

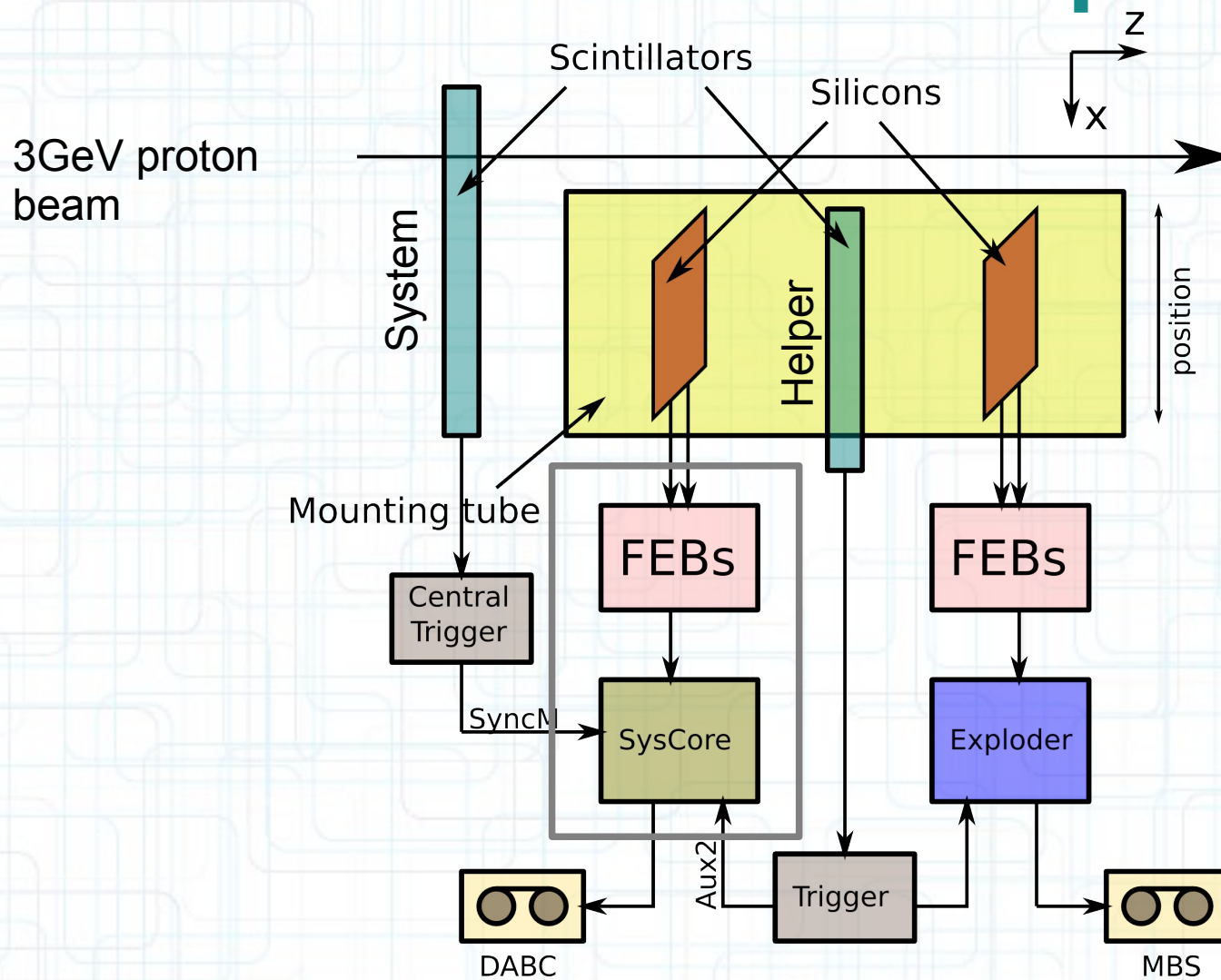
n-XYTER data evaluation
with data from silicon tests
in FZ-Jülich (22/11-28/11/2011)

Rafal Lalik
for
Pion-Tracker collaboration

Reminder from last meeting

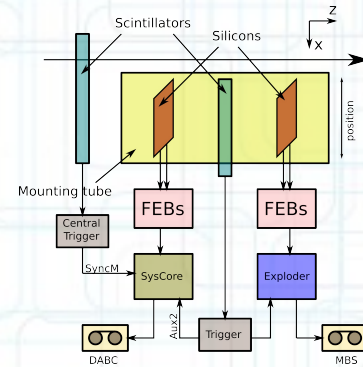
- Experimental setup
- ADC cuts
- Time correlation cuts

Beam line setup



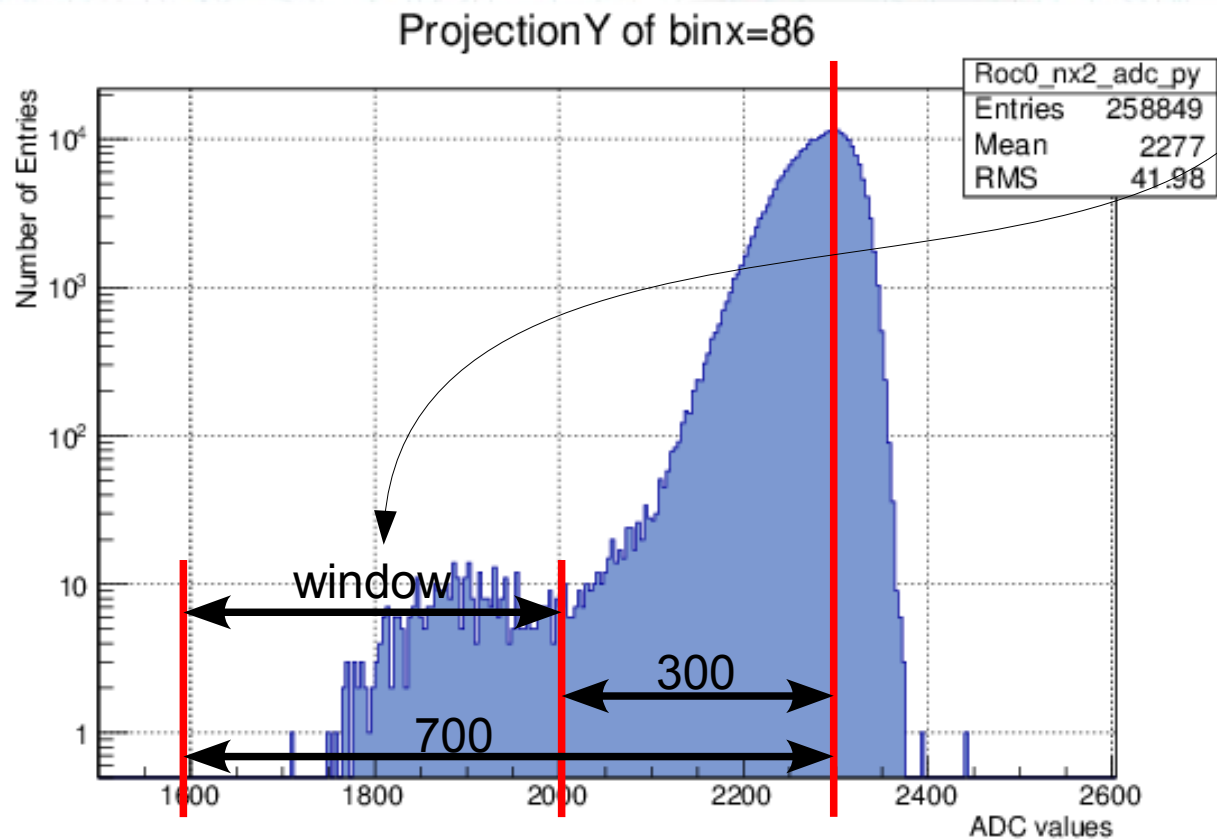
Reminder from last meeting

- Experimental setup
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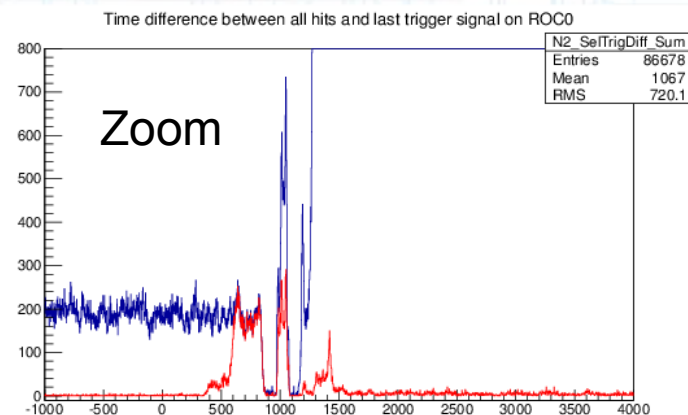
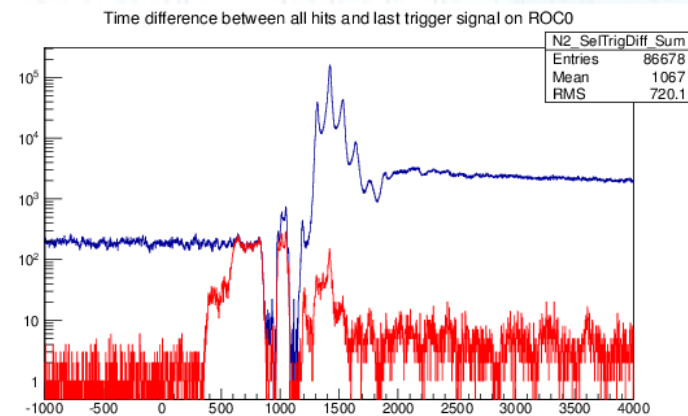
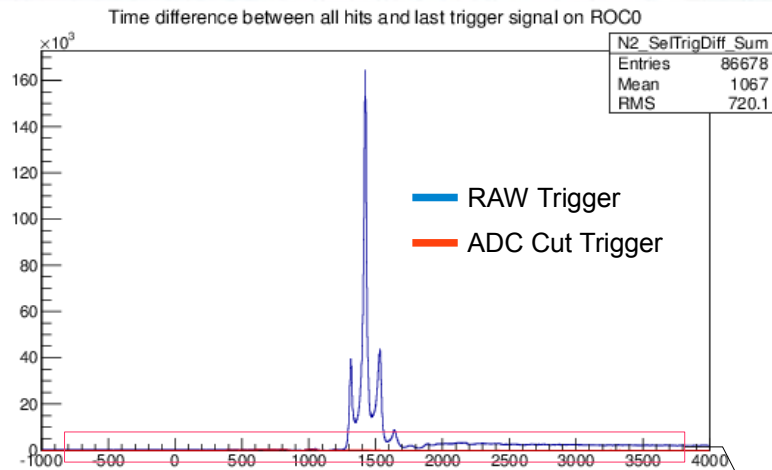


ADC spectrum cuts

- File 0227 (Saturday, 26.11)
- Trigger: Aux2
- Cut on ADC spectrum in window [noise-700; noise-300]



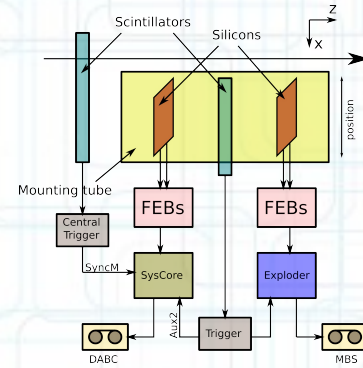
ADC spectrum cuts



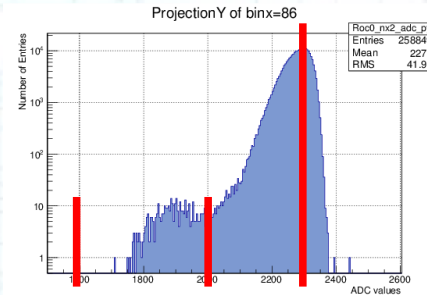
Why no correlation with dominating peak?

