Nuclear Data Newsletter

News from the Nuclear Data Section

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Opening of the 28th Meeting of the International Nuclear Data Committee

From the Section Head

In this 50th issue of the Nuclear Data Newsletter it seems appropriate to look back to the first issue of the Newsletter in September 1979 and reflect on the course that nuclear data has taken during the past 31 years. In 1979, it was stated that the main function of the IAEA-NDS "is to serve as an international data centre for nuclear and atomic data required for the development of nuclear science and technology for peaceful purposes", and indeed the Newsletter was created to improve the flow of nuclear data information from the IAEA-NDS to a continuously increasing number of consumers. Further elaboration of the IAEA-NDS function can be gained from the article entitled: "The IAEA nuclear data programme - Its role in the nuclear community and its services to developing countries" published in the IAEA Bulletin 1980, Vol. 22, Issue 2, http://www.iaea.org/Publications/Magazines/Bulletin/Bull222/22205086578.pdf. Our role has remained essentially unchanged since then, but what has evolved is the size and range of our data, and the methods and speed with which they can be generated and transmitted. As our web site shows, we have invested heavily in the easy search for data and its visualisation.

An insight into the current status of the NDS can be gained from the report to the International Nuclear Data Committee for the period January 2008 – December 2009, where progress reports for all projects within the Atomic and Nuclear Data subprogramme have been combined with information on other related support activities:
http://www-nds.iaea.org/reports-new/indc-reports/indc-nds/indc-nds-0569.pdf

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All services provided to users are free of charge. Please contact us at the following addresses:

Nuclear Data Section
International Atomic Energy Agency
Vienna International Centre
P.O. Box 100
A-1400 Vienna, Austria

Internet: http://www-nds.iaea.org/
Email: services@iaeand.iaea.org
Fax: +43 (1) 26007
Telephone: +43 (1) 2600-21710

Computer Codes and Data Libraries

Databases and libraries are available for download or on CD-ROM/DVD cost-free on request

EXFOR-CINDA Database and Retrieval System, version 1.99, data updated to December 2009:

- Integrated CINDA and EXFOR
- Advanced interactive search
- Help based on dictionaries
- Interactive graphics with ZVView
- Does not need installation, can run from CD-ROM
- Works with local and remote Databases
- CINDA extended by charged particle and photonuclear reactions
- EXFOR and CINDA as MS-Access databases

EndVer/GUI and EXFOR-CINDA package, December 2009:

An integrated software package for comparison of evaluated nuclear data files with experimental data from the EXFOR database (also contains interactive plotting).

Features:

- EndVer with Graphic User's Interface
- Integrated EndVer - PrePro-2007 - EXFOR
- PostScript graphics with PlotC4
- Plotting ENDF Files vs. EXFOR:
  MF4 (DA), MF5 (DE), MF6 (DAE), MF3+33 (SIG)
- Interactive graphics with ZVView
- Full EXFOR and CINDA databases
- Test version for Macintosh

ENDF April 2007 - 14 Evaluated Data Libraries for Nuclear Applications in original and pointwise formats:

- BROND-2.2
- CENDL-2
- ENDF/B-VI-8
- ENDF/B-VII-0
- ENDF/B-VII-0-300
- ENDF/HE-VI
- IAEA-MEDICAL
- IAEA-STANDARDS
- IRDF-2002
- IRDF-2002-G
- INDL/TSL
- JENDL-3.3
- JEFF-3.1
- JEFF-3.1/A

IAEA-Med:

Charged-particle cross-section database for medical radioisotope production: diagnostic radioisotopes and monitor reactions. The database contains evaluated cross-sections for 48 reactions induced by light charged-particles with incident energies up to several tens of MeV (maximum 100 MeV).
http://www-nds.iaea.org/medical/

ENDF archive:

Collection of old and new evaluated data libraries for downloading (39 libraries) in ENDF-4,-5,-6 formats.
http://www-nds.iaea.org/ndspub/download-endf/

ROSFOND-2010:

Updated Russian library of evaluated neutron data: important neutron data for advanced nuclear reactors issued in 2010 by IPPE, Obninsk, Russian Federation.
http://www.ippe.ru/podr/abbn/libr/rosfond.php

CENDL-3.1:

Chinese evaluated neutron data library was issued in December 2009.
http://www-nds.iaea.org/ndspub/download-endf/CENDL-3.1/n-index.htm

JENDL-4.0:

Released May 2010 from JAEA Nuclear Data Center: a general purpose neutron-induced reaction data library, 10^{-5} eV to 20 MeV incident neutron data for 406 nuclides.
http://wwwndc.jaea.go.jp/jendl/j40/j40.html

JANIS-3.2:

