

FORWARD DETECTOR RECONSTRUCTION STUDIES

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Collaboration meeting
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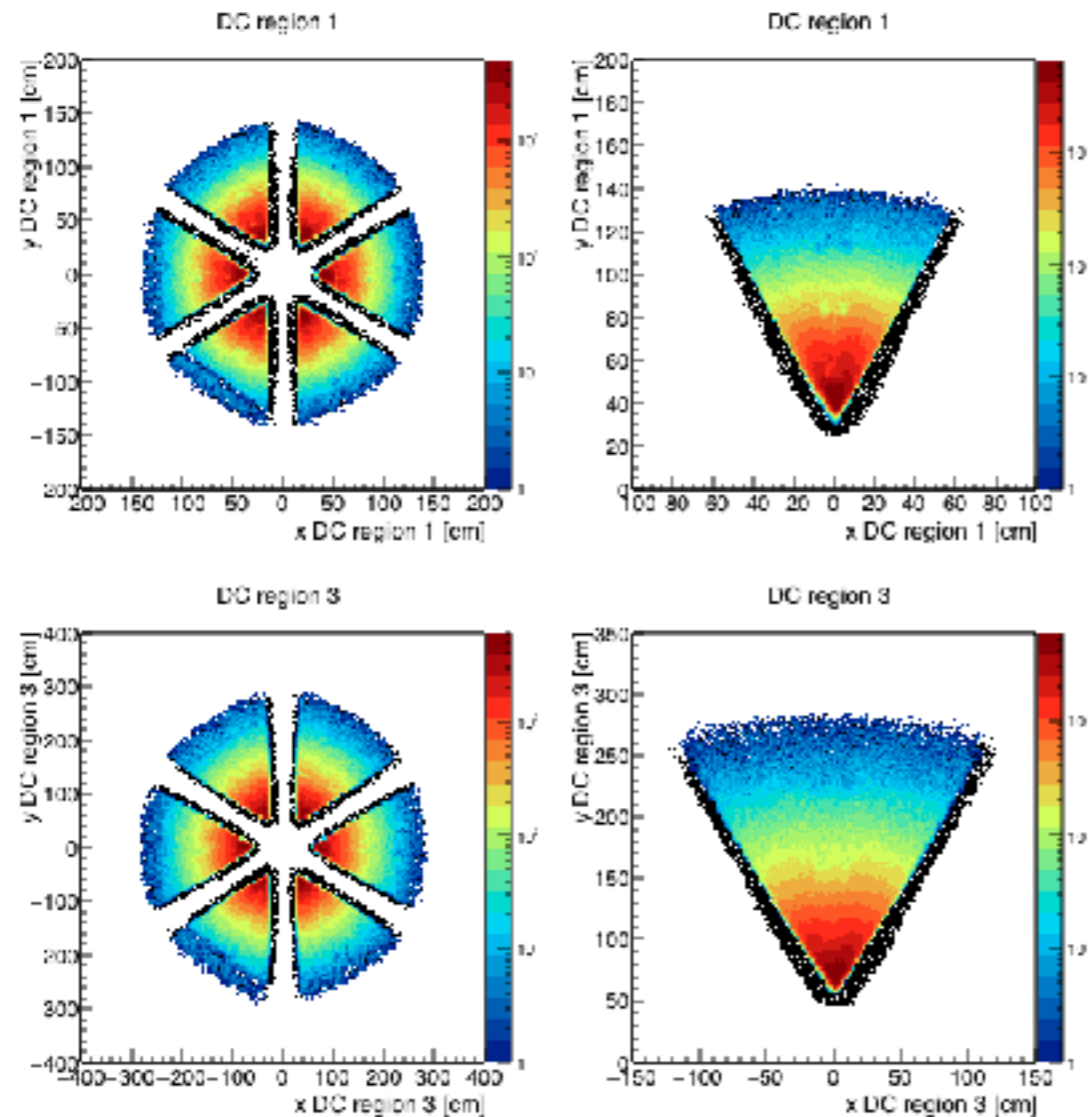
Electron Fiducial cuts

Run 4013 /work/clas12/clas12/data/calib/recooked/

Negatively charged particles with PID = 11 && P > 1.5GeV

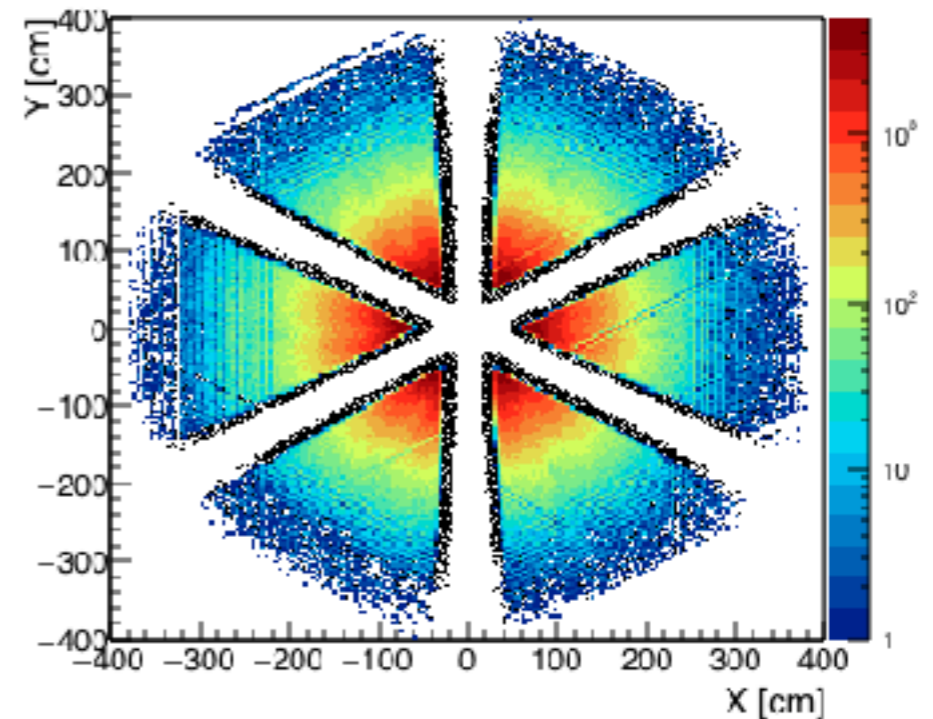
Spatial distributions in DC regions 1 & 3

Hit positions: from REC::Trajectory bank
Triangular cut with opening angle 60



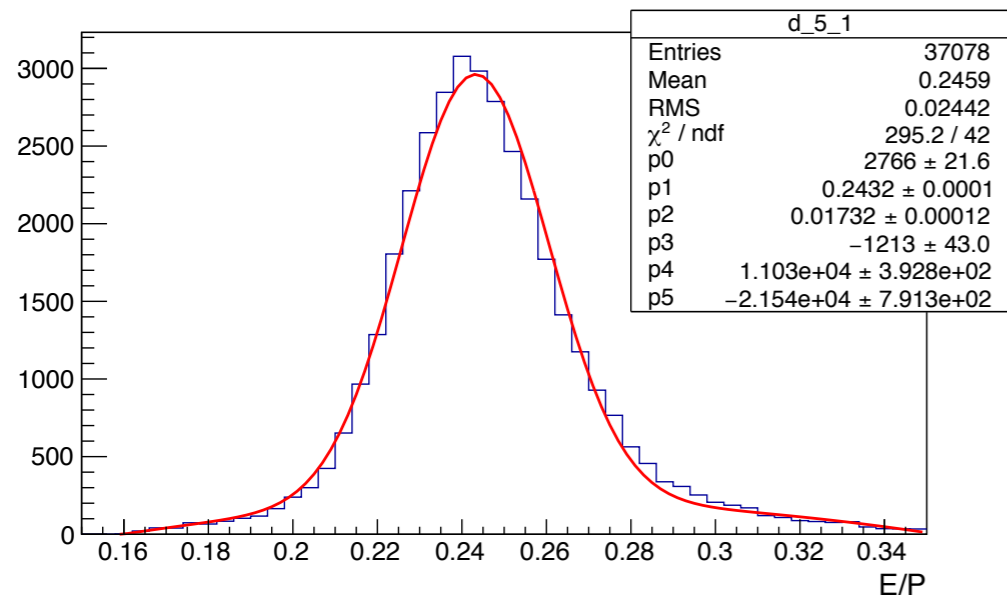
Spatial distributions in Pcal

Hit positions: from REC::Calorimeter bank
Cuts on triangular coordinates U, V, W.

