

# *Overview of USNDP Products and Services*

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# NNDC Web Portal



## National Nuclear Data Center

**BROOKHAVEN**  
NATIONAL LABORATORY

- [Nuclear Structure and Decay Databases](#)
- [Nuclear Structure and Decay Tools](#)
- [Nuclear Reaction Databases](#)
- [Nuclear Reaction Tools](#)
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[Nuclear Wallet Cards 2005](#) New [CSEWG & USNDP Meetings '2005](#)

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Site Index -

Search the NNDC:

go

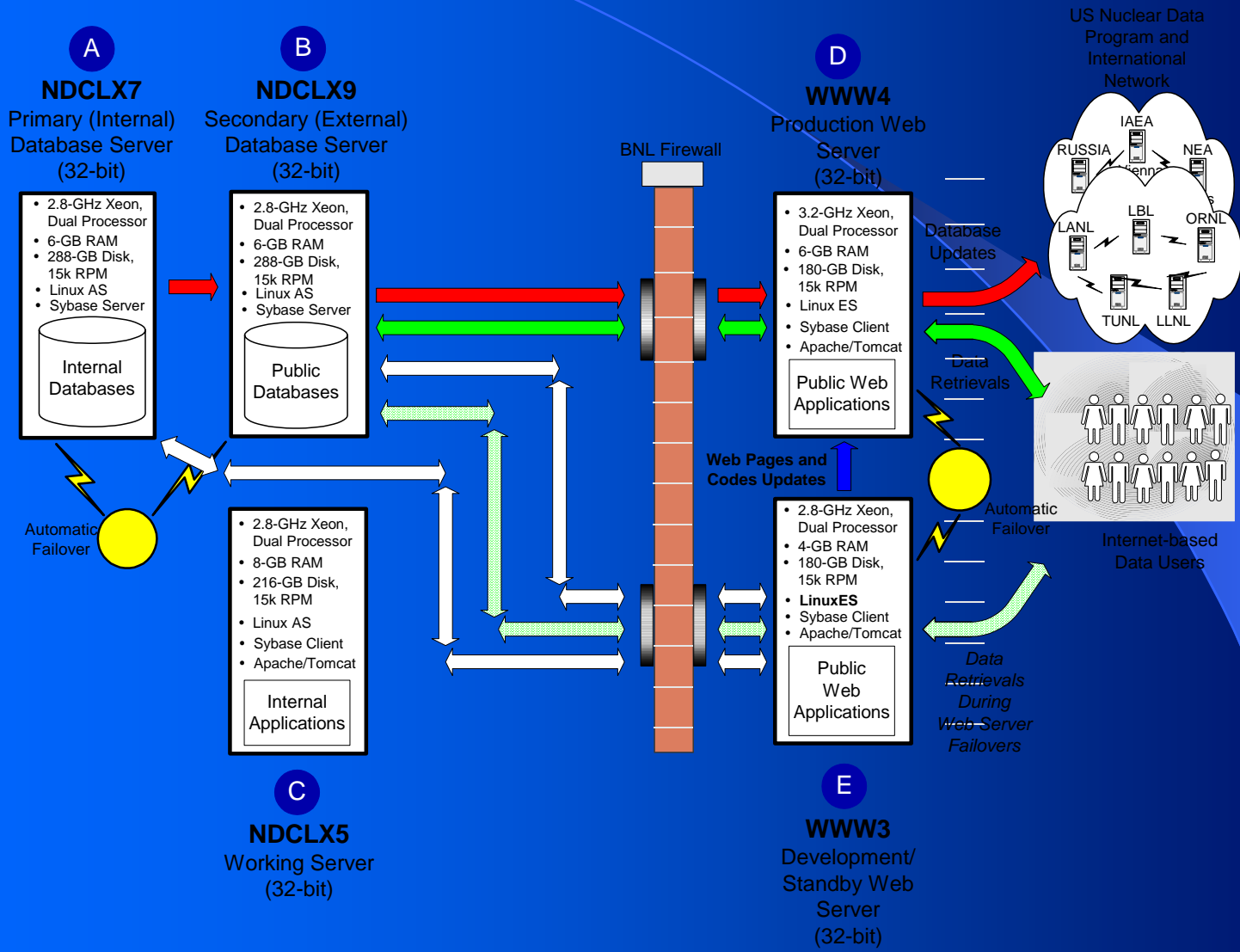
<p><b>AMDC</b> Atomic Mass Data Center, <a href="#">Q-value Calculator</a></p> <p><b>CSISRS</b> <i>alias EXFOR</i> Nuclear reaction experimental data</p> <p><b>For NMMSS &amp; DoE NMIRDC</b> safeguards &amp; inventory decay data standards</p> <p><b>Nuclear Data Sheets</b> Nuclear structure and decay data journal</p> <p><b>RIPL</b> Reference Input Parameter Library</p>	<p><b>CapGam</b> Thermal Neutron Capture <math>\gamma</math>-rays</p> <p><b>Empire</b> Nuclear reaction model code</p> <p><b>IRDF</b> International Reactor Dosimetry File</p> <p><b>Nuclear Wallet Cards</b> Ground and isomeric states properties</p> <p><b>USNDP</b> U.S. Nuclear Data Program</p>	<p><b>CINDA</b> Computer Index of Nuclear (reaction) Data</p> <p><b>ENDF</b> Evaluated Nuclear (reaction) Data File</p> <p><b>MIRD</b> Medical Internal Radiation Dose</p> <p><b>Nuclear Wallet Cards for Homeland Security</b></p> <p><b>XUNDL</b> Experimental Un-evaluated Nuclear Data List</p>	<p><b>CSEWG</b> Cross Section Evaluation Working Group</p> <p><b>ENSDF</b> Evaluated Nuclear Structure Data File</p> <p><b>NSR</b> Nuclear Science References</p> <p><b>NuDat</b> Nuclear structure and decay data</p> <p style="color: red;">Coming March 2006: <a href="#">Atlas of Neutron Resonances</a></p>
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Links ordered alphabetically [Order by category](#)

