

Lepton ID Update

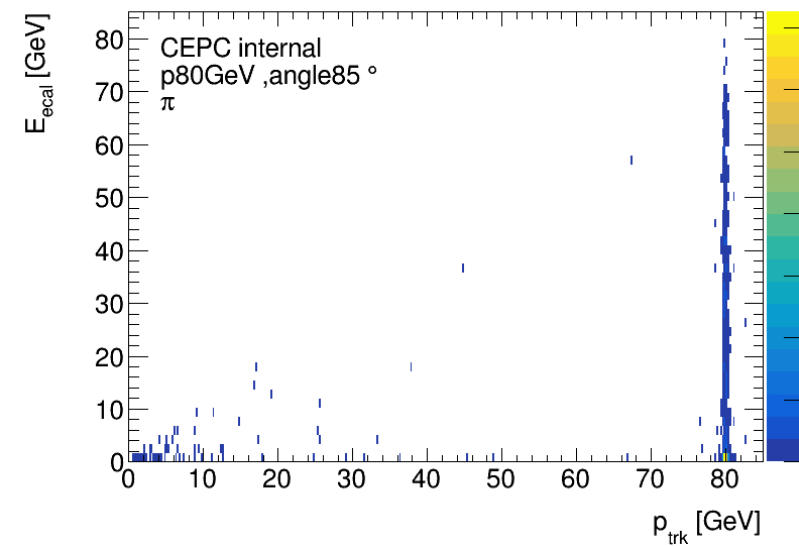
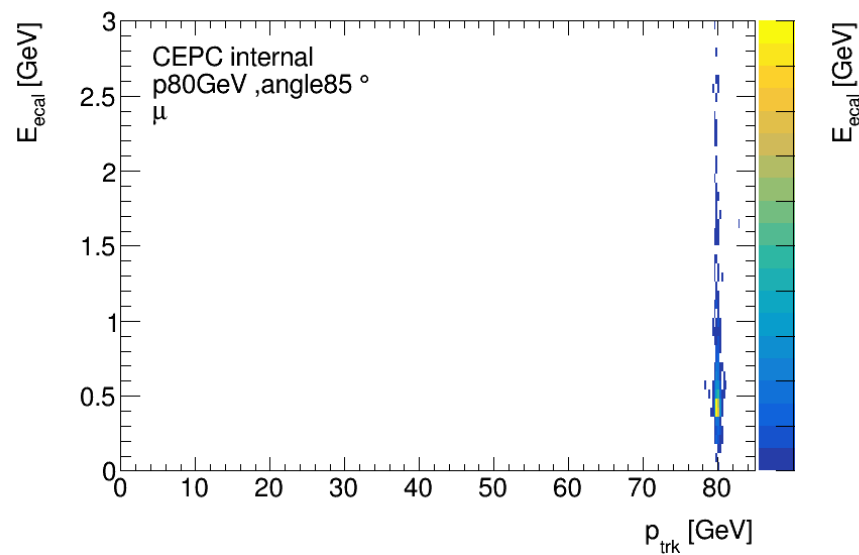
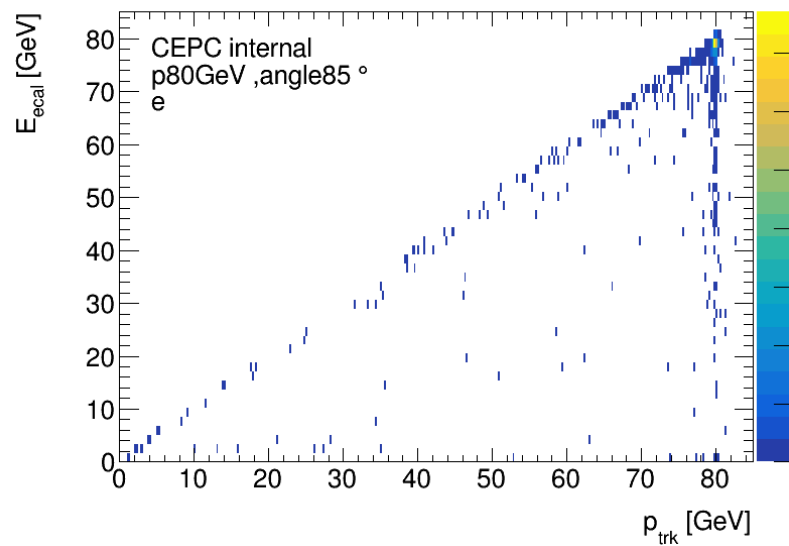
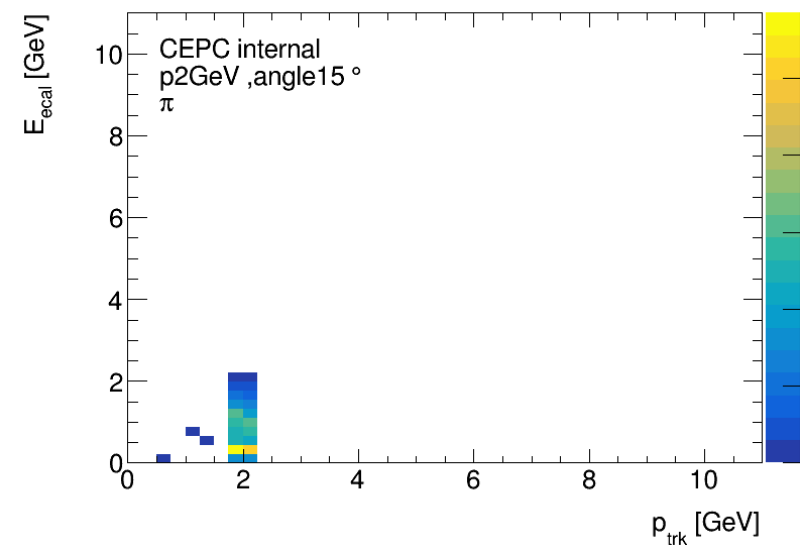
