CROSS-TALK STUDIES

Overview

December meeting – Version 3.0:

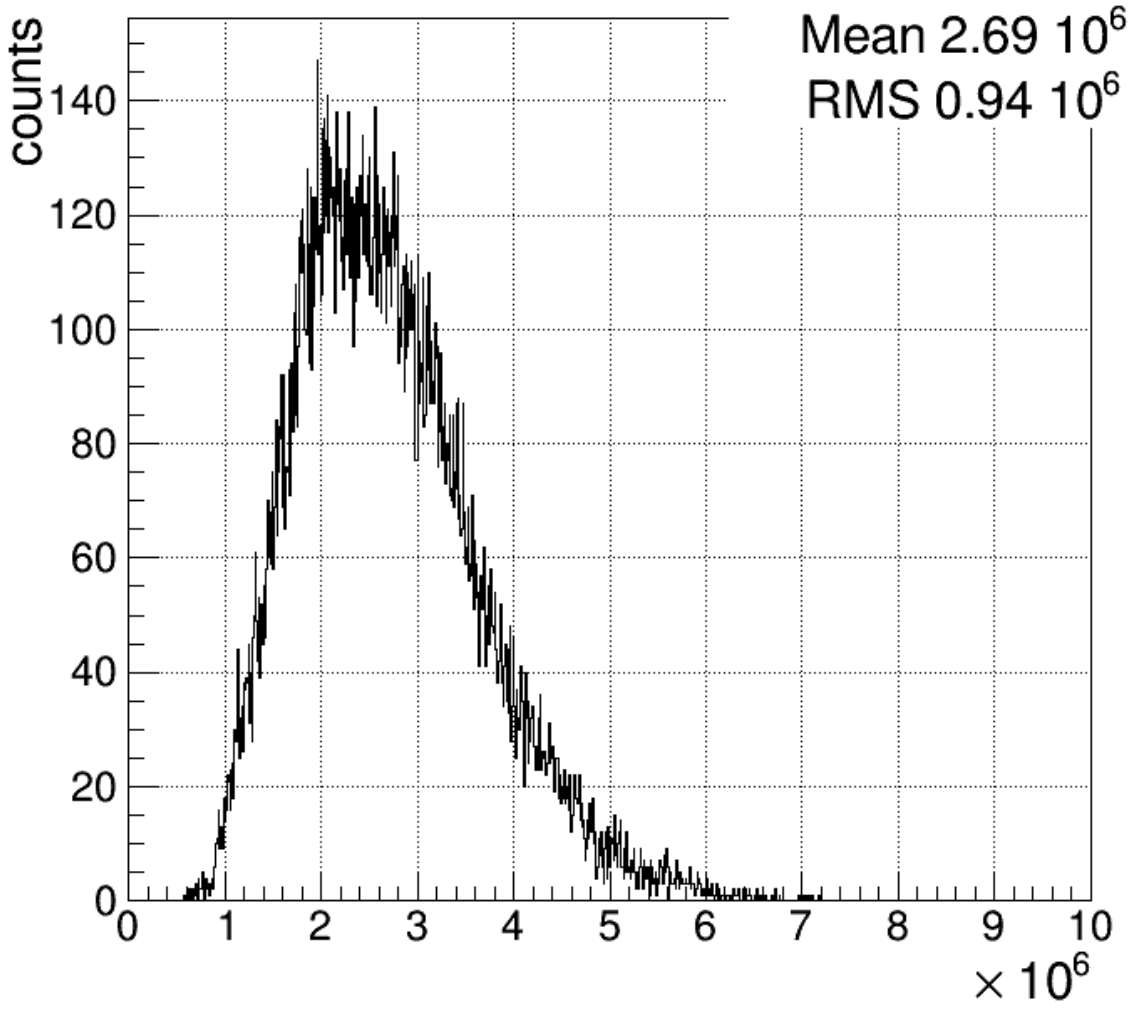
- Digital feedback solved
- No need to further optimize the digital swing
- No need to further tune the CTEST impedance

To be done:

- ADC glitches → wrote to Omega producer
- Systematic study of cross-talk of input lines
- Response to laser
- Characterization
  - gain vs threshold
  - hit time vs duration
  - TDC vs ADC

MAPMT Gain

Average MAPMT gain ~ 2.7 10^6 corresponds to SPE ~ 400 fC



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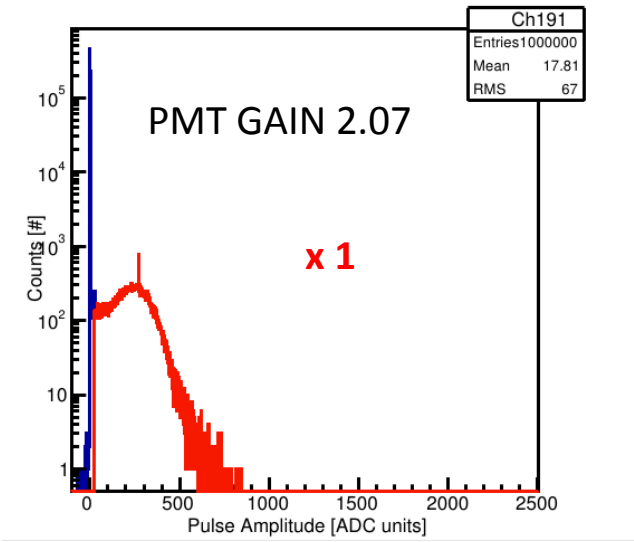
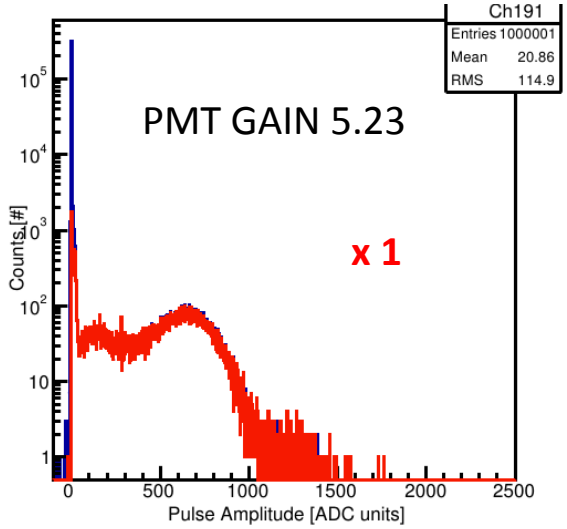
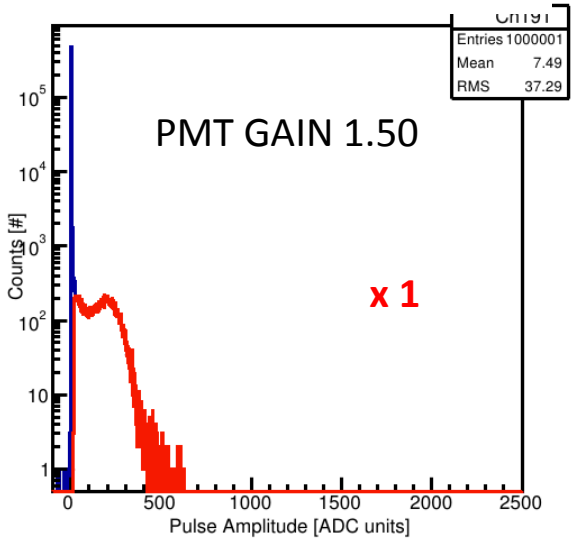
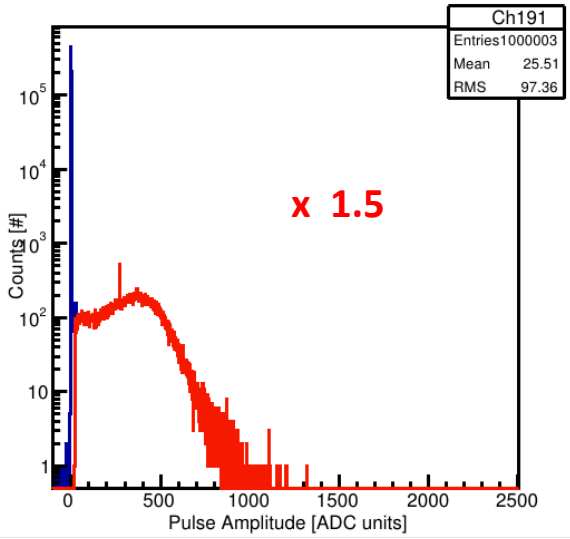
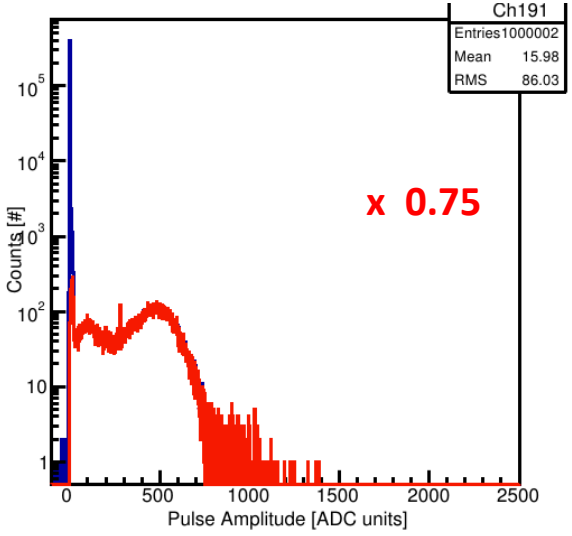


