

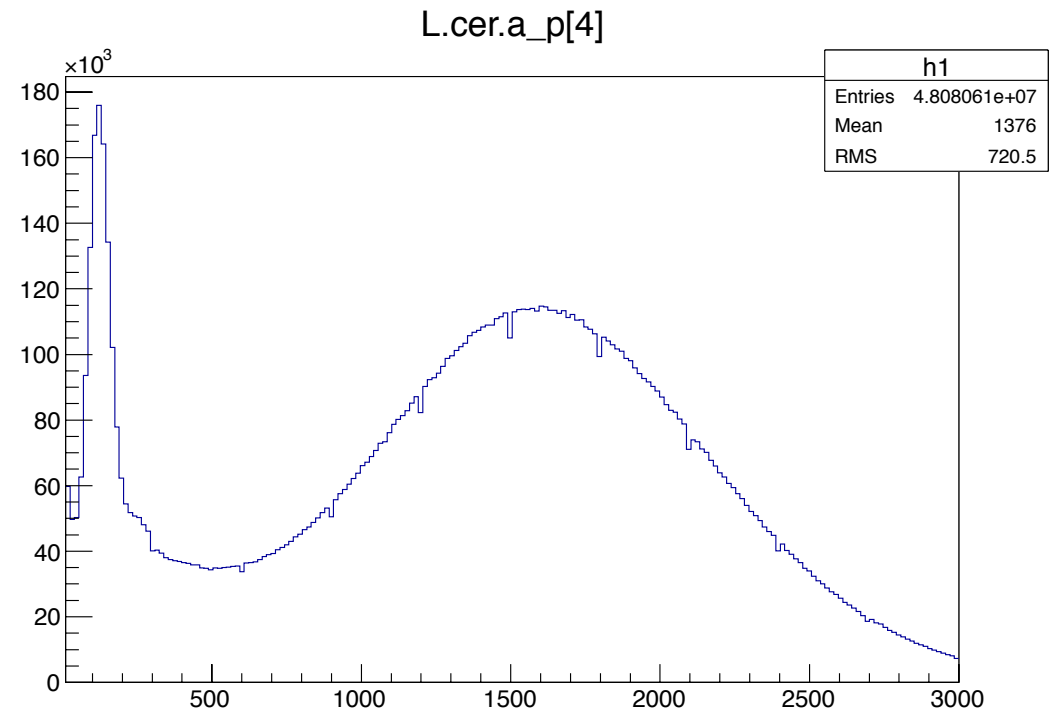
Cherenkov Calibration

Melissa Cummings

June 27th, 2012

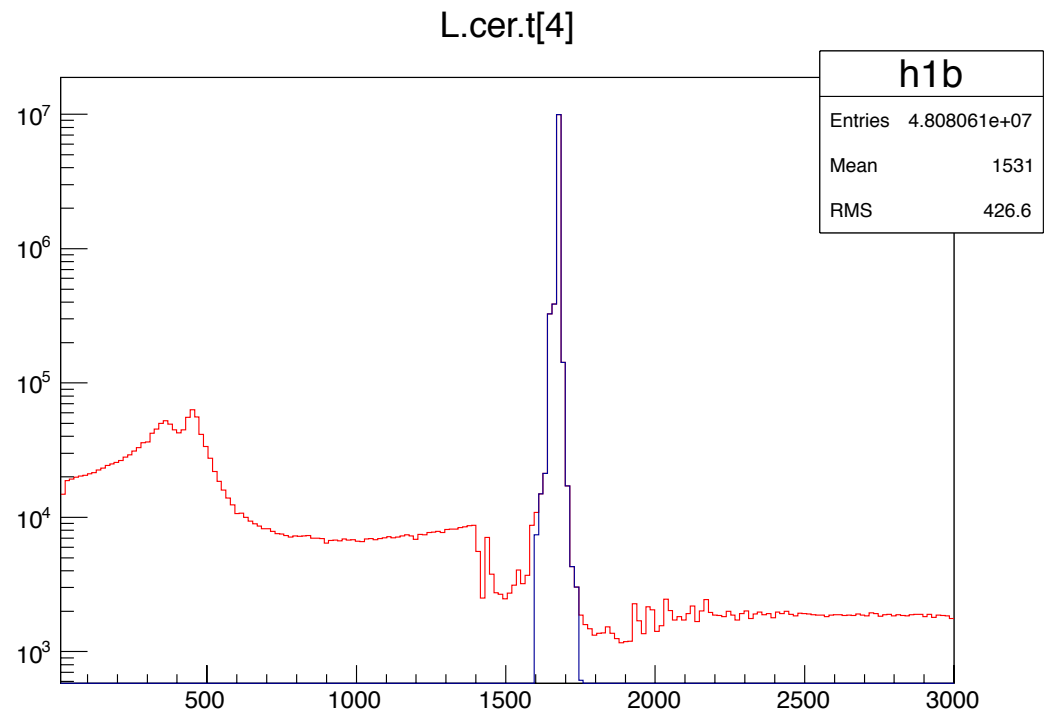
Method

- Isolate the single photo electron peak for each PMT



