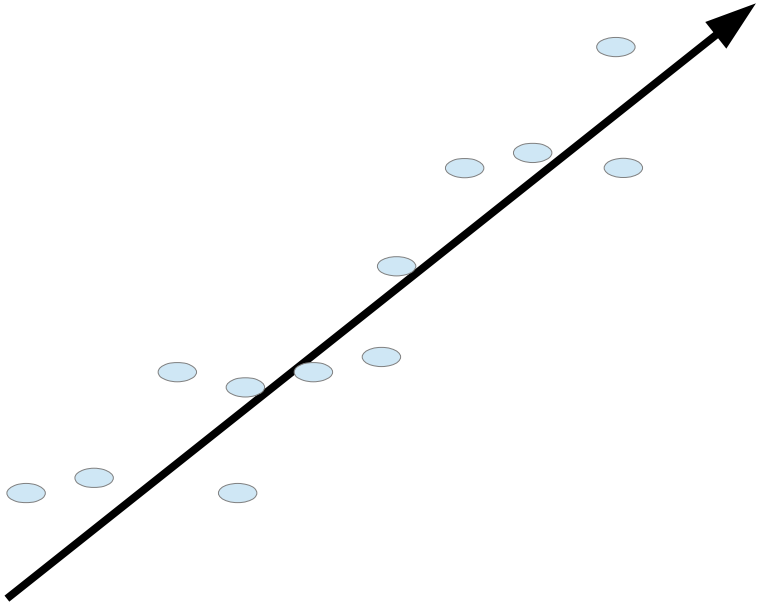
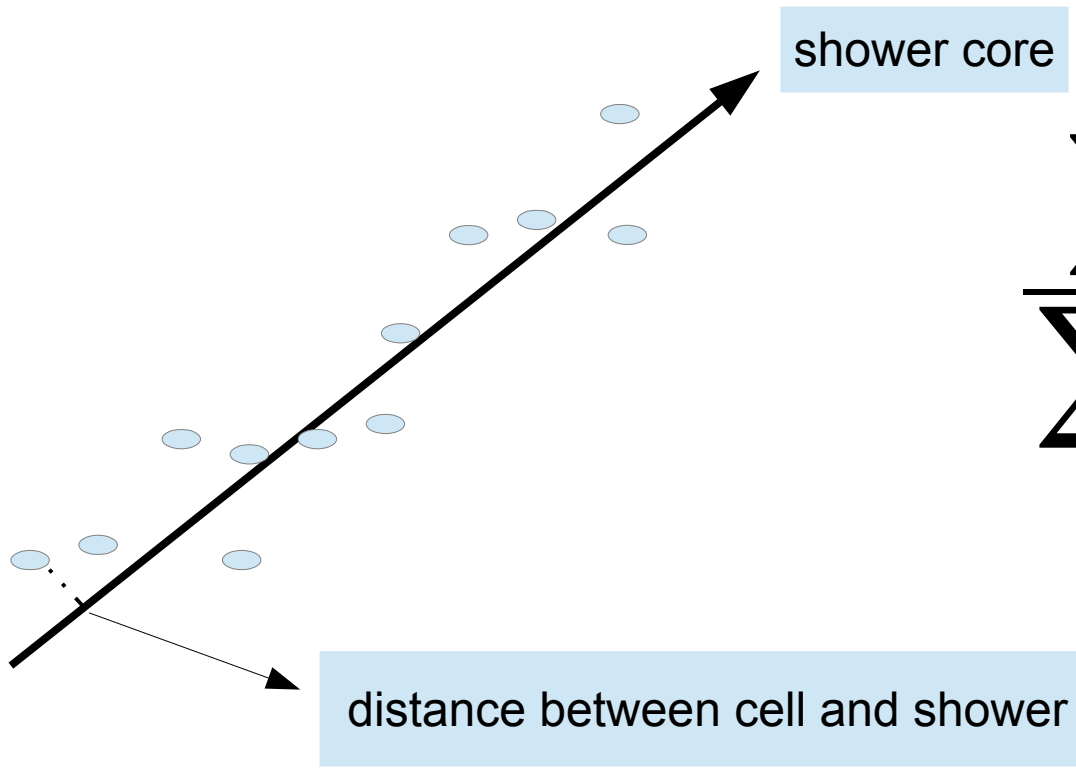
Shower width