Reminder from last meeting

- Experimental setup



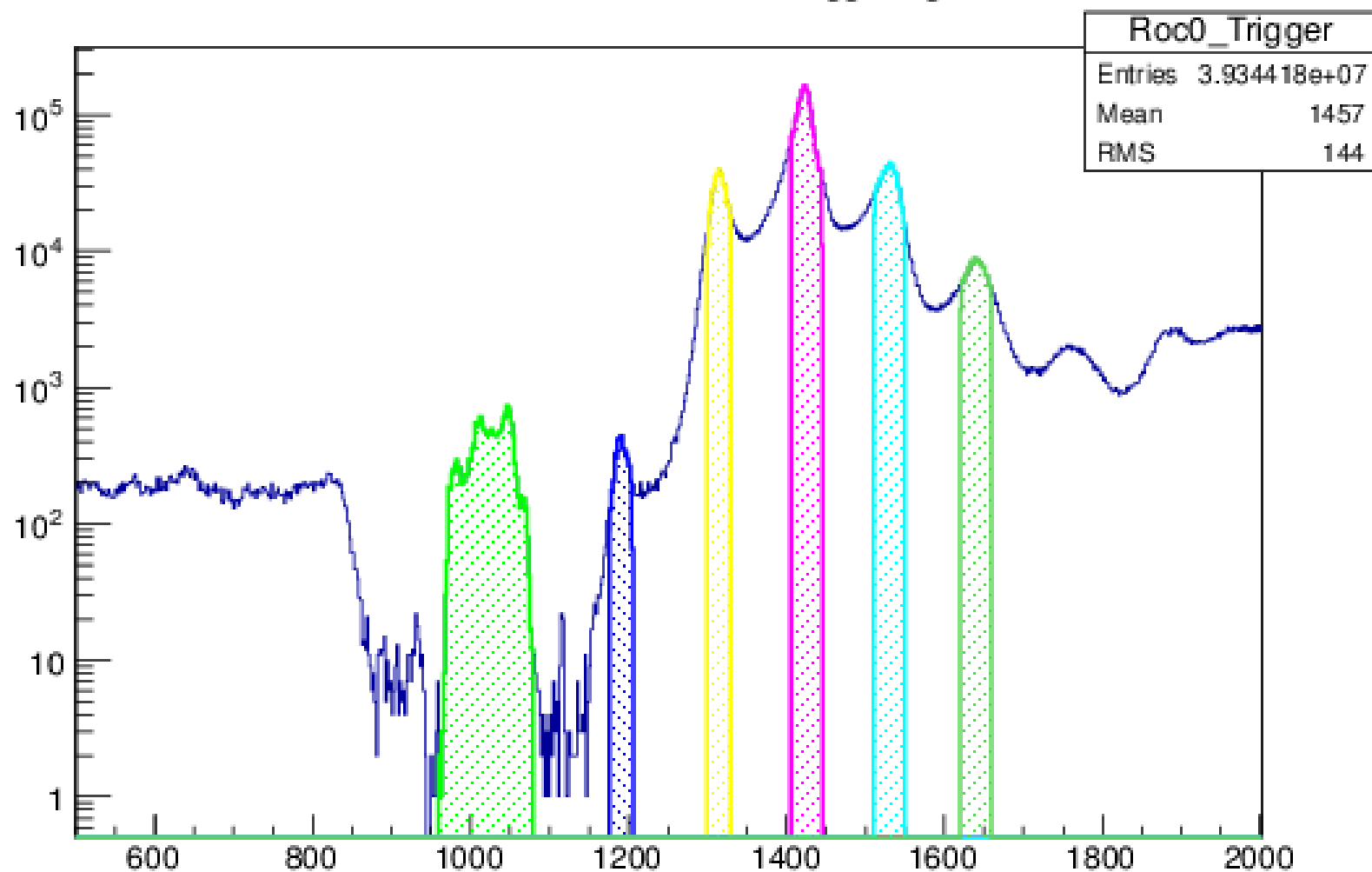
- ADC cuts



- Time correlation cuts

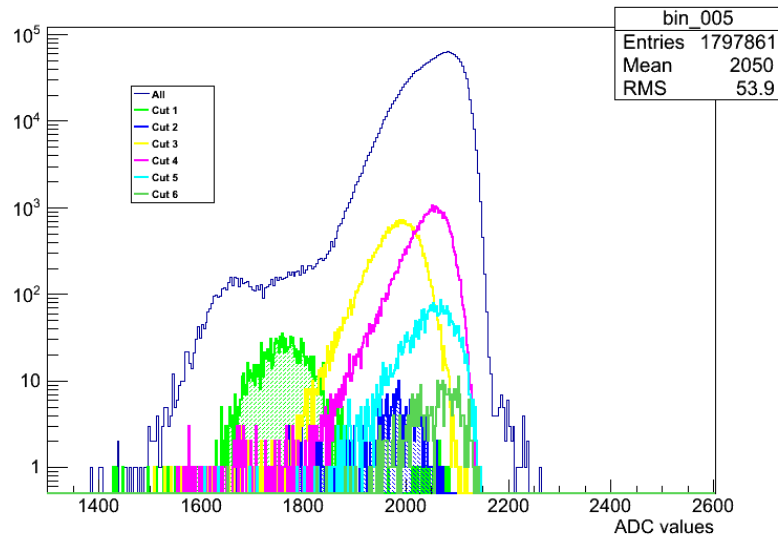
Trigger cuts

Time difference between all hits and last trigger signal on ROC0

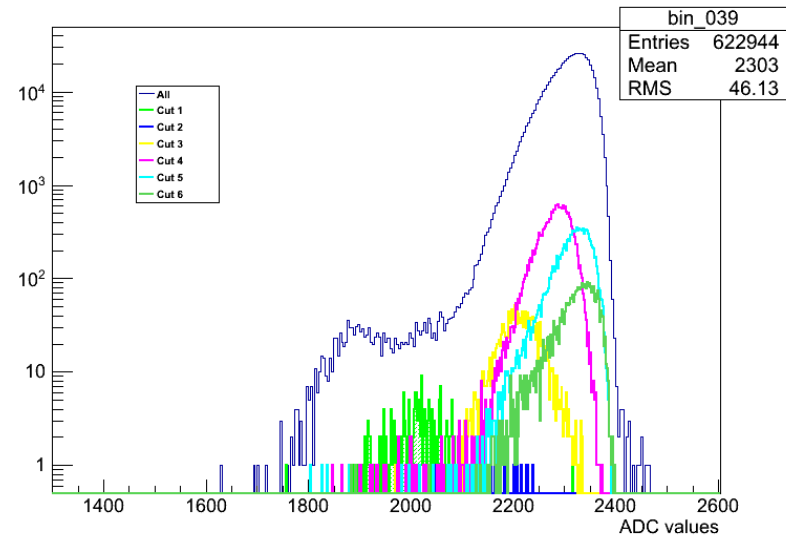


Trigger cuts - ADC

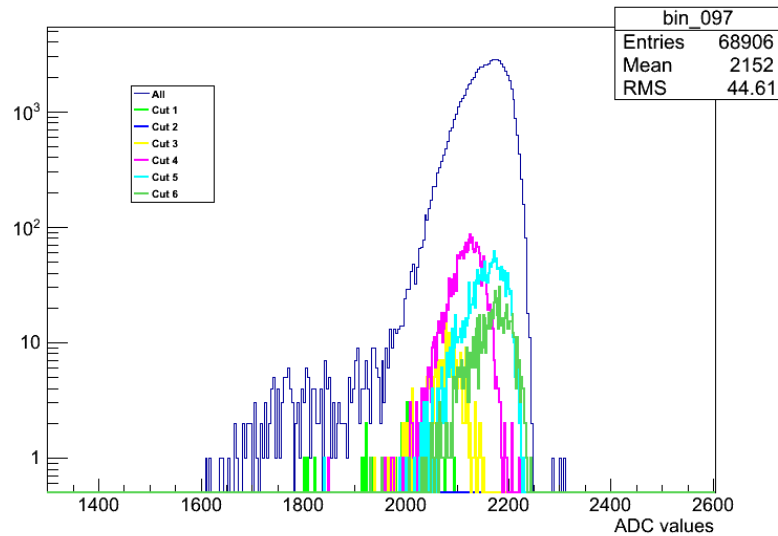
ADC distribution for ROC = 0 NXYTER = 2



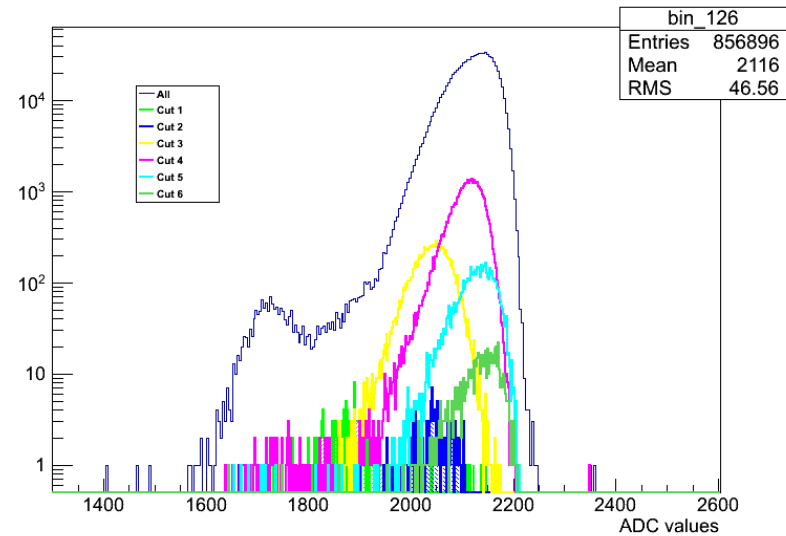
ADC distribution for ROC = 0 NXYTER = 2



ADC distribution for ROC = 0 NXYTER = 2

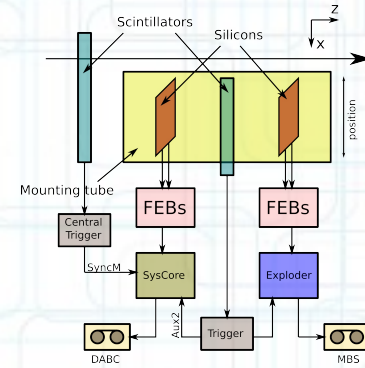


ADC distribution for ROC = 0 NXYTER = 2

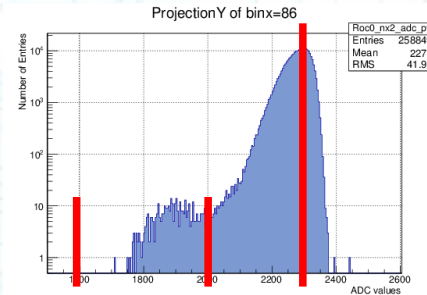


Reminder from last meeting

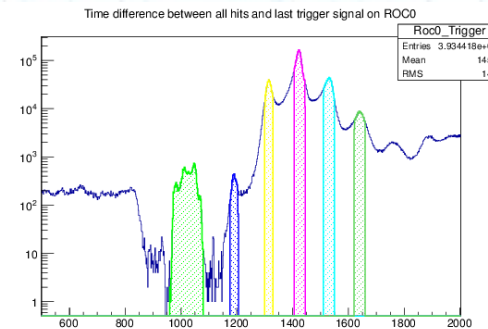
- Experimental setup



- ADC cuts



- Time correlation cuts

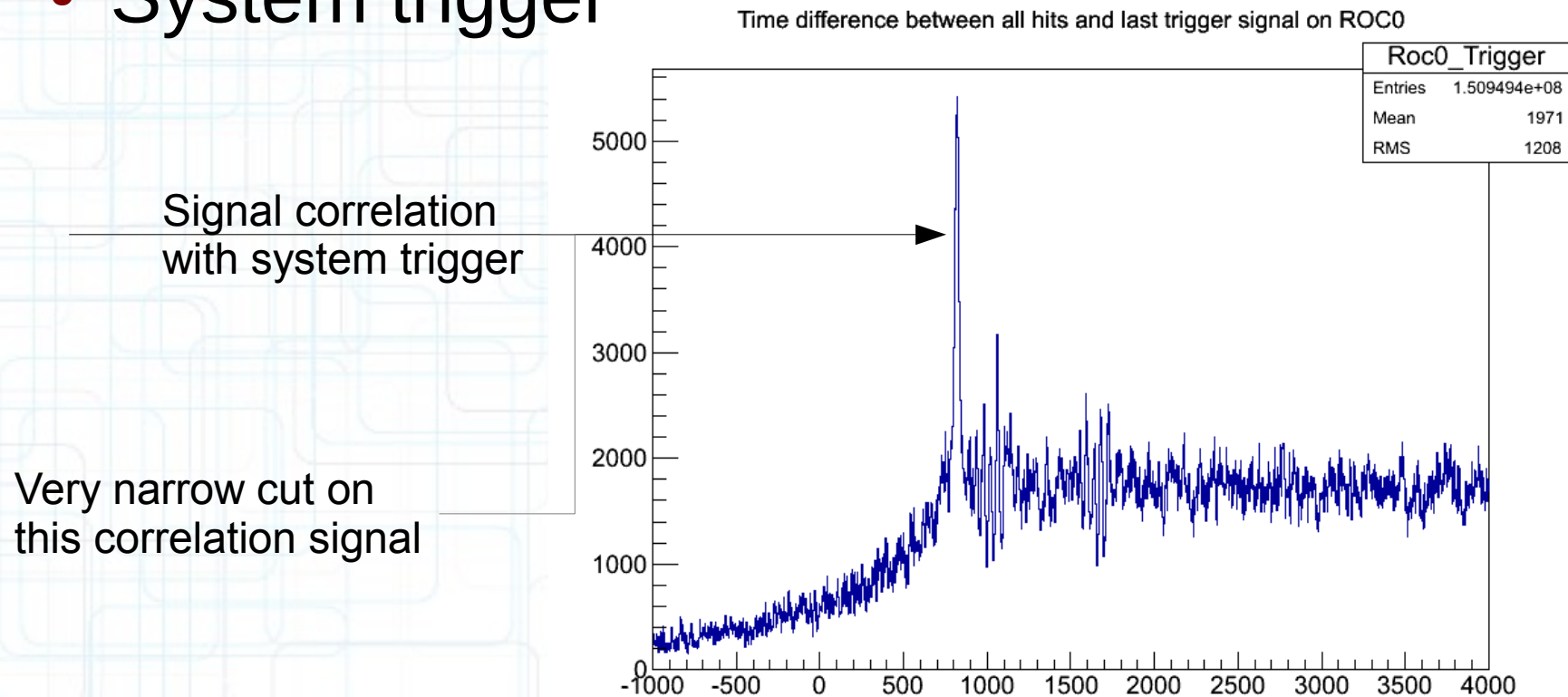


Plan for today

- Comparison of ADC spectrum of signal and noise – peak position determination for data with measured noise spectrum.
- Hit multiplicity (occupancy) vs channel for the old data (file 0227)...
- ...and for the new data (0212-0225)

