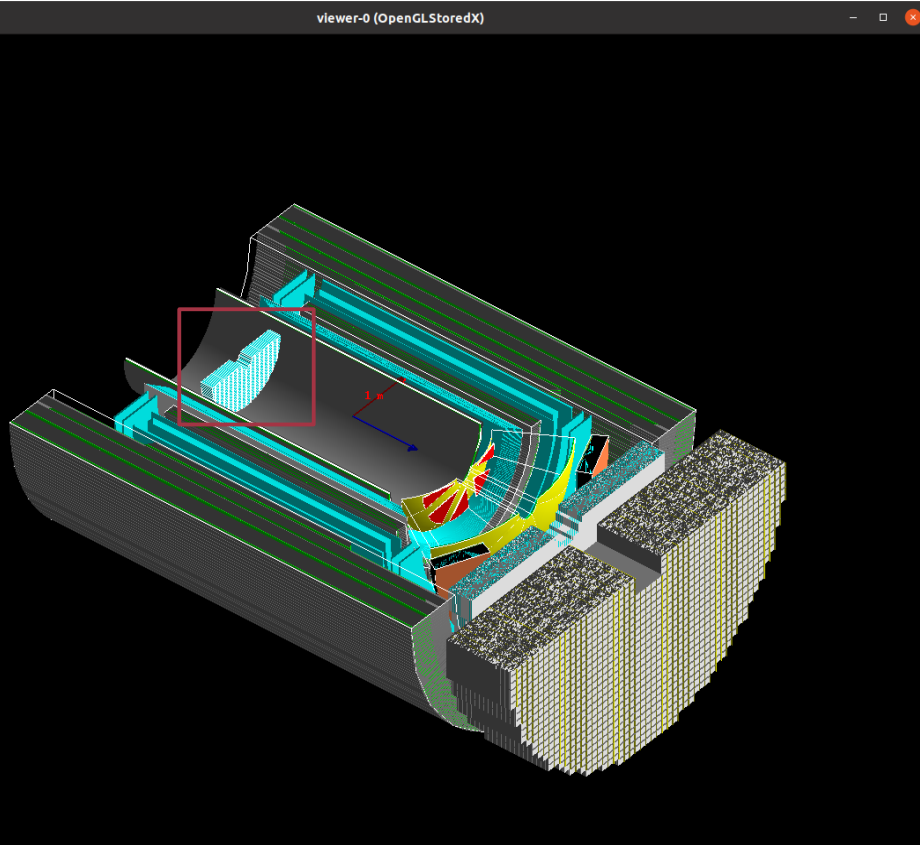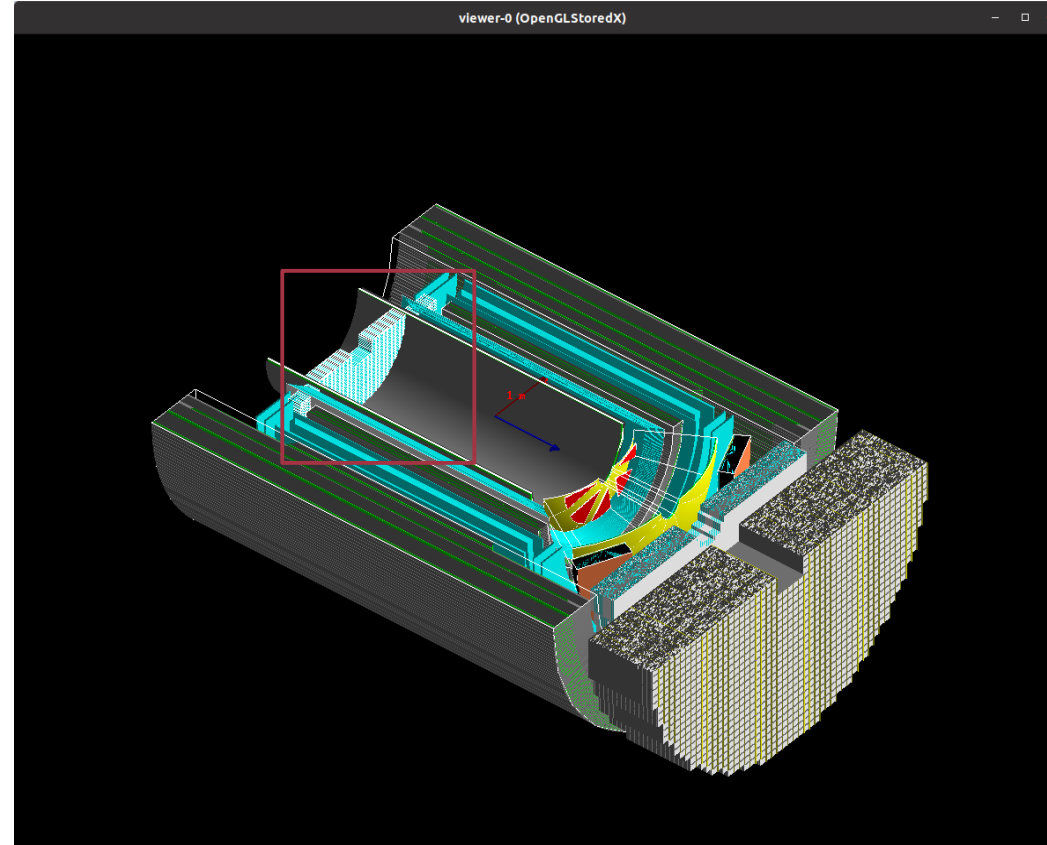# Electron End Cap EMCalorimeter progress

