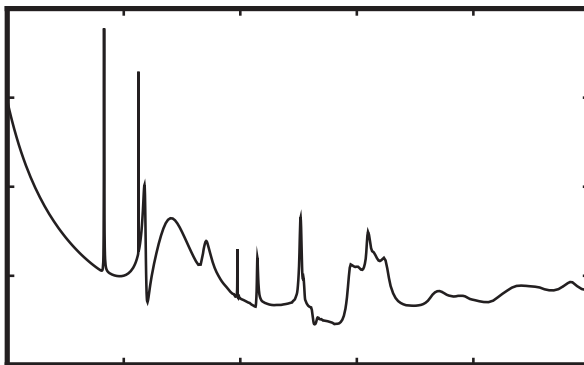# NUCLEAR DATA

NEWSLETTER

Nuclear Data Section (NDS)

International Atomic Energy Agency
Vienna

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All services provided to users are free of charge.

Please contact us on the following addresses:

Staff Items

We are actively searching for a senior nuclear data physicist to direct the Agency's nuclear data development activities. For details, see http://www.iaea.org/worldatom/vacancies/ 99p060.html. Deadline for applications: **30 November 1999**.

Monica Wirtz replaced Elaine Knotzer as secretary of the Nuclear Data Centre unit in May 1999.

Announcement

An IAEA Workshop on Nuclear Reaction Data and Nuclear Reactors: Physics, Design and Safety, will be held at the ICTP Trieste, Italy, 13 March to 14 April, 2000. Participation forms can be obtained via e-mail: smr1220@ictp.trieste.it, by typing on the subject line "get Announcement ", or on WWW servers: http://www.ictp.trieste/it/ (look for Activity Information: smr1220) and http://www-nds.iaea.or.at/. Limited financial support is offered by the ICTP Trieste. Deadline for applications: **31 October 1999**.

Online News

The following **INDC Reports** are posted on http://iaeand.iaea.or.at/indc_sel.html: INDC(CCP)-419, 422, INDC(HUN)-033 and INDC(NDS)-383 (Rev. September 1999), 399, 401, 407 and 408.

Hyperlinks to the sites with on-line access to the Argonne **ANL/NDM Reports** Series, Argonne National Laboratory, USA and DOE collection of **Laboratory Reports** are inserted on http://www-nds.iaea.or.at/. A link to **INEEL Gamma-Ray Spectrum Catalogues** is inserted on http://www-nds.iaea.or.at/indg_gamray.html

Revised **IAEA-NDS-0** Report "Index to the IAEA-NDS-Documentation Series" is available online from NDS Web site (http://www-nds.iaea.or.at). It contains a complete up-to-date list of all IAEA-NDS reports. Each IAEA-NDS report briefly describes one product distributed by NDS. It can be a database, data library or data file, computer code or package, manual or document. All of the latest IAEA-NDS reports are available online through hyperlinks in the list.

Offline News

Updated databases and libraries are now available on CD-ROM:

IAEA-NDS-CD-04, ENDF, (updated in September 1999), contains all comprehensive evaluated data libraries (ENDF/B-VI, Release 6, JENDL-3.2, JEF-2.2, BROND-2 and CENDL-2), a retrieval and merger system for MS Windows, Manuals and Documentation in PostScript format, Utilities and Preprocessing codes.

New Data Libraries

ENDF/B-VI Library, Release 6, (including revisions up to September 1999) is available through Telnet/NDIS and Web from the NDS Web server and on CD-ROM. A revised report **IAEA-NDS-100** containing descriptions of the content and major modifications is available as hard copy and online (http://www-nds.iaea.or.at/reports/nds-100.pdf).

ENDF/B-VI Charged-Particle Sublibraries, Version: September 1999, are available through Telnet/NDIS and Web from NDS server and on CD-ROM. The proton induced reaction sublibrary is substantially extended on number of materials and energy range. The revised report **IAEA-NDS-105** containing a description of sublibraries is available as hard copy and online (http://www-nds.iaea.or.at/reports/nds-105.pdf).

Table of Nuclear Root Mean Square Charge Radii, June 1999, by I. Angeli, is available through Web from NDS server and on diskette. The revised report **IAEA-NDS-163** containing a brief description of the data evaluation procedures is available as hard copy and online (http://www-nds.iaea.or.at/reports/nds-163.pdf). The full report INDC(HUN)-033 with bibliographic information, data selection, evaluation procedures and tables with experimental and evaluated data is available as hard copy or online (http://iaeand.iaea.or.at/indc_sel.html).

