

**IAEA Nuclear Data Section: Progress Report, 2011/12**  
**Summary of Nuclear Data Activity by Staff of the IAEA Nuclear Data Section**  
**May 2011 – April 2012**

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## **1. Staff Changes**

The authorized staff level of the Nuclear Data Section (NDS) consists of a total of 17 professionals and support staff. The latest staff changes include:

- Mark Kellett (Nuclear Physicist) left in February 2012.

## **2. Data Compilations**

### **2.1 EXFOR transmission**

Since the last NRDC Meeting, the following final tapes have been transmitted

- 7 neutron final TRANS tapes (3149 - 3153 and V029) containing 22 new entries (11 compiled at NDS, 4 at CNDC, 5 at NDPCI, 1 at KAERI, 1 at UkrNDC) and 86 revised entries;
- 5 CPND final TRANS tapes (D077 - D081) containing 88 new entries (37 compiled at NDS, 0 at CNDC, 16 at ATOMKI, 21 at NDPCI, 3 at KAERI, 11 at UkrNDC) and 94 revised entries;
- 2 PhND final TRANS tapes (G022 - G023), containing 13 new entries (5 compiled at NDS, 1 at UkrNDC, 3 at NDPCI, 4 at KAERI) and 15 revised entries.

Also 64 final TRANS tapes have been received at NDS. These final TRANS tapes contain 451 neutron entries (39 new, 412 revised), 723 CPND entries (335 new, 388 revised) and 130 PhND entries (52 new, 78 revised).

Based on these finalized TRANS tapes, 12 EXFOR Master Files have been created and distributed.

One regular transmission of the EXFOR/CINDA dictionaries (TRANS.9103) was done in TRANS, DANIEL (backup) and archive format.

## 2.2 EXFOR quality control

Since the last NRDC Meeting, 55 preliminary TRANS tapes were received and checked (with feedback to the originating centres). Both ZCHEX and JANIS TRANS Checker are regularly used. NDS also has registered comments on EXFOR entries from users to the EXFOR Feedback System (<http://www-nds.iaea.org/nrdc/error/>) and monitored the correction process by checking

## 2.3 EXFOR coverage control

Under the EXFOR compilation control system, about 75 journal titles are regularly scanned and registered to the EXFOR Compilation Control System. The list of articles for compilation (<http://www-nds.iaea.org/exfor-master/x4compil/>) is updated every week. Since the last NRDC Meeting, about 500 journal issues (of which 410 issues are from the regularly scanned journals and 90 issues are issues additionally scanned to improve coverage of Conf. Proc. etc.) have been scanned and added to the database for EXFOR compilation control system. When available, PDF files of registered articles have been also collected. The first author names can be displayed for registered articles on the web interface. By clicking a name, compilers can search the EXFOR entries having the same author name in the EXFOR database. Finding such entries in EXFOR compiler can decide whether or not the publication assigned for compilation is really new, or it extends the work already presented in EXFOR. This helps compilers to avoid possible duplication.

## 2.4 Workshops and Meetings in 2011/2012 relevant to EXFOR

- Technical Meeting on Long-term Needs for Nuclear Data Development, 2 - 4 November 2011, IAEA, Vienna, Austria.
- Consultancy Meeting on Further Development of EXFOR, 6 - 9 March 2012, IAEA, Vienna, Austria, materials are available on <http://www-nds.iaea.org/exfor-future/>

Nuclear Data Services Unit staff took part in Meetings, organized by Nuclear Data and Physics Sections to monitor the need, availability and completeness in EXFOR of experimental nuclear data for various scientific and practical applications. They were:

- CM on “Nuclear Data for Charged-particle Monitor Reaction and Medical Isotope Production”, 21-24 Aug. 2011;
- TM on “Intermediate-term Nuclear Data Needs for Medical Applications: Cross Sections and Decay Data”, 22-26 Aug. 2011;
- CM: on “Beta-delayed Neutron Evaluation”, 10-12 Oct. 2011;
- 4<sup>th</sup> RCM on “Improvement of the Reliability and Accuracy of Heavy Ion Beam Nuclear Analytical Techniques”, 11–13 Oct. 2011;
- 3<sup>rd</sup> RCM on “Nuclear Data Libraries for Advanced Systems – Fusion Devices (FENDL-3)”, 6-9 Dec. 2011;
- 2<sup>nd</sup> RCM on “Prompt Fission Neutron Spectra of Actinides”, 13-16 Dec. 2011.
- 1<sup>st</sup> RCM on “Utilization of Ion Accelerators for Studying and Modelling of Radiation Induced Defects in Semiconductors and Insulators”, 19-23 March. 2012.

