Validation of 4.8.4pre2 Calorimeter Simulation

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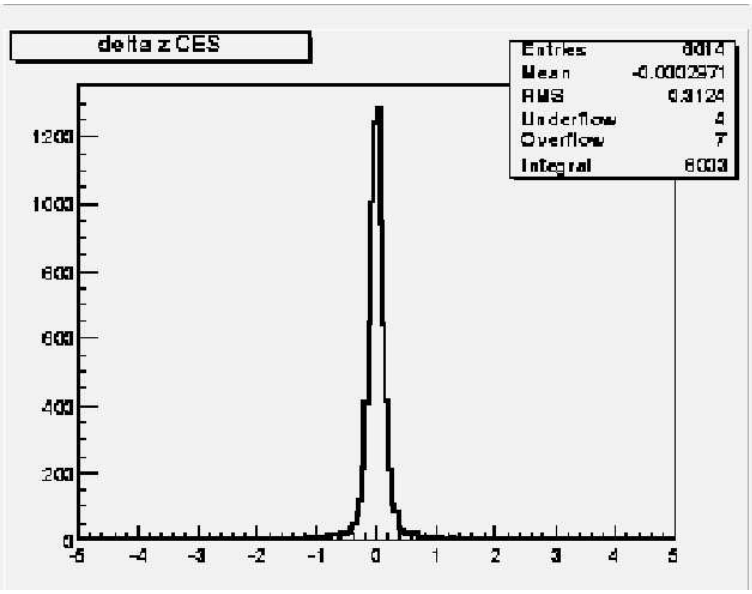
Outline

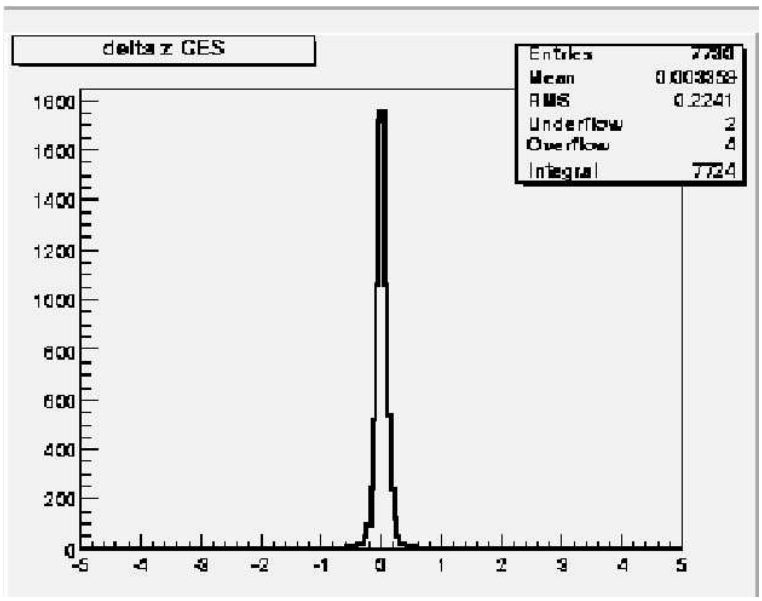
- What we did
- Electron plots
- Pion plots
- Status report

What we did

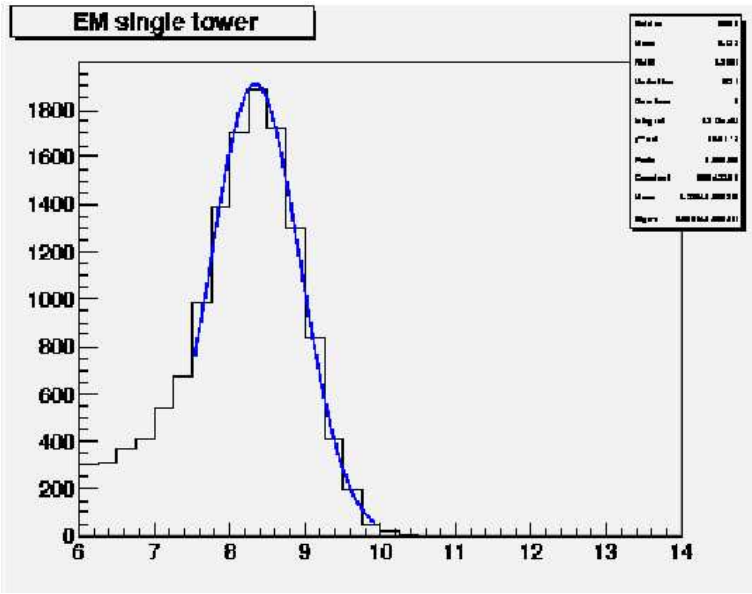
- Simulated and reconstructed 1,325K single-particle MC events using standard executables and tclfiles
  - electrons with Pt 10, 20 57 and 120 in all directions, aiming at towers (28,03) and (40,03) and shooting to 3 towers in eta and phi
  - pions with Pt 10, 20 57 and 120 aiming at towers (28,03) and (40,03)
  - low-pt pions for Gflash validation (reconstructed by the single track analysis study by Sarah Demers)
- Compared release 4.8.4pre2 with release 4.6.2
- Have the plots available at: http://helios.physics.utoronto.ca/~shabnaz/sim_val
- Had a look at the plots

