Longitudinally and transversely segmented dual readout calorimetry

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Outline

- **General**
- **Output**
- **Some plots**

General

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  : try to study in GEANT3/GCALOR a longitudinally and transversely segmented dual readout calorimeter

  : play/test with a 1 m^3 of "very dense" quartz block segmented in 1000 layers of 100×100 cells, 1 cm^2 each

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  : next step to implement realistic material and segmentation

Output

- **info stored at hit level**

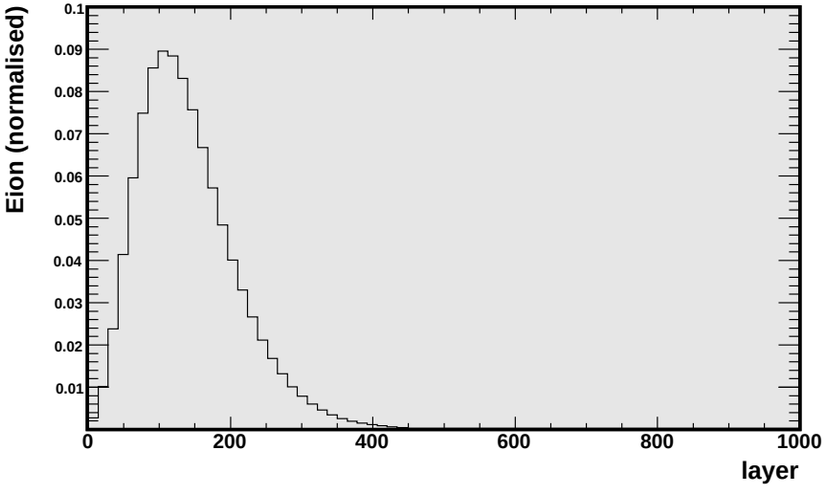
  : hit indices I, J, layer
  position X, Y, Z
  Eionization
  Echerenkov
  Ncherenkov photons
  particle id

- .

  : hits are grouped into cells of given granularity,
  final output is **treeHits** and **treeCells**

