Lepton ID Update

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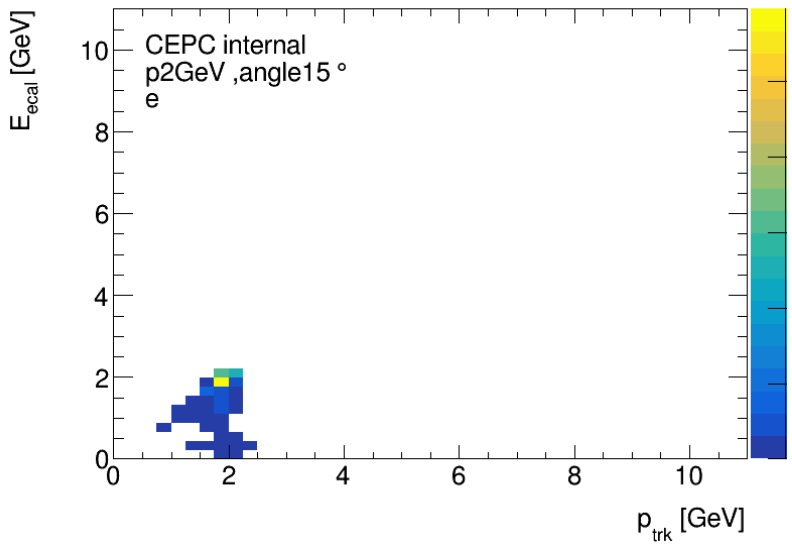
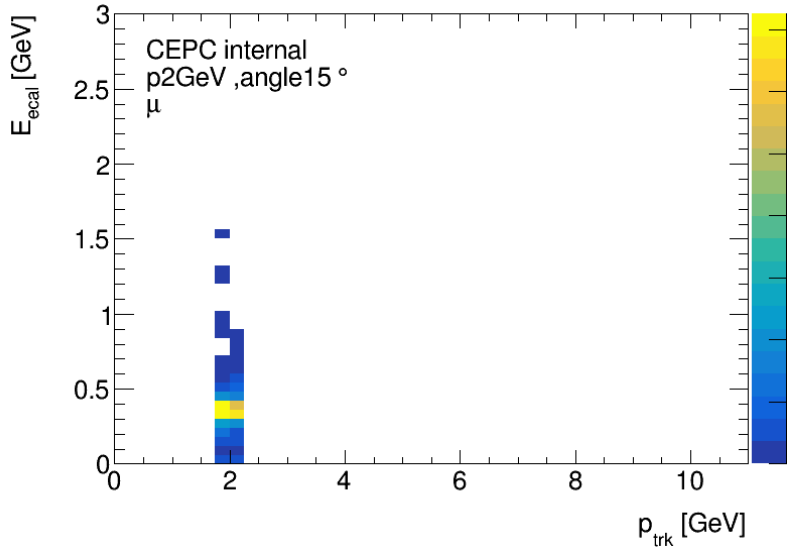
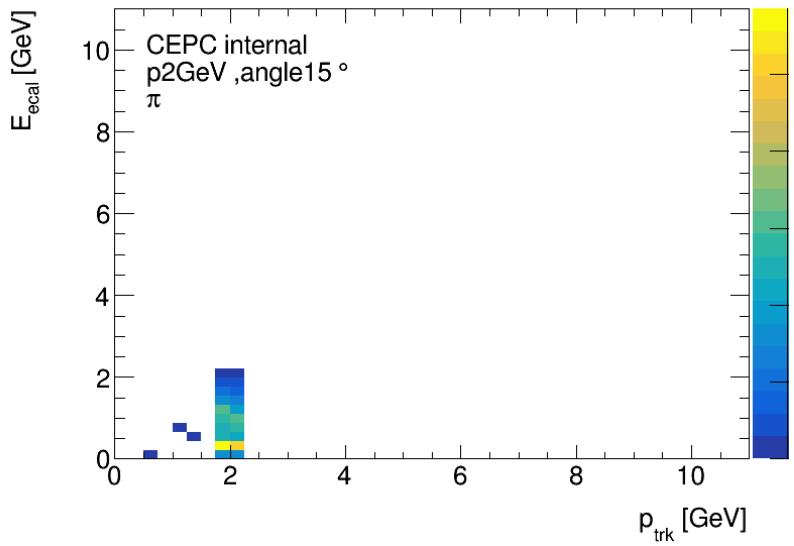
Updates

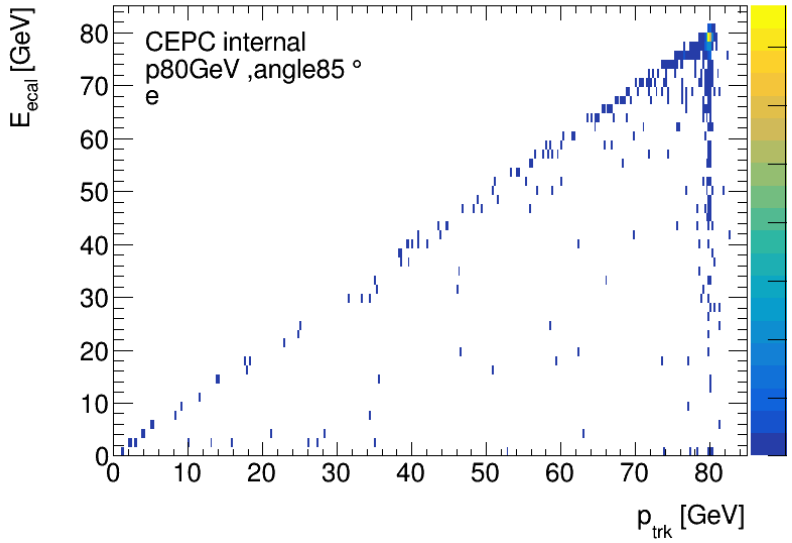
- 1) repeat the performance study for eID and muID
  (use correct the ecal/hcal information supported by Geliang)
- 2) update the mean/sigma defined for eID and muID
- 3) try to add MindR and dd in muID