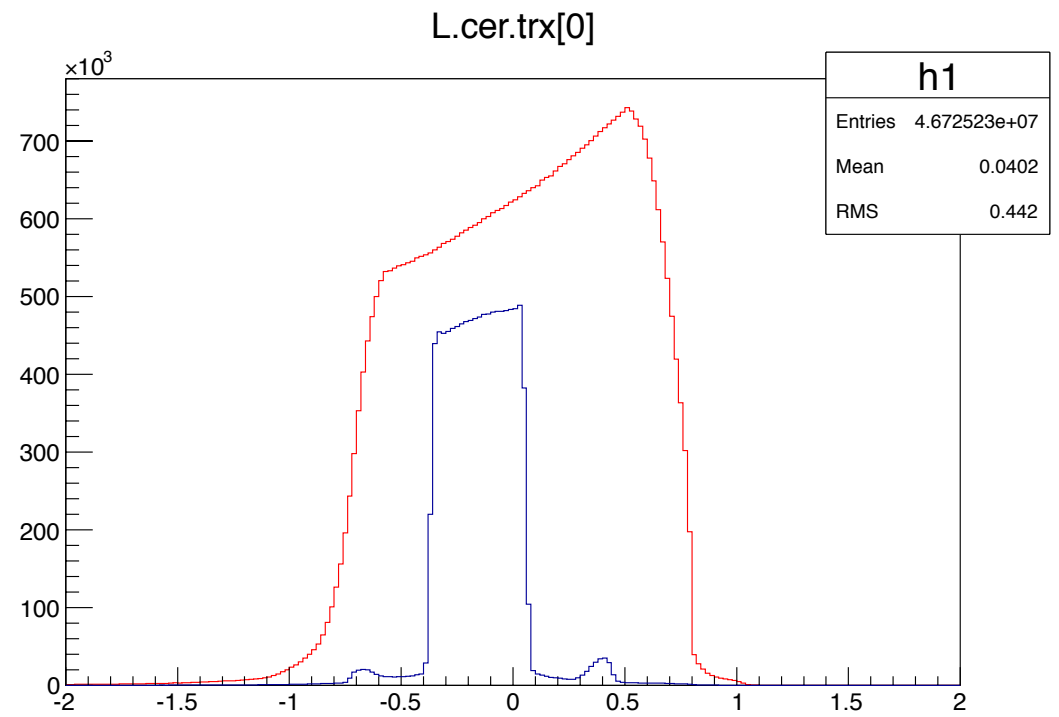
Method

- Cut on “good time” events in TDC



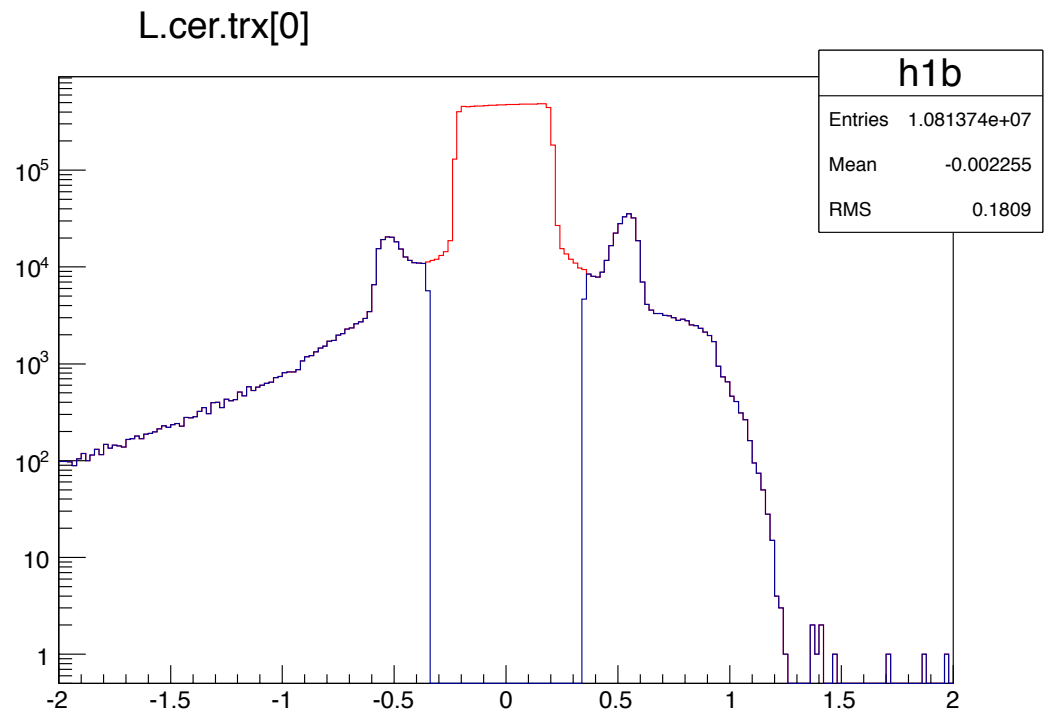
Method

- Apply TDC cut to Cherenkov x -tracking variable
- Isolates location of individual mirrors