Released June 2010 from NEA Data Bank: a Java-based nuclear information software with a display program designed to facilitate the visualisation and manipulation of nuclear data. The new functionalities of this version are: display of evaluated covariances matrices (MF33); support for additional NJOY covariance formats: COVFILS (ERRORR) and BOXER (COVR).
http://www.nea.fr/janis/

ADS-2.0 nuclear data library:

An application test library in ACE and MATXS format for ADS neutronics design.
http://www-nds.iaea.org/ads/

EMPIRE v. 3.0:

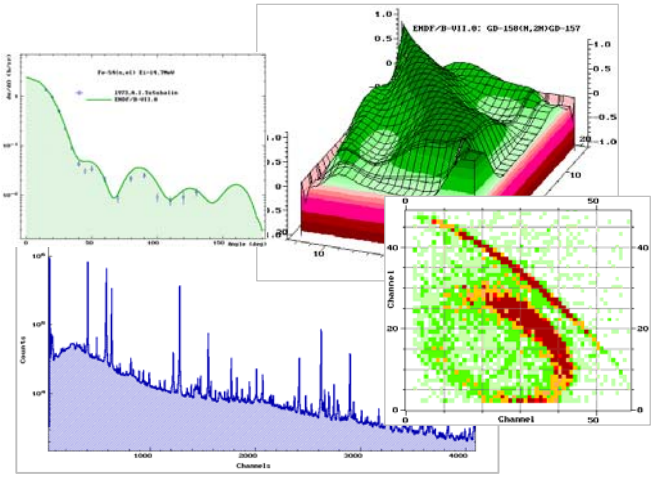
A new version of the EMPIRE system of codes for nuclear reaction calculations was released in January 2010; the current version is available at:
https://ndclx4.bnl.gov/gf/project/empire/

A comprehensive paper describing the release was published in Nuclear Data Sheets 108 (2007) 2655–2715.
http://dx.doi.org/10.1016/j.nds.2007.11.003

Further computer codes and data libraries available:
http://www-nds.iaea.org/cd-catalog.html

Data Library News

If there is any Database News you would like to have mentioned in future issues of the Nuclear Data Newsletter send details to services@iaeand.iaea.org



Web-ZVView (new service)

This is an interactive plotting web application, which can be used independently from traditional IAEA nuclear databases and services. **Users can plot their own data** as well as data available from external web-archives. All operations are performed on the server side, i.e. there is no need for any software installation on the user's side. A variety of plotting operations includes 3-D animation.

Input to web-ZVView:

- User data (copy-paste, upload file)
- ZVD files (e.g. stored from EXFOR-ENDF system)
- Data from ENDF archives (web-link to remote servers)
- One and two dimensional arrays (includes covariance data)
- Column, non-structured and ENDF data (MF33+MF3)

Output formats:

- GIF, EPS
- HTML-Tables, ZVD
- Text (columns, triangle)
- EXFOR style for covariance data
- ENDF style (MF33 Section, LB5)
- Input for Fortran (+ reading Fortran code)

http://www-nds.iaea.org/exfor/myplot.htm

LiveChart of the Nuclides

NDS LiveChart of the Nuclides has been updated with new plotting capabilities and new data:

- Plotting of gamma decay schemes: for the creation of the plot the user can adopt filter values for the level energy (from-to), image height, level width, band spacing; emphasize a level and/or gamma ray and turn on/off display of level energy, spin-parity, half-life, gamma ray values or show all (with possible overlapping). The legend and the displaying of bands can also be turned on/off. The plot for the internet browser is created in JPEG format but for publications an EPS can be created and downloaded.
- N.J. Stone's data (Table of nuclear magnetic and dipole and quadrupole moments) has been included into the nuclide detail page of LiveChart, including links to the references of data within the NSR database.
- I. Angeli and K.P. Marinova data (Nuclear Charge Radii-2010) has been included into the detail page of LiveChart.

http://www-nds.iaea.org/livechart/

Your feedback on these features is welcomed, email to: services@iaeand.iaea.org

Reference Input Parameter Library (RIPL)

The Reference Input Parameter Library is devoted to input parameters needed in calculations of nuclear reactions and nuclear data evaluations. Advanced modelling codes like EMPIRE and TALYS require substantial numerical input; therefore the IAEA-NDS has worked extensively since 1993 on a library of validated nuclear-model input parameters, referred to as the Reference Input Parameter Library (RIPL). The RIPL-3 library was released in January 2009, and updated in January 2010. A graphical interface for RIPL-3 data retrieval and information is available on the web through http://www-nds.iaea.org/RIPL-3/

FORTRAN codes closely linked to retrievable data are also available including SCAT2000, ECIS, OPTMAN and a code for prompt fission neutron spectra calculations within the Los Alamos model.

