

Comparison of Major Nuclear Data Libraries
- JENDL-3.3, ENDF/B-VI.8, ENDF/B-VII β 1.2, and JEFF-3.1 –

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ENDF/B-VII will be released in July, 2006. It is worthwhile to compare the data of major nuclear data libraries: JENDL-3.3, ENDF/B-VI.8, ENDF/B-VII β 1.2, and JEFF-3.1. Data comparisons are made for major and minor actinides, long-lived fission products and major structural materials. For example, the capture cross sections of ^{238}U , which most reactor experts should be interested in, are compared in the following table.

Thermal capture cross sections and resonance integrals at 300 K		
Library	σ_c at 2200 m/s (b)	I_c (b)
JENDL-3.3	2.718	278.1
ENDF/B-VI.8	2.718	278.1
ENDF/B-VII β 1.2	2.684	275.3
JEFF-3.1	2.684	275.3
Mughabghab '03 ¹⁾	2.680 \pm 0.019	277 \pm 3

Not only cross sections but also prompt fission neutron spectra and nu-bar values for some nuclei are compared and discussed in the symposium.

Reference

- 1) S.F. Mughabghab: "Thermal Neutron Capture Cross Sections and Resonance Integrals and g-factors," International Atomic Energy Agency, INDC(NDS)-440 (2003).