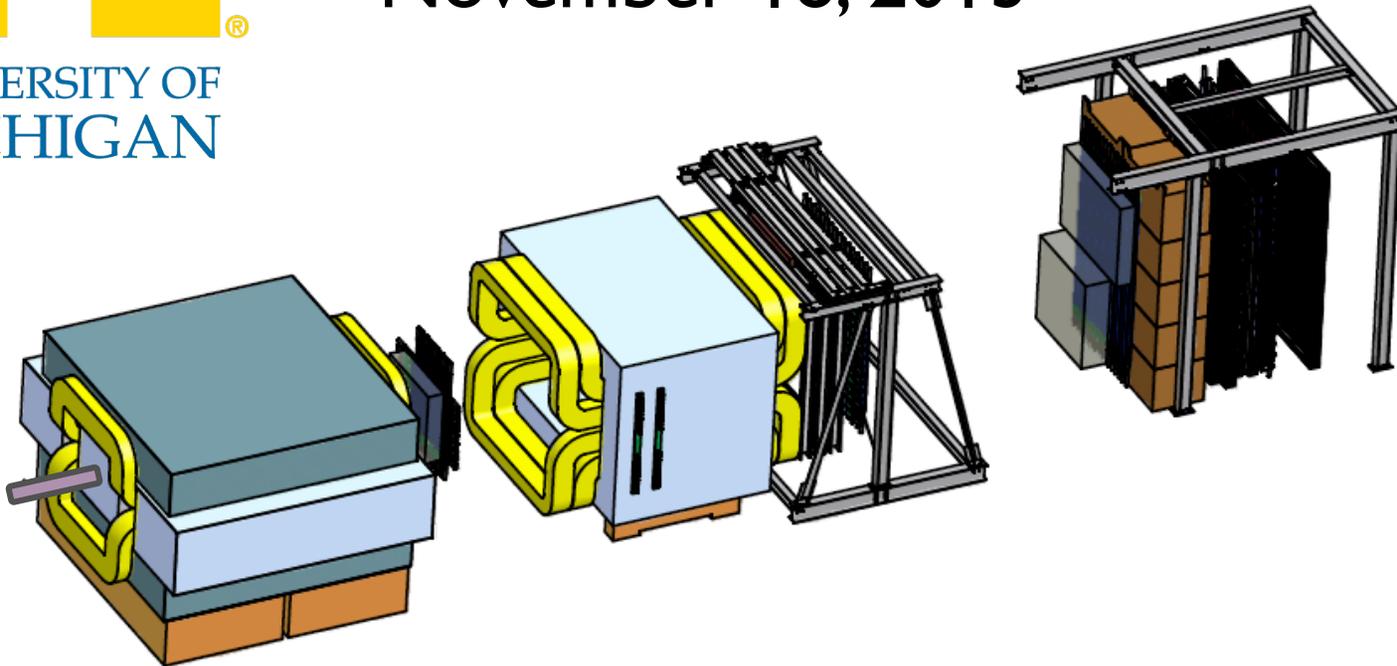


SeaQuest AEM Report



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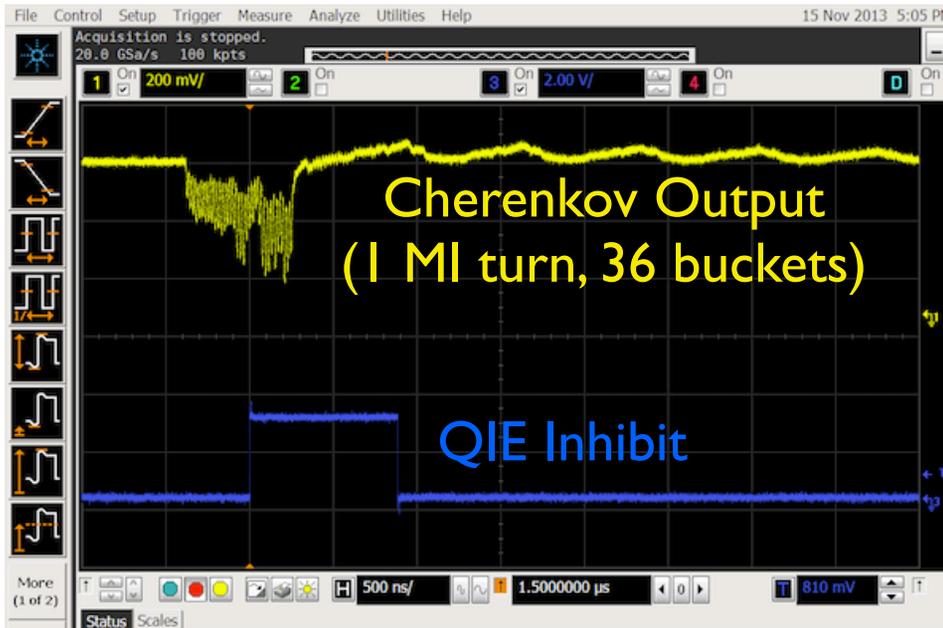
Joshua G. Rubin
November 18, 2013