Trigger correlation vs noise

- Day 26/11, data: 0189-0190, noise: 0180
- Detector in beam?
- System trigger

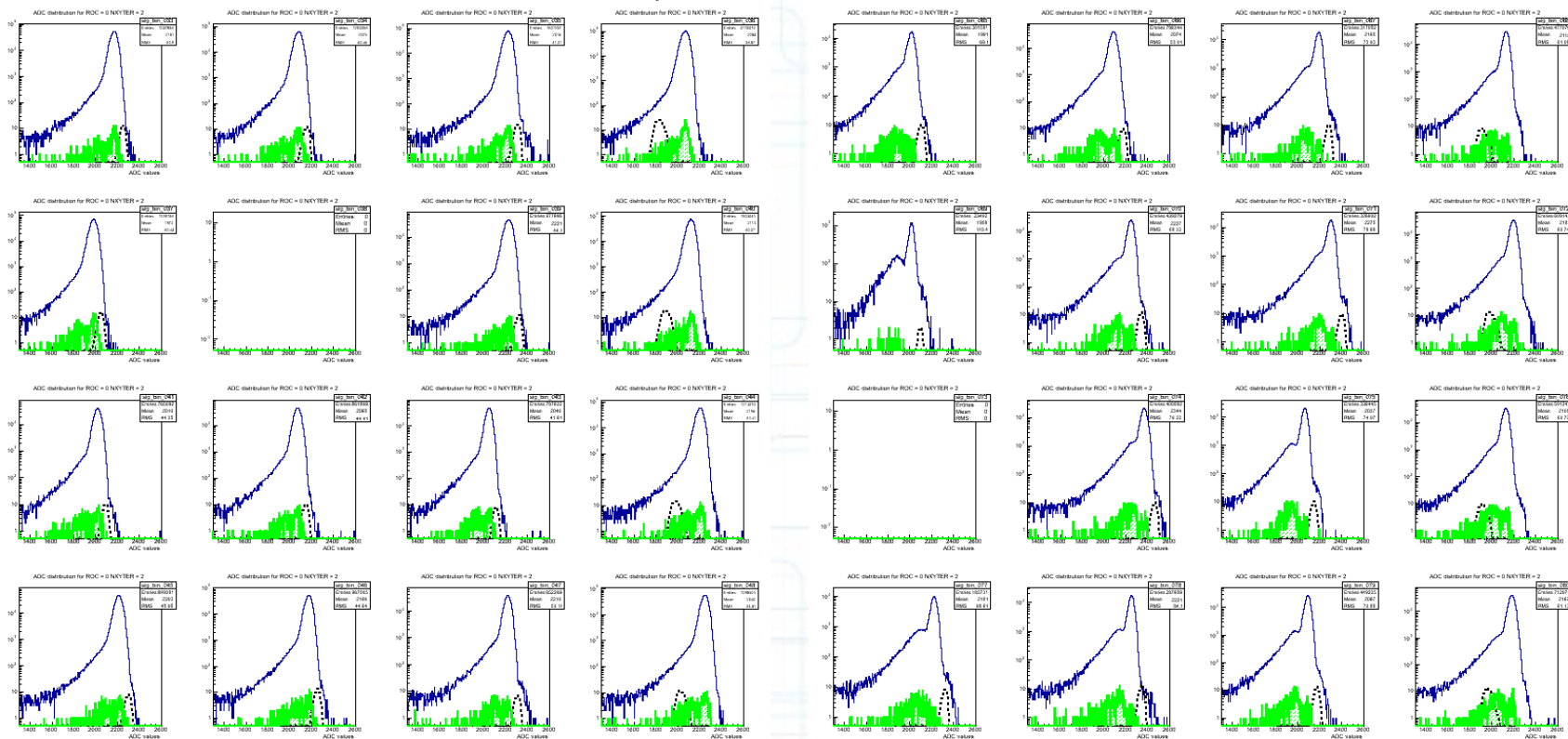


Trigger correlation vs noise

This is general trend for outer and inner section

Outer channels

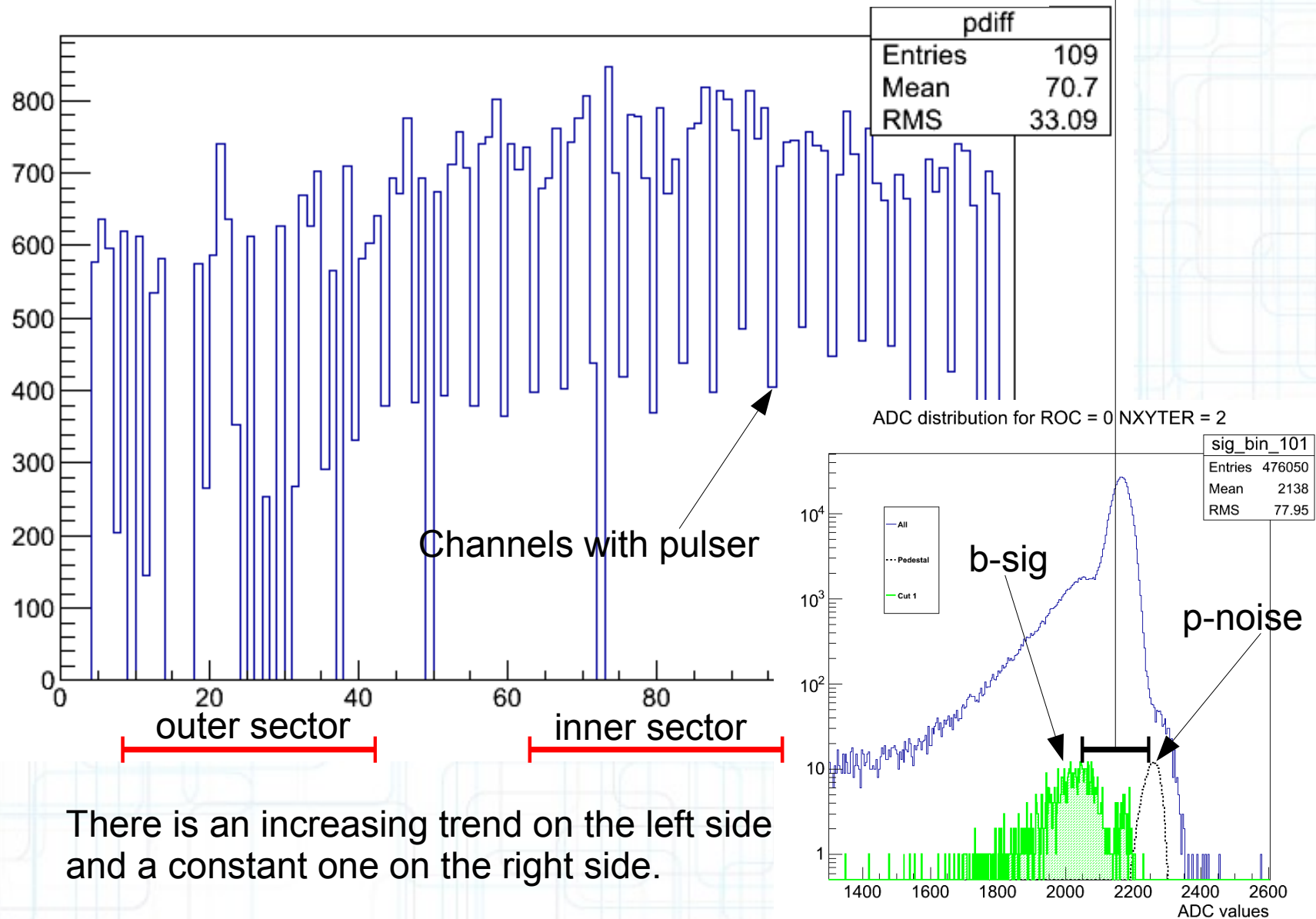
Inner channels



Green peak position changes – let's plot it.

Trigger correlation vs noise

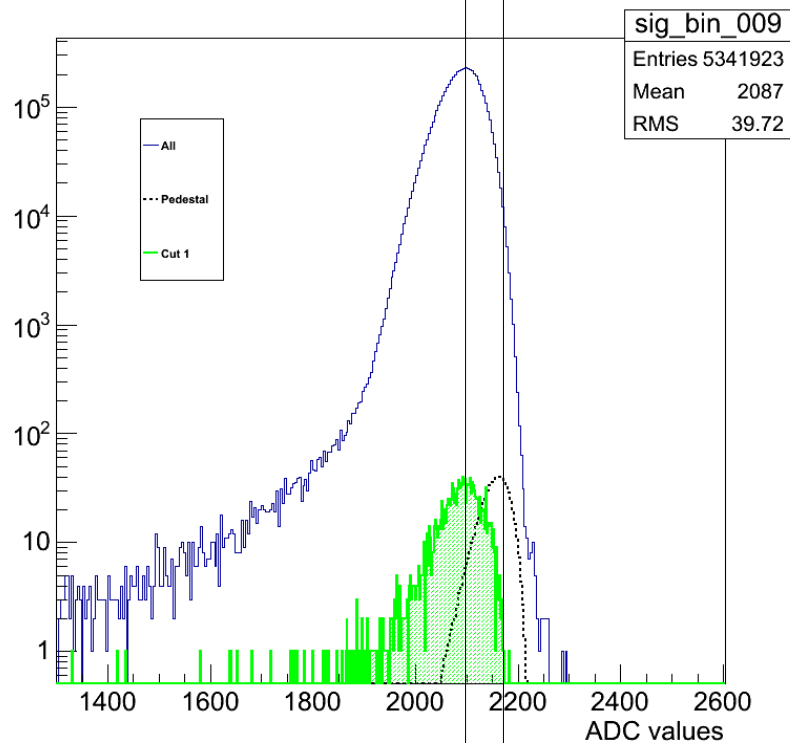
Difference between noise peak and max signal value vs channel



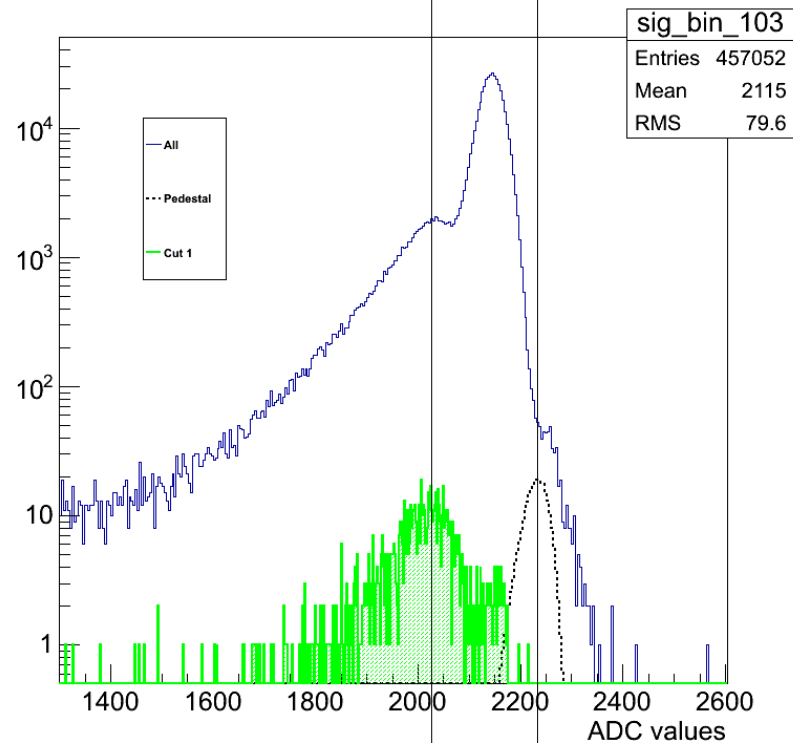
ADC spectrum overlap - noise

Let's compare peak positions
with "pulser" noise...

ADC distribution for ROC = 0 NXYTER = 2



ADC distribution for ROC = 0 NXYTER = 2

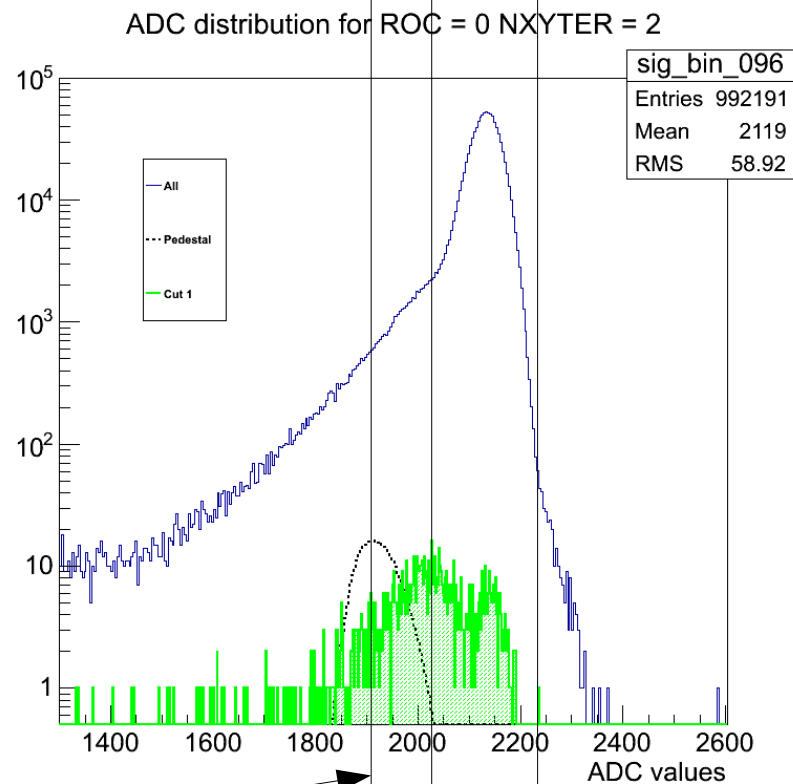
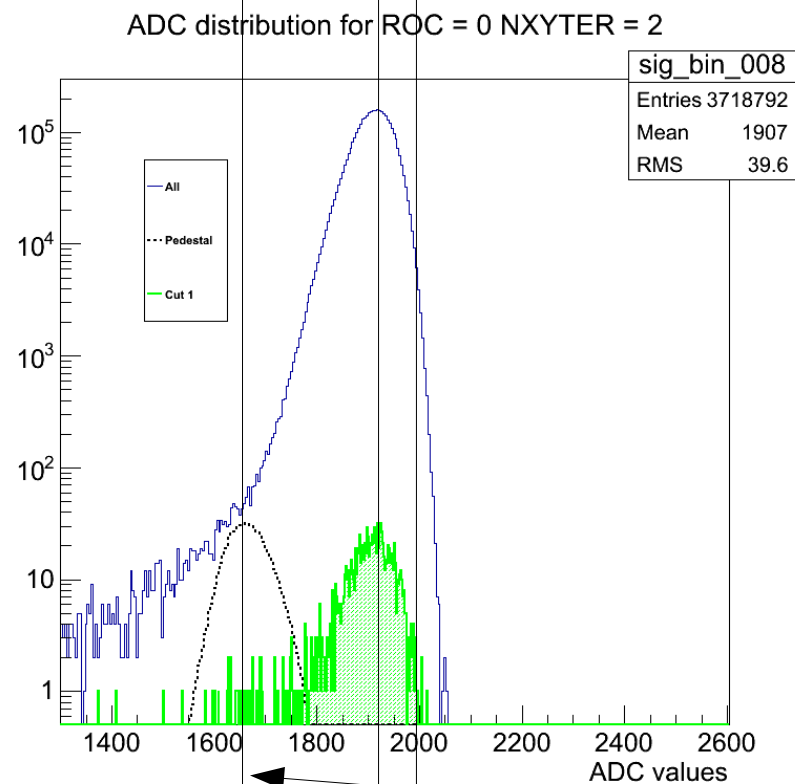


Signal (beam)

Noise (pulser)

ADC spectrum overlap - pulser

...and with pulser signal.



