

USNDP Web Services

B. Pritychenko

*National Nuclear Data Center, Brookhaven National
Laboratory, Upton, NY 11973-5000, USA*



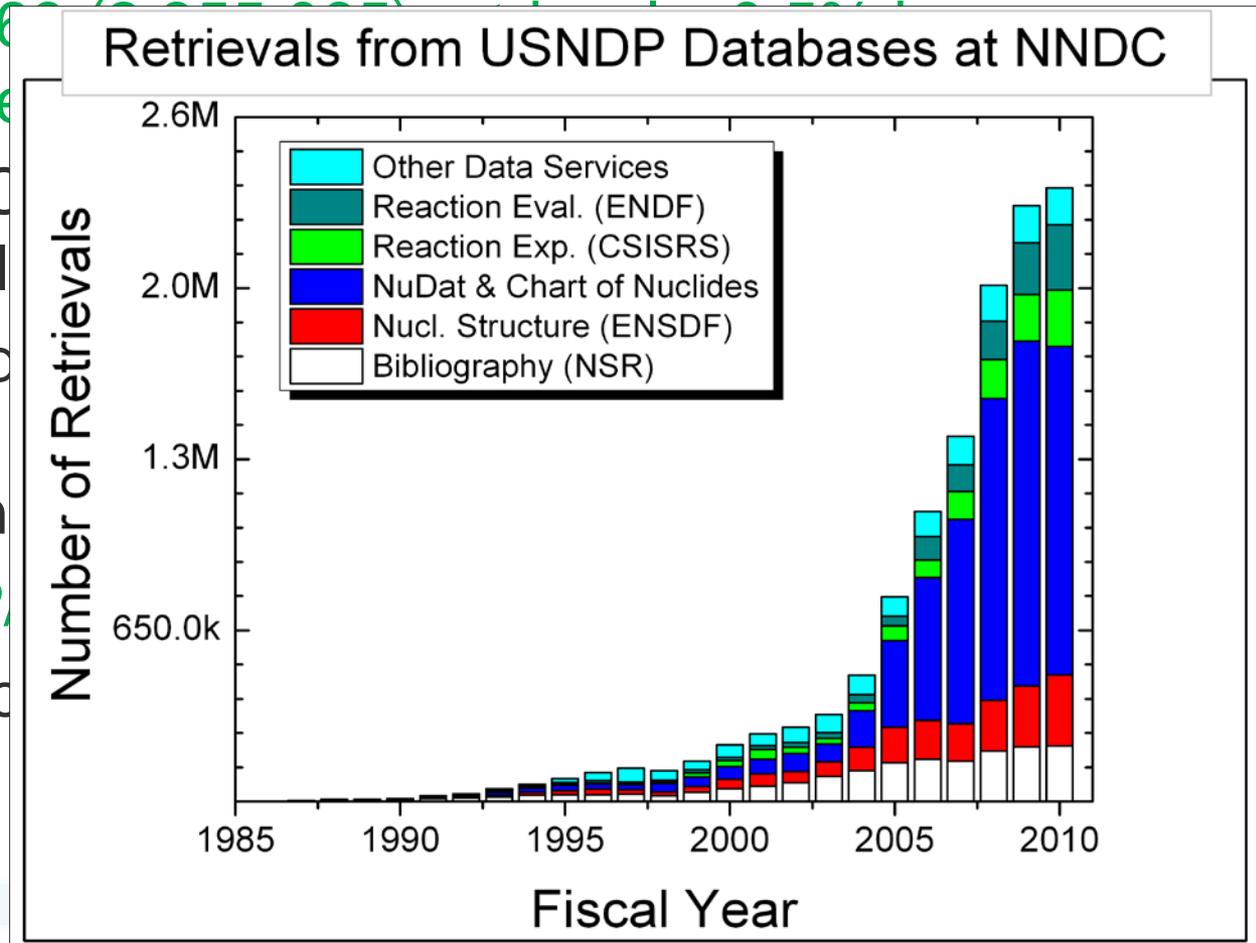
USNDP Web & Database Services

- <http://www.nndc.bnl.gov>
- In service for the past 40 years and are often cause

The screenshot shows the National Nuclear Data Center (NNDC) website. The browser window title is "National Nuclear Data Center - Mozilla Firefox" and the address bar shows "http://www.nndc.bnl.gov". The page content includes a navigation menu with various database and tool links, a search bar, and a footer with sponsorship information.

FY10 Summary

- 2,331,160 retrievals compared to 1,900,000 in FY09
- NuDat/Chart of Nuclides retrieval increased by 15%
- NNDC of Brookhaven Sybase database has been finalized
- USNDP databases are now available via a single Web portal



USNDP/CSEWG Gforge Server

- R. Arcilla &
- <https://ndclx>

The screenshot shows the NNDensemble website in a Mozilla Firefox browser window. The browser's address bar displays the URL <https://ndclx.bnl.gov/af/>. The website header includes the 'FORGE' logo and navigation tabs for 'Home', 'My Stuff', 'Search', 'Projects', and 'Snippets'. The main content area features the 'NNDensemble' logo and the tagline 'The collaboration platform for the U.S. nuclear data community'. A central graphic displays a 'Chart of Nuclides' with various project links: NSR, XUNDL, ENSDF, NuDat, Databases, MIRD, Sigma, CSIRS, ENDF, Networks, CSEWG, USNDP, Empire, Atlas of n Resonances, Nuclear Wallet Cards, Tools and Publications, and Nuclear Data Sheets. To the right, there is a 'National Nuclear Data Center' logo and a circular diagram representing the FORGE workflow: COLLABORATION (INPUT), OUTPUT (FORGE), CONTROL (FORGE), AUTHENTICATION (FORGE), ACCESS (FORGE), and SOURCE CODE (FORGE). The right sidebar contains an 'Activity' graph, 'Recently Registered' users, 'Top Downloads', and 'Browse Project Top' links. The 'About This Website' section states that NNDensemble is a cyberspace collaboration platform for the U.S. nuclear data community, operated by the National Nuclear Data Center (NNDC) funded by the DOE Office of Science, Office of Nuclear Physics. The 'Current Projects' section lists ENDF/B-VII, EMPIRE, and ENDF-6 Manual. The 'Recent News' section shows 'No news items found'. A 'SSL Secured GlobalSign' logo is visible at the bottom of the page.