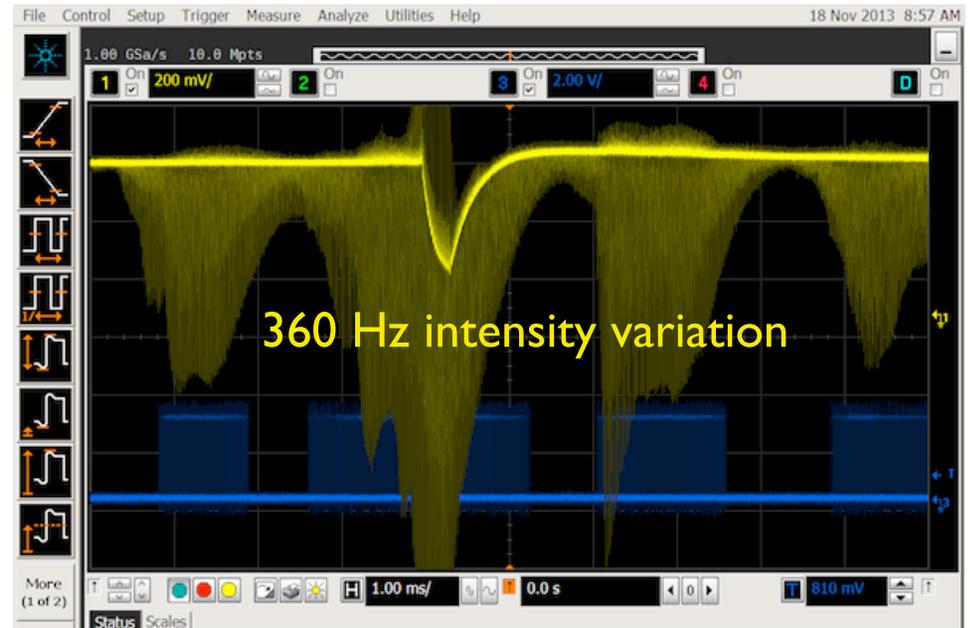
Cherenkov Intensity Monitor

- QIE readout board and scope moved to final location in hall (long runs of RG58 removed)
- Adjustable trigger inhibit working (to veto high-intensity)

