



Status of Idea standalone description

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IDEA simulation meeting

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Status of Idea standalone description

★The goal:

Is to integrate the geant 4 simulation code of the drift chamber and the dual readout calorimeter in a standalone framework.

★The status of the work:

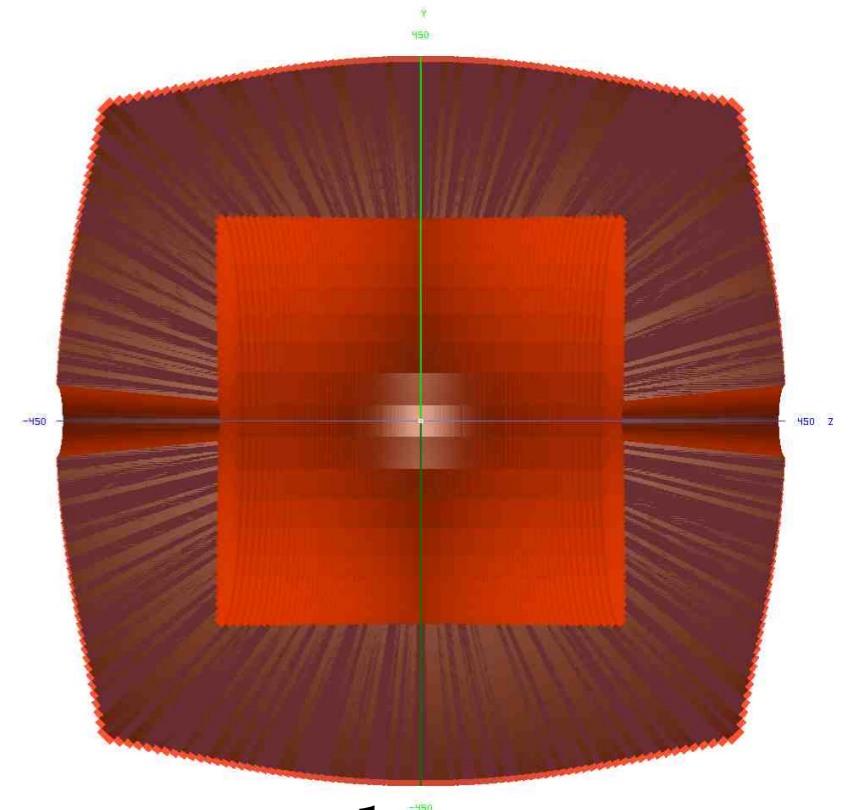
The full geometry for the calorimeter is implemented in the standalone framework (with the drift chamber).

<https://github.com/welmeten/DriftChamberPLUSVertex/tree/master>

The Geometry of the calorimeter

★ Geometry adapted to the IDEA drift chamber volume.

