Offline Analysis of p-Carbon Polarimeter Data

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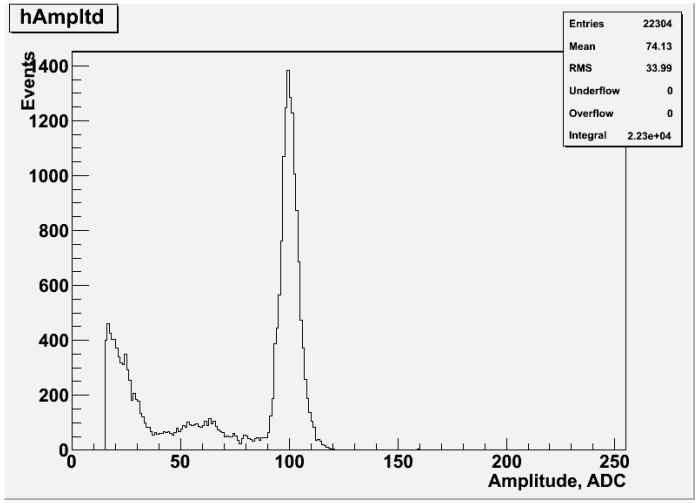
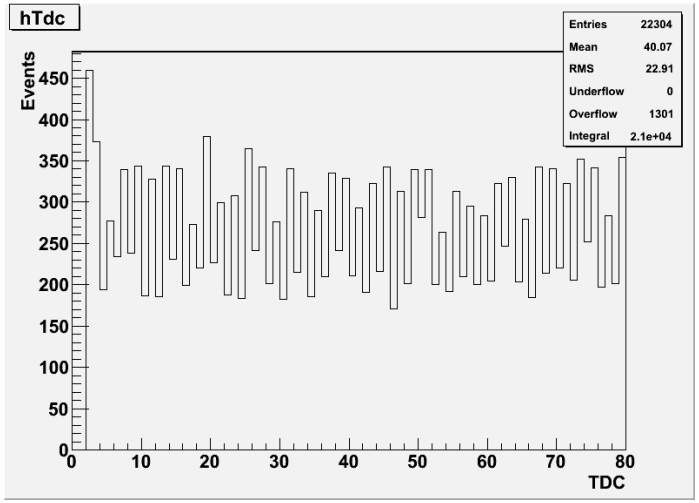
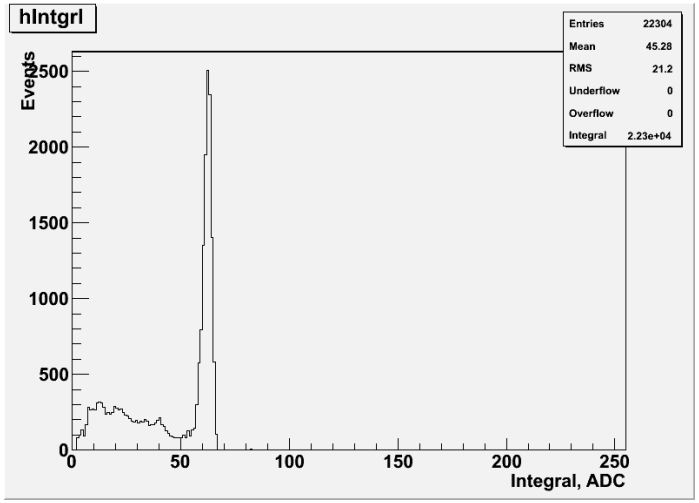
Alpha Calibration: Yellow

- Alpha calibration run:
  - Collected $\sim 22,000$ events in 30 minutes
  - 300 - 400 events per BNL detector strip
  - 100 - 200 events per Hammamatsu strip
  - Alpha yield for Hammamatsu detectors is ~ 2 times lower than for BNL ones
- All channels combined below: Amplitude, TDC, Integral

