



Exercise 4: Geometry - I

FLUKA Beginner's Course

Exercise 4: Geometry - I

Aim of the exercise:

- 1- Edit geometry using Flair
- 2- Debug using Flair
- 3- Debug via GEOEND card

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- ❑ Start a new project based on the **basic** input template
- ❑ Save the project in a new directory "**ex4**" with the name "**ex4**"
- ❑ 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

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- ❑ 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/cm³)

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

Air, Water, Aluminum, and Lead are predefined materials

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Runing 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