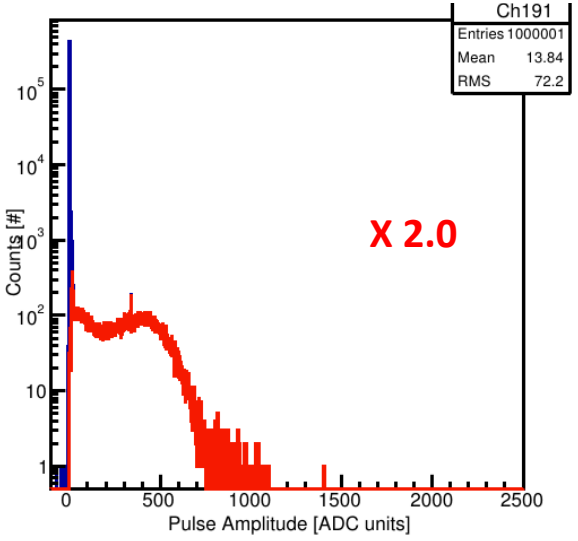




Measured at the laser bench in TED building

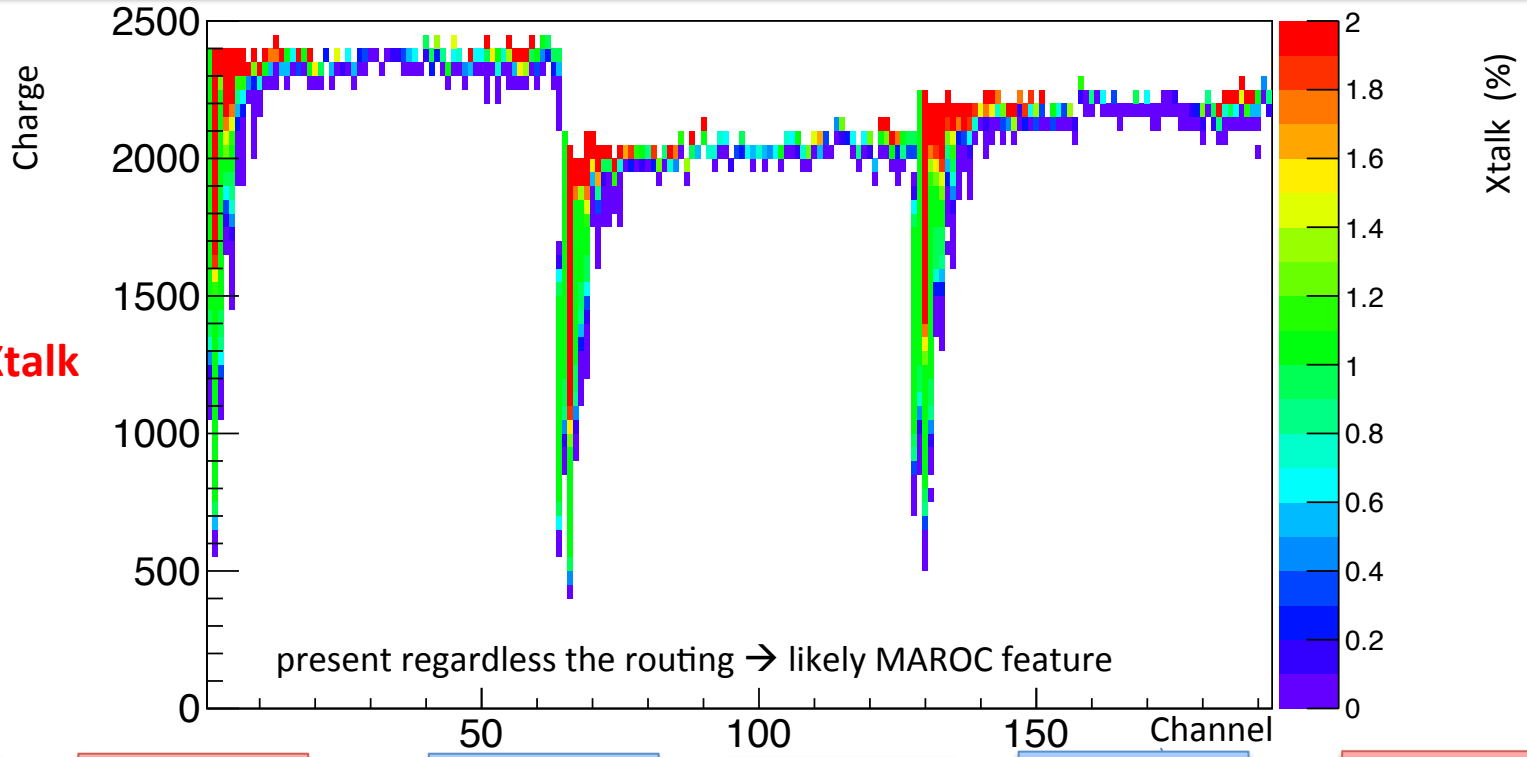


