Progress Report of Nuclear Data Center of Japan Atomic Energy Agency for April 2015 – March 2016

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Japanese Nuclear Data Committee

chaired by N. Yamano, Univ. of Fukui

Subcommittee on Nuclear Data (H.Harada, JAEA)

- Activation Cross Section Evaluation WG (N.Iwamoto, JAEA)
- ENSDF Group (H.Iimura, JAEA)
- Japanese Nuclear Data Measurement Network (Y.Watanabe, Kyushu Univ.)

Subcommittee on Reactor Constants (K. Okumura, JAEA)

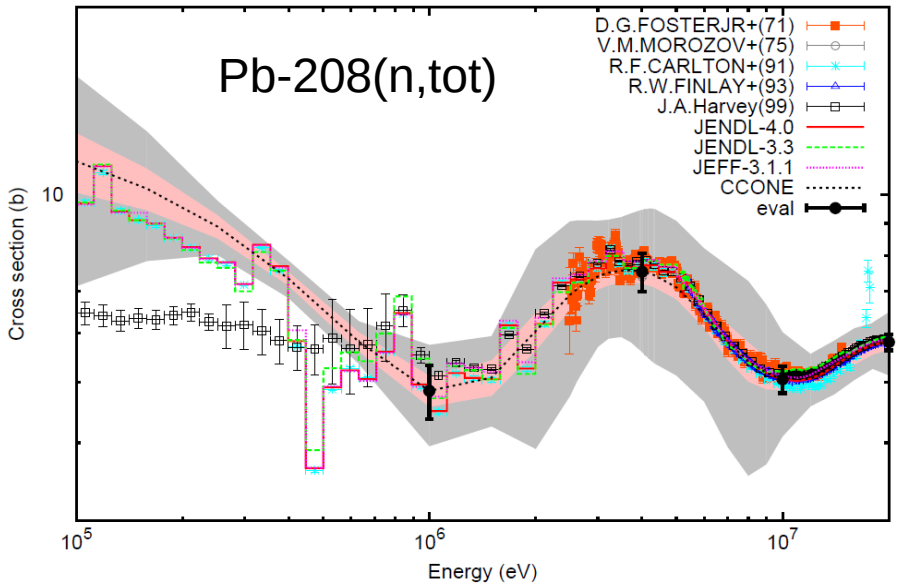
- Reactor Integral Test WG (G.Chiba, Hokkaido Univ.)
- Shielding Integral Test WG (C.Konno, JAEA)
- WG on Evaluation of Nuclide Generation and Decay Heat (K.Okumura, JAEA)
- Covariance Utilization WG (T.Iwasaki, Tohoku Univ.)
- Nuclear Data Processing Program WG (K.Suyama, JAEA)

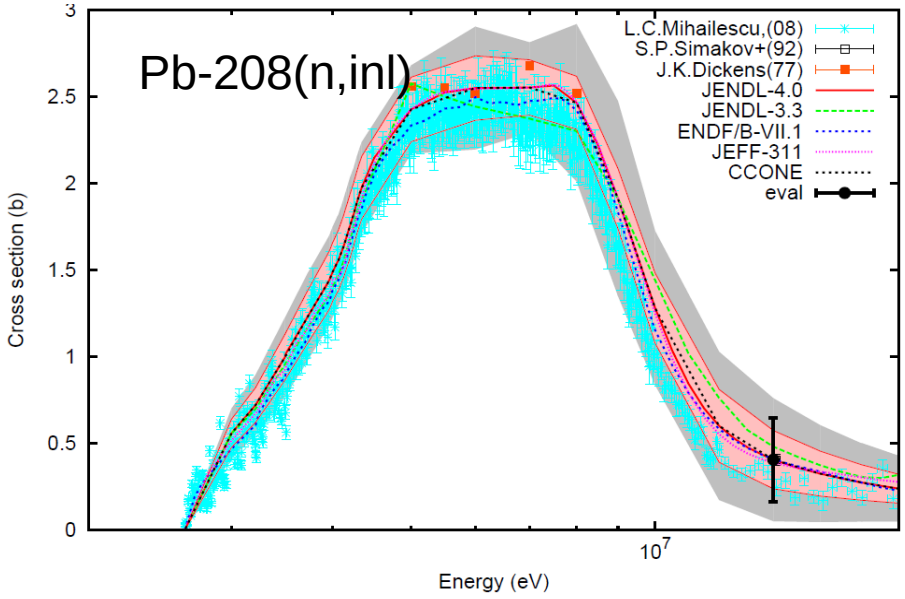
A new subcommittee related to international strategy on nuclear data and neutronics calculation codes will be established in 2016.