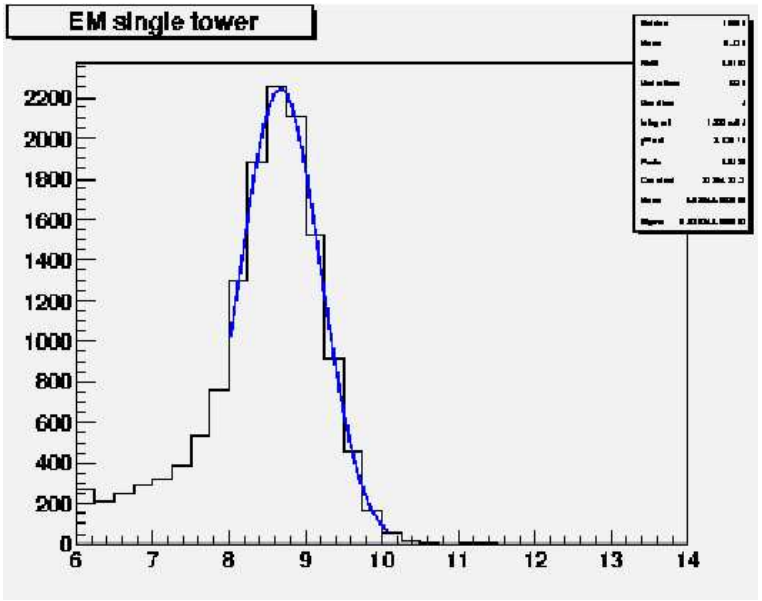
Δz of best matching CES cluster and the track for e57