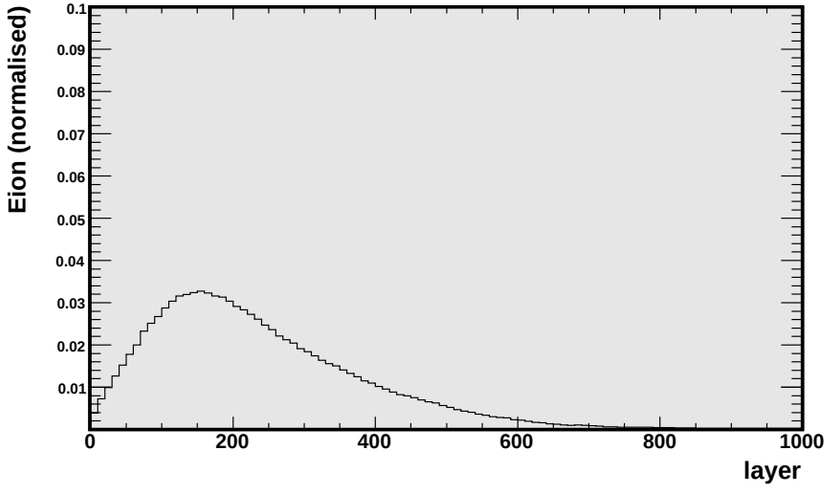
Eion, Echer per layer

e^- 20 GeV

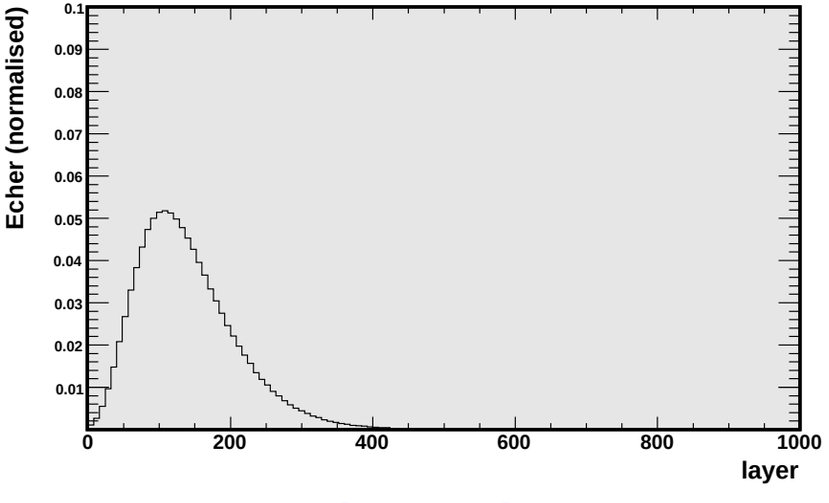


Eion per layer

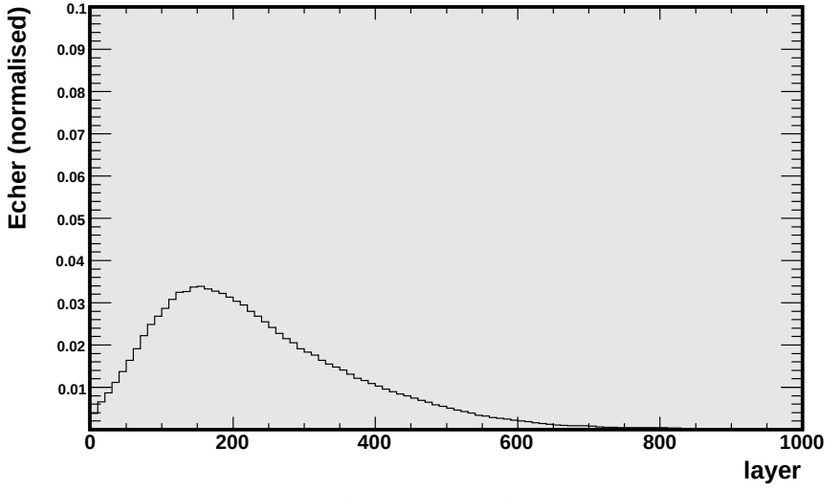