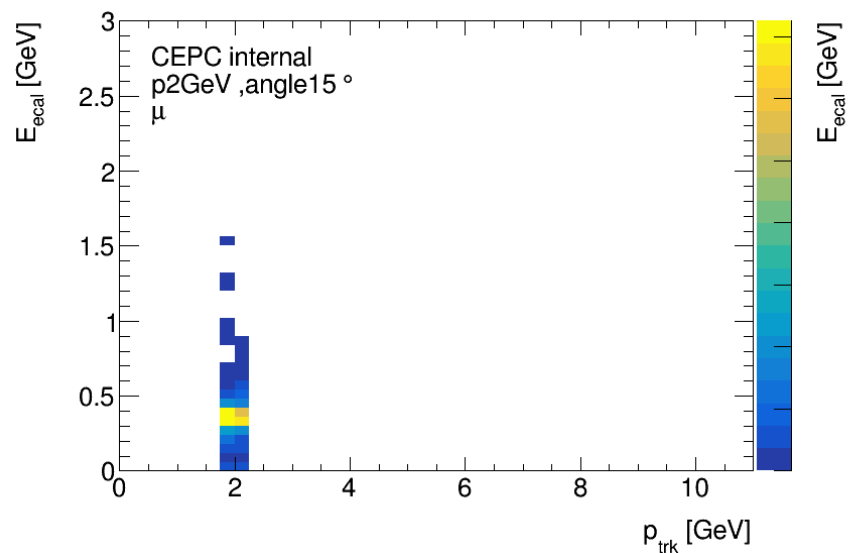
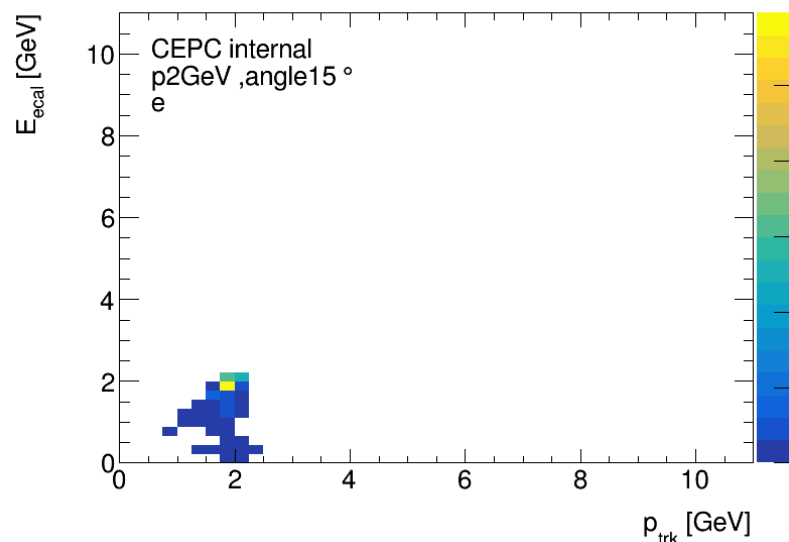
Changhua Hao, Ligang Xia

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