(CM: Consultant Meeting, TM: Technical Meeting, RCM: Research Coordinate Meeting)

## 2.5 CINDA

The latest CINDA Master File is available via the NDS compilers' Web site. An automatic update using the EXFOR and NSR databases has been carried out once (December 2011). MySQL-dump of the complete CINDA database was sent to NNDC.

## 2.6 Evaluated data libraries, files and programs

Various new and revised evaluated data libraries, files and programs for data checking, processing and graphical presentation were added, developed and distributed via the NDS Web site on DVD-ROM (see below).

## 3. Services, software

### 3.1 Web Services

Further improvements have been implemented in the Web EXFOR-CINDA-ENDF retrieval systems since the last NRDC meeting:

- ENDF (Evaluated Nuclear Data Files):
  - ENDF-Archive: collection of evaluated data libraries (47) for FTP downloading: <http://www-nds.iaea.org/ndspub/download-endf/>
  - new evaluated libraries included in the ENDF database:
    - TENDL-2011: TALYS-based Evaluated Nuclear Data Library, 2011
    - JEFF-3.1.2: Joint Evaluated Fission and Fusion File, coordinated by NEA Data Bank, 2012
    - ENDF/B-VII.1: ENDF/B-VII.1 US Evaluated Nuclear Data Library, 2011/12, NNDC
- EXFOR:
  - Automatic data re-normalization (optional: for plots and output data only)
  - Sequential search in CINDA (+NSR) if data are missing in EXFOR
  - Output EXFOR to XML; interpretation EXFOR-XML to HTML using XSL
  - Output EXFOR for users (X4 without Pointers and Common-blocks) to XML
  - Display original publications (PDF) for IAEA staff
  - Display extended listing of references: authors, title, DOI, NSR, Web-links of original articles imported from NSR and Web
  - Display EXFOR database updates summary of the last TRANS files
- CINDA:
  - Optional search: old CINDA, import from EXFOR, import from NSR and lines having Web links: help to EXFOR compiler to find publications missing in EXFOR but available in Internet

The Web EXFOR-CINDA-ENDF retrieval system is functioning at NNDC (USA), BARC (India). Statistics for usage of the Web retrieval system are presented in figures below.

Web-Tools for EXFOR compilers and ENDF/ENSDF evaluators:

- Web-ZVView: remote plotting on the Web server without downloading actual program. Produces draft of covariance data for compilation to EXFOR.
- EXFOR Uploading system: checking user's EXFOR file by x4check, run remote processing (ORDER, CHEX, XTRACT, X4TOC4), search for duplication of references, search similar data in EXFOR and ENDF databases, common plotting, etc. Can produce plot of covariance data from EXFOR free text.
- ENDF Uploading system: run ENDF utility codes and Prepro on Web server on user's evaluation, comparison of user's data with EXFOR and ENDF databases, including plotting\*.
- Web-tools for ENSDF evaluators: run ENSDF analysis codes on Web server, including NDSPUB2 connected to ENSDF and NSR\*.

\*Also available on NNDC Web site

### 3.2 DVD-ROM

DVD "Nuclear reaction libraries, database retrieval systems and applications" contains:

- EXFOR/CINDA for Windows
- EXFOR/CINDA for Applications (Linux/Ubuntu, Windows and Macintosh)
- EndVer/GUI with Prepro-2010 (Linux, Windows and Macintosh)
- ENDF Libraries (25)

### 3.3. NDS electronic document services

#### Status of NDS electronic document project

The IAEA Nuclear Data Section, and (prior to NDS inception) the Nuclear Data Unit, has distributed documents which were defined as having originated under the auspices of the International Nuclear Data Committee (INDC) since 1962. These reports are categorized by geographical origin, as well as having chronologically assigned identification numbers (accession numbers) for internal NDS use – initially INDSWG (to 137), changing to INDC (from 138 onwards). The viability of converting all of these documents to electronic form was investigated in 2004. Some of the documents were already either in the INIS (International Nuclear Information System) database <http://www.iaea.org/inis/> or individual laboratory electronic archives. For many others, a hardcopy (paper) or microfiche form of the document was identified and scanned - some of the older documents were of poor quality and in such cases PDF files were produced to the highest standard possible.