Computer Codes and Packages

TLAPrfl: Package for Calculation of Depth Profile for Thin Layer Activation, by G. Wallace. Report **IAEA-NDS-192** with summary of content is available as hard copy on request or online at http://www-nds.iaea.or.at/reports/nds-192.pdf. TLAPrfl package for Windows and DOS in compressed form is available in diskette upon requst or online at http://www-nds.iaea.or.at/reports/data/tlaprfl.zip.

PCNuDat: a PC Nuclear Data Program, by R.R. Kinsey (Release 2.7, October 1998). Report **IAEA-NDS-162** with summary of content is available on request as hard copy or online at http://www-nds.iaea.or.at/reports/nds-162.pdf and PCNuDat package for DOS in compressed form is available in CD-ROM upon request or online at http://www-nds.iaea.or.at/ndspub/pc_prog/

Selected Reports and Documents

Proceedings of the Workshop "Nuclear Reaction Data and Nuclear Reactors: Physics, Design, Safety", ICTP, Trieste, Italy, 23 February - 27 March 1998, ed. by P. Oblozinsky and A. Gandini, publ. by World Scientific, Singapore (1999). Proceedings include papers on **Nuclear Reaction Models:** *Introduction to the Theory and Analysis of Resolved (and Unresolved) Neutron Resonances via SAMMY* (N.M. Larson); *Theory of Neutron Emission in Fission* (D.G. Madland); *The Optical Model and ECIS95* (B.V. Carlson); *Statistical Theory of Nuclear Reactions* (M. Herman); *Pre-Equilibrium Nuclear Reactions: An Introduction to Classical and Quantum-Mechanical Models* (A.J. Koning and J.M. Akkermans); *Collective Enhancement in Nuclear Level Densities* (A.V. Ignatyuk); **Nuclear Data (Evaluation, Filing and Processing):** *Reference Input Parameter Library for Nuclear Model Calculations* (P. Oblozinský); *Nuclear Data Evaluation: The Link between Nuclear Physics and Applications* (A.J. Koning); *The GSCAN Code: From GNASH Reaction Calculations to ENDF Nuclear Data Files* (M.B. Chadwick, P.G. Young); *Nuclear Data Libraries and Online Services* (P. Oblozinsky, O. Schwerer); *Microscopic and Macroscopic Modelling: Role*

of Basic Data, Computer Codes and Integral Experiments (E. Sartori*); Processed Evaluated Nuclear Data for Reactor Calculations* (A. Trkov); *An Introduction to the ENDF Formats and Understanding NJOY* (R. E. MacFarlane); *Issues Connected with Using Western Codes and Libraries for VVER Applications* (K. Zalesky) and 14 other papers on **Physics of Nuclear Reactors.**
Requests at the Proceedings (ISBN 981-02-3916-5, US$ 94) should be sent to World Scientific Publishing Co. Pte. Ltd., PO Box 128, Farrer Road, Singapore 912805 (http://www.wspc.com).
A limited number of copies the proceedings is available free of charge for scientists from developing countries upon request sent to the Nuclear Data Section (see addresses on cover page).

INDC(CCP)-419. *Selected articles translated from Yadernye Konstanty* (Nuclear Constants) (Series: Nuclear Constants Issue No. 2 1998). 1. *Evaluation of the Decay Characteristics of 3H and 36C.* V.P. Chechev. 2. *Validation of the ABBN/CONSYST Constants System. Part I: Validation through Critical Experiments on Compact Metallic Cores.* T.T. Ivanova, G.N. Manturov, M.N. Nikolaev, E.V. Rozhikhin, M.Yu. Semenov, A.M. Tsibulia. 3. *Validation of the ABBN/CONSYST Constants System. Part I: Validation through Critical Experiments on Cores with Uranium Solutions.* T.T. Ivanova, G.N. Manturov, M.N. Nikolaev, E.V. Rozhikhin, M.Yu. Semenov, A.M. Tsibulia. Available online: http://iaeand.iaea.or.at/indc_sel.html.

INDC(CCP)-420. *Progress Report, January 1997 - December1999,* Ministry for Atomic Energy of Russian Federation, ed. by B.D. Kuzminov (1998).

INDC(CCP)-422. *Fission Rate Determination in Delayed Neutron Emission Measurements with T(p,n) and D(d,n) Neutrons.* V.M. Piksaikin, V.S. Shorin, R.G. Tertychnyi (1999). Available online: http://iaeand.iaea.or.at/indc_sel.html.

INDC(CPR)-047. *Communication of Nuclear Data Progress,* No.20 (1998). China Nuclear Data Center. Ed. by Liu Tingjin and Zhuang Youxiang. Annual review on the activity in the nuclear data field in China.

