BigBite Analysis

BigBite Momentum Bin Shower Calibrations, Pre-Shower vs Shower

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Outline

4.7 GeV Momentum Bin Shower Calibrations

- Split momentum into 2 bins:
  - momentum < 0.9 GeV
  - momentum > 0.9 GeV
- Looked at the percent difference between the two momentum bins for the pre-shower and shower calibration constants

4.7 GeV Momentum Bin Difference Calibration Constants

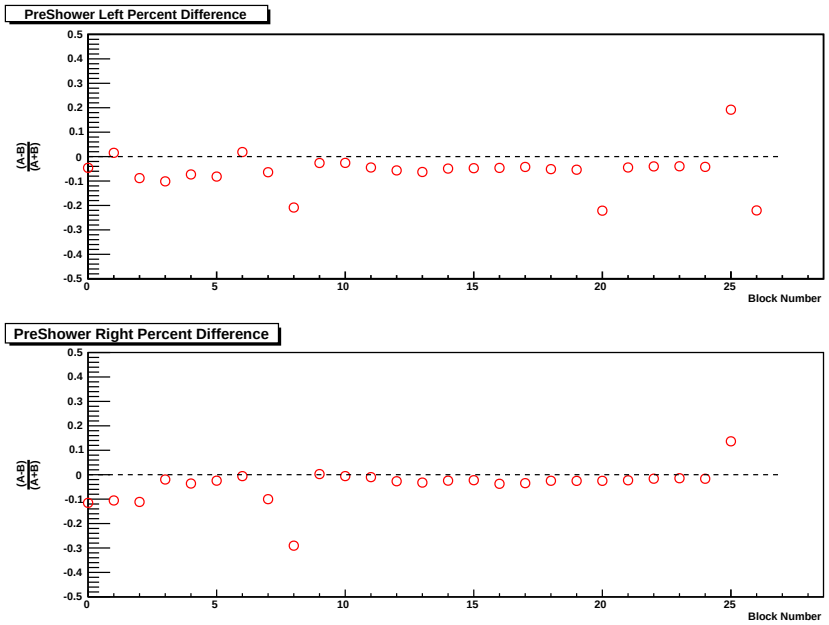

Figure: Percent difference of high and low momentum bins in the BigBite pre-shower calibration constants.

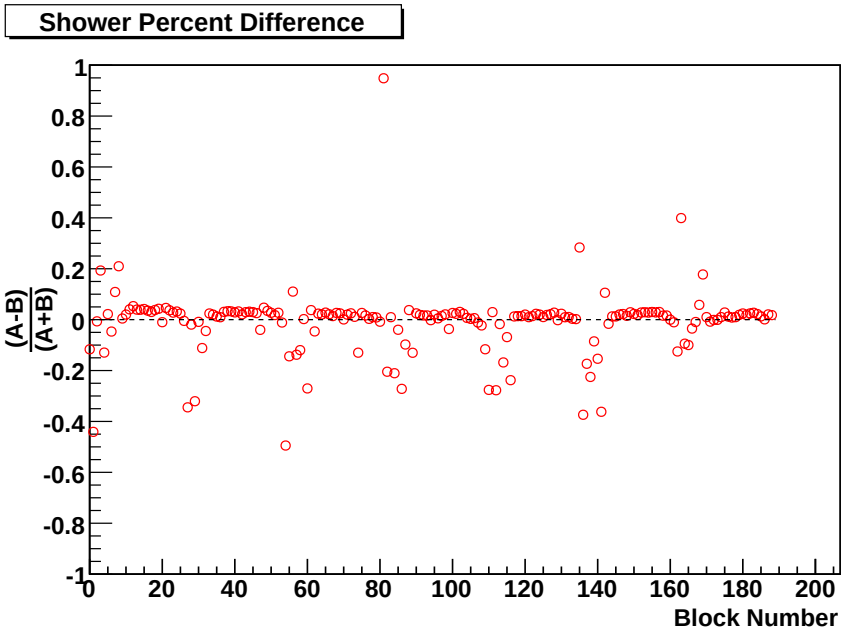

Figure: Percent difference of high and low momentum bins in the BigBite shower calibration constants.