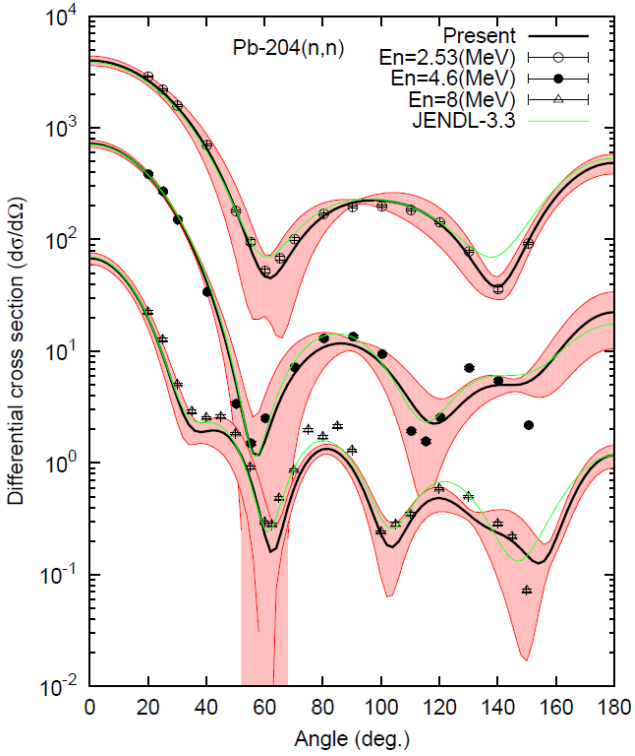
JENDL-4.0 update files

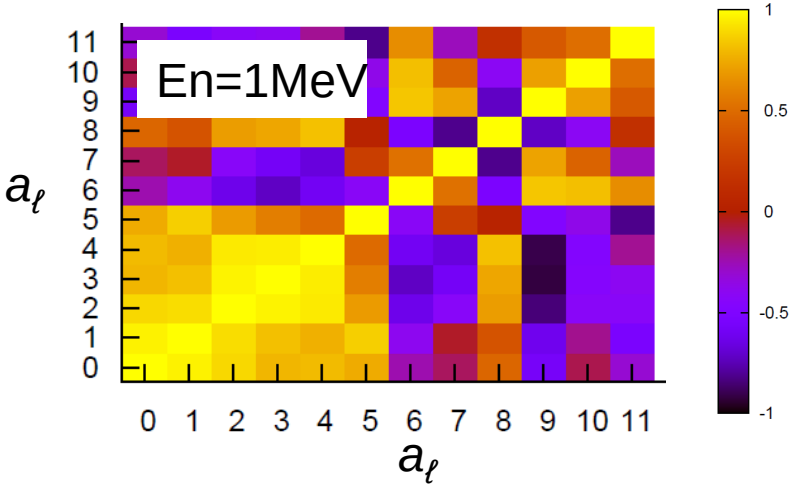
- Pb-204, 206, 207, 208
  - Covariance data were added.
  - cross sections (MF=33/MT=1, 2, 4, 16, 17, 51-91, 102)
  - angular distribution for elastic scattering (MF=34/MT=2)
- Rh-105
  - The target spin in RRR (MF/MT=2/151) was corrected.
  - The resonance parameters (pseudo resonance) were modified so as to reproduce the thermal capture cross section and resonance integral of Mughabghab et al.