INDC(CPR)-048. *Communication of Nuclear Data Progress,* No.21 (1999). China Nuclear Data Center. Ed. by Liu Tingjin and Zhuang Youxiang. Annual review on the activity in the nuclear data field in China.

INDC(CCP)-422. *Fission Rate Determination in Delayed Neutron Emission Measurements with T(p,n) and D(d,n) Neutrons.* V.M. Piksaikin, V.S. Shorin, R.G. Tertychnyi (1999). Available online: http://iaeand.iaea.or.at/indc_sel.html.

INDC(GER)-045. *Progress Report on Nuclear Data Research in the Federal Republic of Germany for the Period April 1, 1998 to March 31, 1999,* ed. by S.M. Qaim (1999).

INDC(HUN)-033. *Table of Nuclear Root Mean Square Charge Radii.* I. Angeli (1999).

INDC(JPN)-182 (JAERI-CONF-99-002). *Proceedings of the 1998 Symposium on Nuclear Data,* November 19 - 20, JAERI, Tokai, Japan (1999).

INDC(JPN)-183. *Progress Report (January 1997 - December 1998),* Japanese Nuclear Data Committee, ed. by J. Katakura (1999)

INDC(NDS)-395. *Validation and Improvement of the FENDL-2.0 Transport Sublibraries*. Report on an IAEA Consultants' Meeting, IAEA Head quarters, Vienna, Austria, 12 - 14 October 1998, prepared by M. Herman (1999).

INDC(NDS)-399. *Co-ordination of the International Network of Nuclear Structure and Decay Data Evaluators.* Summary Report of an IAEA Advisory Group Meeting, IAEA Headquarters, Vienna, 14 - 17 December 1998. Prepared by V.G. Pronyaev. (1999). Available online: http://iaeand.iaea.or.at/indc_sel.html.

INDC(NDS)-400. *Report of the IAEA Nuclear Data Section to the International Nuclear Data Committee for the Period 1997-1998*, ed. by P. Oblozinsky (1999).

INDC(NDS)-401. *The Nuclear Data Centers Network,* ed. by V.G. Pronyaev. (March 1999). Revised version of September 1999 is available online: http://iaeand.iaea.or.at/indc_sel.html. Hardcopy of revised report can be received on request.

INDC(NDS)-403. *Update of X- and γ–Ray Decay Data Standards for Detector Calibration an other Application,.* Summary Report of the First Research Co-ordination Meeting, IAEA Headquarters, Vienna, Austria, 9 - 11 December 1998, prepared. by M. Herman and A. Nichols (1999).

INDC(NDS)-407. *Report on the Consultants' Meeting on Co-ordination of the Nuclear Reaction Data Centers (Technical Aspects)*, IAEA Headquarters, Vienna, 18 - 20 May 1999, ed. by O. Schwerer, M. Lammer and V.G. Pronyaev (1999). Available online: http://iaeand.iaea.or.at/indc_sel.html.

INDC(NDS)-408. *Summary Report of the Consultants' Meeting on Assessment of Nuclear Data Needs for Thorium and other Advanced Cycles,* IAEA Headquarters, Vienna, 26 - 28 April 1999, prepared by V.G. Pronyaev (1999). Available online: http://iaeand.iaea.or.at/indc_sel.html.

INDC(UK)-055. *UK Nuclear Science Forum Progress Report: Data Studies during 1998,* ed. by A.L. Nichols (1999).

Progress Report for Beijing National Tandem Accelerator Laboratory: 1996-1997. Atomic Energy Press (1998).

Yad. Konst. 1999 (1). *Determination of neutron resonance parameters of ^{140}Sm in energy range 15-300 eV* (G.P. Georgiev, Yu.S. Zamyatnin, L.B. Pikel'ner et al., in Russian). *Re-evaluated resonance parameters of ^{235}U.* (G.B. Morogovskij, in Russian). *Resolved resonance parameters of ^{238}Np.* (G.B. Morogovskij, in Russian).*Evaluation of neutron cross sections for ^{241}Am and ^{243}Am* (A.V. Ignatyuk, A.I. Blokhin, V.P. Lunev et al., in English). *Some considerations concerning ^{58}Ni(n,a) reaction* (V.N. Manokhin, in English). *Level density parameters for the back-shifted Fermi gas model in mass range$24 \le A \le 250$.* (V.I. Plyaskin, R.A. Kosilov,, in Russian). *Phase analysis of p^{3}He and pT elastic scattering cross sections in energy range 0 - 20 MeV.* (L.M. Lazarev, B.M. Dzjuba, in Russian). *Evaluated cross sections and astrophysics S-factors of reactions (p,g) for nuclei C, N, O.* (B.M. Dzjuba, A.G. Zvenigorodskij, L.M. Lazarev, S.G. Skidan, in Russian).