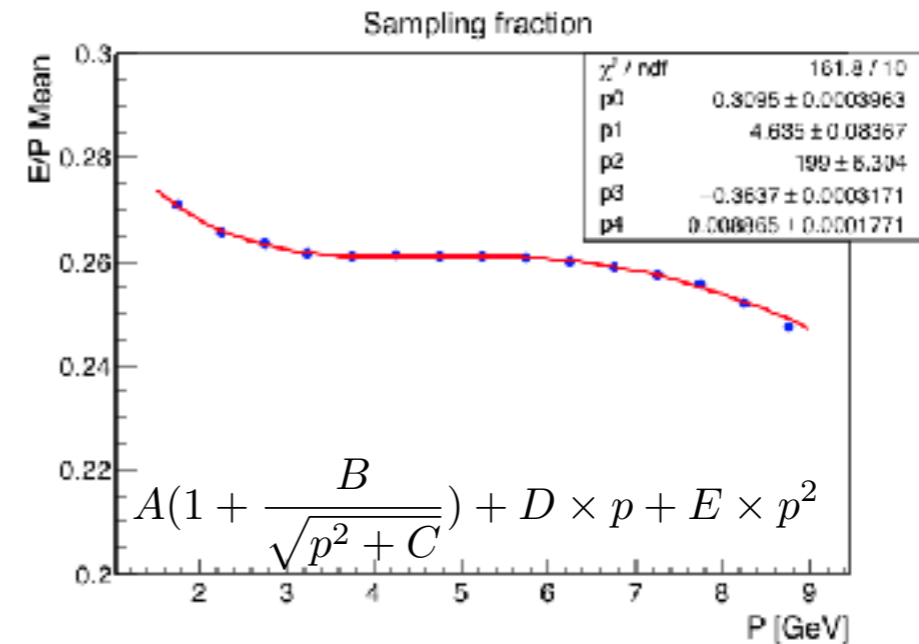


Electron Sampling Fraction

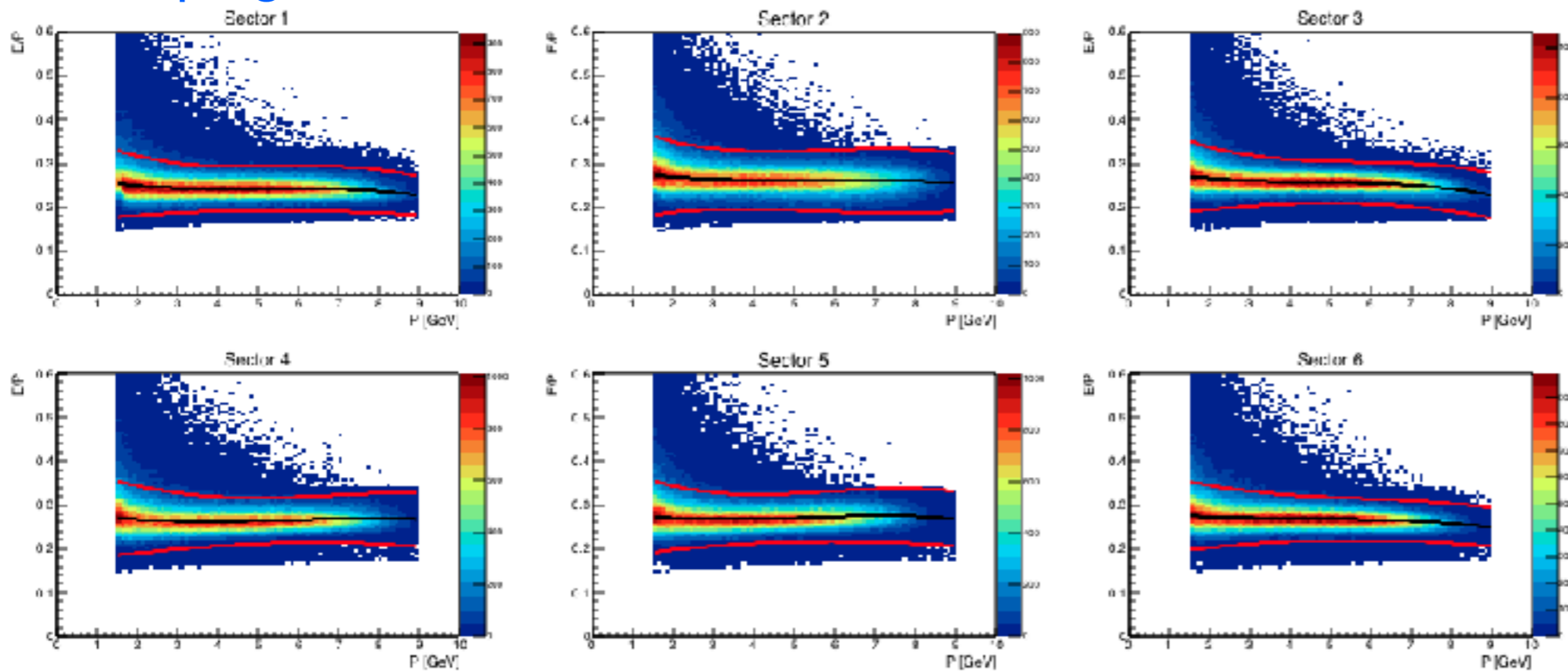
E/P ratio: fit momentum slices with gaussian + pol2