Covariance data of Pb isotopes









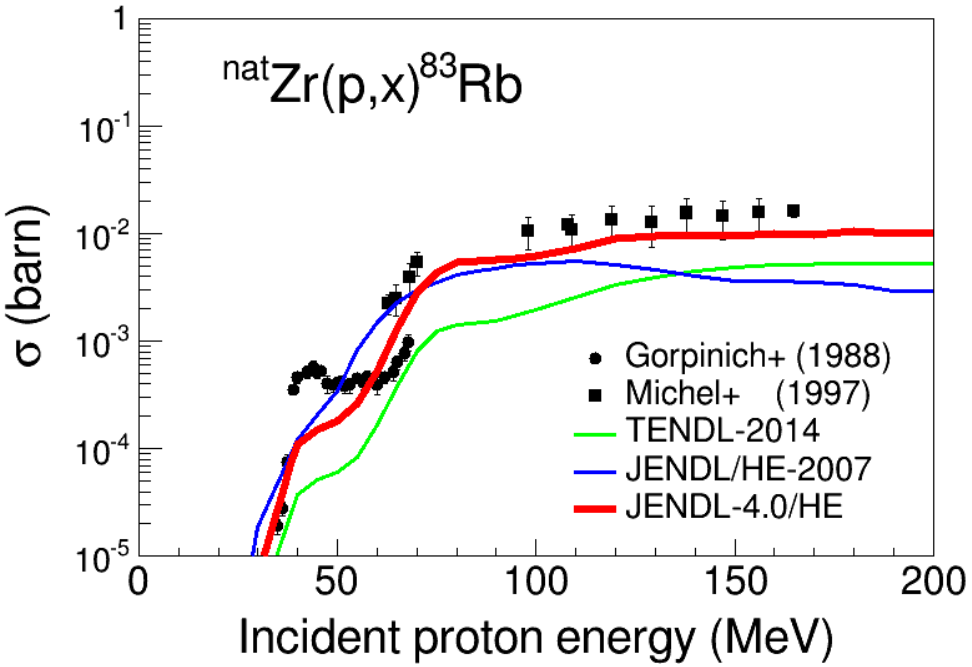
Newly released libraries in 2015

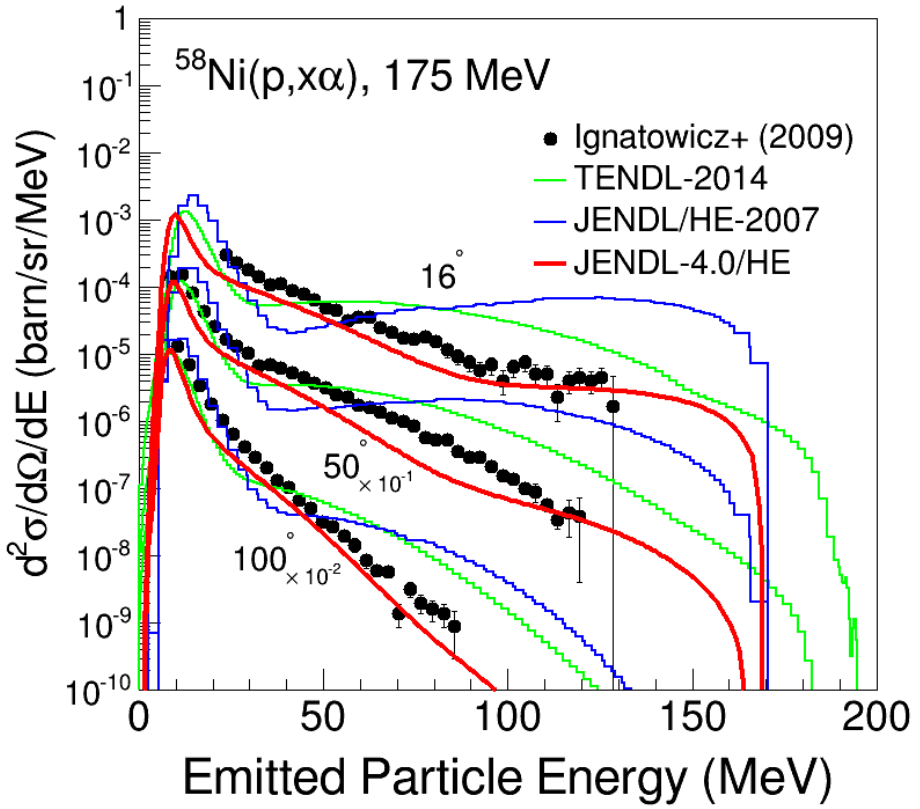
- JENDL Decay Data File 2015 (JENDL/DDF-2015)
  - 3,237 nuclei of A= 1 to 260
  - JENDL/FPD-2011 (1,284 nuclei) + ENSDF (1,953 nuclei)
- JENDL-4.0 High Energy File (JENDL-4.0/HE)
  - an extended version of JENDL-4.0 up to 200 MeV
  - Neutron 10^{-5} eV – 200 MeV （130 nuclei*）
  - Proton 1 MeV – 200 MeV （133nuclei*）
  - DDX, residual production