This work was undertaken in cooperation with International Nuclear Information System (INIS) staff who have suitable equipment and expertise to handle microfiche and bulkier texts. At the time of reporting to the previous meeting of the INDC (May 2010), 59% of the documents identified in the series had been scanned and made available. The more urgent demand on INIS services by other offices of the IAEA meant that the NDS scanning project had low priority. Consequently in 2010 the possibility of accelerating completion of the project by, where feasible, continuing the scanning work within the NDS was explored. As a fast-feed scanner was available in NDS, much more of this work was subsequently undertaken in the Section and by end-2011 the remaining 40% of the project was completed. The total number of documents in this series has now reached over 2500 - when not possible to locate a document, a remark to this effect has been included on the Website [http://www-nds.iaea.org/publications/indc\\_groups.php](http://www-nds.iaea.org/publications/indc_groups.php)

During the course of this work, the Website, with links to published documents, has also been upgraded. All available cross references have been included on the Website, and consistency achieved whenever possible in the presentation of the contents of the site.

### **Publications management**

The INDC reports, containing more than 2500 documents at the moment, are a unique source of knowledge for nuclear data related topics. The efforts in producing these high quality papers need to be matched with an equally high quality service to make them available in the best way to users.

To achieve this management of INDC reports after publication, as well as other types of documents like NDS staff papers or IAEA-NDS report series, was analyzed. The objective was to improve the dissemination of this archive of documents, and to build back-end services to manage the storage, the insertion and updating, and to better understand users' needs and preferences.

The tasks to achieve those goals were defined as:

1. Storage of document bibliographic data in a relational database.
2. Document visibility under Google Scholar, a widely used, freely accessible web search engine that indexes scholarly literature.
3. A dedicated web site providing easy and clear user navigation.
4. Single search engine across the entire set of documents, allowing search by keyword, author and serial number. In this way it will be possible to search documents by a topic of interest without going through the entire list of publications.
5. Web based application to manage the database and to load the documents on the server.
6. Dynamic web pages reflecting the database updating.
7. Server side application to collect download statistics.

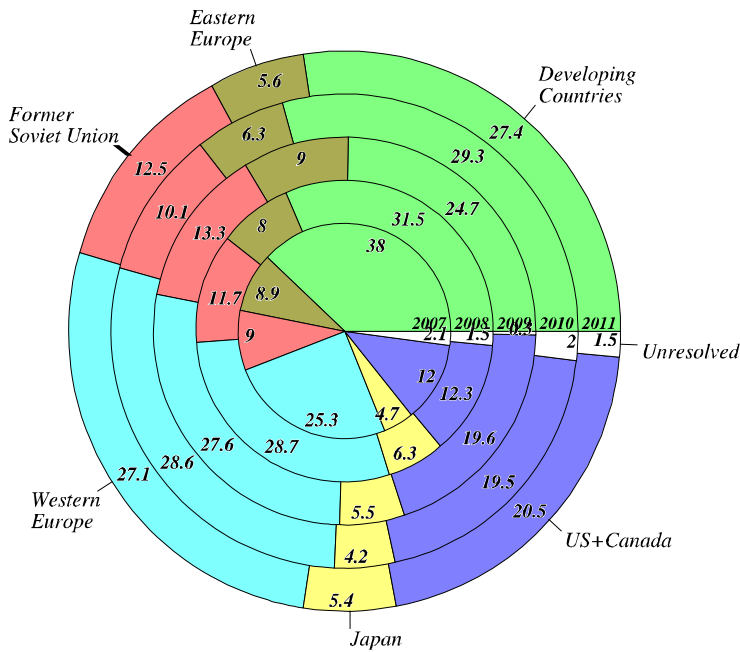
The publications web page has been made available for public use during September 2011, and has since been improved to incorporate suggestions from internal as well as external users. Web-access statistics have shown that the publications web site has grown to become one of the most accessed sections of the www-nds web site.

The download statistics provides feedback to authors, which has been used to improve the offering of other NDS services. As an example, some data from the most accessed documents were made available in an easier way in other NDS data-retrieval engines.

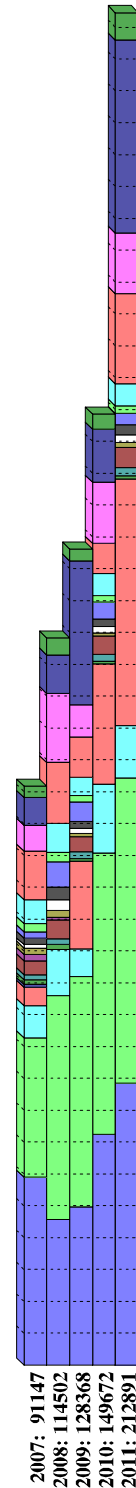
# IAEA Nuclear Data Services: Web Statistics

