

解説 (II)

JENDL-3.2 の炉定数整備(4)

BERMJ3 and BERMJ3G

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BERMUDA is a radiation transport code system (Refs. 1 - 3).

BERMJ3 is for use only with neutron transport codes and adjoint neutron transport code in the BERMUDA code system (Refs. 1 & 3). This data library consists of neutron group constants for 30 nuclides in 125-energy-group structure from 0 eV to 16.5 MeV. The data are based on JENDL-3.2 and were processed with the PROF-GROUCH-G/B code system.

Nuclides: H, He-3, Li-6, Li-7, Be, B-10, C, N, O, F, Na, Mg, Al, Si, P, S, K, Ca, V, Cr,

Mn, Fe, Co, Ni, Cu, Nb, Mo, Ta, W and Pb.

For elastic and inelastic scattering (to discrete levels), cross sections and angular distributions (Legendre coefficients) are given for each level and each energy group. For continuum inelastic scattering, together with (n,2n) and (n,3n) reactions etc., isotropic scattering matrix is given for each group. Resonance self-shielding factors for 300 Kelvin are given so that effective cross sections are obtainable in the resonance energy region.

BERMJ3G is for use only with the gamma rays transport codes in the BERMUDA code system (Ref. 2). This data library consists of gamma rays group constants for 30 nuclides in 41-energy-group structure from 10 keV to 14 MeV. The data are based on JENDL-3.2 and PHOTX data libraries.

The secondary gamma rays production data in JENDL-3.2 are processed with the PROF-GROUCH-G/B code system to produce the (n,γ) production matrix. This matrix is multiplied by 125-energy-group neutron scalar flux to account the gamma rays source emitted isotropically into each of the 41 energy groups of gamma rays. Total cross section σ_t for accounting attenuation coefficient μ (or Σ_t) are processed from PHOTX data of ANS-6.4.3-1991. This σ_t data are prepared not only for each of 41 energy groups but also for each energy grid. A grid is defined by dividing an energy group into 10 subgroups having equal energy widths.

Nuclides contained are same as in BERMJ3.

Details of BERMJ3 and BERMJ3G are given in Ref. 4 and Ref. 5, respectively. They are available from the following authors:

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References

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