T2 Threshold

- T2 trigger had total energy cut in the trigger
- Plotting pre-shower vs shower should show the trigger energy threshold
- Energy threshold set near 500 MeV

Pre-Shower vs Shower

Pre-shower added to trigger?

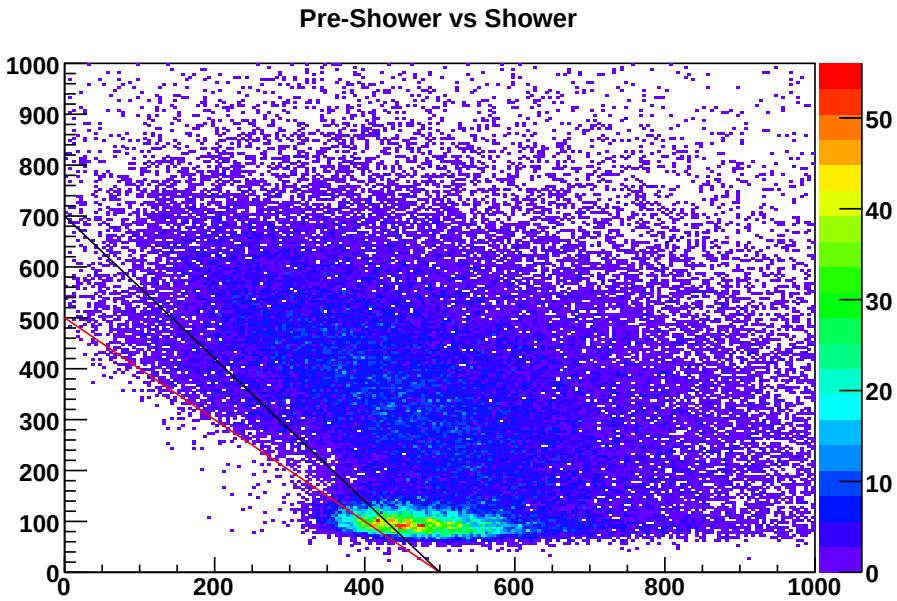

Figure: Pre-shower vs shower for run 1530. No PID cuts applied

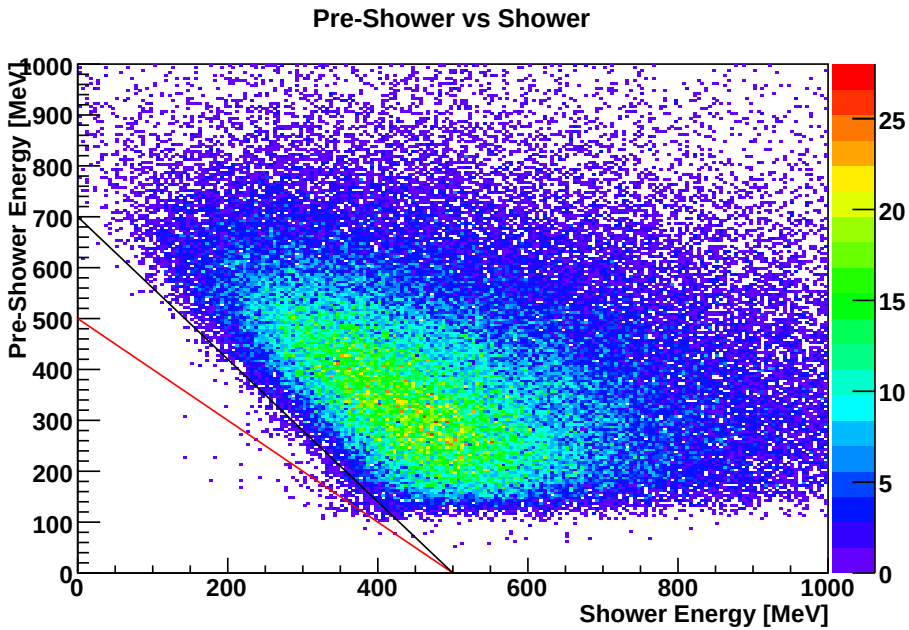

Figure: Pre-shower vs shower for run 1881. No PID cuts applied

Pre-Shower vs Shower

Cause of pre-shower vs shower slope change?