Momentum dependence of gaussian mean

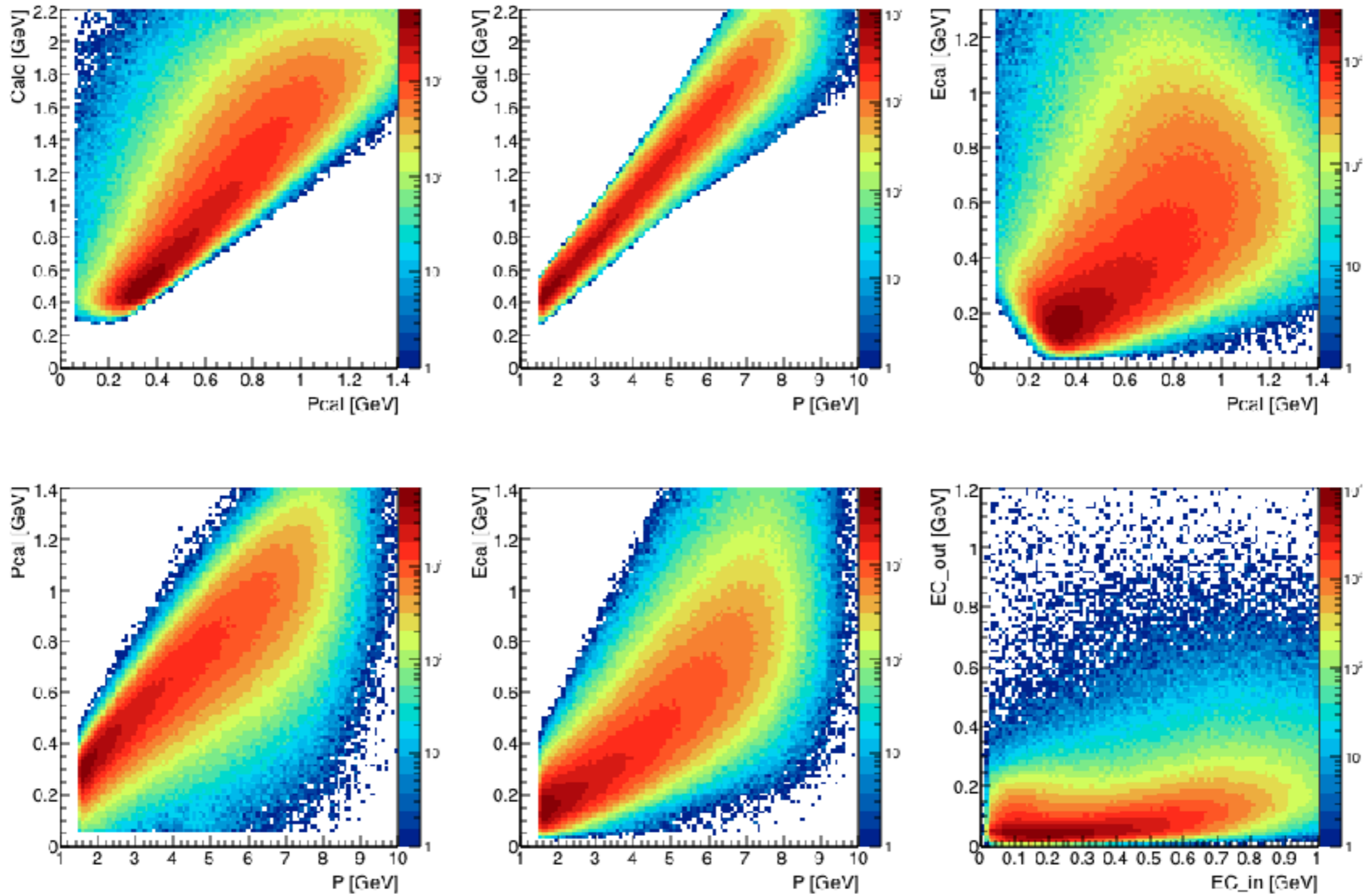


Sampling fraction for 6 sectors



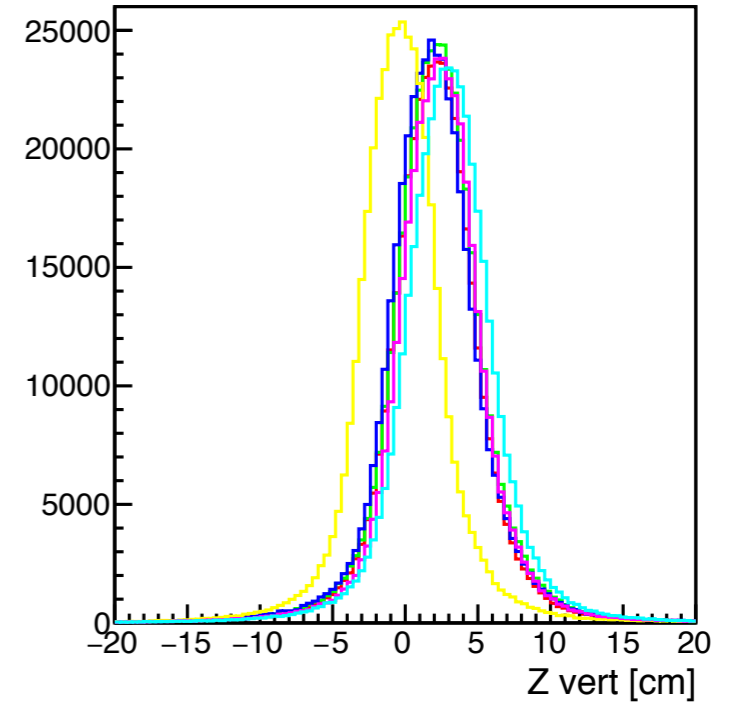
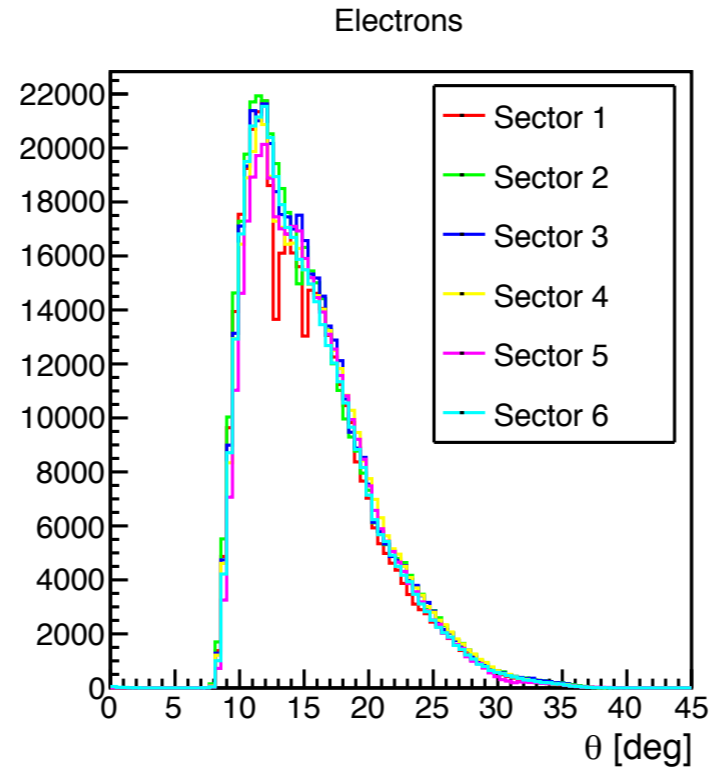
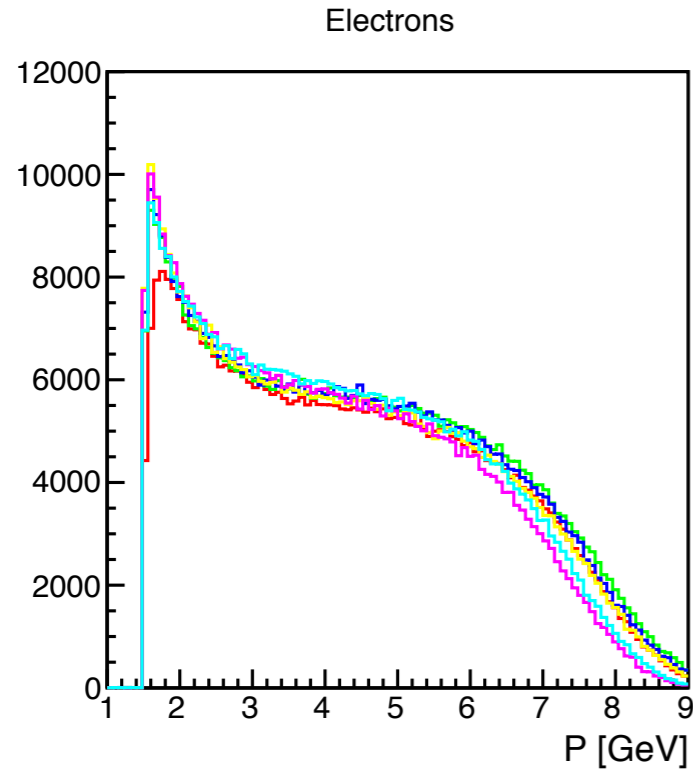
Calorimeter response to Electrons

Correlations between particle momentum and energy deposition in Calorimeter layers

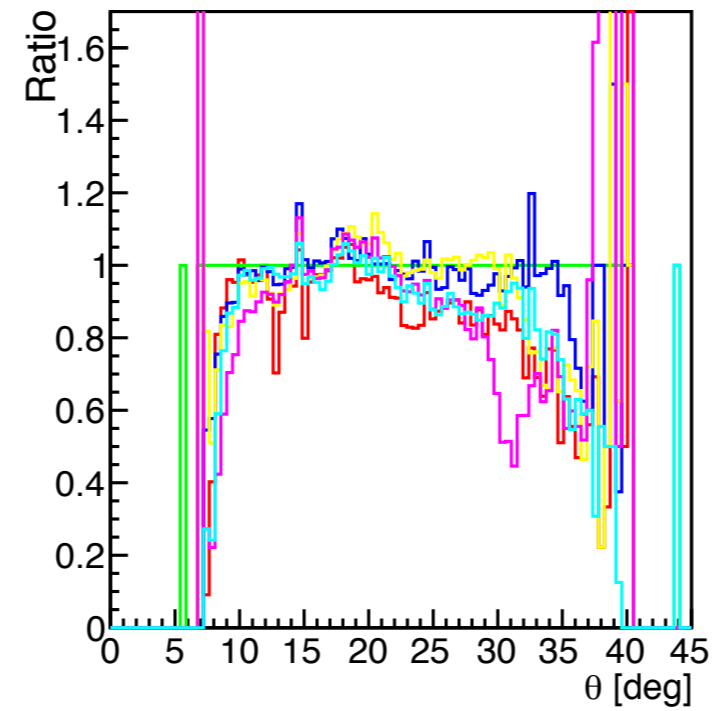
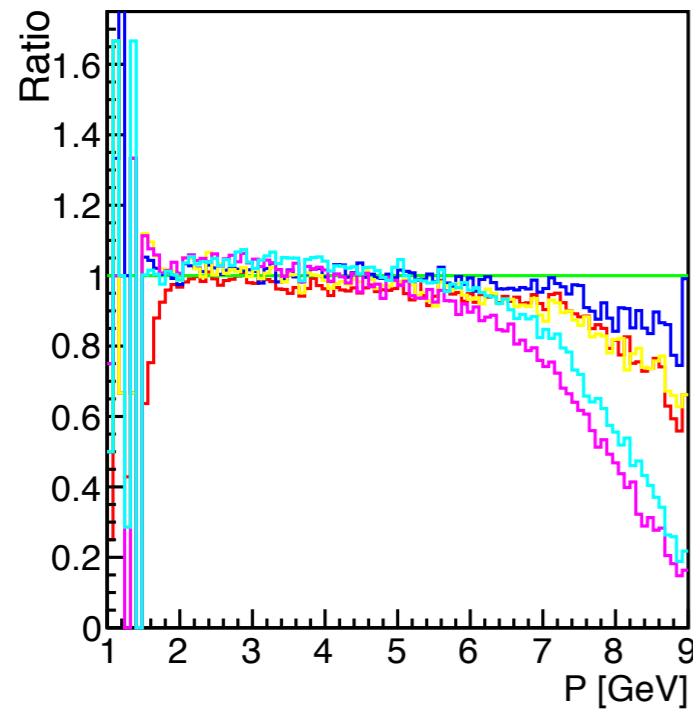


Electron Yields

Sector dependence of electron yields.

