



# 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:  $Y^* \langle X_{geo} \rangle$ , 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