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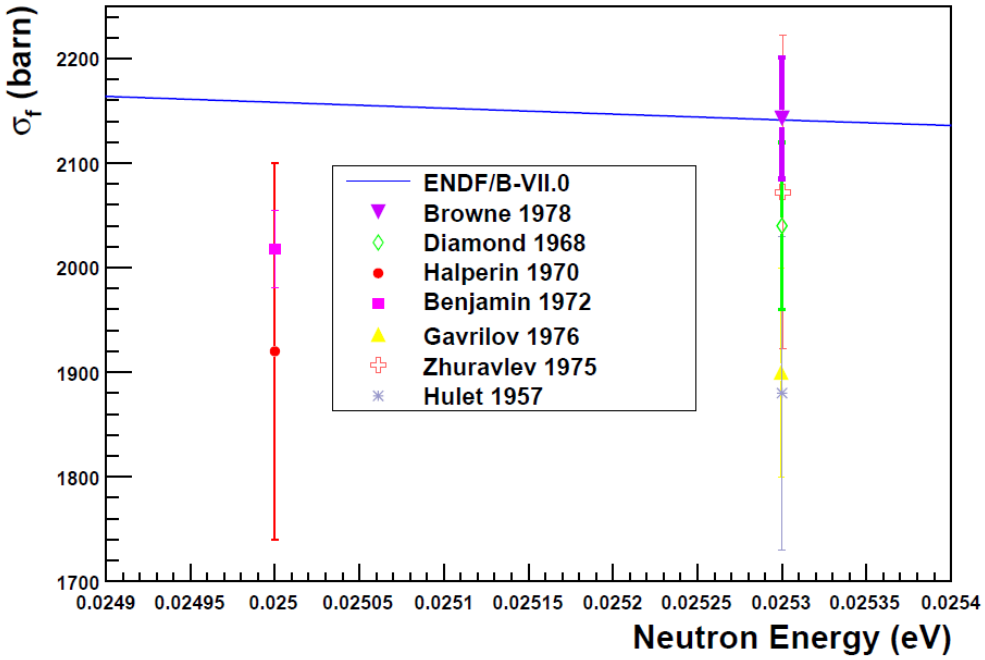
To: Distribution
From: N. Otsuka,
Subject: **Thermal neutron energy value**

Below is a review of current ^{245}Cm(n,f) cross section values presented in the 3rd Research Coordination Meeting for Minor Actinide Neutron Reaction Data (MANREAD) in last October.



In publications of two works (Halperin 1970, Benjamin 1972), authors use the expression "2200 m/s" and it is coded as 0.025 eV under the heading EN by the compiler. This is the reason why we see a small deviation in neutron energy values in the figure. From the view of significant digit, this is a possible solution (Both the velocity and the translated energy have two digits). However, LEXFOR "Thermal neutron energies" asks us to use 0.0253 eV:

Thermal energy is defined as 2200 m/sec or 0.0253 eV or 273 K.

The last digit (3) changes as temperature changes 0.3% and I do not think the last digit (3) has any physical meaning. In order to avoid unnecessary confusion, however, I propose to keep the value described in LEXFOR (0.0253 eV).

Note that 0.0253 eV is corresponding to $2.20 \cdot 10^3$ m/s (for neutron) and $2.93 \cdot 10^2$ K.

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