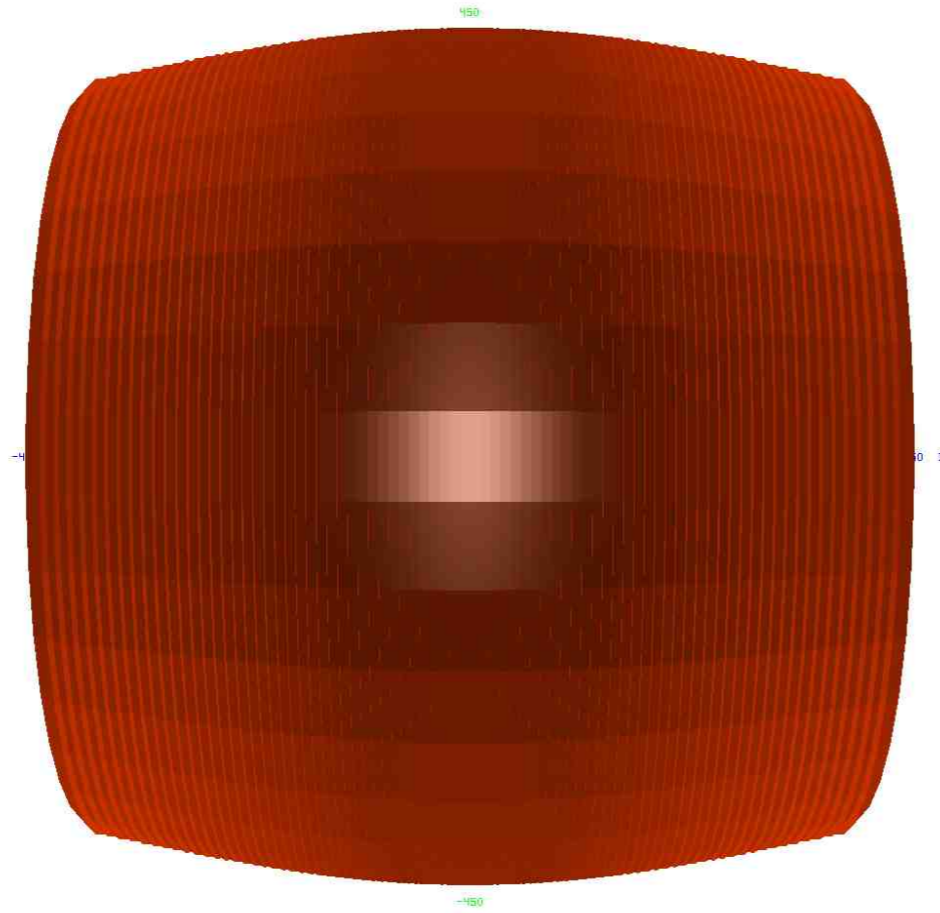
- Towers are G4Trap() physical volumes with slightly different shapes changing with θ .
- Fibers are 1mm diameter G4Tubs(), 0.5 mm of absorber material (copper) between two adjacent fibers is considered.
- Barrel Inner length: 5m - Outer diameter: 9 m @ 90°.
