

1 3D-neutronics

1.1 3D-unitcell

- Input file: *3D-unitcell.i*
- Mesh: *3D-unitcell.msh*
- Transient problem.

Figure 1 displays the geometry. Figure 2 shows the results.

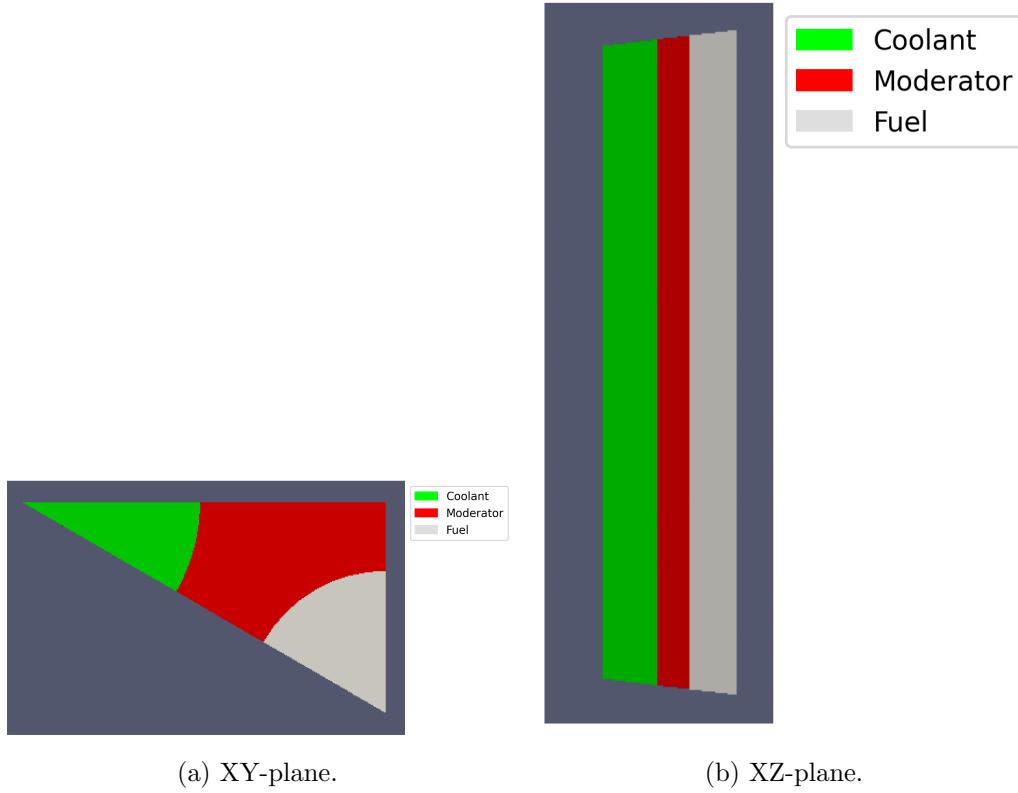


Figure 1: *3D-unitcell* scaled down geometry.

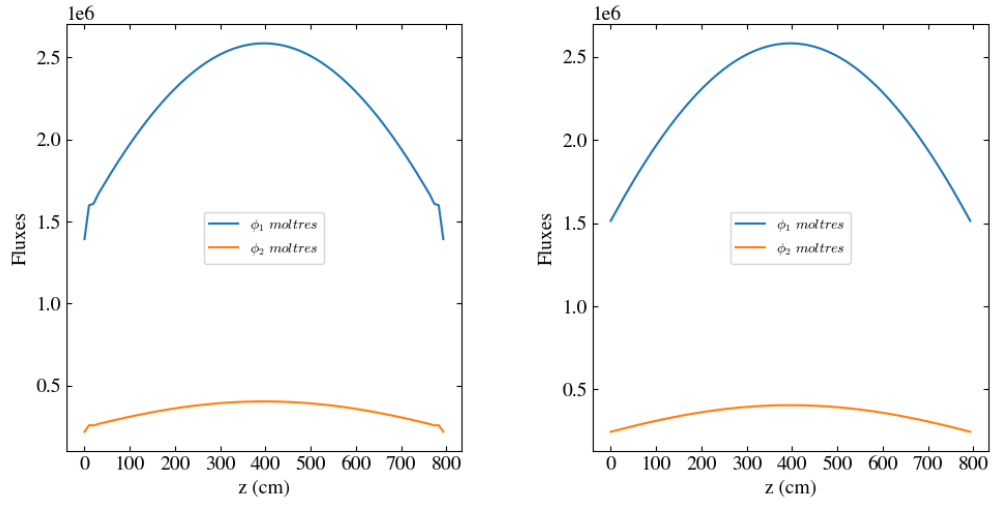
1.2 3D-unitcell-reflec

- Input file: *3D-unitcell-reflec.i*
- Mesh: *3D-unitcell-reflec.msh*
- Transient problem.