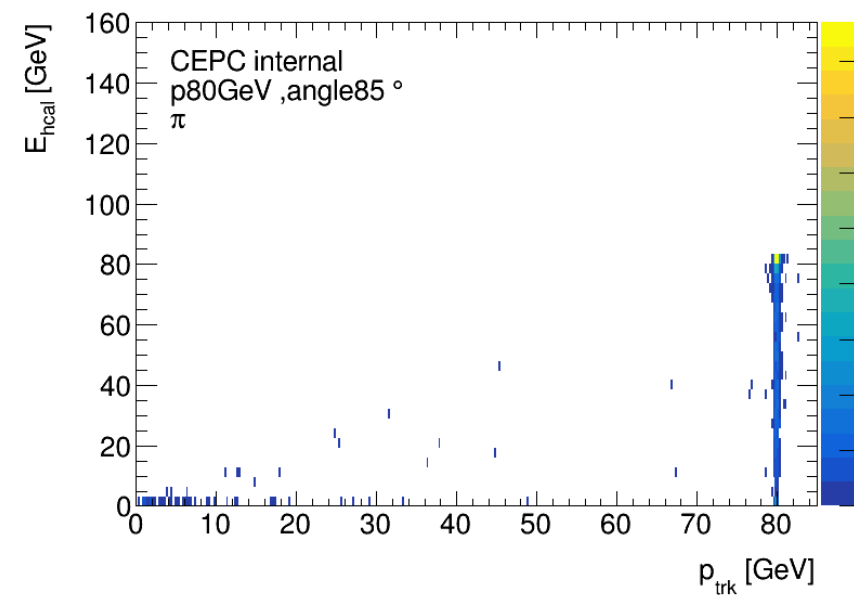
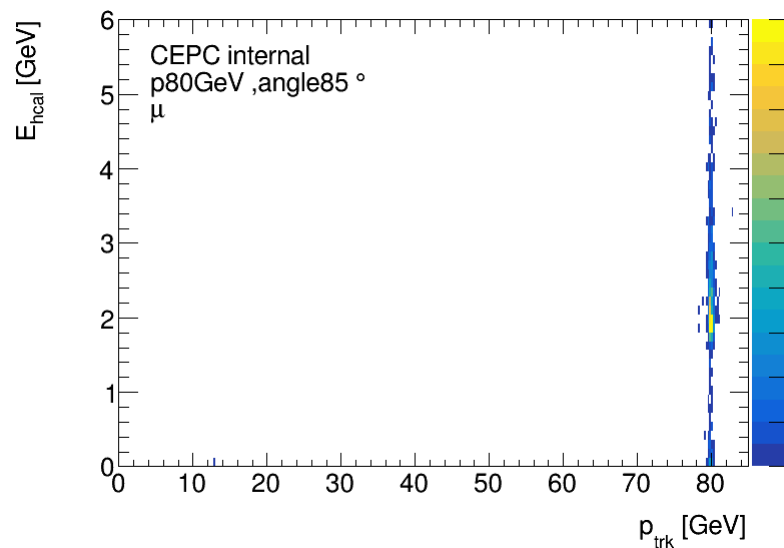
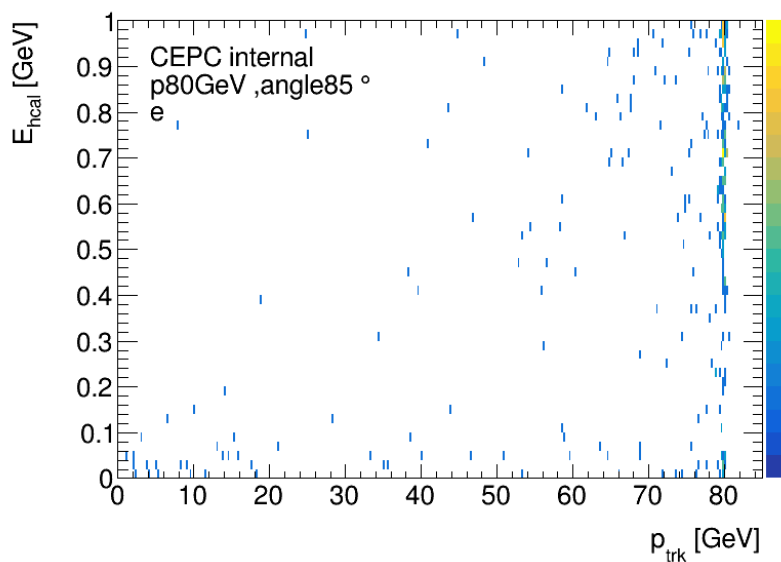
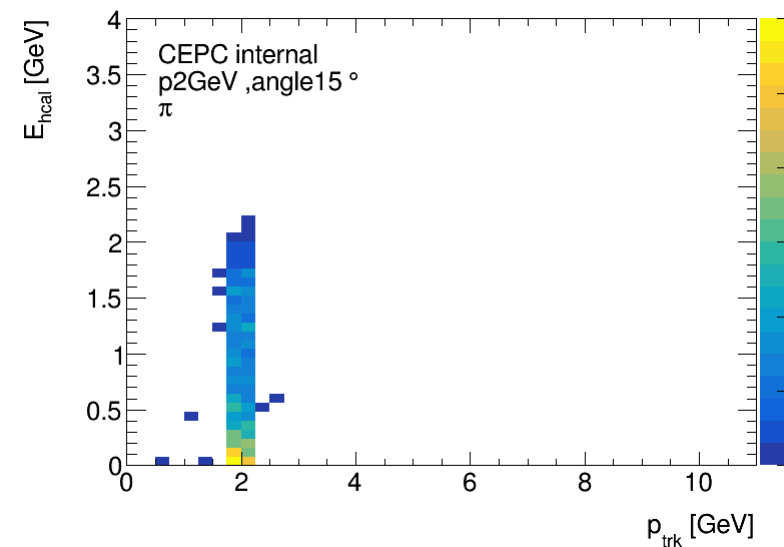
