

TPC Gain Calibration Update

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Reminder

Recall for the anode calibrations, I defined beam tracks as those which

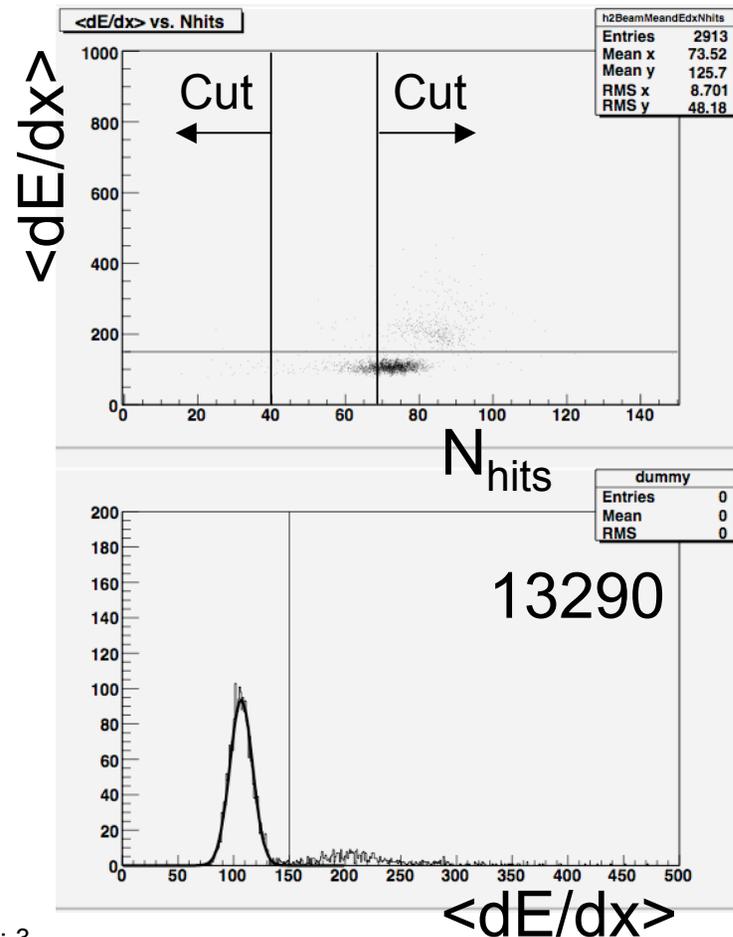
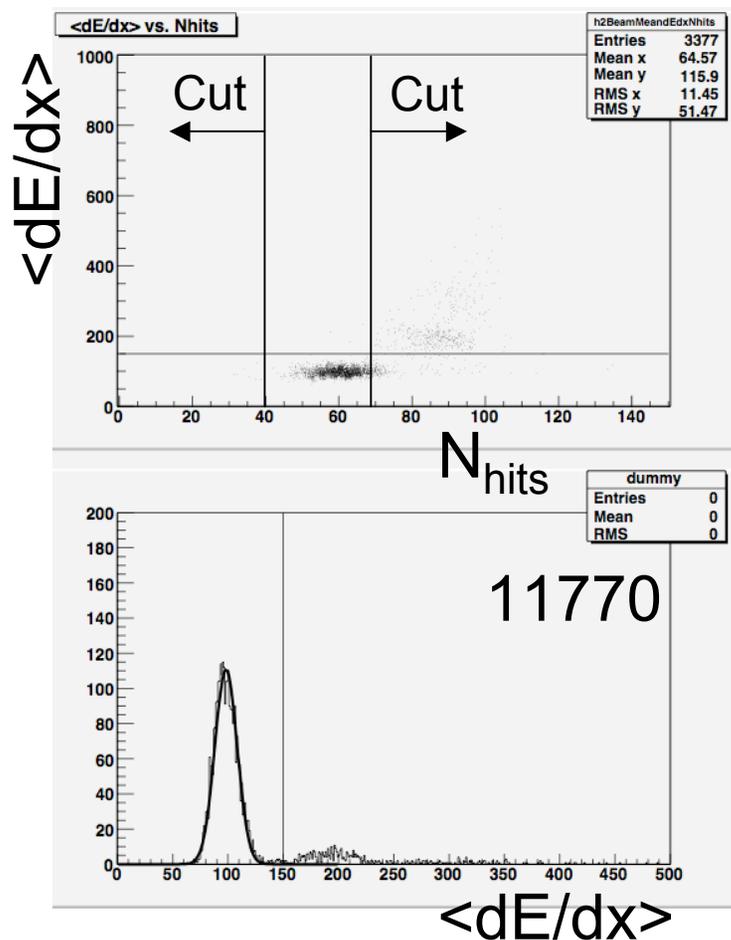
- (1) are the only track in an event
- (2) travel straight down the center of the TPC within a box of +/- 10cm around the target position
- (3) have $40 < N_{\text{hits}} < 68$

At my last update, we decided to eliminate the first criterion above and the third criterion seemed too low and semi-arbitrary...



Revisiting “beam” tracks

The N_{hits} distributions for single beam tracks are not stable enough over the whole run period for my previous cuts ($40 < N_{\text{hits}} < 68$) which were chosen looking at only a few runs...