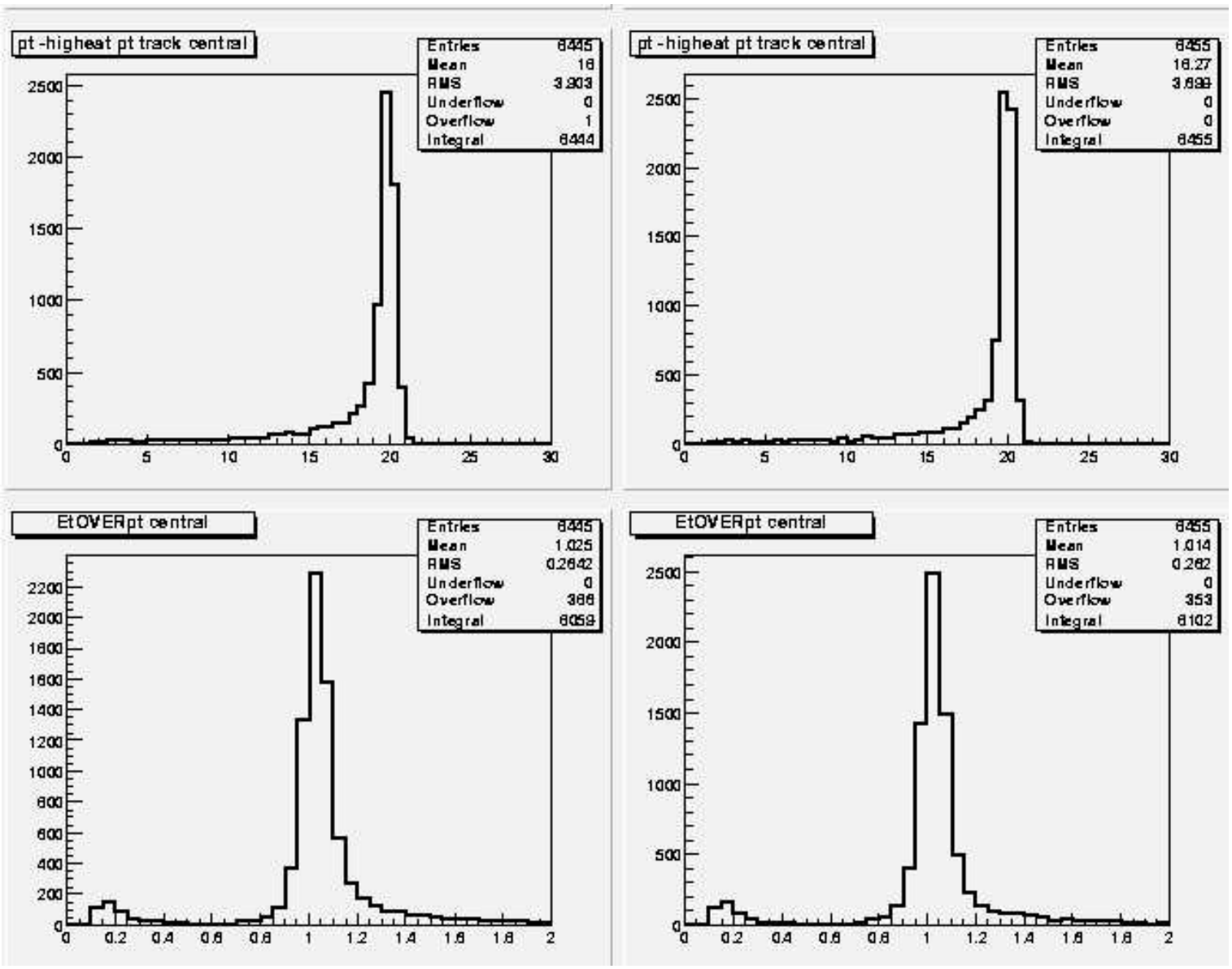




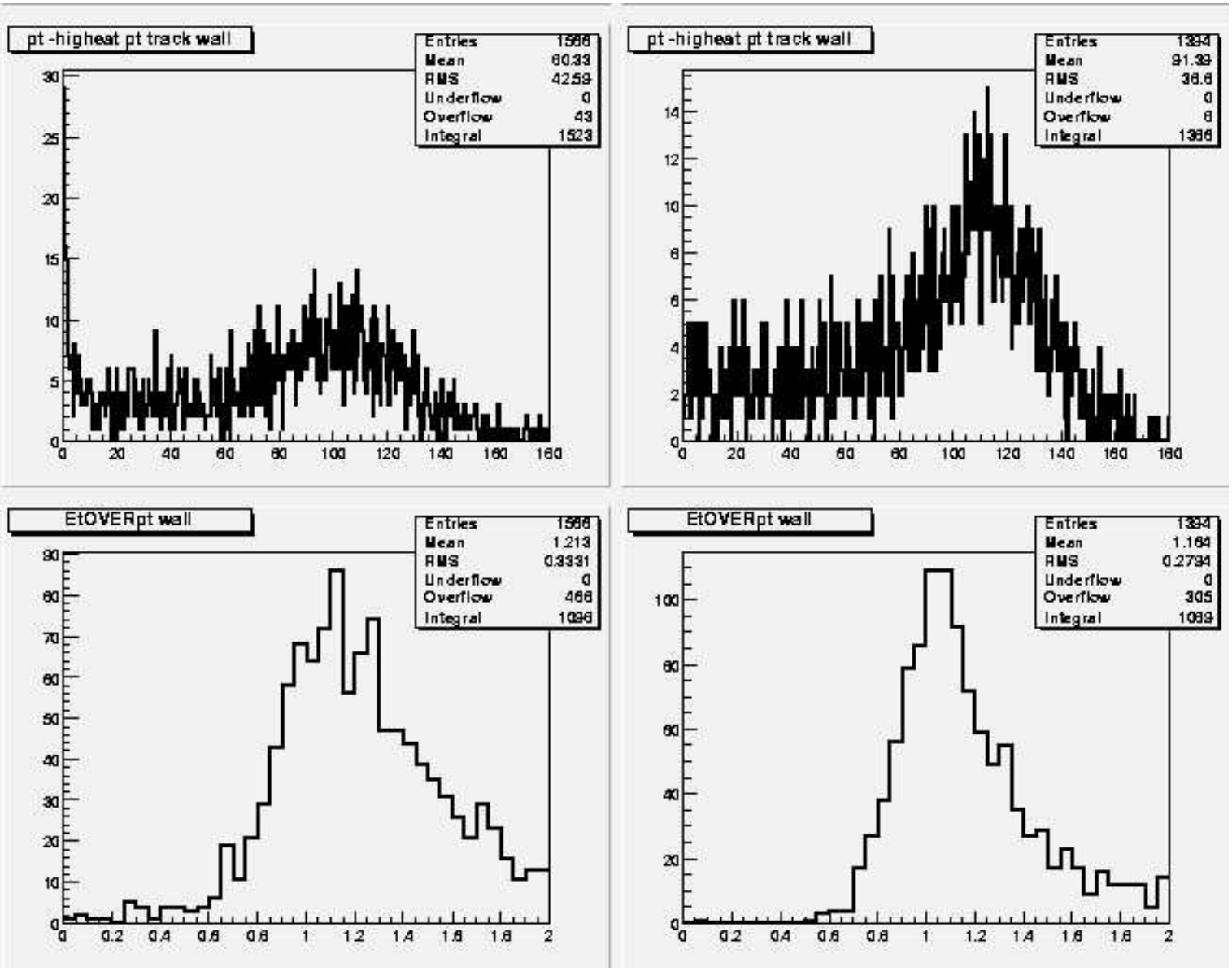
Energy deposited in tower (40,03) for e10