Figure 3 displays the geometry. Figure 4 shows the results.

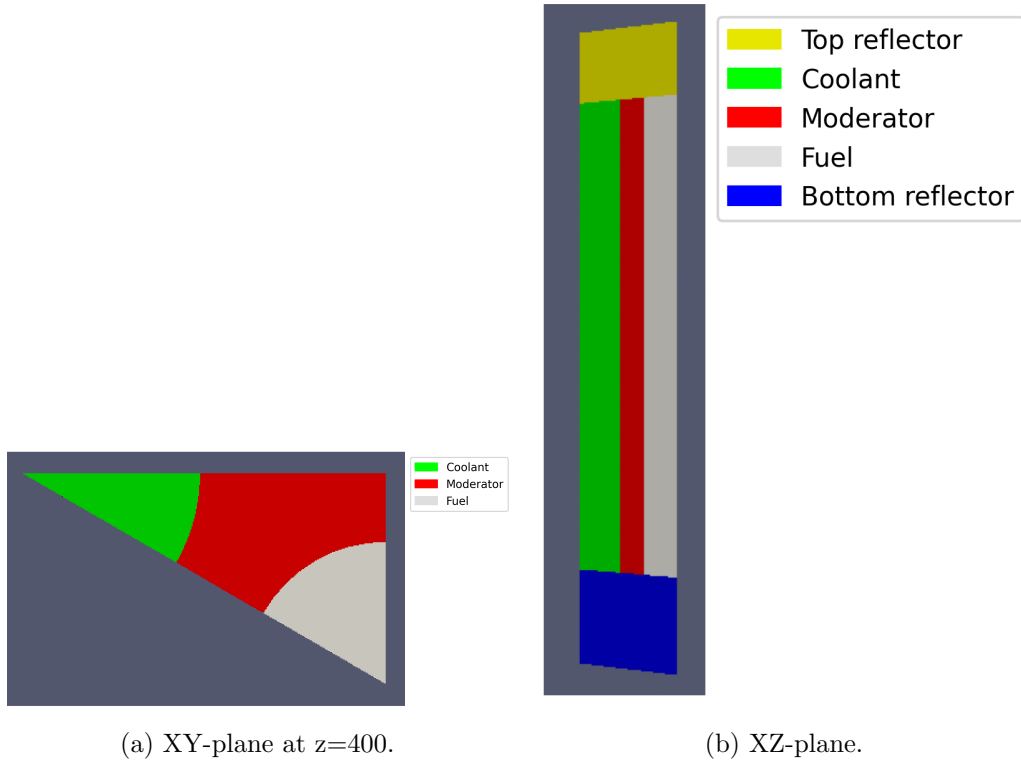
1.3 3D-unitcell-reflec-homo

- Input file: *3D-unitcell-reflec-homo.i*
- Mesh: *3D-unitcell-reflec.msh*



(a) Fuel centerline between points (1.628,-0.939,0) and (1.628,-0.939,793). (b) Coolant centerline between points (0,0,0) and (0,0,793).

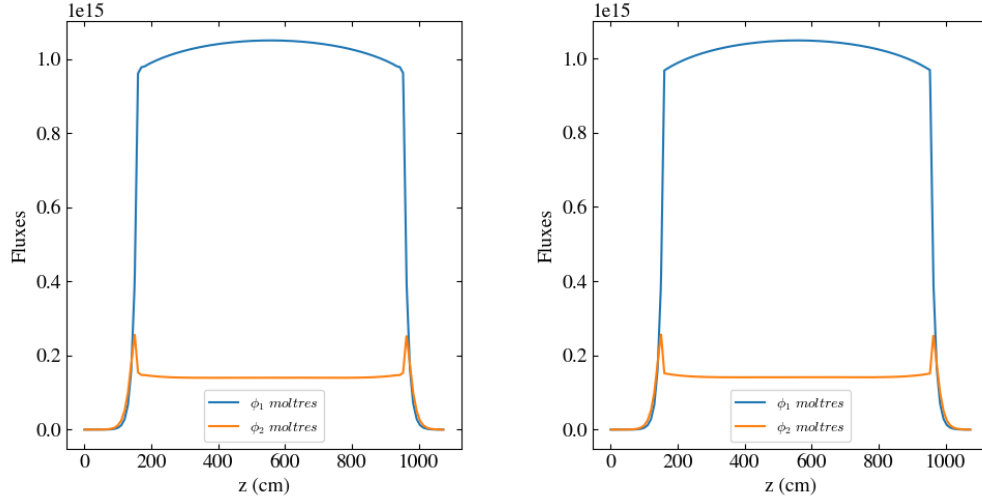
Figure 2: Group 1 and 2 axial fluxes in different locations of the unitcell at 10 msec.