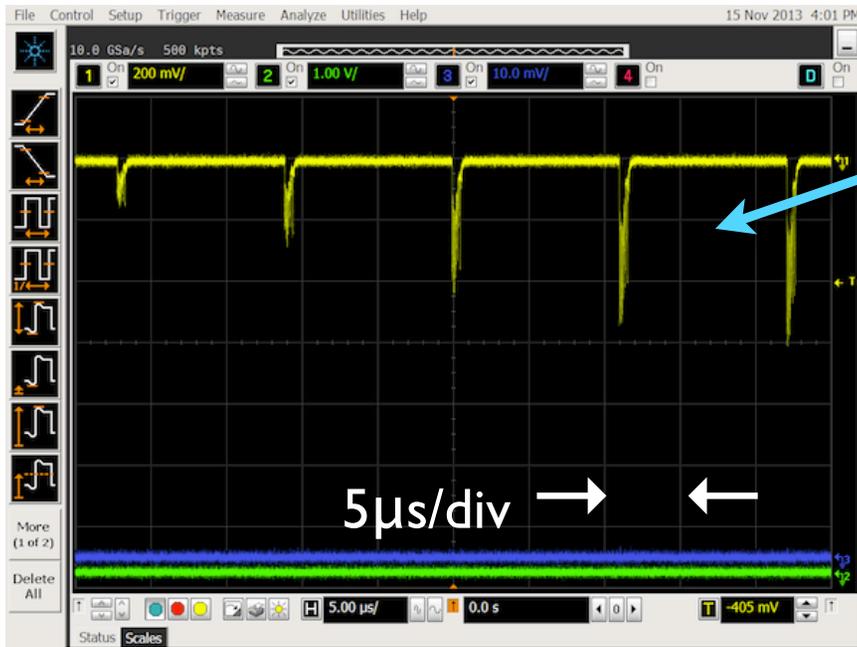
50ns/div → ←



1 ms/div → ←

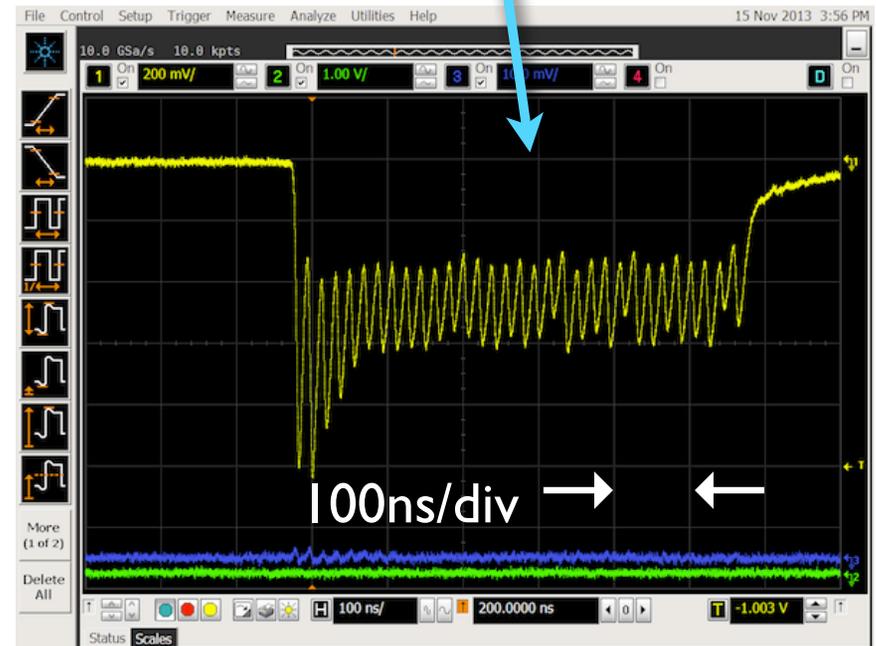
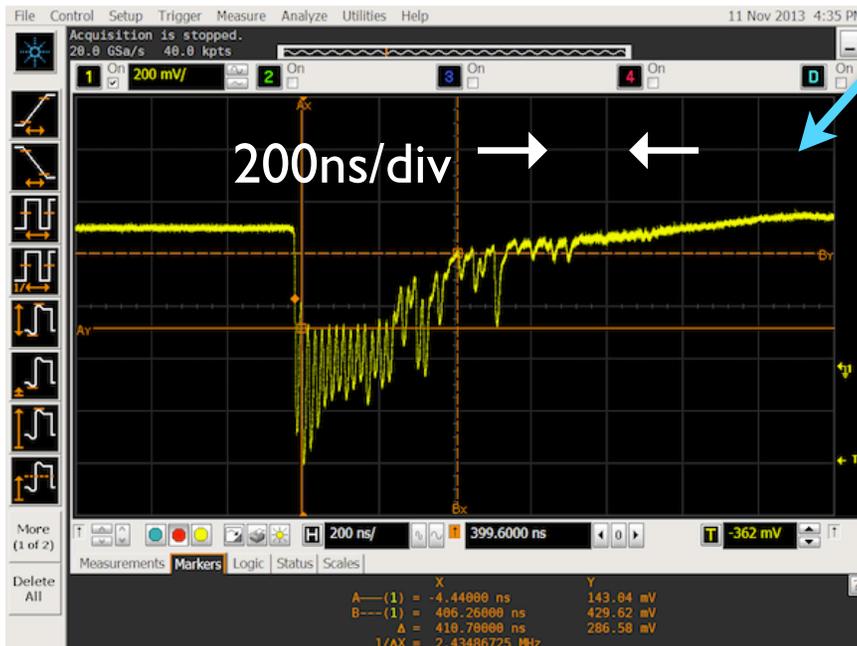


