おしらせ (その Ⅱ)

NNDENへの投稿

Contribution to Neutron Nuclear Data Evaluation Newsletter-20

Japanese Nuclear Data Committee
(Nuclear Data Centre, JAERI)

Work recently completed:

i) The gamma-ray spectra following neutron capture by ^{238}U are calculated on the basis of the statistical model. The calculations are carried out taking account of the low-lying discrete levels with known values of energy, spin and parity, and of statistical assumptions for the distribution of levels in the continuum region. All radiative transitions are assumed to be of the electric dipole type. The gamma-ray cascade is exactly treated by taking account of the possibility of neutron emission at excitation energies above the neutron binding energy. Comparisons are given between experimental spectra and corresponding calculated spectra for incident neutron energies at 0.025 eV, 10.1 keV, 101 keV and 1.0 MeV. (informed by M. Ohta, Kyushu Univ.)

ii) Evaluations of total, fission, capture, elastic scattering, inelastic scattering, (n,2n), (n,3n) cross sections and νp of ^{239}Pu have been completed between 1 keV and 15 MeV. Results of the evaluation work were contributed to compile the data file of Japanese Evaluated Nuclear Data Library (JENDL). (informed by M. Kawai,NAIG)

iii) Evaluation on ^{235}U neutron data has been recently completed from 1 keV to 15 MeV. The evaluated data were contributed to a compilation of JENDL-1. (informed by H. Matsunobu, SAEI)

Work in progress:

i) Evaluation of total, capture, elastic scattering and inelastic scattering cross sections of ^{92,94,96,98} and ^{100}Mo was started in order to contribute to the compilation of JENDL-1. Evaluated data for the other isotopes of ^{95} and ^{97} Mo had been already prepared by a working group of JNDC. Through this work, the data for Mo will be evaluated also. (informed by M. Kawai, NAIG, and T. Hojuyama, MAPI)

ii) A compilation group of JENDL-1 has continued the work on making the evaluated data for the library. Members of this group collected every available evaluated data, compared them with the experimental data and adopted the most relevant data. When there are no relevant data, they performed reevaluation. In particular, they made every effort to provide self-consistent data of the heavy elements in the unresolved resonance region, and to give reliable data of the inelastic scattering and capture cross sections. Followings are nuclides whose evaluated data are stored in JENDL-1.

H	^{55}Mn	^{90}Sr	^{103}Rh	^{149}Sm
^{6}Li	Fe	^{93}Zr	^{105}Pd	^{151}Sm
^{7}Li	^{54}Fe	Mo	^{107}Pd	^{153}Eu
^{10}B	^{56}Fe	^{92}Mo	^{109}Ag	^{155}Eu

^{11}B	^{57}Fe	^{94}Mo	^{129}I	^{181}Ta
^{12}C	^{58}Fe	^{95}Mo	^{131}Xe	^{232}Th
^{16}O	Ni	^{96}Mo	^{133}Cs	^{233}Pa
^{23}Na	^{58}Ni	^{97}Mo	^{135}Cs	^{234}U
^{27}Al	^{60}Ni	^{98}Mo	^{137}Cs	^{235}U
Si	^{61}Ni	^{100}Mo	^{144}Ce	^{238}U
Cr	^{62}Ni	^{99}Tc	^{143}Nd	^{239}Np
^{50}Cr	^{64}Ni	^{101}Ru	^{144}Nd	^{239}Pu
^{52}Cr	Cu	^{102}Ru	^{145}Nd	^{240}Pu
^{53}Cr	^{63}Cu	^{104}Ru	^{147}Pm	^{241}Pu
^{54}Cr	^{65}Cu	^{106}Ru	^{147}Sm	^{241}Am

Work planned for the near future:

Evaluation on ^{243}Am and ^{244}Cm cross sections will be started. (informed by T. Fuketa, JAERI)

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