Comprehensive information on the RIPL library is available in the published paper in Nuclear Data Sheets *Special Issue on Nuclear Reaction Data*, Vol. 110 No. 12 (2009) 3107–3214. http://dx.doi.org/10.1016/j.nds.2009.10.004
Limited hard copies available on request.

NDS Meeting Reports

ICTP-IAEA Workshop on Nuclear Reaction Data for Advanced Reactor Technologies
Trieste, Italy, May 3 – 14, 2010

Directors: Roberto Capote, A. Stanculescu, V.G. Pronyaev; Local Organizer: C. Tuniz;
34 students from 21 countries



Participants of ICTP-IAEA Workshop on Nuclear Reaction Data for Advanced Reactor Technologies

The main topics of the Workshop included: neutron cross-section measurements, data reduction and uncertainty estimation; nuclear reaction theory, nuclear models and codes for cross-section calculations; cross-section evaluations using non-model and model fits of experimental data; nuclear data libraries, data retrieval and processing; reactor calculations with calculated parameter uncertainty estimation; and strategies for advanced reactor and closed fuel cycle technologies. In addition to lectures on nuclear reaction modelling, the scientists and students who attended the Workshop undertook practical exercises on EMPIRE and TALYS calculations. Students thoroughly enjoyed the two-week workshop, made useful new contacts with IAEA staff, invited external lecturers and other students, and learnt much about nuclear reaction data for advanced reactor systems.

Consultants Meeting on Improvements and Extension to IRDF (International Reactor Dosimetry File)
Vienna, May 5 – 7, 2010

Scientific Secretary: Mark A. Kellett, 4 participants and NDS staff



Participants of Consultants Meeting on Improvements and Extension to IRDF

The main aims of this meeting were to discuss scientific and technical matters related to reactor dosimetry and more specifically to consider how best to proceed with improving the current library, IRDF-2002. The IRDF-2002 library, produced through an earlier CRP, aimed to meet the dosimetry requirements for operating fission reactors. It was acknowledged by the participants that improvements to a number of evaluations in the current library have been made, or are in progress, and these need to be incorporated into a new release. Also a major update is required if a future version of the library is to meet the dosimetry needs of non-fission nuclear facilities, including those relating to fusion devices, e.g. IFMIF and ITER. This latter point requires the upper energy limit of the library to be extended to 60 MeV. The ways in which this can be achieved were discussed. The meeting participants agreed that an update to the library, satisfying the identified needs, can be produced through the existing effort by the end of 2011. At that point a major validation exercise will be required which the IAEA plans to coordinate through a new CRP.

http://www-nds.iaea.org/reports-new/indc-reports/indc-nds/

28th Meeting of the International Nuclear Data Committee
Vienna, May 25 – 28, 2010

Scientific Secretary: Robin A. Forrest: 12 members (3 members apologised for absence),
2 advisors, 2 observers and NDS staff

The INDC advises the IAEA on its programmatic activities in the field of nuclear data applications. Members, who serve in their personal capacity are selected from IAEA Member States which maintain a major nuclear data programme and they provide particular technical expertise, or offer a needed regional perspective. Committee Members may be accompanied by advisors; observers from the OECD-NEA (Organization for Economic Cooperation and Development – Nuclear Energy Agency) and the EC-JRC-IRMM (European Commission – Joint Research Centre – Institute for Reference Materials and Measurements) also attended the last meeting.



Opening of the 28th Meeting of the INDC

For the period 2009 – 2012, membership of the INDC is: Ulrich Fischer (Germany), Boris Fursov (Russian Federation) Michal Herman (USA), Robert Jacqmin (Chairman) (France), Natalia Janeva (Bulgaria), Swaminathan Kailas (India), Young Ouk Lee (Republic of Korea), Francisco Leszczynski (Argentina), Keiichi Shibata (Japan), Deon Steyn (South Africa), Jean-Christophe Sublet (UK), Ferenc Tarkanyi (Hungary), Nguyen Van Do (Vietnam), Bruce Wilkin (Canada), and Zhixiang Zhao (China). Robin Forrest (Section Head, NDS) serves as Scientific Secretary of the INDC.

During the meeting this external review body assessed the activities of the IAEA Nuclear Data Section (NDS) covering 2008 and 2009, including nuclear data and database development, and nuclear data services to all users in Member States, and made recommendations on new specific activities of the IAEA to begin in the 2012-2013 time period, in order to address the needs of Member States in the field of nuclear data. The work programme during 2010 and 2011 was described. Actions for consideration included Coordinated Research Projects (CRPs), Data Development Projects (DDPs), general services such as data dissemination, and specific training initiatives that fall within the responsibility of the NDS.



