

**Cylindrical GEMs and Si-based detectors
for the Inner tracker of
Super c- τ Factory – geometry description
in DD4HEP**

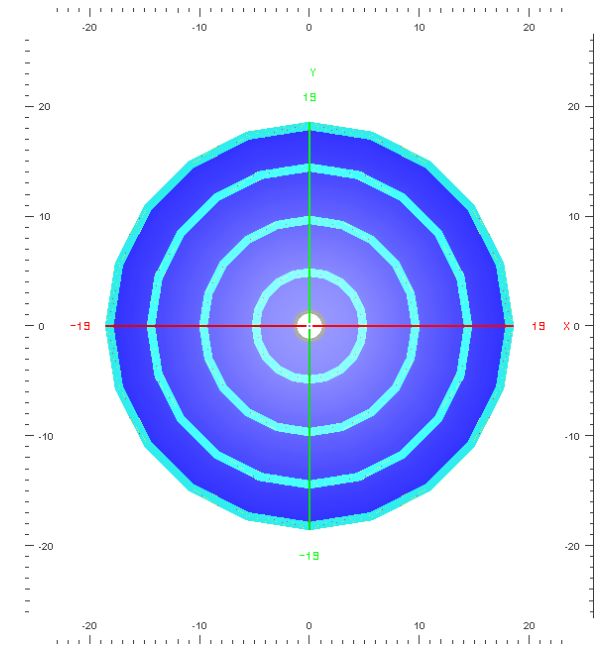
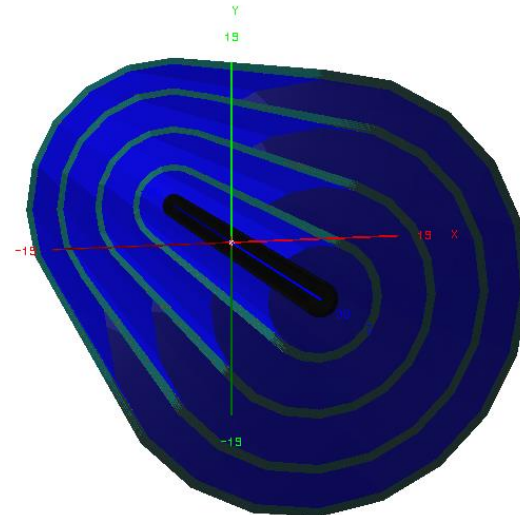
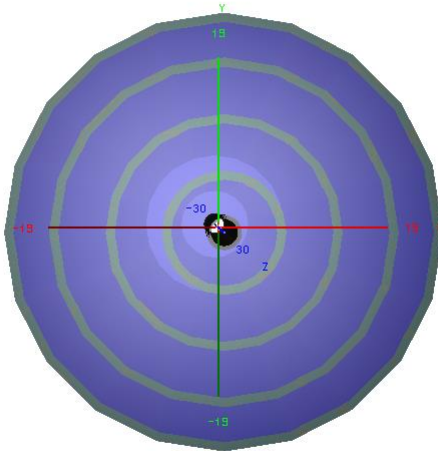
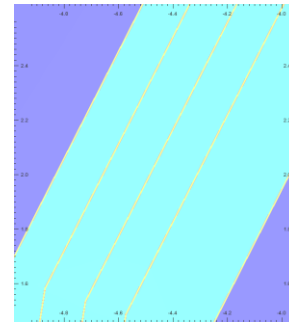
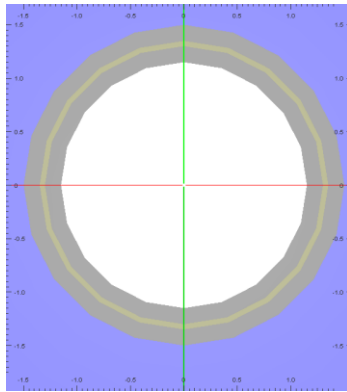
T. Maltsev

