**Nuclear Data Section**

**International Atomic Energy Agency**

**P.O.Box 100, A-1400 Vienna, Austria**

**Memo CP-D/1138**

**Date:** 16 May 2025

**To:** Distribution

**From:** N. Otsuka

**Subject: Some proposals on coding of characteristic energy of spectrum**

**Proposal 1**

It is sometimes not clear for me how to choose one from EN-MEAN and EN-DUMMY for a dataset measured under a broad neutron spectrum field. Here are their descriptions in Dictionary 24:

|  |  |  |
| --- | --- | --- |
| Heading | Expansion | Comment |
| EN-MEAN | Mean energy of incident projectile spectrum | Mean energy of incident projectile spectrum or of energy range. Explanation in free text is required. |
| EN-DUMMY | Dummy incident projectile energy, for broad spectrum | Used as the numerical equivalent of an incident particle spectrum when neither EN-MEAN nor KT apply. See also INC-SPECT. Quantity has modifier to specify spectrum. |

I would like to confirm that (1) EN-MEAN is used when the energy is given by the authors or in a related reference (REL-REF) describing the same irradiation field, (2) otherwise EN-DUMMY is used.

**Proposal 2**

LEXFOR gives the EN-DUMMY values of

* 0.0005 eV for cold neutrons (if nothing else is specified by authors)
* 0.0253 eV for thermal Maxwellian and thermal reactor spectra
* 1.5 MeV for fission-neutron spectra (if nothing else is specified by authors)
* 4.5 MeV for decay α-Be neutron source

I would like to propose use of **400 keV** for the fast reactor neutrons (SF8=FST) if nothing else is specified by authors.

**Proposal 3**

I propose **0.5 eV** for Cd cut off energy if nothing else is specified by authors, namely EN-MIN=0.5 eV for resonance integral (,RI) and epi-cadmium fission yield (,FY,,EPI).

**Remark**

There can be two different definitions of the mean energy:

I think we do not have a rule about its choice.

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nrdc.memo-distribution@iaea.org