Participants of the 28th Meeting of the INDC

The Committee endorsed the NDS plans for new CRPs on Particle-Induced Gamma-ray Emission (PIGE) and non-standard β^+ emitters. Extension of the IRDF-2002 dosimetry library to correct errors and make it applicable for fusion applications was considered to be relevant. The importance of training was again recognised and the Section was urged

to continue with courses and workshops at ICTP which are considered to be especially relevant for developing countries. The coordination of international activities through the NRDC and NNDC networks was seen as a vital part of the NDS work. The Committee was very enthusiastic with the improvement of the NDS web site and the development of improved on-line data visualisation, noting their importance to the dissemination of data to Member States.

http://www-nds.iaea.org/reports-new/indc-reports/indc-nds/indc-nds-0569.pdf

2nd Research Coordination Meeting (RCM) on
Characterization of Size, Composition and Origins of Dust in Fusion Devices
Vienna, June 21 – 23, 2010

Scientific Secretary: Bas Braams, 7 participants, 4 observers and NDS staff

In 2008 it was acknowledged by the fusion community that additional information on dust is of vital importance to the development of future fusion devices as, up to that date, there was no reliable method for the diagnosis of dust accumulation in a fusion device. Although the creation of this CRP was controversial, it was recognized that the most effective method of obtaining new data would be through this means, with the specific objective of the CRP being to generate data on the particle size, composition and origins of dust particles in fusion devices.



Participants of the 2nd RCM on
Characterization of Size, Composition and Origins of Dust in Fusion Devices

The first RCM of this CRP was held in December 2008, at which time participants summarized relevant developments related to dust in fusion devices and formulated a detailed plan of work.

The second RCM was also a valuable meeting as participants reviewed the status of the definitive objectives previously identified. One outcome of the meeting is a plan to create a database of parameters of dust particles collected in tokamak experiments. The development of the tools for automated analysis of tens of thousands of images of individual particles is being developed primarily by the Garching group in the CRP.

http://www-nds.iaea.org/reports-new/indc-reports/indc-nds/

EXFOR Editor Training
Vienna, August 30 – September 3, 2010

Scientific Secretary: Svetlana Dunaeva, 8 lecturers, 14 participants and NDS staff



Participants and lecturers: EXFOR Editor Workshop

The Workshop covered updating the EXFOR and LEXFOR Manuals, as well as EXFOR compilation training for compilers.

Items on the Agenda included:

- Revision of the EXFOR and LEXFOR Manuals (N. Otsuka);
- EXFOR retrieval, uploading and checking web-systems from NDS - basic & new features (V. Zerkin);
- EXFOR Editor software from Japan (A. Makinaga) and Russia (G. Pikulina/ S. Taova);
- Introduction for EXFOR compilers (M. Mikhaylyukova/S. Dunaeva);
- Individual training - creation of new EXFOR entries using original papers;
- Digitizing software from Japan (K. Tsubakihara) and Russia (S. Taova).

This five-day Workshop was considered by all participants to be highly informative and many have returned to their home countries fully motivated to follow-up on their experience and undertake further EXFOR compilation work.

3rd Research Coordination Meeting (RCM) on
Surface Data for Composition Dynamics relevant to Erosion Processes
Vienna, September 13 – 15, 2010

Scientific Secretary: Bas Braams, 12 participants and NDS staff

This CRP was organized to increase the understanding of erosion processes in fusion devices, such as ITER, with special attention to the migration and re-deposition of eroded material and the resulting changes in surface composition. During the past three years, data have been compiled, assessed and evaluated, and new measurements have been undertaken by the CRP participants. At this concluding RCM of the CRP, participants were requested to submit materials for the collective journal publication. Additionally, individual contributions by participants towards the preparation of a new APID publication were also requested to be submitted. All data from this CRP will be available in the Knowledge Base (http://www-amdis.iaea.org/w/index.php/Main_Page).

http://www-nds.iaea.org/reports-new/indc-reports/indc-nds/

Technical Meeting: International Code Centres Network
Vienna, September 27 – 28, 2010

Scientific Secretary: Hyun-Kyung Chung, 15 participants and NDS staff

The International Code Centres Network meets every two years and brings together experts from ten different countries. Its purpose is to gather and provide access to any information relevant for modellers in fusion plasma science. The main issues discussed at this, its second meeting, entailed reconsideration of the wide availability of the codes in atomic, molecular and plasma-surface interaction data, discussions on which codes should be distributed in the future, as well as the future role of the Network itself.

http://www-nds.iaea.org/reports-new/indc-reports/indc-nds/

Technical Meeting on Neutron Cross-Section Covariances
Vienna, September 27 – 30, 2010

Scientific Secretary: Roberto Capote, 26 participants and NDS staff

Uncertainties in nuclear data have long been recognized to be important considerations in assessing the safety, reliability, and cost-competitive advantages of nuclear power in comparison to other energy sources. The objective of this Technical Meeting was to bring together a group of experts who represent the cross-section measurement, modelling, and evaluation communities as well as a few key user communities, and who, as a collective group, have a great interest in improving the status of providing reliable covariance data and seeing them used in practical applications associated with nuclear power production. All major producers of evaluated nuclear data libraries (e.g. ENDF-B, JEFF, JENDL, CENDL and ROSFOND) were represented at the meeting.