(a) XY-plane at $z=400$.

(b) XZ-plane.

Figure 3: *3D-unitcell-reflec* scaled down geometry.



(a) Fuel centerline between points (1.628,-0.939,0) and (1.628,-0.939,1073). (b) Coolant centerline between points (1.628,-0.939,0) and (1.628,-0.939,1073).

Figure 4: Group 1 and 2 axial fluxes in different locations of the unitcell at 10 msec.

- Transient problem.

Figure 5 displays the geometry. Figure 6 shows the results.

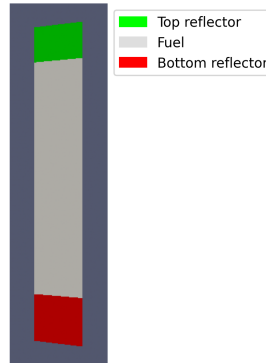


Figure 5: *3D-unitcell-reflec* scaled down geometry.

1.4 3D-assembly-action

- Input file: *3D-assembly-action.i*
- Mesh: *3D-assembly-30deg-reflec.msh*
- Transient problem.

Figure 7 displays the geometry. Figure 8 shows the detector positions. Figure 9 shows the results.

1.5 3D-fullcore-120-homo

- Mesh: *3D-fullcore-120-homo.msh*

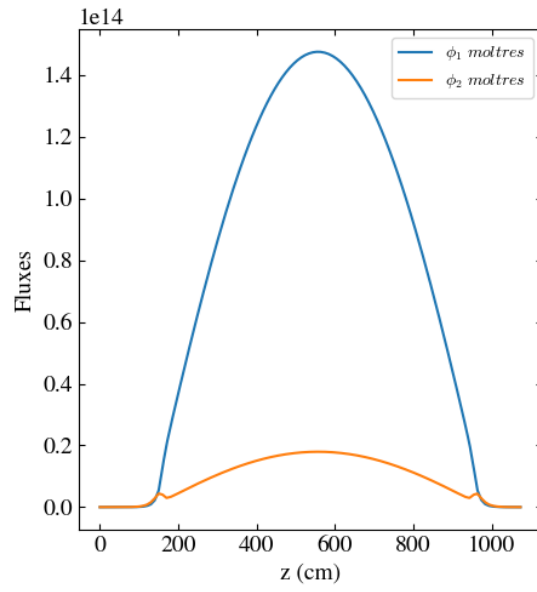


Figure 6: Group 1 and 2 fluxes at 10 msec.