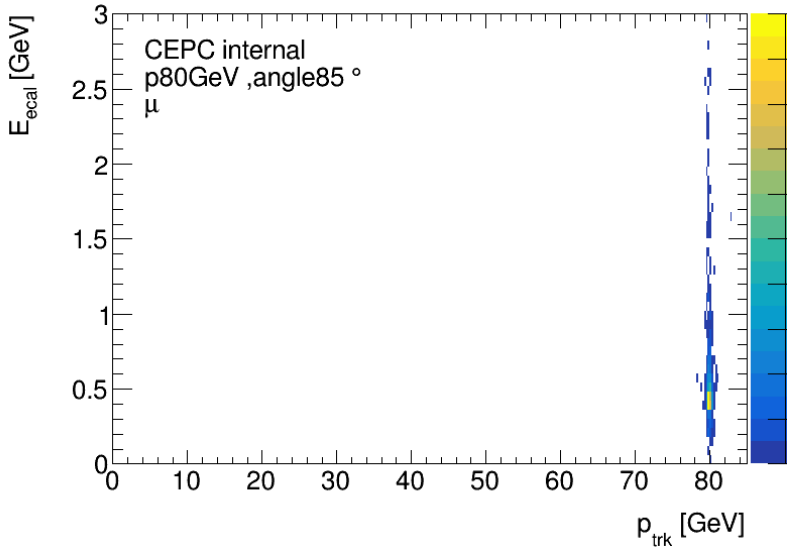
E_Ecal vs ptrk

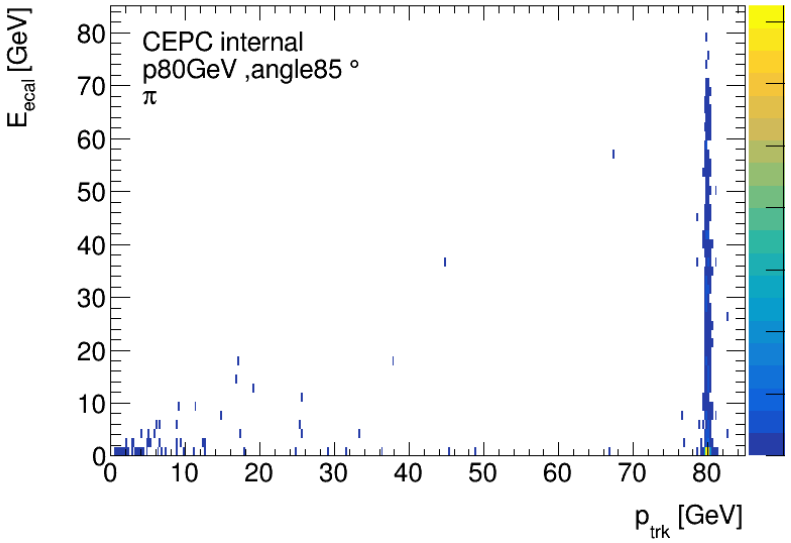




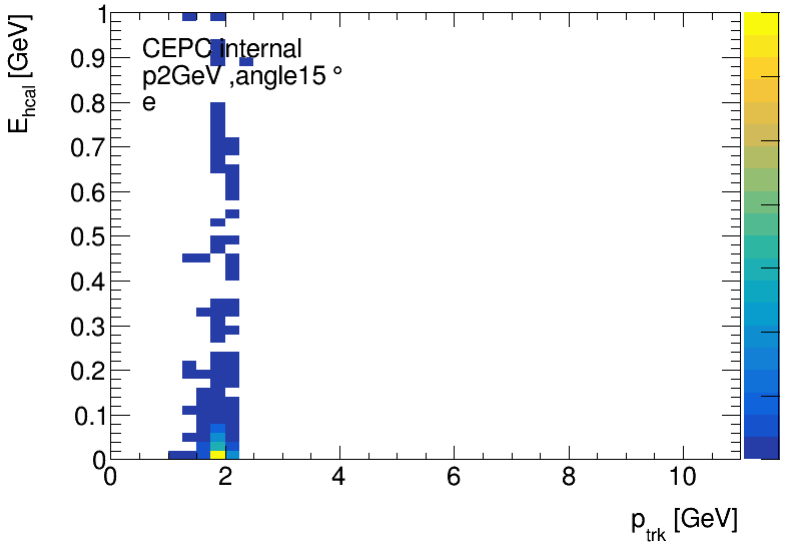


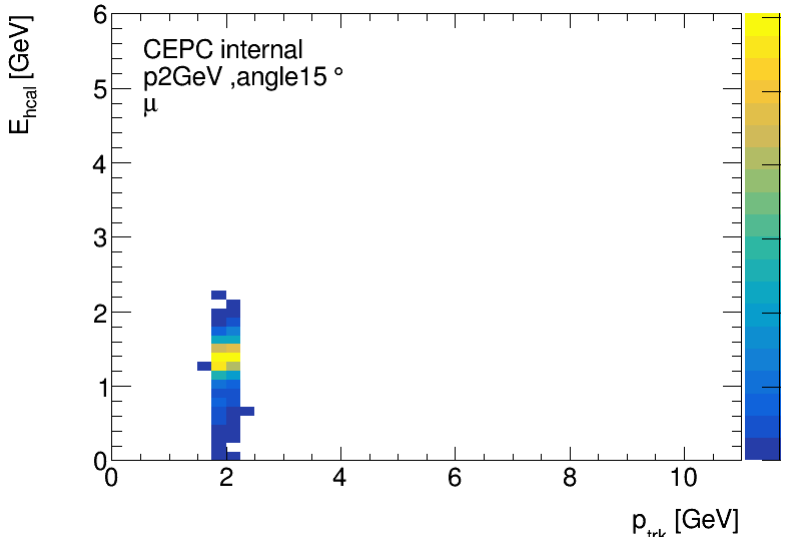


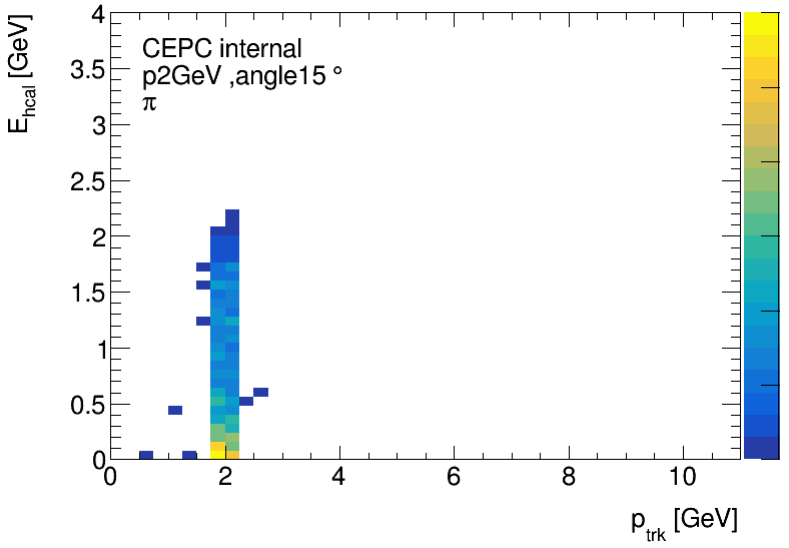


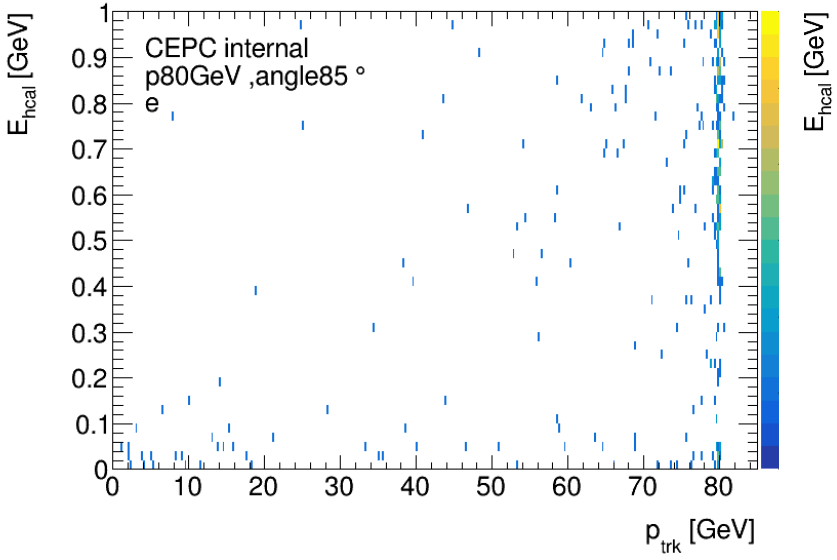


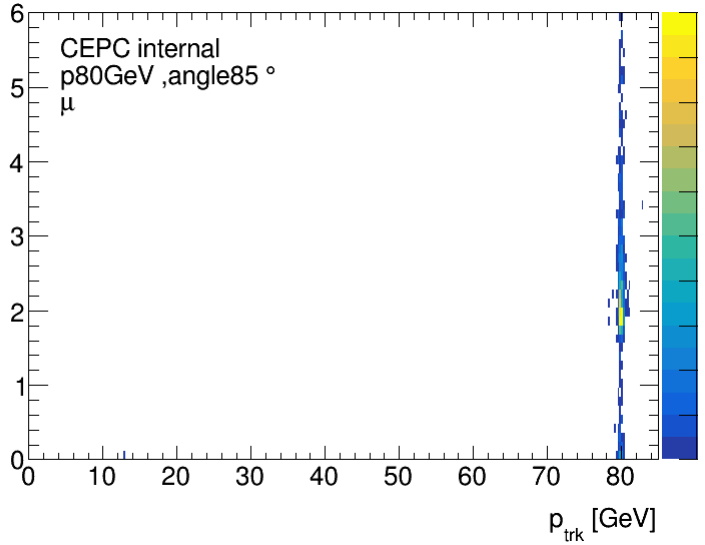
E_Hcal vs ptrk

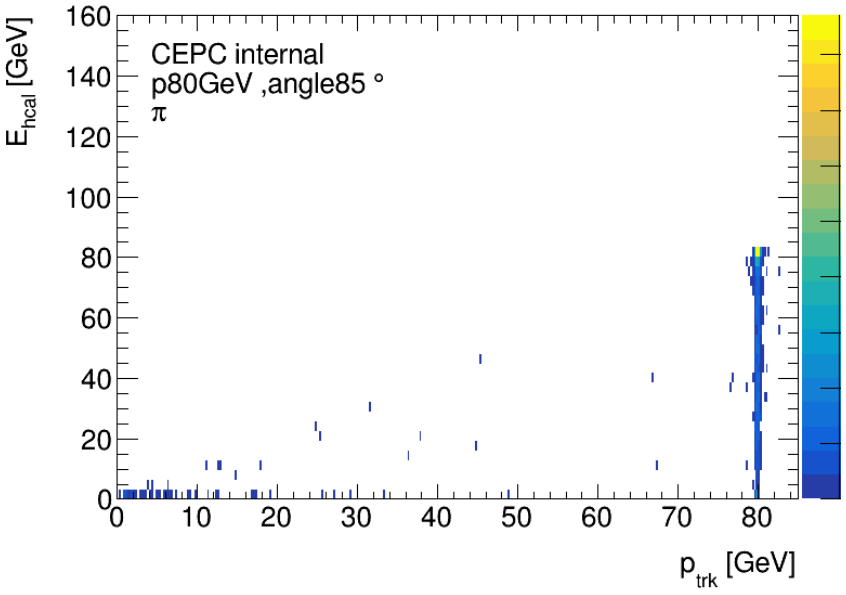




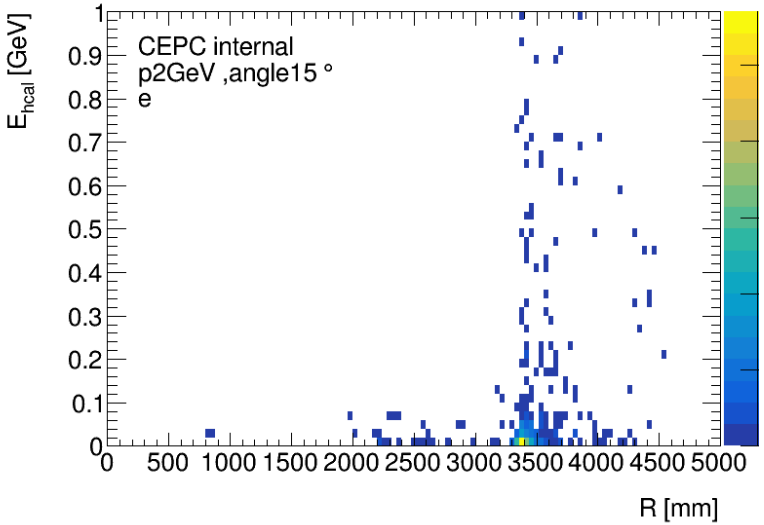


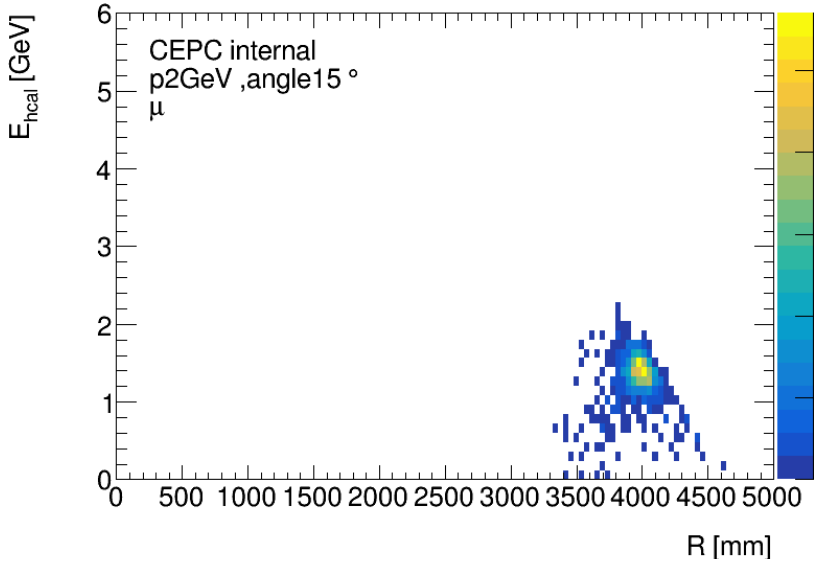


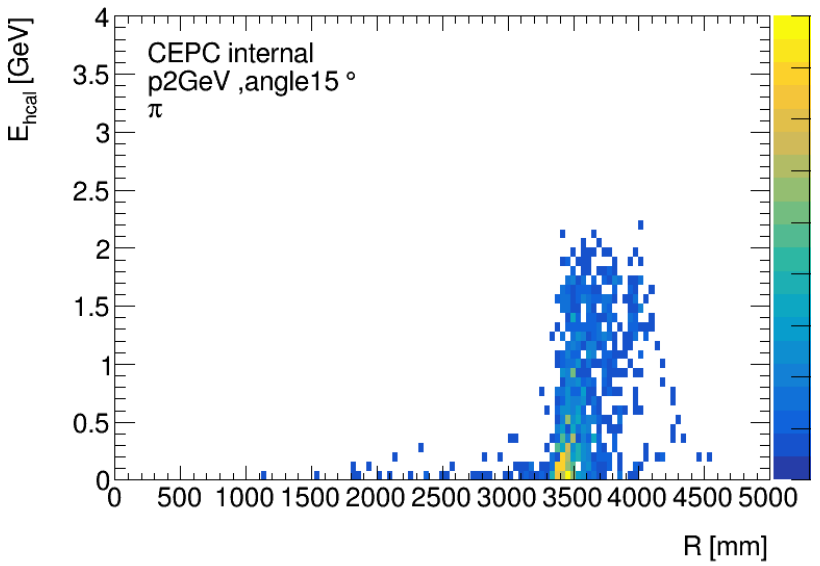


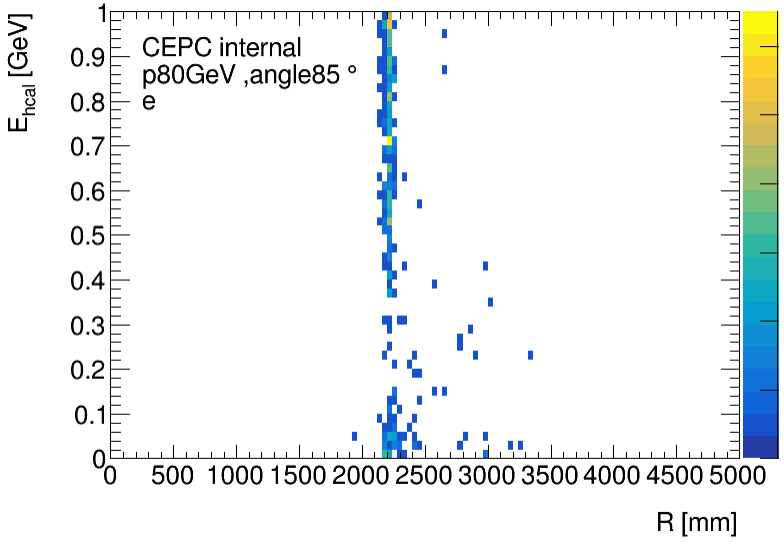


