Exercise 7: Importance biasing

7th FLUKA Course

NEA Paris, Sept.29-Oct.3, 2008

Exercise – Importance biasing

- Create a new directory ex7 and download the **ex5.inp**, renamed it to **ex7.inp**

Step 1:

- change targets back to H_2O/Al/Pb
- add a 240 cm thick concrete shield around the target
- calculate neutron fluence inside the shield

  in region-independent mesh (USRBIN) create a contour plot with FLAIR

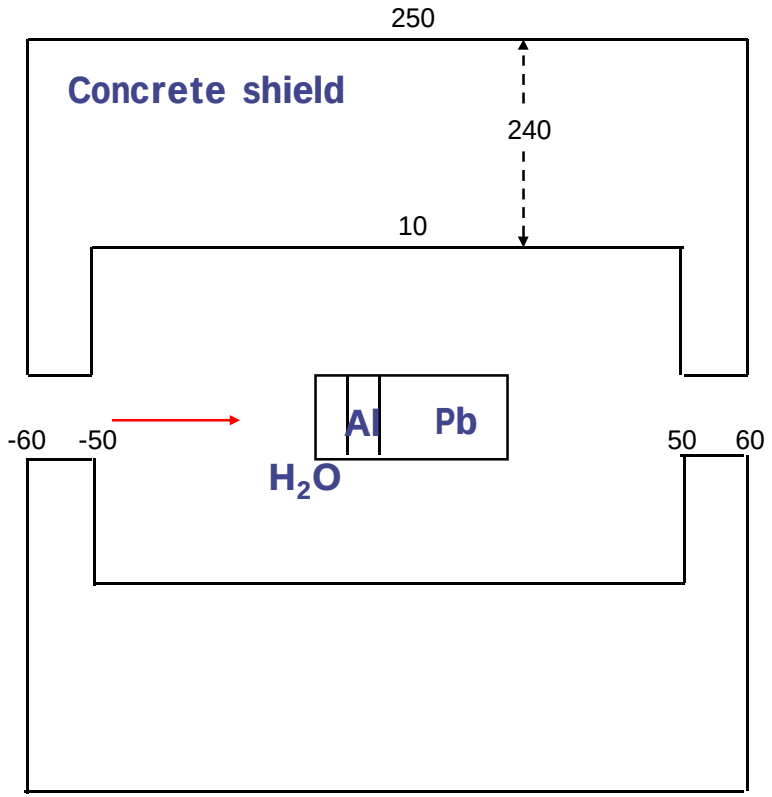
Step 2:

- split lateral shield into 6 layers of 40 cm thickness each and assign region importance factor to each layer such that the importance increases between adjacent layers by a factor of two
- calculate again the neutron fluence inside the shield, *create contour plot* and compare to case without region importance biasing

Tip: you can create a #define BIAS variable and enclose the BIASING cards with #if BIAS...#endif cards. Then create a second run in the Run Frame with the BIAS disabled

Concrete:	(mass fraction)		
Hydrogen	0.01	Aluminum	0.034
Carbon	0.001	Silicon	0.337
Oxygen	0.529	Potassium	0.013
Sodium	0.016	Calcium	0.044
Magnesium	0.002	Iron	0.014

Density: 2.42g/cm³



Exercise

Result