π^- 20 GeV



Eion per layer



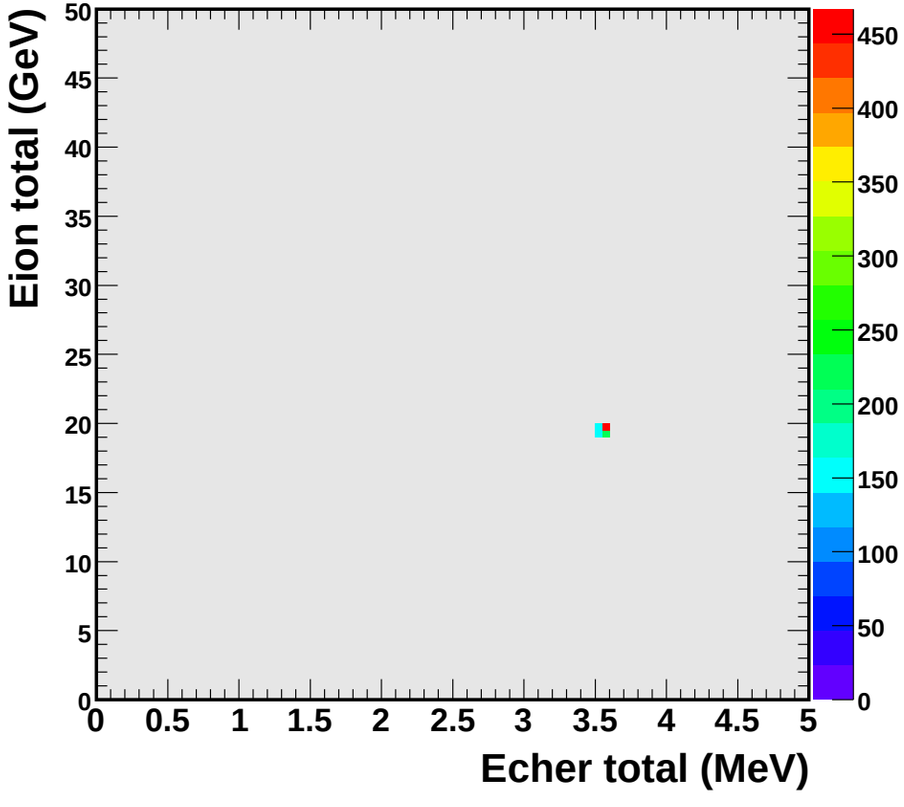
Echer per layer



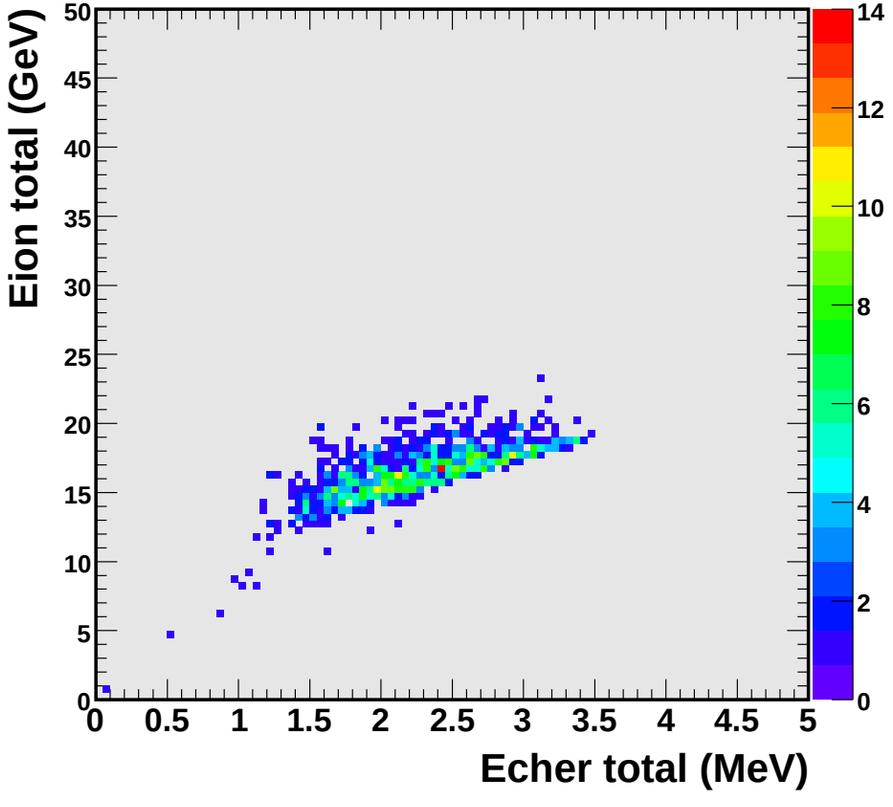
Echer per layer

Eion vs Echer (total)