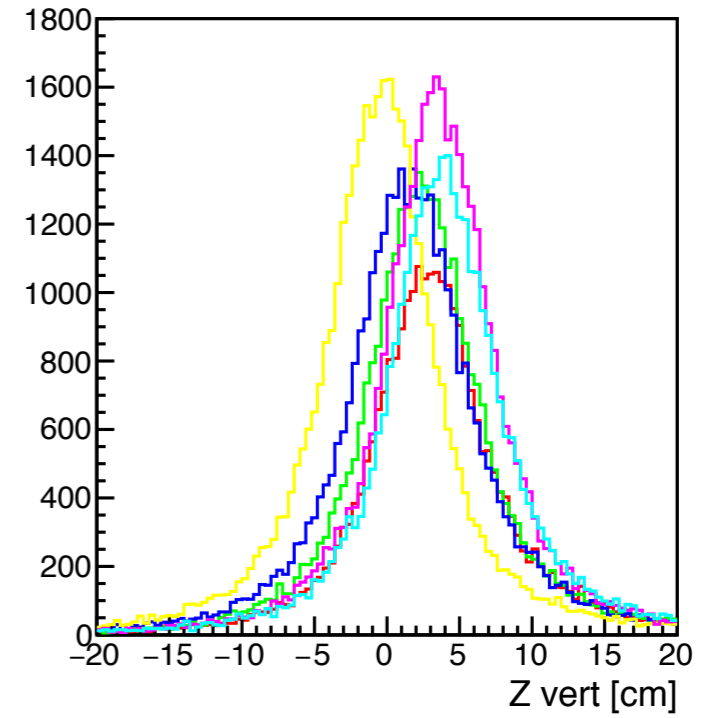
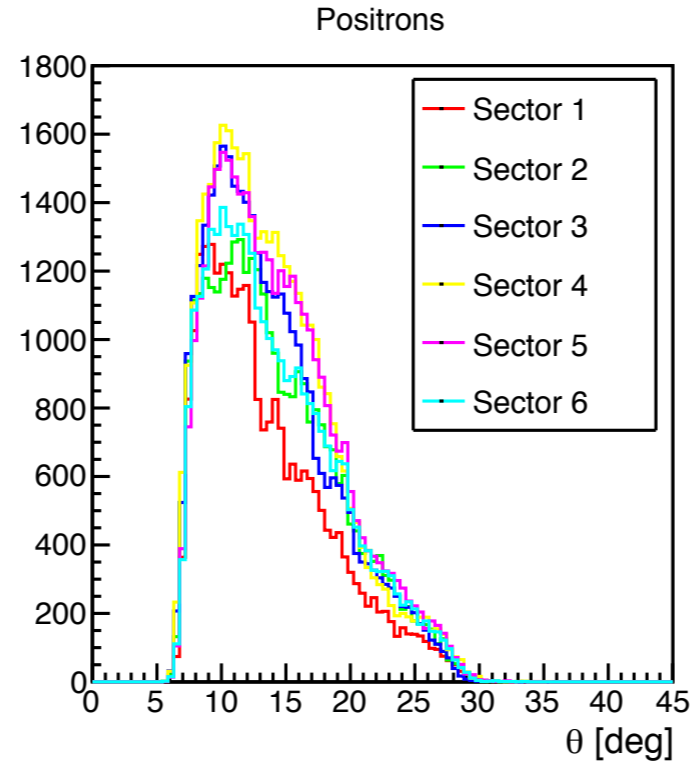
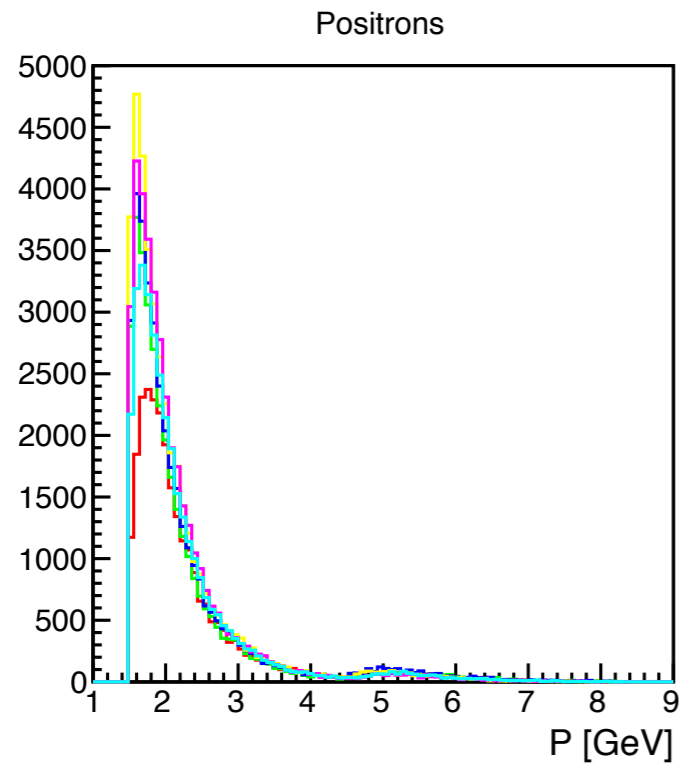


Sector 2 was taken as a reference.

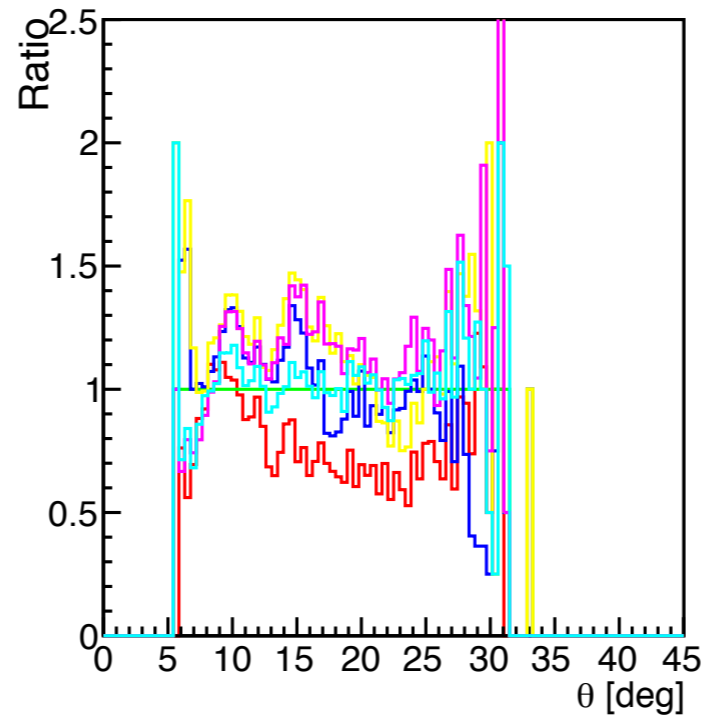
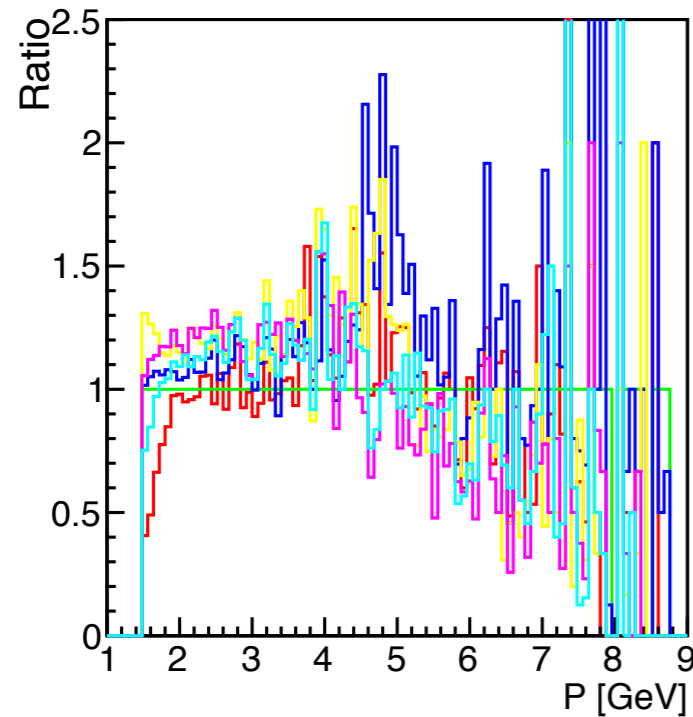


Positron Yields

Sector dependence of positron yields.