04 October 2018

Outline

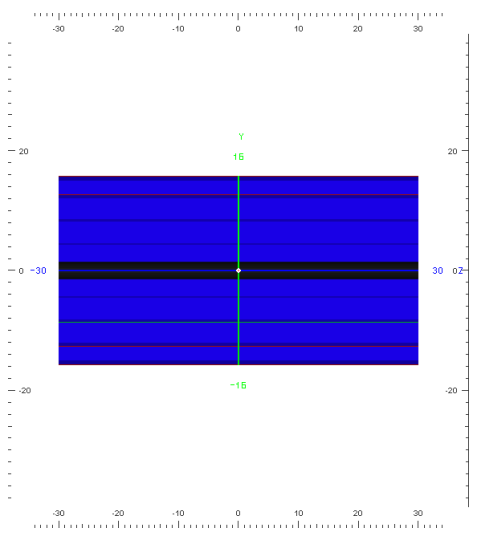
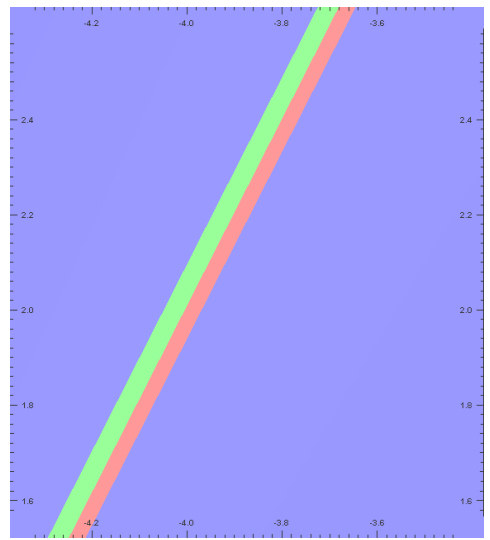
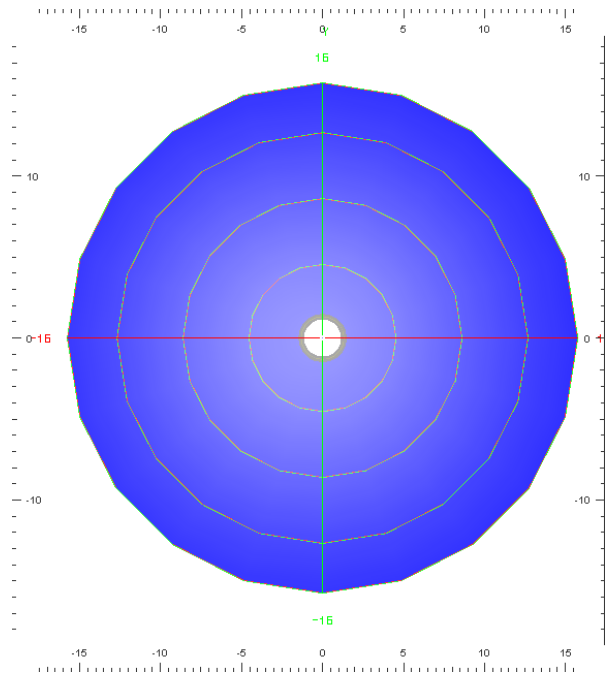
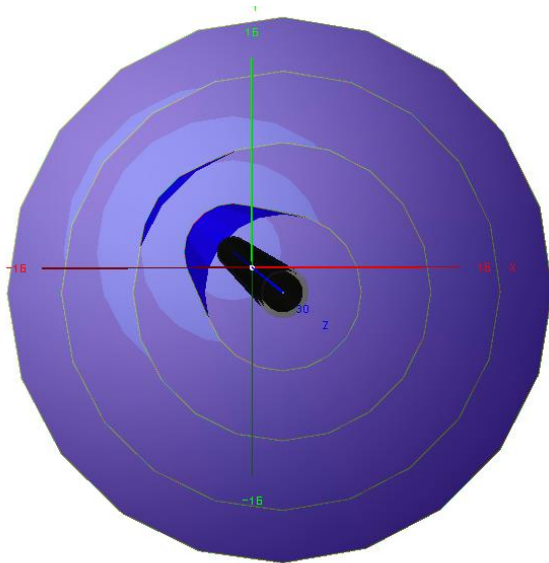
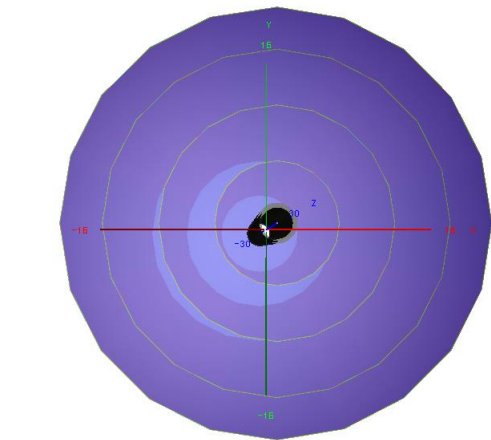
- **Cylindrical GEMs**
- **Cylindrical Si-based detectors**
- **General structure of simulation**

- 4 cylindrical GEMs, separated by 3 air gaps + 1 air gap separates 1-st GEM-detector from the beam pipe
- Width of the air gaps – 3 cm, 4 cm, 4 cm, 3 cm
- Gaps inside GEM-detector (Ar-CO₂(25%)) – 3 mm; 1,5 mm; 1,5 mm; 2 mm
- Each GEM-detector consists of 3 GEMs – kapton (50 μm) and copper (5 μm) on both sides of kapton (with reduced density because of holes)



GEM-detector → 320 μm of silicon and 400 μm of carbon
The same air gaps – 3 cm, 4 cm, 4 cm, 3 cm

Si-detectors will not be used.
However it is important to prove such decision in the simulation.



Generation of primary particles

primary_particles.root

Simulation of detector response

output_hits.root

Reconstruction

Decision

geometry.xml

The simulation is assumed to be accomplished within one stable framework

Thank you for attention!

