



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 local directory:

```
mkdir ex_Geometry1 ;  
cp pathtoUSB/Examples/example_running/example_running.inp ex_Geometry1/ex_Geometry1.inp ;  
cd ex_Geometry1
```

Open the file ex_Geometry1.inp with FLAIR (flair ex_Geometry1) to edit the input file and...

- ❑ 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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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