Organized along three main lines, the meeting dealt with the resolved and unresolved resonance region, the fast neutron region, and with discussions of user data requirements.

Work on extension of the EXFOR format to accommodate covariance data and the development of supporting software tools has been started at NDS (see p.3, visualization of an EXFOR correlation matrix produced by the plotting package web-ZVView).



Participants of the Technical Meeting on Neutron Cross-Section Covariances

A number of recommendations for further work were generated which will appear in a technical document that is being prepared. All presentations of the meeting are available at:

http://www-nds.iaea.org/nds-technical-meetings/TMcovariances092010/

http://www-nds.iaea.org/reports-new/indc-reports/indc-nds/

Consultants Meeting on Database Needs for Plasma Modelling
Vienna, September 29 – 30, 2010

Scientific Secretary: Bas Braams, 5 participants and NDS staff

This meeting, which immediately followed the Code Centres Network meeting, brought together five plasma scientists with broad experience in computational simulation of fusion experiments. These users of atomic and molecular data represent important customers of the work of the A+M Data Unit and we wanted to learn from them what the A+M Data Unit can do to support their work. The discussions provided us with many recommendations about data interface issues, data validation and quality control, new data that should be considered for our databases, ways to reorganize our web-based documentation of data, our relation with other European (EFDA) and international (ITPA) activities, and other matters.

http://www-nds.iaea.org/reports-new/indc-reports/indc-nds/

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In the past weeks, the NDS programme of work within the 2012 – 2013 biennium has been preliminarily formulated. As with other organizations at the present time, tightening of the budget has had to be considered. However, with the Agency's ability to make efficiencies through enhanced administrative programs, it is hoped that the high quality of nuclear data work will be maintained, although a few projects are likely to be deferred to the following biennium. All representations that can be made from your organisations to senior IAEA management noting the important work that the NDS does would be greatly appreciated.

We are delighted with the overwhelming response already received for electronic registration to the ND Newsletter. As a further step towards this 'greening' effort, future distributions of INDC reports produced by NDS will also be sent electronically, with hardcopies provided only on specific request. Please help us to keep our database information up to date by sending an email to services@iaeand.iaea.org should there be any changes in your details.

In recent months my work programme has taken me to Slovenia, India, and the USA, where I was pleased to have the opportunity to interact with many of you personally on current nuclear data topics. I look forward to our continued interaction in 2011.

Robin Forrest

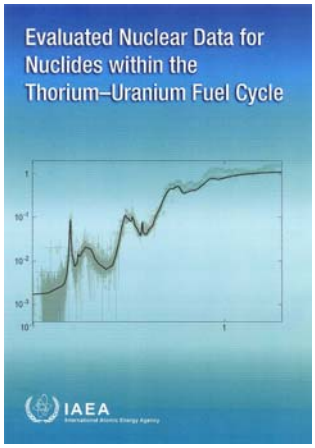
Coordinated Research Projects

IAEA Coordinated Research Projects (CRPs) are a valuable mechanism for stimulating research in IAEA Member States of relevance to the IAEA programmes. Details of the CRPs of the Nuclear Data Section, both active and recently completed, can be found at: http://www-naweb.iaea.org/napc/nd/crps.asp

Evaluated Nuclear Data for Nuclides within the Thorium-Uranium Fuel Cycle

The main goal of this CRP was an improvement of evaluated nuclear data files to allow more accurate design calculations of innovative fuel cycle concepts involving the Th–U fuel cycle. The nuclides of primary interest for evaluation relevant to the Th–U fuel cycle are ^{232}Th, ^{231,233}Pa and ^{232,233,234,236}U. Data validation was integrated into the evaluation process; this ensured prompt feedback on potential weaknesses to the evaluators, and thus improved the quality and final performance of the evaluations. The research activities resulted in new evaluated nuclear data files for ^{232}Th and ^{231,233}Pa, and improvements to existing evaluations for ^{232,233,234,236}U. Basic evaluated nuclear data files, as well as the processed libraries in ACE format for the MCNP family of Monte Carlo codes and in MATXS format for deterministic codes, are available at:

http://www-nds.iaea.org/Th-U/



STI/PUB/1435, May 2010

This is available electronically at: http://www-pub.iaea.org/MTCD/publications/PDF/Pub1435_web.pdf
Hardcopies are available from the IAEA Sales and Promotion Unit - cost Euro 29.