JENDL-4.0/HE CCONE Calculation

Isotope-production XS

composite-particle emission





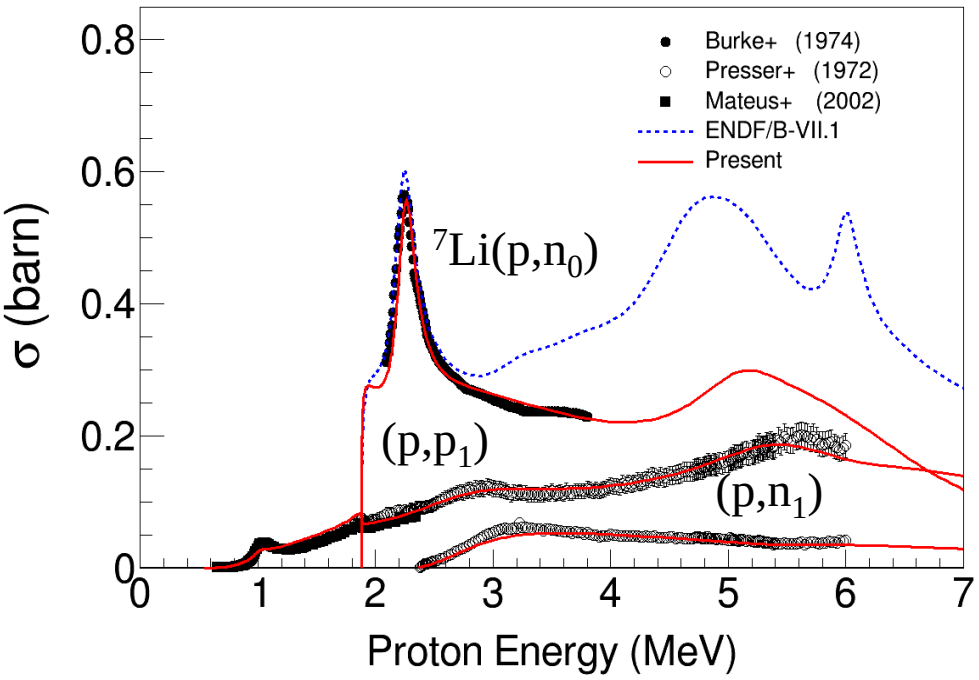
⇨ Consistent with experimental data, obviously better than the other evaluations.