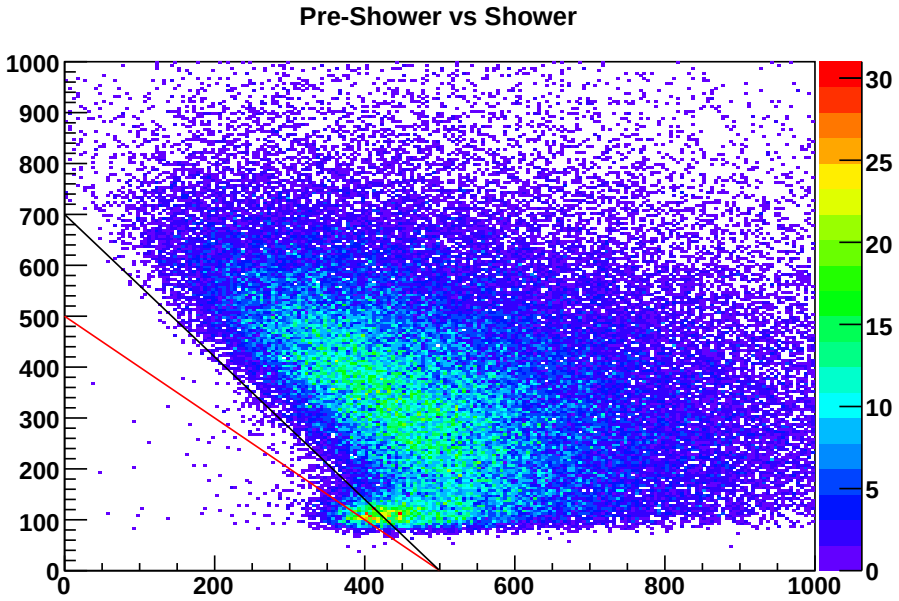

Figure: Pre-shower vs shower for run 1915. The pre-shower threshold was lowered to -0.015mV. No PID cuts applied

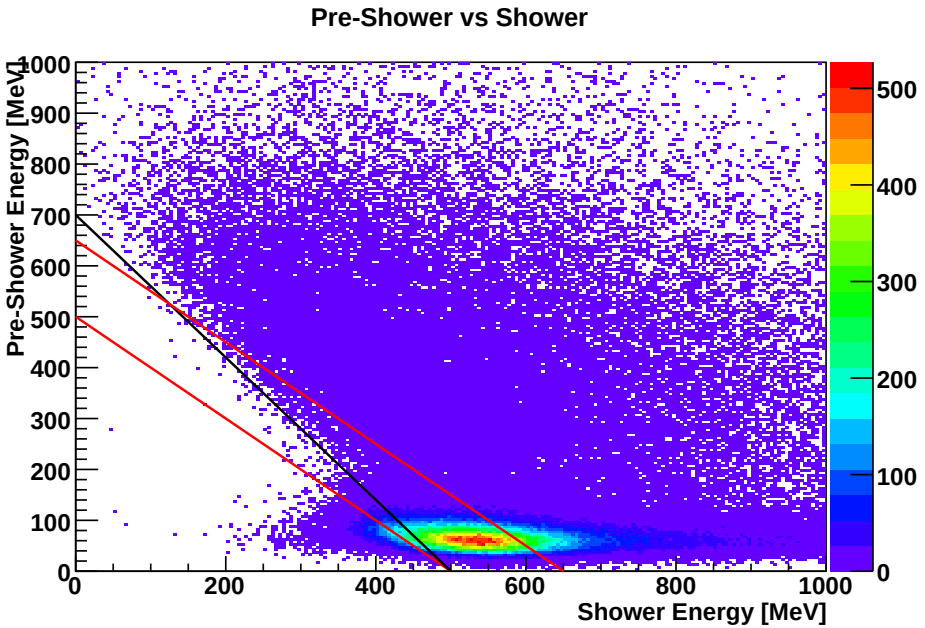

Figure: Pre-shower vs shower for run 1809. Test using T2 trigger after trigger alignment. No PID cuts applied