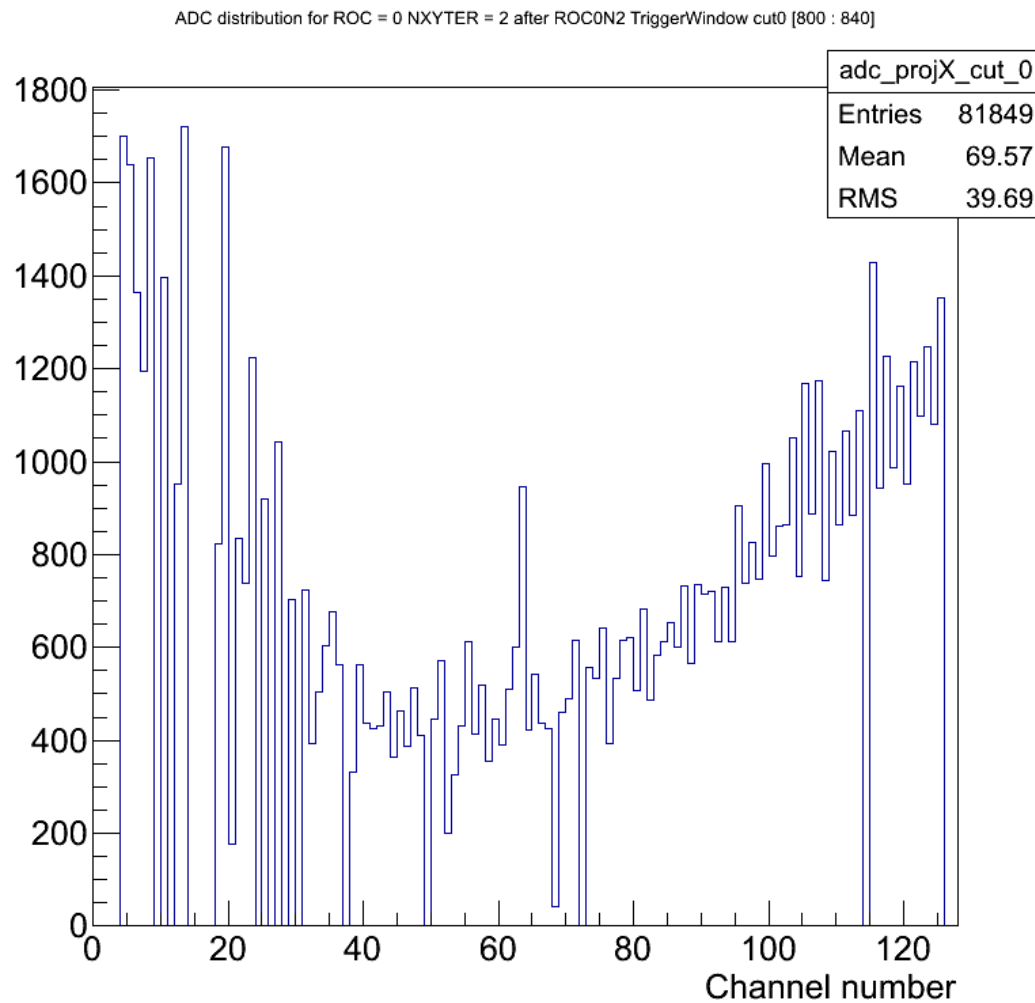
Signal (pulser)

Signal (beam)

Noise (pulser)

PULSER = 1.2 MIP

Hit multiplicity

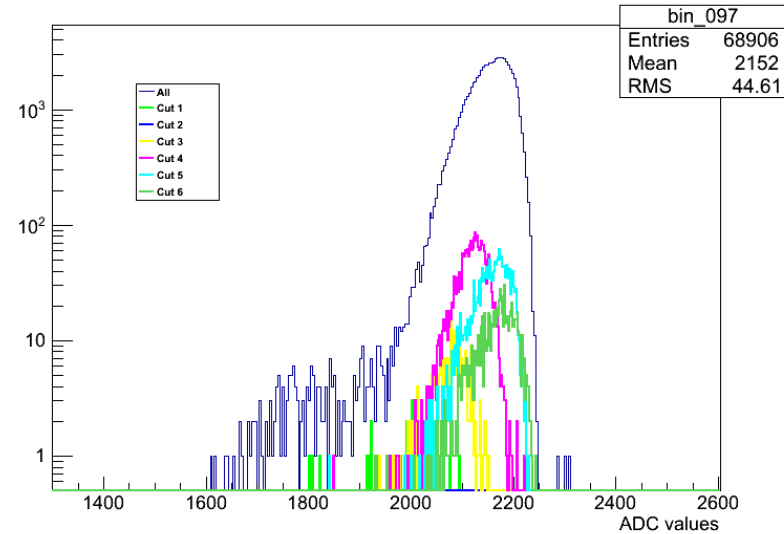


Hit multiplicity for cut on time correlated signals.