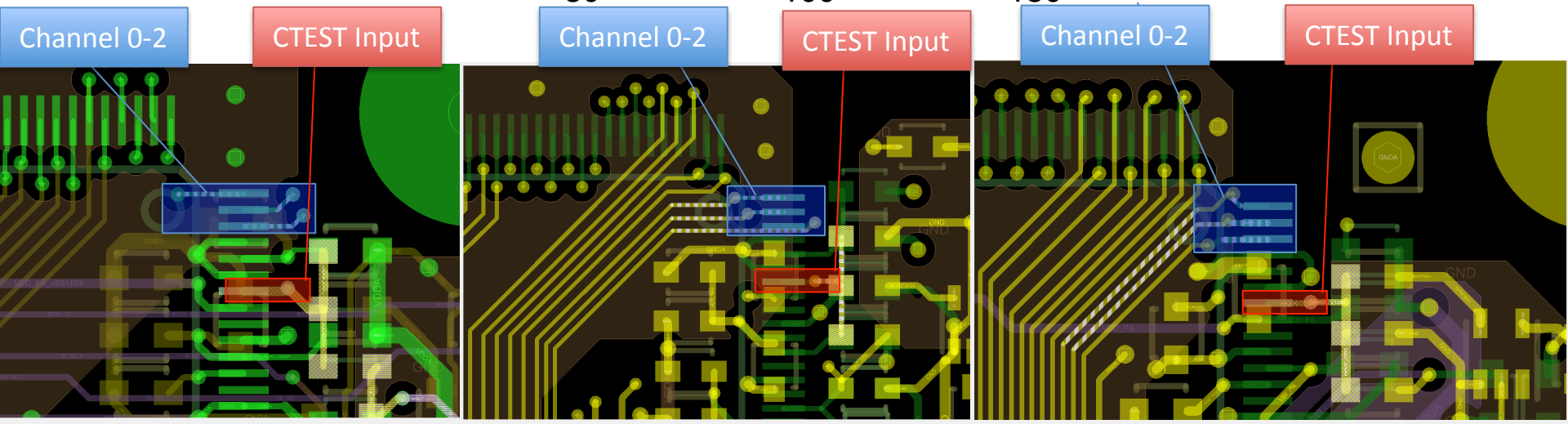




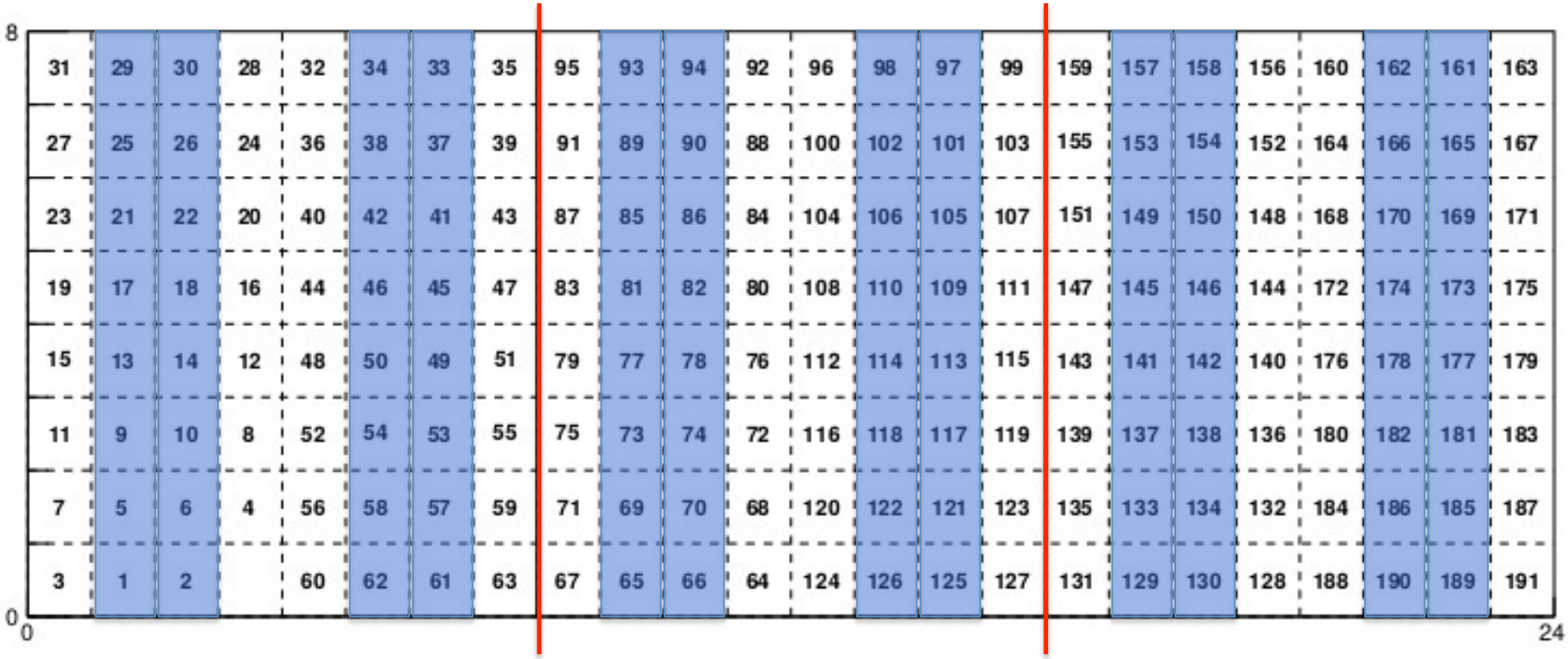
