

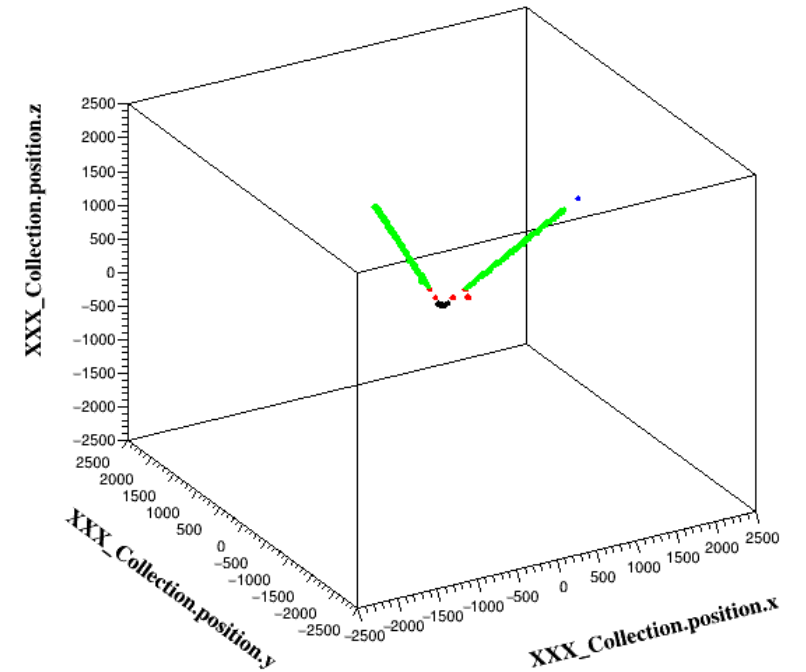
Status on SDT simulation

Ryuta

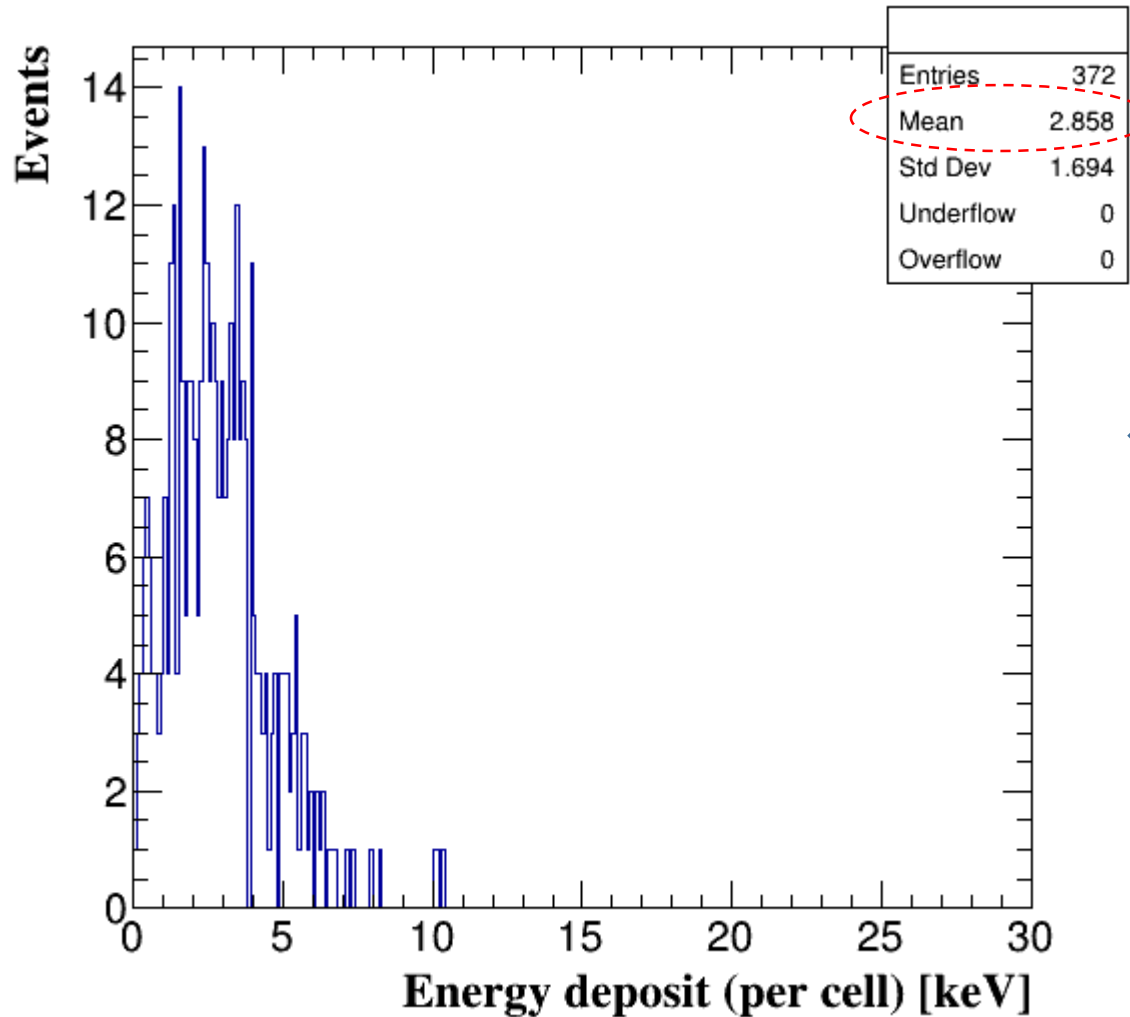
08/31/2020₁

Update

- Check the energy deposit
 - confirmation of tracks with “ $ee \rightarrow \mu\mu$ ” @ $\sqrt{s} = 2$ GeV sample (already have sent)
 - have a look the energy deposit/path length, stored in output rootfile (which is from `dd4hep::sim::geant4Tracker::Hit`)



Energy deposit



not far away from expectation ...