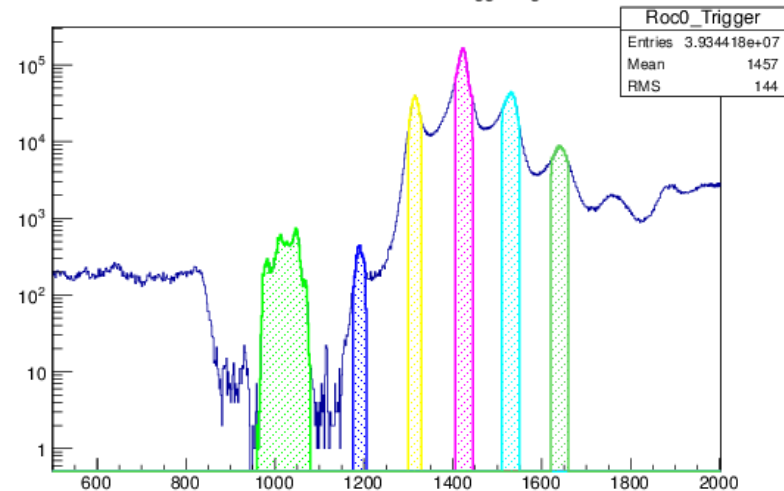
Trigger correlation cuts

- File 0227
- Private trigger → correlation with detector geometry expected

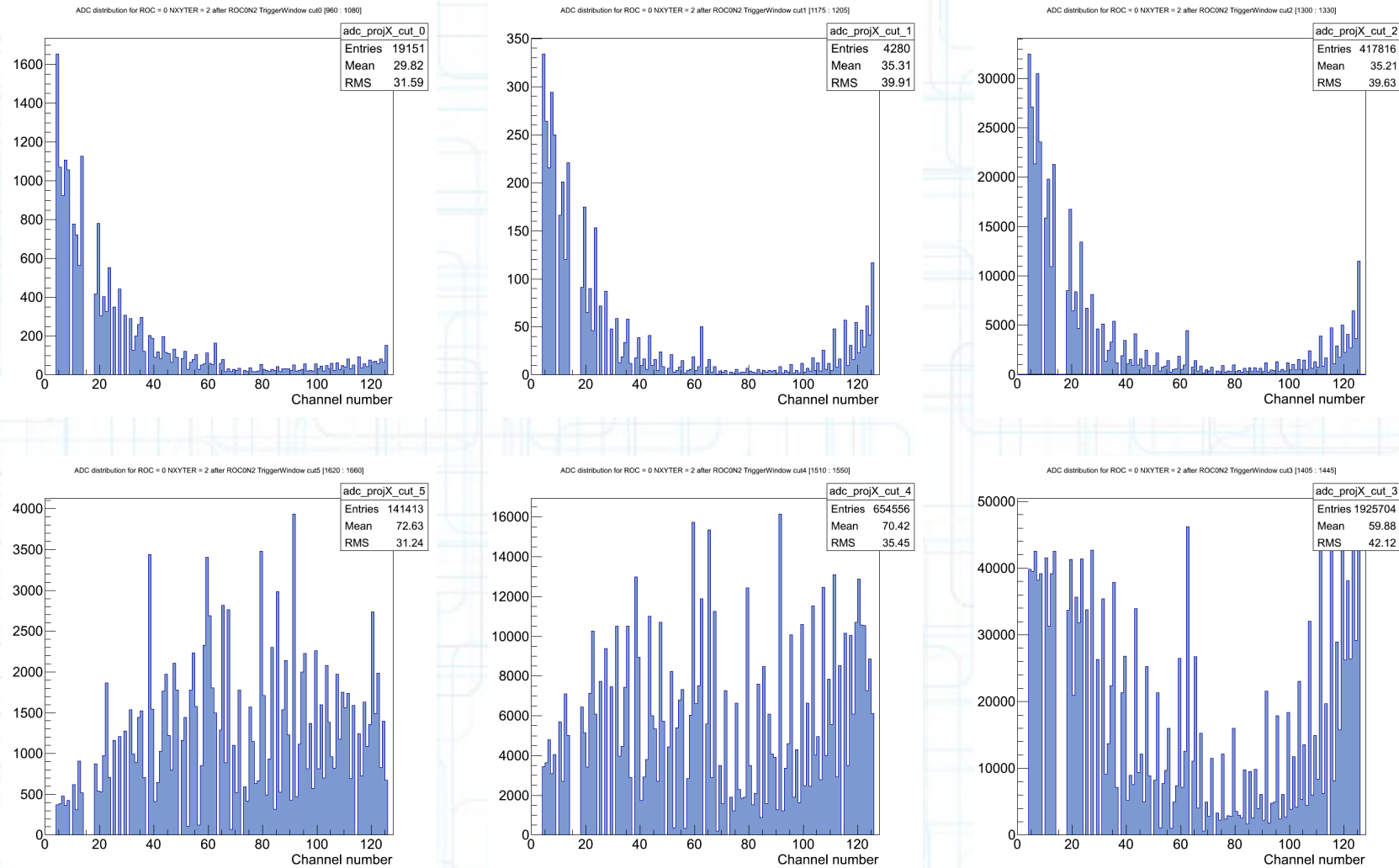
ADC distribution for ROC = 0 NXYTER = 2



Time difference between all hits and last trigger signal on ROC0



Trigger correlation vs noise

