Exercise: Geometry - I

FLUKA Beginner's Course

Exercise: Geometry - I

Aim of the exercise:

1- Edit geometry

2- Debug using Flair

3- Debug via GEOEND card

Exercise: Geometry - I

Copy the input file from the example_running in a new directory:

mkdir ex_Geo1 ;
cp ../Example/example_running/example_running.inp ex_Geo1/ex_Geo1.inp ;
cd ex_Geo1

Open the file ex_Geo1.inp with FLAIR (flair ex_Geo1) to edit the input file and…

- Delete the beer material
- Replace the finite cylinder with an infinite one

- use a ZCC body for the cylinder

- use two XYP planes, at z=0 "Ztlow". and z=10.cm "ZThigh", to cut it

- re-define the regions TARGET and VOID

- Look at the new geometry using the Geometry Editor

Exercise: Geometry - I

- Segment the target in 3 parts by two transverse cuts
- Define 3 target regions
- Assign new materials to the targets
- Set surrounding medium to CO2 (density = 0.001965 g/cm^3)

From	*To*	*Region*	*Material*	*Tip*
z=0.	*z=1.*	*TARGS1*	*Water*	*new XYP needed "T1seg"*
z=1.	*z=2.*	*TARGS2*	*Aluminum*	*new XYP needed "T2seg"*
z=2.	*z=10.*	*TARGS3*	*Lead*	*no more bodies needed*

Air, Water, Aluminum, and Lead are predefined materials

Exercise: Geometry - I

Running FLUKA debug through Flair

- Edit the GEOEND card to define a 1mm grid from (x,y,z)=(-6., -5., -1.) to (x,y,z)=(6., 5., 11.)

  Tip: put a STOP card after GEOEND card

  Search the manual (F1 on flair) for GEOEND card

- Run and search for *Geometry debugging* in the .out file:

  enjoy the lack of errors