beam intensity varies on different time scales



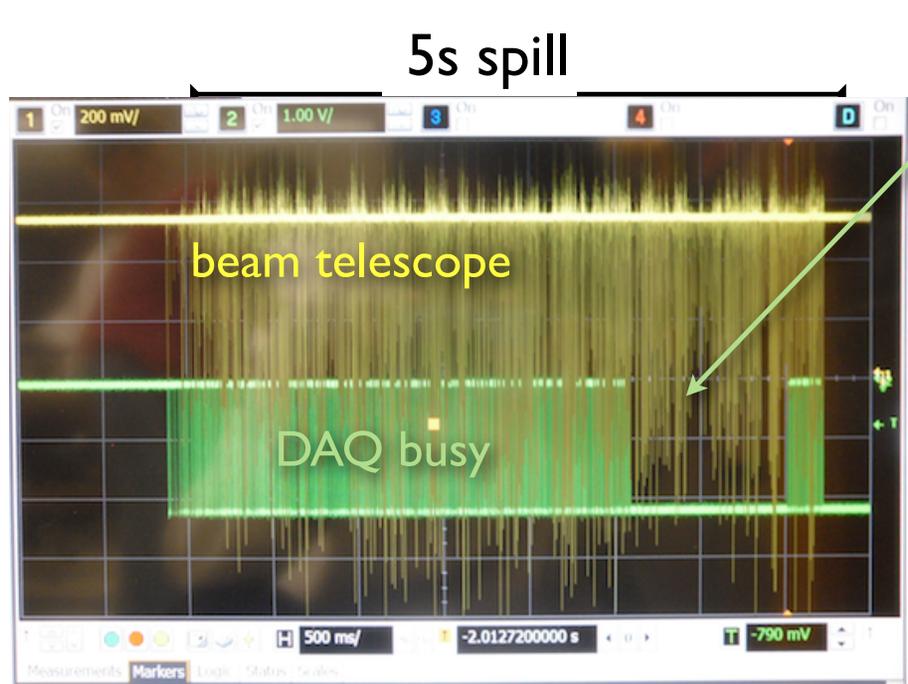
Significant intensity variation turn to turn, with similar relative bucket-by-bucket structure

Sometimes variation large within a turn, sometimes quite uniform



unexpected issues

I. DAQ 'hiccup' (noticed Tuesday)



100mb/s DAQ
should have been
gigabit

(culprit
apprehended and
sentence passed)

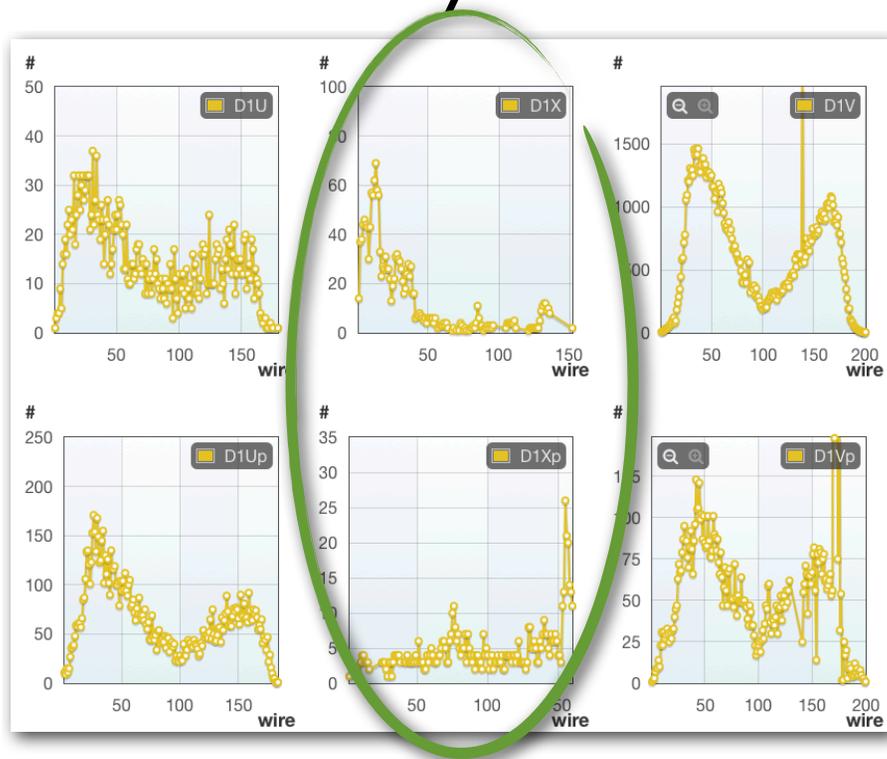
2. database server interruption (Thursday)