e^- 20 GeV

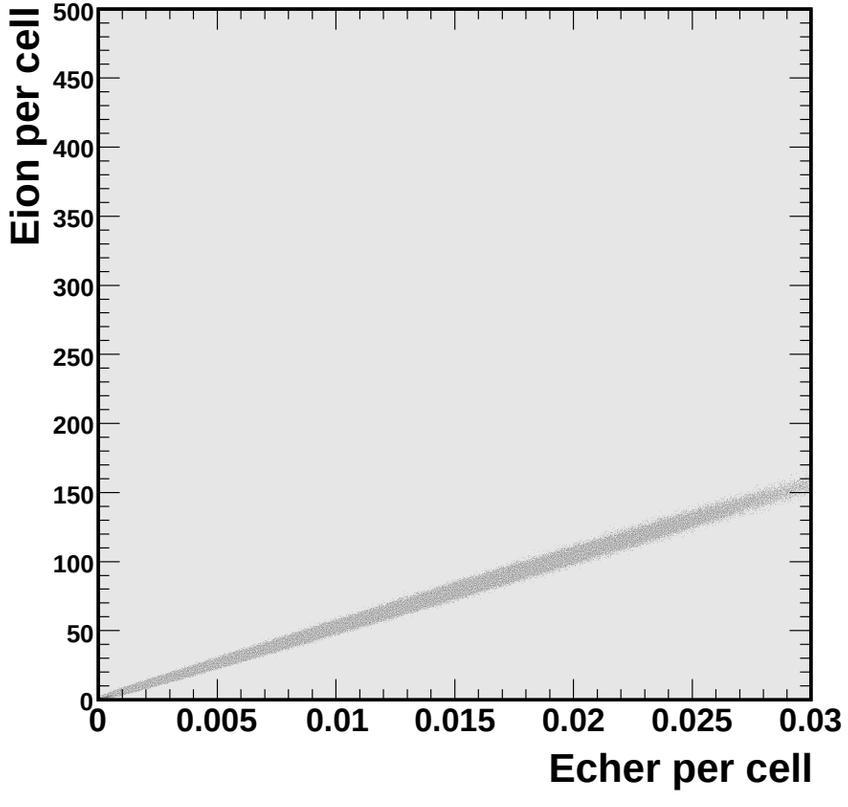


π^- 20 GeV

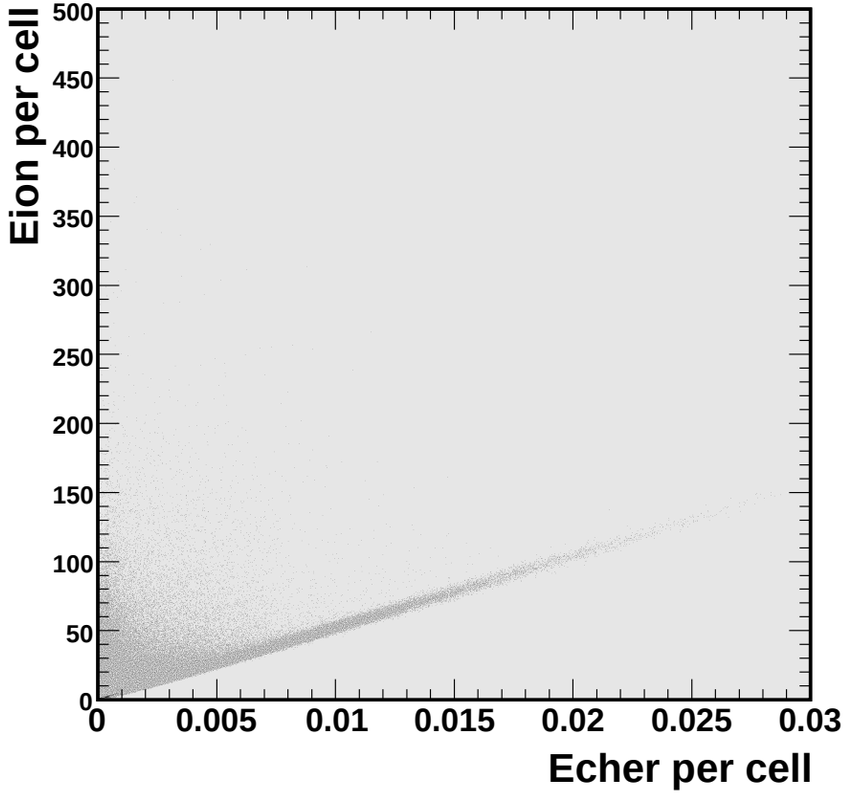


Eion vs Echer (per cell)