Carlos Munoz Camacho   Wang, Pu-Kai   18/05/2021
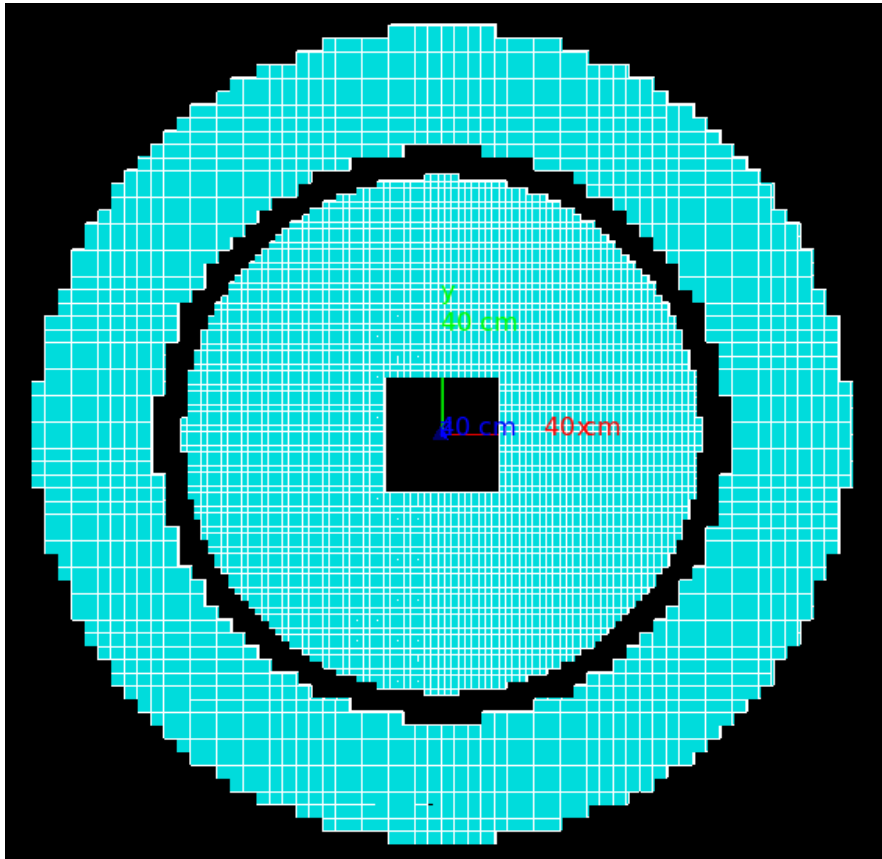
Change the EEMC configuration