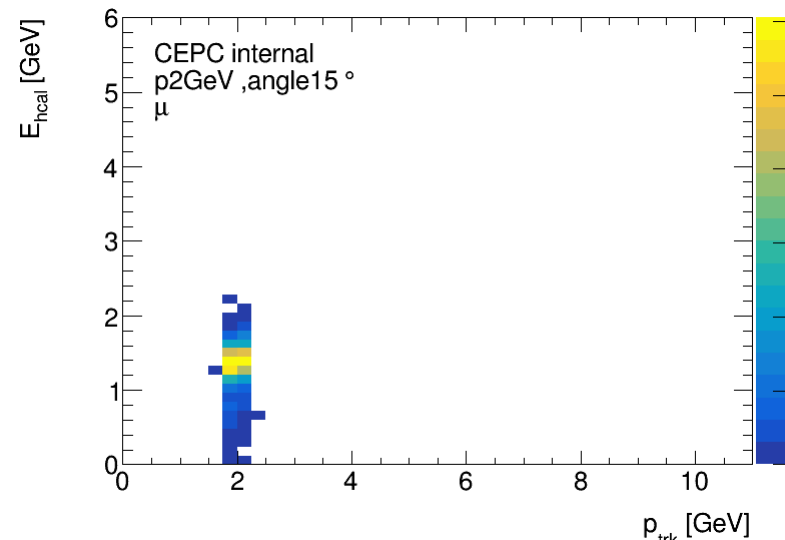
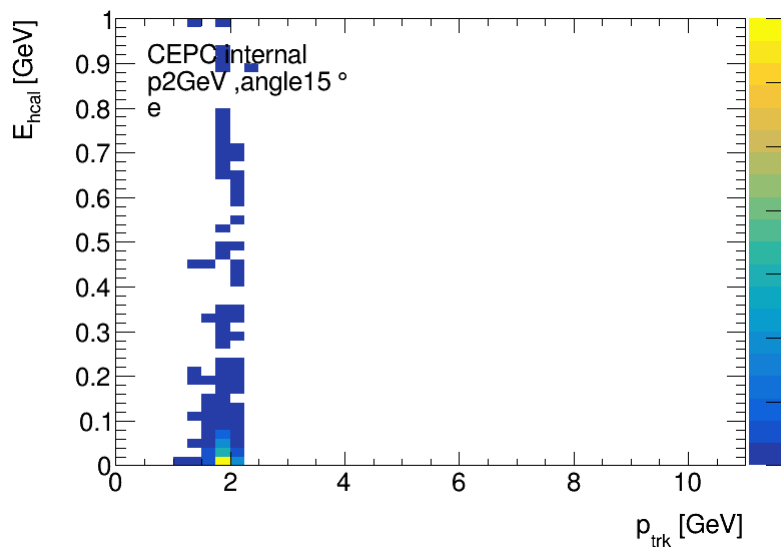
Updates

- 1) Check and use correct the ecal/hcal information supported by Geliang(Thanks!)
