

BigBite Analysis:

Scattering Angle

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Outline

1 BigBite Scattering Angle

2 What's Next

BigBite Scattering Angle

- Last week I showed the BigBite scattering angle binned to match the LHRS momentum settings
- LHRS had $9 p_0$ setting and with bin width of

$$p_{width} = p_0 \pm 0.035 * p_0$$

- It seemed as though there were two peaks in the scattering angle
 - Correlated to Čerenkov mirror columns having different scattering centers?

BigBite Scattering Angle

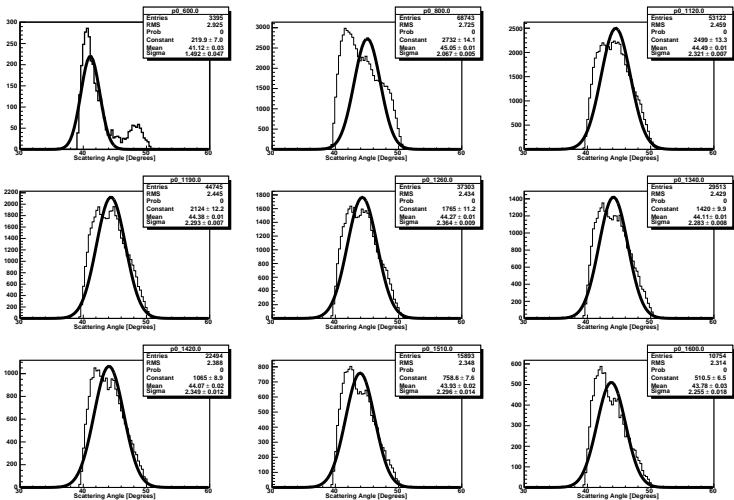


Figure: BigBite scattering angle binned in LHRs p_0 bins.

BigBite Čerenkov Scattering Angle

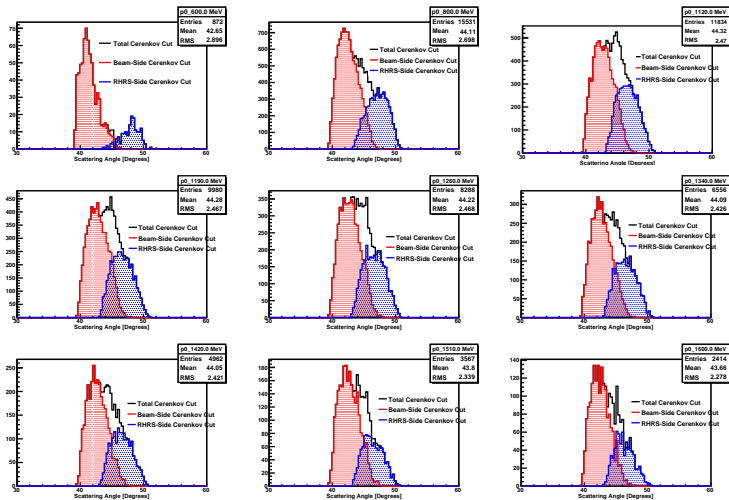


Figure: BigBite Čerenkov scattering angle binned in LHRs p_0 bins. The red histo shows beam-side Čerenkov mirrors, blue histogram shows RHRS-side Čerenkov mirrors and black is beam or RHRS side mirrors.

BigBite Vertical Shower Position vs Scattering Angle

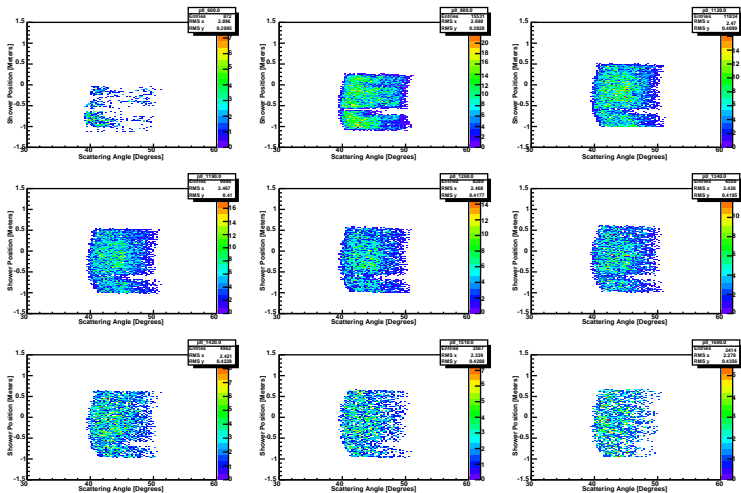


Figure: BigBite scattering angle binned in LHRs p_0 bins vs vertical shower position.

Total BigBite Scattering Electron Energy

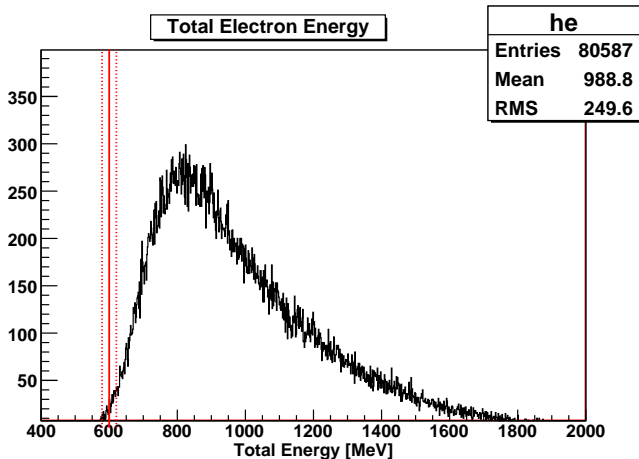


Figure: BigBite scattering electron energy. Solid red line is $p_0 = 600$ MeV. Dashed red lines are $\pm 3.5\%$ of p_0 .

BigBite Scattering Angle Summary

- It seems that the **double peaks** in the scattering angle are due to the **Čerenkov mirrors**
- First p_0 bin is on the edge of a good total electron energy

What's Next...

- PolRad
 - Continue looking at PolRad code
 - I finally got code to run
 - Reproduce previous results from the code
- Continue sorting 5-pass wave-plate/target changes
 - About 1/3 done
- Will be out Aug. 30 - Sept 9