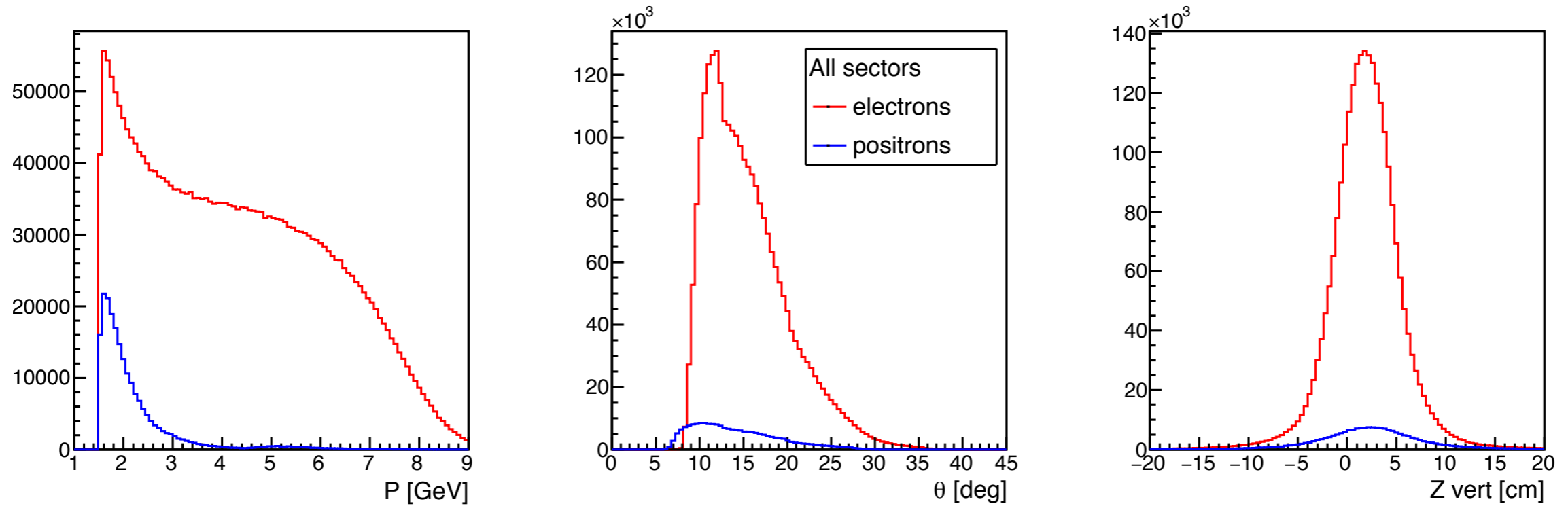


Sector 2 was taken as a reference.