## 2007-2012

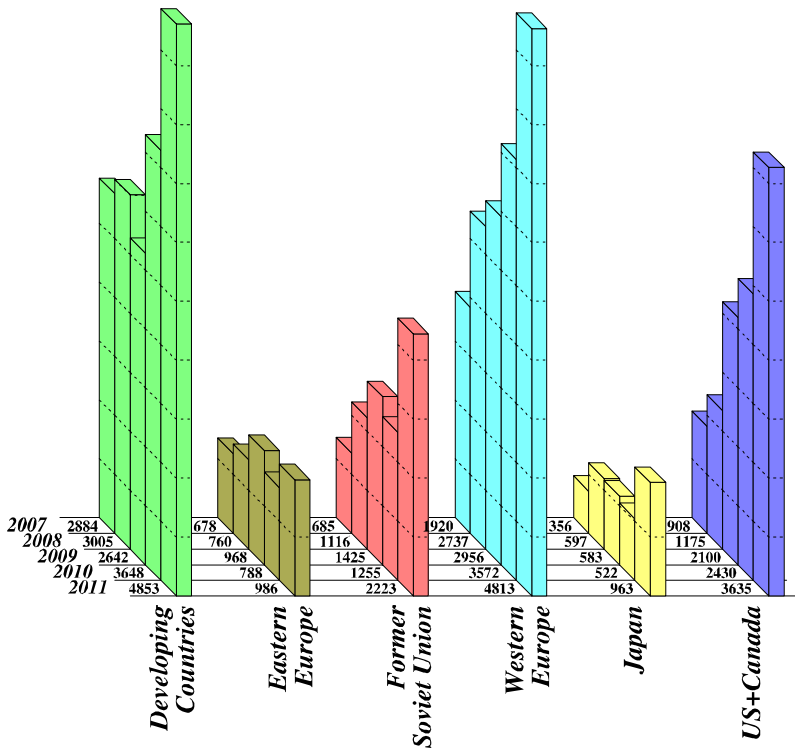
**Geographical Distribution (%)**



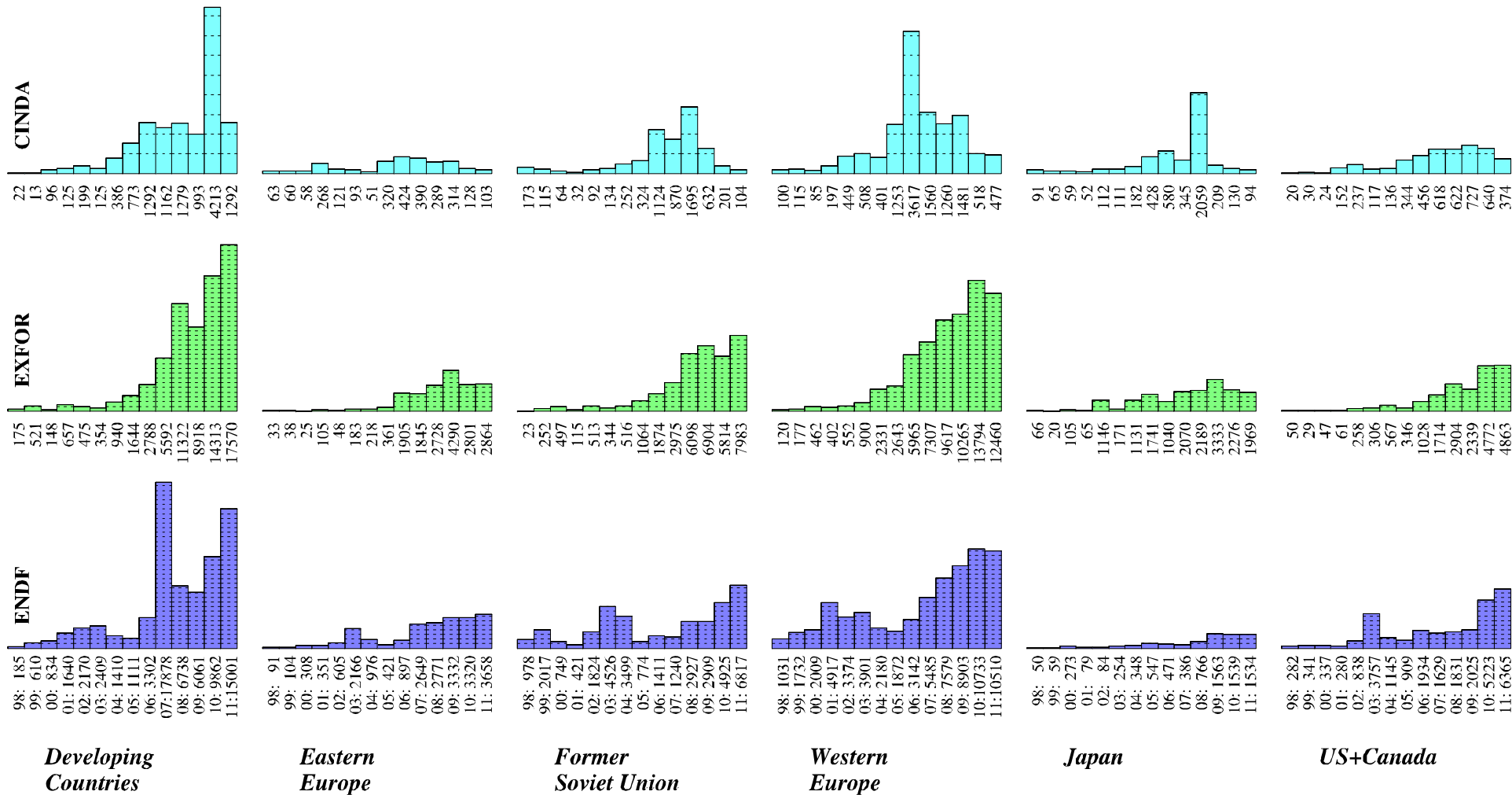
**Total per Year**  
(Number of accesses + retrievals)



