1 Pseudo-1D-neutronics

The geometries are 2D stripes. The BCs in the x-direction is homogeneous Neumann on both sides. Thus, it is like if we were solving for the 1D case.

1.1 2D-fuel-action

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

Figure 1 shows the results.

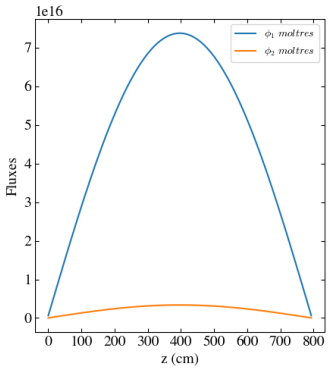


Figure 1: Group 1 and 2 fluxes at 10 msec.

1.2 2D-fuel-reflec-action

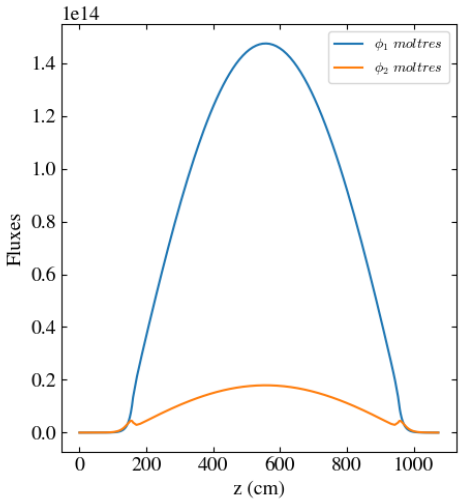
- Input file: *2D-fuel-reflec-action.i*
- Mesh: *2D-fuel-reflec.msh*
- Transient problem.

Figure 2 shows the results.

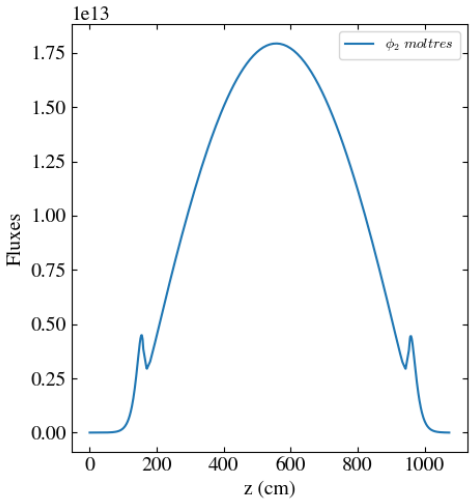
1.3 2D-fuel-reflec-action-delayed

- Mesh: *2D-fuel-reflec.msh*
- Transient problem
- Solves for precursors

Figure 3 shows the results.

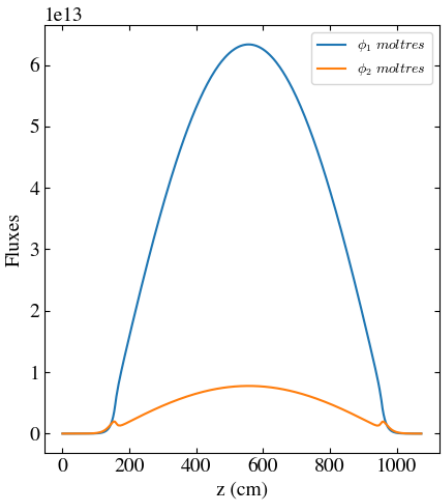


(a) Group 1 and 2 fluxes at 10 msec.

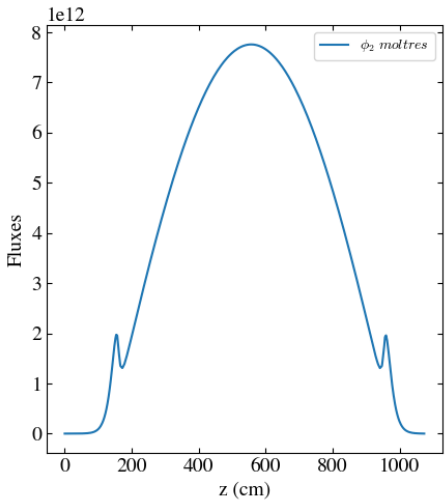


(b) Group 2 flux at 10 msec.

Figure 2: Transient problem fluxes.



(a) Group 1 and 2 fluxes at 10 msec.



(b) Group 2 flux at 10 msec.

Figure 3: Transient problem fluxes.

1.4 2D-fuel-reflec-action-eig

- Input file: *2D-fuel-reflec-action-eig.i*
- Mesh: *2D-fuel-reflec.msh*
- Eigenvalue problem: InversePowerMethod

Figure 4 shows the results.

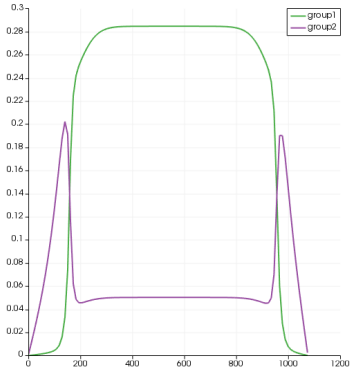


Figure 4: Steady state Group 1 and 2 fluxes for 'InversePowerMethod'.