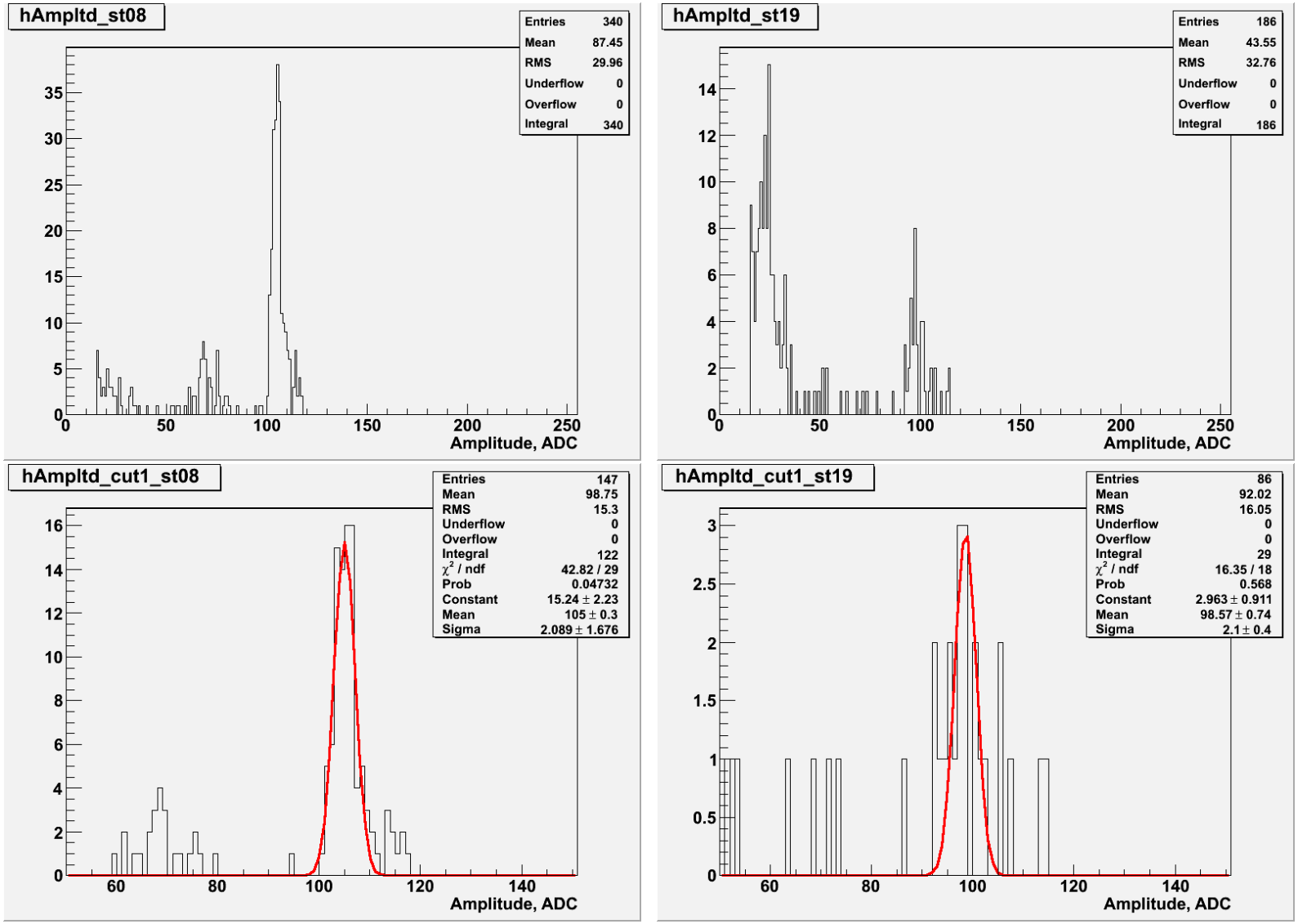






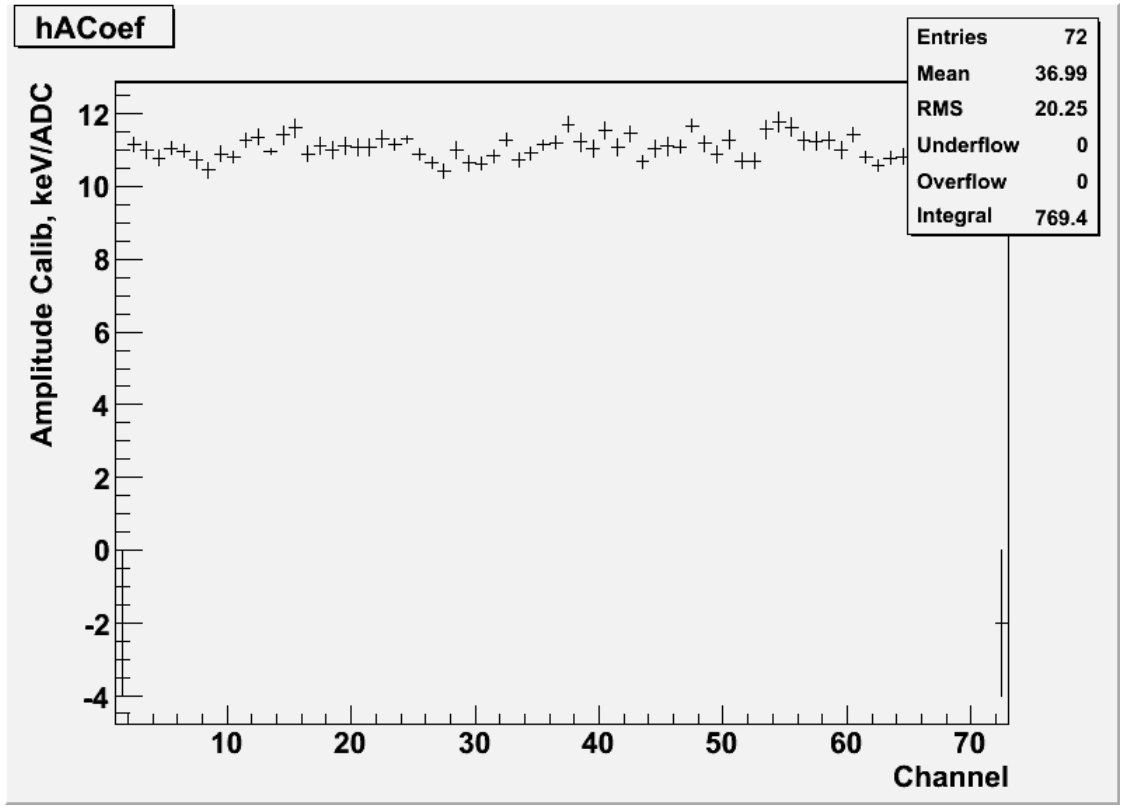
Alpha Calibration: Typical Channel Responce

- Left: BNL detector
- Right: HAMMAMATSU detector
- Is optimal bias voltage set on HAMMAMATSU detectors? Bias scan?