**Average per Month**  
(Number of accesses + retrievals)



- | Service                | Comment      |
|------------------------|--------------|
| Computer Codes         |              |
| Documents              |              |
| OtherData              |              |
| IBANDL                 |              |
| PGAA                   |              |
| PhotoNuclear           |              |
| RIPL                   | Theory       |
| FENDL                  | Fusion       |
| Masses                 |              |
| IRDF                   | Dosimetry    |
| Thermal Capture        |              |
| Wallet Cards           |              |
| Med.Radioisotope.Prod. |              |
| NGAtlas                | Activation   |
| RNAL                   |              |
| ENSDF                  | Structure    |
| MIRD                   | Medical      |
| NuDat/LiveChartNucl    |              |
| CINDA+NSR Bibliography |              |
| EXFOR                  | Experimental |
| ENDF                   | Energy       |



IAEA Web statistics: geographical distribution of nuclear reaction databases' retrievals

#### 4. Visits and Inter-centre Cooperation (2011-2012)

- V. Zerkin (NDS) to NNDC. To deploy and further develop software for the management and web-retrieval of ENDF, CINDA and EXFOR databases as well as remote processing of users data. 8–26 August 2011.
- N. Otsuka (NDS) to CNDC: To attend the 2nd Asian Nuclear Reaction Database Development Workshop. 5-9 September 2011.

#### 5. Nuclear Data Developments

Although direct nuclear data developments are outside the immediate operations of the NRDC, the relevant activities undertaken in the Nuclear Data Section are listed below.

##### On-going Coordinated Research Projects (CRPs)

- Minor Actinide Neutron Reaction Data (MANREAD) (2007-2011);
- Nuclear Data Library for Advanced Systems: Fusion Devices (FENDL-3) (2007-2012);
- Prompt Fission Neutron Spectra of Actinides (2009-2013);
- Development of a Reference Database for Particle-Induced Gamma-ray Emission (PIGE) (2011-2015).

##### Data Development Projects (DDP)

- Maintain the international neutron cross section standards file and evaluation techniques;
- Extension of the IRDF-2002 dosimetry library, the International Dosimetry Library;(IRDF);
- Ion Beam Analysis Nuclear Data Library (IBANDL)
- Development of evaluation methodology and nuclear reaction modelling systems;
- Neutron data evaluation work up to 150 MeV: W isotopic chain and <sup>55</sup>Mn nucleus;
- Missing level corrections using experimental neutron spacings input to JEFF project;
- . Collection and compilation of experimental decay heat measurements of actinides.

#### 6. Publications (2011-2012)

**Systematic study of (*n, p*) reaction cross sections from the reaction threshold to 20 MeV**  
B. Lalremruata, N. Otuka, G.J. Tambave, V.K. Mulik, B.J. Patil, S.D. Dhole, A. Saxena, S. Ganesan, V.N. Bhoraskar, *Phys. Rev. C* **85** (2011) 024624.