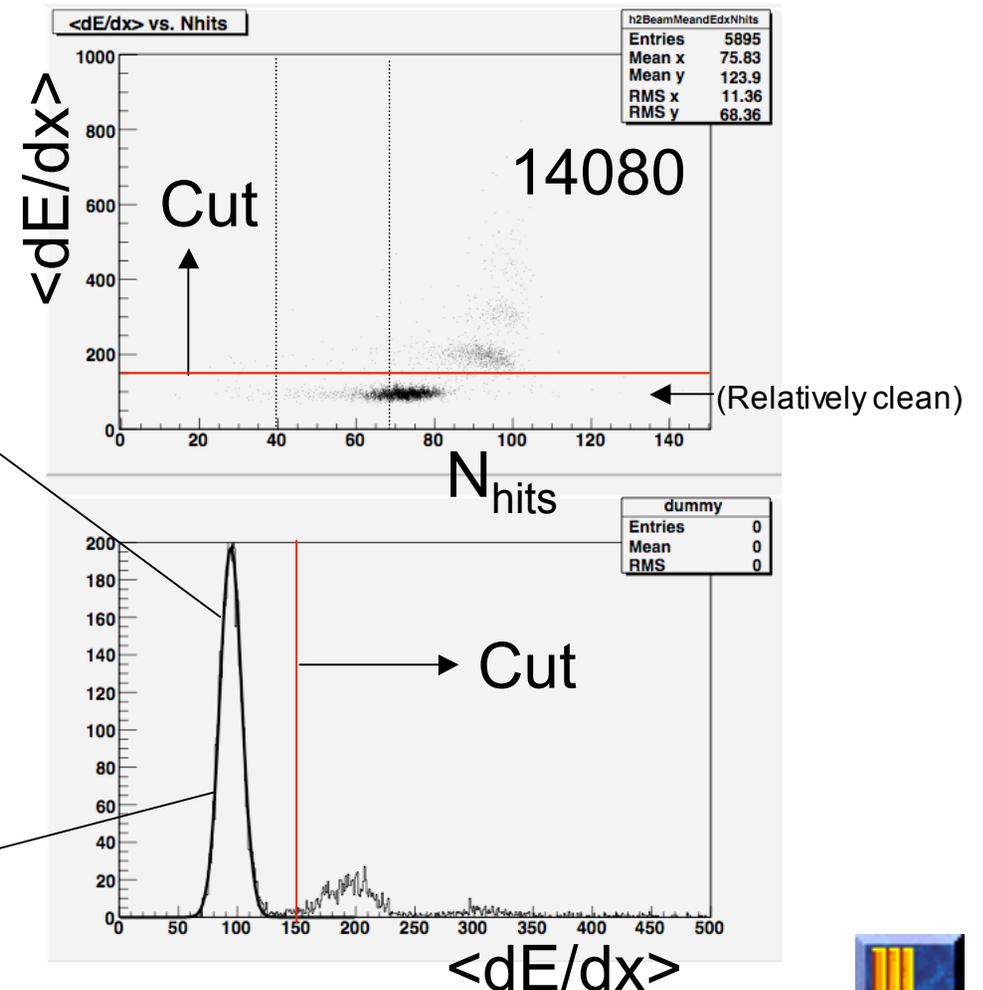
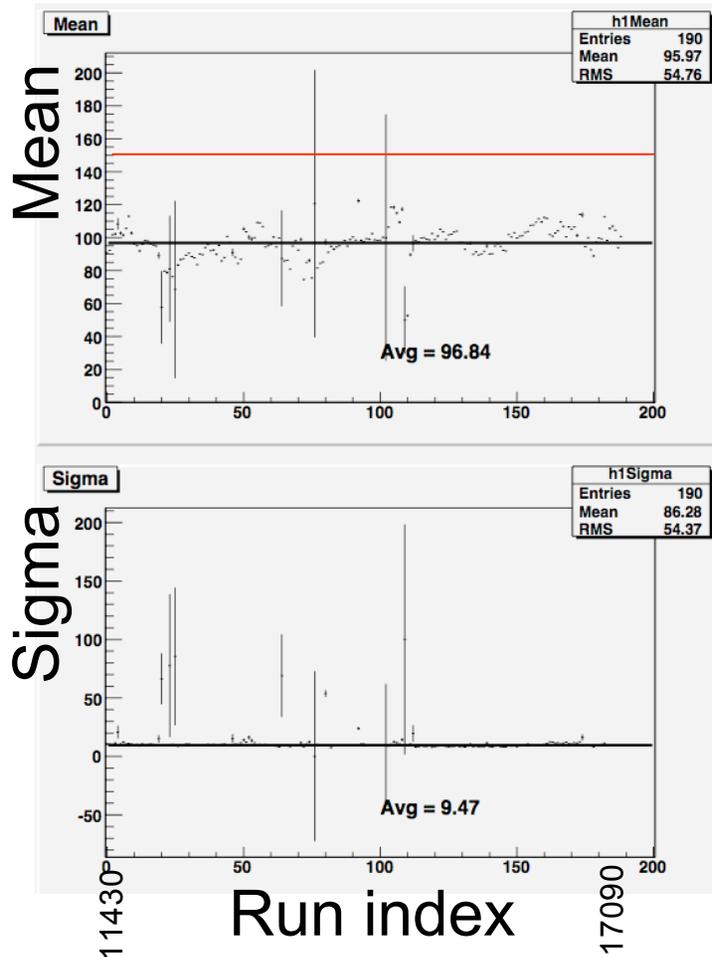


$\langle dE/dx \rangle$ is a better cut

However, $\langle dE/dx \rangle$ for single beam tracks *is* reasonably* stable over the whole run period

(*Mean moves around some but width is stable and not large)

Cut at $\langle dE/dx \rangle < 150$ looks safe



To do

- I am running a set of tests with the new cuts
- These tests will generate calibration constants in the DB
- Need to add the methods to TPCRUtils which apply these corrections
- Then we (Jon and I) can study their impact on the cluster-finding/fitting (through ADC thresholds)
- In principle, the calibrations are ready to be run in pass2
- Once we have a handle on the ADC thresholds, pass2 is finished (can be done simultaneously?), and I check the results of the calibrations in the DB, pass3 could run.