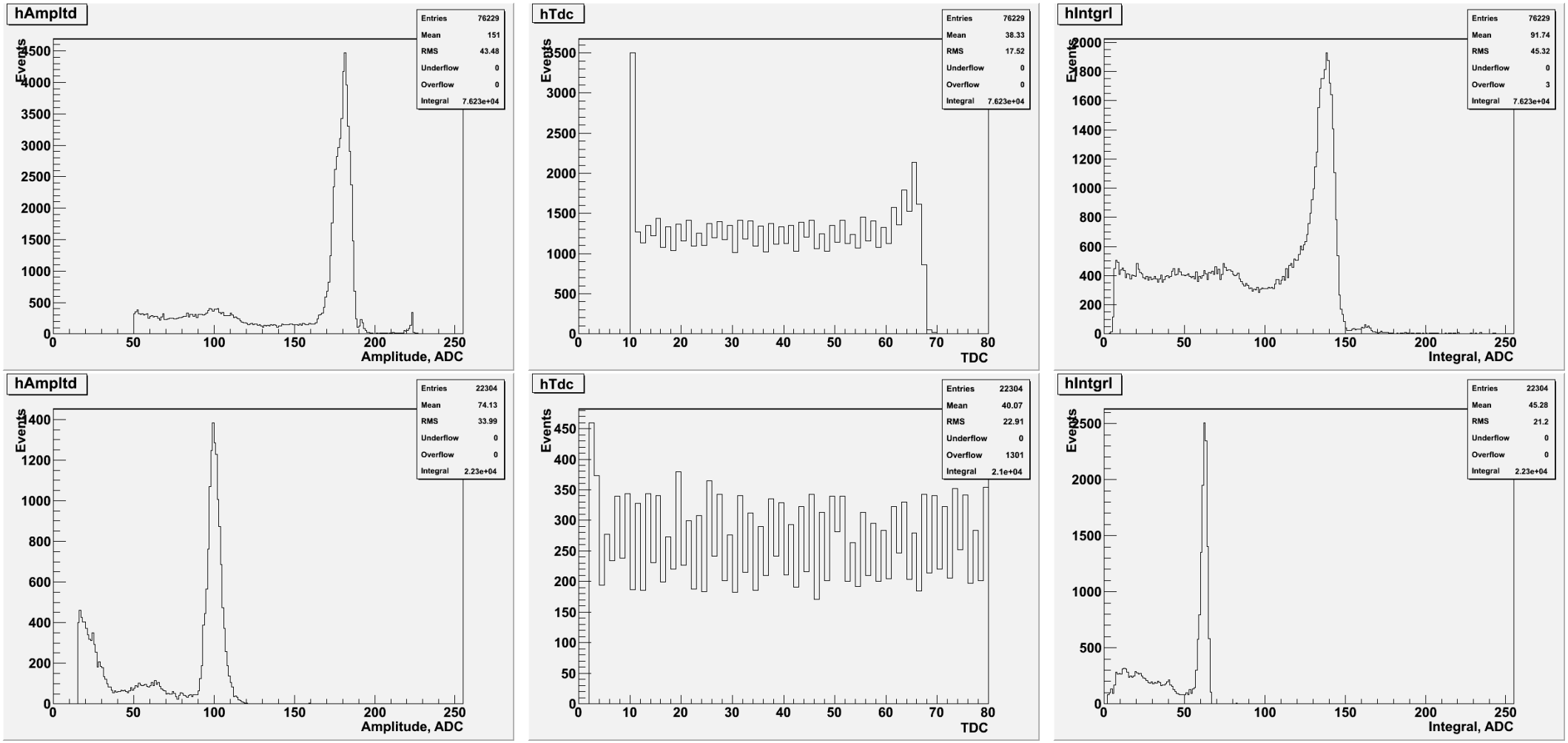


Alpha Calibration: Yellow