**Experimental Nuclear Reaction Data Library (EXFOR) – Compilation and Dissemination of Nuclear Reaction Data Provided by Nuclear Reaction Data Centres Network**

V. Semkova, N. Otuka, S.P. Simakov, V. Zerkin, Presented at 8th Int. Conf. “Nuclear and Radiation Physics”, 20-23 September 2011, Almaty, Kazakhstan (also to be published in Proceedings).

**Experimental Nuclear Reaction Data Collection EXFOR**

V. Semkova, N. Otuka, S.P. Simakov, V. Zerkin, presented at 2nd International Conference on Advancements in Nuclear Instrumentation, Measurement Methods and their Applications (ANIMMA 2011), June 6-9, 2011, Ghent, Belgium, also to be published in IEEE Conference Proceedings.

**Proton elastic scattering differential cross-sections for  $^{12}\text{C}$**

D. Abriola, A. F. Gurbich, M. Kokkoris; A. Lagoyannis V. Paneta, *J. Nucl. Instrum. Methods in Phys. Res.*, **B269** (2011) pp. 2011-2016.

**Compilation, evaluation, and dissemination of covariances, in microscopic nuclear reaction data,**

N. Otuka, R. Capote, V. Zerkin, *Transact. American Nucl. Soc.* **104** (2011) pp.774-775.

**Assessment of Actinide Decay Data Evaluations: Findings of an IAEA Coordinated Research Project**

M.A. Kellett, presented at 18th Int. Conf. on Radionuclide Metrology and its Applications (ICRM 2011), 19-23 September 2011, Tsukuba, Japan; also to be published in *Appl. Radiat. Isot.*

**ENDF/B-VII.1 Nuclear Data for Science and Technology: Cross Sections, Covariances, Fission Product Yields and Decay Data**

M.B. Chadwick, R. Capote, *et. al.*, *Nucl. Data Sheets* **112** (2011) 2887-2996.

**The Nuclear Science References (NSR) database and Web Retrieval System**

B. Pritychenko, E. Běták, M.A. Kellett, B. Singh, J. Totans, *J. Nucl. Instrum. Methods in Phys. Res.*, **A640** (2011) pp. 213-218.

**Covariances of Evaluated Nuclear Cross Section Data for  $^{232}\text{Th}$ ,  $^{180,182,183,184,186}\text{W}$  and  $^{55}\text{Mn}$**

A. Trkov, R. Capote, E.Sh. Soukhovitskii, L.C. Leal, M. Sin, I. Kodeli, D.W. Muir, *Nucl. Data Sheets* **112** (2011) 3098-3119.

**Nuclear Data Activities at the IAEA Nuclear Data Section**

S.P. Simakov, Procs. 20th Int. Conf. Nuclear Energy for New Europe 2011, 305.1-305.8.

**Measurement of the  $^{236}\text{U}(n,f)$  cross section from 170 meV to 2 MeV at the CERN n\_TOF facility**

R. Sarmiento, R. Capote, *et al.*, (the n\_TOF Collaboration) *Phys. Rev.* **C84** (2011) 044618.

**$^{96}\text{Zr}(n,\gamma)$  measurement at the n\_TOF facility at CERN**

G. Tagliente, R. Capote, *et al.*, (the n\_TOF Collaboration) *Phys. Rev.* **C84** (2011) 055802.

**Nuclear Analytical Applications within the IAEA Nuclear Data Section**

M.A. Kellett, Procs. 11th Int. Conf., Crete, (Greece), 12–18 June 2011, AIP Conf. Procs. **1412**, pp. 430-437.

**Investigations of  $^{89}\text{Y}(p,x)^{86,88,89}\text{Zr}$ ,  $^{86m+g,87g,87m,88g}\text{Y}$ ,  $^{85g}\text{Sr}$ , and  $^{84g}\text{Rb}$  nuclear processes up to 42 MeV**

M.U. Khandaker, K. Kim, M.-W. Lee, K-S. Kim, G. Kim, N. Otuka, *Nucl. Instr. Meth. Phys. Res.* **B271** (2012) pp. 72-81.

**Development of a genetic algorithm for the search of optical model parameters**

D. Abriola, *Nucl. Instr. Meth. Phys. Res.* **B269** (2011) pp. 2984-2989.

**Development of a reference database for Ion Beam Analysis and future perspectives**

D. Abriola, N.P. Barradas, I. Bogdanović-Radović, M. Chiari, A.F. Gurbich, C. Jeynes, M. Kokkoris, M. Mayer, A.R. Ramos, L. Shi, I. Vickridge, *Nucl. Instr. Meth. Phys. Res.* **B269** (2011) pp. 2972-2978.