Total Energy

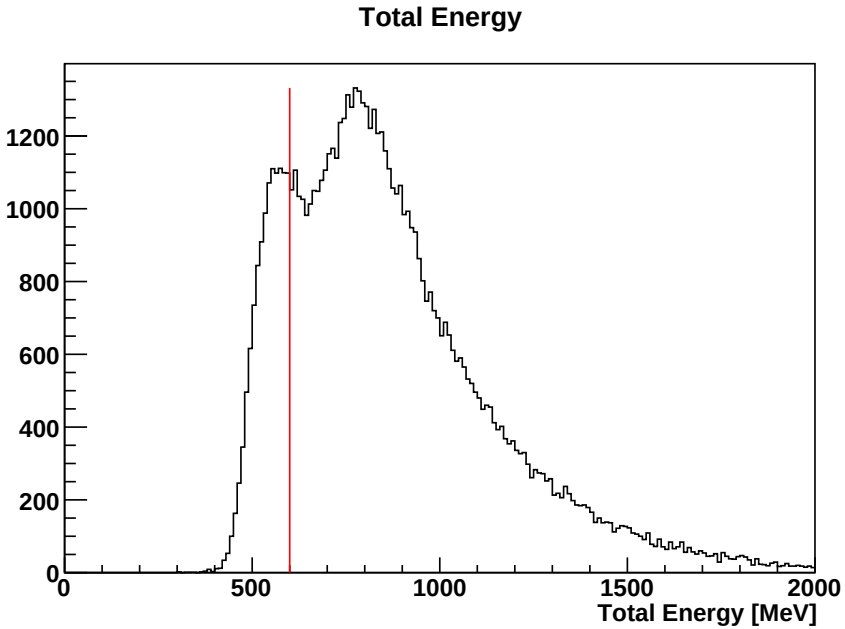

Figure: Total energy for run 1530.

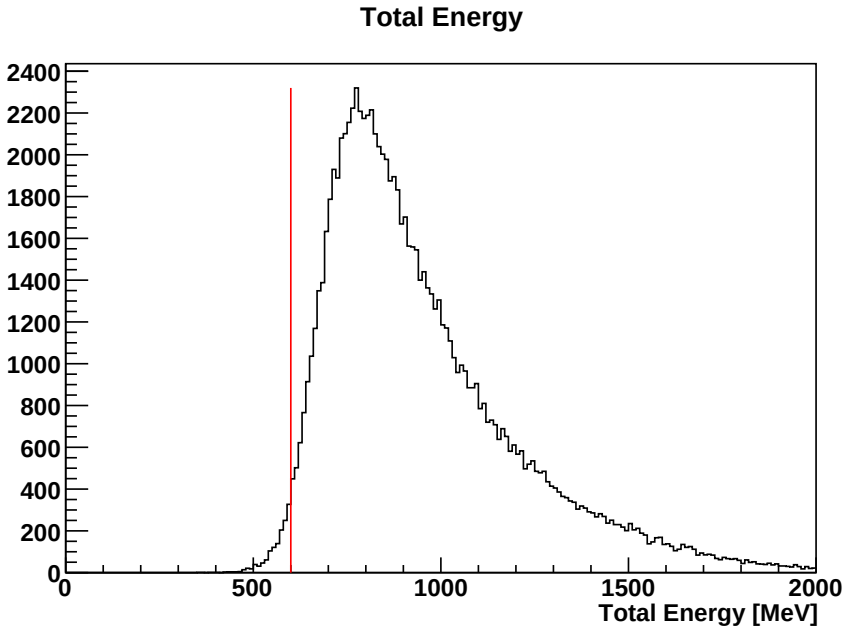

Figure: Total energy for run 1881.