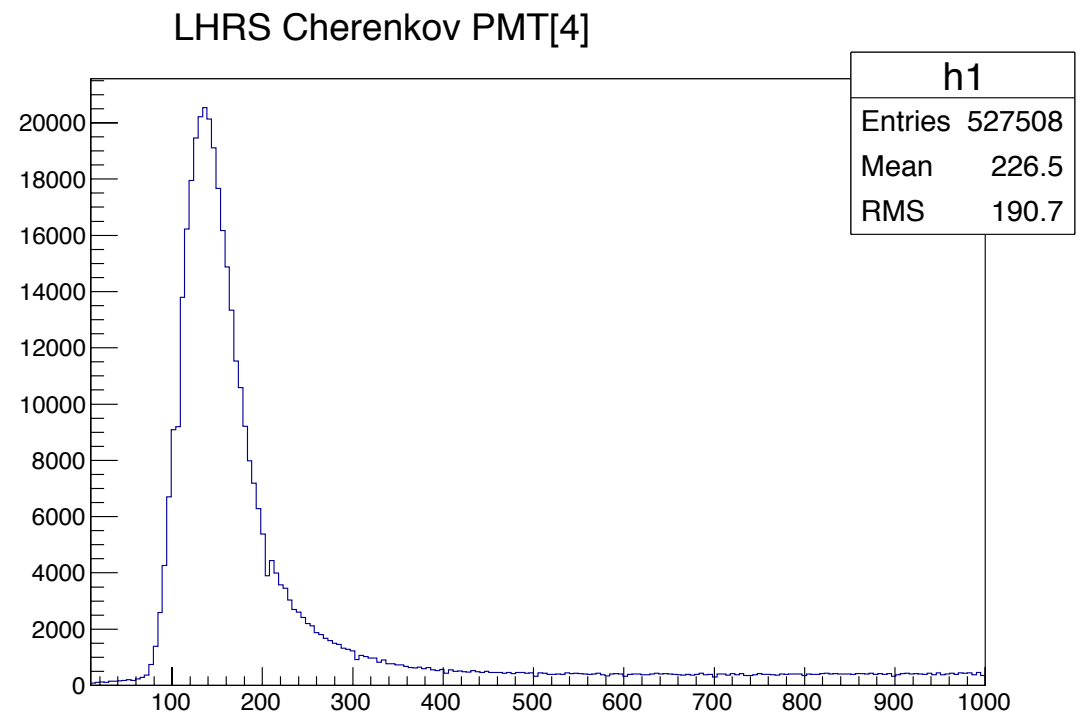
Method

- Apply TDC cut to Cherenkov x-tracking variable
- Isolates location of individual mirrors
- Cut on “tails” to pick out single photoelectron events



