1 2D-neutronics

1.1 2D-unitcell-reflecB-action

- Input file: *2D-unitcell-reflecB-action.i*
- Mesh: *2D-unitcell-reflecB.msh*
- Transient problem.

Figure 1 displays the geometry. Figures 2 and 3 show the results.

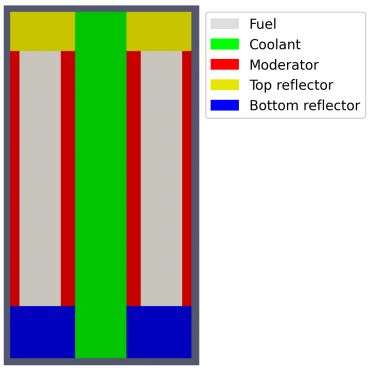
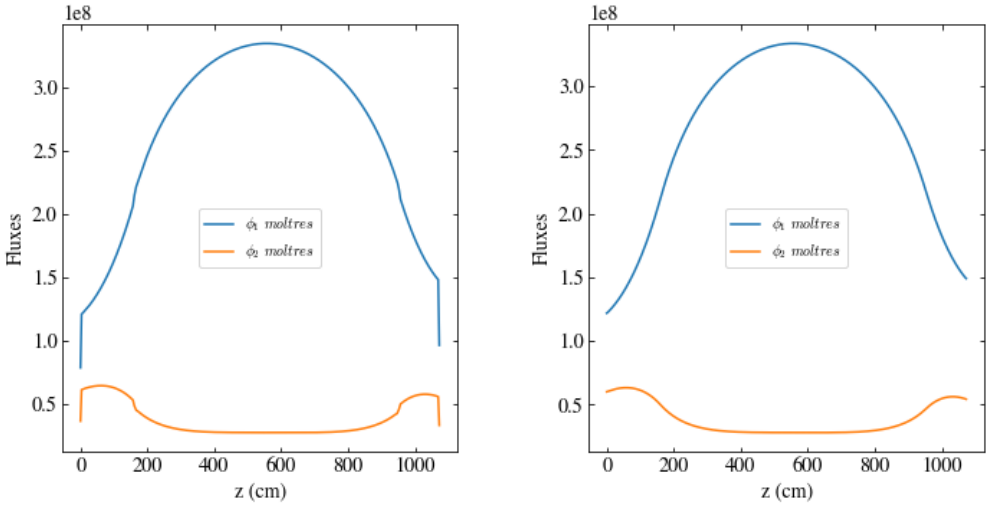


Figure 1: *2D-unitcell-reflecB* scaled down geometry.



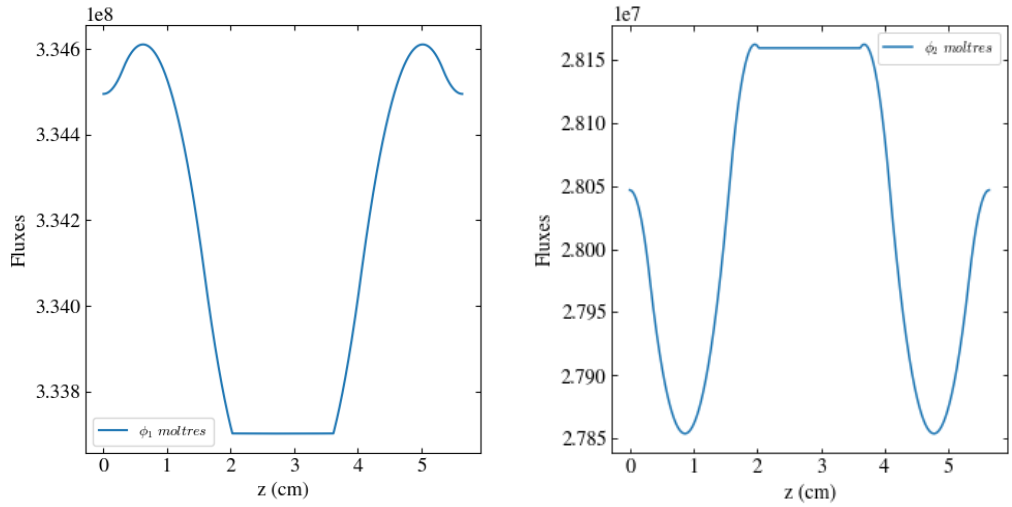
(a) Fuel centerline between points (0.94,-160,0) and (0.94,913,0).

(b) Coolant centerline between points (2.82,-160,0) and (2.82,913,0).

Figure 2: Group 1 and 2 axial fluxes in different locations of the unitcell at 10 msec.

1.2 2D-unitcell-reflec-action

- Input file: *2D-unitcell-reflec-action.i*
- Mesh: *2D-unitcell-reflec.msh*



(a) Group 1. (b) Group 2.

Figure 3: Group 1 and 2 fluxes across the cell between points (0,400,0) and (5.64,400,0) at 10 msec.

- Transient problem.

Figure 4 displays the geometry. Figures 5 and 6 show the results.

