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Nuclear Data Newsletter

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From the Section Head

Greetings from Vienna and all the best for 2026!

In this Newsletter, you will find news about the release of several new databases, computer programs and web interfaces.

A highlight for our Section was the release of our new website at nds.iaea.org. We hope you like it and that you will soon get used to the new taxonomy and functionality. A special thanks goes to Ludmila Marian, who coordinated this development in the past few years. Unfortunately (for us), Ludmila is rotating out of the IAEA now and we wish her all the best at her new position at ITU in Geneva!

Besides our recurring nuclear data meetings such as INDEN, I want to mention a particular new initiative, a Technical Meeting on neutron-induced reactions on short-lived nuclei, which due to their nature come with both experimental and theoretical challenges. The main drivers from applied nuclear science for this meeting are fission products and astrophysics.

The Atomic and Molecular Data Unit organised their biennial Meetings of the Code Centres Network and Data Centres Network and had their second RCM on Properties of Molecules in Edge Plasmas. The current interest in nuclear fusion attracts many participants to atomic data meetings. We are very glad that we have a new staff member, Lalita Sharma, to make sure we can handle the workload.

I wish to finish by stating that this Introduction has been written without the use of AI tools, and that the photo below is together with Roberto Capote Noy, who is leaving the IAEA at the end of February, after a 22-year career in the Section. Among his accomplishments are the RIPL database, the INDEN network and the current status of neutron standards, dosimetry library, actinide evaluations and the medical isotope nuclear database, and much more. It is obvious that it will be very challenging to replace him.



Roberto Capote Noy, Unit Head - NDDU and Arjan Koning, Section Head, Nuclear Data Section

Announcement

Honorary Doctorate for Arjan J. Koning

Arjan Koning, Head of the Nuclear Data Section, has received an honorary doctorate at the Faculty of Science and Technology of the University of Uppsala, for his expertise in nuclear data, coordinating and conducting research and development in the field. He received the award at a special doctorate ceremony on 29 January 2026 in Uppsala, Sweden.



Hedersdoktorer 30 januari 2026

Data Libraries News

TALYS and related Software

A new release of the TALYS software system for nuclear reaction models is available at https://nds.iaea.org/talys/.
The various codes and databases are all available as tar packages while links to GitHub are provided for further development of all the software.

The current collection consists of:

- **TALYS-2.2** - the nuclear reaction model code.
This latest version provides output in a more consistent format called YANDF, opening the door to more efficient processing and AI/ML applications. The updates regarding the physics are, among others, the improved BSKG3 level density model and associated fission model, and more flexibility for optical model calculations (IAEA-NDS-0255, https://doi.org/10.61092/iaea.jk8k-mm54).

- **TASMAN-2.2** - Statistical software for TALYS: Uncertainties, sensitivities, and optimization.
This is the code responsible for the complete covariance information that is delivered with the TENDL data libraries. In addition, TASMAN can automatically optimize TALYS nuclear model parameters to experimental data from the EXFOR database, and create sensitivity profiles for all reaction channels relative to the TALYS model parameters. There are many options and they are described in the tutorial (IAEA-NDS-0256, https://doi.org/10.61092/iaea.wk9h-13p7).

- **TEFAL-2.2** - Code to make ENDF-6 nuclear data libraries from TALYS.
TEFAL is a software package to produce nuclear data libraries. Its main task is to process the output files of the TALYS nuclear reaction code, but also data from other sources such as resonance tables and other nuclear data libraries, into a data library in ENDF-6 format (IAEA-NDS-0257, https://doi.org/10.61092/iaea.kr6y-axkg).

- **EXFORtables-2.2** - Experimental nuclear reaction database based on EXFOR.
This database is based on the international experimental nuclear reaction database EXFOR and contains the data in an easy accessible projectile/element/mass/reaction directory structure
(IAEA-NDS-0252,https://doi.org/10.61092/iaea.z24h-z6rf).

- **ENDFtables-2.2**- Code to translate ENDF nuclear data libraries into tabular format.
This code reads one ENDF formatted data library and produces a large collection of data tables, with one data file per reaction channel, in x-y or x-y-dy format and a header containing the basic information about the reaction.

- **Resonancetables-2.2** – Directory-structured database with resonance parameters, thermal cross sections, Maxwellian-Averaged cross sections from all known evaluations and nuclear data libraries (IAEA-NDS-0254, https://doi.org/10.61092/iaea.19p2-xxwz).