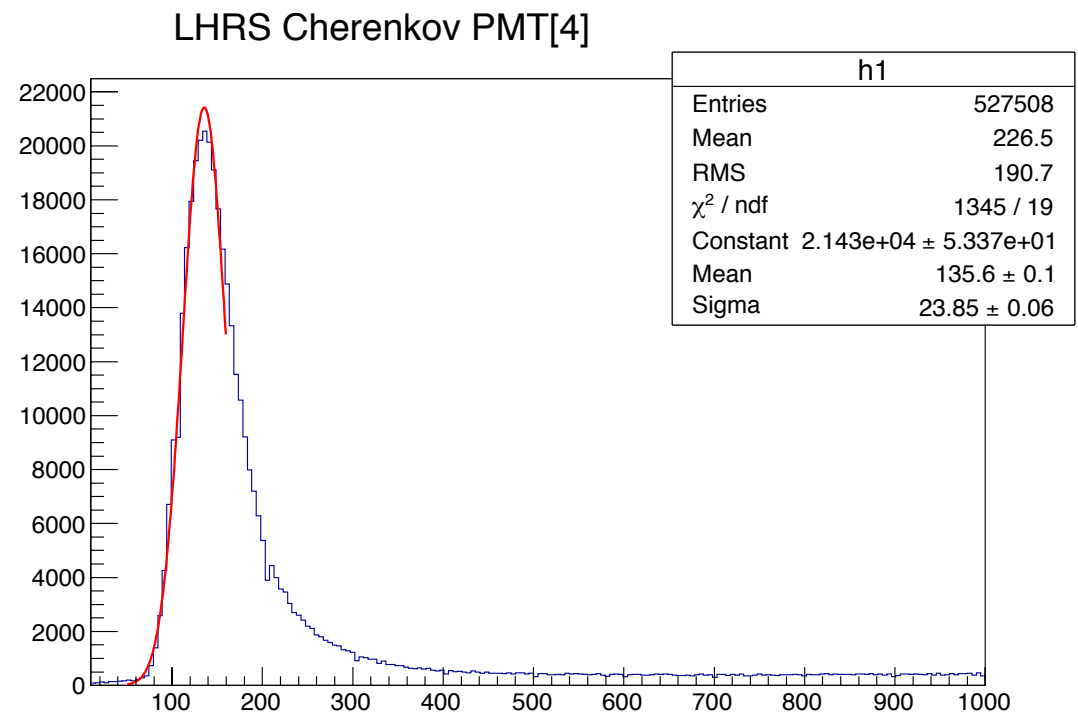
Method

- Apply TDC cut and x-tracking cut to ADC spectra

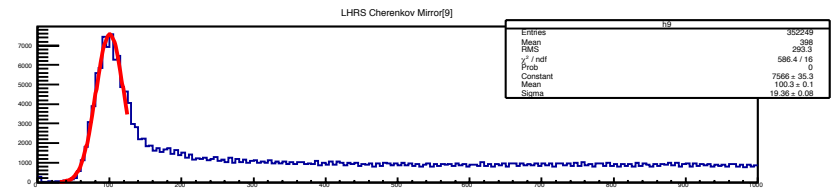
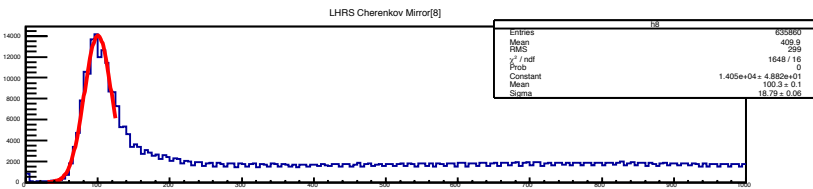
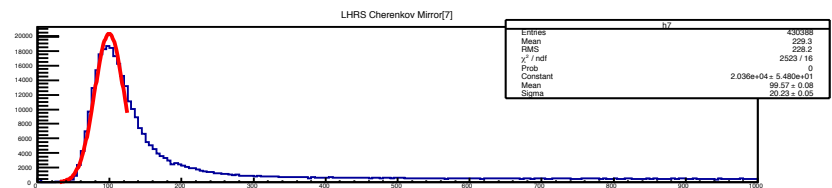
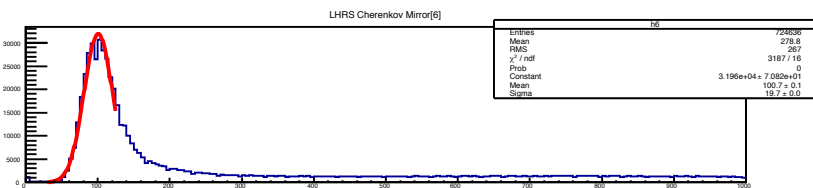