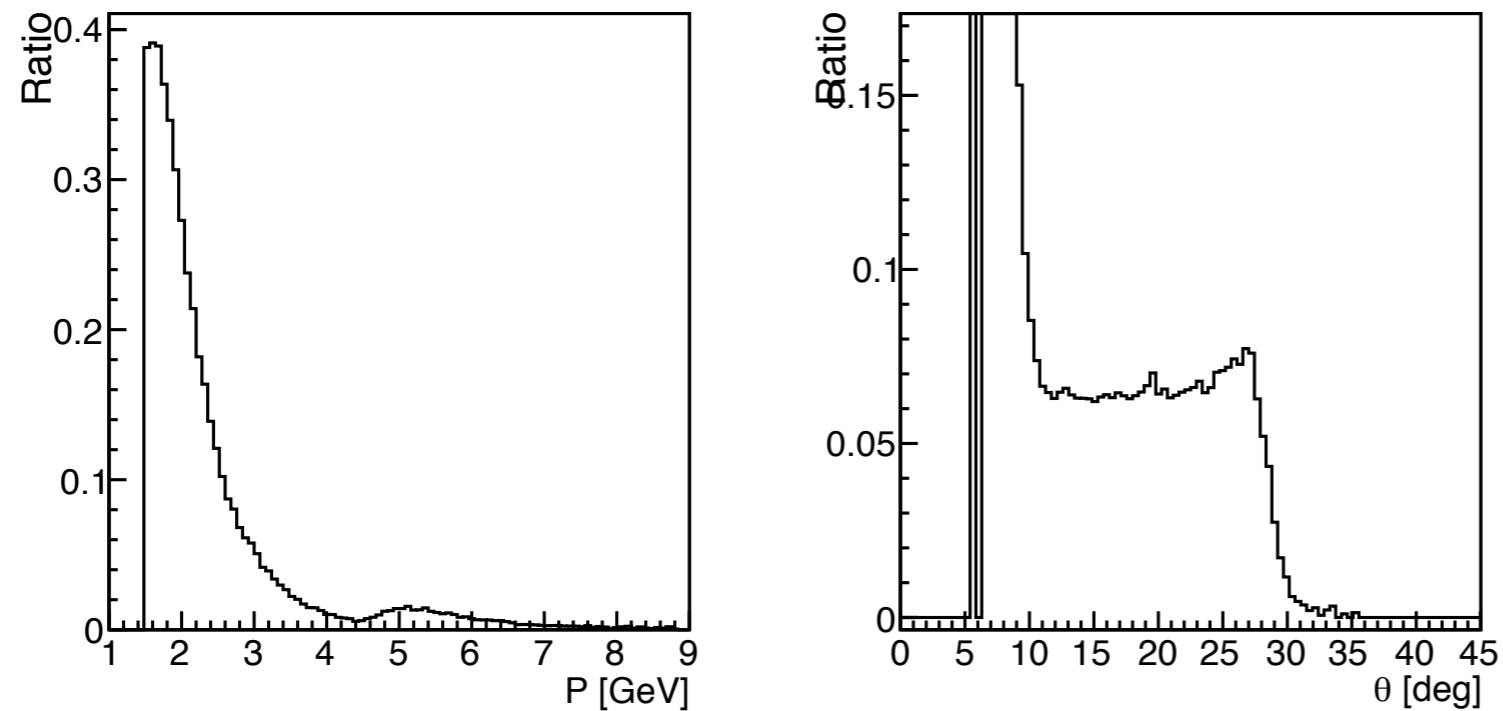


Electrons vs Positrons

Comparison between electrons and positrons



Positrons / Electrons ratio



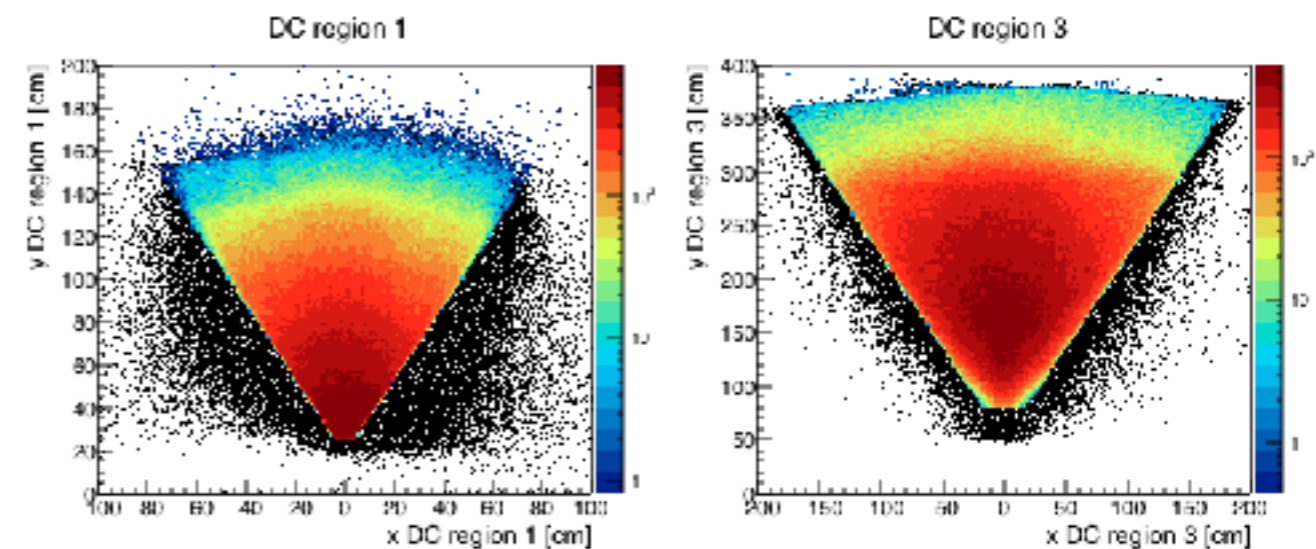
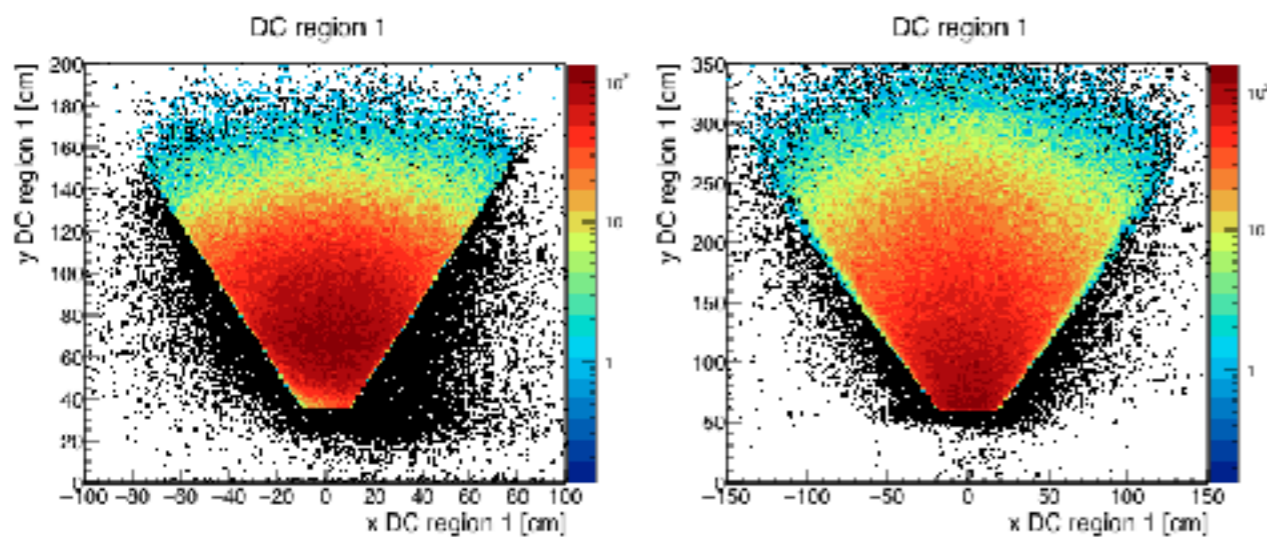
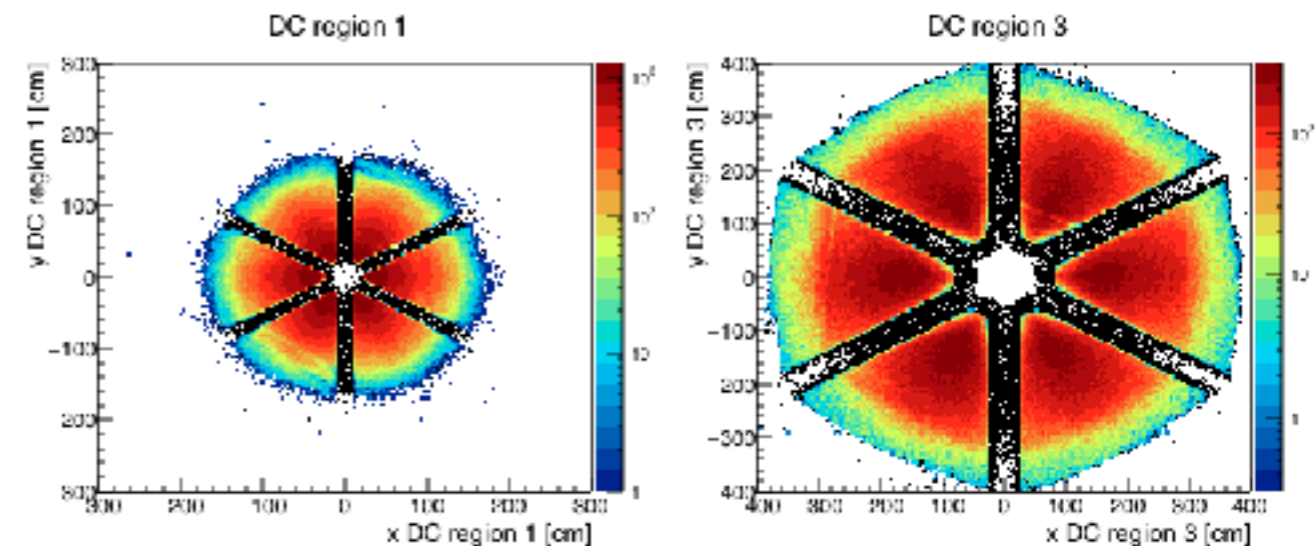
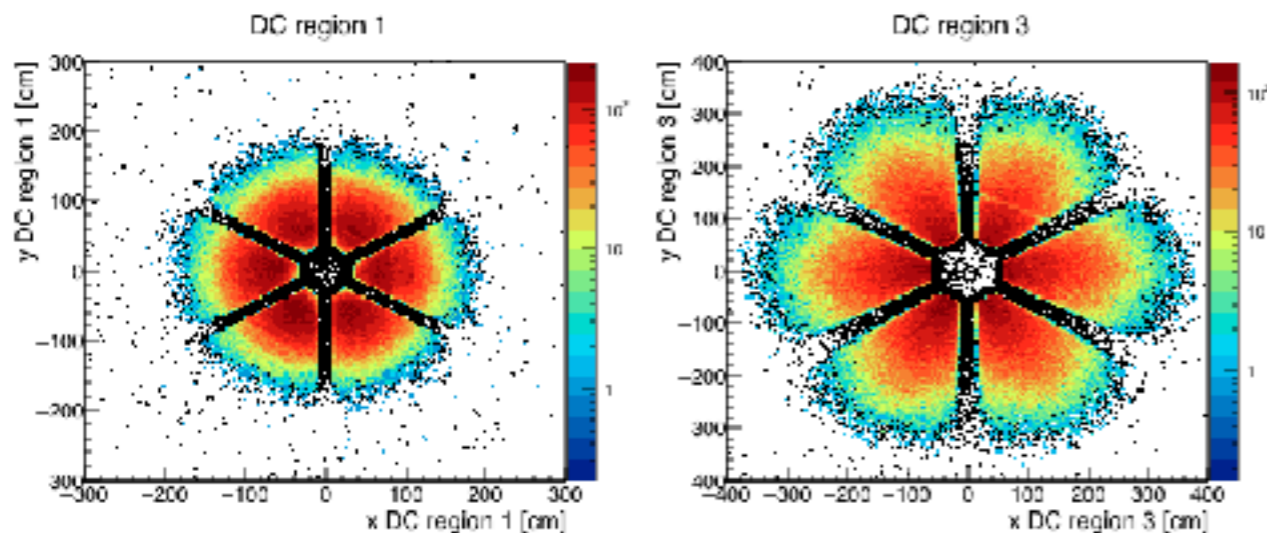
Fiducial cuts for hadrons

Negative hadrons (charge=-1 && pid != 11)

Hit positions: from REC::Trajectory bank
Triangular cut with opening angle 60
Minimum cut on Y coordinate of the track