Access to temporary SQL database at UIUC was accidentally interrupted by their IT. Interfered with slow control and online monitoring. Some reconfiguration was necessary. Will be fixed permanently with local database (to be installed shortly).

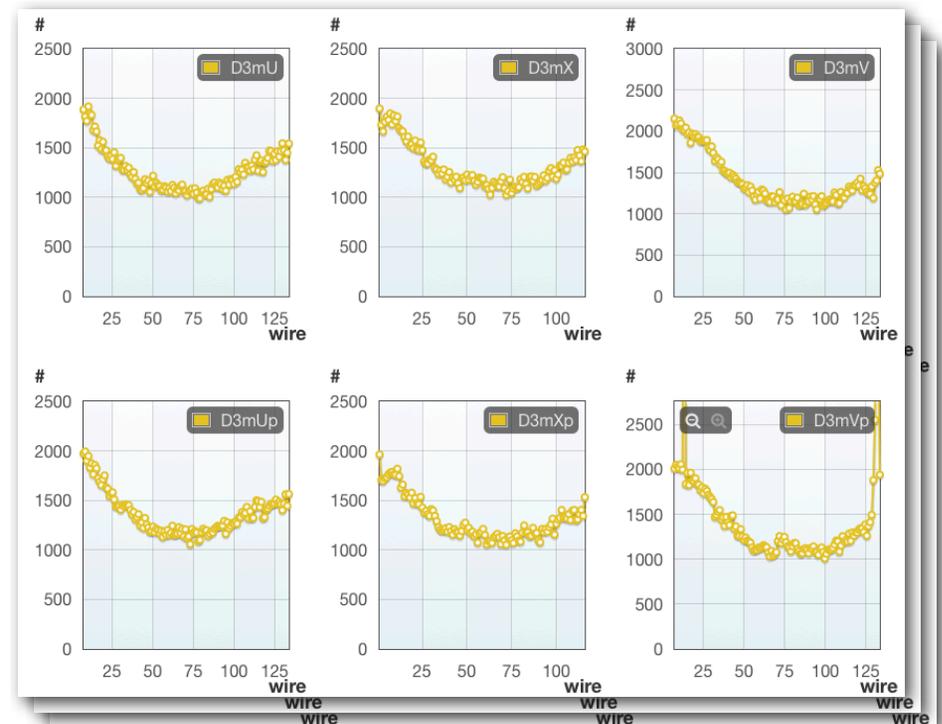
Drift Chamber Progress:

- Gas flow adjusted
- Some bad electronics swapped out
- Discovered a disconnected HV cable