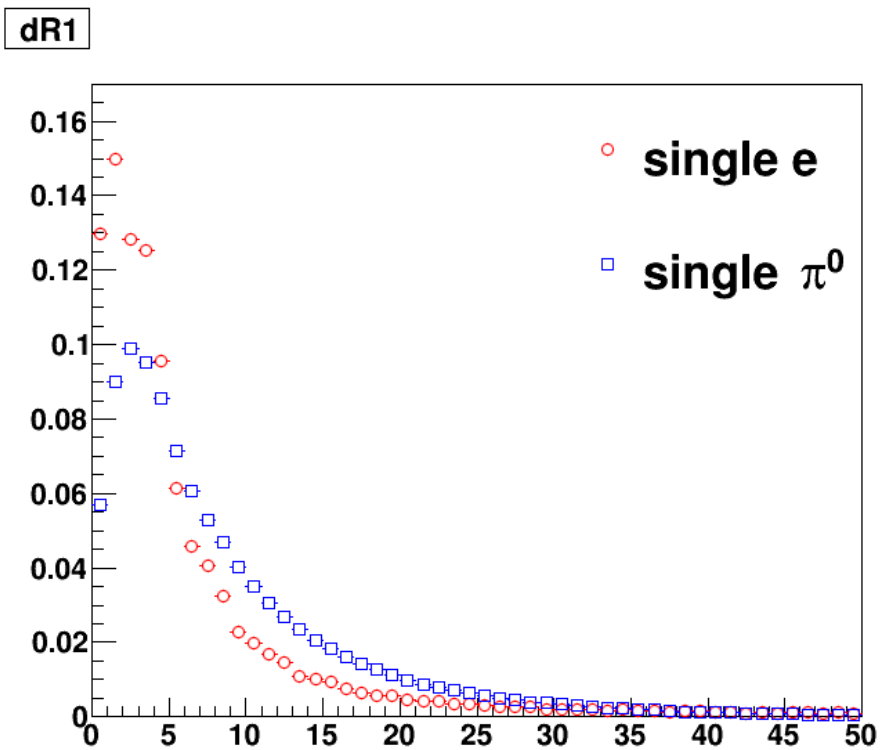
- Pi0 has wider shower width than electron. Thus it is possible to simply calculate the shower width to separate them.
- Challenge:
  - Pi0 has less cells
  - Pi0 has short shower depth

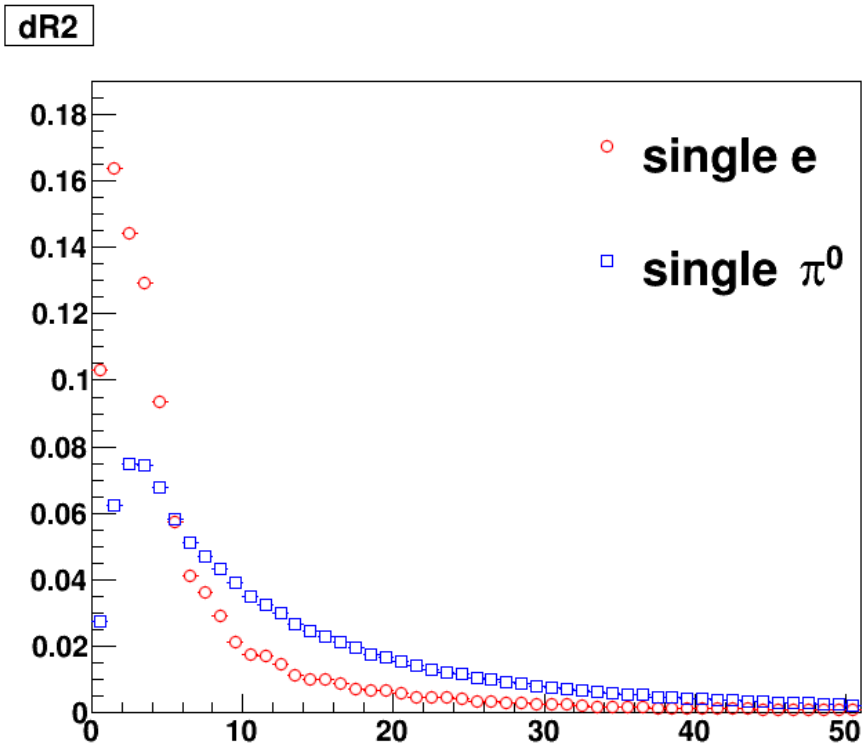
Shower width



$$\frac{\sum E_{cell\,i} \cdot R^2_{cell\,i}}{\sum E_{cell\,i} \cdot L_{shower}}$$