JENDL-4.0/HE Light-nuclei

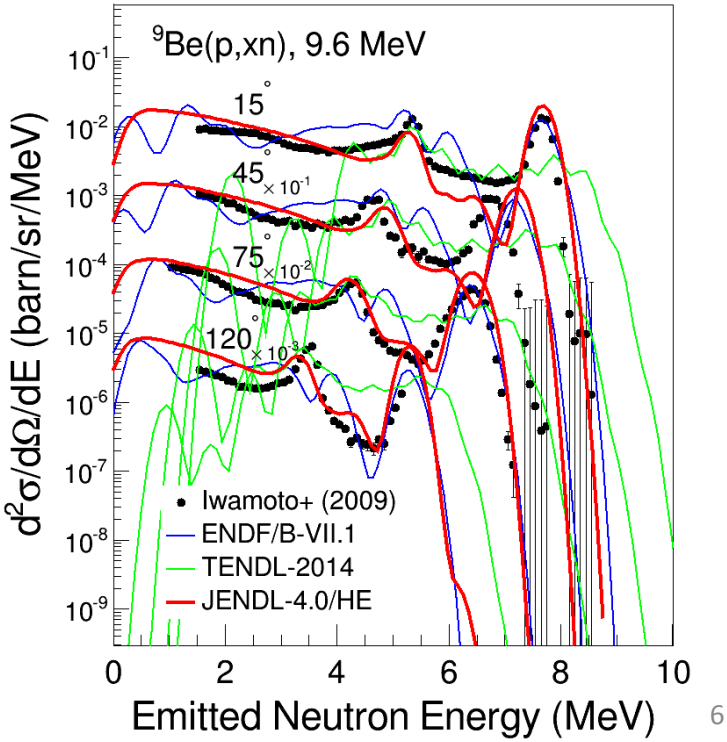
^{1,2}H, ^{6,7}Li, ^{9}Be, ^{12,13}C, ^{14,15}N, ^{16,18}O, …

- Inherited from JENDL/HE-2007,
- New (p only) evaluation

R-matrix analysis



OPTMAN +CCONE



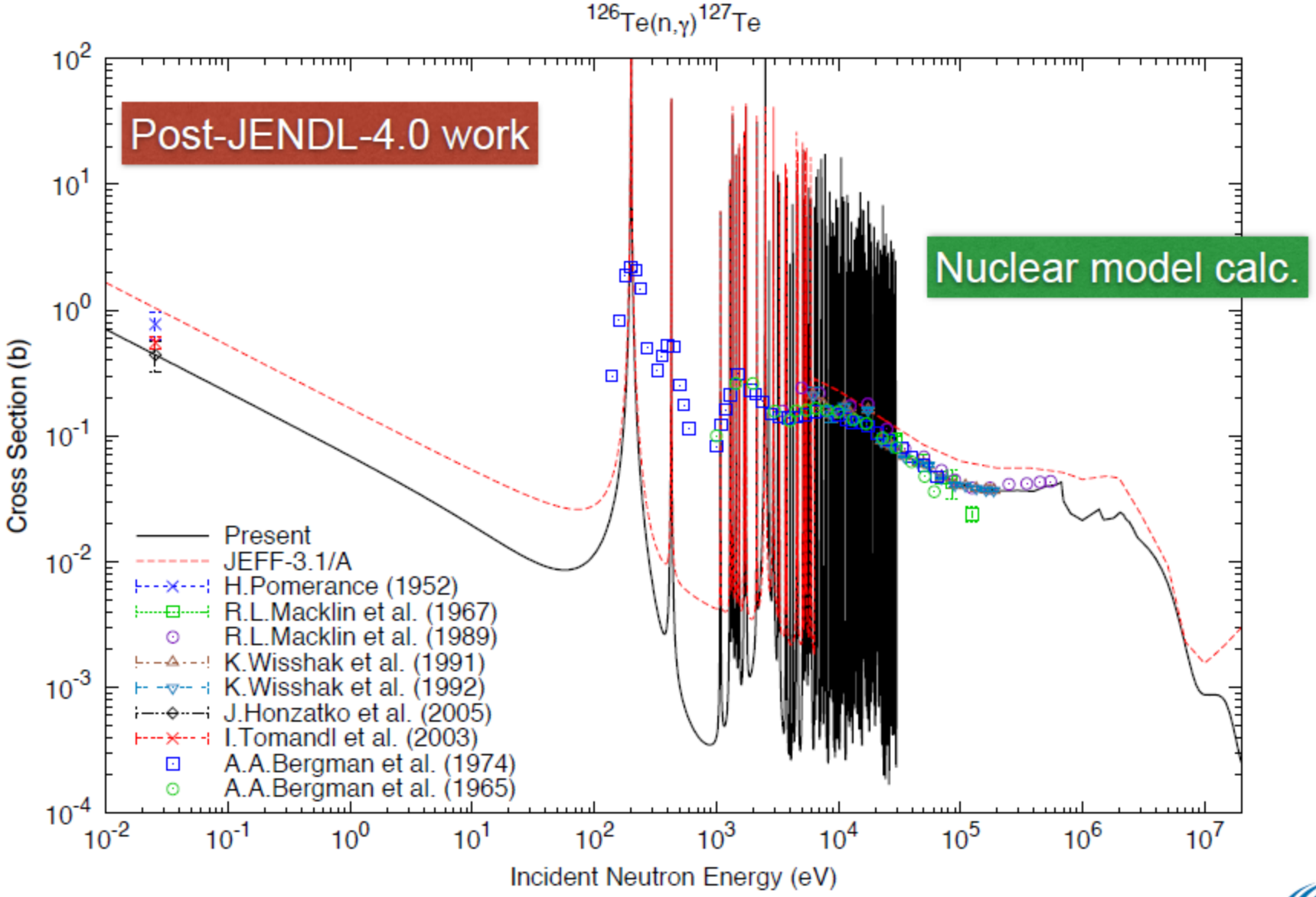
Activation Cross-section File for Decommissioning of LWRs