Nuclear Science References

- More user friendly
- The only database providing information on EXFOR connections
- V. Zerkin, IAEA
- Database maintained

Nuclear Science References (NSR) - Mozilla Firefox
http://www.nndc.bnl.gov/nsr/

NNDc National Nuclear Data Center
BROOKHAVEN NATIONAL LABORATORY

INDC Databases: NuDat | NSR | XUNDL | ENSDF | MIRD | ENDF | CSISRS | Sigma

Nuclear Science References (NSR)

The previous version of Web Interface is here.
Database version of October 22, 2010

The NSR database is a bibliography of nuclear physics articles, indexed according to content and spanning 100 years of research. Over 80 journals are checked on a regular basis for articles to be included. For more information, see the help page. The NSR database schema and web applications have undergone some recent changes. This is a revised version of the NSR Web Interface.

Quick Search | Text Search | Indexed Search | Keynumber Search | Combine View | Recent References

Author
Brown or B.A. Brown

Nuclide
31Ra or 23-S8

Reaction
n,p or (n,p), 105-180

Publication Year from 1910 to 2010

Reference Type All Experiment Theory

Output Format HTML BibTex Text

Database Manager: Boris Pritychenko, NNDC, Brookhaven National Laboratory
Web Programming: Boris Pritychenko, NNDC, Brookhaven National Laboratory
Data Source: NNDC, Brookhaven National Laboratory,
IAEA, International Atomic Energy Agency,
NDG, McMaster University

Sigma 3.2

- A. Sonzogni, et al.
- JENDL-4.0
- Improved mathematical operations

Existing Datasets:

| Dataset | Description | Number of total (x,y) points | Quantities evaluated between $x_{min}=0.0$ and $x_{max}=0.0$ | | | | | | |
|---|-------------|------------------------------|--|-----------|-----------|--------------------------------------|---------------|-------------------------------------|------------------------|
| | | | Number of (x,y) points | y_{min} | y_{max} | $\int y dx$ ($x_{max}>x_{min}$) | $\int y/x dx$ | Maxwellian weighted $k_7=30$ keV | ^{252}Cf weighted |
| <p>The plot cart is empty, add plot(s) to it before using this page: go to Browse or Retrieval, select Plot, click Add to plot cart.</p> <p>This part of Sigma allows the user to compute operations between different sets of (x,y) data points that are stored in the plot cart. A new set of (x,y) points, resulting in mathematical operations of other datasets, will be added to the plot cart using this feature.</p> <p>Examples:</p> <ul style="list-style-type: none"> • To plot the first dataset's y column multiplied by 10, type $10*y0$. • To plot the \log_{10} of the first dataset's y column, type $\log(y0)$. Use $\ln()$ for \log_e. • To plot the first dataset's x column multiplied by its y column, type $x*y0$. • To plot the integrand of a Maxwellian type averaged cross section, type $y0*x*\exp(-x/10000)$. • To add the y columns for the first two datasets, type $y0+y1$. • To plot the first dataset's y column plus 10 times the second dataset's y column type $y0+10*y1$. <p>The new dataset's x values are obtained as the union of all the datasets' x values involved in the operation. The expression is then evaluated in y values obtained from linear interpolations.</p> <p>The ^{252}Cf weighted quantity corresponds to $\int C \exp(Ax) \sinh(\sqrt{Bx}) y dx$, with $A=7.89E-1$ MeV$^{-1}$ and $B=4.47E-1$ MeV$^{-1}$</p> <p>The abundances are obtained from NuDat2 while the fission yields are from ENDF/B-VII.0</p> <p>Warnings:</p> <ul style="list-style-type: none"> • At the moment, computations are restricted to cross sections (MF=3). • Operations among datasets containing more than 10,000 actual points will take a long time to execute and the connection will be timed out. • The precision of the integrals in the table is good as long as the integrand is linear. | | | | | | | | | |

Conclusion & Outlook

- Migration project has been finished in FY10
- Many challenges
- Work on new projects will continue
- ENSDF/XUN T. Johnson
- We will continue to support the community
- We advertise Physics Today

web watch To suggest topics or sites for Web Watch, please visit <http://www.physicstoday.org/suggestwebwatch.html>.
Compiled and edited by Charles Day

<http://www.ostina.org/content/view/4914/1292>
Bridges is an online magazine published by the Office of Science and Technology at Austria's embassy in Washington, DC. Among the articles in the current issue is a report by OST staffer Caroline Adenberger on North Korea's first international university, Pyongyang University of Science and Technology.



<http://www.nndc.bnl.gov/>
The **National Nuclear Data Center** at Brookhaven National Laboratory provides a clearinghouse for collision cross sections, half-lives, and other nuclear data. The center also maintains a searchable database of papers drawn from 80 journals.

<http://www.cancer.gov/cancertopics/factsheet/Therapy/radiation>
Radiation therapy can be as scary to some people as the cancer it's intended to treat. The National Cancer Institute has put together a guide, **Radiation Therapy for Cancer: Questions and Answers**, which explains the various kinds of radiation therapy and how they work.

www.physicstoday.org August 2010 Physics Today 29