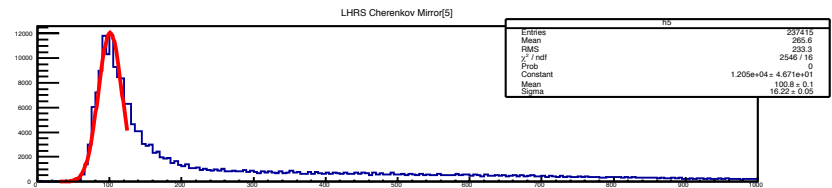
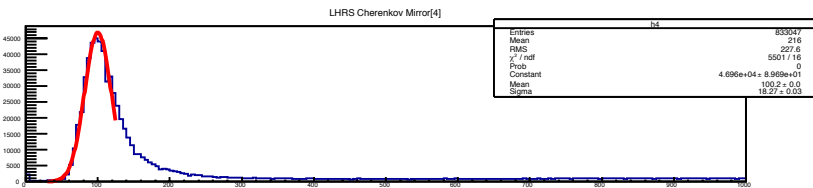
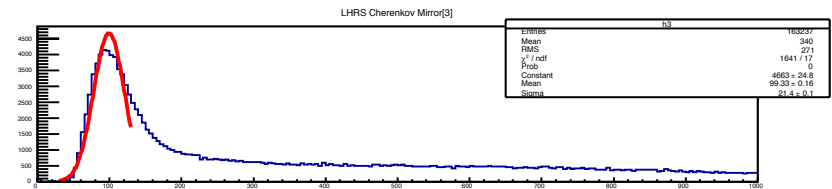
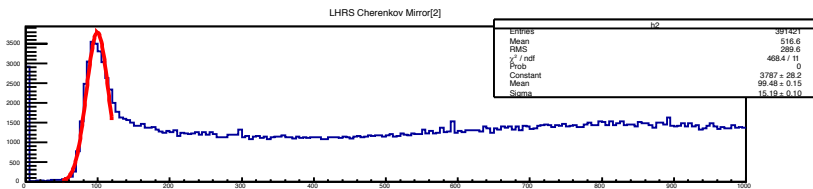
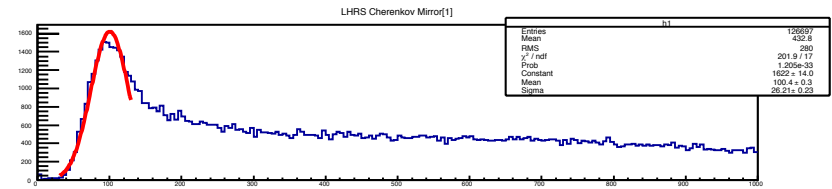
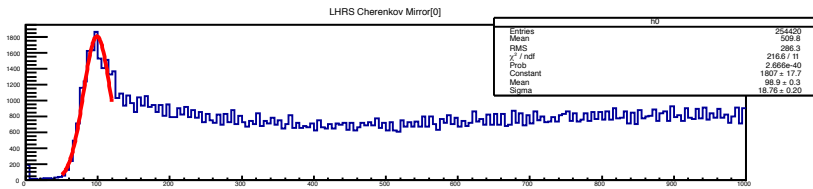