- **Isotopia-2.2** - Simulation of medical isotope production with accelerators.
The isotope yields for any production route with incident protons, deuterons, tritons, Helium-3 or alpha particles, and for natural or enriched targets, can be calculated. ISOTOPIA is the engine behind the Medical Isotope Browser, https://nds.iaea.org/mib, which allows to analyze production routes in an efficient way via a GUI (IAEA-NDS-0253, https://doi.org/10.61092/iaea.cwcj-vhnn).

- **Libraries-2025** - Evaluated nuclear data libraries and EXFOR in tabular format.
This is a large collection of simple x-y-(dy) data files from the major nuclear data libraries in the world, in directory-structured format. It also contains a tar file with plots of all major nuclear data libraries compared with EXFOR data.

- **EXFOR outliers -** Outliers for the EXFOR database, as collected in the past decade from automated, visual and in-depth analyses. The outlier database is a set of JSON files, one per EXFOR subentry, with more or less annotated data.

At the moment, available on github.com/arjankoning1 for preliminary validation.

TENDL-2025

A new release of the TALYS Evaluated Nuclear Data Library, TENDL-2025, is now available at https://tendl.imperial.ac.uk/ and succeeds the TENDL-2023 library.
The library contains complete ENDF-6 formatted data files, including covariance data and energies up to 200 MeV, for 2854 isotopes (all stable or with half-life >1sec) for incident neutrons, photons, protons, deuterons, tritons, Helium-3, and alpha particles.

Staff News

Lalita Sharma



We welcome Lalita Sharma, who recently joined the Atomic and Molecular Data Unit of NDS as an Atomic Physicist. In her new role, she will be working on database management, developing software tools for data verification and validation, and supporting Coordinated Research Projects. Before joining the IAEA, she has been serving as a faculty member in the Department of Physics at the Indian Institute of Technology (IIT) Roorkee, Roorkee, India, since 2011. She completed her PhD in Atomic Collision Theory in 2008 and worked as a postdoctoral fellow at the University of Heidelberg from 2009 to 2011.
Lalita's research specializes in generating and validating atomic data for plasma applications, particularly in fusion and astrophysics, using advanced relativistic quantum mechanical methods.

NDS Meeting Reports

(TM = Technical Meeting, RCM = Research Coordination Meeting, CM = Consultants' Meeting, WS = Workshop, CRP = Coordinated Research Project)

Technical Meeting on Neutron Data Standards

26-30 January 2026, Vienna, Austria
Scientific Secretary: G. Schnabel
18 participants and IAEA staff



This technical meeting was held in hybrid form with 18 participants (10 on-site) from 5 Member States and 2 International Organizations. The topics of the 13 presentations spanned evaluation methods, evaluation work, new measurements and updates to the NDS database. As the plan is to release a new version of the NDS by the end of 2026, a large part of the discussion was dedicated to the planning and coordination of the outstanding actions in great detail.
More information can be found on the dedicated meeting page: https://conferences.iaea.org/event/465/.
Summary report is in preparation and will be published as INDC(NDS)-0935.

Consultants' Meeting on the Evaluation of Nuclear Moments

16-19 December 2025, Vienna, Austria
Scientific Secretary: P. Dimitriou
7 participants and IAEA staff



Main objective of this Consultants' Meeting was to evaluate the current status of the IAEA Nuclear Moments database (https://nds.iaea.org/nuclearmoments/), review recent measurements and advances in data analysis and evaluation methodologies, recommend best practices, and outline a work plan to ensure the database's maintenance and future development.
More information is available at:
https://conferences.iaea.org/event/447/.
Summary report of the meeting will be published as INDC(NDS)-0937 and is in preparation.

Consultants' Meeting of INDEN on the Evaluated Data of Structural Materials

15-19 December 2025, Vienna, Austria
Scientific Secretary: G. Schnabel
15 participants and IAEA staff



Under the umbrella of the International Nuclear Data Evaluation Network (INDEN), a Consultants' Meeting on Structural Materials was held with 15 on-site participants from 7 Member States and 2 International Organizations. 18 presentations were given covering among other topics integral experiments, measurement campaigns and theoretical developments related to scattering kernels and the Unresolved Resonance Range. Notably, the recently released JEFF-4.0 and ENDF/B-VIII.1 library include evaluations of fluorine, copper, iron, manganese, silicon and chromium that have been produced by the INDEN collaboration, hence evaluation progress since then was also reviewed.
More details of the meeting can be found on the meeting webpage: https://conferences.iaea.org/event/459/.
Summary report is in preparation and will be published as INDC(NDS)-0941.