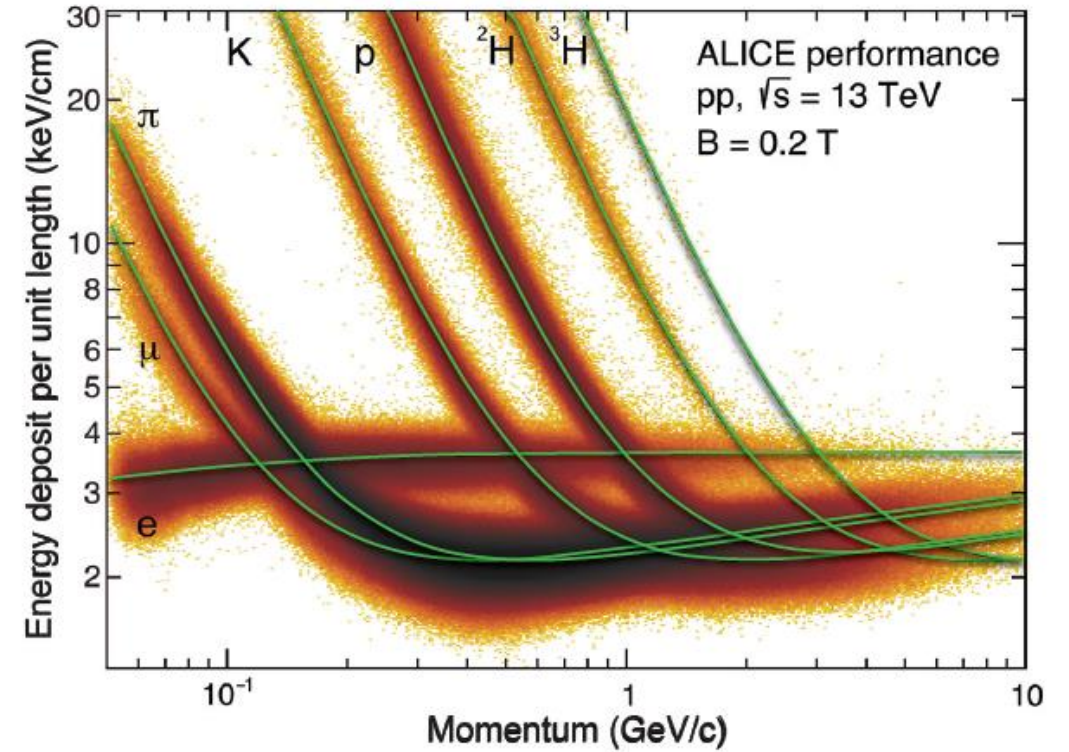
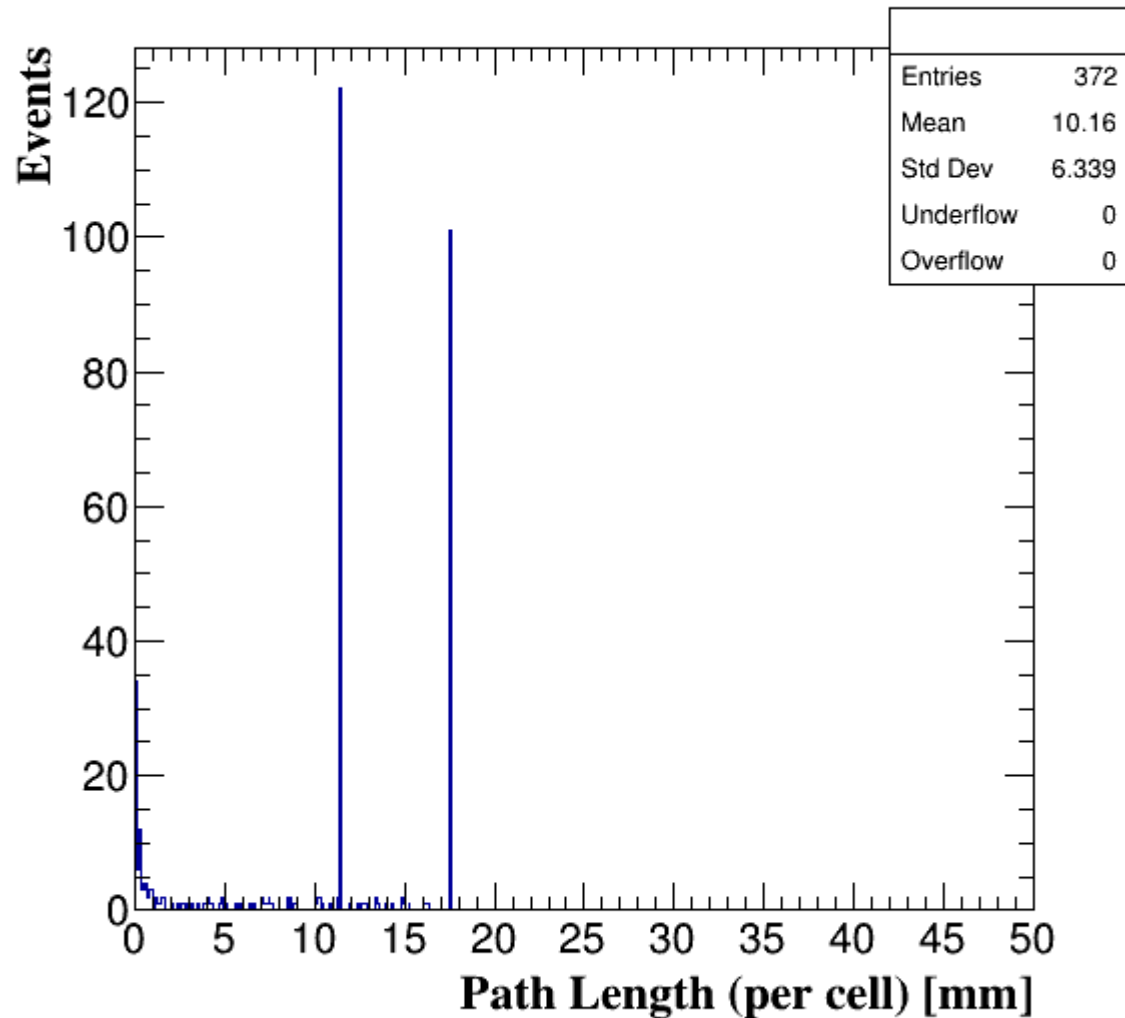


Figure 35.15: Energy deposit versus momentum measured in the ALICE TPC.