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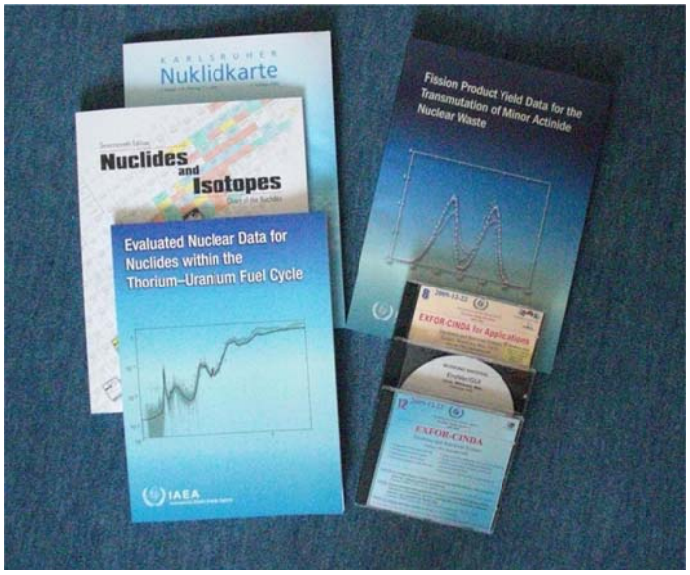
Intern - Nuclear Data Section



Each year the IAEA awards a limited number of internships to persons who are studying for, or who have just received, a degree. The purpose of the programme is to provide interns with the opportunity to gain practical work experience in line with their studies, as well as to benefit the IAEA's programme through the assistance of qualified students/recent graduates specialized in various professional fields. During July/August 2010, **Mehdi Meghzifene**, who is studying applied mathematics at ENSIMAG, Grenoble, was assigned to the Nuclear Data Section to assist Roberto Capote with the implementation of a computer program which fits theoretical cross-section calculations with experimental data from the EXFOR database. The generalized least square method, as well as Monte Carlo simulation, were used.

Mehdi's comment at the end of his internship was: "I feel very lucky to have been given the opportunity to work with such interesting people. For the scientific part, I was given the chance to deal with a highly technical project which usually interns only dream of. Not only did I learn a lot, but I also had the feeling that I was able to take an active role. For the personal part, I learnt that managing and interacting together in an international organization is not necessarily about high level skills and abstract knowledge that one can learn from reading huge books. Sometimes having a coffee together and talking about everyday life is more than enough to obtain a very good working atmosphere".

Selected Charts, Reports and Documents



Recent Releases:

INDC(NDS)-0567 Summary Report of the Second Research Coordination Meeting on Nuclear Data Libraries for Advanced Systems - Fusion Devices (FENDL - 3), Vienna, 23-26 March 2010, prepared by M.E. Sawan, June 2010.

INDC(NDS)-0569 Report of the IAEA Nuclear Data Section to the International Nuclear Data Committee for the period January 2008 – December 2009, Vienna, edited by D.H. Abriola and R.A. Forrest, April 2010.

INDC(NDS)-0570 Summary Report of an IAEA Consultants' Meeting on XSAMS: XML Schema for atoms molecules and solids, Japan, 24-26 March 2010, prepared by B.J. Braams.

INDC(NDS)-0573 Report of an IAEA Technical Meeting of the International Network of Nuclear Reaction Data Centres, Vienna, 20-23 April 2010, prepared by R.A. Forrest, S. Dunaeva, and N. Otsuka, July 2010.

INDC(NDS)-0574 Proceedings of an IAEA Technical Meeting in collaboration with NEA on Specific applications of research reactors: provision of nuclear data, Vienna, 12-16 October 2009, prepared by D. Ridikas, D. Bernard, O. Cabellos, Y.O. Lee, S. Oberstedt and M. Oshima, July 2010.

INDC(NDS)-0577 Report on Decay heat calculations: assessment of fission product decay data requirements for Th/U fuel, prepared by M. Gupta, M.A. Kellett, A.L. Nichols and O. Bersillon, May 2010.

All INDC series reports listed above are available online: http://www-nds.iaea.org./reports-new/indc-reports

Also Available:

Nuclear Data Sheets *Special Issue on Nuclear Reaction Data*, Vol. 110, No. 12 (2009). Special Issue Editor: P. Obložinský, National Nuclear Data Center, Brookhaven National Laboratories (BNL), United States. Limited hard copies available on request.