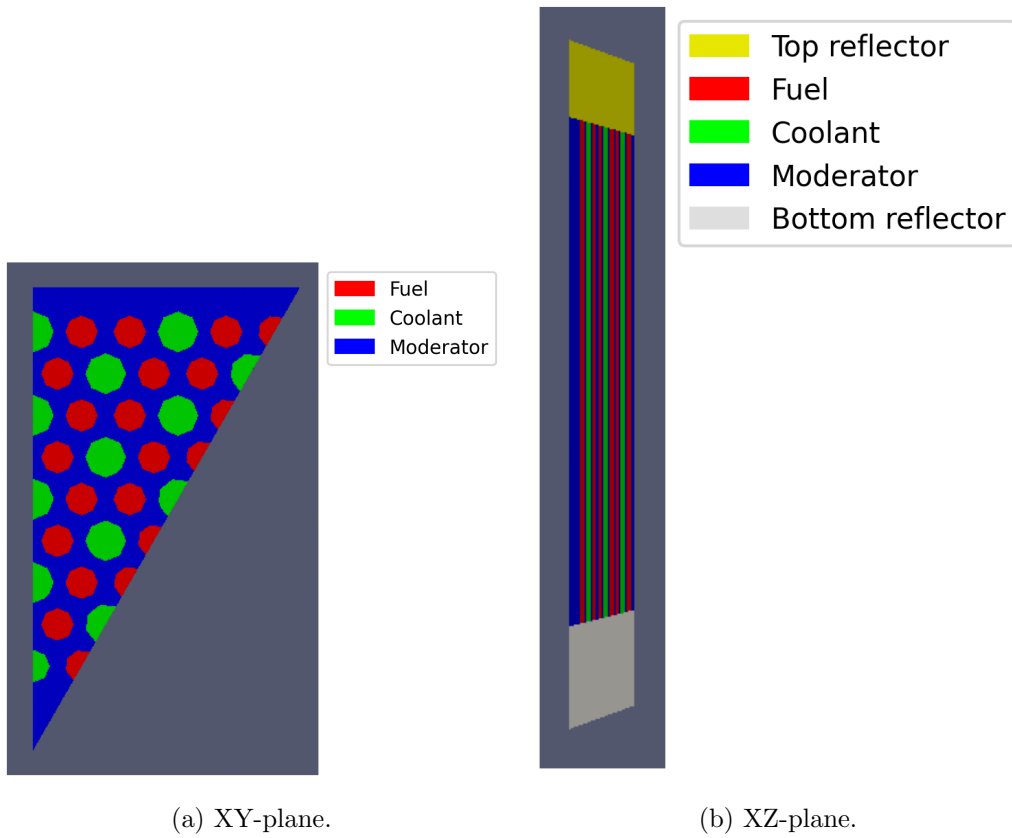


Figure 7: *3D-assembly-30deg-reflec* scaled down geometry.

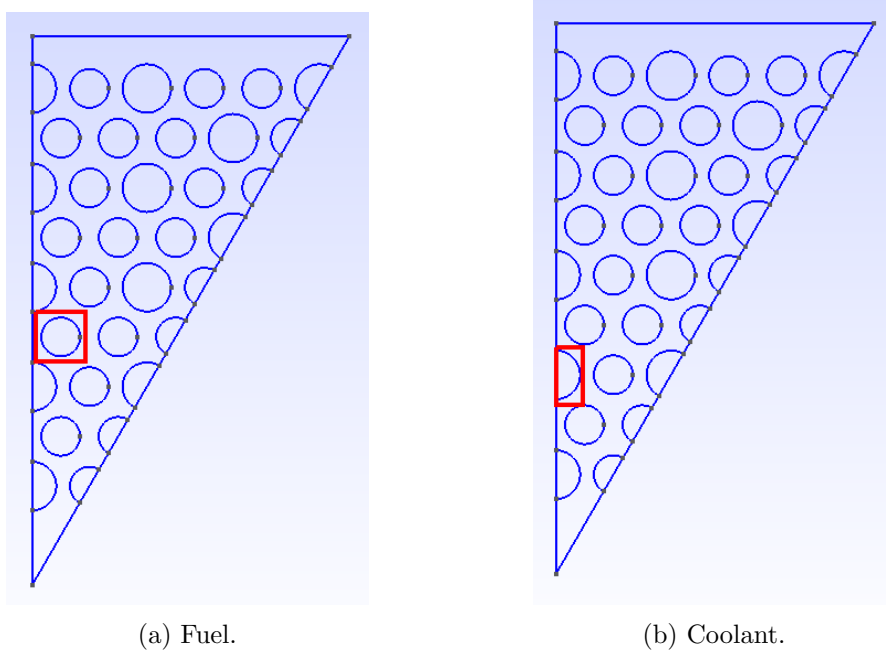


Figure 8: Detector positions.