Previous one:
single circular plate, within hole at center
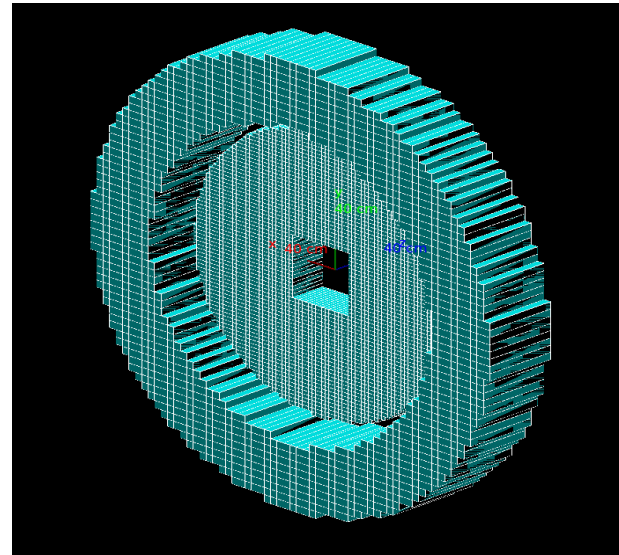
New one:
1. Inner circular plate, within hole at center
2. Outer circular ring.

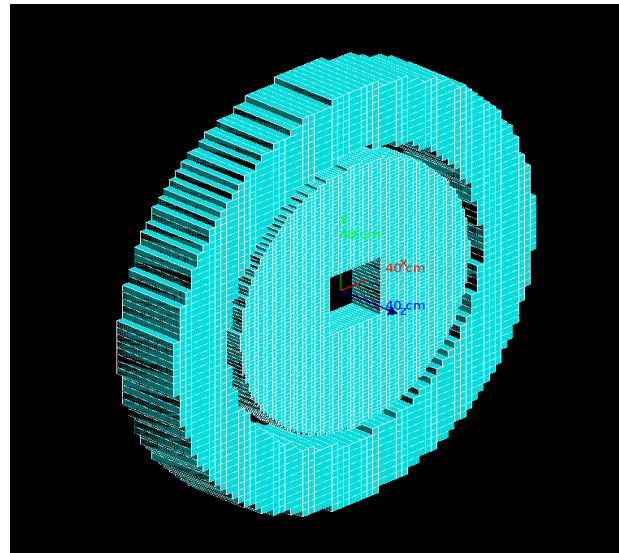