Nuclear Data Sheets *Special Issue on Evaluated Nuclear Data File ENDF/B-VII.0*, Vol. 107, No. 12 (2006). Special Issue Editors: P. Obložinský and M. Herman. Limited hard copies available on request. Also available on CD-ROM.

Evaluated Data Library for the Bulk of Fission Products Vol. 23. A report by the Working Party on International Evaluation Cooperation of the NEA Nuclear Science Committee; Coordinator/Monitor: P. Obložinský, National Nuclear Data Center, Brookhaven National Laboratories (BNL), United States. Limited hard copies available on request.

Chart of the Nuclides *(Wall chart) prepared by Knolls Atomic Power Laboratory (KAPL) and distributed by Lockheed Martin (17th edition, revised 2009).* Available cost-free on request only for **teachers and scientists from developing countries.**

Chart of the Nuclides *(Book) prepared by Knolls Atomic Power Laboratory (KAPL) and distributed by Lockheed Martin (17th edition, revised 2009).* This book form of the Nuclides Chart is available cost-free on request only for **teachers and scientists from developing countries.**

Karlsruher Nuklidkarte *Wall chart of the nuclides from Karlsruhe, 7th edition (2006).* Available cost-free on request only for **teachers and scientists from developing countries**.

Karlsruher Nuklidkarte *Desk chart of the Nuclides from Karlsruhe, 7th edition (2006).* Available cost-free on request only for **teachers and scientists from developing countries**.

Chart of the Nuclides 2004 *Desk chart of the Nuclides from Japanese Nuclear Data Committee and Nuclear Data Centre, JAEA.* Available cost-free on request only for **teachers and scientists from developing countries**.

Chart of the Nuclides 2010 JAEA Nuclear Data Centre is expected to release an updated version of its Nuclide Chart in November 2010.

Nuclear Wallet Cards 2005 7th Edition, by Jagdish K. Tuli, National Nuclear Data Center. These pocket size wallet cards are available as hard copy on request.

NOTE to Universities: earlier editions of KAPL and Karlsruhe Nuclides Charts, both as wall chart and in book form, are available cost free for student use (as long as supplies last).

Staff Items

For all NDS staff details: http://www-naweb.iaea.org/napc/nd/aboutus.asp



Stanislav Simakov, from the Russian Federation, has taken up the post of Head, Nuclear Data Services Unit. He is a Nuclear Physicist, Dr. phys.-math.sci.; as well as being directly responsible for the availability and provision of nuclear data to all Member States, he is involved in the organization of workshops and CRPs related to nuclear data for applications. Prior to joining NDS, Stanislav worked at the Forschungszentrum Karlsruhe where he was responsible for IFMIF neutronics activities; he also performed the neutron source and radioprotection analysis for the SPIRAL-2 project, the shielding analysis for the AREVA fission reactors, and the validation of the activation, dosimetry and transport data for the EAF/JEFF project.

From 1976 to 2000, he worked at the Institute of Physics and Power Engineering (IPPE), Obninsk, where, together with colleagues, he carried out the experimental and theoretical study of the (p,n), (n,n') and (n,xγ) reactions in the energy range 5 to 21 MeV, validation of neutron transport cross-sections by means of spherical benchmarks with T(d,n) and Cf sources, nuclear model calculation of neutron cross-sections and generation of evaluated data files.



After joining NDS in 2003, **Svetlana Dunaeva** completed the seven years of service as permitted for professional staff on 11 October this year. During her service in NDS, Svetlana worked constantly to ensure that the EXFOR library (http://www-nds.iaea.org/exfor/exfor.htm) remained a fully up to date and comprehensive compilation of experimental nuclear reaction data, embracing charged-particle and photon reactions as well as neutron cross-sections. Svetlana also assumed full responsibility for organizing annual meetings of the International Network of Nuclear Reaction Data Centres, along with a series of regular and much appreciated EXFOR Editor training courses. Her unabated enthusiasm, energy, contagious laugh and friendly character will be greatly missed in the Section, and we all wish her good health and happiness in her retirement.



Valentina Semkova, from Bulgaria, has taken up the post of Nuclear Physicist in the Nuclear Data Services Unit. As the successor to Svetlana, she will be involved in the compilation of bibliographic (CINDA) and experimental (EXFOR) data, and maintenance of these databases. Valentina's previous professional experience includes work in the field of neutron-induced cross-section measurements. Her most recent scientific work was as part of the 'Neutron Metrology' working group at the German National Metrological Institute in Braunschweig where measurements of reaction cross-sections of Mo isotopes induced by mono-energetic neutrons in the energy range from 6 to 14 MeV were undertaken.