Method

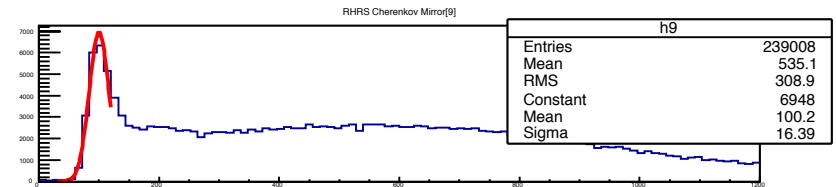
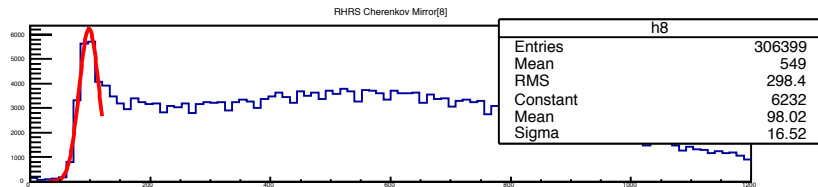
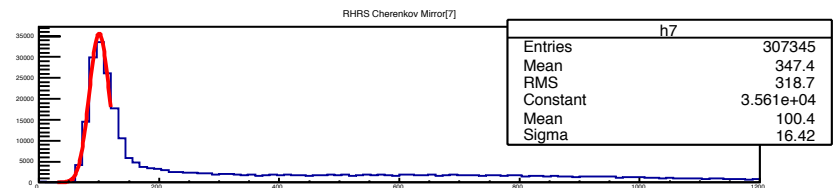
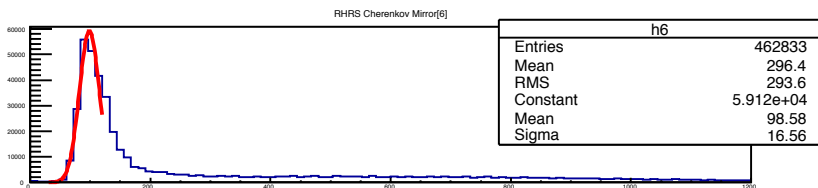
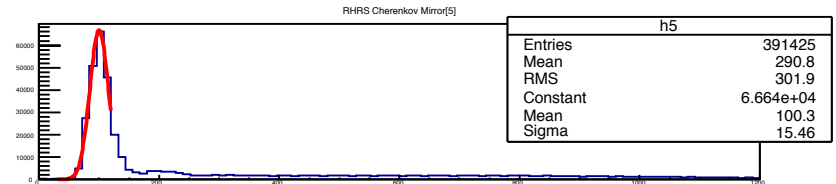
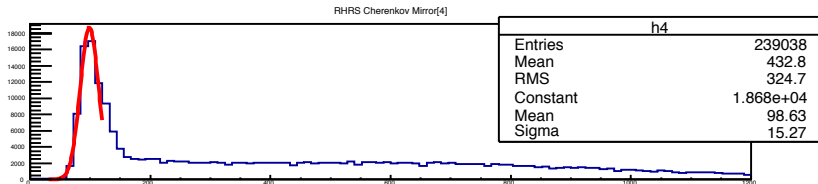
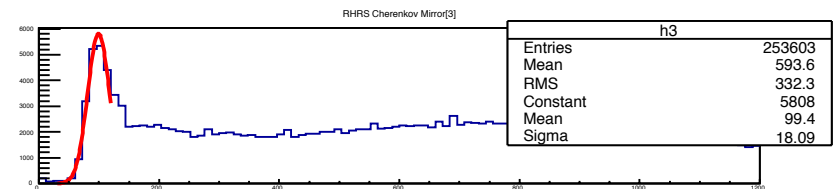
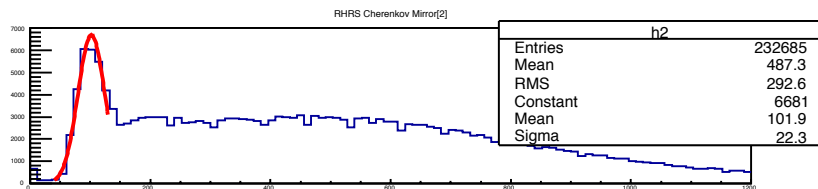
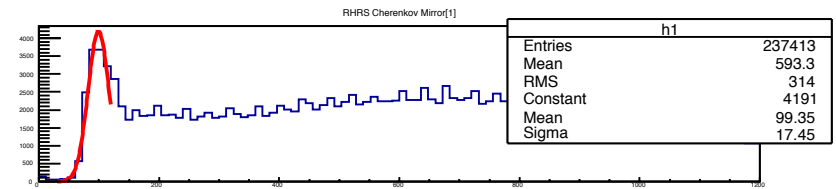
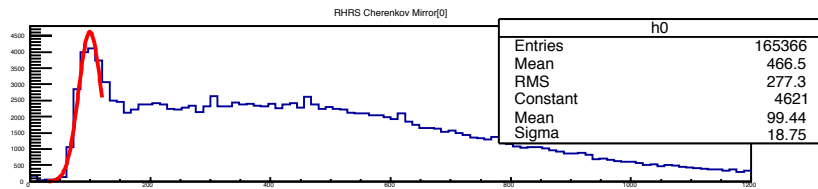
- Apply TDC cut and x-tracking cut to ADC spectra
- Fit peak with a gaussian
- Scale to align peaks to channel 100



