BigBite Analysis
BB Shower Calibration:E/p,E,p and BB Cer TDC Check

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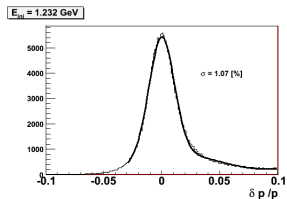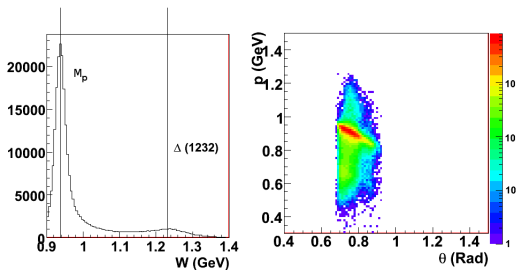
Outline

Shower Calibration

- Initially Calibrated the 4-pass shower using Xin's momentum
- Then Diana fixed the momentum (shift and continuity)
- So I used her momentum and my shower calibration coefficients that I got from using Xin's momentum
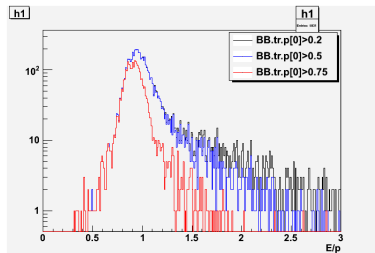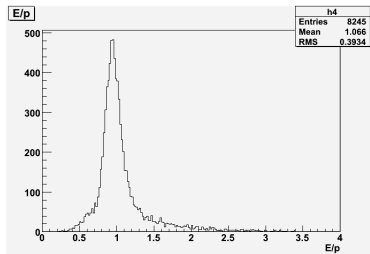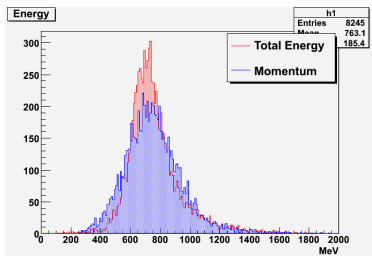
Fixed Momentum

Merging Diana's momentum fix on
my BB lib...
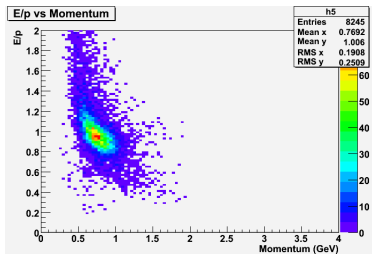
Shower Calibration: Energy and Momentum