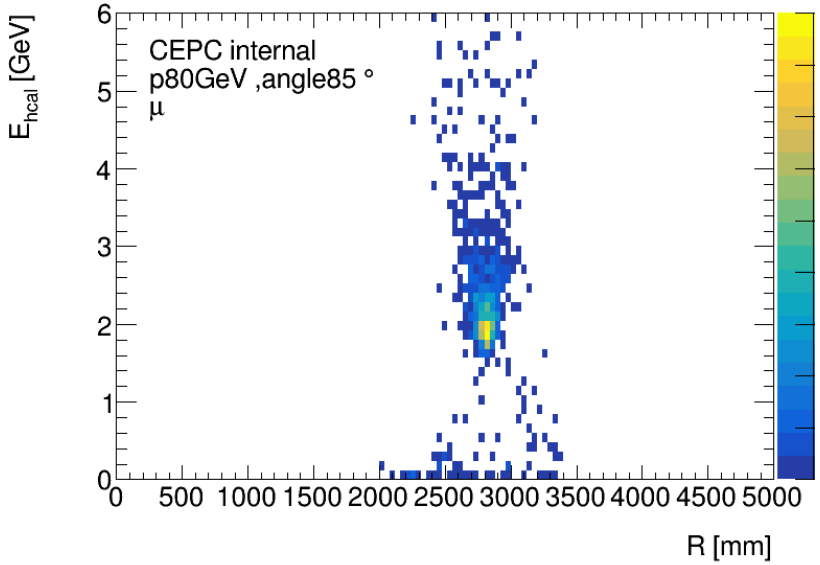
R_Hcal vs ptrk

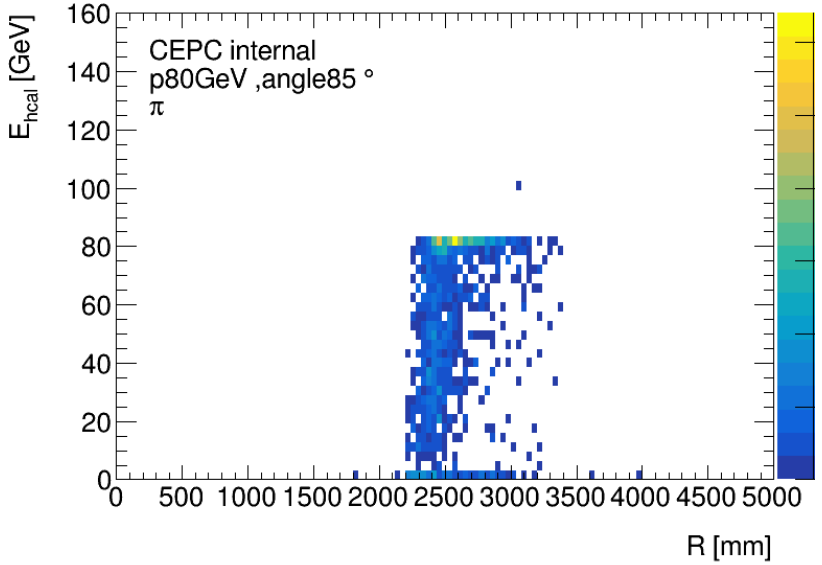












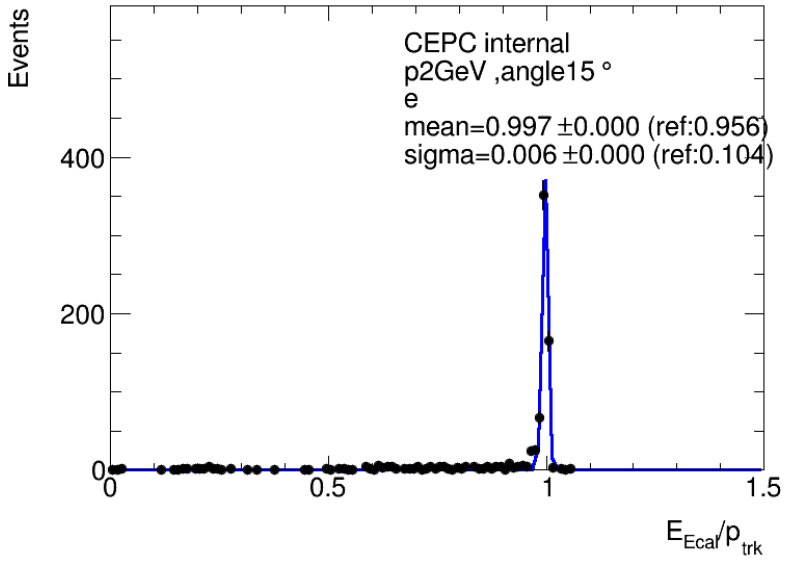
Combined leptonID

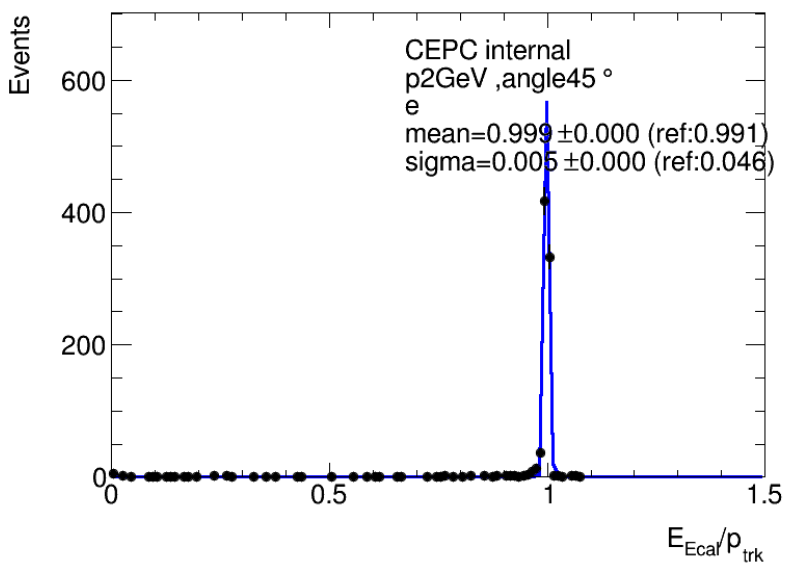
- chi2=chi2(tpc)+chi2(tof)+chi2(Eecal/p)+chi2(Ehcal)+chi2(Rhcal)
  [+chi2(MindR)+chi2(dd)]
  for electrons

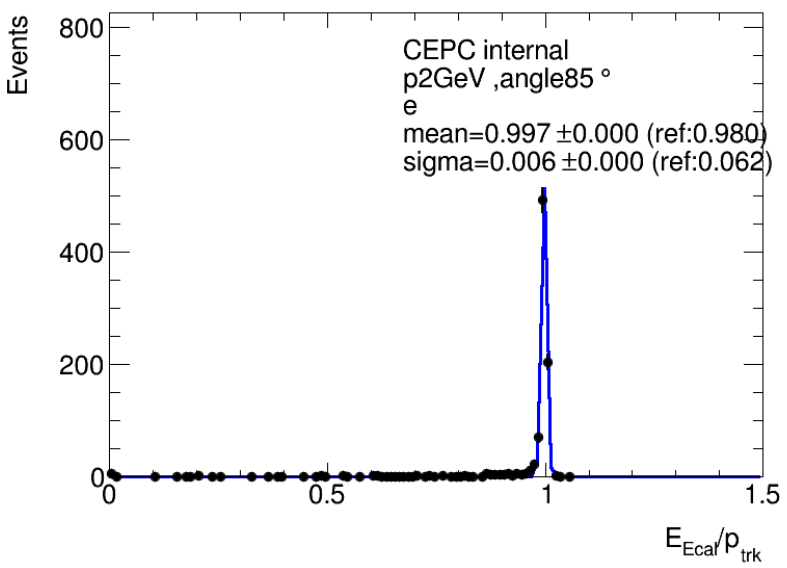
- chi2=chi2(tpc)+chi2(tof)+chi2(Eecal)+chi2(Ehcal)+chi2(Rhcal)
  [+chi2(MindR)+chi2(dd)]
  for muons

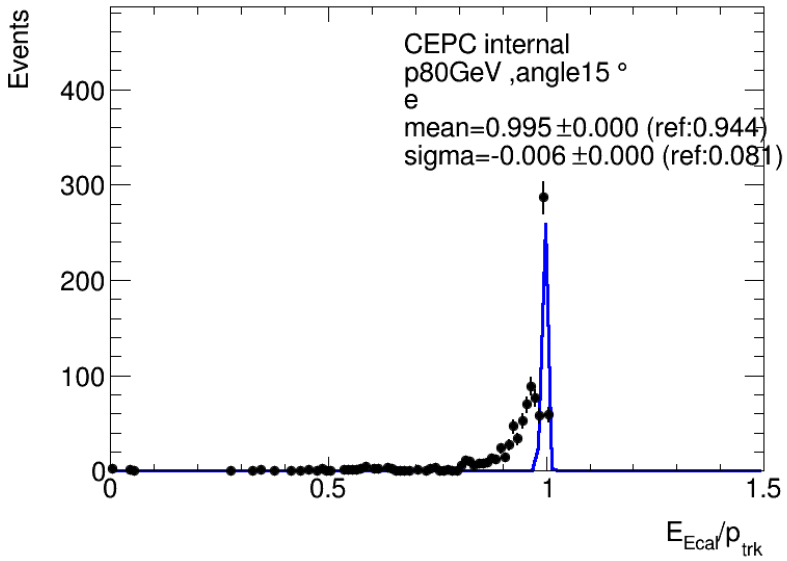
- Note: a subdetector like tof may fail to reconstruct tof and chi2(tof)=0.

