

BigBite Analysis

Out of plane angle check and 5-pass Data Quality

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Outline

1 Out of Plane Angle

2 TDC Offsets

Out of Plane Angle at Vertex Center ± 5 mm

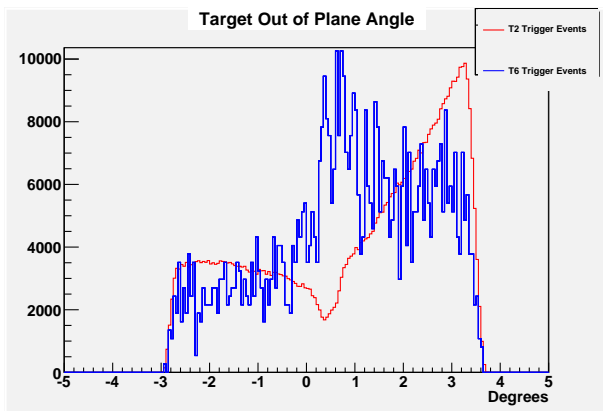


Figure: The out of plane angle for the two trigger types, T2 and T6 from vertex center ± 5 mm. There are no Čerenkov cuts applied in this plot. The dip in the center of the out of plane angle for the T2 trigger type events is due to the Čerenkov being in the T2 trigger. This dip goes away for the T6 type events which does not have the Čerenkov in the trigger.

Čerenkov and PSUM TDC Procedure

- $TDC_{\text{Cut}} = |TDC_i - TDC_{\mu}| < 50$
- TDC_i : TDC value of i^{th} event
- TDC_{μ} : Mean TDC value found by fitting TDC spectra with a Gaussian
- 50 is number of TDC channels in the cut window

Small Angle Čerenkov TDC Offsets

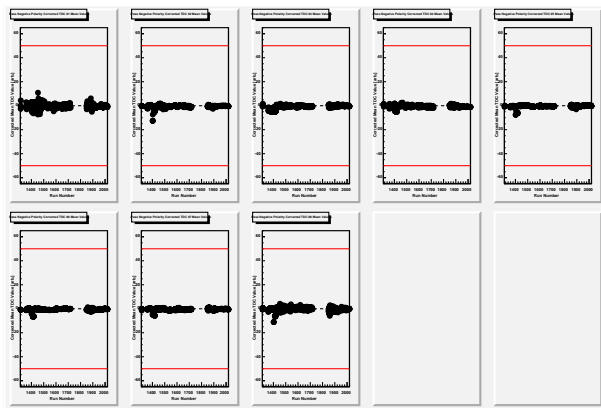


Figure: Small angle side Čerenkov TDC peak positions with offset applied for entire 5.89 GeV data set. The two red lines represent the current TDC cut position at TDC channel of ± 50 .

Large Angle Čerenkov TDC Offsets

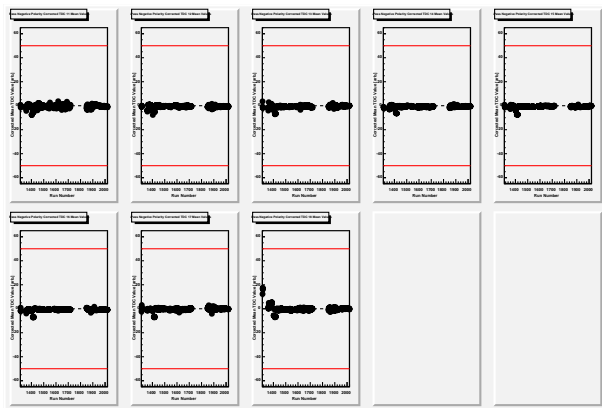


Figure: Large angle side Čerenkov TDC peak positions with offset applied for entire 5.89 GeV data set. The two red lines represent the current TDC cut position at TDC channel of ± 50 .

PSUM TDC Offsets (1)

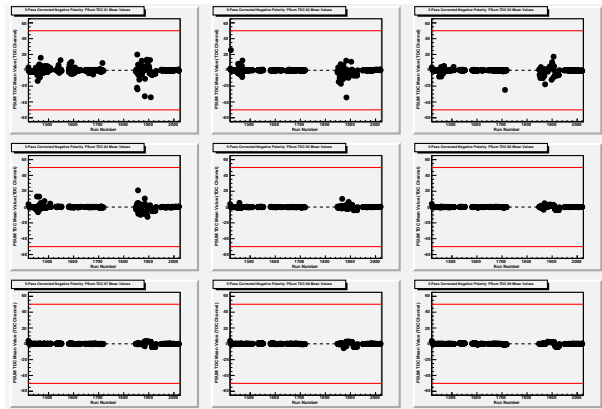


Figure: PSUM 1-9 TDC peak positions with offset applied for entire 5.89 GeV data set. The two red lines represent the current TDC cut position at TDC channel of ± 50 .

PSUM TDC Offsets (2)

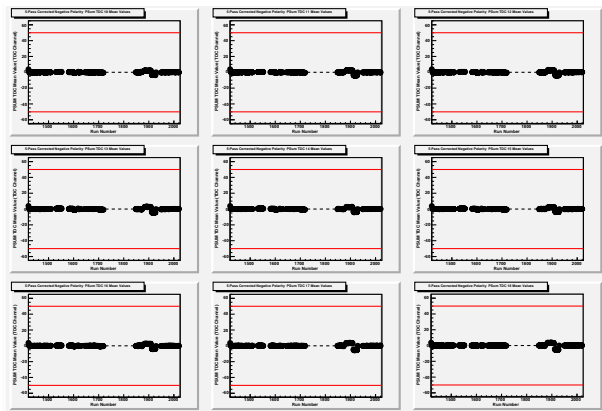


Figure: PSUM 10-18 TDC peak positions with offset applied for entire 5.89 GeV data set. The two red lines represent the current TDC cut position at TDC channel of ± 50 .

PSUM TDC Offsets (3)

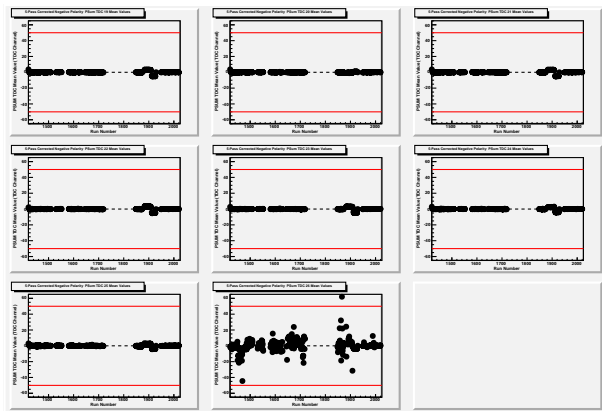


Figure: PSUM 19-26 TDC peak positions with offset applied for entire 5.89 GeV data set. The two red lines represent the current TDC cut position at TDC channel of ± 50 .

What's Next

- Continue data quality checks on 2nd round replays:
 - MWDC stability
 - E/p