- 2 m long copper based towers: $\sim 8.2 \lambda$
- 36 rotation around z axis
- Number of Towers in the barrel: $40 \times 2 \times 36 = 2880$
- Number of Towers in per endcap: $35 \times 36 = 1260$



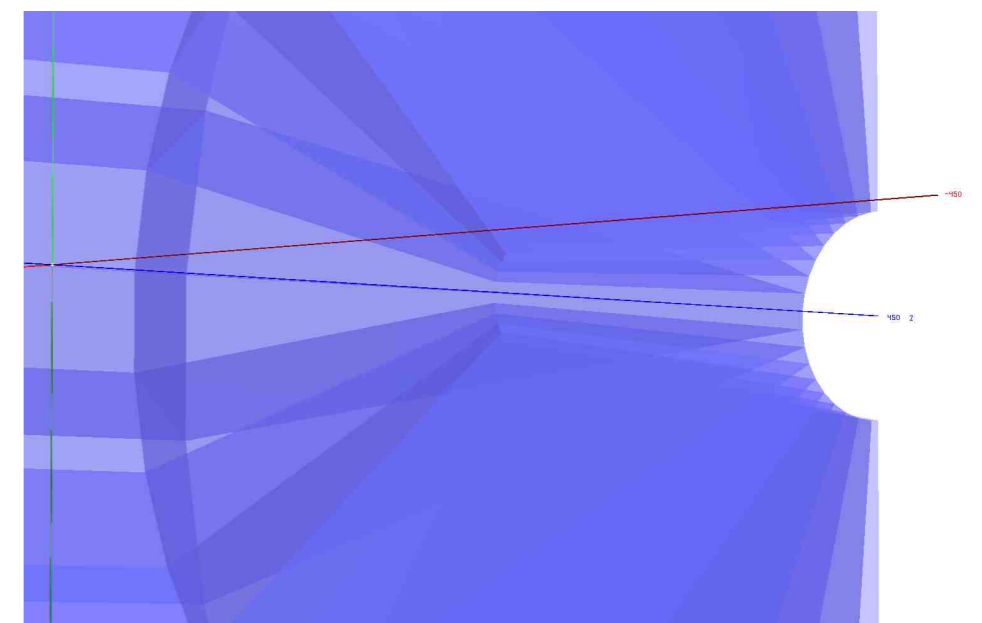
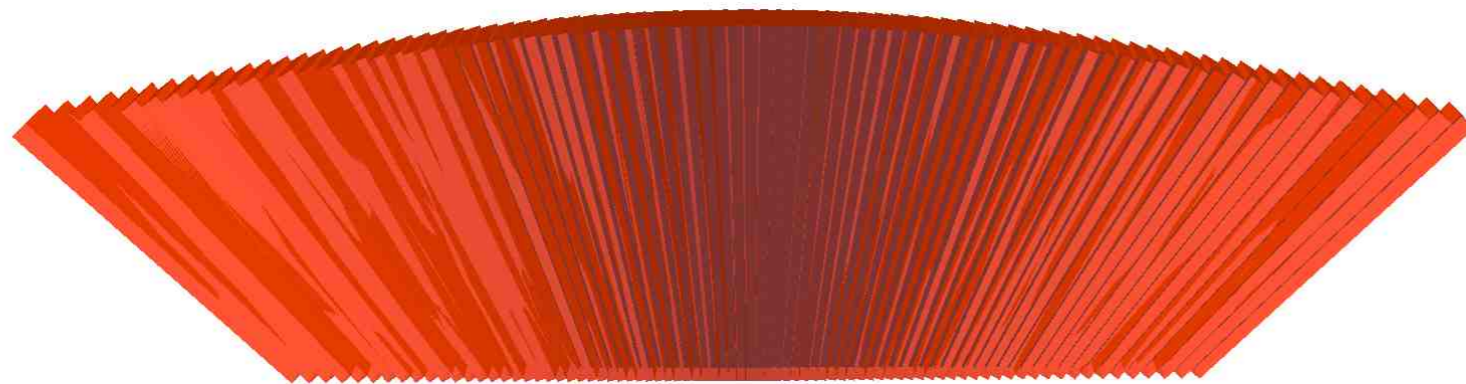
Calorimeter mother volume