Technical Meeting of INDEN on Actinide Evaluation in the Resonance Region (7)

8-12 December 2025, Vienna, Austria
Scientific Secretary: R. Capote Noy
12 participants and IAEA staff



Participants of this Technical Meeting gathered to discuss and exchange evaluation methodologies and further coordinate the activities in different laboratories with the aim of obtaining consistent evaluated data files of fissile actinides that respect the experimental differential and integral data. A review of existing fissile evaluations after the release of ENDF/B-VIII.1 and JEFF-4.0 libraries was undertaken. It highlighted the excellent agreement of the INDEN Pu-239 evaluation in the resonance range adopted for the ENDF/B-VIII.1 library with new transmission data below 3~eV measured at LANL DICER setup. A new Pu-239 evaluation in the fast region which improves the scattering cross section was discussed.
Summary report of the meeting will be published as INDC(NDS)-0933.

Consultants' Meeting of INDEN for Light Elements

18-21 November 2025, Vienna, Austria
Scientific Secretary: P. Dimitriou
10 participants and IAEA staff



At this annual meeting of the INDEN-LE working group participants discussed progress in evaluations of charged-particle and neutron-induced reactions of light elements at low energies relevant to energy and non-energy applications.
The main topics covered were: i) comparison of the evaluations of ^{7}Be system produced with the R-matrix analysis codes AZURE2, GECCCOS, SAMMY, ii) evaluations of ^{10}Be and ^{17}O systems using RAC code, iii) measurements and evaluation of ^{15}N system, and iv) developments in uncertainty quantification in R-matrix analysis.
More details of the meeting can be found from meeting webpage: https://conferences.iaea.org/event/446/.
Summary report was published as INDC(NDS)-0931.

Consultants' Meeting on Evaluation of Photon Strength Functions III

12-14 November 2025, Vienna, Austria
Scientific Secretary: P. Dimitriou
9 participants and IAEA staff

The purpose of this meeting was to monitor progress in the evaluation of Photon Strength Function (PSF) data. Participants discussed (i) systematics of experimental and theoretical PSF, (ii) new compilations of PSF data and quality indicators, and (iii) the extension of the PSF database and online interface to include model calculations (D1M+QRPA and SMLO).



More details of the meeting can be found from meeting webpage: https://conferences.iaea.org/event/440/.
Summary report was published as INDC(NDS)-0889.

Technical Meeting on Thermal Capture and Prompt Gamma Emission

28-31 October 2025, Vienna, Austria
Scientific Secretary: R. Capote Noy
9 participants and IAEA staff



The participants of this technical meeting came together with the purpose of reviewing the ongoing processing of experimental prompt gamma activation analysis spectra and to discuss further steps to be taken with the aim of producing a set of recommended data which will update the PGAA and subsequently the EGAF IAEA databases. Processing of newly measured experimental spectra was finished. Work is on-going to prepare comprehensive publication of the new data.
Summary report of the meeting including the outcomes will be published as INDC(NDS)-0929.

Second Research Coordination Meeting on the Properties of Molecules in Edge Plasmas

22-24 October 2025, virtual event
Scientific Secretary: K. Heinola
18 participants and IAEA staff