**Low and medium energy deuteron-induced reactions on <sup>63,65</sup>Cu nuclei**

E. Šimečková, P. Bém, M. Honusek, M. Štefánek, U. Fischer, S.P. Simakov, R.A. Forrest, A.J. Koning, J.-C. Sublet, M. Avrigeanu, F.L. Roman V. Avrigeanu, *Phys. Rev.* **C84** (2011) 014605 (2011).

**Shutdown dose rate analyses for the IFMIF HFTM**

A. Serikov, F. Arbeiter, U. Fischer, V. Heinzl, A. Klix, S.P. Simakov, *Fusion Eng. Des.* **86** (2011) pp. 2639–2642.

**State-of-the-art of computational tools and data for IFMIF neutronics and activation analyses**

U. Fischer, A. Klix, J. Li, P. Pereslavstev, S.P. Simakov, R.A. Forrest, F. Wasastjerna, *J. Nucl. Mats.* **417** (2011) pp.1311–1315.

**Impact of activation cross-section uncertainties on the tritium production in the HFTM specimen cells**

O. Cabellos, A. Klix, U. Fischer, N. Garcia-Herranz, J. Sanz, S. Simakov, *J. Nucl. Mats.* **417** (2011) pp. 1307–1310.

**Displacement damage induced in iron by gammas and neutrons under irradiation in the IFMIF test cell**

S.P. Simakov and U. Fischer, *J. Nucl. Mat.*, **417** (2011) pp. 1321–1324.

**Modelling d-Be and d-C neutron sources for SPIRAL-2**

M. Majerle and S.P. Simakov, Procs. Workshop “Nuclear Measurements, Evaluations and Applications – NEMEA-6”, 25-28 October 2010, Krakow, Poland, NEA/NSC/DOC(2011)4, OECD 2011, pp. 131-136.

**ADS-related activities at IAEA: From accelerators, neutron sources to fuel cycle and databases**

F. Mulhauser, P. Adelfang, R.M. Capote Noy, V. Inozemtsev, G. Mank, D. Ridikas, A. Stanculescu, A. Zeman, Procs. Workshop on Technology and Components of Accelerator driven Systems, Karlsruhe, Germany, March 2010, Nuclear Science 2011, OECD-NEA, ISBN 978-92-64 11727-3, pp. 307-319.

**JENDL-4.0: A new library for nuclear science and engineering**

K. Shibata, O. Iwamoto, T. Nakagawa, N. Iwamoto, A. Ichihara, S. Kunieda, S. Chiba, K. Furutaka, N. Otuka, T. Ohsawa, T. Murata, H. Matsunobu, A. Zukeran, So Kamada, J. I Katakura, *J. Nucl. Sci. Technol.* **48** (2011) pp. 1-30.

**Neutron capture on <sup>94</sup>Zr: Resonance parameters and Maxwellian-averaged cross sections**

G. Tagliente, R. Capote, *et. al.*, (the n\_TOF collaboration), *Phys. Rev.* **C84** (2011) 015801.

**Neutron-induced fission cross section of <sup>nat</sup>Pb and <sup>209</sup>Bi from threshold to 1 GeV: An improved parametrization**

D. Tarrío, R. Capote, *et. al.*, (the n\_TOF collaboration), *Phys. Rev.* **C83** (2011) 044620.

**<sup>197</sup>Au(n,γ) cross section in the unresolved resonance region**

C. Lederer, R. Capote, *et. al.*, (the n\_TOF collaboration), *Phys. Rev.* **C83** (2011) 034608.

**Towards an improved evaluation of neutron-induced fission cross sections on actinides**

S. Goriely, S. Hilaire, A.J. Koning, R. Capote, *Phys. Rev. C* **83** (2011) 034601.

**Nuclear data evaluation of  $^{55}\text{Mn}$  by the EMPIRE code with emphasis on the capture cross-section**

A. Milocco, A. Trkov, R. Capote, *Nucl. Eng. Design* **241** (2011) pp. 1071-1077.

**Giant dipole resonance parameters with uncertainties from photonuclear cross sections**

V.A. Plujko, R. Capote, O.M. Gorbachenko, *Atomic Data and Nuclear Data Tables* **97** (2011) pp. 567-585.