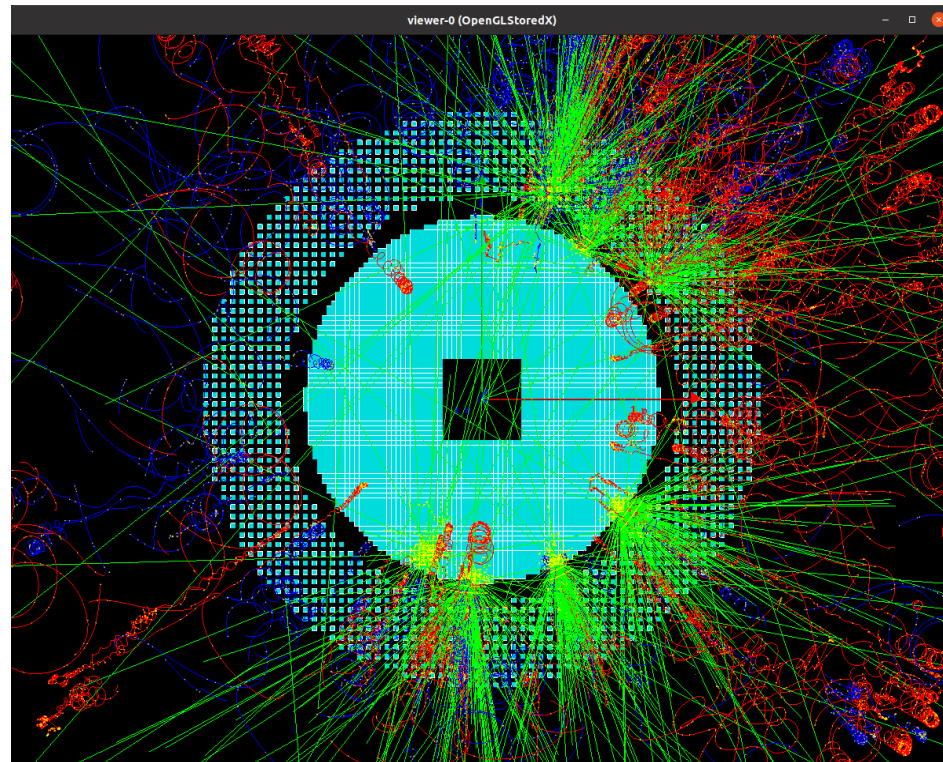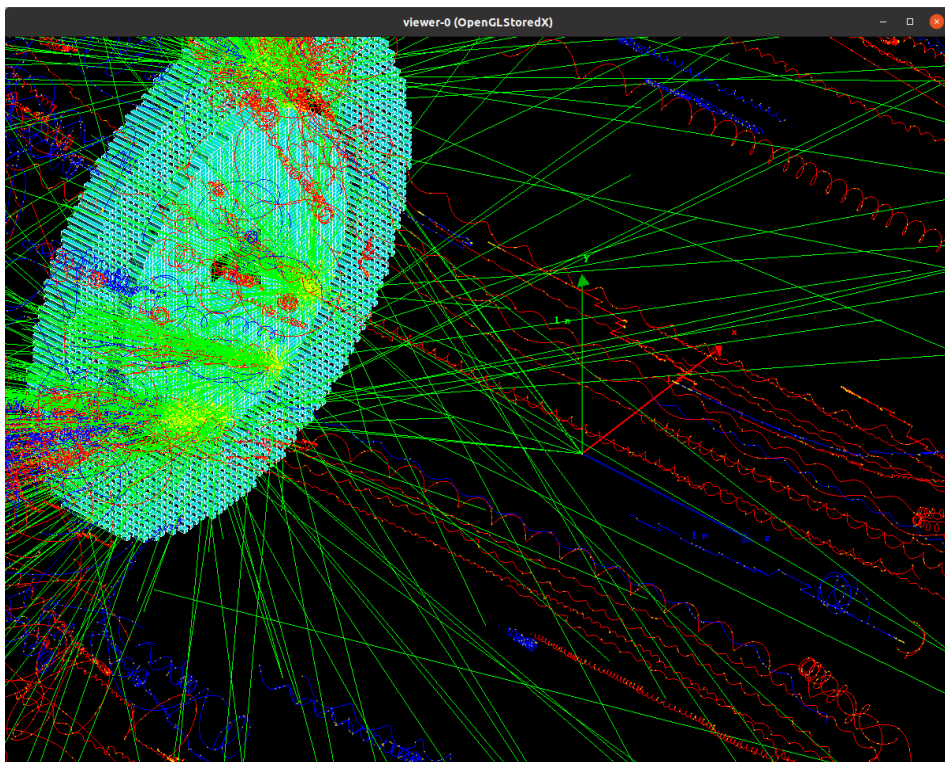# Change the EEMC configuration

Back side

Outer: Sci glass,
[4cm, 4cm, 40cm],
Rin: 89cm, Rout: 130cm
Z: -2.11m
Eta: -1.6 ~ -1.22