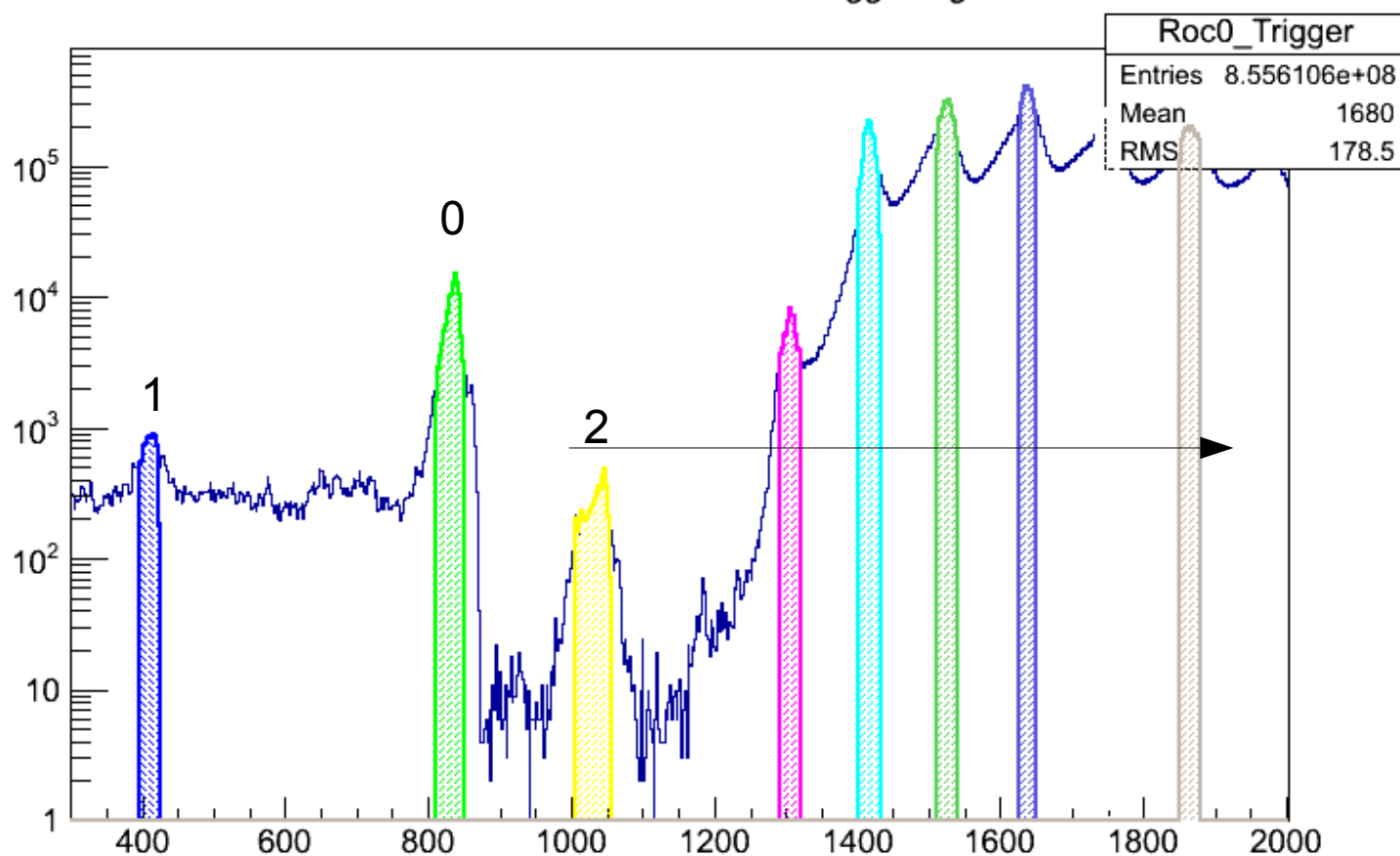


No good conclusions can be drawn here.

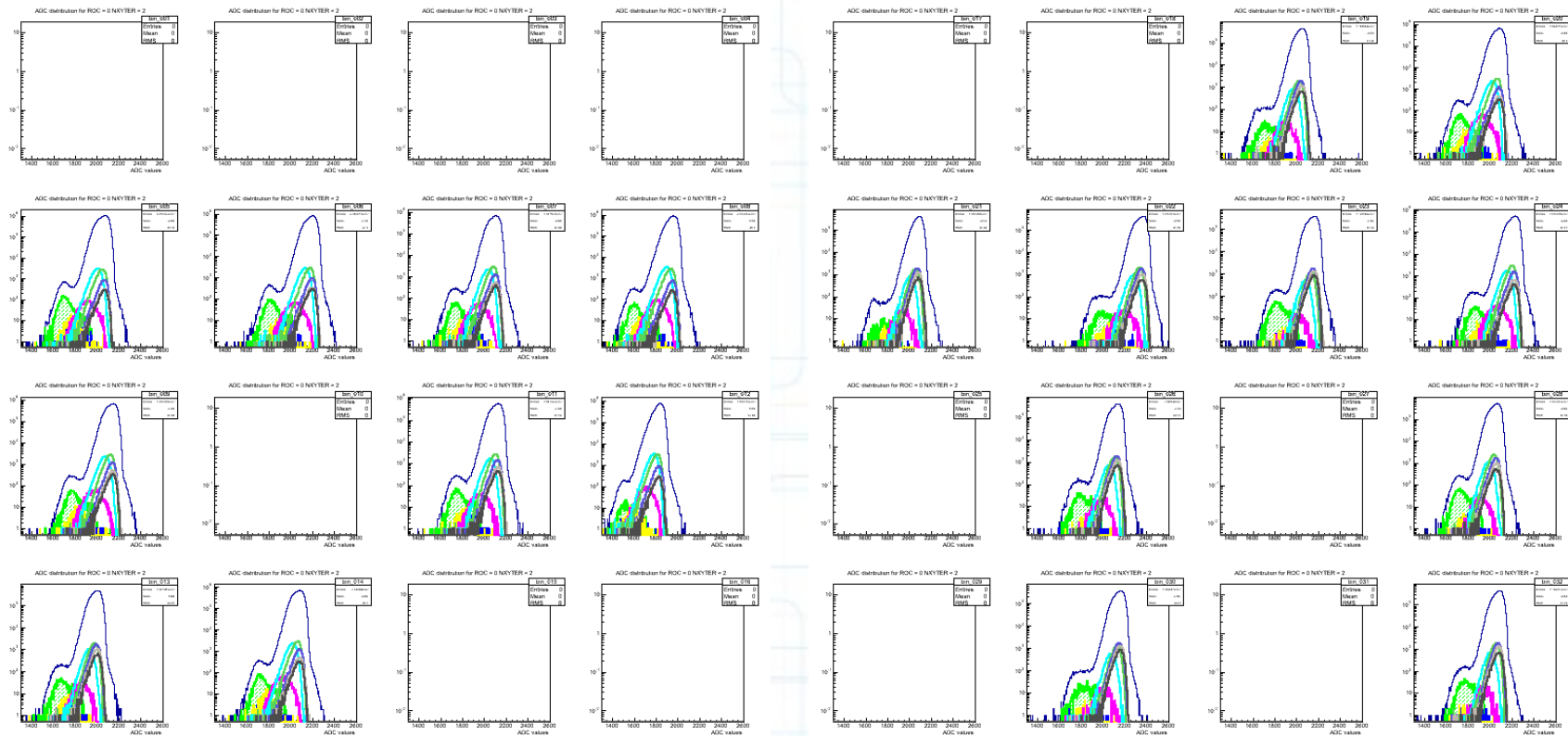
Trigger correlation cuts

- Detector not in the beam
- “Helper” trigger, files 0212-0225

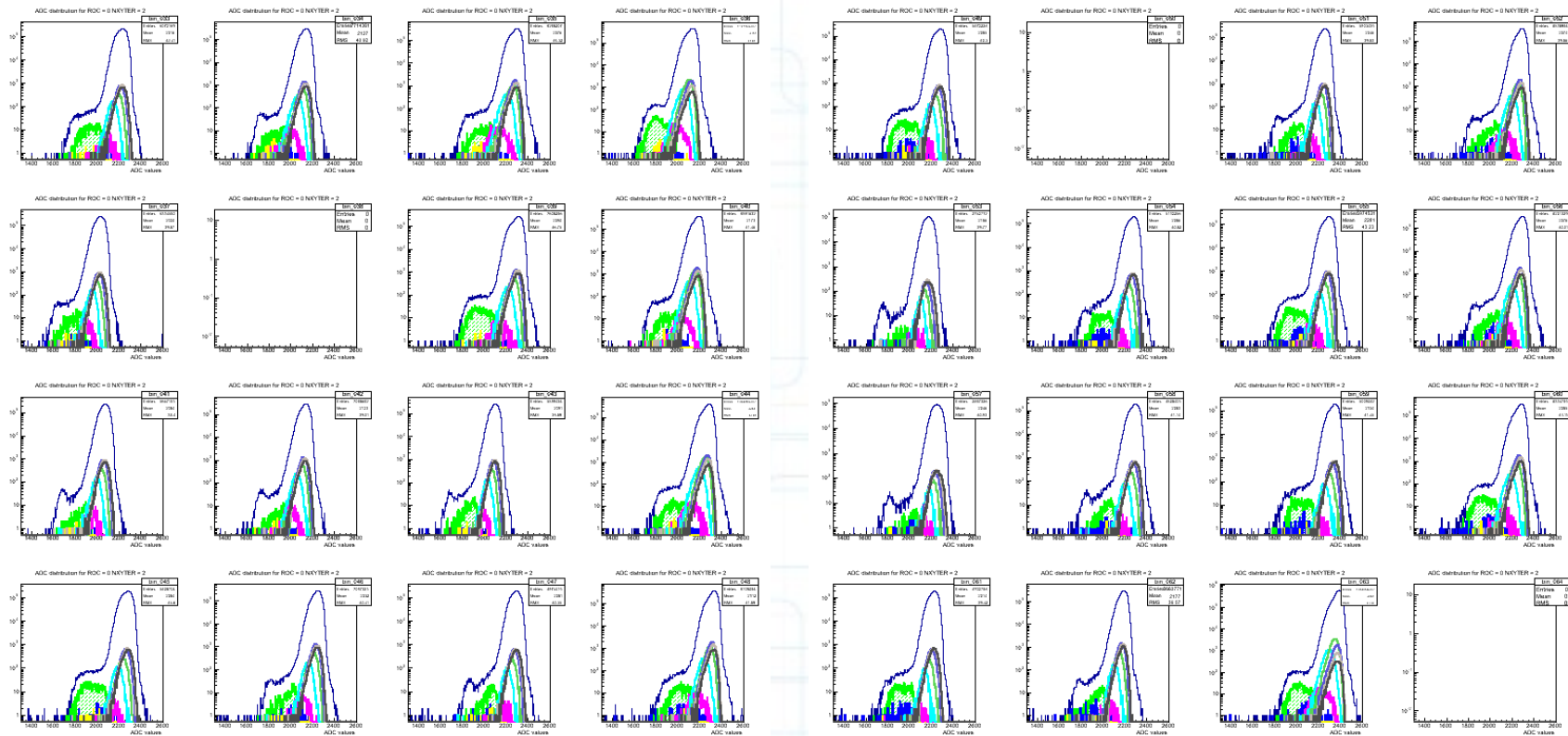
Time difference between all hits and last trigger signal on ROC0