Station I has some efficiency issues



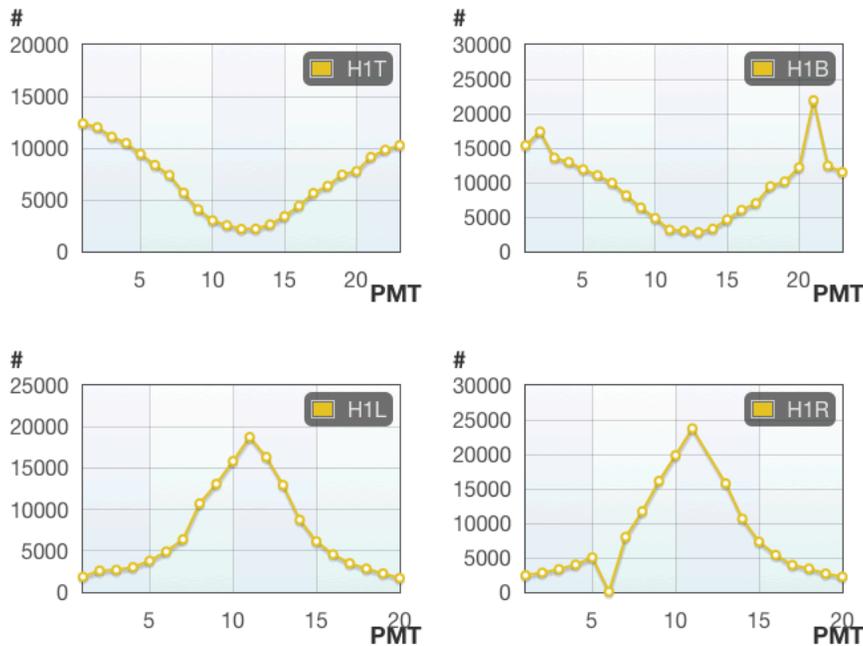
Other stations (3- shown) look good; ready to be plateaued!



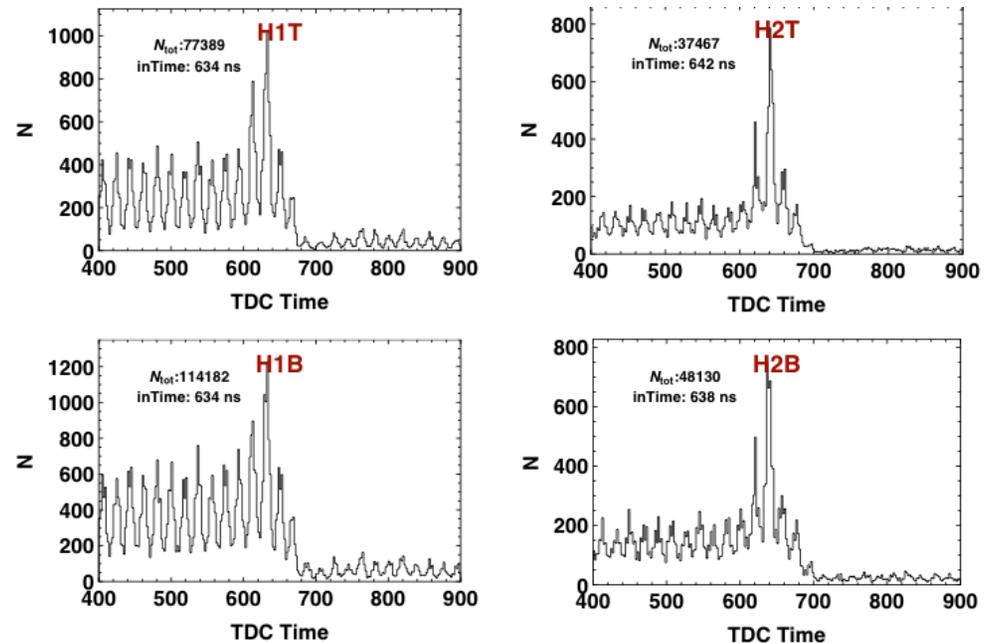
Hodoscopes and Trigger

- Gain matching underway (HV scan and QVT)
- To do: fine timing of individual paddles
- Coarse timing done in primary trigger (FPGA)

example hodoscope distributions



example TDC spectra by plane
 ≈ 5 ns resolution



Summary

- Lots of progress on Cherenkov intensity monitor. SeaQuest will be able to record clean beam intervals shortly.
- Various unexpected problems solved. Also a few DAQ crashes related to now-replaced serial communication boxes.
- Chamber efficiencies are significantly improved since last week. Gains and timing for hodoscopes being adjusted.