

Clarifications about Corrective Factors

The strategy proposed in order to avoid a full reanalysis of all experiments by the participants to the adjustment exercise is to provide corrective factors obtained as a ratio between a very detailed (reference) calculation and a simplified one. Therefore, the participant that does not want to fully reanalyze the experiments using its own cross sections should obtain his calculated values by just carrying out the calculation for the simplified model and then multiplying the results by the corresponding corrective factor.

Hence the C/E (Calculated/Experimental value) is obtained as:

$$\frac{C}{E} = \frac{C^s * C^f}{E}$$

where E is the experimental value C^s is the result coming from the simplified model calculation and C^f the corresponding provided corrective factor.

The corrective factors have been calculated using ENDF/B-VII data. It has been shown (see presentation by G. Palmiotti: “Corrective Factors Dependence from Cross Sections Data Sets”, November 2010) that there is a very weak dependence of the corrective factors from the library used.

Two simplified models are provided: Monte Carlo (continuous energy), and multigroup deterministic. The preferred one is Monte Carlo (with continuous energy files), as this model will avoid any energy collapsing effect on the results.

For the deterministic calculation, you must carefully collapse the cross sections to the defined 33 group structure (see the “Procedure to generate the 33 group cross sections for corrective factor evaluation” file on the website), and then perform a S_4P_1 calculations.

For the one-dimensional model of the JEZEBEL and FLATTOP experiments no corrective factors are provided for Monte Carlo as the adopted models will generate the reference results.