Rcell distribution – from single particle

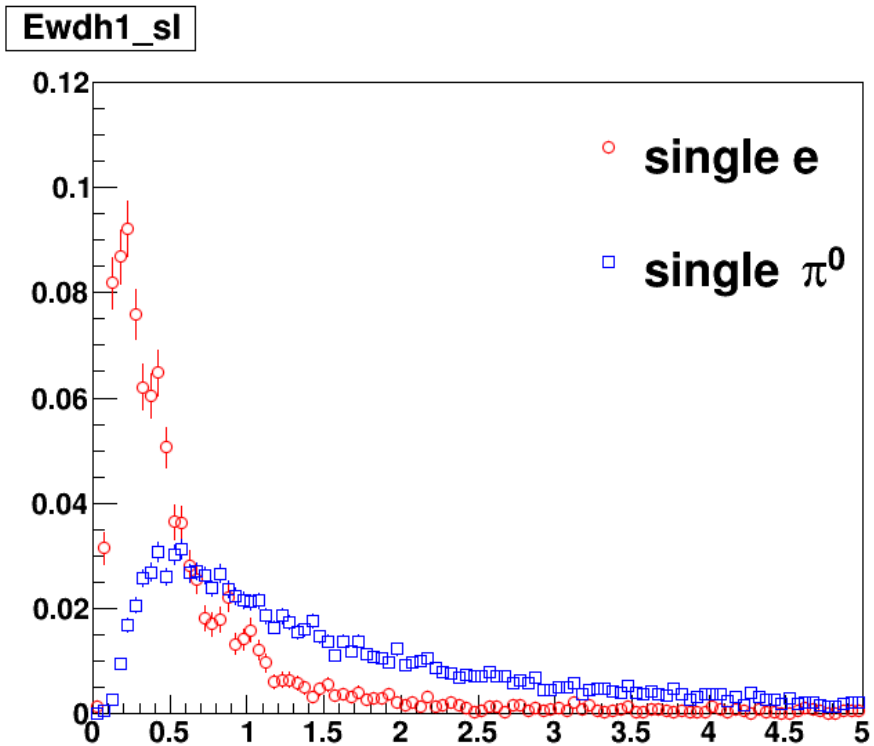




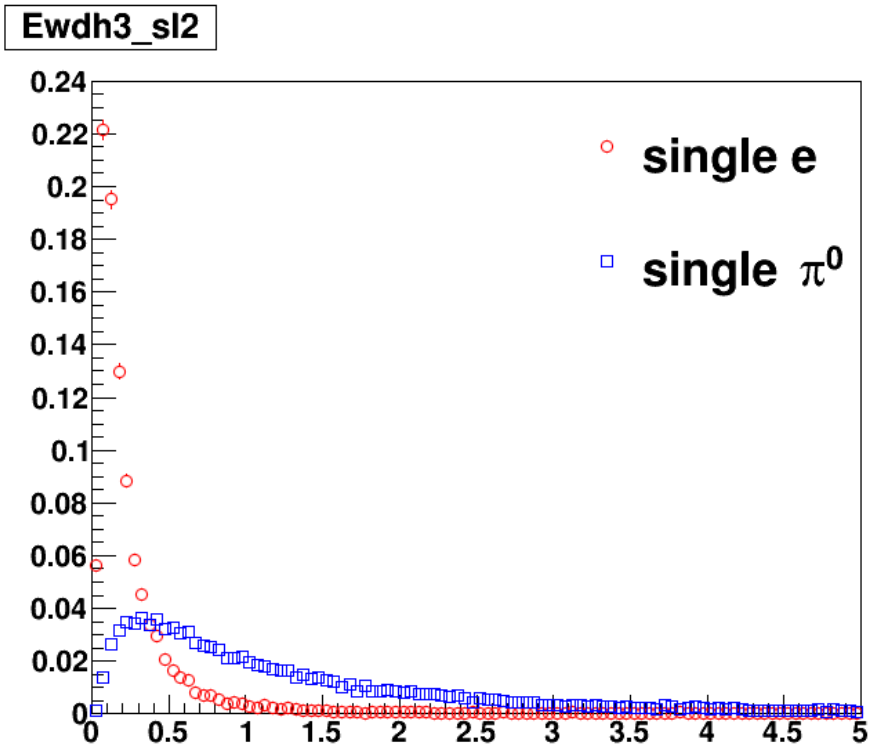
Using energetic prong associated cells

Using slice associated cells