IAEA Nuclear Data Activities

At http://www.iaea.or.at/programmes/ripc/nd/ learn more about the present status of IAEA Nuclear Data Programme and Activities. Information can be obtained on Publications, Coordinated Research Projects (CRPs), Technical Co-operation Projects, Workshops and Meetings.

Technical Co-operation

A Local Nuclear Data Center was assembled for Project GHA/4/011 (Utilization of Ghana Research Reactor). This includes a PC Windows NT Web server, an Ethernet based LAN and a few client PCs. Nuclear databases, libraries, files, programs and documents were placed on this server. Edison Amanor and Bulmuo Tuor Maakuu from Ghana Atomic Energy Commission visited the NDS for a two months training in the Nuclear Data Center services.

A Nuclear Data Mirror Site based on a new AlphaServer will be installed in IPEN, Sao Paulo, Brazil, as part of the ARCAL Project RLA/0/19 (Improved Access to IAEA Nuclear Data Services in Latin America). All needed equipment and software have been purchased. Most nuclear databases, libraries, files, programs and documents have been loaded and tested. Adimir dos Santos and Joao Carlos de Alexandria visited the NDS for training on the Nuclear Data Web services.

We welcome your suggestions for new initiatives in the field of Technical Co-operation.

Specifications

Magnetic tapes: specify acceptable density (1600 or 6250 bpi), maximum block size, and whether the data should be coded in EBCDIC, ASCII, or VAX-backup coding. Only 9-track tapes are used.

DAT tapes: 4mm only, either in TAR format, IBM format or VMS format, uncompressed or compressed. Preferable for very large data libraries (up to several Gigabytes).

PC diskettes: DOS standard diskettes, 3.5 inch. Preferable for not too large files (if compressed up to several Megabytes).

CD-ROM: Recording format ISO 9660. Please specify maximum file-name length on your system.

Note: Unless indicated otherwise, the quoted data files, printed materials, or computer codes are available cost-free upon request. When requesting data files or codes on magnetic tapes or diskettes, kindly give us your acceptable specifications.

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Co-operating nuclear data service centers

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. +1 516-344-2902; Fax +1 516-344-2806; e-mail: nndc@bnl.gov; Worldwide Web: http//www.nndc.bnl.gov/. For information on online services and requests contact: V. McLane

For services to customers in OECD countries in Western Europe and Japan:
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; e-mail: (name)@ nea.fr or nea@nea.fr; Worldwide Web: http://www.nea.fr, username: NEADB. Contact: C. Nordborg, ext. 1090

For services to the countries of the former USSR:
Neutron data: Russia Nuclear Data Center, Centr Jadernykh Dannykh (CJD), Fiziko-Energeticheskij Institut, Ploschad Bondarenko, 249020 Obninsk, Kaluga Region, Russia. Tel. +7 08439-9-8982; Fax +7 095-230-2326; e-mail: manokhin@ippe.rssi.ru. Contact: V.N. Manokhin

Charged-particle data: Russia Nuclear Structure and Reaction Data Center (CAJAD), Kurchatov Institute, 46 Ulitsa Kurchatova, 123 182 Moscow, Russia. Tel. +7 095-196-9968; Fax +7 095-882-5804; e-mail: chukreev@polyn.kiae.su or feliks@polyn.kiae.su. Contact: F.E. Chukreev

Photonuclear data: Centre for Photonuclear Experiments Data, Centr Dannykh Fotoyadernykh Eksperimentov (CDFE), Moscow State University, Vorob'evy Gory, 119 899 Moscow, Russia. Tel. +7 095-939-3483; Fax +7 095-939-0896; e-mail: varlamov@cdfe.npi.msu.su or varlamov@depni.npi.msu.su 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 10-6935-7830; Fax +86 10-6935-7008; e-mail: tong@mipsa.ciae.ac.cn. Contact: Liu Tong

Computer codes of US origin to all countries:
Radiation Safety Information Computational Center (RSICC), Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6362, USA. Tel. +1 423-574-6176; Fax +1 423-574-6182; e-mail: pdc@ornl.gov. (There may be charges and release restrictions.)

Computer codes of non-US origin to all countries:
NEA Data Bank, see above, contact: E. Sartori, ext. 1072. (There may be release restrictions.)

The IAEA Nuclear Data Section offers data center services primarily to non-OECD countries (except Russia 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. For online services see the first page of this Newsletter.

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