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Progress Report of Nuclear Data Center of Japan Atomic Energy Agency for FY 2023

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JAEA/NDC

- JAEA/NDC consists of 9 staffs.
  - 7 regular staffs, 1 postdoc and 1 secretaries as of April 1, 2023.
  - Leader: Dr. Osamu IWAMOTO.
- Nuclear data measurements (4 regular staffs)
  - TOF neutron cross section measurement with ANNRI in MLF at J-PARC
  - Activation cross section measurement at KUR and JRR-3
- Nuclear data libraries (3 regular staffs, 1 postdoc)
  - JENDL-5 (released in 2021): general purpose file
    https://wwwndc.jaea.go.jp/index.html
    13 updated files have been released for correction of errors in JENDL-5
    - Update 12 （Aug. 10, 2023.）
      The data in MF8 were inconsistent with those in the other MF.
    - Update 13 （Aug. 10, 2023.）
      Discrete gamma-ray energies emitted from the (p,n1) and (p,p1) reactions were corrected.

Nuclear data measurements

Neutron TOF C.S. measurements

- Measurements of the Neutron Total and Capture Cross Sections and Derivation of the Resonance Parameters of ^{181}Ta, S. Endo et al., NSE, 198(4), 786 (2024).
- Measurements of neutron total and capture cross sections of ^{139}La and evaluation of resonance parameters, S. Endo et al., EPJ-A, 59(12), 288 (2023).
- Measurement of the neutron capture cross section of ^{185}Re in the keV energy region, T. Katabuchi et al., JNST, 61(2), 678 (2024).
- Neutron total and capture cross-section measurements of ^{155}Gd and ^{157}Gd in the thermal energy region with the Li-glass detectors and NaI(Tl) spectrometer installed in J-PARC・MLF・ANNRI, A. Kimura et al., JNST, 60(6), 678 (2023).
- ^{241}Am Neutron Capture Cross Section in the keV region using Si and Fe-filtered neutron beams, G. Rovira et al., JNST, 60(5), 489 (2023).

Neutron Activation measurements

- Measurements of capture cross-section of ^{93}Nb by activation method and half-life of ^{94}Nb by mass analysis , S. Nakamura et al., JNST 60(11), 1361 (2023).
- Neutron capture cross-section measurement by mass spectrometry for Pb-204 irradiated in JRR-3, S. Nakamura et al., JNST 60(9), 1133 (2023).

Nuclear data library/evaluation

- Japanese Evaluated Nuclear Data Library version 5; JENDL-5, O. Iwamoto et al., JNST, 60(1), 1-60 (2023).
- JENDL photonuclear data file 2016, N. Iwamoto, JNST 60(8), 11 (2023)
- JENDL-5 benchmarking for fission reactor applications, K. Tada et al., JNST, 61(1), 2-22 (2024).
- Simulated performance evaluation of d-Be compact fast neutron source, S. Nakayama et al., JNST, 60(12), 1447-1453 (2023).
- FENDL: A Library for fusion research and applications, G. Schnabel et al., Nuclear Data Sheets, 193, 1-78 (2024).
- Comparison of Ichimura-Austern-Vincent and Glauber models for the deuteron-induced inclusive breakup reaction in light and medium-mass nuclei, H. Liu et al, PRC 108(1), 014617 (2023).

Activities of EXFOR compilation in 2023 JFY

(from Apr. 2023 to Mar. 2024)

JAEA started to compile the data from 2019.

Our responsibility: Neutron data measured at JAEA or measured in cooperation with JAEA Nuclear Data Center