Single particle – Etrue = 1 GeV

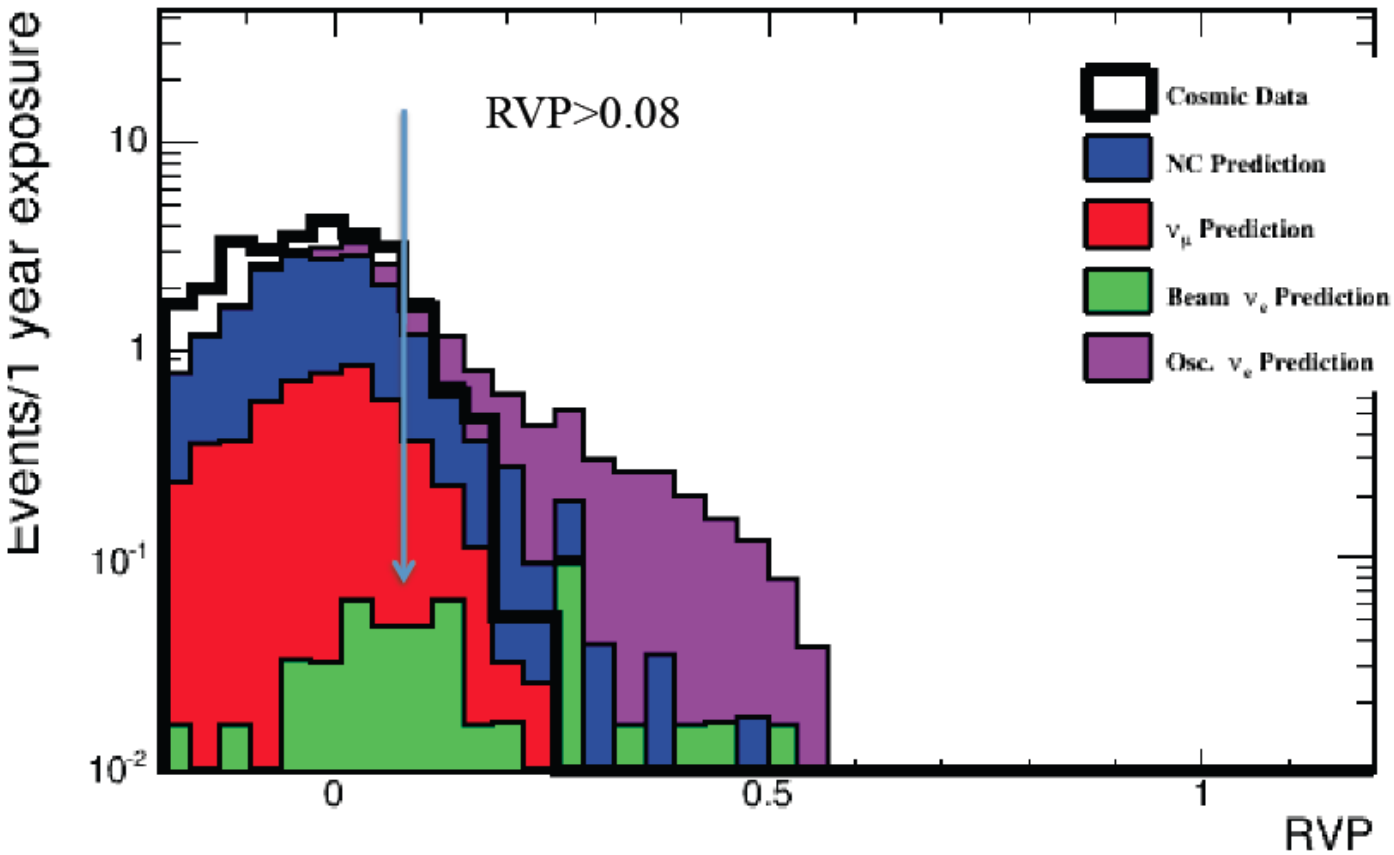


Using energetic prong associated cells



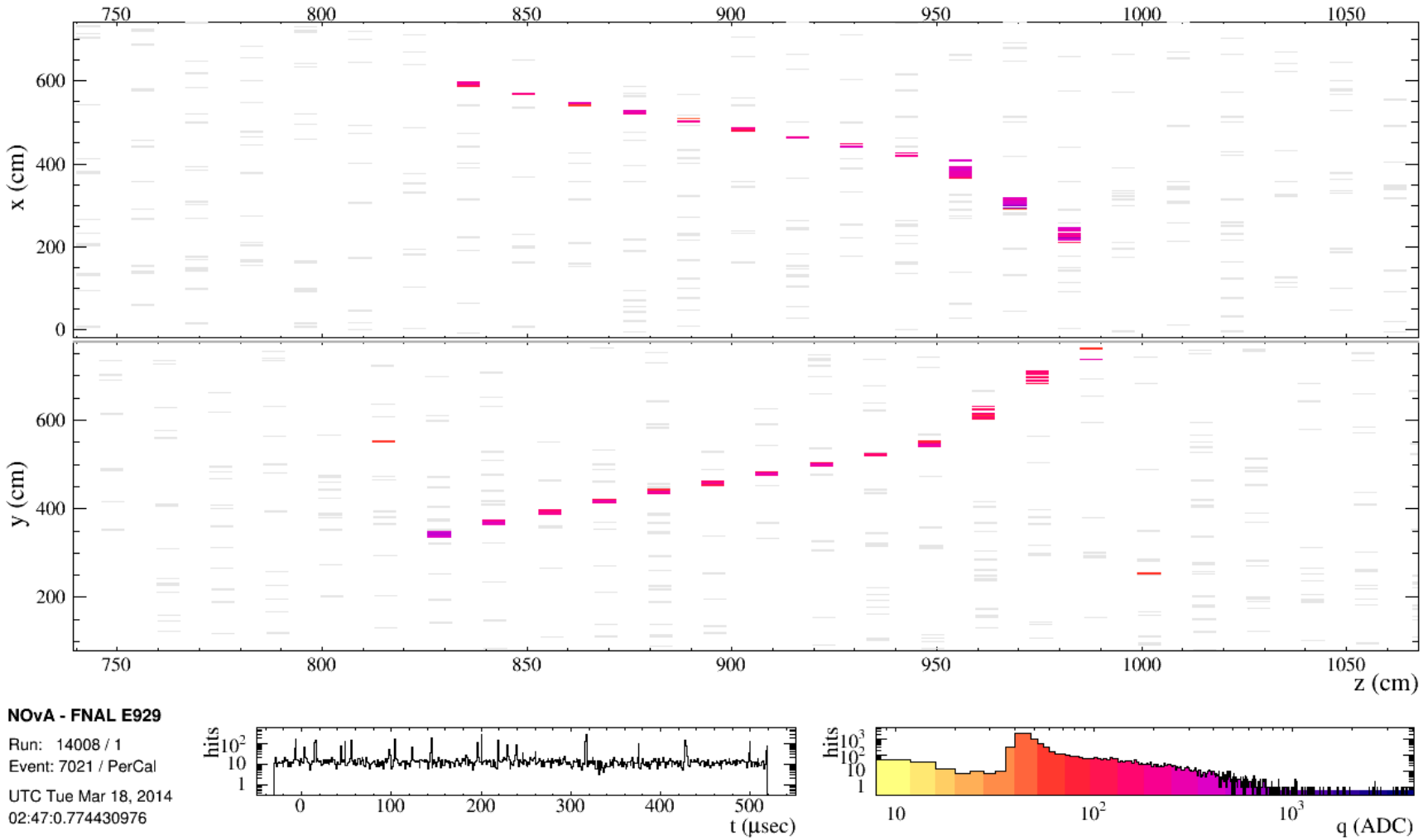
Using slice associated cells

Latest RVP