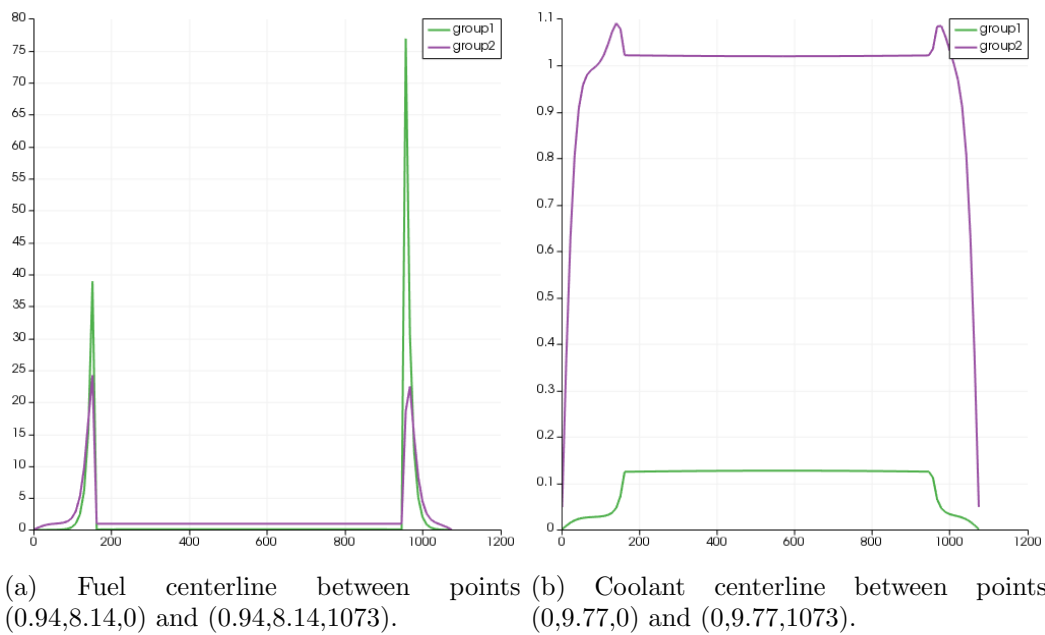


Figure 9: Group 1 and 2 axial fluxes in different locations of the fuel assembly at 1 msec.

- Transient problem.

Figure 10 displays the geometry. Figure 11 shows the results.

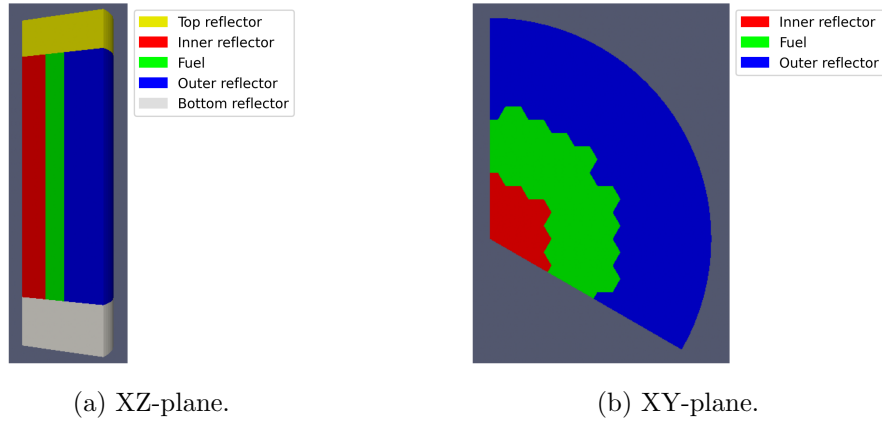


Figure 10: *3D-fullcore-120-homo* geometry.

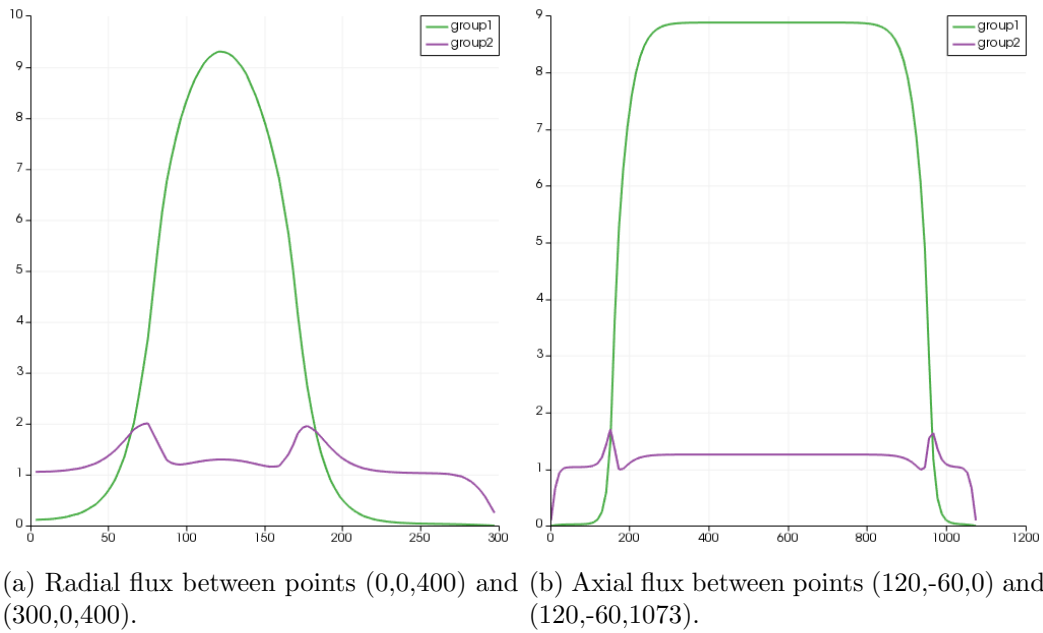


Figure 11: Group 1 and 2 axial fluxes in different locations at 1 msec.