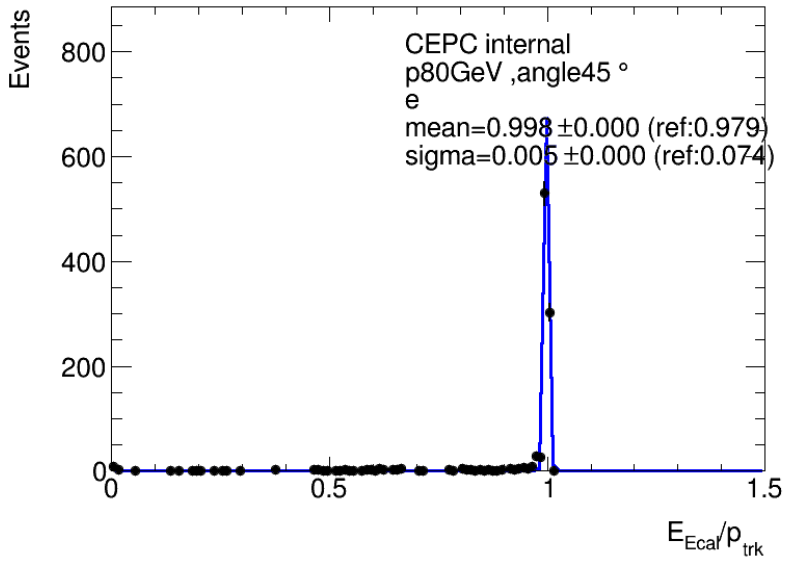
Fit examples

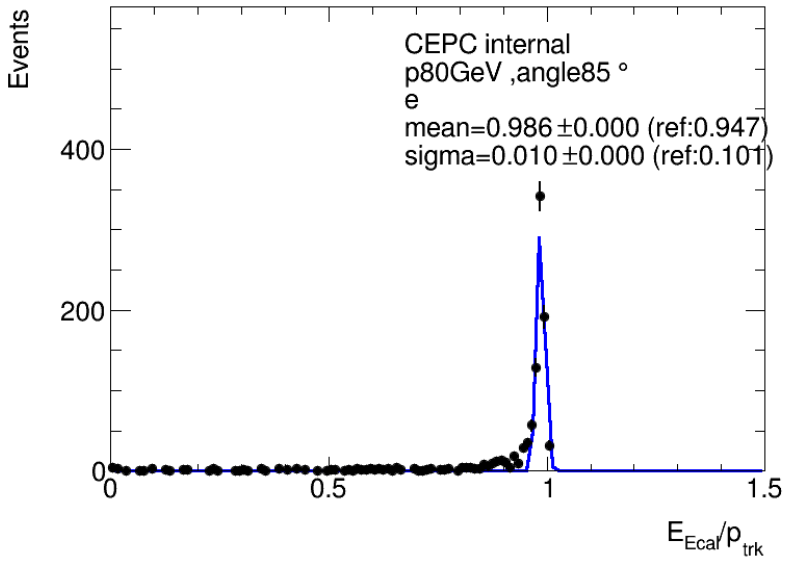




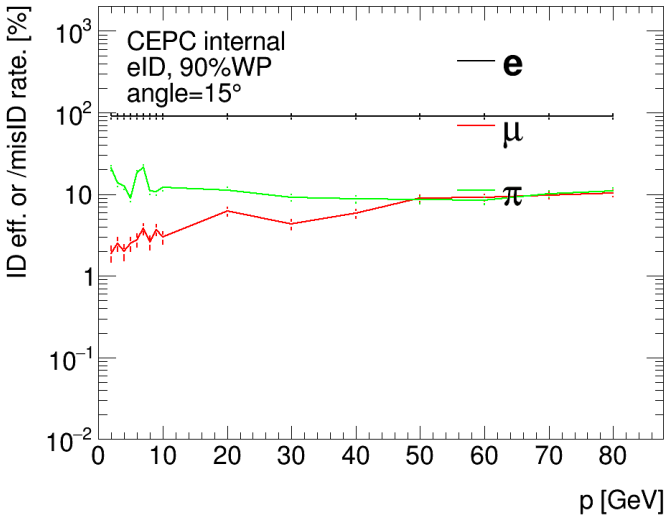


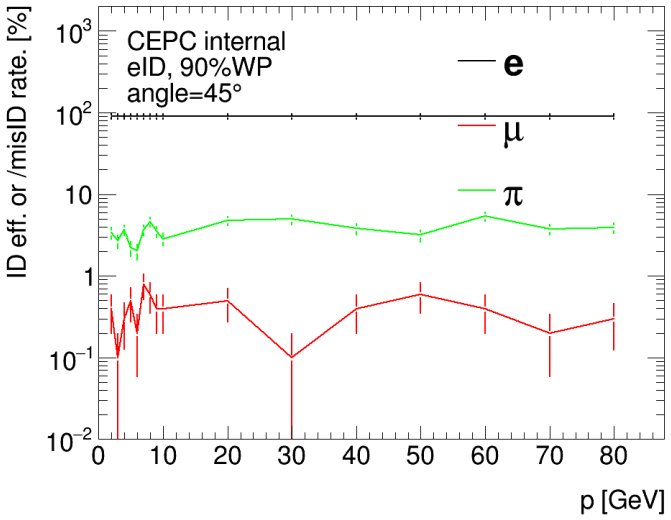


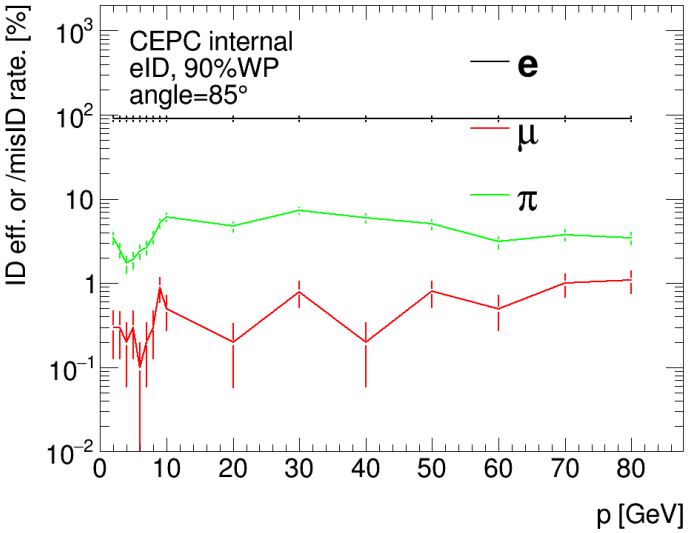


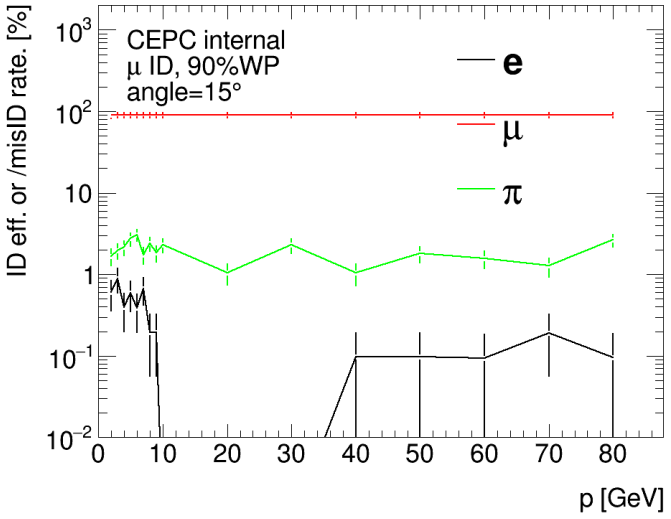


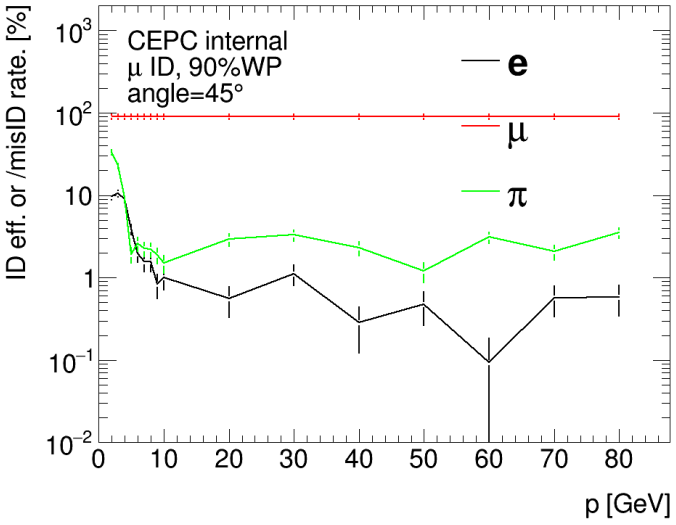
Performance examples:

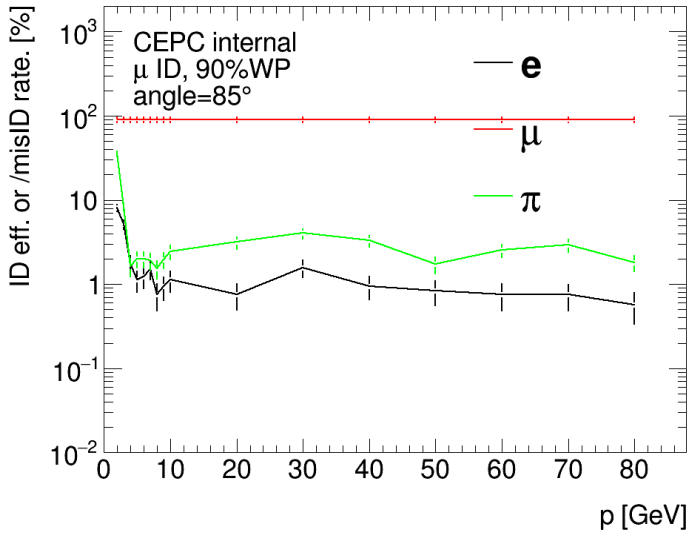




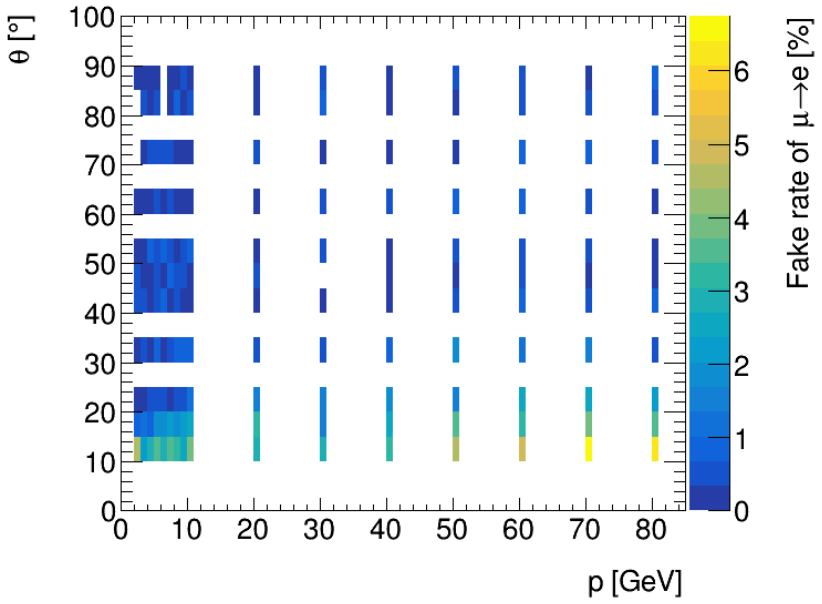


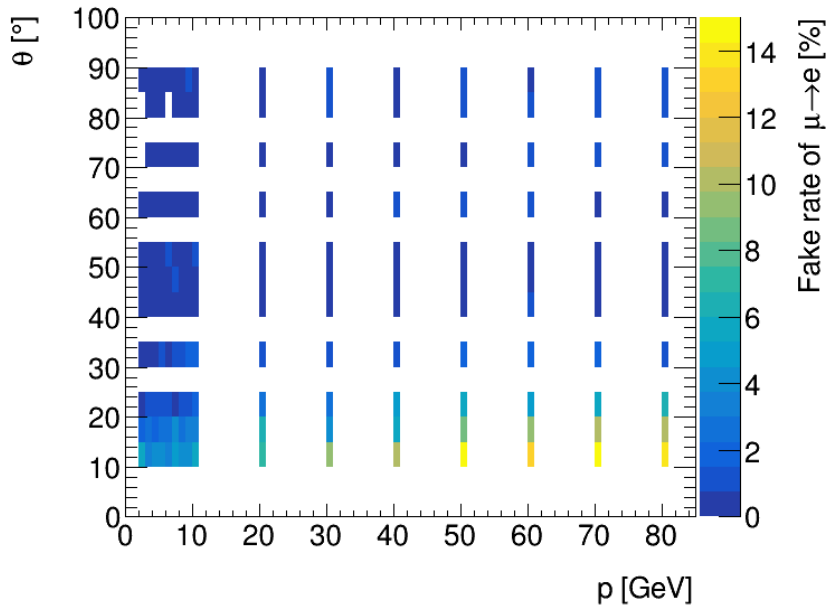


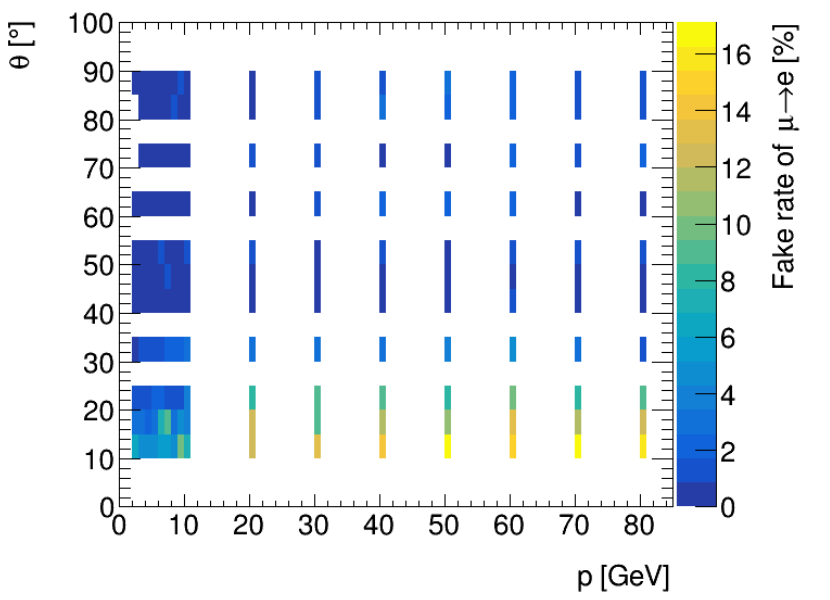


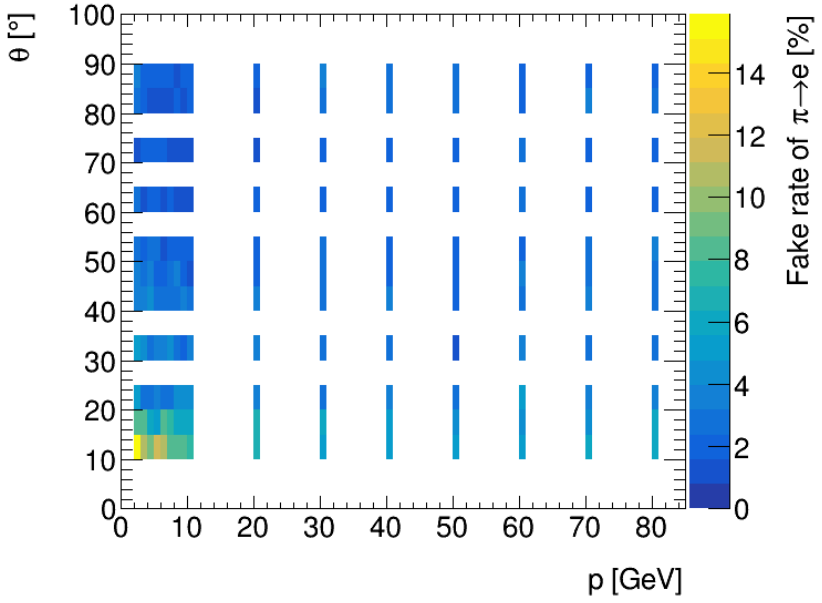


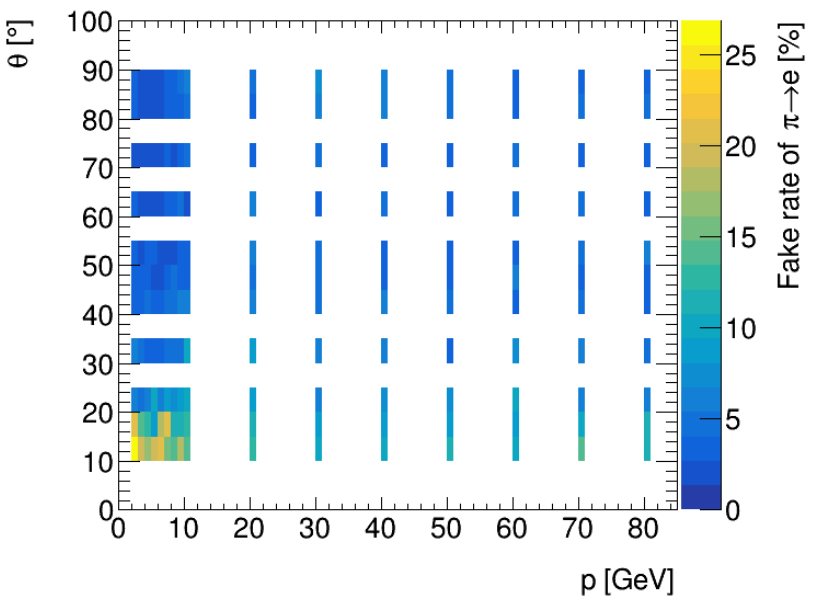
eID: 70%WP (left) . 90%WP and 95% WP (right)

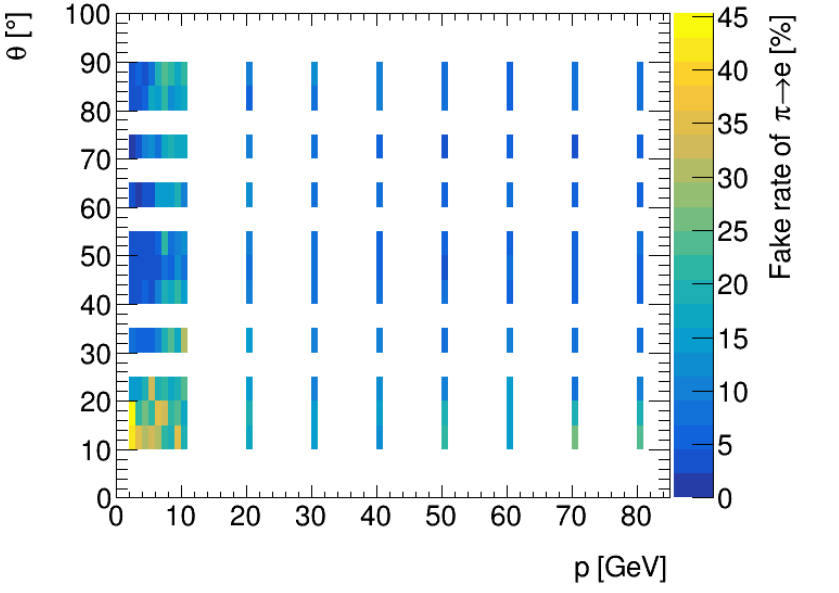




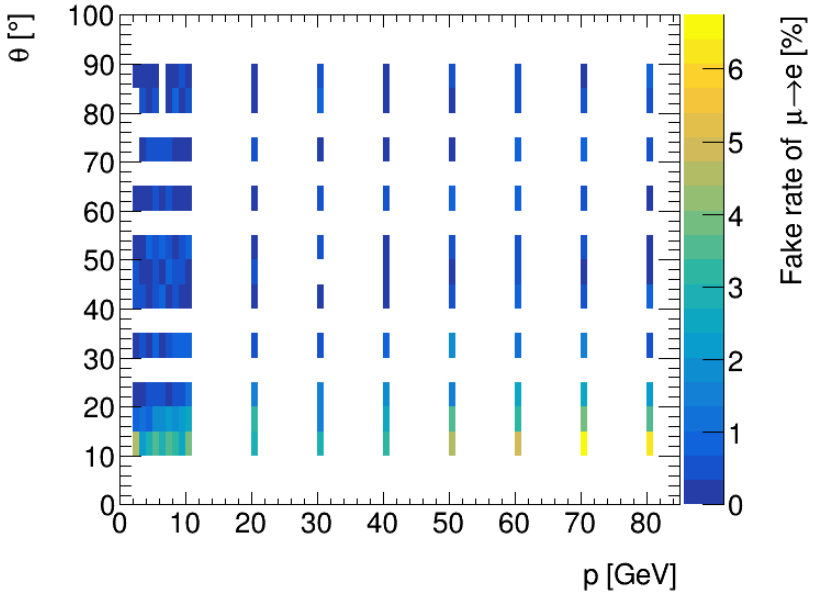


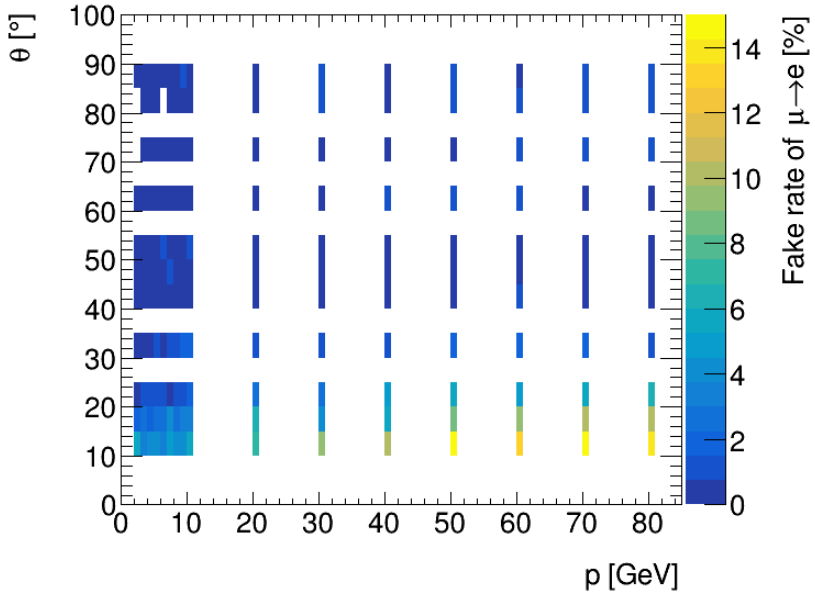


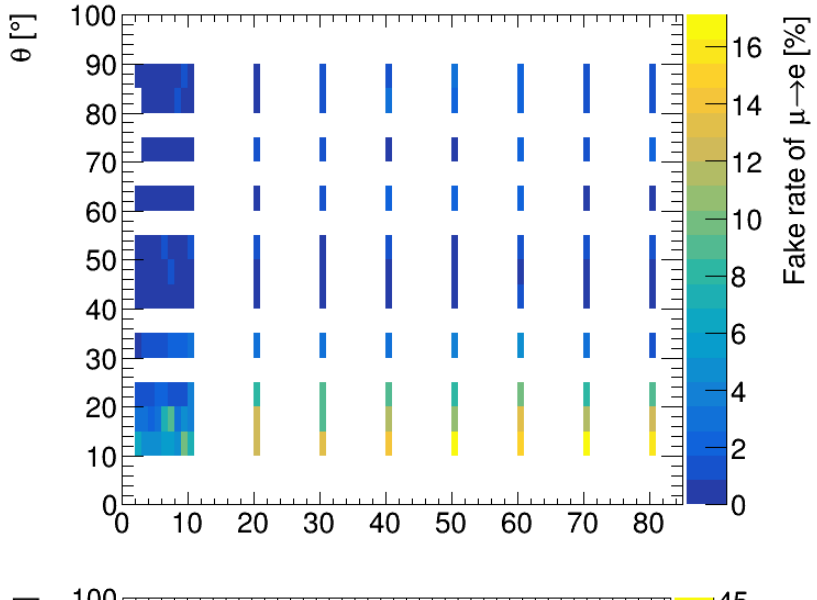


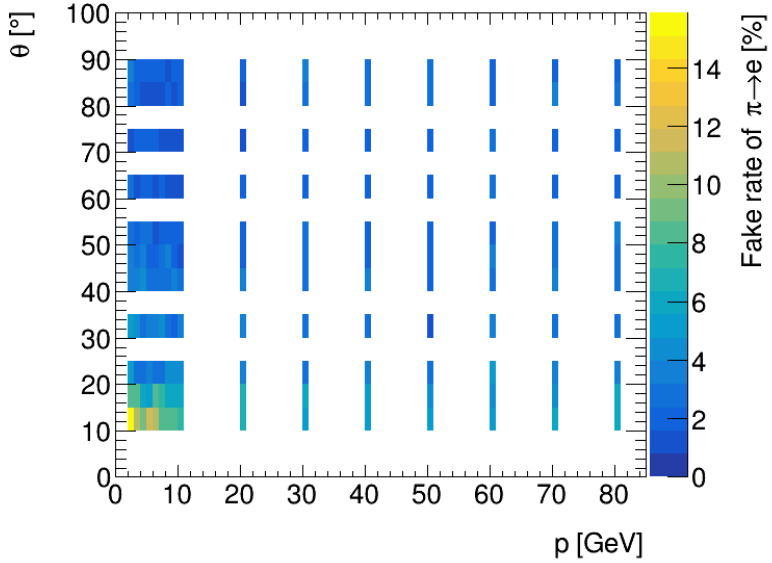


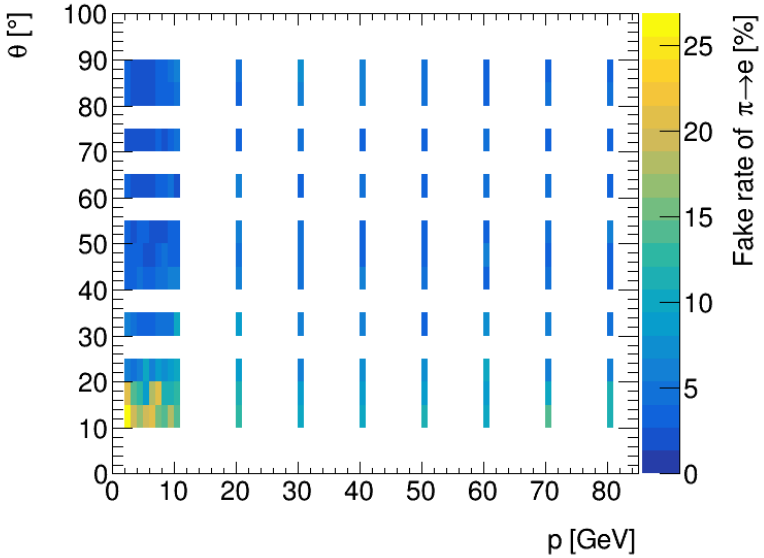
eID: 70%WP (left) , 90%WP and 95% WP (right)
With MindR and dd