CTEST Onboard Pulser

LH-RH Xtalk





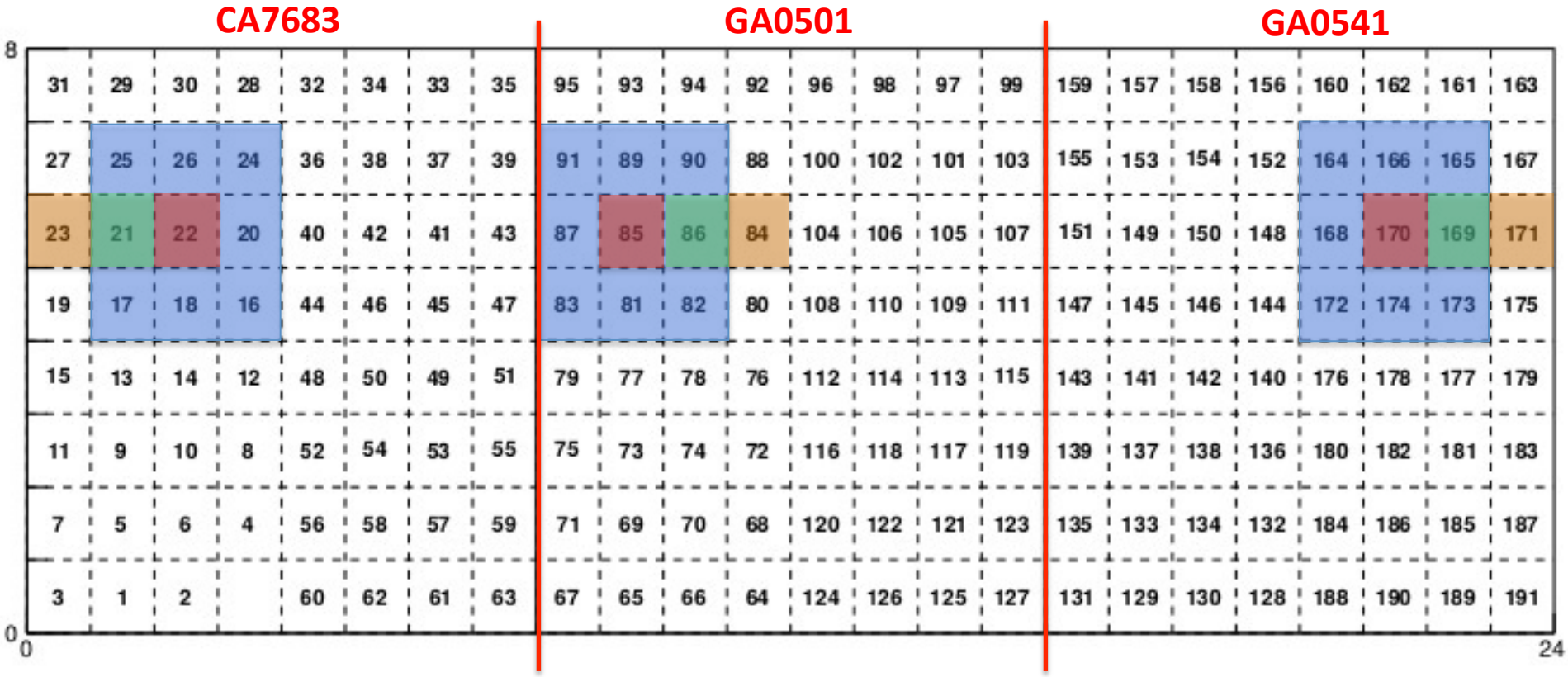
CLAS12 RICH Project Midterm Status