To be released as JENDL/AD-2016

Compiled Results (T = 0 K, 293.6 K)

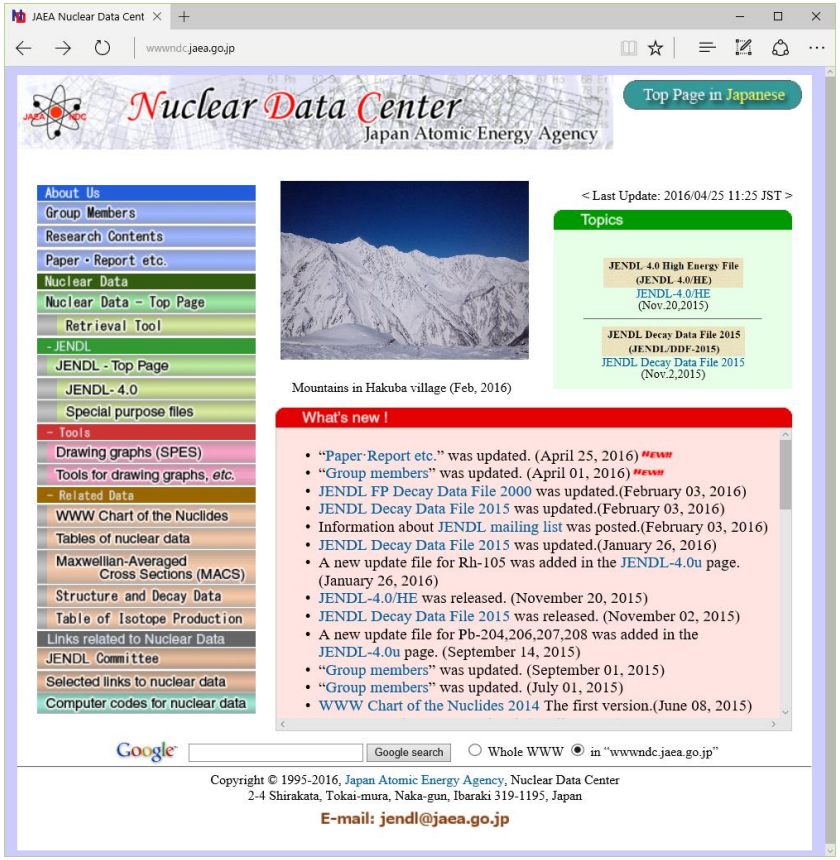
• JENDL-4.0	50 nuclides
• JENDL-4.0 + α	19 nuclides
• JENDL/A-96	1 nuclide
• JENDL/A-96 + α	5 nuclides
• Nuclear model calc.	158 nuclides
• Nuclear model calc. + α	69 nuclides
Total	302 nuclides