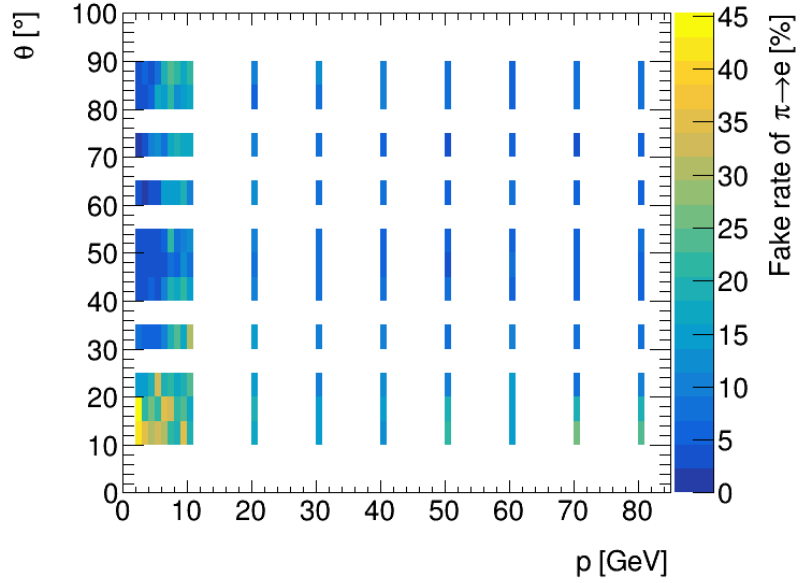




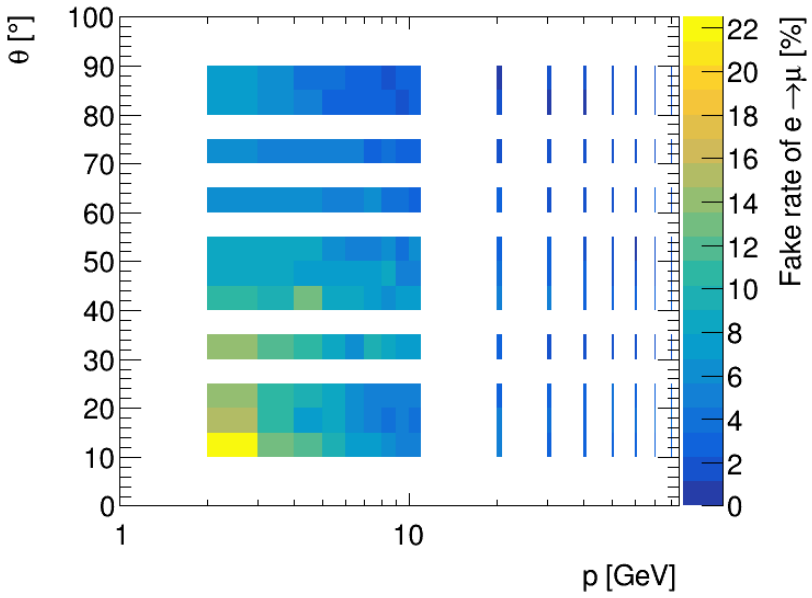


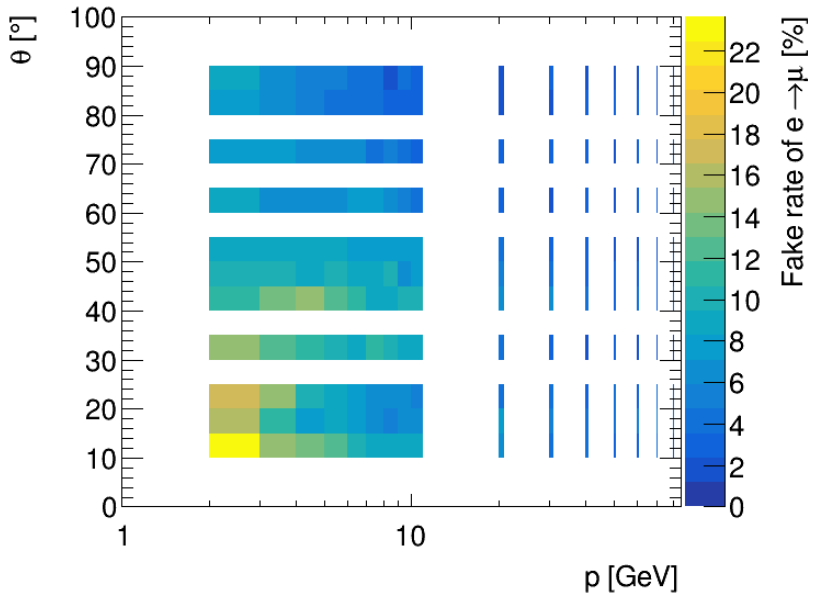


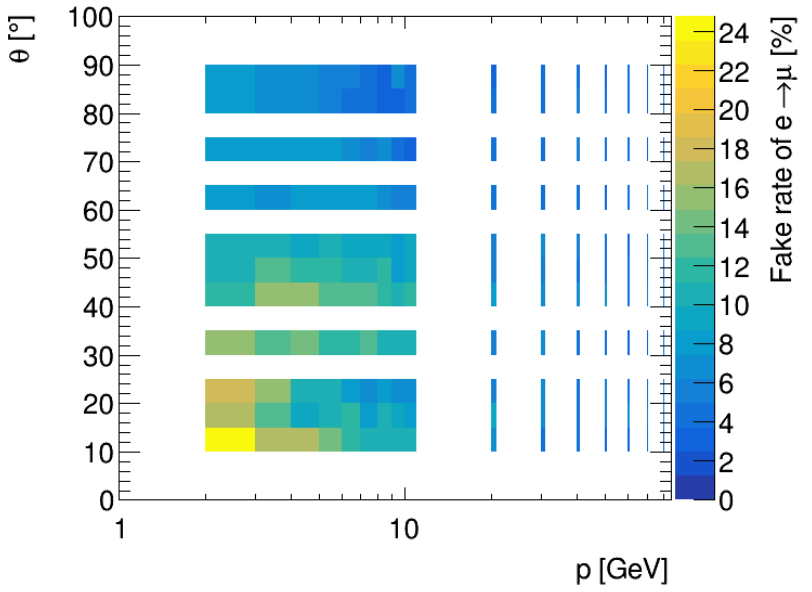


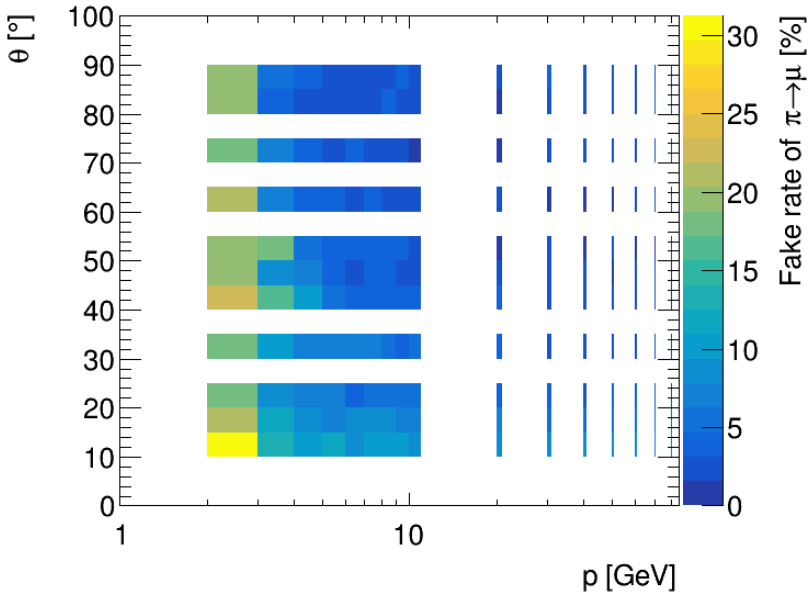


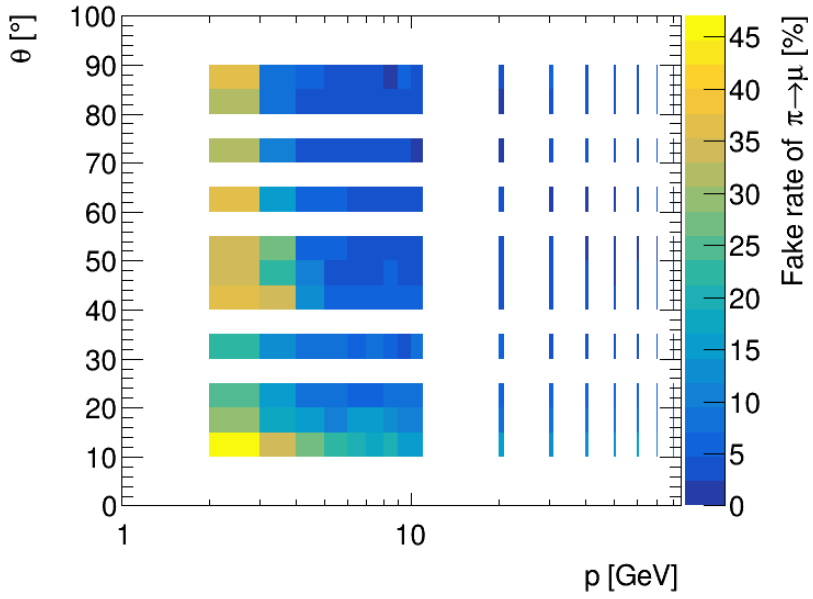
muID: 70%WP (left), 90% WP and 95% WP (right)