**Neutron-induced fission cross-section of  $^{233}\text{U}$  in the energy range  $0.5 < E_n < 20\text{MeV}$**

F. Belloni, R. Capote, (the n\_TOF Collaboration), *Eur. Physical. J. A* (2011) p. 47:2.

**Influence of resonance parameters' correlations on the resonance integral uncertainty;  $^{55}\text{Mn}$  case**

G. Žerovnik, A. Trkov, R. Capote, D. Rochman, *Nucl. Instr. Meth. Phys. Res. A* **632** (2011) pp. 137-141.

**Assessment of the unresolved resonance treatment for cross-section and covariance representation**

L. Leal, G. Noguère, C. de Saint John, I. Sirakov, R. Capote, J.-C. Sublet, P. Ribon, M. Coste Delclaux, C. Jouanne, O. Iwamoto, G. Chiba, K. Shibata, R.E. MacFarlane, A.C. Kahler Jr., C.R. Libutz, D. Cullen, M. Herman, (Members of Subgroup 32 – International Evaluation Cooperation, NEA/OECD), NEA/NSC/WPEC/DOC(2011)430, OECD/NEA 2011.

**Covariance data in the fast neutron region**

E. Bauge, R. Capote, U. Fisher, A.Yu. Konobeyev, P.E. Pereslavl'tsev, M. Herman, P. Obložinský, M.T. Pigni, T. Kawano, P. Talou, I. Kodeli, A. Trkov, A. Koning, D. Rochman, H. Leeb, D. Neudecker, D.L. Smith (Members of Subgroup 24 – International Evaluation Cooperation, NEA/OECD), NEA/NSC/WPEC/DOC(2010)427, OECD/NEA 2011.

**Measurements and evaluation of differential cross-sections for ion beam analysis**

A.F. Gurbich, D. Abriola, N.P. Barradas, A.R. Ramos, I. Bogdanovic-Radovic, M. Chiari, C. Jeynes, M. Kokkoris, M. Mayer, L. Shi, I. Vickridge. *Proc. Int. Conf. on Nuclear Data for Science and Technology 2010, J. Korean Physical Soc.* **59** Vol. 2 (2011) pp. 2010-2013.

**Fission cross-section measurements of  $^{233}\text{U}$ ,  $^{245}\text{Cm}$  and  $^{241,243}\text{Am}$  at CERN n\_TOF facility**  
M. Calviani, R. Capote, *et al.*, (the n\_TOF collaboration), *Proc. Int. Conf. on Nuclear Data for Science and Technology 2010, J. Korean Physical Soc.* **59** Vol. 2 (2011) pp. 1912-1915.

**$^{237}\text{Np}(n,f)$  cross section: New data and present status**

C. Paradela, R. Capote, *et al.*, (the n\_TOF collaboration), *Proc. Int. Conf. on Nuclear Data for Science and Technology 2010, J. Korean Physical Soc.* **59** Vol. 2 (2011) pp. 1908-1911.

**High-energy neutron-induced fission cross sections of natural lead and bismuth-209**

D. Tarrío, R. Capote, *et al.*, (the n\_TOF collaboration), *Proc. Int. Conf. on Nuclear Data for Science and Technology 2010, J. Korean Physical Soc.* **59** Vol. 2 (2011) pp. 1904-1907.

**Neutron capture measurements on minor actinides at the n\_TOF facility at CERN: Past, present and future**

D. Cano-Ott, R. Capote, *et al.*, (the n\_TOF collaboration), *Proc. Int. Conf. on Nuclear Data for Science and Technology 2010, J. Korean Physical Soc.* **59** Vol. 2 (2011) pp. 1809-1818.

**The measurement of neutron activation cross section of  $^{59}\text{Co}$  below 36 MeV**

E. Šimečková, P. Bém, V. Burjan, U. Fischer, R.A. Forrest, M. Götz, M. Honusek, V. Kroha, J. Novák, S.P. Simakov, *Proc. Int. Conf. on Nuclear Data for Science and Technology 2010, J. Korean Physical Soc.* **59** Vol. 2 (2011) pp. 1801-1804.

**Neutron-induced activation cross sections on hafnium isotopes from the threshold to 20 MeV**

V. Semkova, R. Jaime Tornin, N. Janeva, N. Koyumdjieva, A. Moens, A.J. Plompen, K. Volev, Proc. Int. Conf. on Nuclear Data for Science and Technology 2010, *J. Korean Physical Soc.* **59** Vol. 2 (2011) pp. 1737-1740.

**Renewed database of GDR parameters for atomic nuclei**

by V.A. Plujko, O.M. Gorbachenko, V.M. Bondar, R. Capote, Proc. Int. Conf. on Nuclear Data for Science and Technology 2010, *J. Korean Physical Soc.* **59** Vol. 2 (2011) pp. 1514-1517.

**Study of photon strength function of actinides: The case of  $^{235}\text{U}$ ,  $^{238}\text{Np}$  and  $^{241}\text{Pu}$**

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