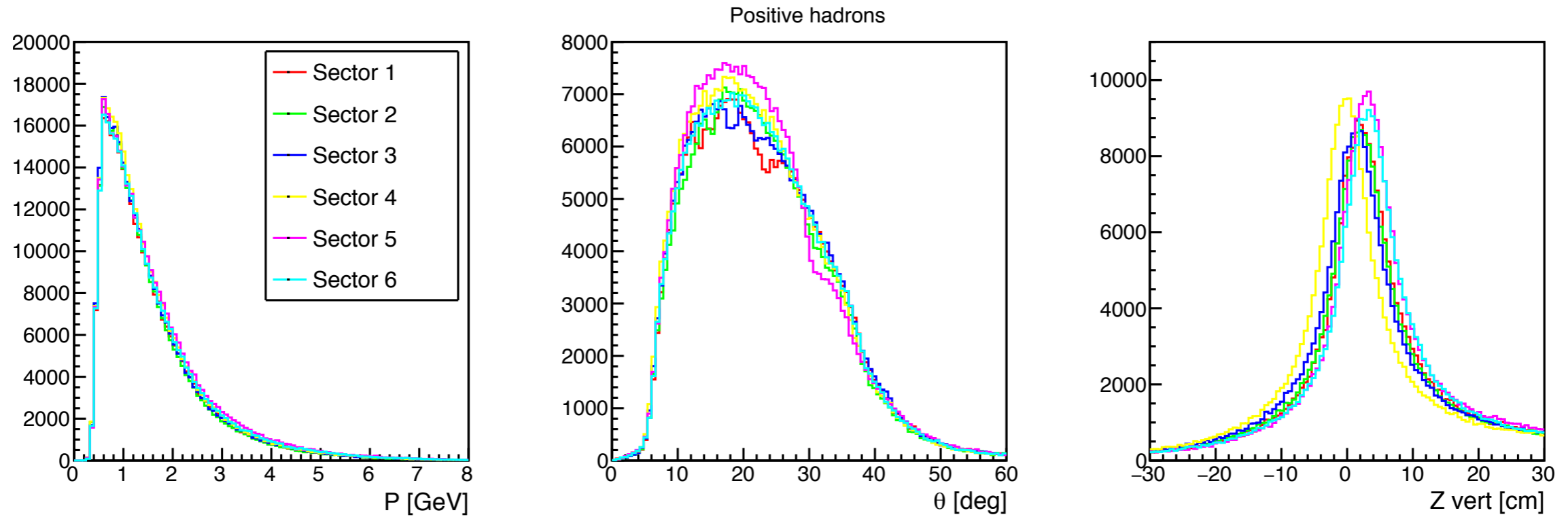
Positive hadrons: (charge=1 && pid != -11)

Hit positions: from REC::Trajectory bank
Triangular cut with opening angle 60
Minimum cut on Y coordinate of the track

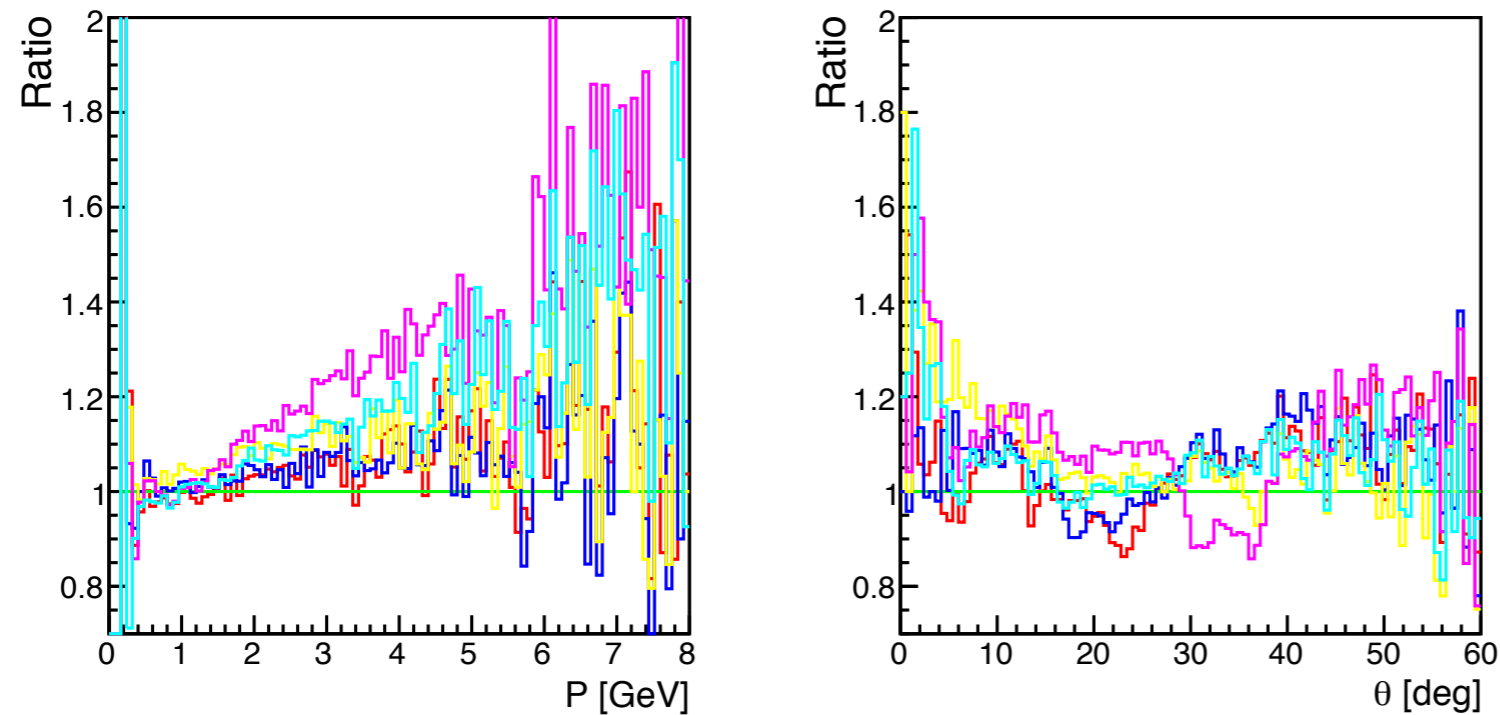


Positive hadrons

Sector dependence for positive hadrons.

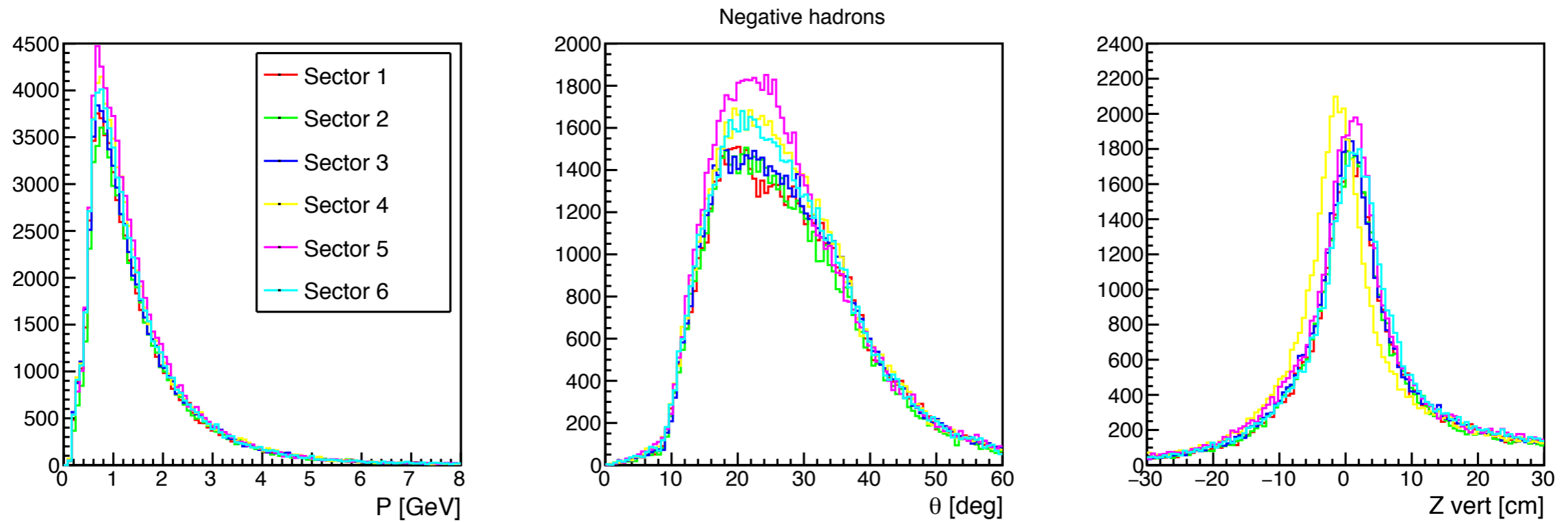


Sector 2 was taken as a reference.

