Exercise 11: Activation

Beginners' FLUKA Course

Exercise 11: Activation

- copy the solution of Exercise 5 (**ex5.inp**) into a new directory (**ex11**), rename it as **ex11.inp** and open it using FLAIR

- add irradiation profile of *three irradiation periods* of 7 days each, separated by 4 days of shutdown
- assume as *intensity* during each period 10^5 protons per second
- consider *two cooling periods*: one hour and one month
- kill *electromagnetic* cascade in the prompt particle cascade and set transport *thresholds* for decay electrons/positrons and photons at 100keV and 10KeV, respectively

- add scoring of *specific activity* in Bq/cm^3 in the aluminum and lead cylinders of the target for both cooling periods with USRBIN and with RESNUCLE and convince yourself that they give the same results
- calculate dose equivalent rate around the target for both cooling periods using the conversion coefficients for *effective dose* (identifier 'EWT74', selected with the AUXSCORE card), with USRBIN (R-Φ-Z) R:0…10cm in 100 bins, Φ 1 bin, Z:-5…15cm in 200 bins, X=0, Y=0cm