2003 Apr 21</entrydate>
  <resourcetype>Conference</resourcetype>
  <fulltext>http://www.nrel.gov/docs/fy99osti/25692.pdf</fulltext>
  <citation>http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=5059</citation>
     </row>
```

## Requesting Pages within Search Results

By default, a request returns only the first page of results. The *page* search option can return multiple pages of search results.

**Example**

If a search for “hydrogen” has already been performed with a *query_id* value of 1 returned in the results XML, then the second page of the results may be obtained with the following URL.

http://www.osti.gov/conference/?query_id=1&page=2

## Additional Search Options

Some of the data XML services may specify additional searching options. These special criteria apply only to those particular data services.

| *Additional Criteria Keywords* | *Search Option Selected* | *XML Service* |
|---|---|---|
| collection | Specifies the type of collection to search: "G" indicates GEOTHERMAL ONLY, "L" indicates GEOTHERMAL LEGACY DATA ONLY. The default is to search both collections of data. | Only applies to the **Geothermal XML Data Service** |
| PatentNumber | Searches for a specified patent number | Only applies to the **DOE Patents Database XML Data Service** |
| PatentApplicationNumber | Searches for a specified patent application number | Only applies to the **DOE Patents Database XML Data Service** |
| Inventors | search within author only | Only applies to the **DOE Patents Database XML Data Service** |
| LabTechCenter | search within originating_research_org only | Only applies to the **DOE Patents Database XML Data Service** |
| Sponsoring Office | search within sponsor_org only | Only applies to the **DOE Patents Database XML Data Service** |
| Contract Number | search within contract_nos only | Only applies to the **DOE Patents Database XML Data Service** |
| Assignee | search within patent_assignee only | Only applies to the **DOE Patents Database XML Data Service** |
| Abstract | search within description only | Only applies to the **DOE Patents Database XML Data Service** |