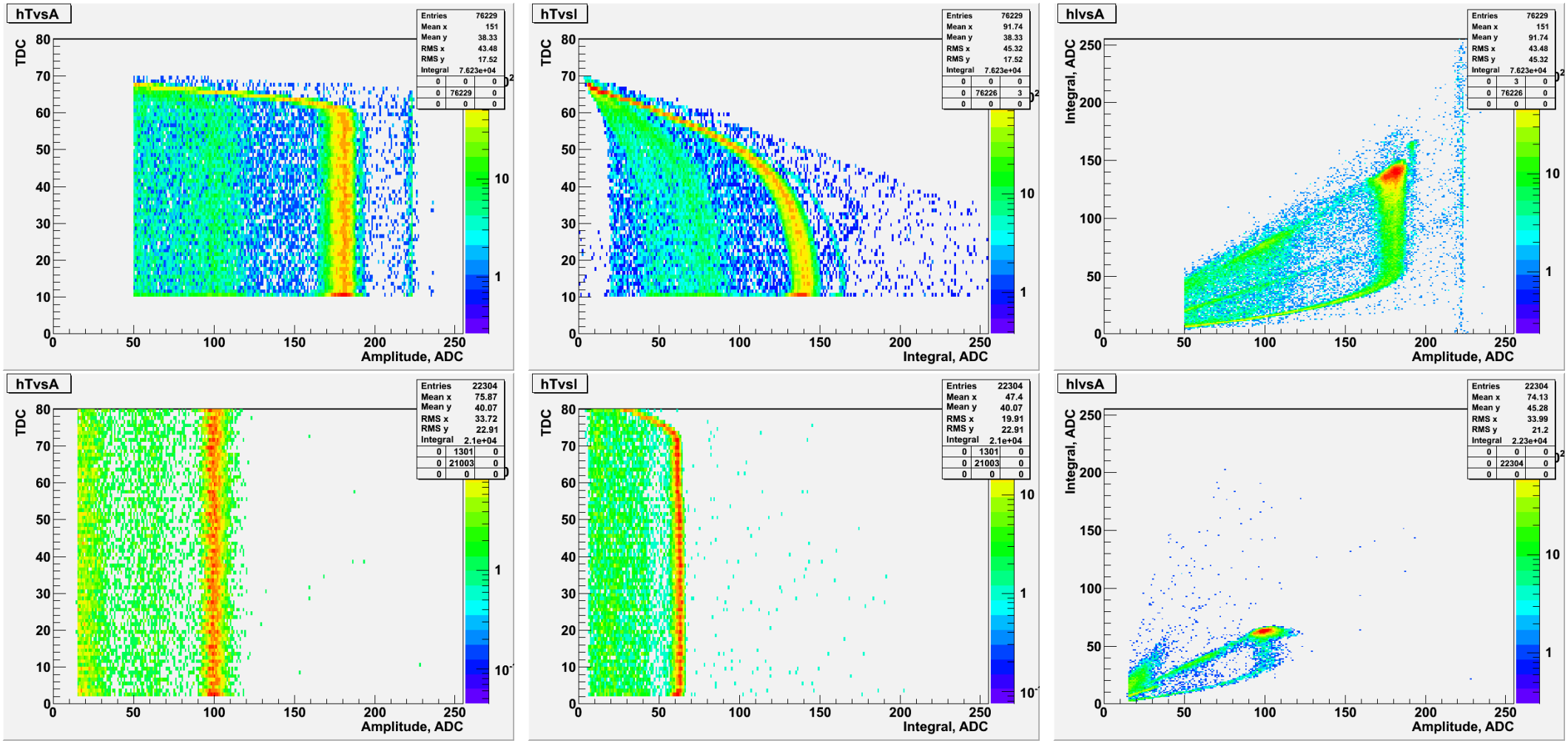
- The gain is unifrom across the channels