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# NNDC Computer Configuration



# Atomic Mass Data Center

<http://www.nndc.bnl.gov/amdc>



## Atomic Mass Data Center



NNDC [Atomic Masses](#) and [Q-value Calculator](#) are based on the AMDC 2003 Atomic Mass Evaluation.

The Atomic Mass Data Center Web site is maintained by G. Audi (CSNSM Orsay, France) and hosted by the National Nuclear Data Center (BNL, USA). Its major new products are the "Ame2003 Atomic Mass Evaluation" and the "Nubase2003" evaluation, published by G. Audi, A.H. Wapstra, C. Thibault, J. Blachot and O. Bersillon in Nuclear Physics A729 (2003).



 Français

### Summary

- [Introducing AMDC](#)
- [Bulletin of the AMDC](#)
- [Access to the AMDC files](#)
- [AME Atomic Mass Evaluation](#)
- [NUBASE Nuclear data evaluation: PC-nucleus, jvNubase](#)
- [Other Web Sites](#)
  - [Other nuclear Data Centers](#)
  - [Experiments on Masses](#)

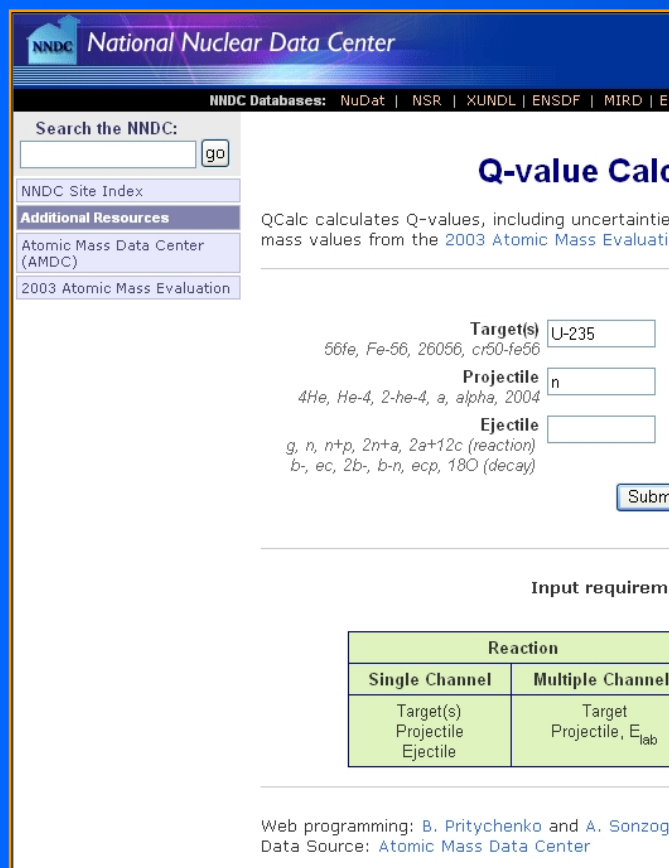
### Other Data at the AMDC

ENSDF (Evaluated Nuclear Structure and Decay File): As a help for the AMDC users, the ENSDF files downloaded from BNL, are accessible in the ["ens" subdirectory](#).