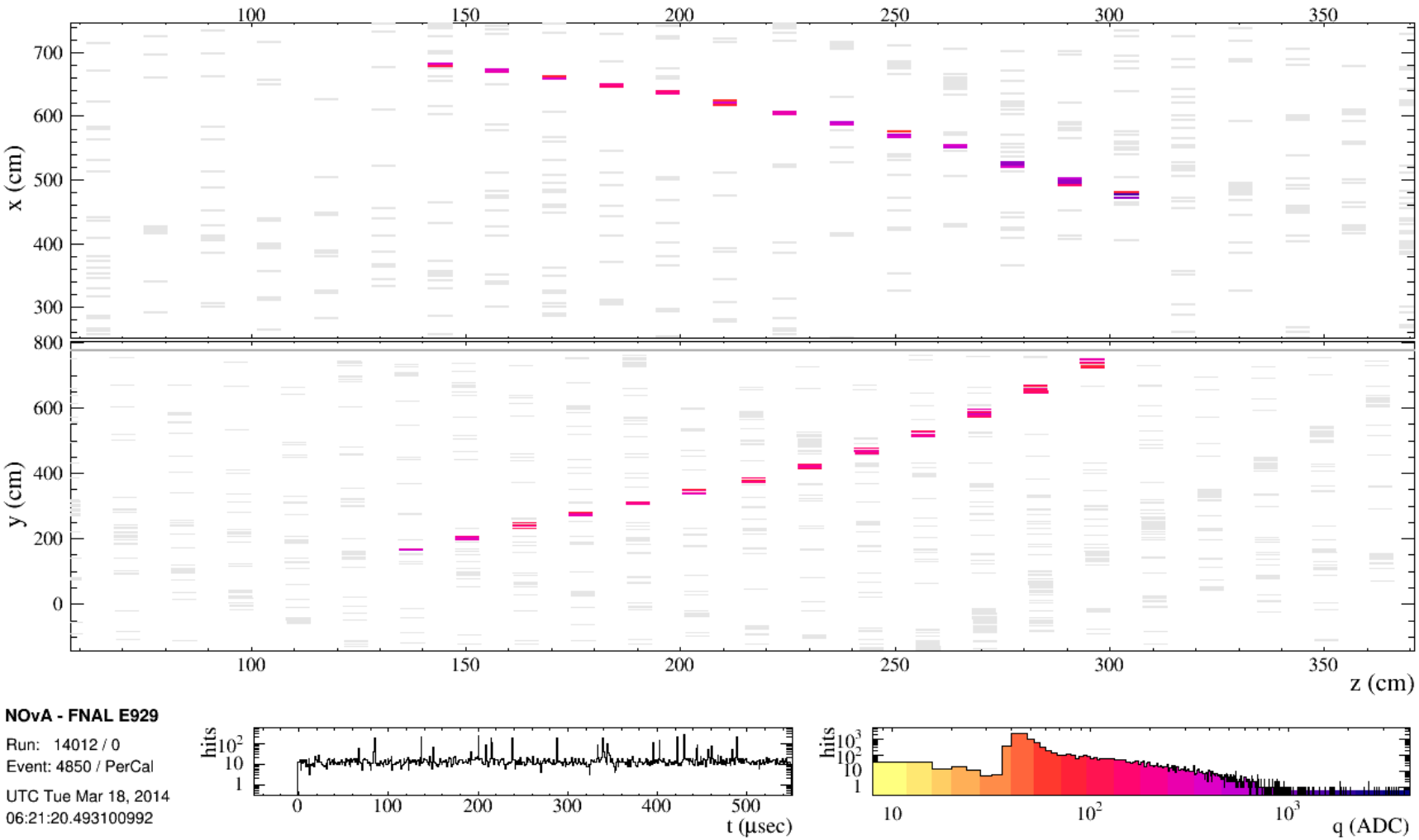


Why the cosmic data events have that high RVP output ?
The inputs of RVP have been chosen without considering
the cosmic events, but do study the muon neutrino MC events.