In Memoriam

It was with great sadness that the Institute of Nuclear Research and Nuclear Energy of the Bulgarian Academy of Sciences (INRE), announced the untimely death of Dr. Jordana Dimitrova Jordanova on 14 July, 2010, after a long and painful disease. Dr. Jordanova was a leading scientist in fast neutron physics and heavily involved in the EC fusion program concerning the scientific background for the design of ITER. She was well loved and will be sorely missed by colleagues and friends at INRE.

This Newsletter, as well as previous Issues, can be accessed electronically at:
http://www-pub.iaea.org/MTCD/publications/newsletter.asp?id=60

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During 2010 all ND Newsletter recipients were requested to register reconfirming their interest in continuing to receive the Newsletter, either electronically or hardcopy. We would like to thank all of you who have re-registered, as well as those who have registered for the first time, for your interest and help in making our distribution more efficient. Thank you.

Nuclear Data Services – Contact points

For services to customers in USA and Canada:
US National Nuclear Data Center, Bldg. 197D, Brookhaven National Laboratory, P.O. Box 5000,
Upton, NY 11973-5000, USA.
Tel. +1 631-344-2902; Fax +1 631-344-2806; Email: nndc@bnl.gov; Worldwide Web: http://www.nndc.bnl.gov/
For information regarding on-line services, contact: B. Pritychenko: pritychenko@bnl.gov
For information regarding general NNDC services, contact: M. Blennau: blennau@bnl.gov

For services to customers in OECD/NEA Data Bank member countries:
NEA Data Bank, OECD Nuclear Energy Agency, Le Seine Saint-Germain, 12 blvd des Iles,
F-92130 Issy-les-Moulineaux, France.
Tel. +33 1 4524 (plus extension); Fax +33 1 45241110;
Email: Emmeric.Dupont@oecd.org or db@nea.fr; Worldwide Web: http://www.nea.fr/databank/ contact: E. Dupont, ext. 1084.

For services to the customers from the former USSR:
Neutron data: Russia Nuclear Data Center, Centr Jadernykh Dannykh (CJD), Fiziko-Energeticheskij Institut, Ploschad Bondarenko,
249020 Obninsk, Kaluga Region, Russian Federation.
Tel. +7 08439-9-8982; Fax +7 095-230-2326;
Email: blokhin@ippe.obninsk.ru; Worldwide Web: www.ippe.obninsk.ru/podr/cjd/; contact: A.I. Blokhin.
Charged-particle data: Russia Nuclear Structure and Reaction Data Center (CAJAD), Kurchatov Institute,
Kurchatov Square 1, 123 182 Moscow, Russian Federation.
Tel. +7 095-196-9968; Fax +7 095-882-5804;
Email: sbabykina@polyn.kiae.su; contact: S. Babykina.
Photonuclear data: Centre for Photonuclear Experiments Data, Centr Dannykh Fotoyadernykh Eksperimentov (CDFE),
Skobeltsyn Institute of Nuclear Physics, Lomonosov Moscow State University, Leninskie Gory, 119 922 Moscow, Russian Federation.
Tel. +7 495-939-3483; Fax +7 495-939-0896;
Email: varlamov@depni.sinp.msu.ru or varlamov@depni.npi.msu.su; Worldwide Web: http://cdfe.sinp.msu.ru/; contact: V.V. Varlamov.

For services to customers in China:
China Nuclear Data Center, China Institute of Atomic Energy, P.O. Box 275(41), Beijing 102413, China.
Tel. +86 10-6935-7275; Fax +86 10-6935-7008; Email: gezg@iris.ciae.ac.cn; contact: Ge Zhigang.

Computer codes of US origin to all countries (there are charges and release restrictions):
Radiation Safety Information Computational Center (RSICC), Oak Ridge National Laboratory,
P.O. Box 2008, Oak Ridge, TN 37831-6362, USA.
Tel. +1 865-574-6176; Fax +1 865-574-6182;
Email: pdc@ornl.gov Worldwide Web: http://epicws.epm.ornl.gov/

Computer codes of non-US origin to all countries (there may be release restrictions):
NEA Data Bank (see above)
Email: Juan.Galan@oecd.org; contact: J. Galan, ext. 1008.

IAEA Nuclear Data Section offers data centre services primarily to non-OECD countries
(except Russian Federation and China, see above). However, most products advertised in this Newsletter, specifically INDC reports,
IAEA-NDS-documents, etc., are provided upon request to customers in all countries.
IAEA-NDS on-line services at Worldwide Web: http://www-nds.iaea.org/
Users of countries in Latin America and the Caribbean may use
IAEA-NDS mirror at Worldwide Web: http://www-nds.ipen.br
Users in India and neighbouring countries may use
IAEA-NDS mirror at Worldwide Web: http://www-nds.indcentre.org.in

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