AMDC webmaster, G. Audi, [audi-at-csnsn.in2p3.fr](mailto:audi-at-csnsn.in2p3.fr)  
 AMDC host, B. Pritychenko, [pritychenko-at-bnl.gov](mailto:pritychenko-at-bnl.gov)

# Q-value Calculator

AME2003, <http://www.nndc.bnl.gov/qcalc>



**National Nuclear Data Center**

Search the NNDC:

Additional Resources:  
 NNDC Site Index  
 Atomic Mass Data Center (AMDC)  
 2003 Atomic Mass Evaluation

QCalc calculates Q-values, including uncertainty mass values from the 2003 Atomic Mass Evaluation

Target(s)   
*56Fe, Fe-56, 26056, c150-fe56*

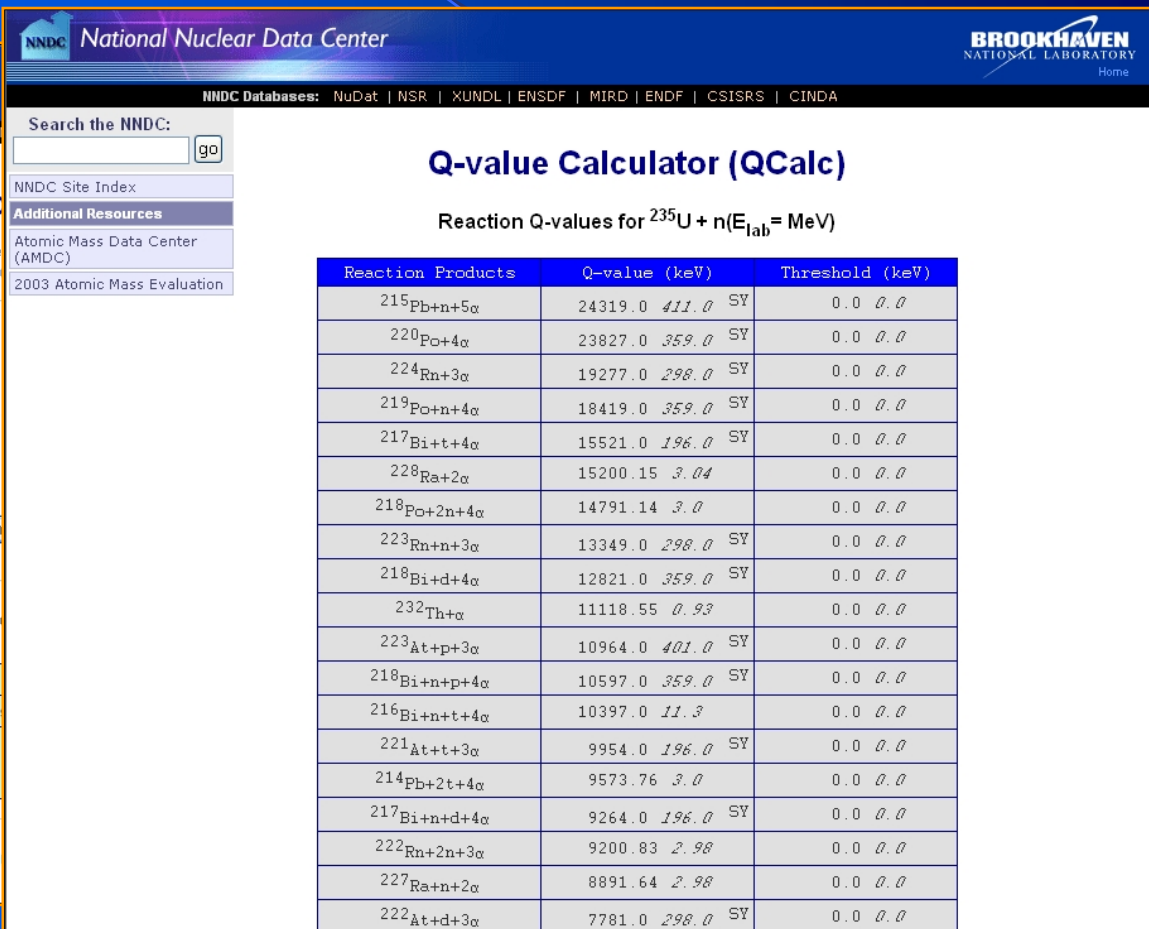
Projectile   
*4He, He-4, 2-he-4, a, alpha, 2004*