e^- 20 GeV

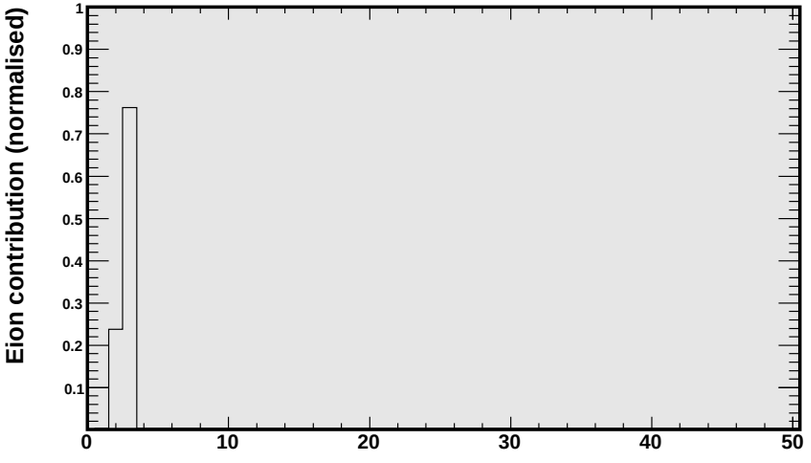


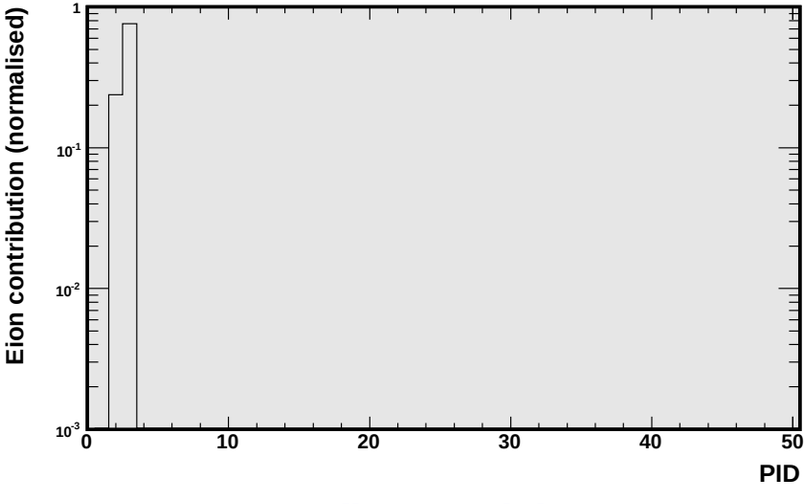
π^- 20 GeV



contribution to Eion vs PID

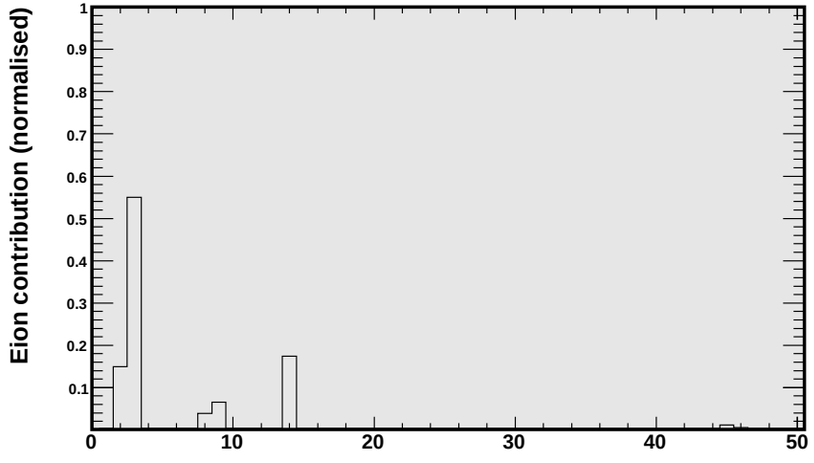
e^- 20 GeV

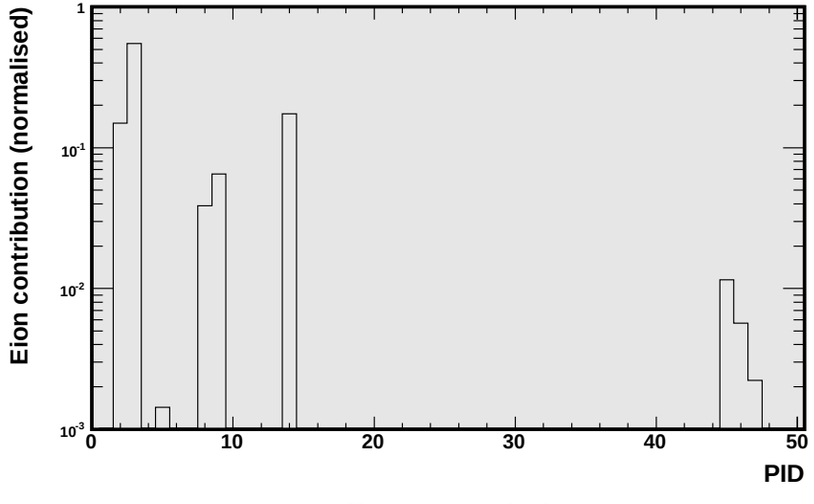




(log scale)

π^- 20 GeV





(log scale)