E/p
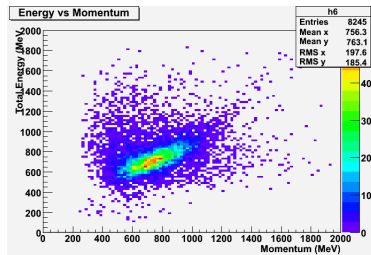
Energy and Momentum

Shower Calibration: Momentum Dependence

E/p vs Momentum

Shower Calibration: Energy vs Momentum

Gregg and Diana had suggested maybe peds are off

Shower Calibration

Shower peds matched db, but preshower peds were about 30 channels too low.
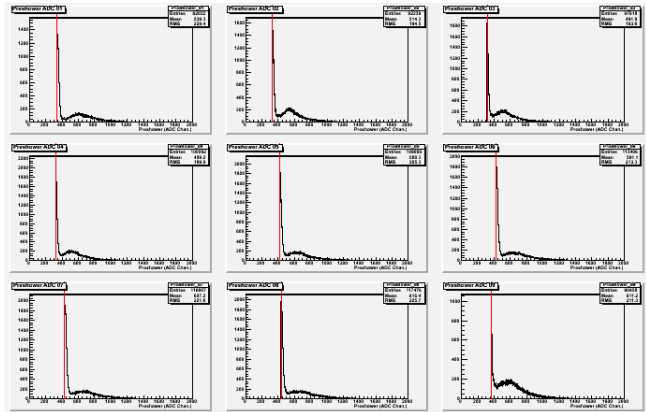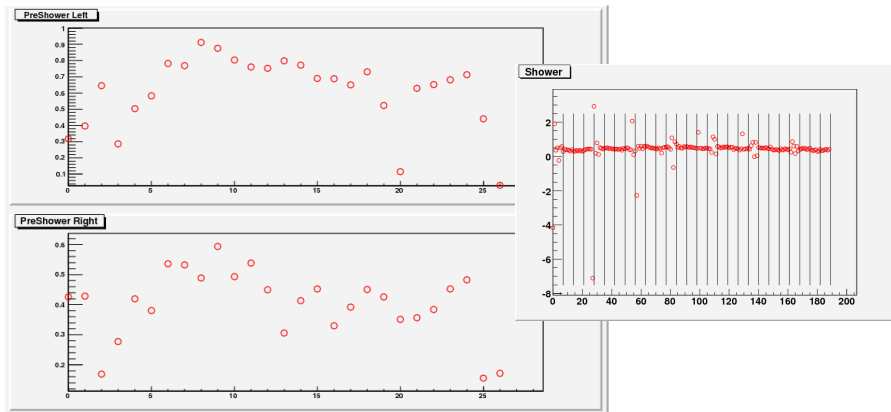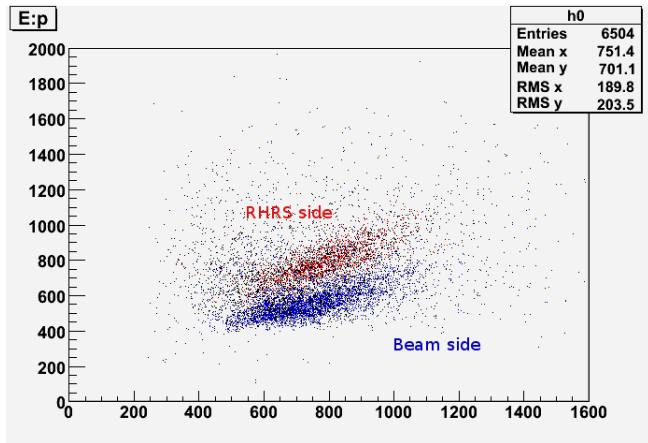

Figure: Cosmic run 1945

Shower Calibration Constants: With Diana Momentum and Preshower Peds

Shower Calibration E/p: With Diana Momentum and Preshower Peds

TDC Stability Check

- Looked at TDC stability over various run periods
- Fit each TDC peak for each run to get peak location
- For each TDC plot peak value vs run number and look for instabilities
- Chain each stable period together and fit TDC peak
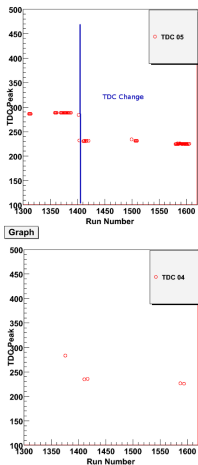
TDC Stability Results

5-pass, 270 deg

4-pass, 90 deg

Figure: Top plot shows TDC 05 for run 1311-1609, there are two TDC stability periods. Bottom plot shows problem with TDC 04.
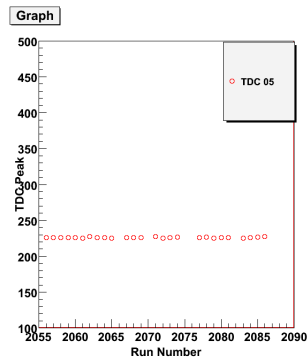
Figure: TDC 5 for runs 2056-2089

Summary

- Energy and momentum have odd behaviour
  - Could be due to using Xin's momentum. Need to recalibrate with Diana's momentum.
  - Preshower peds were 30 channels too low
- TDC 04 has an issue during the 5-pass 270 deg setting
- Finished finer treatment of BB production run list
  - hallaweb.jlab.org/wiki/index.php/BigBite_Production_List

For Next week

- Re-calibrate shower with Diana's momentum (in progress)
- Continue TDC stability checks