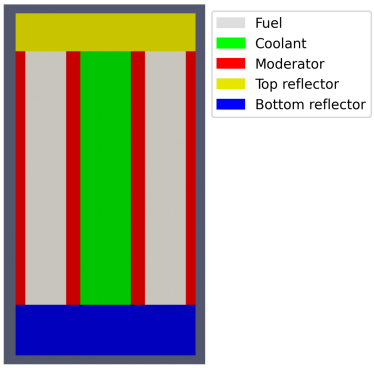


Figure 4: *2D-unitcell-reflec* scaled down geometry.

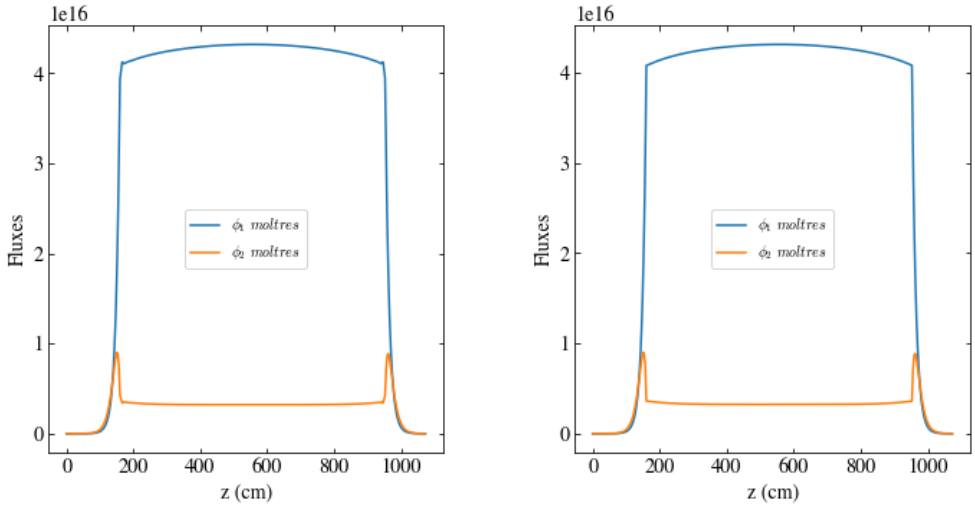
1.3 2D-fullcore-reflecB-action

- Input file: *2D-fullcore-reflecB-action.i*
- Mesh: *2D-fullcore-reflecB.msh*
- Transient problem.

The geometry is not displayed. Figure 8 displays a similar geometry. In *2D-fullcore-reflecB.msh*, the coolant channels go through the reflectors. Figure 7 shows the results.

1.4 2D-fullcore-reflec-action

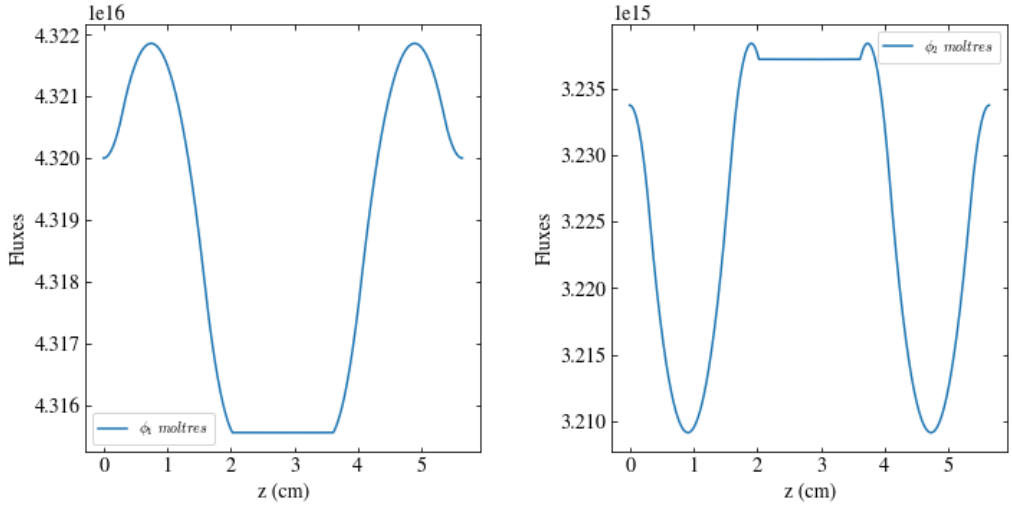
- Input file: *2D-fullcore-reflec-action.i*



(a) Fuel centerline between points (0.94,-160,0) and (0.94,913,0).

(b) Coolant centerline between points (2.82,-160,0) and (2.82,913,0).