Ejectile   
*g, n, n+p, 2n+a, 2a+12c (reaction)  
 b-, ec, 2b-, b-n, ecp, 18O (decay)*

**Input requirements**

Reaction	
Single Channel	Multiple Channel
Target(s)	Target
Projectile	Projectile, $E_{lab}$
Ejectile	

Web programming: B. Pritychenko and A. Sonzogni  
 Data Source: Atomic Mass Data Center



**National Nuclear Data Center**

Search the NNDC:

Additional Resources:  
 NNDC Site Index  
 Atomic Mass Data Center (AMDC)  
 2003 Atomic Mass Evaluation

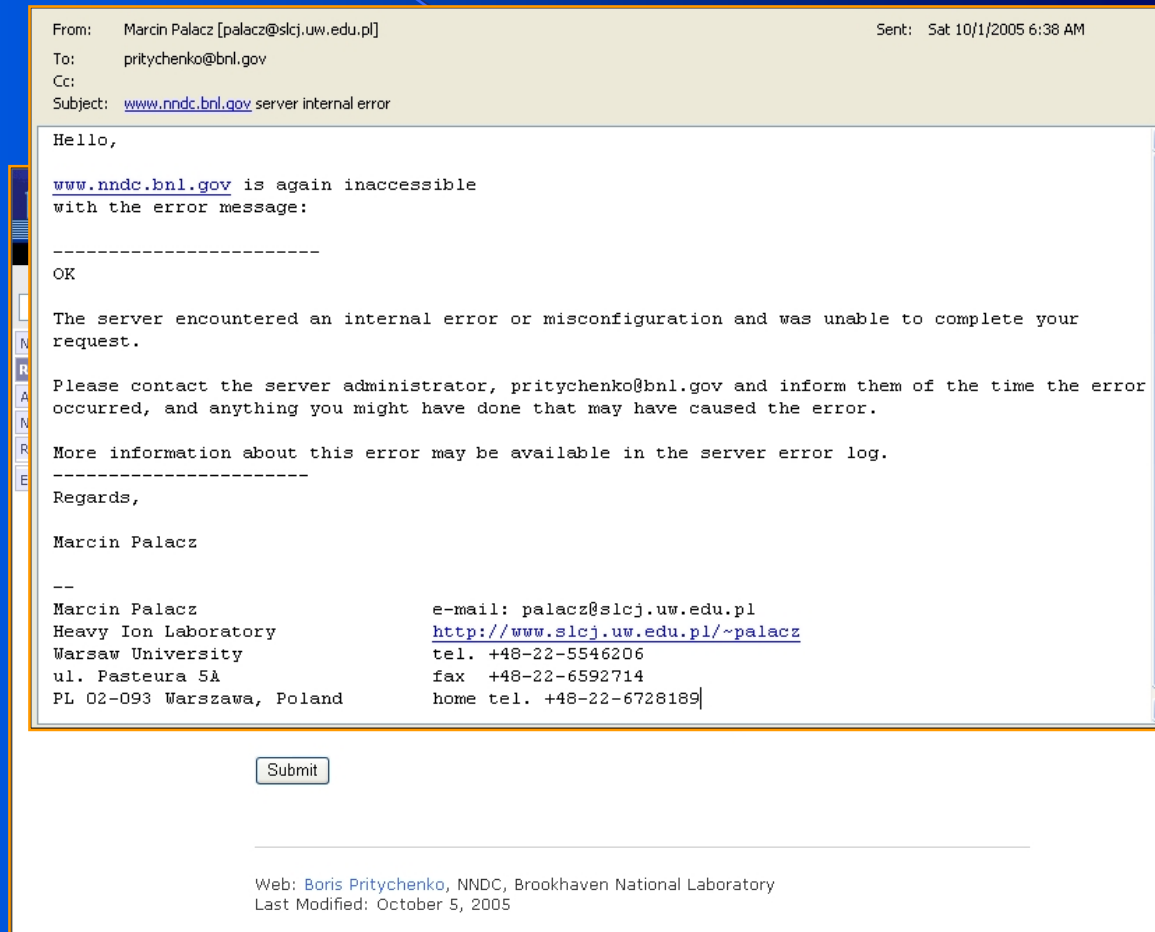
### Q-value Calculator (QCalc)

