

Progress Report of
Nuclear Data Center of Japan Atomic Energy Agency
for April 2023 – March 2024

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1. General

Nuclear Data Center of Japan Atomic Energy Agency (JAEA/NDC) is working on evaluation and measurement of nuclear data for Japanese Evaluated Nuclear Data Library JENDL. The experiments were mainly performed using Accurate Neutron-Nucleus Reaction measurement Instrument (ANNRI) installed in Material and Life Science Experimental Facility at J-PARC. The evaluation and related works are performed in the cooperation with Universities, Research Organizations, and Companies in Japan through Japanese Nuclear Data Committee. The number of Nuclear Data Center members consists of 7 regular staffs, 1 postdoc and 1 secretary as of April 1, 2024, and the center leader is Dr. Osamu IWAMOTO.

2. Nuclear Data Evaluation

The latest version of general purpose nuclear data library JENDL-5.0 was released in Dec. 2021. Previously released special purpose files such as neutron activation cross sections and charged-particle/photon-induced reactions were incorporated into JENDL-5 with updating the data. The 13 files fixing problems found in JENDL-5.0 have been released as JENDL-5.0 Updated Files until now. Evaluations of nuclear data for the next version of JENDL are in progress.

3. Nuclear Data Measurement

Neutron capture and total cross sections have been conducted for ^{181}Ta , ^{139}La , ^{185}Re , and 155 and ^{157}Gd at the J-PARC/MLF/ANNRI. Thermal capture cross sections of ^{93}Nb and ^{204}Pd have been deduced with the activation method.

4. EXFOR compilation

JAEA started to compile the data from 2019. We are responsible for compiling neutron-induced experimental data measured in JAEA facilities or cooperation with the JAEA Nuclear Data Center. In 2023, we have compiled 8 entries.

Table 1 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
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 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	

5. Other Services

The data in JENDL are available at web site (<https://www.ndc.jaea.go.jp/index.html>). The monthly downloaded data size in April 2023 to February 2024 is shown in Fig.1. The share by the country in the same period is shown in Fig.2.

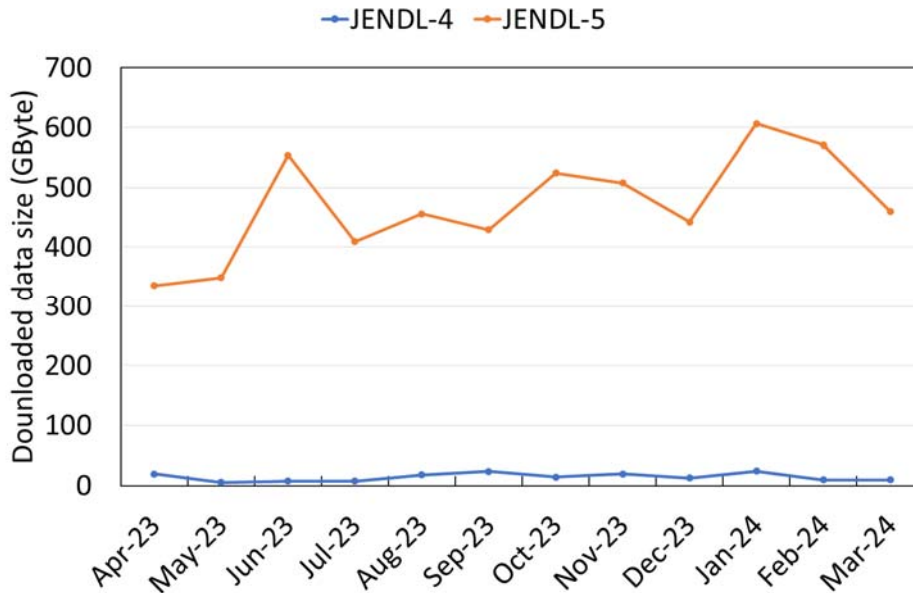


Fig.1 Downloaded data size in period of April 2023 to March 2024.

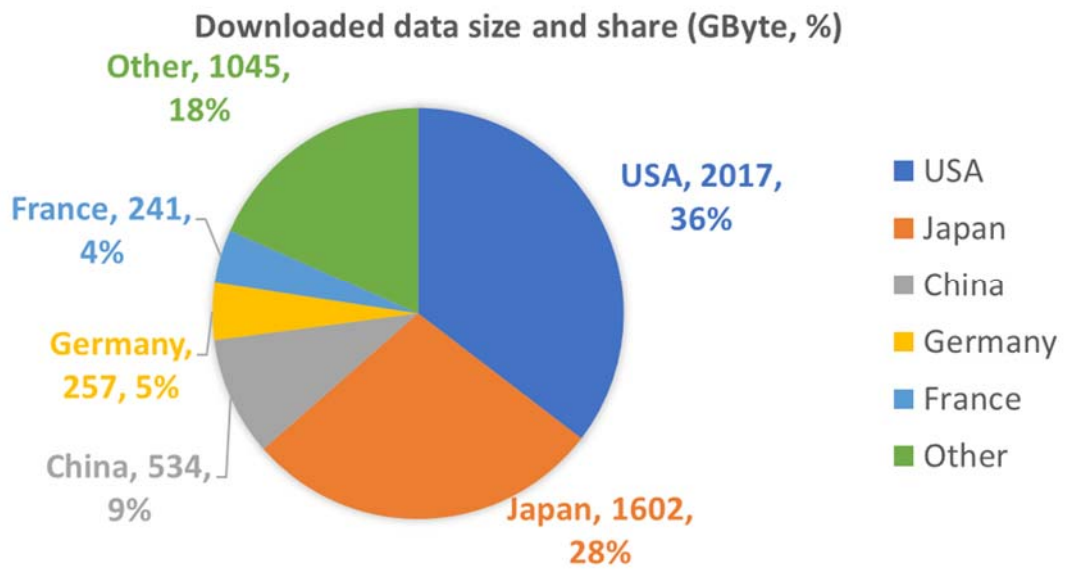


Fig. 2 Downloaded data size by countries for JENDL-5.0.