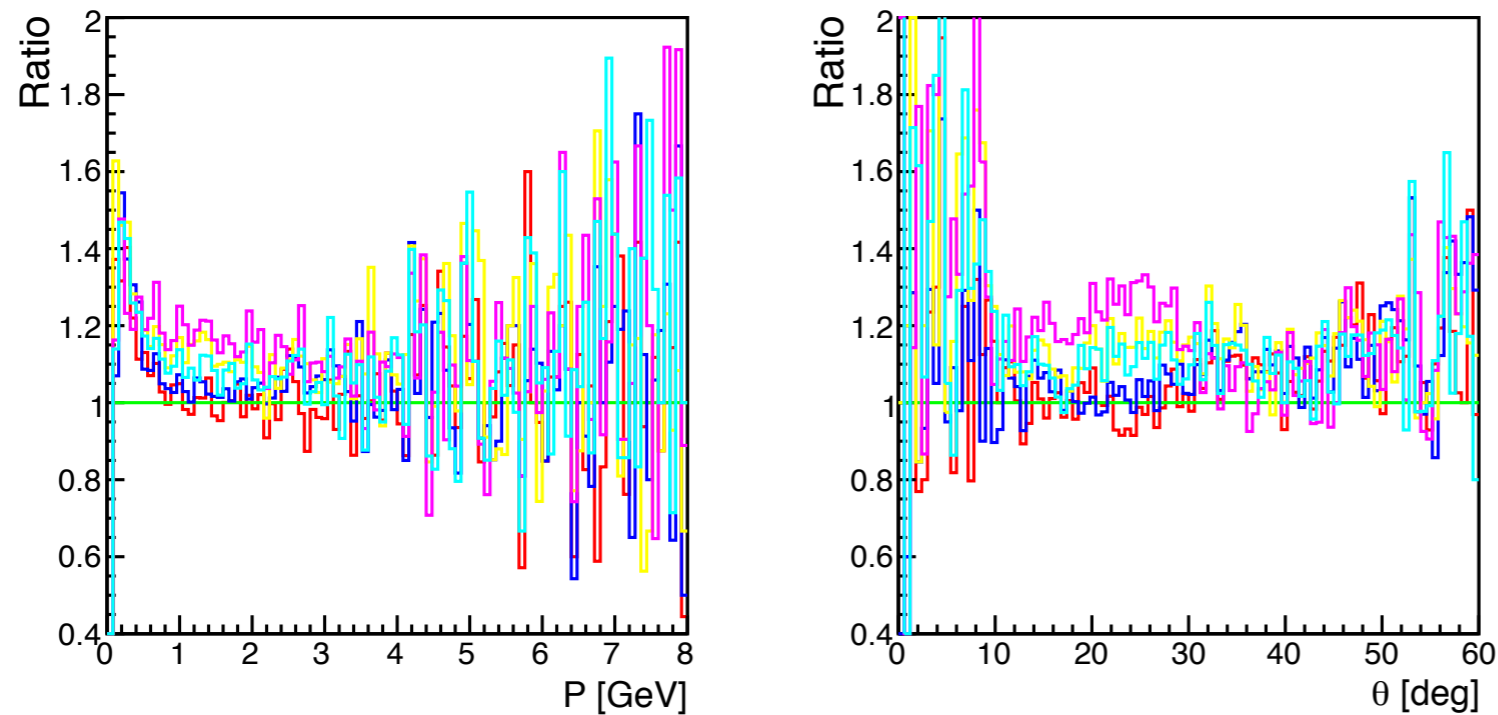


Negative hadrons

Sector dependence for negative hadrons.

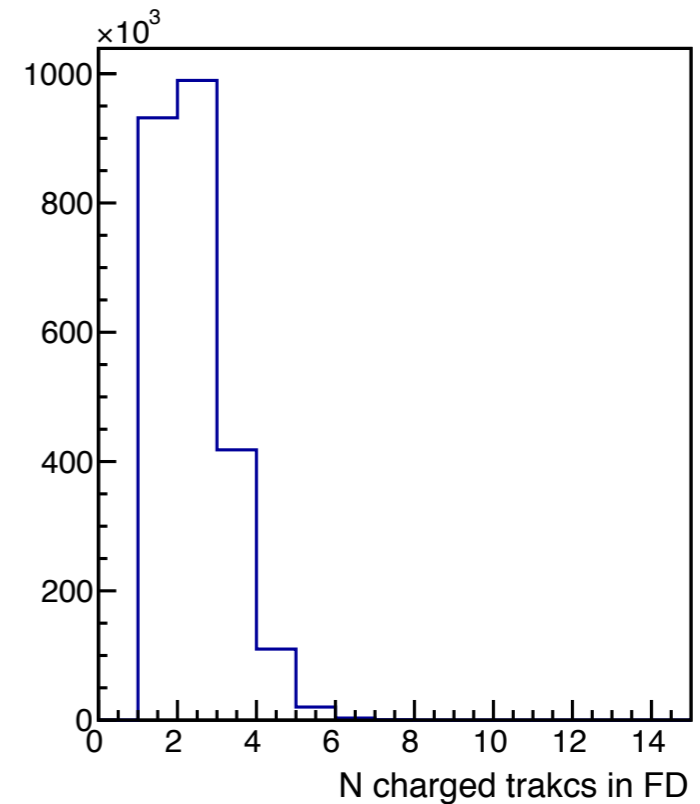
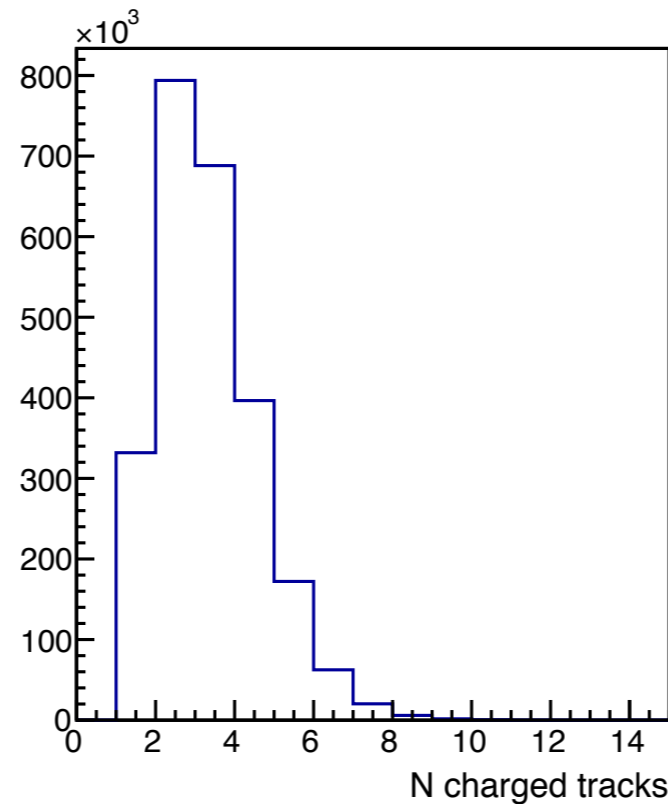
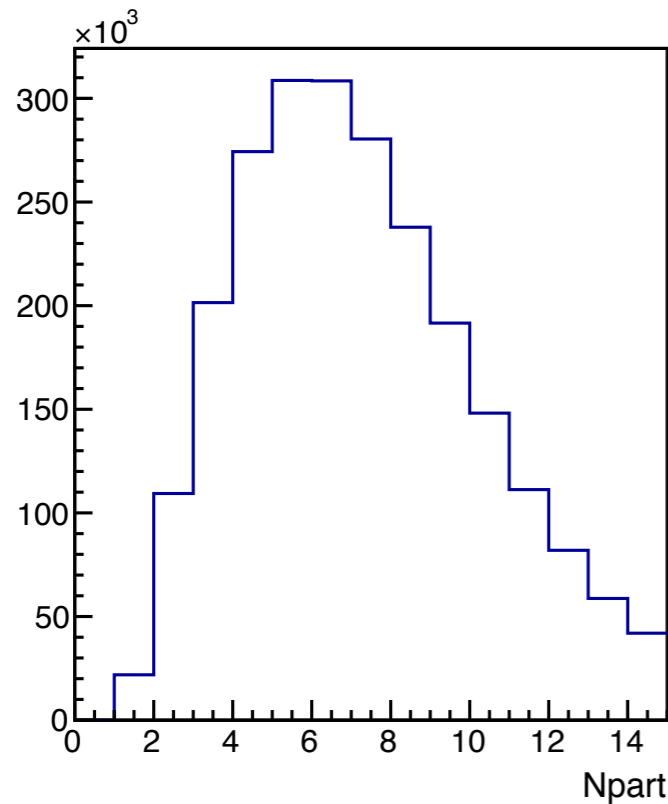


Sector 2 was taken as a reference.



Summary

Reconstructed particle and charged track multiplicity per event



- a. Sector dependence of charged particle rates was presented.
- b. Shift of Z vertex for sector 4.
- c. Large fraction of positrons at low momentum.

Thank you!