SPE Peaks for LHRS



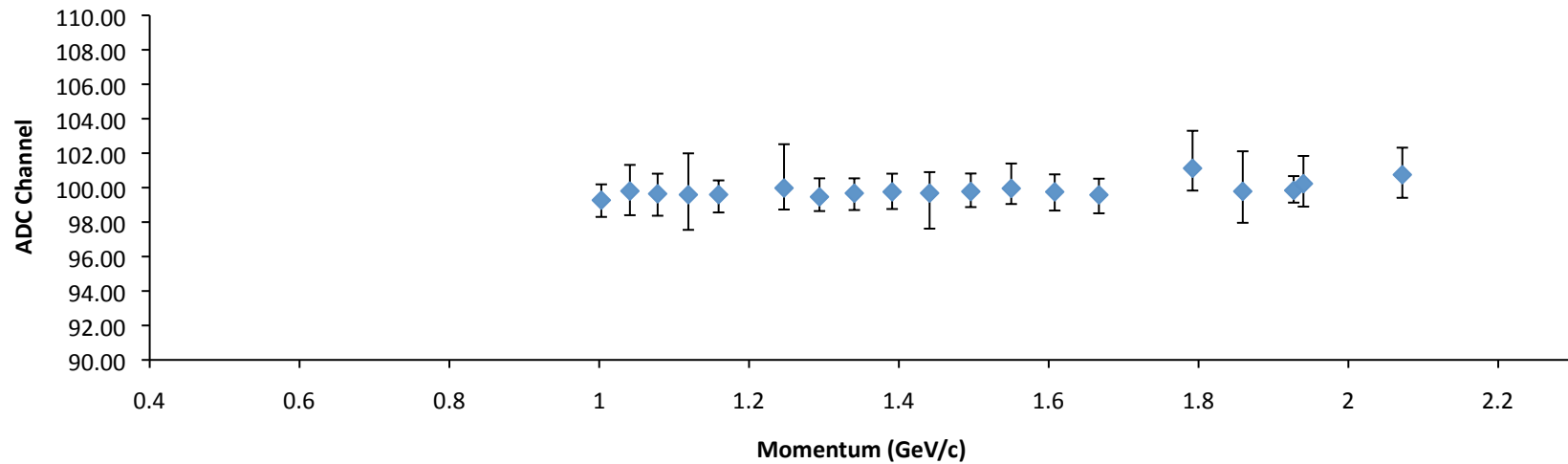
SPE Peaks for RHRS



Consistency Checks

- Check the stability of calibration over all energy/momentum settings
- Fit peaks for individual PMTs, then average for each momentum

