

The Scintillator Tile detector at Pandaroot

Dominik Steinschaden, Lukas Gruber, Ken Suzuki
Stefan Meyer Institute

- Present status
- Current progress
- Plans for the near future
- Remaining implementation



Dominik Steinschaden



Panda Collaboration Meeting
Jülich 9. - 12.12.2014

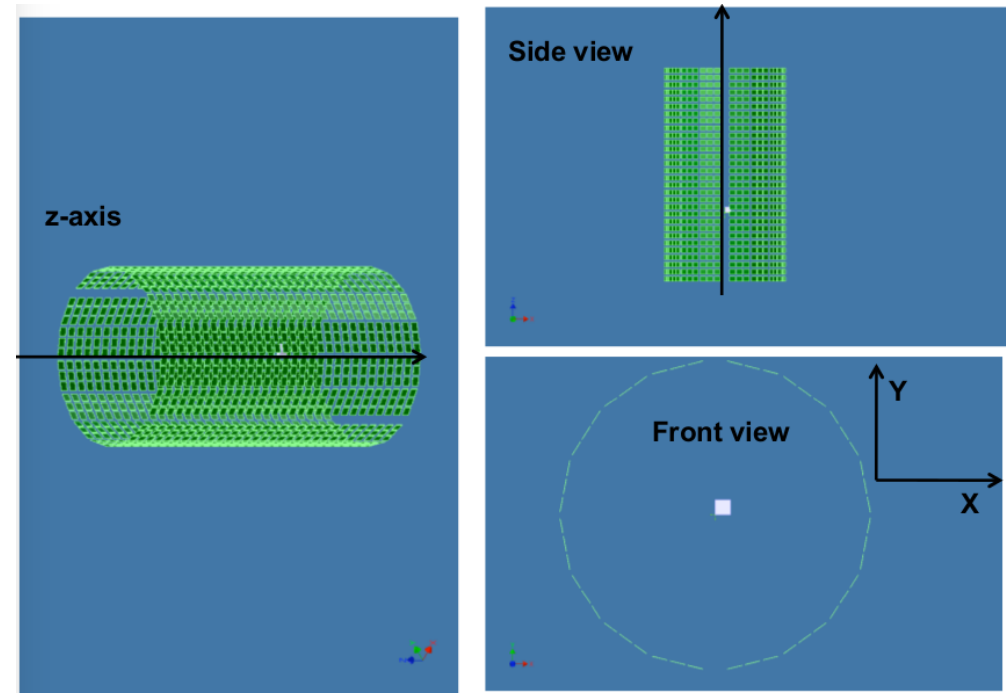


Previous status

first implementation by Alicia Sanchez Lorente

– Geometry

- based on the Scintillation Tile Hodoscope detector proposal
- including only scintillation tiles
- Material: Polypropylene (defined at media.geo)



Previous status

first implementation by Alicia Sanchez Lorente

– Digitization:

- **Hit Position**

- corresponds to the center point of each scintillating tile in the submodule

- **Time**

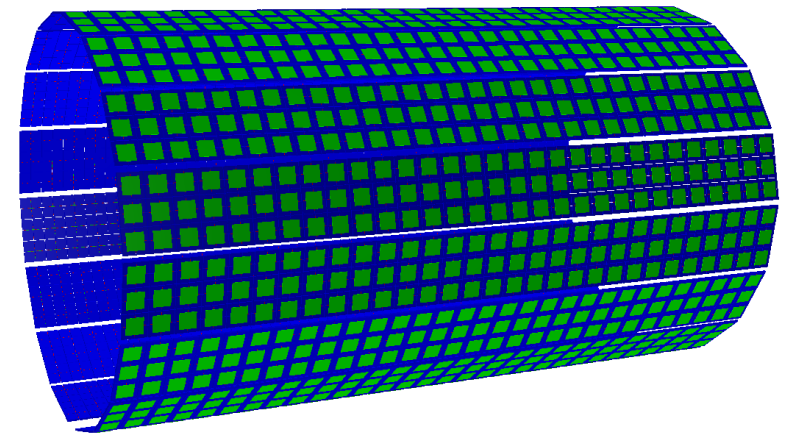
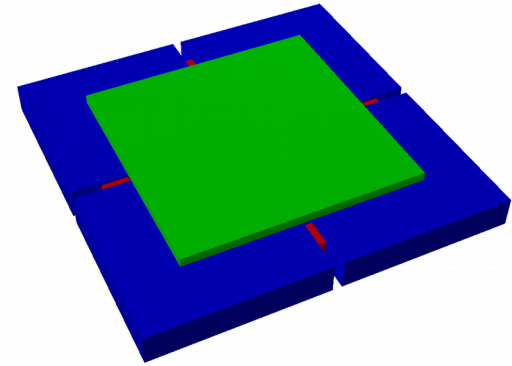
- smeared by the expected resolution of the detector (~ 100ps)

- PndSciTHit

- (Int_t trackID, Int_t detID,
- TString detName,
- Double_t time, Double_t dt,
- TVector3& pos, TVector3& dpos,
- Int_t index, Double_t charge);

Current progress

- Geometry
 - Implementation of SiPMs
 - Implementation of readout cards
 - Updating the material data



Plans for the near future

- Updating the geometry
 - due to current development and optimization
- Updating the expected time resolution
 - geometry dependent
 - position dependent
- Study the effect of proposed geometries on the pattern recognition
 - double hits
 - $d\varphi$, $d\theta$
- Implementation of position resolution within a single tile

Remaining implementation

- Geometry
 - Support structures
- PID algorithms
- Time based reconstruction
- Time based simulation