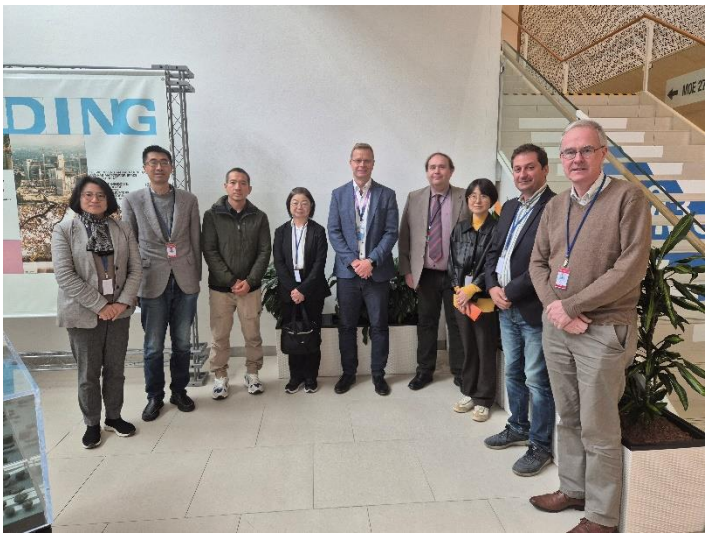


Purpose of the meeting was to review the current progress and results relevant to physics and data concerning molecule formation and their properties in the cool edge plasma regions of fusion devices. The studied processes comprised of various reactions with fusion electrons (such as dissociative recombination, or molecular activated recombination (MAD), and dissociative excitation, or molecular activated dissociation (MAD)) including ro-vibrational resolution (rovibrational de-excitation). Results concerning ITER-relevant ionic molecules were discussed and reviewed, such as H_2, HD, NH, N_2H, NeH, BH, as well as new Collisional-radiative Model applications and experimental results from MAST-U were presented.
More information including detailed agenda and presentations can be found on the meeting webpage: https://conferences.iaea.org/e/Mol-RCM2.
Summary report of the meeting will be published as INDC(NDS)-0940.

28th Technical Meeting of the Data Centres Network

1-3 October 2025, Vienna, Austria
Scientific Secretary: K. Heinola
13 participants and IAEA staff

Data Centres Network meeting reviewed current activities of the national data centres and discussed acute data requirements and activity needs raised within the nuclear fusion community.
A special topic for discussion was a policy proposal for unified management of atomic and molecular data for fusion modelling. A drafted document had been sent earlier to the DCN members. This document is an outcome of IAEA Technical Meetings on the topic in 2024 and a subsequent meeting organized by Forschungszentrum Jülich, Germany. Aim of the policy document was to provide recommendations on atomic, molecular and plasma-material interactions data management and maintenance. This special topic was discussed jointly with participants at SOLPS-ITER Code Camp (organized by ITER Organization), who joined the DCN meeting remotely from ITER.
More information including detailed agenda and presentations can be found on the meeting webpage https://conferences.iaea.org/e/dcn28.
Summary report of the meeting will be published as INDC(NDS)-0938.



9th Technical Meeting of the Code Centres Network

9-11 September 2025, Vienna, Austria
Scientific Secretary: K. Heinola
5 participants and IAEA staff



The 9th Technical Meeting of the Code Centres Network was dedicated to a special code comparison activity related to processes relevant to injected impurities in fusion devices. Experts representing Argentina, Australia, France and Hungary presented their computational findings on the agreed fusion process with argon and hydrogen present in reactors utilizing argon gas as an impurity for the protection

of divertor area and for diagnosis purposes of Charge-exchange Recombination Spectroscopy (CXRS). Participants reviewed their findings and identified similarities and gaps and discussed their underlying physical mechanisms. As an outcome, a peer-reviewed publication is expected during spring 2026.
Summary report of the meeting will be published as INDC(NDS)-0927.

Selected Reports

INDC(JPN)-0212 Proceedings of the 12th AASPP Workshop on Asian Nuclear Reaction Database Development, Conference Hall, Hokkaido University, Sapporo, Japan, 2-5 September 2025, edited by Dagvadorj Ichinkhorloo, Masayuki Aikawa, Kosuke Nomura, and N. Otuka, January 2026, https://doi.org/10.61092/iaea.4n13-wehr.

INDC(NDS)-0912 The International Nuclear Data Evaluation Network (INDEN) on Actinide Evaluation in the Resonance Region (6), Summary Report of the Technical Meeting, 9-13 December 2024, prepared by G. Noguere, M. Pigni, R. Capote Noy, October 2025, https://doi.org/10.61092/iaea.m4c7-wrw3.

INDC(NDS)-0913 Summary Report of the Consultants' Meeting of International Nuclear Data Evaluation Network (INDEN) on Evaluated Data of Structural Materials (7), 16-20 December 2024, prepared by S. Kwon, A. Trkov and G. Schnabel, December 2025, https://doi.org/10.61092/iaea.p4xd-v313.

INDC(NDS)-0915, Rev. 1 Table of Recommended Nuclear Magnetic Dipole Moments**,** prepared by N.J. Stone, December 2025, https://doi.org/10.61092/iaea.qs1q-27sa.

INDC(NDS)-0917 Neutron Data Standards, Summary Technical Meeting, 27-31 January 2025, prepared by G. Noguere, D. Neudecker and G. Schnabel, January 2026, https://doi.org/10.61092/iaea.fh8p-cekm.