Total Energy

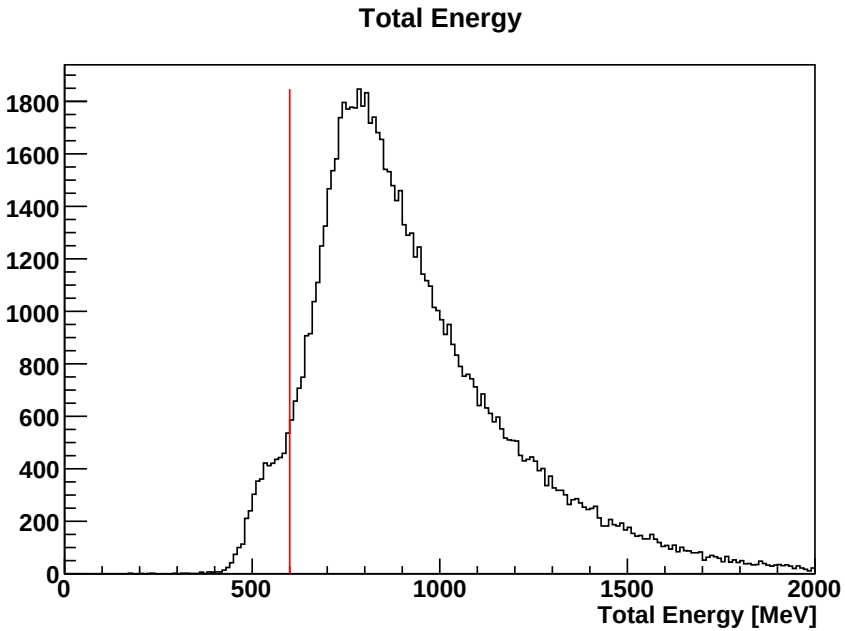

Figure: Total energy for run 1915. Here the pre-shower threshold was changed from -0.02 to -0.015 mV.

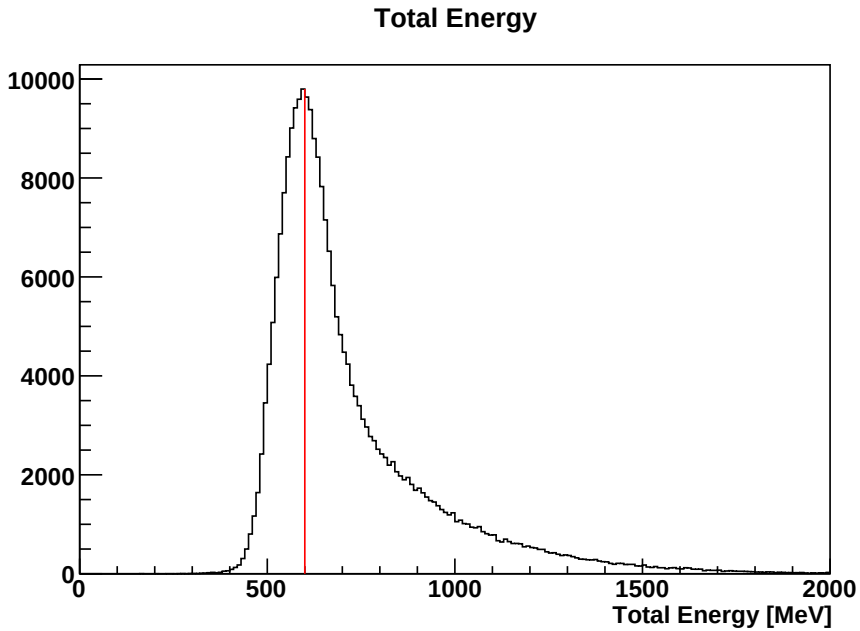

Figure: Total energy for run 1809. Test run after trigger alignment.