- 2) repeat the performance study for eID and muID

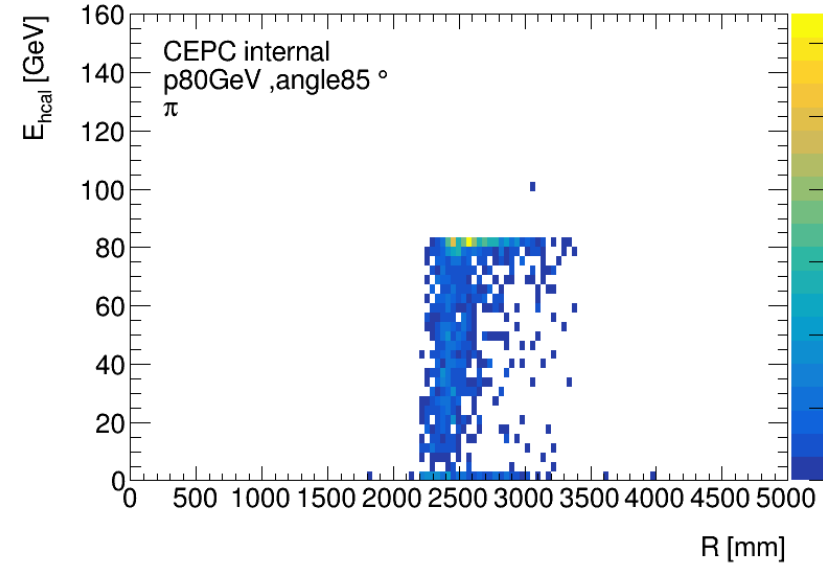
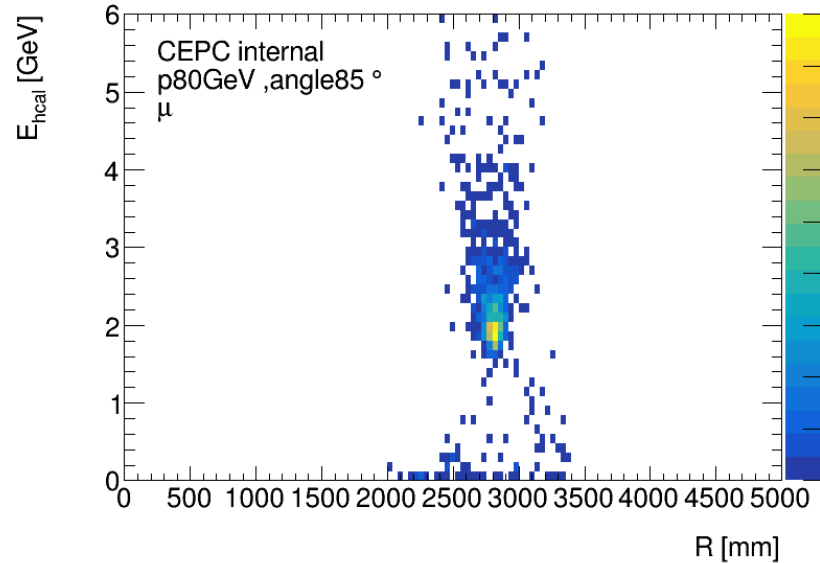
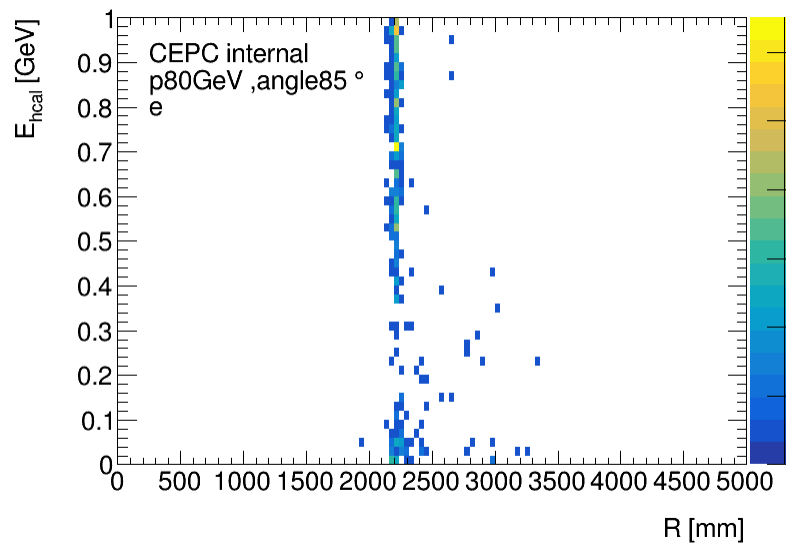
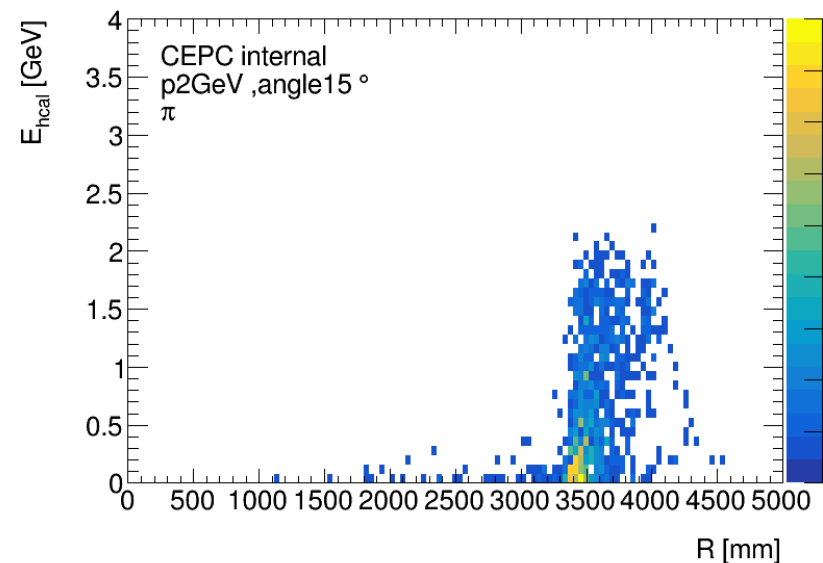
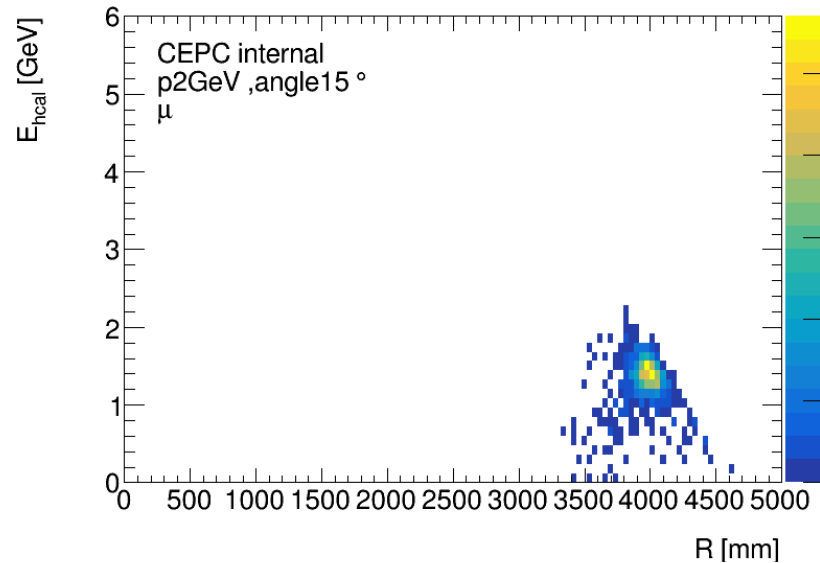
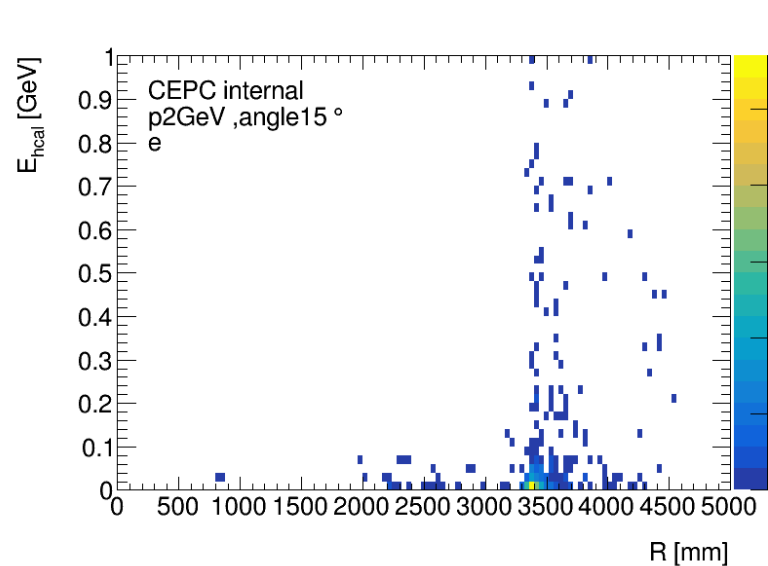
E_{ecal} vs p_{trk}



E_Hcal vs p_trk