Inner: Crystal(PbWO4),
[2cm, 2cm, 20cm],
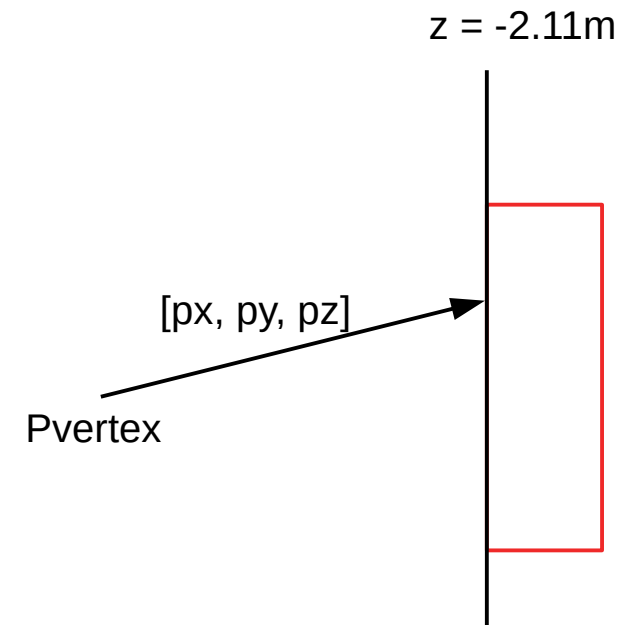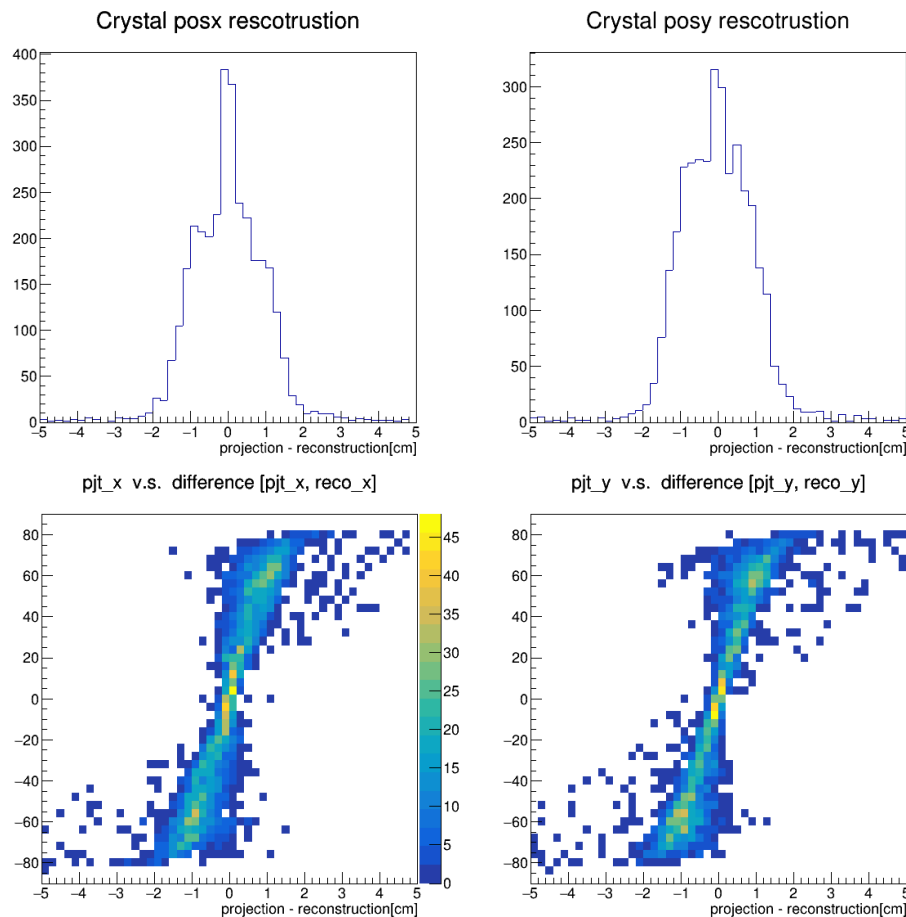Rin: 15cm, Rout: 80cm
Z: -2.11m
Eta: -3.2 ~ -1.7

The huge gap between inner and outer is ~9cm
to avoid the overlap. I will shrink it as small
as possible.