Figure $^{126}Te(n,\gamma)^{127}Te$

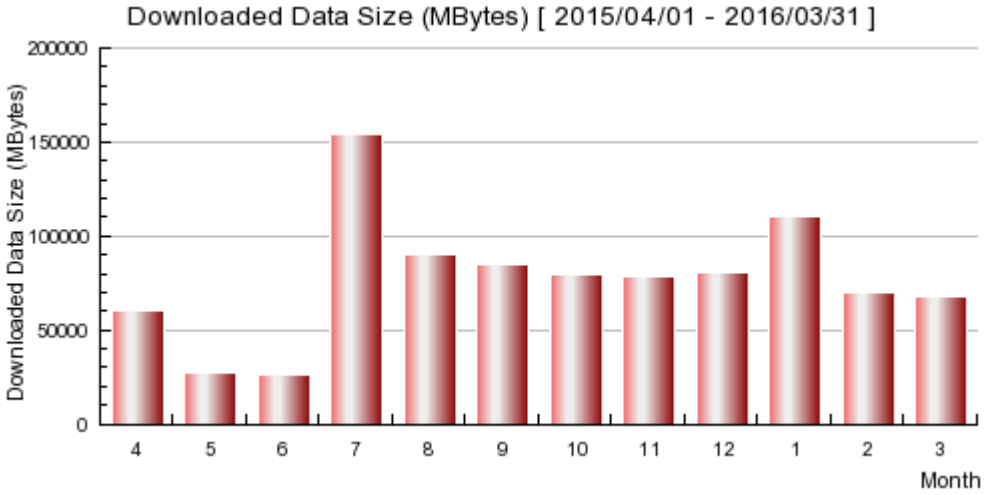


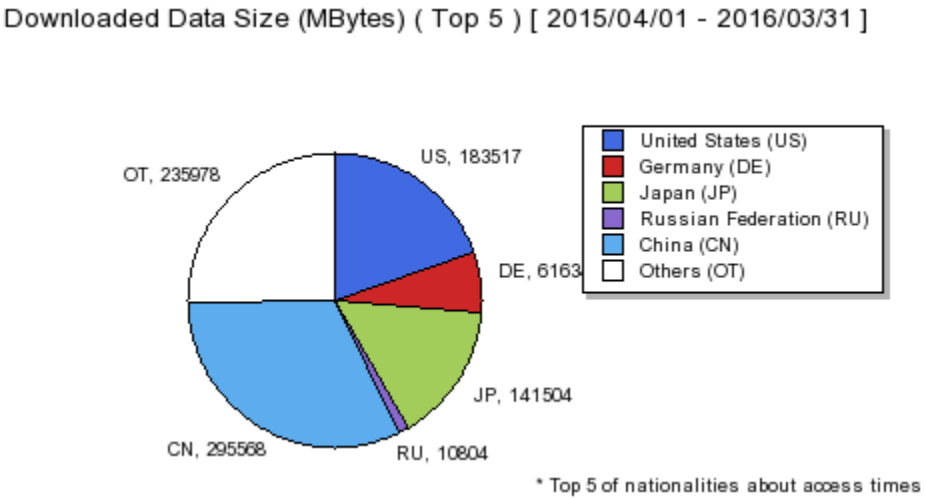
Data service by web

wwwndc.jaea.go.jp



Downloaded data size in period of April 2013 to February 2014.





* Top 5 of nationalities about access times

WWW Chart of the Nuclides 2014

- Web version of the Chart of the Nuclides 2014 was released on 8 June 2015. It contains basic nuclear properties such as mass, spin, half-life etc. The user interface was also updated from the previous version