Reaction Q-values for  $^{235}\text{U} + n(E_{lab} = \text{MeV})$

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

# Contact Us Java Servlet, <http://www.nndc.bnl.gov/guestbook>

- Our primary goal is to serve U.S. nuclear data users
- Non U.S. users expect free of charge services despite the fact that their countries do not contribute to support
- Non U.S. users can be helpful for product improvements



From: Marcin Palacz [palacz@slcj.uw.edu.pl] Sent: Sat 10/1/2005 6:38 AM  
To: pritychenko@bnl.gov  
Cc:  
Subject: [www.nndc.bnl.gov](http://www.nndc.bnl.gov) server internal error

Hello,

[www.nndc.bnl.gov](http://www.nndc.bnl.gov) is again inaccessible with the error message:

-----  
OK

The server encountered an internal error or misconfiguration and was unable to complete your request.

Please contact the server administrator, pritychenko@bnl.gov and inform them of the time the error occurred, and anything you might have done that may have caused the error.

More information about this error may be available in the server error log.  
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Regards,

Marcin Palacz

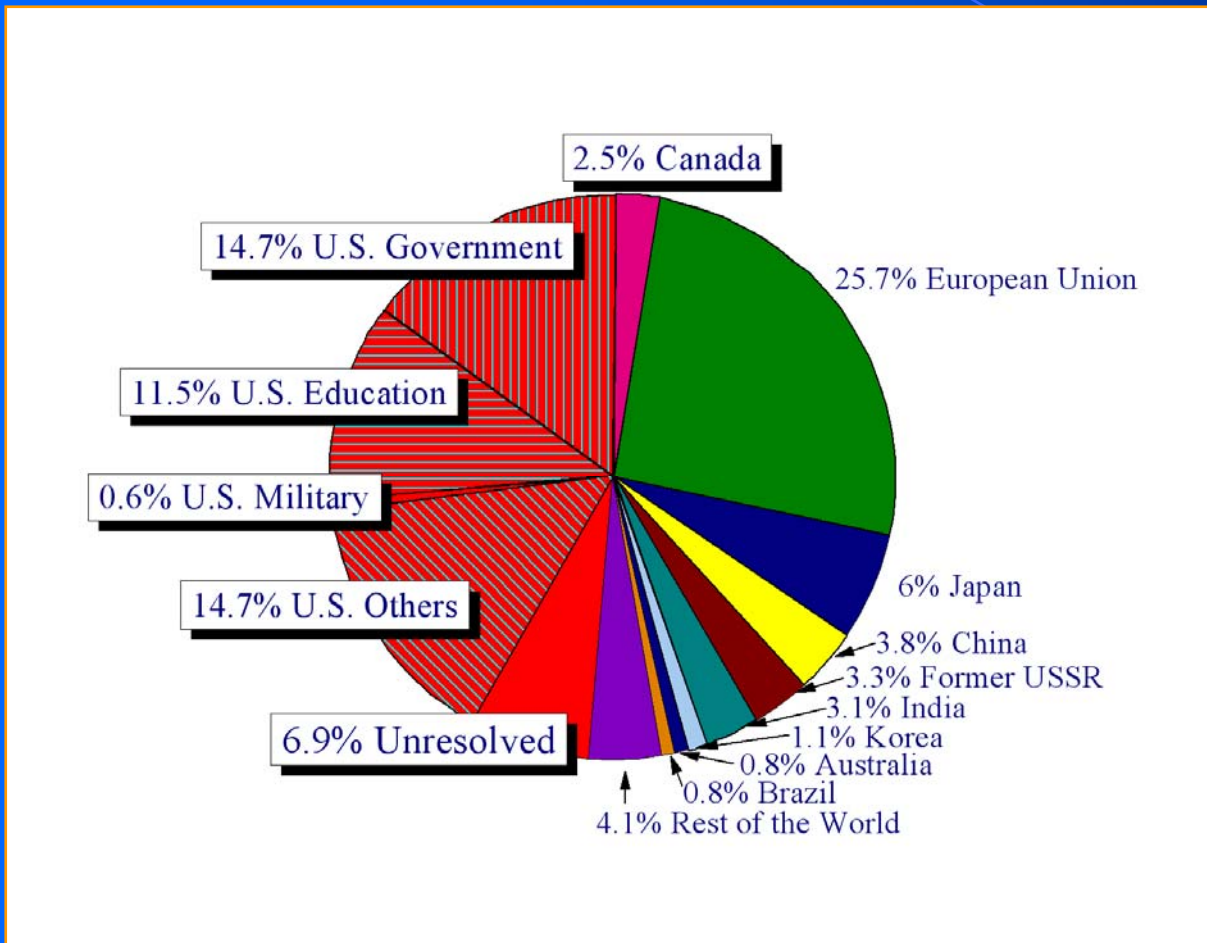
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Marcin Palacz e-mail: palacz@slcj.uw.edu.pl  
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PL 02-093 Warszawa, Poland home tel. +48-22-6728189