Pre-shower and Shower Energy

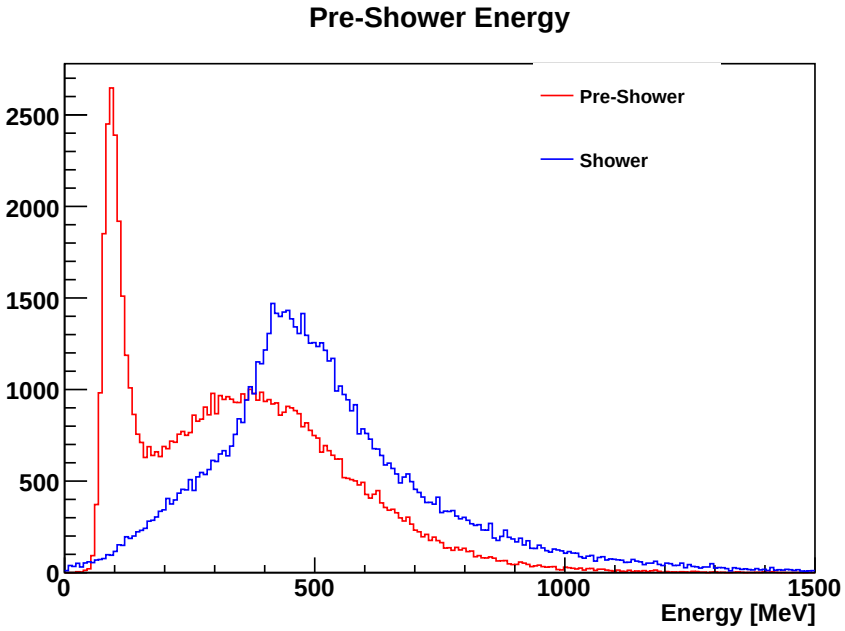

Figure: Pre-shower and shower energy for run 1530.

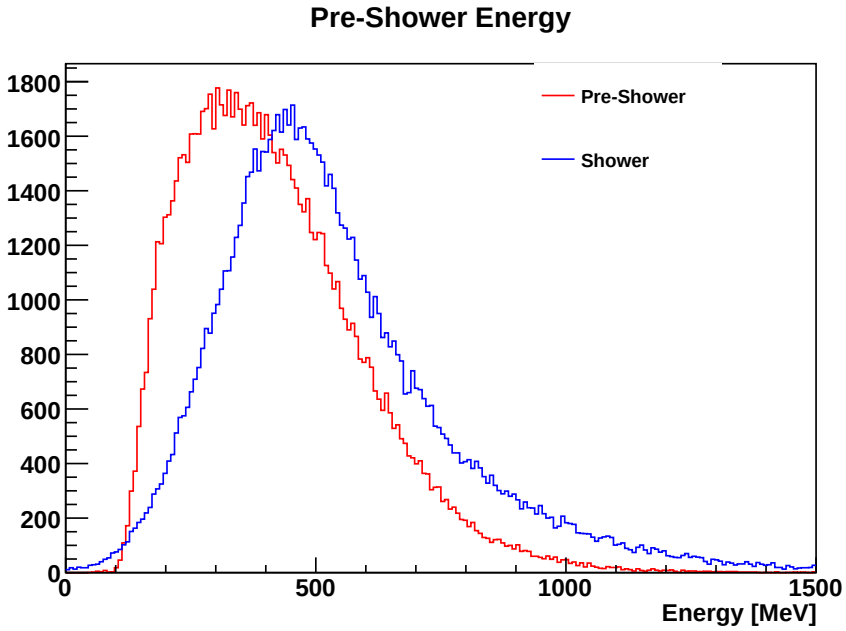

Figure: Pre-shower and shower energy for run 1881.

