JOYO Corrective Factors (INL)

The specifications of this experiment are provided by our JAEA colleagues and are available on the related Excel file. Please, refer to this file for the RZ model, compositions, and spatial mesh.

The following S_4 angular data have been used. Just a reminder that directions with zero weight are used only for improving convergence on the curvilinear derivative term and should not affect the final result if not used, as it is the case of some S_n codes (e. g. TWOTRAN, TWODANT).

Direc.	Weight	η	μ
1	0.0000000E+00	-0.8819200E+00	-0.4714000E+00
2	0.8333331E-01	-0.8819200E+00	-0.3333333E+00
3	0.8333331E-01	-0.8819200E+00	0.3333333E+00
4	0.0000000E+00	-0.3333333E+00	-0.9428100E+00
5	0.8333331E-01	-0.3333333E+00	-0.8819200E+00
6	0.8333331E-01	-0.3333333E+00	-0.3333333E+00
7	0.8333331E-01	-0.3333333E+00	0.3333333E+00
8	0.8333331E-01	-0.3333333E+00	0.8819200E+00
9	0.0000000E+00	0.8819200E+00	-0.4714000E+00
10	0.8333331E-01	0.8819200E+00	-0.3333333E+00
11	0.8333331E-01	0.8819200E+00	0.3333333E+00
12	0.0000000E+00	0.3333333E+00	-0.9428100E+00
13	0.8333331E-01	0.3333333E+00	-0.8819200E+00
14	0.8333331E-01	0.3333333E+00	-0.3333333E+00
15	0.8333331E-01	0.3333333E+00	0.3333333E+00
16	0.8333331E-01	0.3333333E+00	0.8819200E+00

Corrective factors have been calculated with the ENDF/B-VII cross section data. In tables I and II we provide the corrective factors for the homogenous R-Z model for Monte Carlo (MC) and deterministic S_4P_1 33 group calculations. Corrective factors are calculated as the ratio between the values obtained by the detailed Monte Carlo calculation and those obtained by the corresponding approximated calculation.

Table I. Corrective factors for R-Z homogeneous **Monte Carlo** calculations.

Parameters	MC Detailed	MC R-Z Hom.	**Corr. Fact.**	Experiment
K_{eff}	0.99851 ±9pcm	1.00186	**0.99666** ±100pcm	1.00105 ±180pcm

Table II. Corrective factors for R-Z homogeneous **deterministic** calculations.

Parameters	MC Detailed	S_4 R-Z Hom.	**Corr. Fact.**	Experiment
K_{eff}	0.99851 ±9pcm	1.00107	**0.99744** ±100pcm	1.00105 ±180pcm