The Geometry of the calorimeter

Calorimeter volume



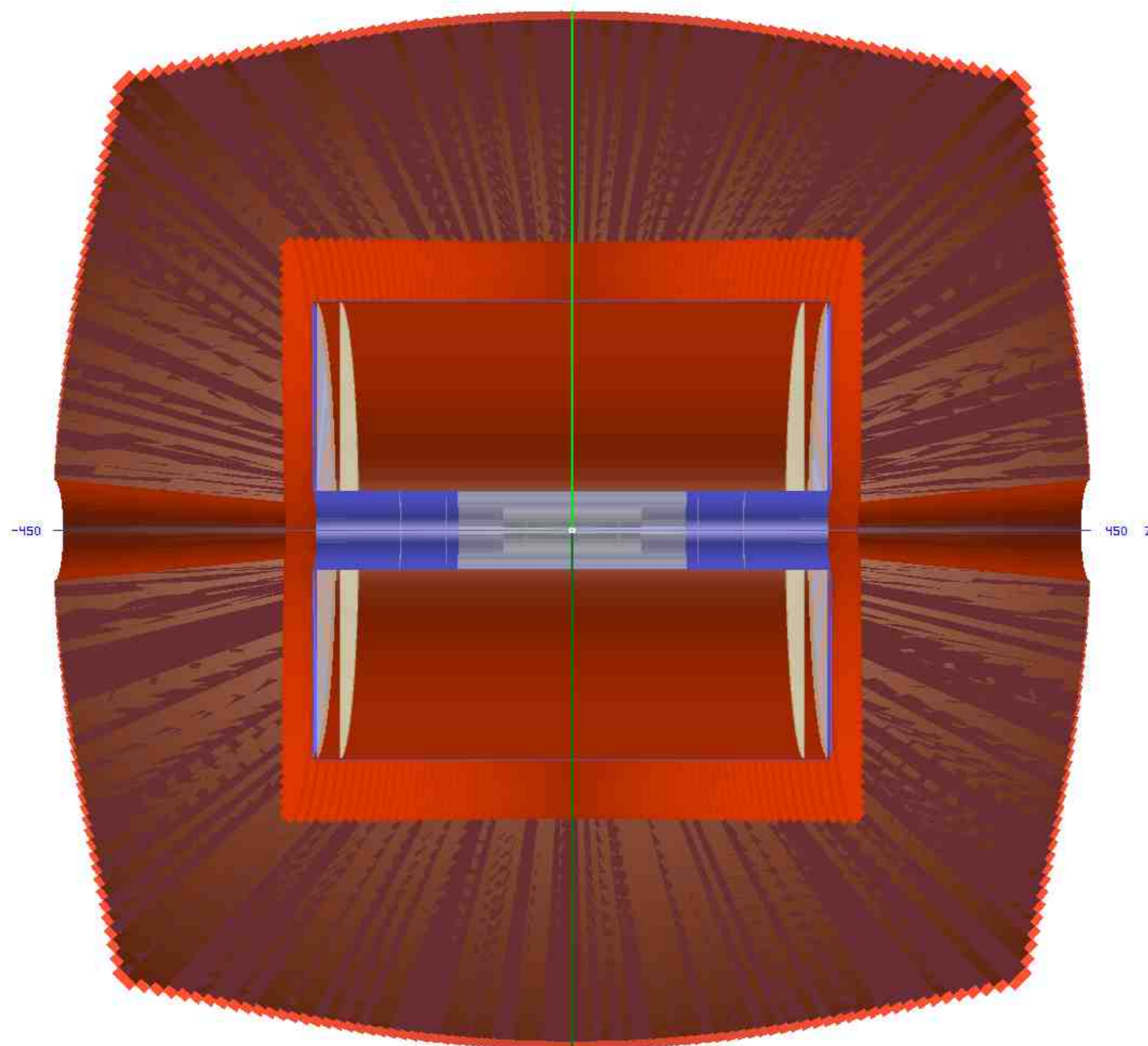
Phi volume (barrel)



