EXFOR E2298 and SINBAD NEA-1552/14 (A64)

(N. Otsuka, 2015-08-03, Memo CP-D/883)

NRDC 2015 Action 64 (Otsuka): Assess the difference of RIKEN neutron spectra compiled in EXFOR E2298 and SINBAD NEA-1552/14 summarized in WP2015-17.

Dr. Noriaki Nakao (the corresponding author of the source article [1]) kindly explained us the situation:

1. They have two original spectra (Data Set A and B, both are in 4 digits). The data sets are the same except the 1st or 2nd negligible data points at the highest neutron energy which are eliminated in the Data Set B. The spectrum is so normalized that the integration of the spectrum at the peak area (Table 5 of Ref. [1]) gives 1.

2. EXFOR provides the Data Set A multiplied by the absolute peak neutron yield (1.007×10^{10} neutrons/sr/μC).

3. SINBAD provides the Data Set B after rounding to 3 digits.

Therefore I conclude that both data compilations provide correct numerical data but with different normalization.

Note that **the caption of Tables 5 to 7 in SINBAD should be corrected**: "Peak fluences were normalized to those at 12 m distance estimated from the target activity" should be read as "Peak fluences were normalized to 1.0 at the peak range".

Reference

[1] N. Nakao et al., Nucl. Instrum. Meth. A**420**(1999)218.