INDC(NDS)-0920 Updating and Improving Nuclear Level Densities for Applications, Summary Report of the First Research Coordination Meeting, 24-28 March 2025, prepared by S. Hilaire, M. Krticka, M. Wiedeking and P. Dimitriou, September 2025, https://doi.org/10.61092/iaea.qz01-qqgz.

INDC(NDS)-0921 Preparation of a Major Release of the Fusion Evaluated Nuclear Data Library (FENDL), Summary Report of the Consultants' Meeting, 13-16 May 2025, prepared by S. Kwon and G. Schnabel, October 2025, https://doi.org/10.61092/iaea.7k8f-az1j.

INDC(NDS)-0923 International Nuclear Reaction Data Centres**,** Summary Report of the Technical Meeting, 17-20 June 2025, Madrid, Spain, prepared by N. Otuka and B. Pritychenko, October 2025, https://doi.org/10.61092/iaea.bwpw-yfk0.

INDC(NDS)-0926 Neutron-induced Reactions on Short-lived Nuclei**,** Summary Report of the Technical Meeting, 25-29 August 2025, prepared by I. Dillmann, M. Dupuis, J. Escher and P. Dimitriou, December 2025, https://doi.org/10.61092/iaea.8zt9-x65k.

INDC(NDS)-0928 On Low-Energy Enhancement of M1 Photon Strength Functions**,** prepared by J. Kopecky, October 2025, https://doi.org/10.61092/iaea.w2ks-mk2h.

INDC(NDS)-0930 Evaluation of Photon Strength Functions III, Summary Report of the Consultants' Meeting, 12-14 November 2025, prepared by K. Malatji, T. Laplace and P. Dimitriou, January 2026, https://doi.org/10.61092/iaea.dfyr-1g5x.

INDC(NDS)-0931 Summary Report of the Consultants' Meeting of International Nuclear Data Evaluation Network (INDEN) on the Evaluation of Light Elements (7), 18-21 November 2025, prepared by J. Skowronski and P. Dimitriou, December 2025, https://doi.org/10.61092/iaea.1qz4-w9pw.

Limited number available cost-free on request only for **teachers and scientists from developing countries:**

Chart of the Nuclides 2022 Japanese Nuclear Data Committee and Nuclear Data Center, Japan Atomic Energy Agency.

Karlsruher Nuklidkarte *Booklet, 12th edition (2025).*

Karlsruher Nuklidkarte *Wall Chart, 12th edition (2025).*

Nuclear Data Services – Contact Points

For services to customers in USA:
US National Nuclear Data Center, Bldg. 490, Brookhaven National Laboratory, P.O. Box 5000,
Upton, NY 11973-5000, USA.
Tel. +1 631-344-2902
Website: http://www.nndc.bnl.gov/
Email: nndc@bnl.gov
Online services contact: Benjamin Shu, Email: bshu@bnl.gov
General services contact: Catherine Dunn, Email: cdunn@bnl.gov

For services to customers in OECD/NEA Data Bank member countries:
NEA Data Bank, OECD Nuclear Energy Agency, 46, Quai Alphonse le Gallo
F-92100 Boulogne-Billancourt, France.
Website: http://databank.io.oecd-nea.org/codes/cps/ (Computer Program Services)
Website: http://databank.io.oecd-nea.org/data/overview/ (Nuclear Data)
Contact: Tel.: +33 1 73 21 28 30, Email: programs@oecd-nea.org; data@oecd-nea.org.

For services to customers from the Russian Federation:
Neutron data: Russia Nuclear Data Center, Centr Jadernykh Dannykh (CJD), Fiziko-Energeticheskij Institut, Ploschad Bondarenko,1,
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Photonuclear data: Centre for Photonuclear Experiments Data, Centr Dannykh Fotoyadernykh Eksperimentov (CDFE),
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Contact: Shu Nengchuan, Email: nshu@ciae.ac.cn

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 37831-6003, USA.
Tel. +1 865-574-6176; Fax +1 865-241-4046
Email: pdc@ornl.gov

Computer codes of non-US origin to all countries (there may be release restrictions):
NEA Data Bank (see above)
Email: programs@oecd-nea.org, Tel.: +33 1 73 21 28 30

IAEA-NDS on-line services at Website https://nds.iaea.org/
Users in India, China, Russia and neighbouring countries may use
IAEA-NDS mirror websites:
http://www-nds.org.in (India); http://www-nds.ciae.ac.cn/ (China); http://www-nds.atomstandard.ru/ (Russia).

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