

Progress Report of
Nuclear Data Center of Japan Atomic Energy Agency
for April 2013 – March 2014

O. Iwamoto
Nuclear Data Center
Nuclear Science and Engineering Center
Japan Atomic Energy Agency

1. General

Nuclear Data Center of Japan Atomic Energy Agency (JAEA/NDC) is working on the nuclear data evaluation for Japanese Evaluated Nuclear Data Library JENDL. The evaluation and related works are performed in the cooperation with Universities, Research Organizations and Companies in Japan through Japanese Nuclear Data Committee. A part of Research Group for Applied Nuclear Physics of JAEA, which had activities of nuclear data measurements, joined in JAEA/NDC in 2014. Experimental activities such as neutron cross section and nuclear structure measurements are included from April 2014.

The number of Nuclear Data Center staff members is 14 including 1 technical assistant, 3 postdocs and 2 secretaries as of April 1, 2014. Approximately a-half members are working for nuclear data evaluation.

2. Evaluation

Main work of evaluation is to compile the JENDL library. The latest version of general purpose nuclear data library JENDL-4.0 was released in May 2010. Revised files fixing problems arising in JENDL-4.0 have been released as JENDL-4.0 Updated Files since 2012. They are available on the web-site "<http://wwwndc.jaea.go.jp/jendl/j40/update/>". The 5 year period from April 2010 to March 2015 is the second period of mid-term research plan of JAEA. According to the mid-term plan, an objective of nuclear data research is "incident energy extension of JENDL". For this purpose, the nuclear reaction model code, CCONE was improved so as to adapt for higher energy reactions up to 200 MeV including the multi-particle and complex-particle emission on the pre-equilibrium stage. The development of the energy-extended file of JENDL-4.0 will be finished by March 2015. As the other projects, nuclear data evaluation for the neutron activation file and the photonuclear data file are in progress. They will be released in the near future.

3. Other Services

The data related to JENDL are provided on our web site (<http://www.ndc.jaea.go.jp/index.html>). The monthly downloaded data size in April 2013 to February 2014 is shown in Fig.1. The share by the country in the same period is shown in Fig.2.

Two web-tools, “View of Average Resonance Cross Section (VARCS)” and “Search for Resolved Resonances” were added in the Tools for drawing graphs, etc. page (July 5, 2013). The VARCS shows averaged cross sections of JENDL-4.0 as a function of TOF channels. The other one is a tool to retrieve available resonances in JENDL-4.0 in the specified ranges for resonance energies, cross section values, atomic and mass numbers.

“WWW Chart of the Nuclides 2010 (JavaScript-β version)” was added in the “WWW Chart of the Nuclides” page. (February 20, 2014). This is a new version of “WWW Chart of the Nuclides” which utilizes JavaScript and under development for the next distribution of the “Chart of the Nuclides”. This is produced to improve operability and visualization from the present version above. On the new version, the chart can be slid in all directions by dragging and zoomed in/out by wheel rolling with a mouse like some web maps (Fig. 3).

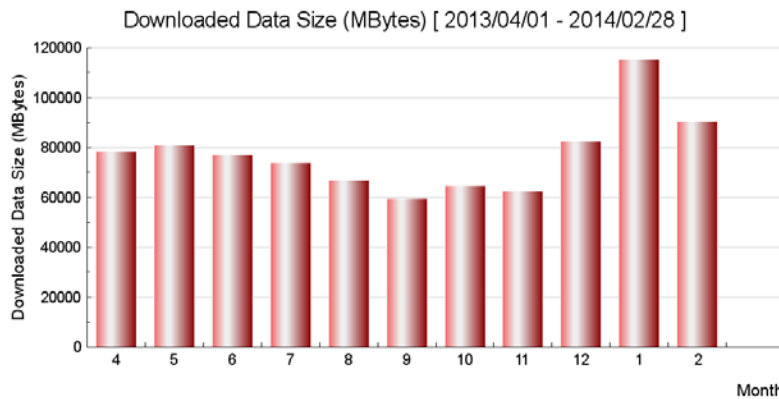
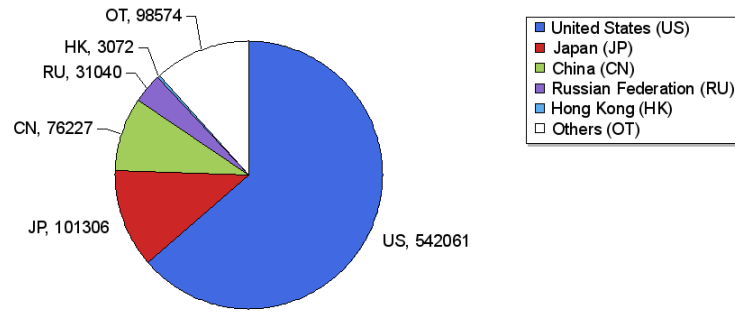


Fig.1 Downin loaded data size in period of April 2013 to February 2014.

Downloaded Data Size (MBytes) (Top 5) [2013/04/01 - 2014/02/28]



* Top 5 of nationalities about access times

Fig. 2 Downloaded data by countries.



Fig. 3 WWC Chart of the Nuclides 2010(JavaScript-β)