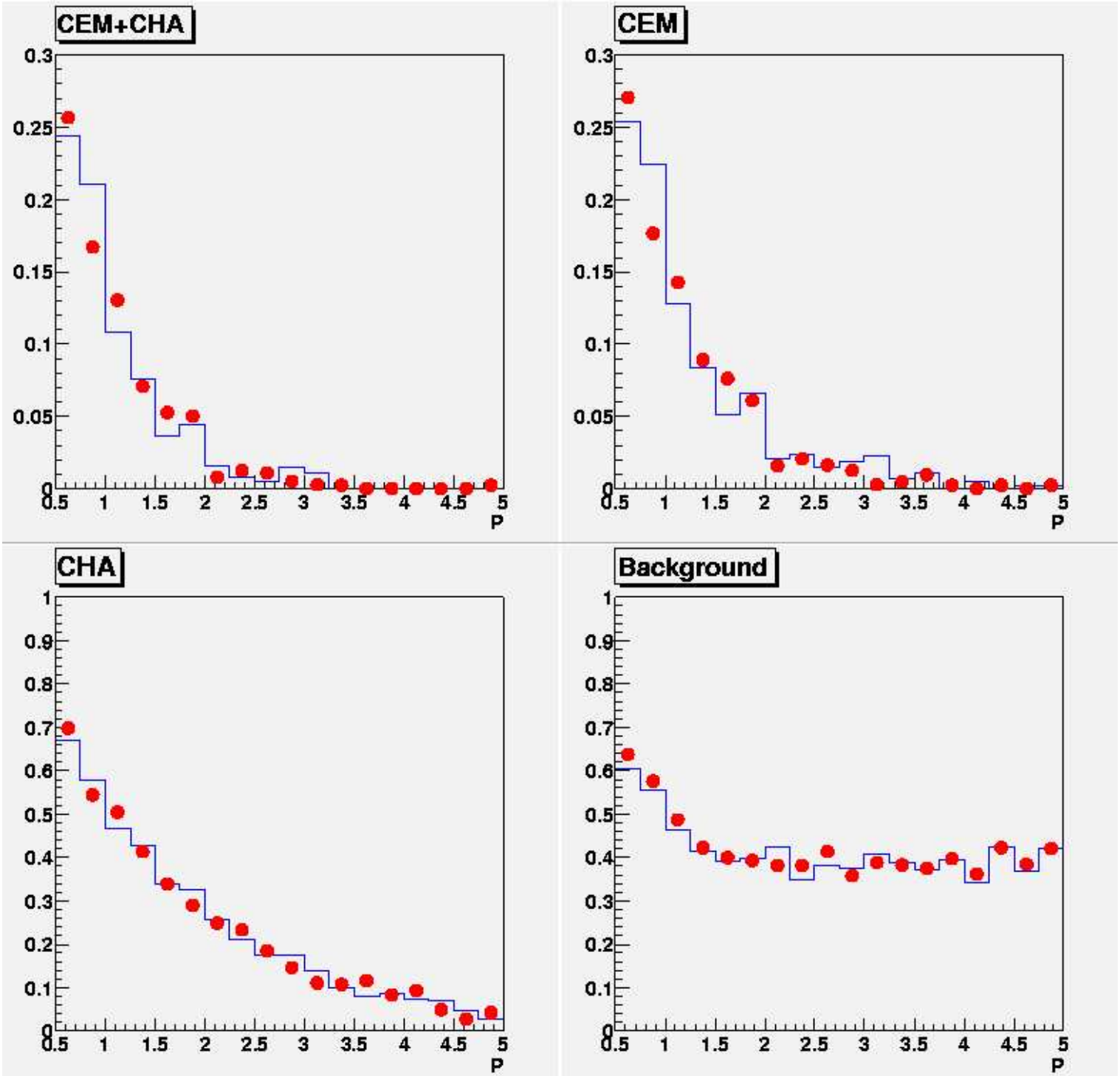


E_T/p_T - central calorimeter for e20



E_T/p_T - wall calorimeter for e120

Fraction of Zeros vs. P



Status report

- No problem in running cdfSim or ProductionExe in 4.8.4pre2
- Compared single pions and electrons in release 4.8.4pre2 and 4.6.2
- There exist some differences
  - lower energy seen in Plug calorimeter
  - wider Δz distribution in 4.8.4pre2
  - more low p_T tracks in 4.8.4pre2
  - higher E_T/p_T in 4.8.4pre2
  - difference in fraction of zeros for low-p_T pions