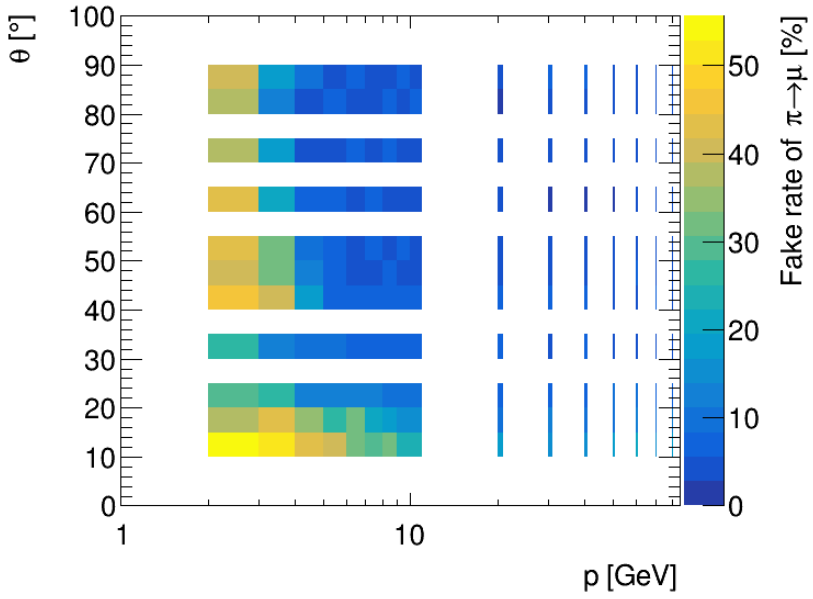




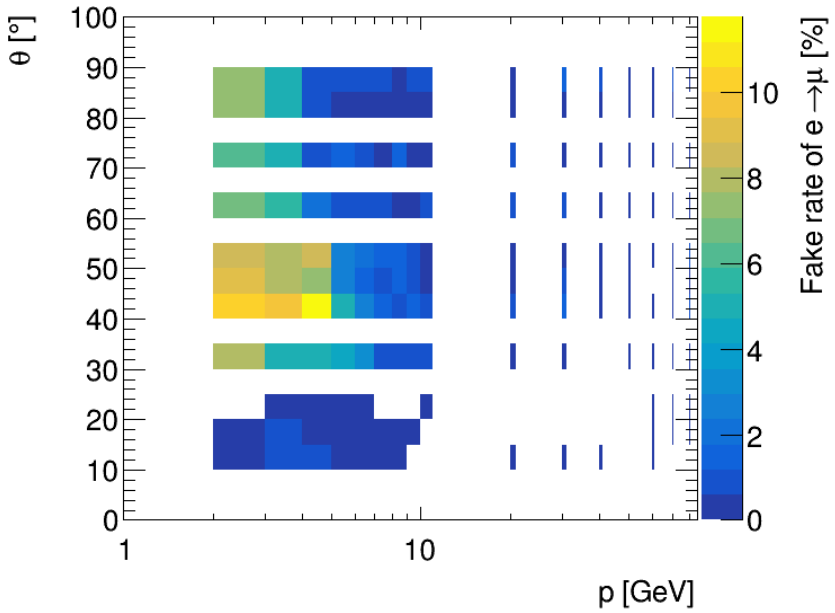


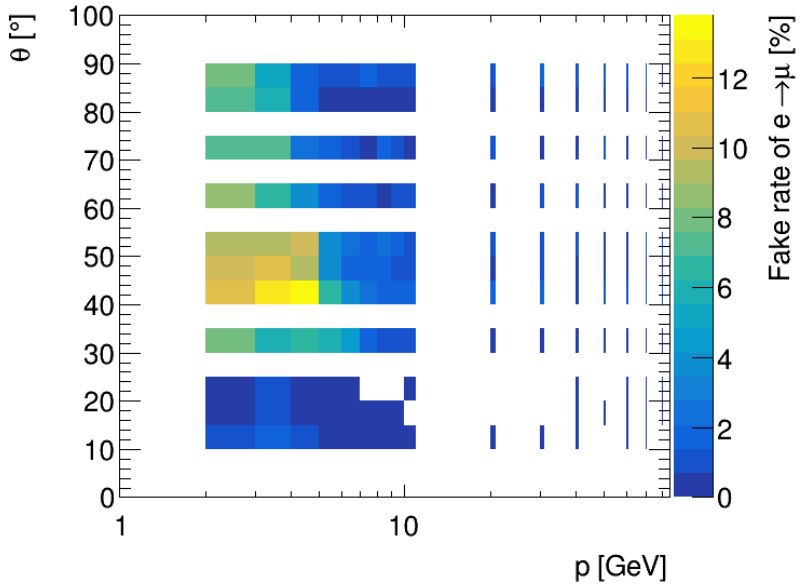


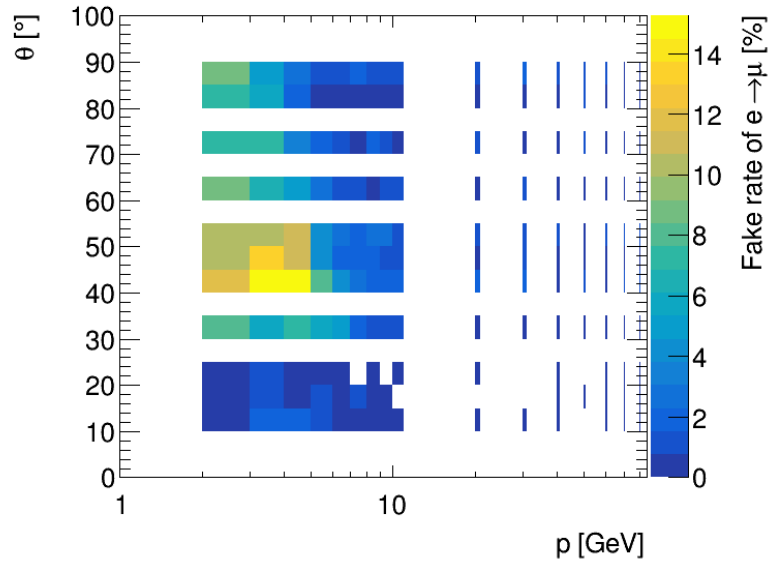


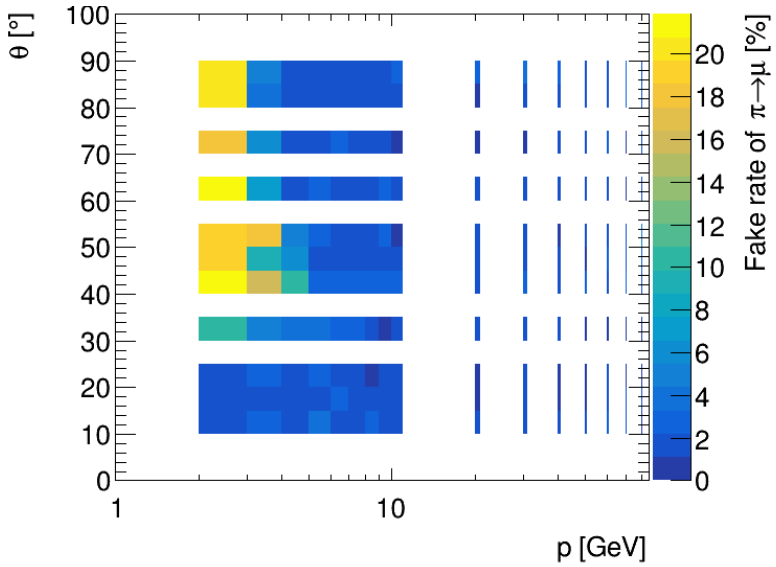


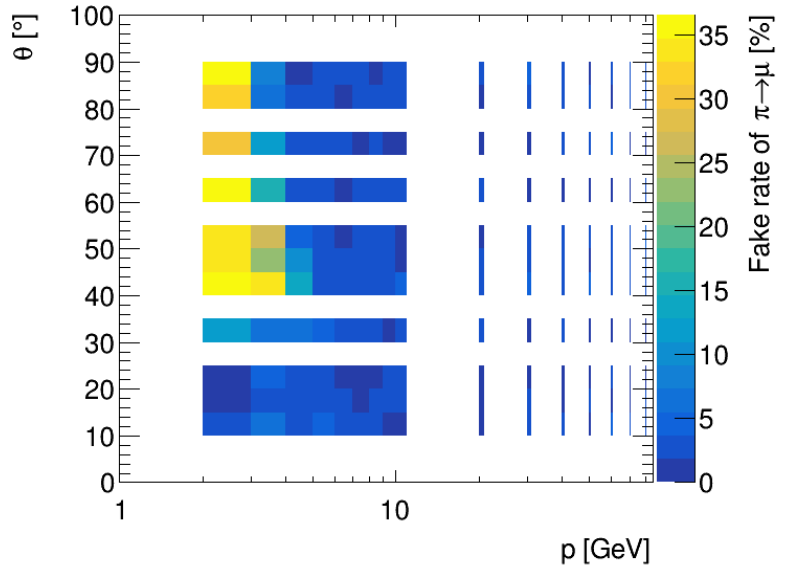
muID: 70%WP (left), 90% WP and 95% WP (right) with MindR and dd