Web: Boris Pritychenko, NNDC, Brookhaven National Laboratory  
Last Modified: October 5, 2005

# Geographical Distribution of NNDC Users in 2004

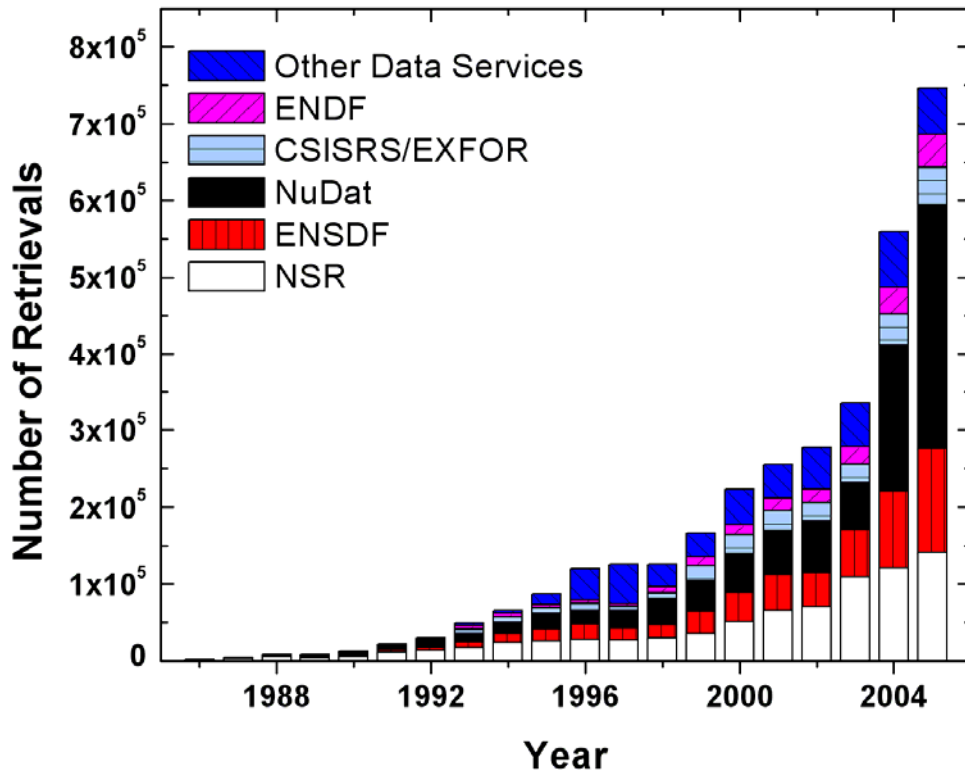


- USA - 41.87%
- EU - 25.72%
- Japan - 6.06%
- China - 3.75%
- Russia - 3.28%
- India - 3.13%
- Canada - 2.47%
- Korea - 1.09%
- Australia - 0.78%
- Brazil - 0.77%





# Recent 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



# *NNDC Booth Activities*

- NNDC staff member(s) run the booth
- Live demonstration of Nuclear Data services
- Extended NNDC poster (latest version is available at this meeting), poster content reflects hot topics of the conference
- Handout materials (Nuclear Wallet Cards, flyers, ...)

## *Targeted Conferences*

- International Conference on Nuclear Data for Science and Technology, Santa Fe, Sep 26 - Oct 1, 2004
- 12<sup>th</sup> Int. Conference on Capture Gamma-Ray Spectroscopy and Related Topics, Notre Dame, Sep 4-9, 2005
- PHYSOR 2006, Amer. Nuclear Society's Topical Meeting on Reactor Physics, Vancouver, Canada, Sep 10-14, 2006

# Summary

- NNDC maintains nuclear databases and keeps nuclear data up-to-date
- NNDC produces nuclear data tools & publications
- NNDC coordinates CSEWG & USNDP activities
- We are looking for new opportunity to interact with users
- We are seeking new applications for our products