Phi volume (Endcap)

The standalone description

(calorimeter+Drift chamber)

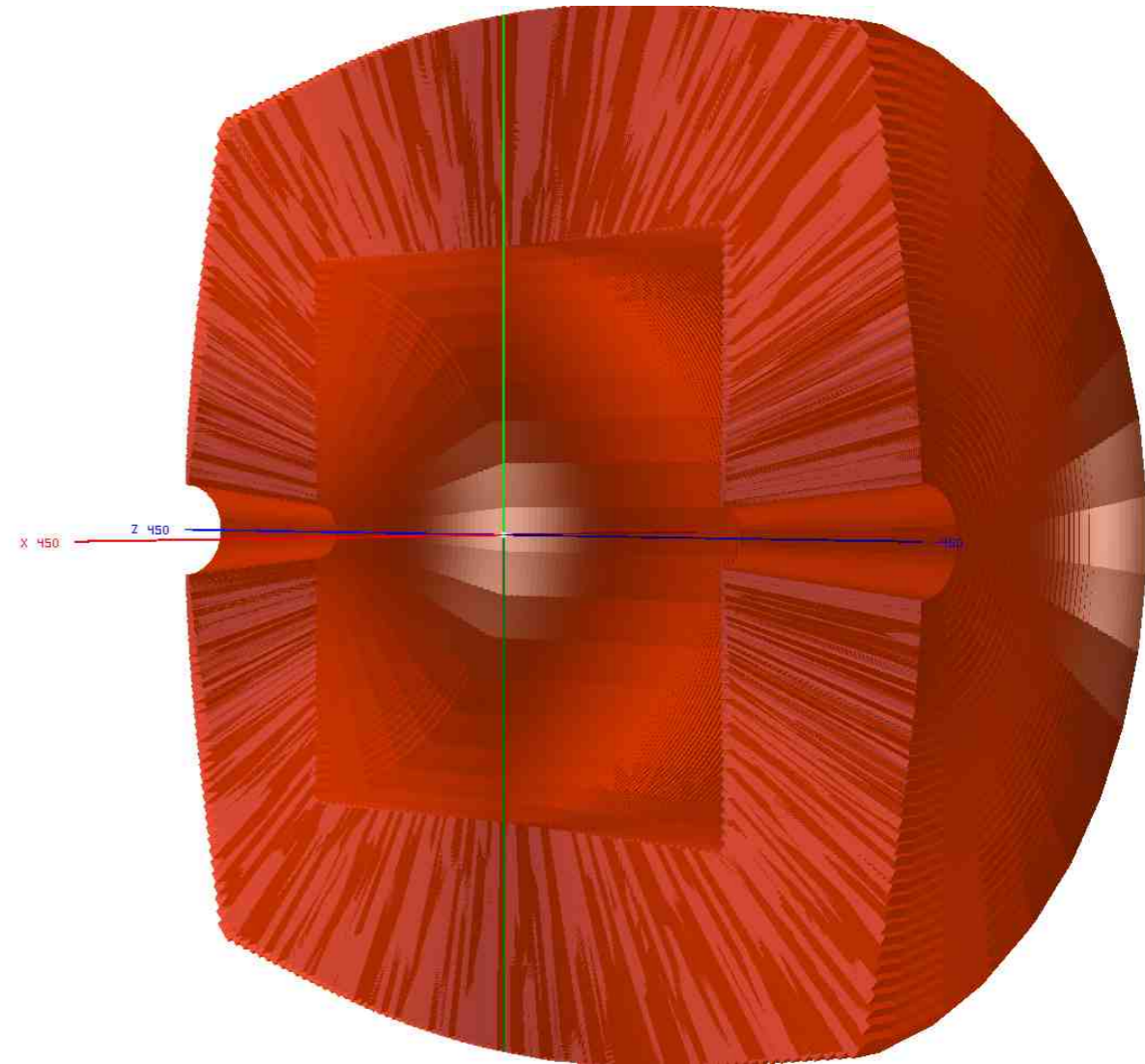
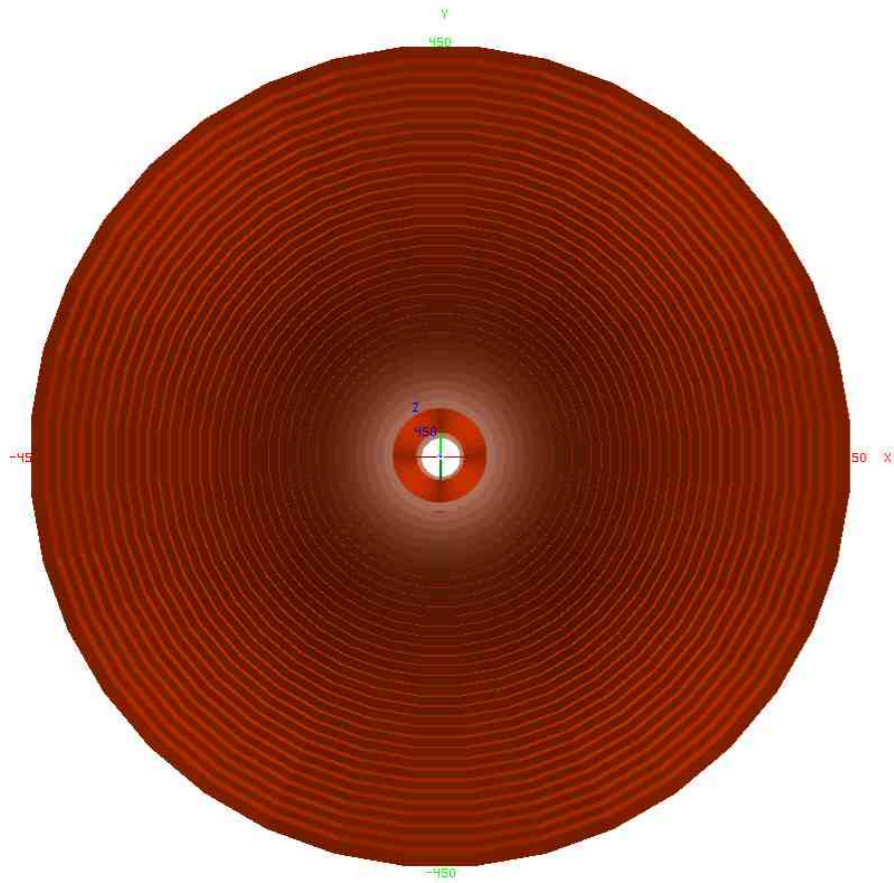


★ What is ongoing now:

- 📌 Implementing the hits for the calorimeter.
- 📌 Check if there are any overlap between the calorimeter and the other detectors.

Backup

Different view from the geometry of the calorimeter



The standalone description

(calorimeter+Drift chamber)

