Summar of the TPC and tracking meeting on March 5, 2012

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Overview

http://indico.cern.ch/conferenceDisplay.py?confId=180233

TPC tracking meeting

Monday, March 5, 2012 from **14:00** to **15:30** (Europe/Zurich)
at **CERN (4-1-007)**

Description Presentations and discussions on the status of the Kalman Filter and the TPC pixel readout in MarlinTPC.

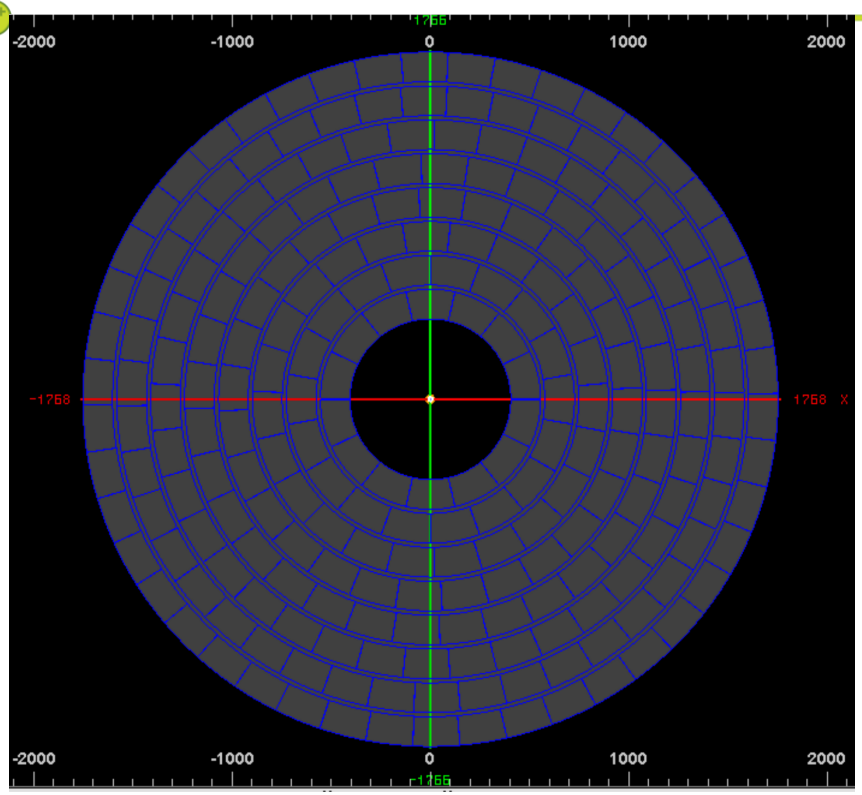
Material webex information

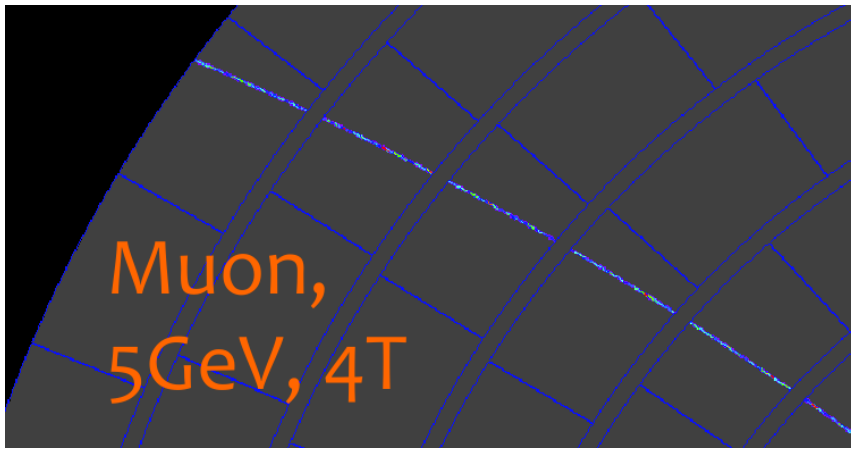
Monday, March 5, 2012

14:00 - 14:20 The Kalman Filter in MarlinTPC *20'*
Speaker: Bo Li (T)
Material: Slides

14:20 - 14:40 Simulation of pixel readout in MarlinTPC *20'*
Speaker: Martin Killenberg (CERN)
Material: Slides

Kalman Filter and Modular ILD TPC (Bo)





Kalman Filter in MarlinTPC

Distortions at the edge of JGEM modules

- Can be corrected with MILLEPEDE (NIMA,566:5-13)
- Kalman filter can directly know distortions

Simulate modular end plate in a full TPC

- Realistic gaps between pad planes

Current work

- Adapt the simulation processors in MarlinTPC for multiple modules

Planned

- Study performance of the Kalman Filter
- Simulate with inhomogeneous magnetic field

Pixelised TPC Readout (Martin)

Simulate full TPC with Ingrid-like readout

- Simulate "ideal" chip (multi-hit capability, time and charge per pixel)
- Gas gain fluctuations (Polya) and crosstalk

Planned studies

- Occupancy (full bunch train of BG)
- Momentum resolution/ dE/dx (single muons)
- Tracking efficiency ($t\bar{t}$@3 TeV)

Current issues

- Memory consumption for occupancy study
- No pattern recognition
  - Try *Pathfinder*
  - Fit all pixels for singe muons
    + outlier rejection

Next Meeting

Next meeting:

Wednesday, 4. April 2012, 14:00h

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