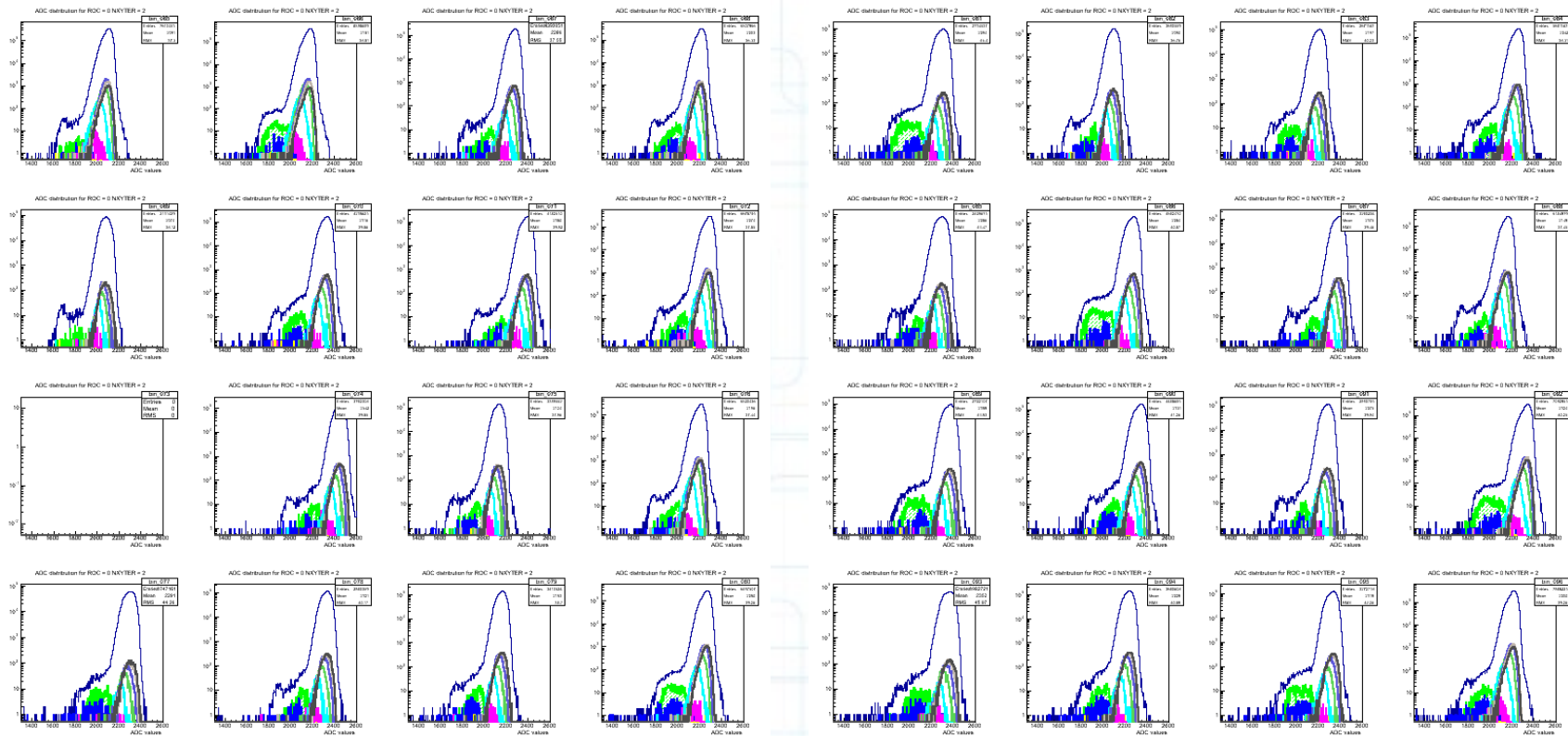
ADC spectrum, 1-32



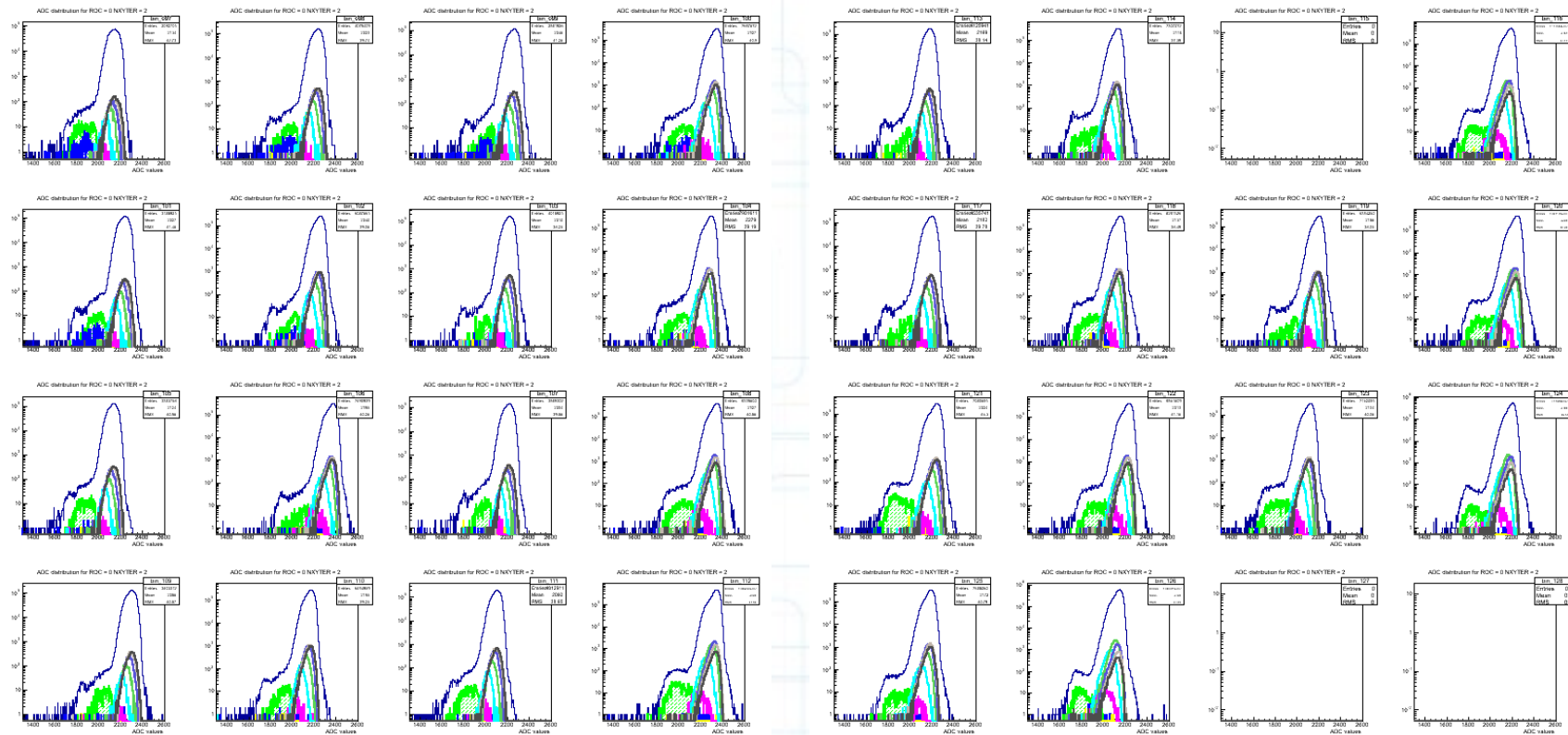
ADC spectrum, 33-64



ADC spectrum, 65-96

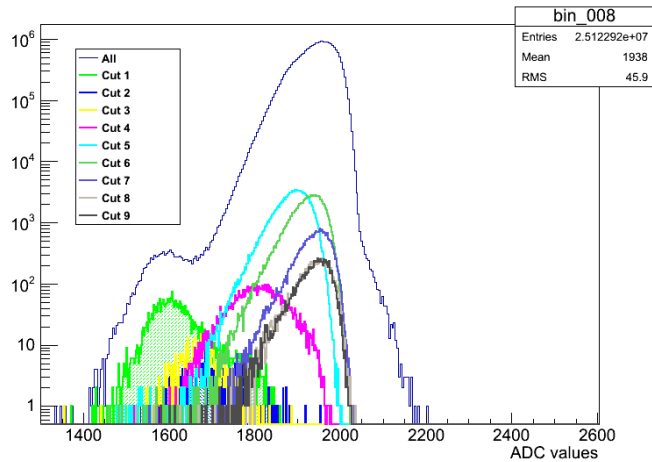


ADC spectrum, 97-128

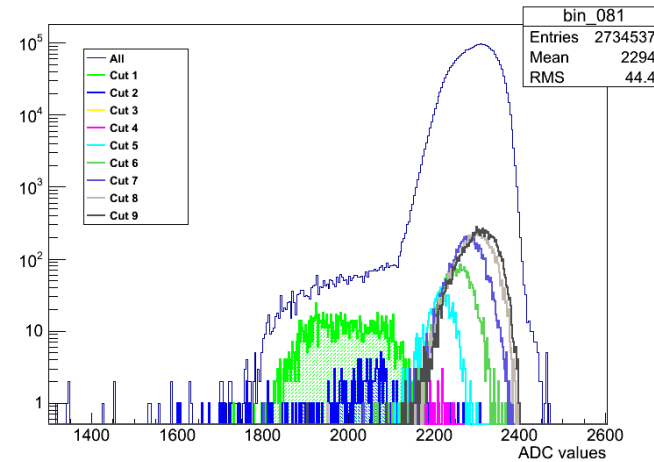


ADC spectrum

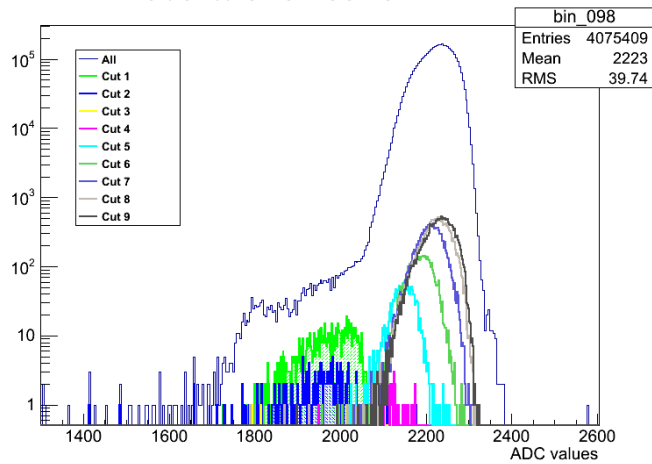
ADC distribution for ROC = 0 NXYTER = 2



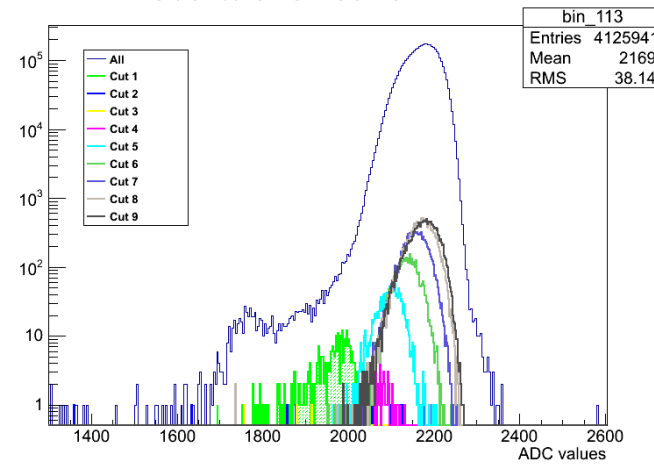
ADC distribution for ROC = 0 NXYTER = 2



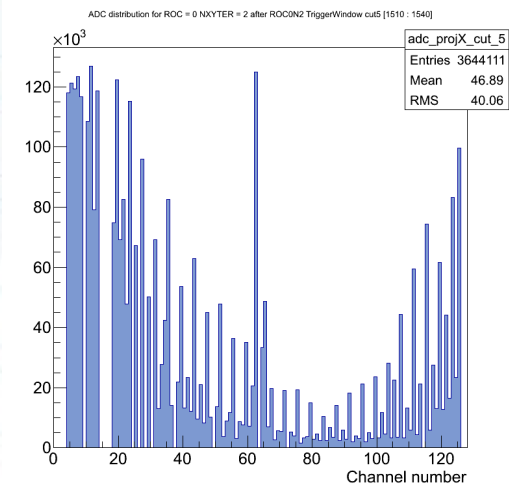