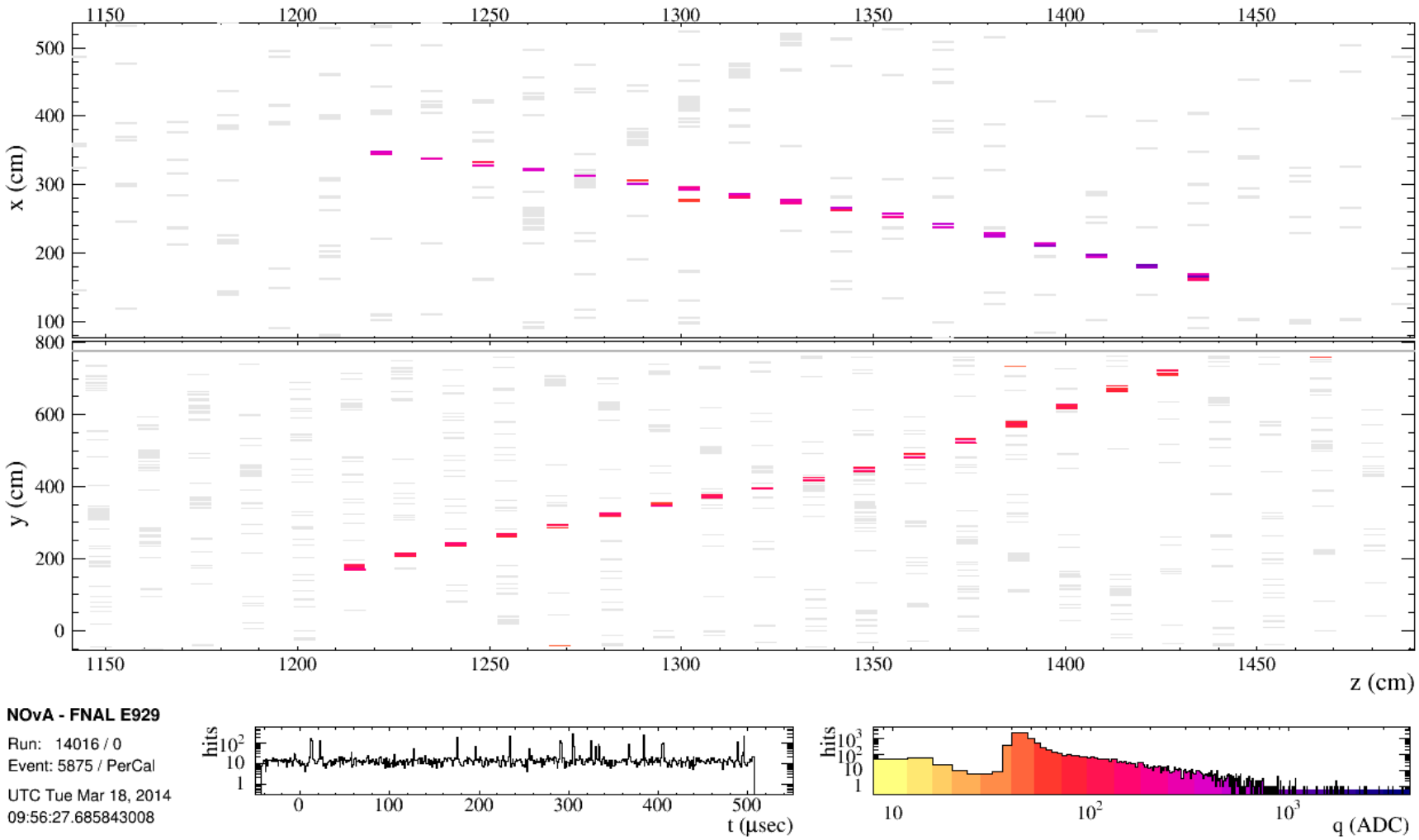
Cosmic data event display with high RVP output



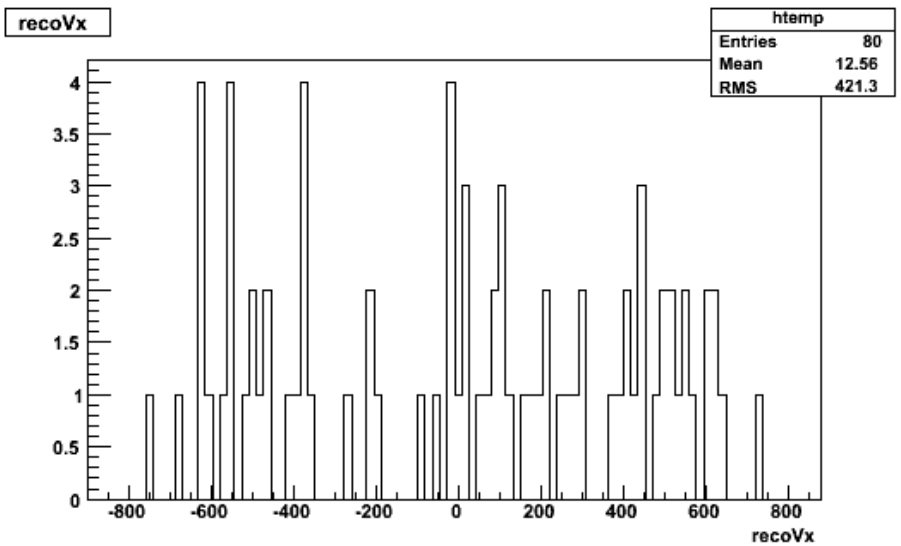
Cosmic data event display with high RVP output