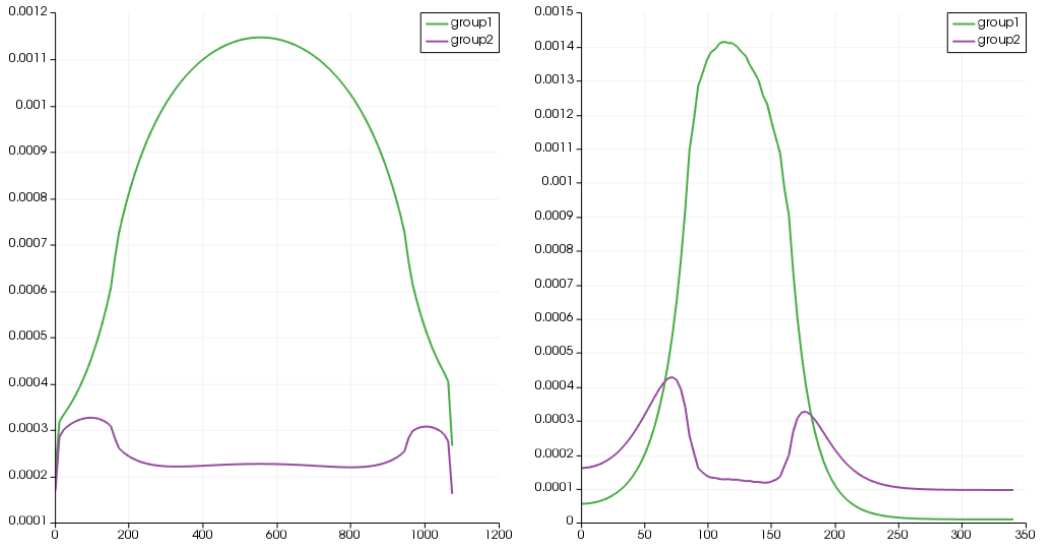
Figure 5: Group 1 and 2 axial fluxes in different locations of the unitcell at 10 msec.



(a) Group 1.

(b) Group 2.

Figure 6: Group 1 and 2 fluxes across the cell between points (0,400,0) and (5.64,400,0) at 10 msec.



(a) Fuel centerline between points (162.94,-160,0) and (162.94,913,0).

(b) Radial flux at y=400.

Figure 7: Group 1 and 2 fluxes at 1 msec.

- Mesh: *2D-fullcore-reflec.msh*
- Transient problem.

Figure 8 displays the geometry. Figure 9 shows the results.

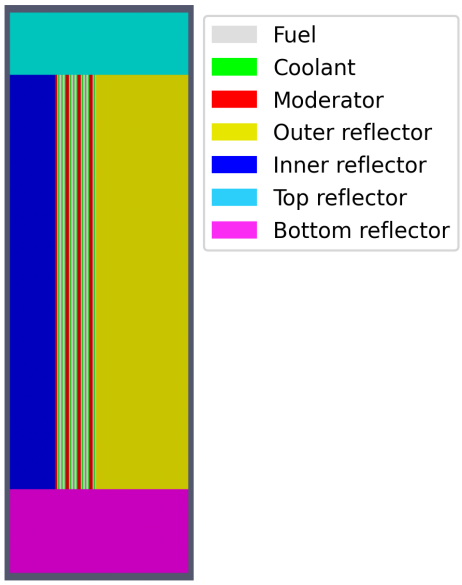
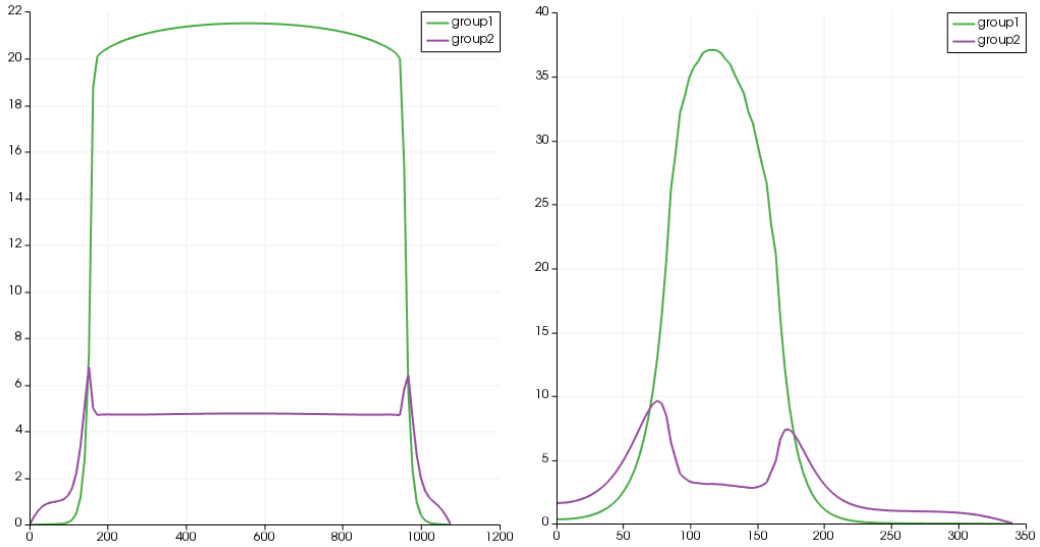


Figure 8: RZ-plane of *2D-fullcore-reflec-action* geometry.



(a) Fuel centerline between points (162.94,-160,0) and (162.94,913,0).

(b) Radial flux at y=400.

Figure 9: Group 1 and 2 fluxes at 1 msec.