Exercise 6: Low Energy Neutrons

Beginners FLUKA Course

Exercise 6: Low Energy Neutrons

- Create a folder called ex6, download the solution of ex5 (only ex5.inp) from the website, rename it to ex6.inp and open it in *flair*
- Change the materials of the regions *TARGS1* and *TARGS2* to lead. Change the material of region *TARGS3* to water.
- Add an estimator to score the fluence of neutrons **in** water (region TARGS3):
  - Use logarithmic energy binning down to the group of lowest energy
  - Write the output unformatted to unit 56
- Run 5 times 5000 primaries and plot the results as a lethargy spectrum (x-axis: GeoMean, y-axis: Y*<Xgeo>, both axis logarithmically)
- Save the plot
- Identify the peak in thermal part of spectrum
- Note: automatic matching of group structure
- Redo the exercise for water at 87K

  applying LOW-MAT to water components

- Compare the new plot to the previous one