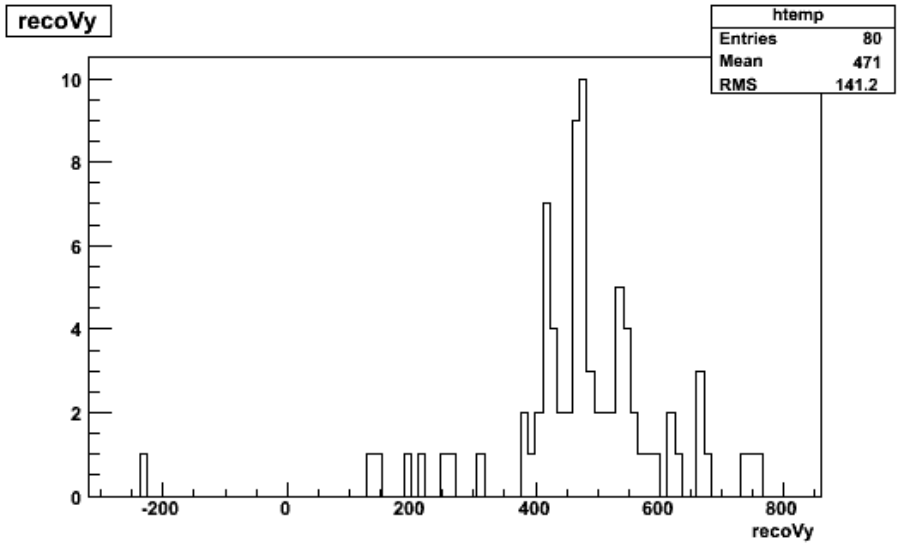


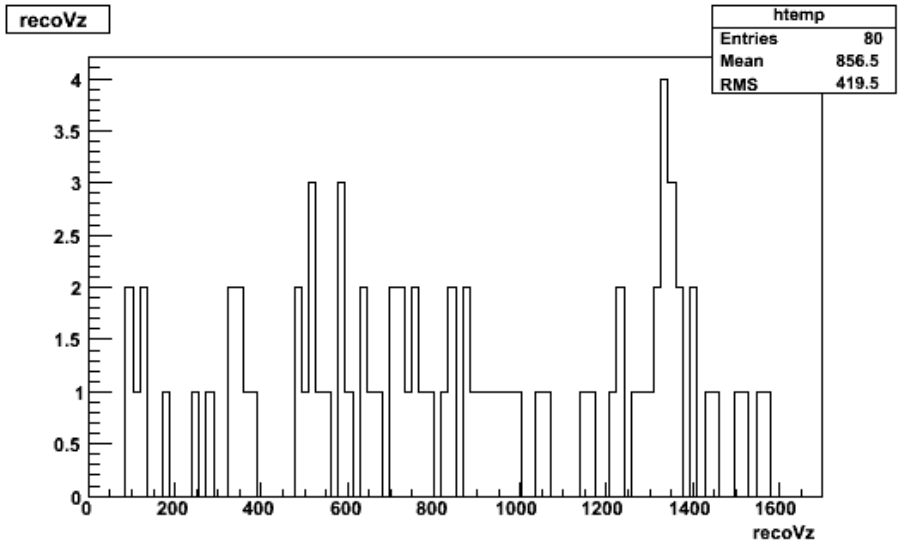
Cosmic data event display with high RVP output



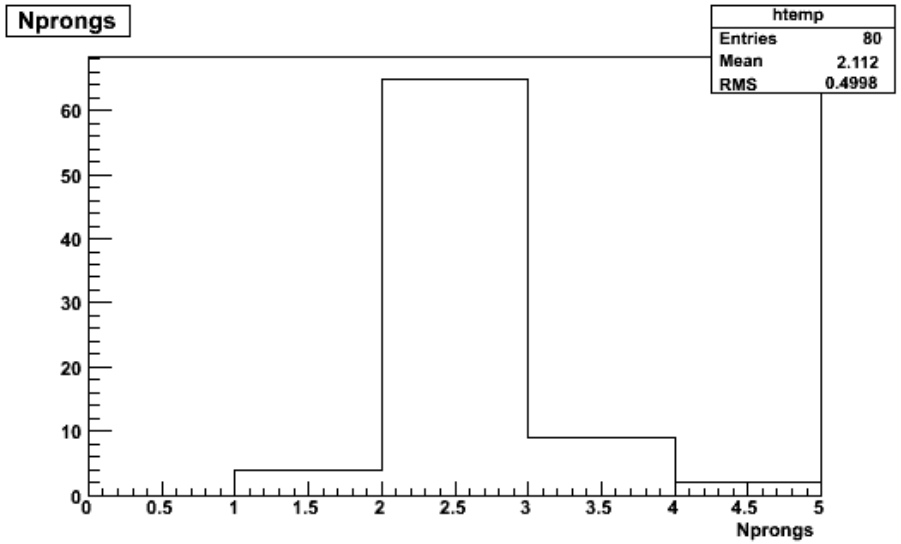
Reco variables for these cosmic data events