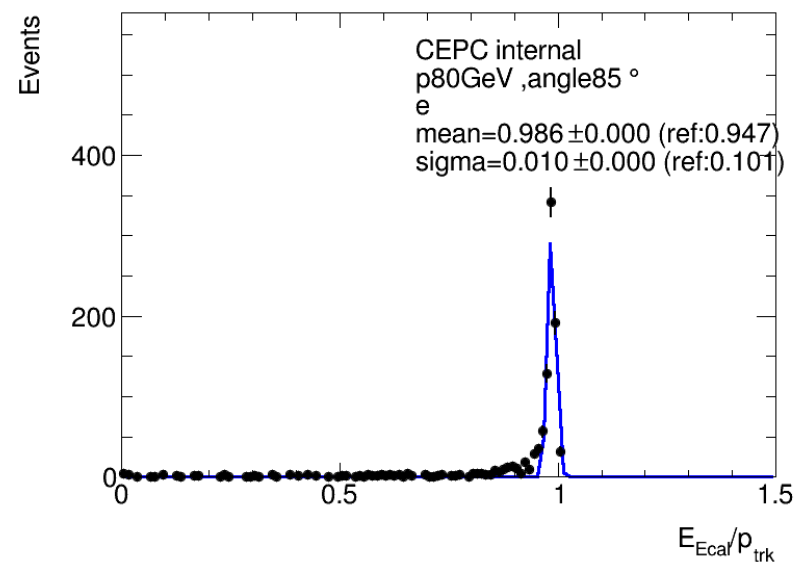
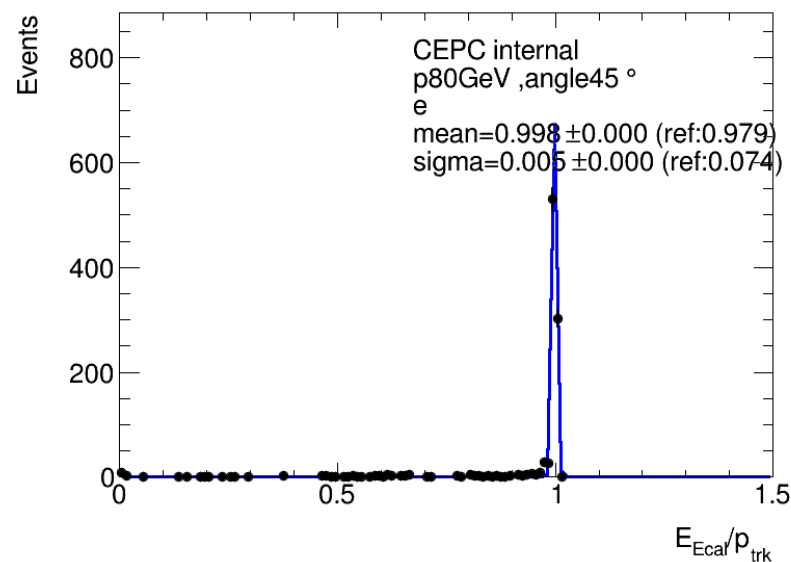
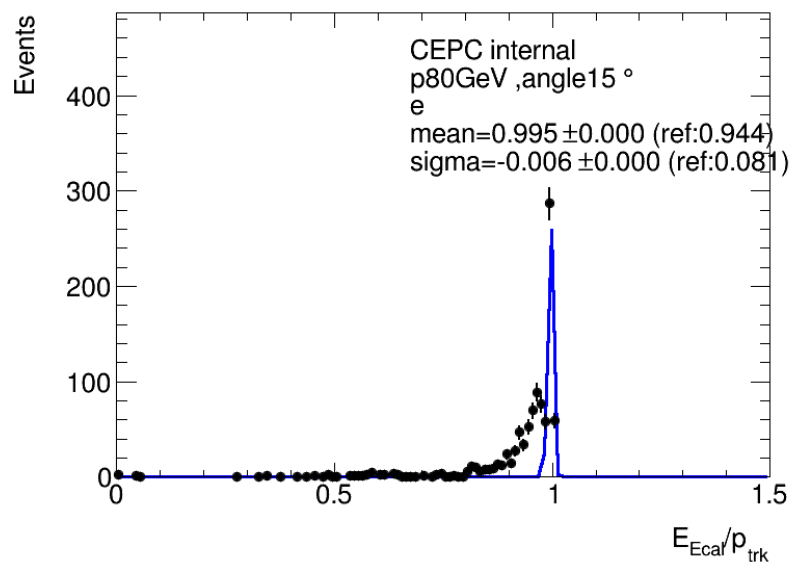
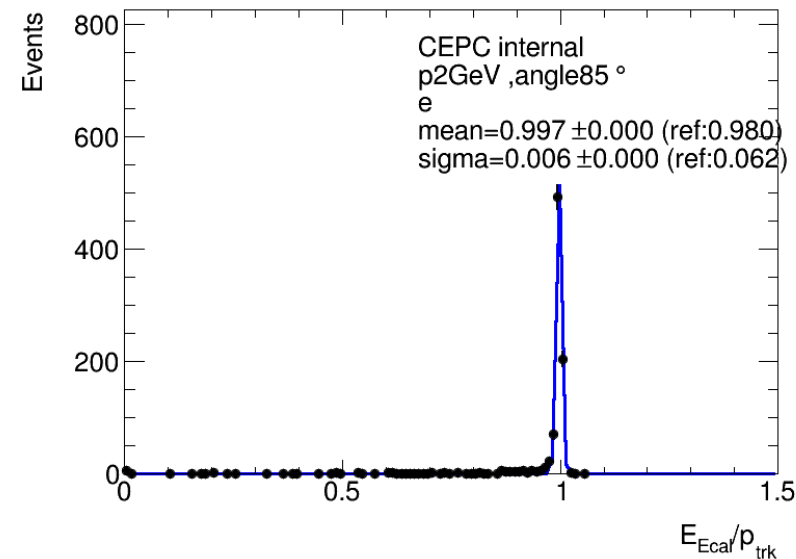
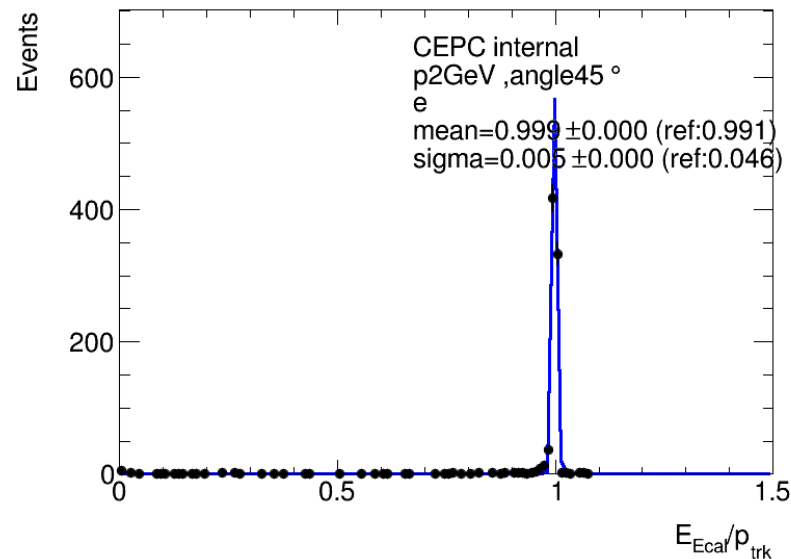
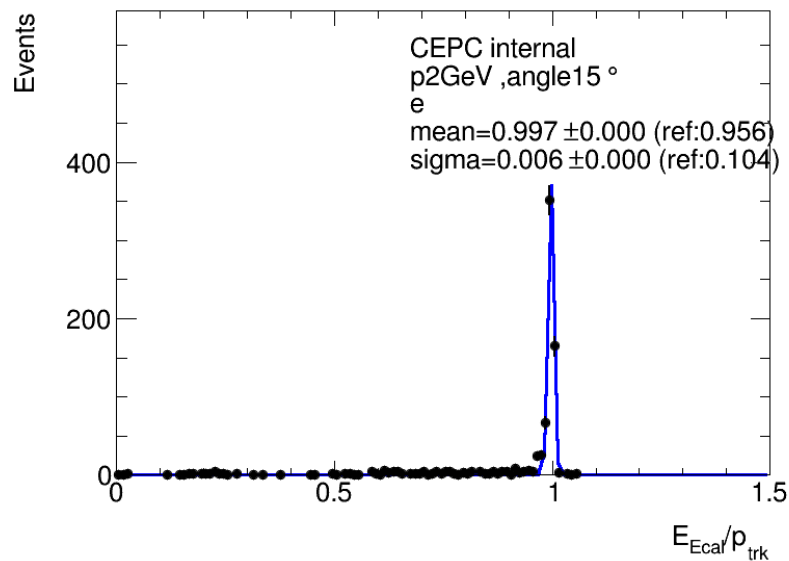
R_Hcal vs ptrk



Combined leptonID

- $\text{chi2} = \text{chi2}(\text{tpc}) + \text{chi2}(\text{tof}) + \text{chi2}(\text{Eecal/p}) + \text{chi2}(\text{Ehcal}) + \text{chi2}(\text{Rhcal})$
for electrons
- $\text{chi2} = \text{chi2}(\text{tpc}) + \text{chi2}(\text{tof}) + \text{chi2}(\text{Eecal}) + \text{chi2}(\text{Ehcal}) + \text{chi2}(\text{Rhcal})$ for muons
- Note: a subdetector like tof may fail to reconstruct tof and $\text{chi2}(\text{tof}) = 0$.

Fit examples



Summary

- 1) Gelang got the correct the ecal/hcal information from my ntuples (Thanks!)
- 2) repeat the performance study for eID and muID
- Work to do:
 - 1) update the mean/sigma defined for eID and muID
 - 2) update FinalPID package (with the help of Gelang)
 - 3) include the hits in muon spectrometer information in muID