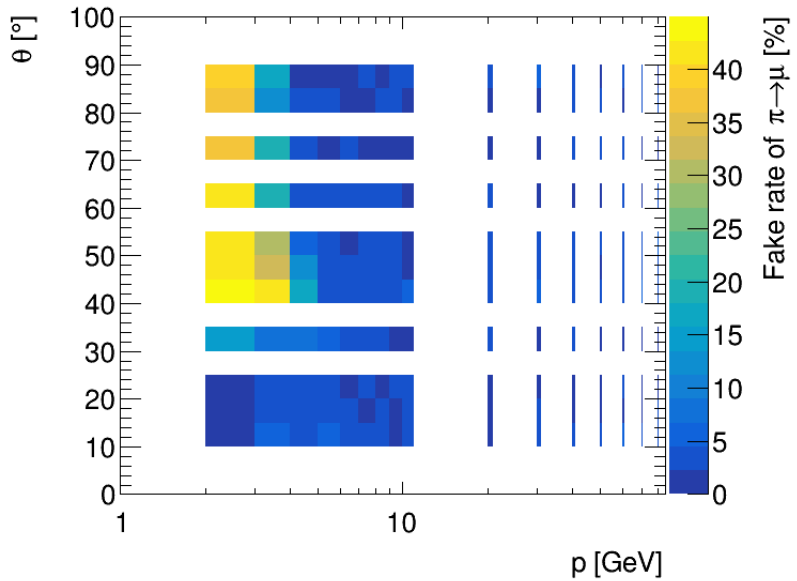




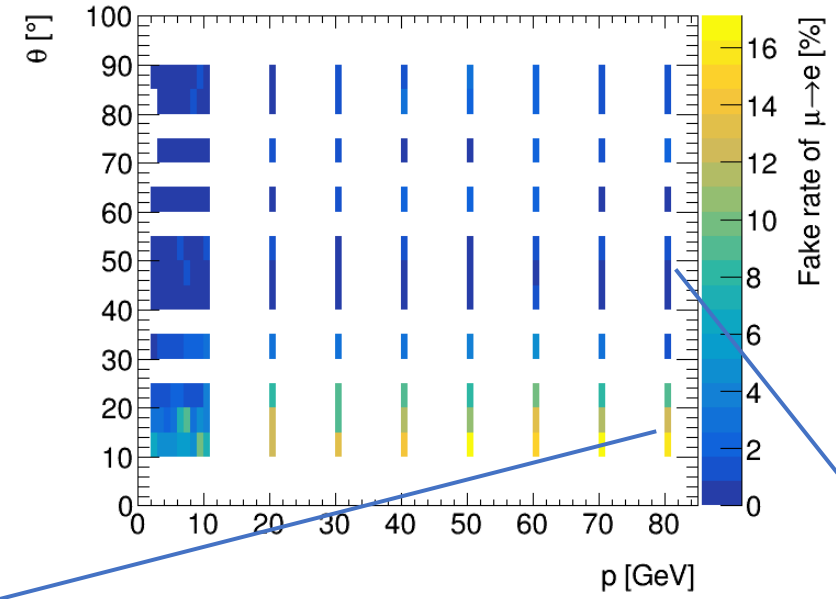


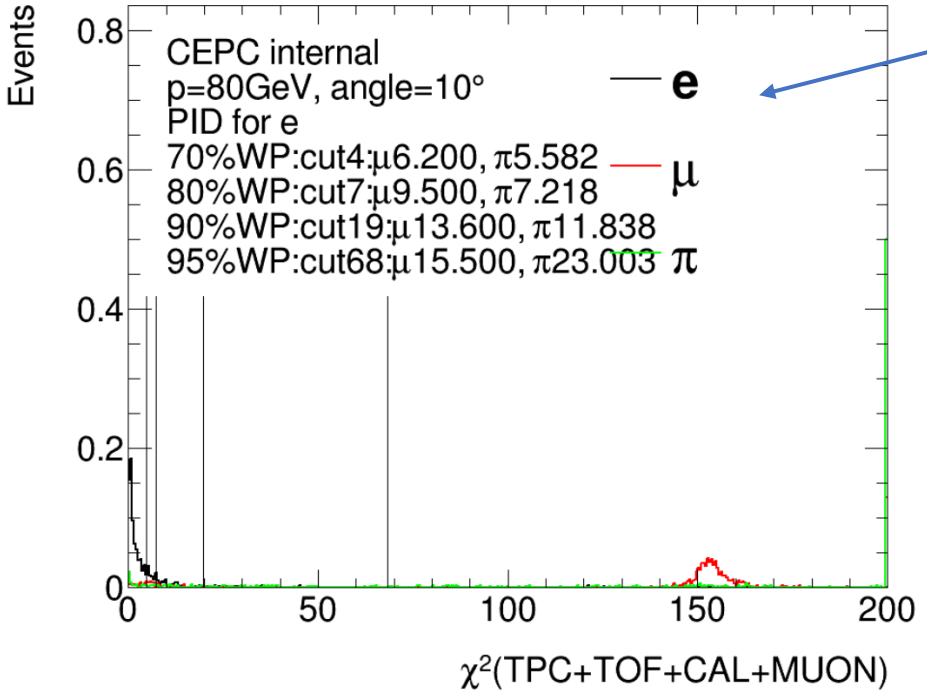


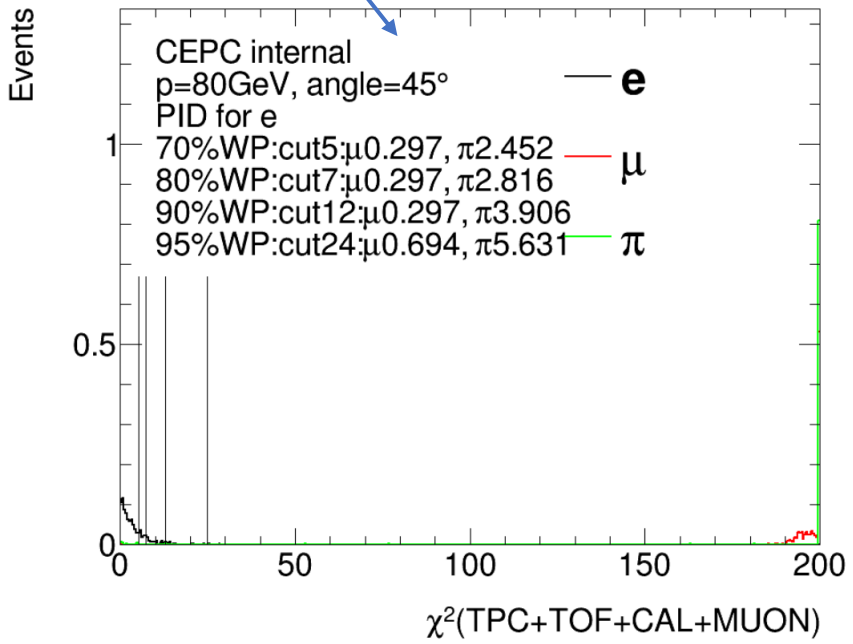




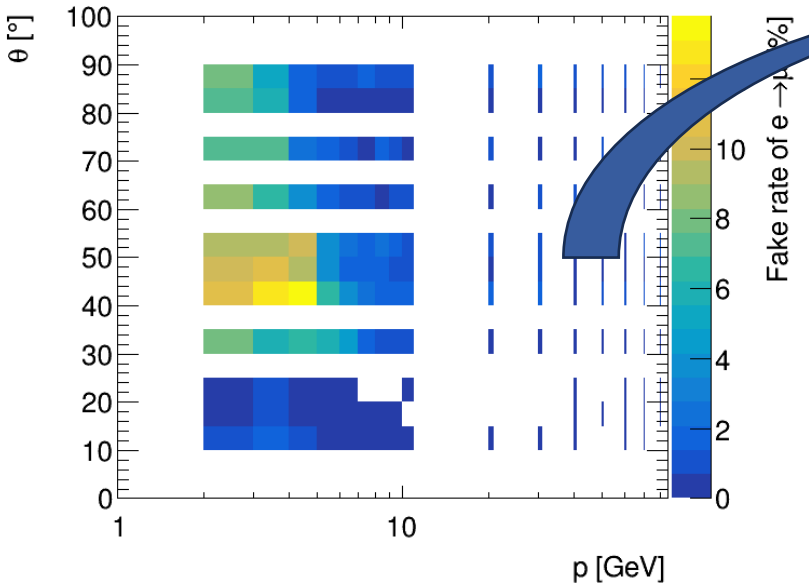
eID: 70% WP high momentum

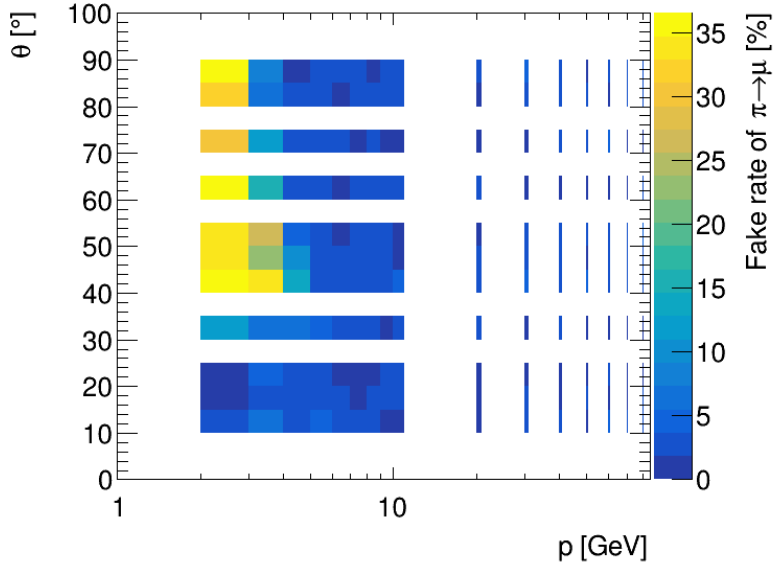


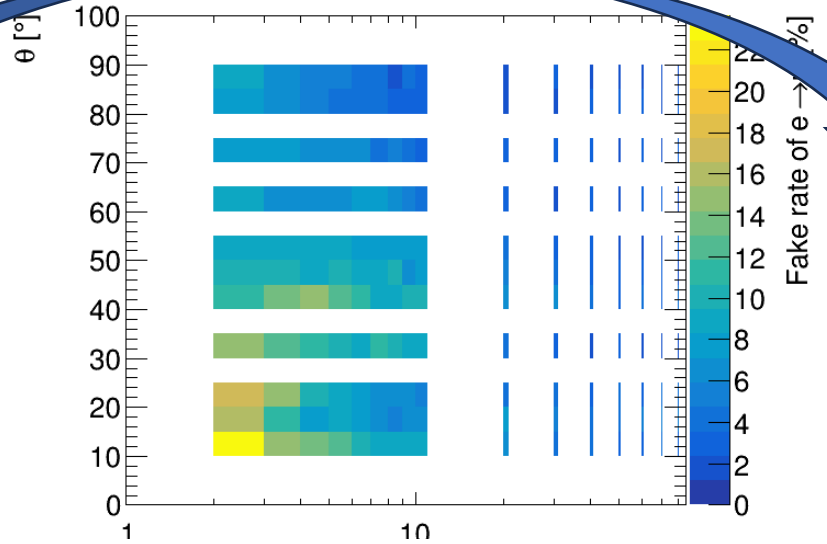


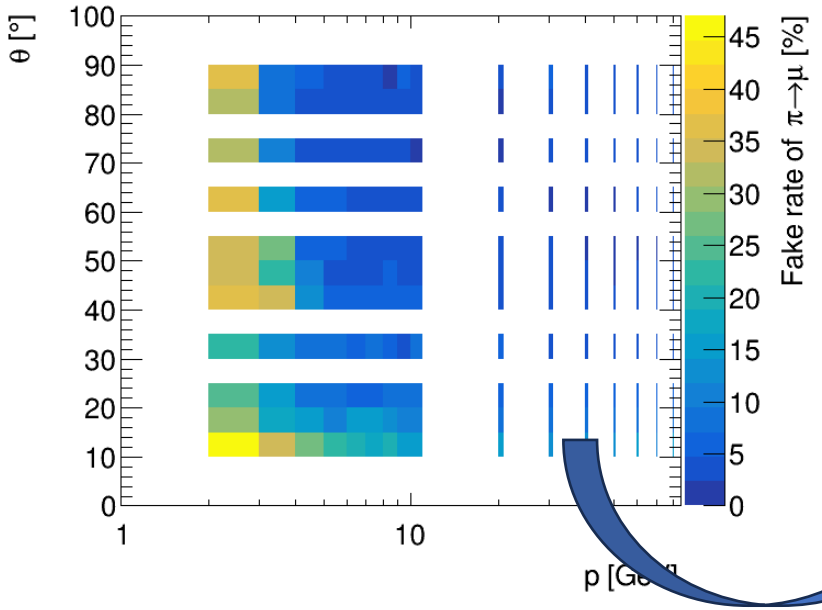


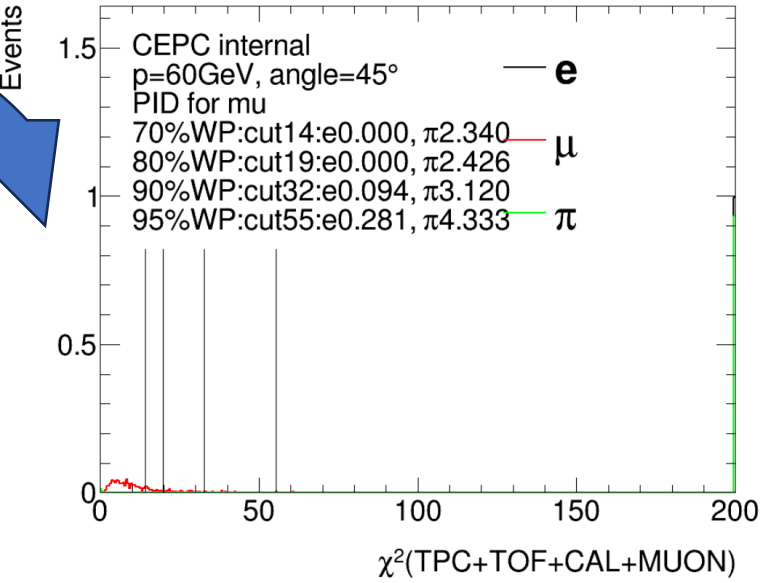
With v.s. without MindR and dd(90% WP)

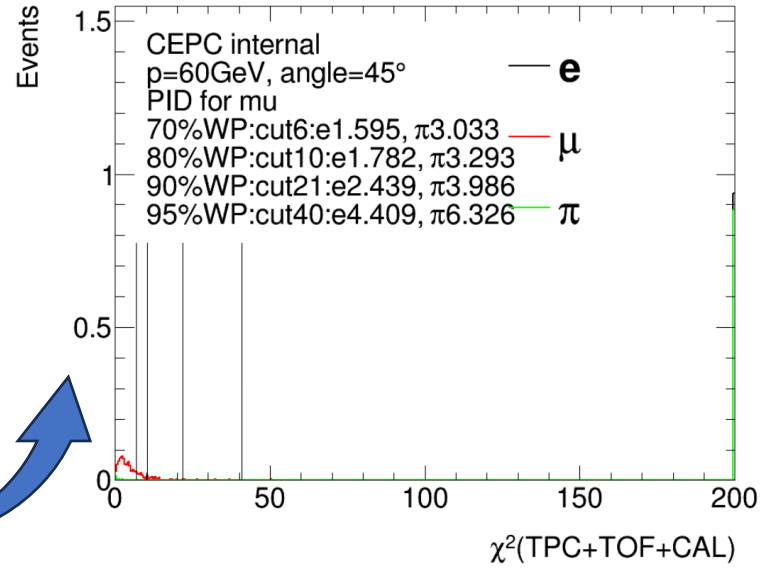












Summary

- 1) repeat the performance study for eID and muID
- 2) update the mean/sigma defined for eID and muID
- 3) try to add MindR and dd in muID

- Work to do:
- 1) include the hits in muon spectrometer information in muID
- 2) update FinalPID package