Front side

Hits on the EEMC

Simple generator: 10GeV gamma hit

Reconstruction (inner)

- 10000 gamma, 10GeV, primary vertex(0, 0, 0)

- diff_x = project_x – cluster_x

- diff_y = project_y – cluster_y

z = -2.11m

[px, py, pz]

Pvertex
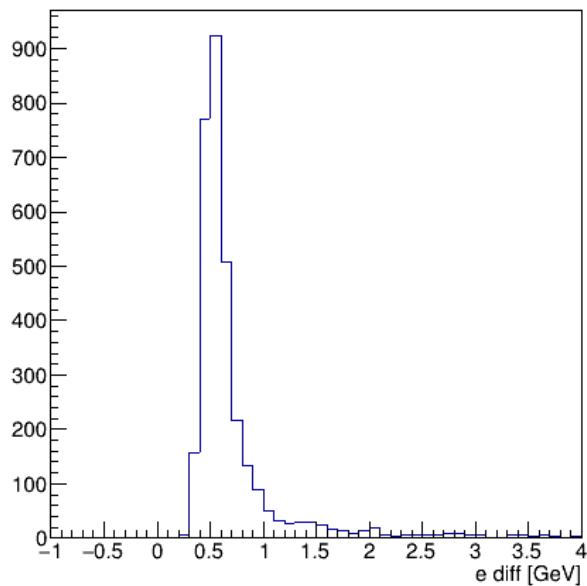
The correction for larger R is bad

Reconstruction (inner)

- 10000 gamma, 10GeV, primary vertex(0, 0, 0)

- diff_e = E_primary – cluster_e
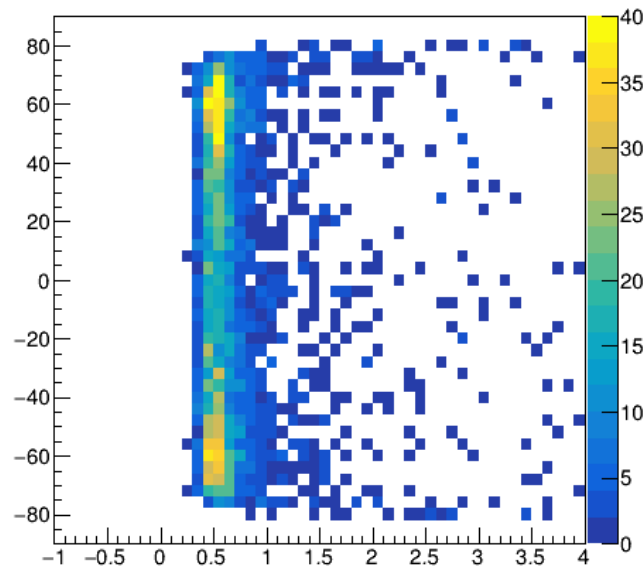
Next Step

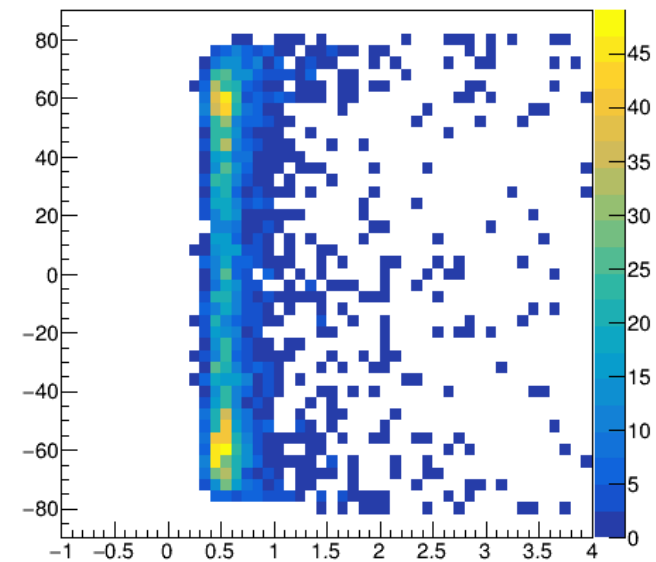- Extend the mono-energetic generator to the uniform one, 1~10GeV, study the energy resolution

- Study the position and energy reconstruction of the outer part

- Changing the clustering algorithm - correction parameter

- Studying the cluster happen between inner and outer