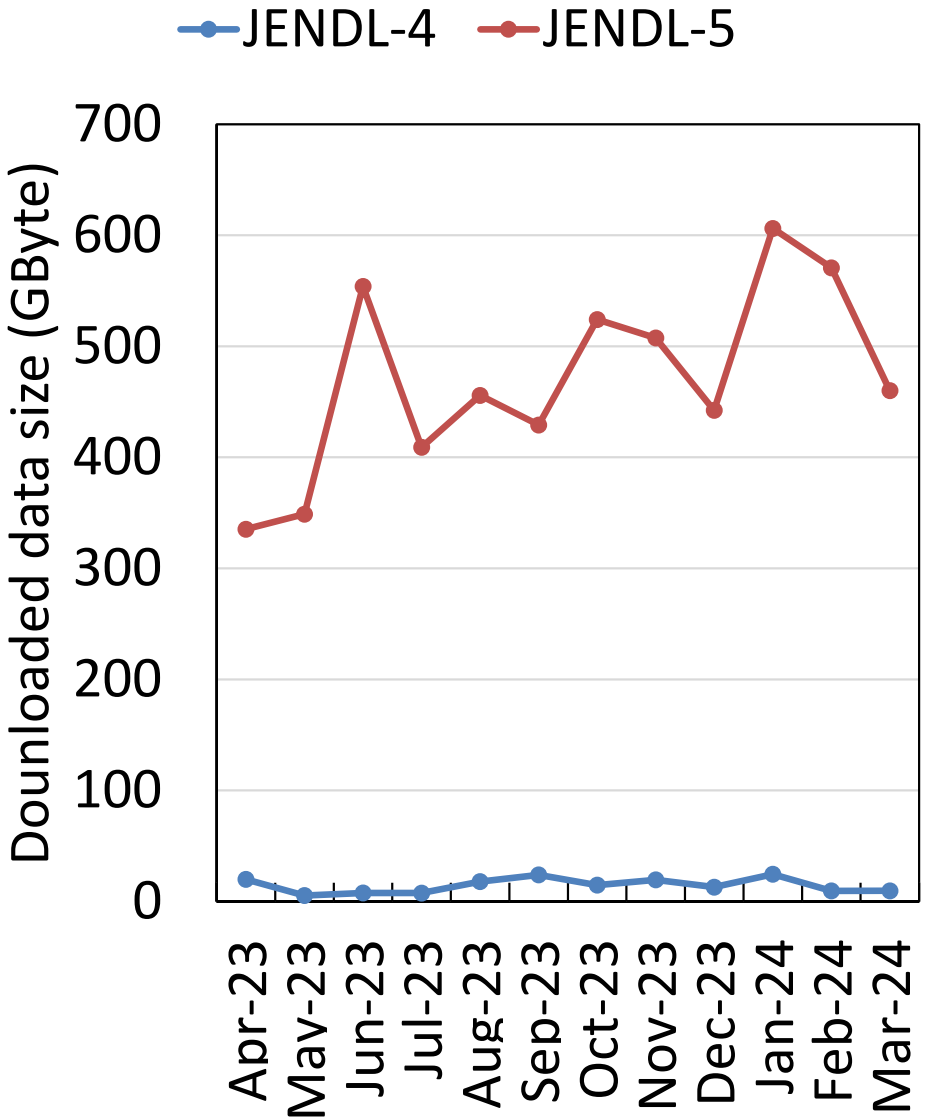
Compilation statistics of JAEA in 2023 JFY.

Entry	Reference	Reaction	Facility	Date	Status
23604	JNST,59,1388,2022	Np-237(n,g)	KUR	20230623	In EXFOR
(23605)	JNST,59,318,2022	Nb-93 (n,g), (n,tot)	J-PARC	20221209	In EXFOR
23606	JNST,60,489,2023	Am-241(n,g)	J-PARC	20230628	In EXFOR
23607	J,NST,60,678,2023	Gd-155,157(n,g)	J-PARC	20231208	In EXFOR
23608	J,PR/C,97,034622,2018	La-139 RP	J-PARC	20231110	In EXFOR
23609	J,PR/C,107,054602,2023	Xe-131 RP	J-PARC	20231110	In EXFOR
23610	J,NST,60,1133,2023	Nb-93 (n,g)	KUR	20231211	Compiled
23611	J,NST,60,1361,2023	Pb-204 (n,g)	JRR-3	20231213	Compiled
23612	J,PRL,132,023402,2024	V-0 Scattering length	J-PARC	20240209	Compiled
23613	J,EPJ/A,59,288,2023	La-139(n,g), (n,tot)	J-PARC	On going	
23614	J,NSE,198,786,2024	Ta-181(n,g), (n,tot)	J-PARC	On going	

Data service by web

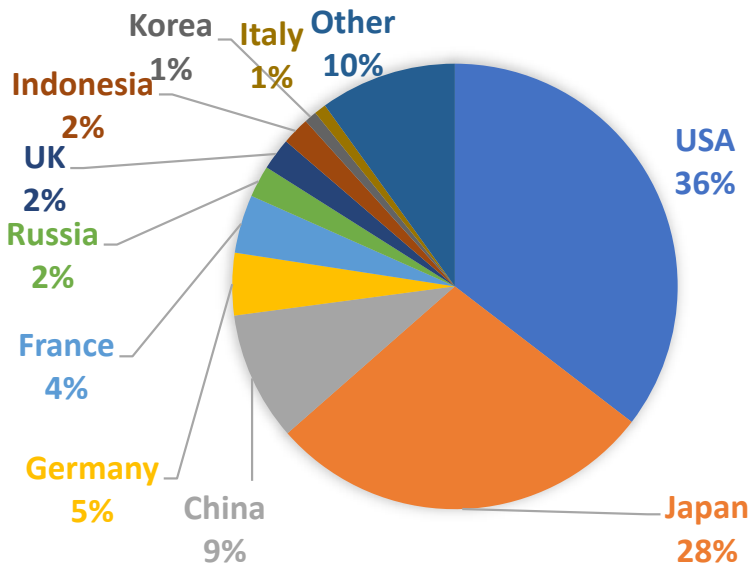
The data in JENDL are available on web site (https://wwwndc.jaea.go.jp/index.html).

Monthly downloaded data size of JENDL



The share by the country in 2023 JFY.

JENDL-5 (Total 5643GByte)



JENDL-4 (Total 173GByte)