Left **OR** right channels readout on contiguous circuits

JLab Laser Test

3x MAROC tile, PMT covered by masks with small holes



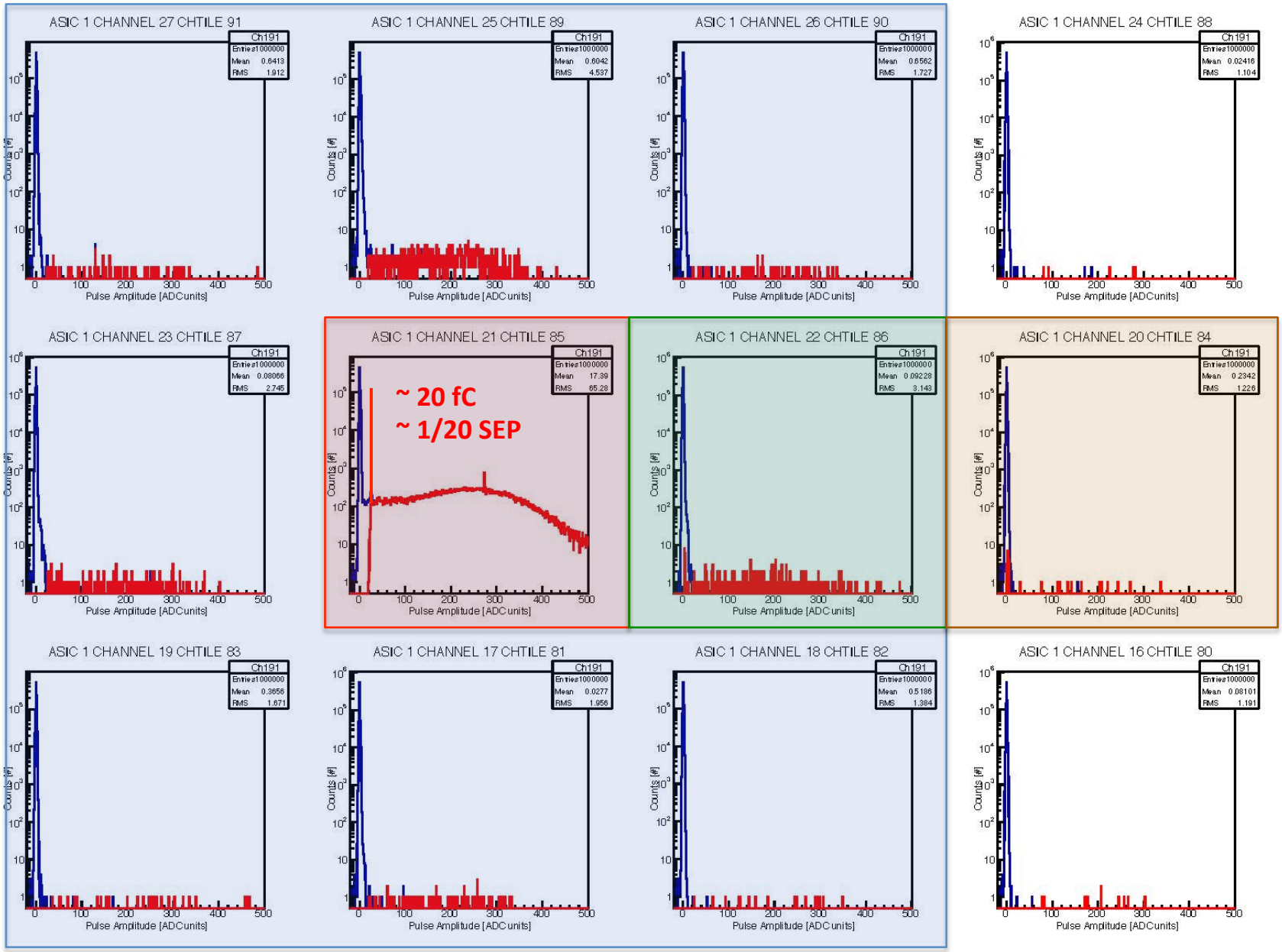
Fired Pixel

Electronic – Xtalk: contiguous circuits