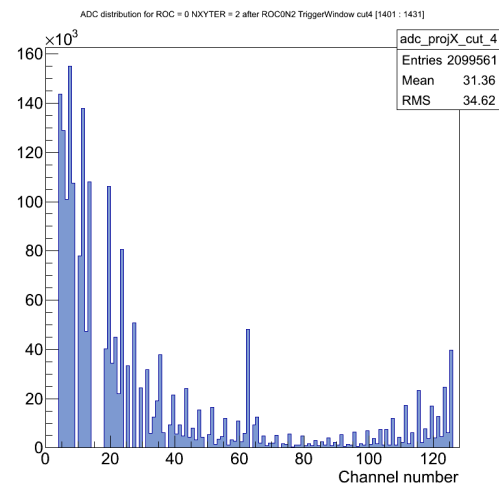
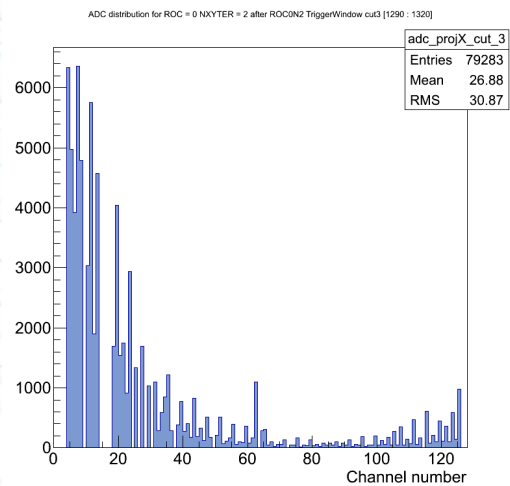
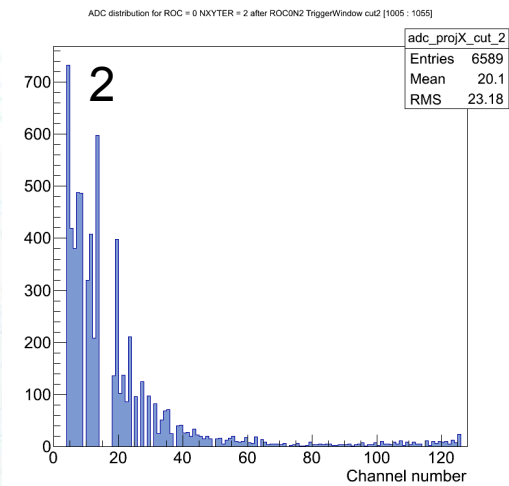
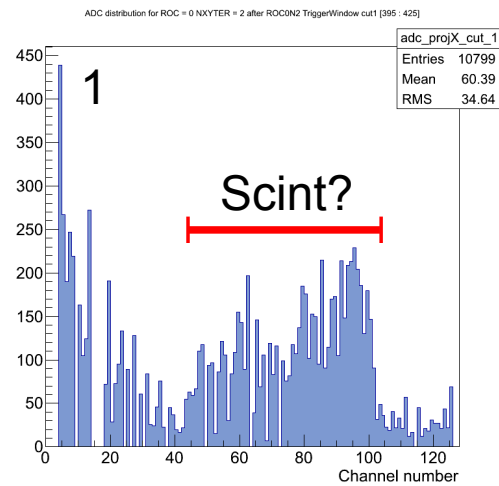
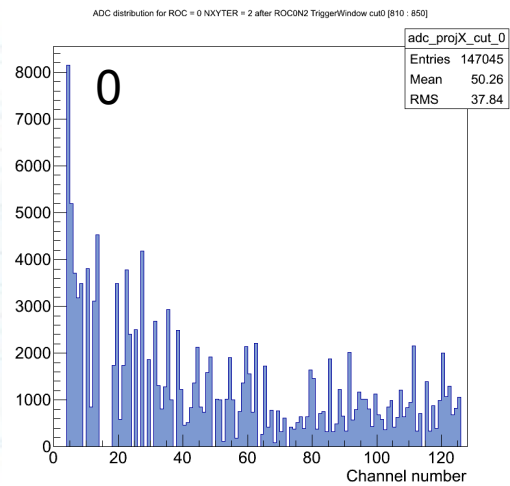
ADC distribution for ROC = 0 NXYTER = 2



ADC distribution for ROC = 0 NXYTER = 2



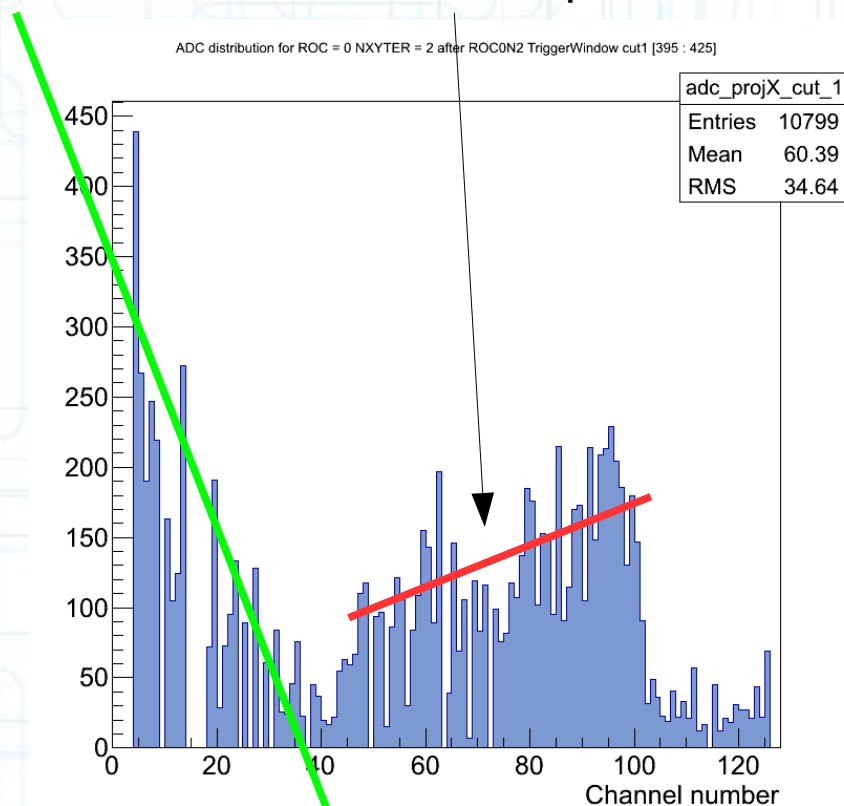
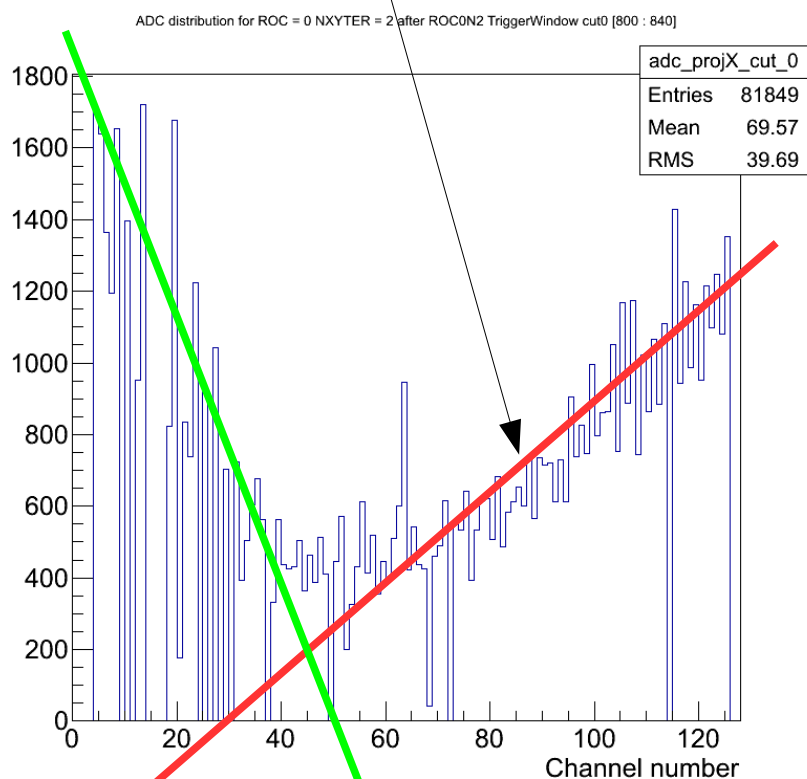
Hit multiplicity



Comparison

$\sim 1/r$ beam halo intensity?

Scintillator shape?



Left-side noise trend