Alpha Calibration: Comparison to Run9

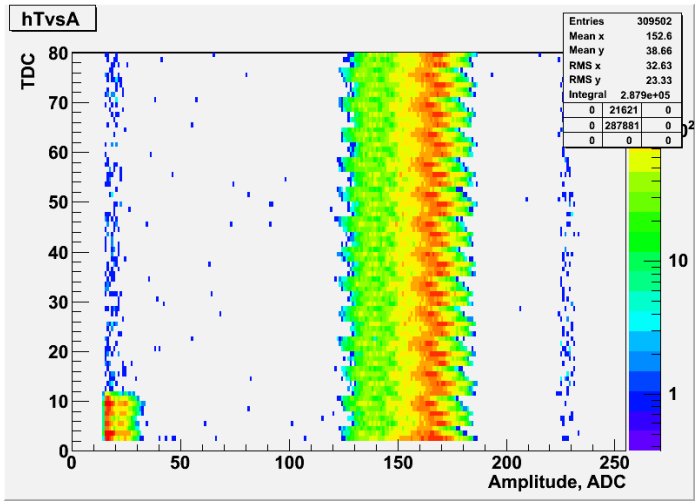


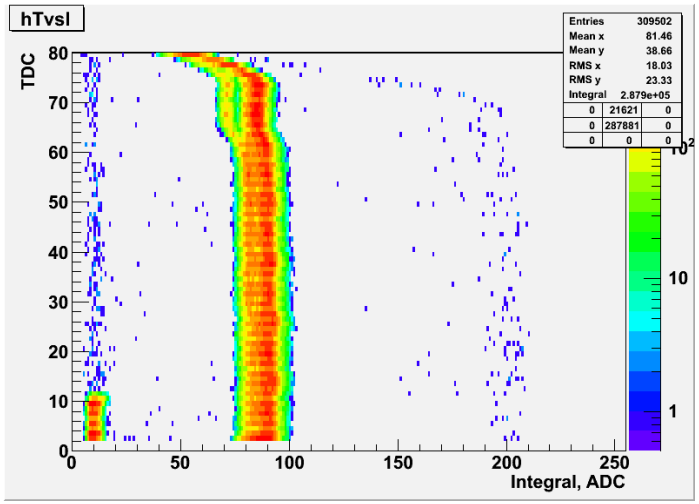
Alpha Calibration: Comparison to Run9

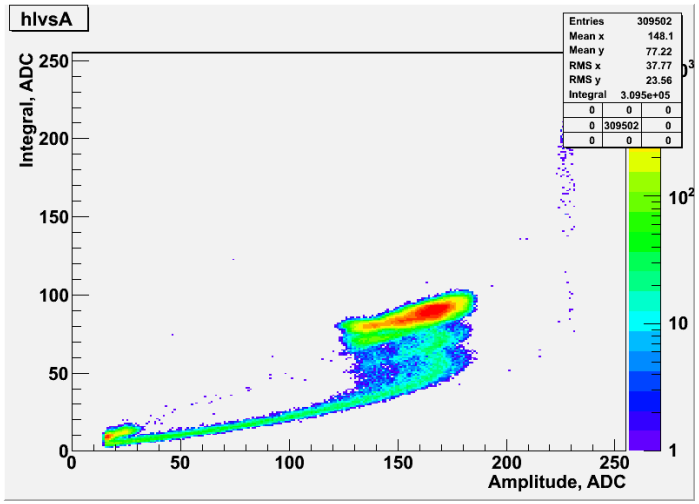


- The new signal is much narrower but also smaller

Pulser Run


hTvsA
Entries 309502
Mean x 152.6
Mean y 38.66
RMS x 32.63
RMS y 23.33
Integral 2.879e+05
TDC
Amplitude, ADC


hTvsI
Entries 309502
Mean x 81.46
Mean y 38.66
RMS x 18.03
RMS y 23.33
Integral 2.879e+05
TDC
Integral, ADC


hIvsA
Entries 309502
Mean x 148.1
Mean y 77.22
RMS x 37.77
RMS y 23.56
Integral 3.095e+05
Integral, ADC
Amplitude, ADC

Summary and Plans

- Offline framework can provide calibration for both signal amplitude and integral
- Measurement of integral might provide better sensitivity over the amplitude
- A bias scan can tell more about the detectors. . .
- Can benefit from an increased dynamic range
- Online machines will be updated with latest versions of Linux, CDEV, and online/offline CNIPol