Pre-shower and Shower Energy

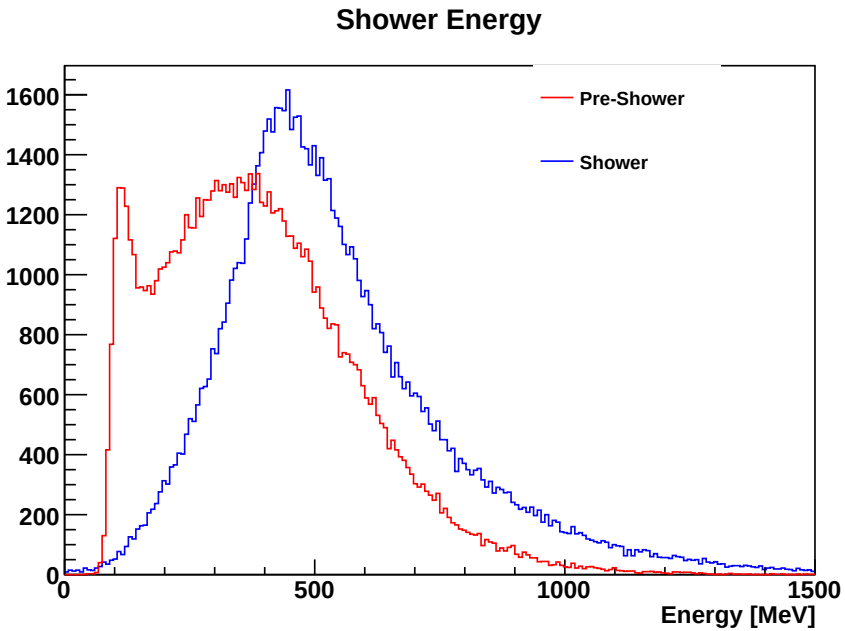

Figure: Pre-shower and shower energy for run 1915.

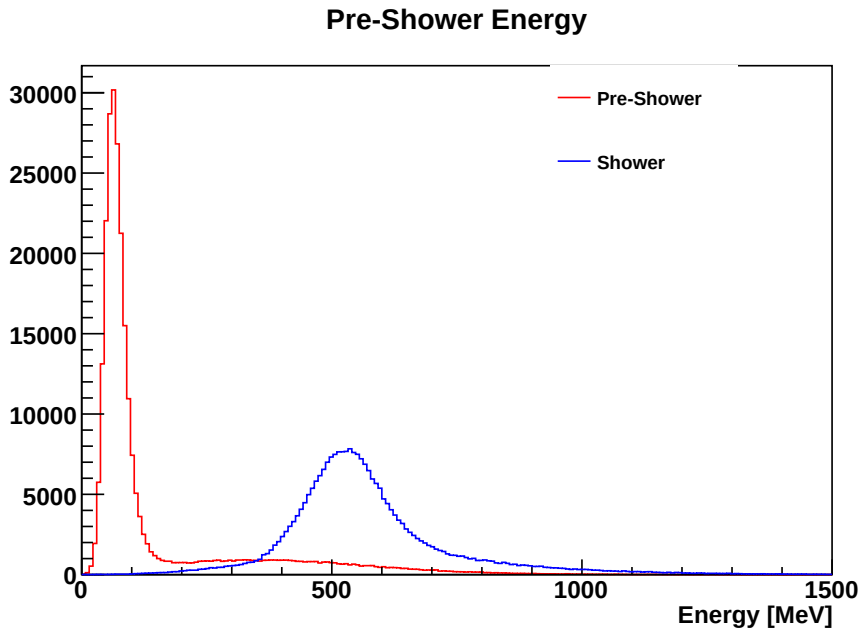

Figure: Pre-shower and shower energy for run 1809.

What's Next

- Look more into in-plane angle shift
- Finish cut stability checks
- Compute raw asymmetries
- Calculate accumulated charge for 5-pass
- Get 5-pass N2 runs for dilution correction
- Get EPR Polarizations