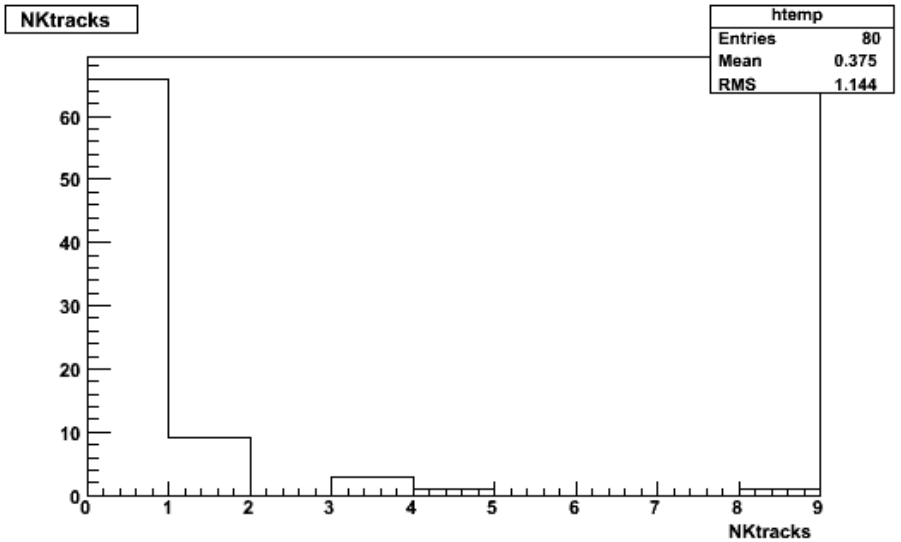




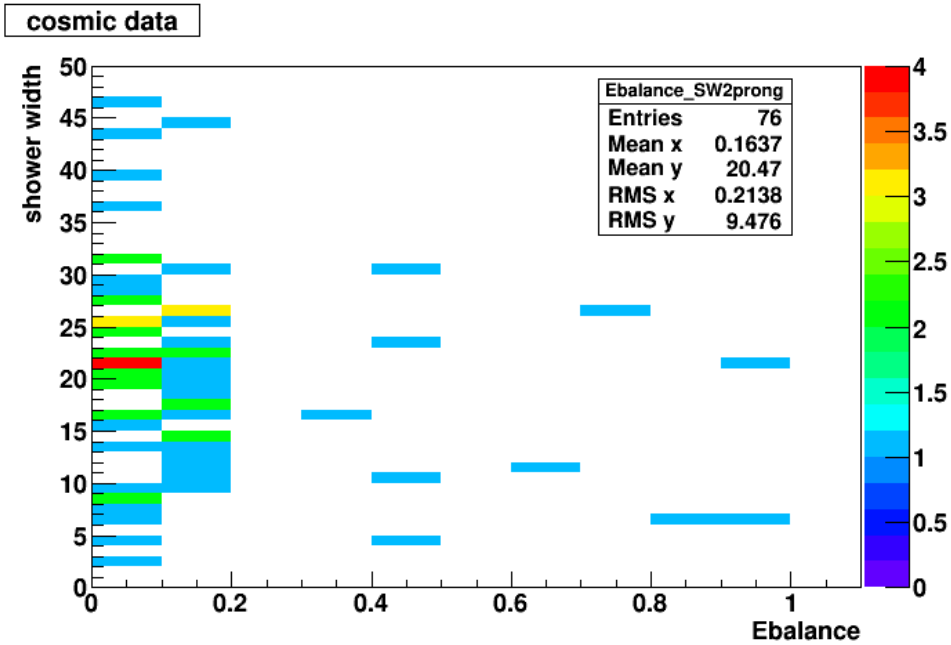
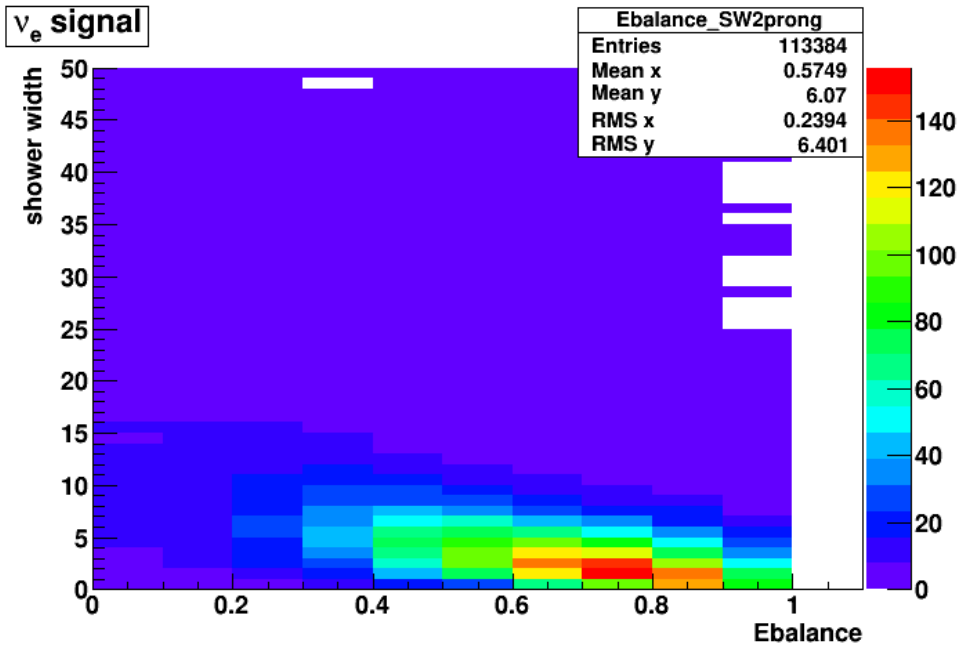


Reco variables for these cosmic data events





Prong break the curve track to two, that is why there are 2 prongs for most cases.

Apparently, kalman track can not reconstruct these curve tracks.

Reco variables for these cosmic data events