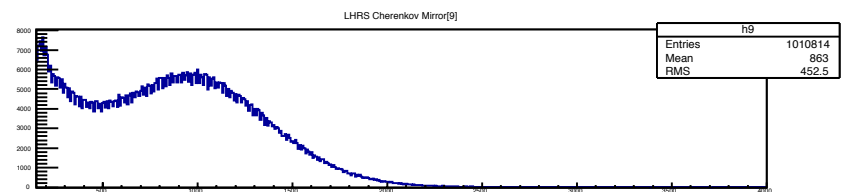
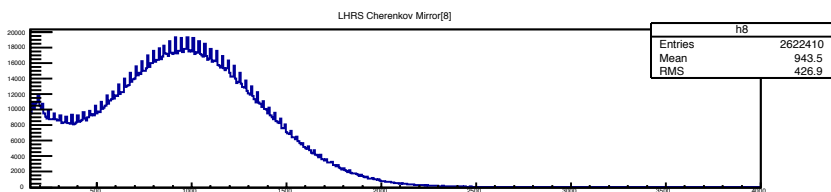
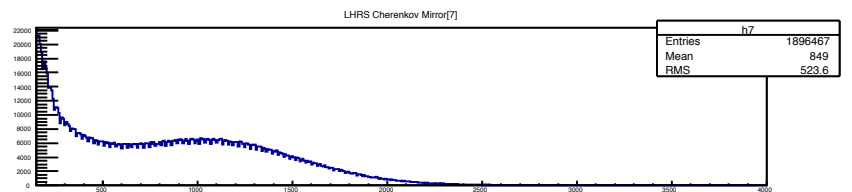
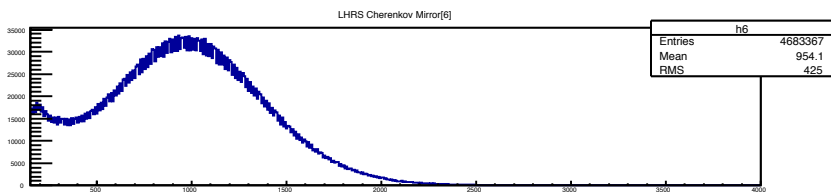
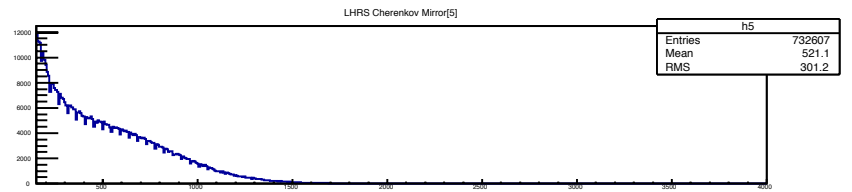
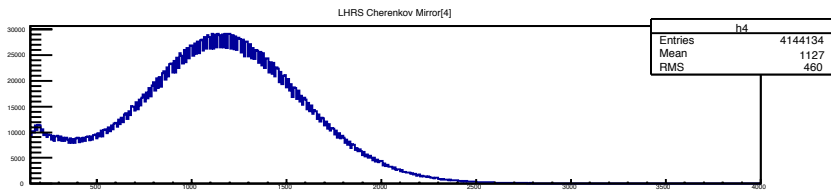
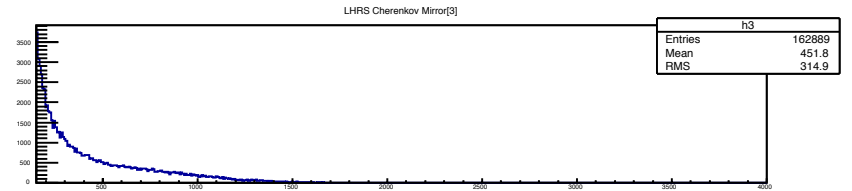
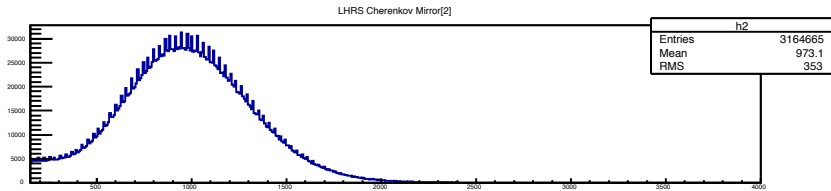
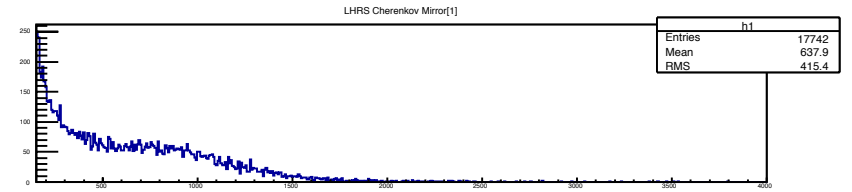
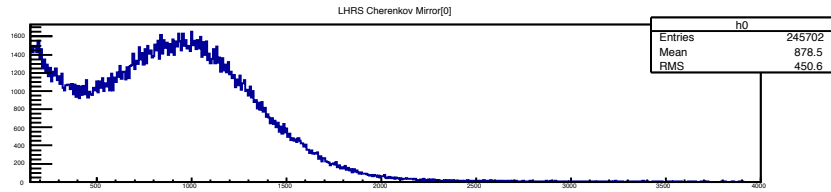
**Cherenkov Calibration Stability Check
(2.2 GeV)**



Needs to be Done:

- Finish stability checks
- PMT Efficiencies
 - Average # of photoelectrons

Good Electron Peak



Cherenkov Tracking Variables

LHRS Cherenkov Tracking Variables, Broken up by PMT#