-- data sample is from "ee- \rightarrow $\mu\mu$ " @ $\sqrt{s} = 250$ GeV

Path Length



parameters

A simple settings (not adjusted well but for test/demonstration)

-- Number of layer : 130

-- Number of cell : 200

-- cell size : 10 mm

-- minimum $r = 340$ mm

-- (maximum) $z = 2350$ mm

of course, the geometry configuration for this test version is just temporal.

Next steps

- Try to get those figures

- Information of Number of primary ?

- Particle Gun

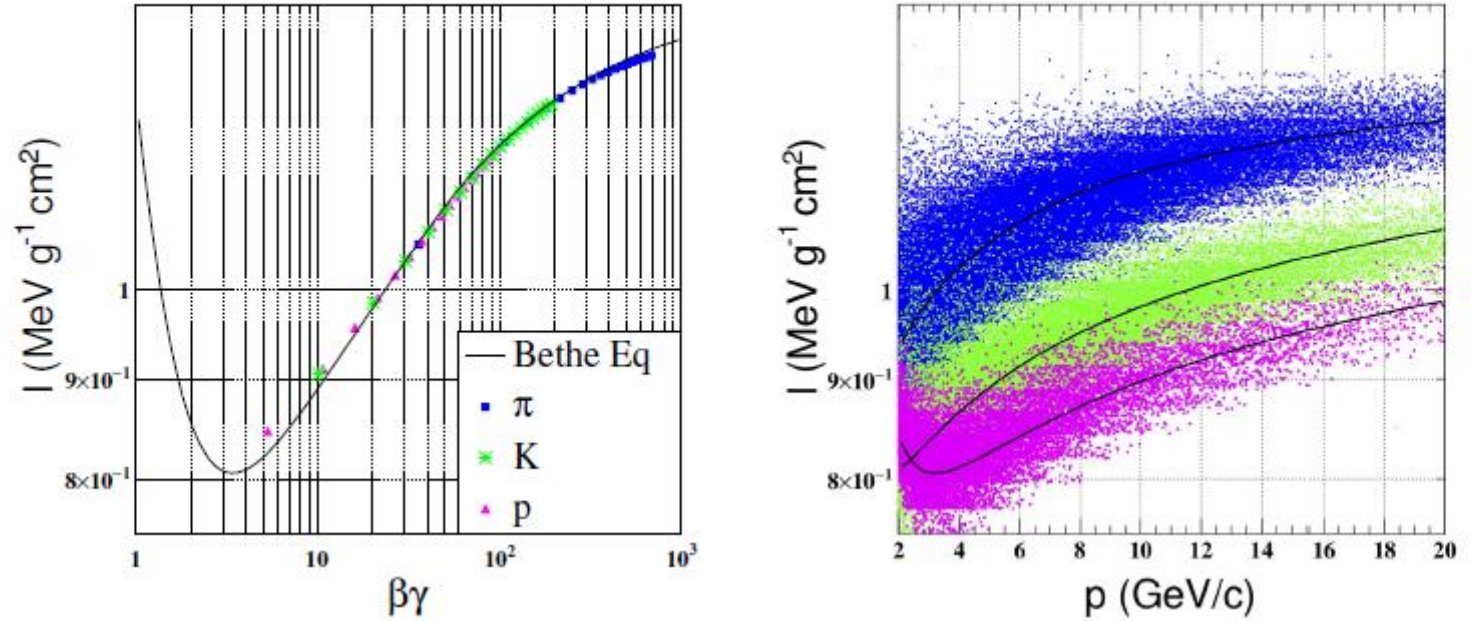


Fig. 1 The dependence of the truncated mean I of the track dE/dx , as a function of $\beta\gamma$ (left) and p (right) for charged particles traversing the TPC of the CEPC detector. In the left plot the dots represent the MC result of single-particle events with the theoretical prediction by the Bethe equation [15] overlaid. In the right plot the dots are from simulation of $e^+e^- \rightarrow Z \rightarrow q\bar{q}$ events.