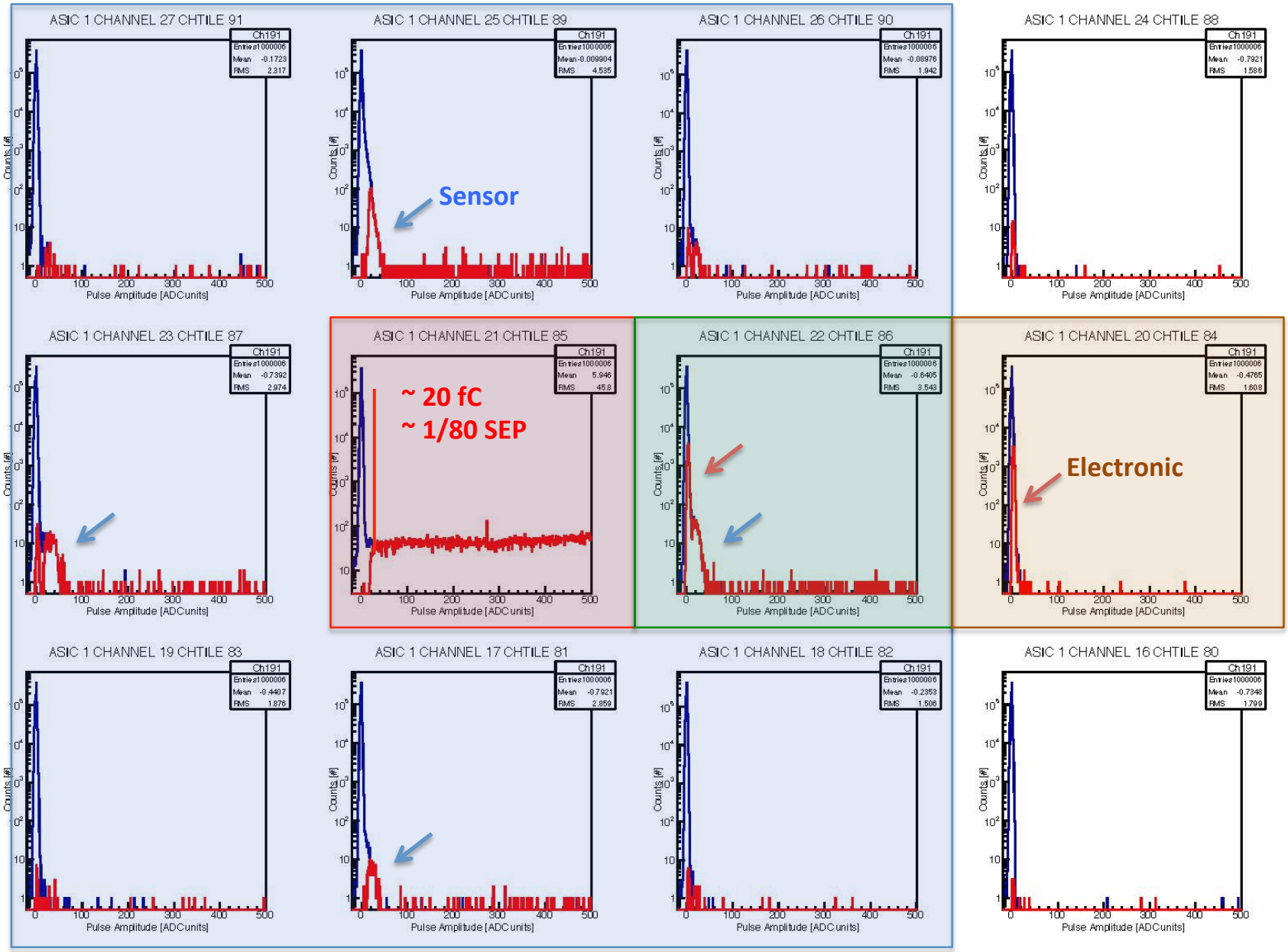
Sensor - Xtalk: contiguous pixels

Electronic + Sensor Xtalk

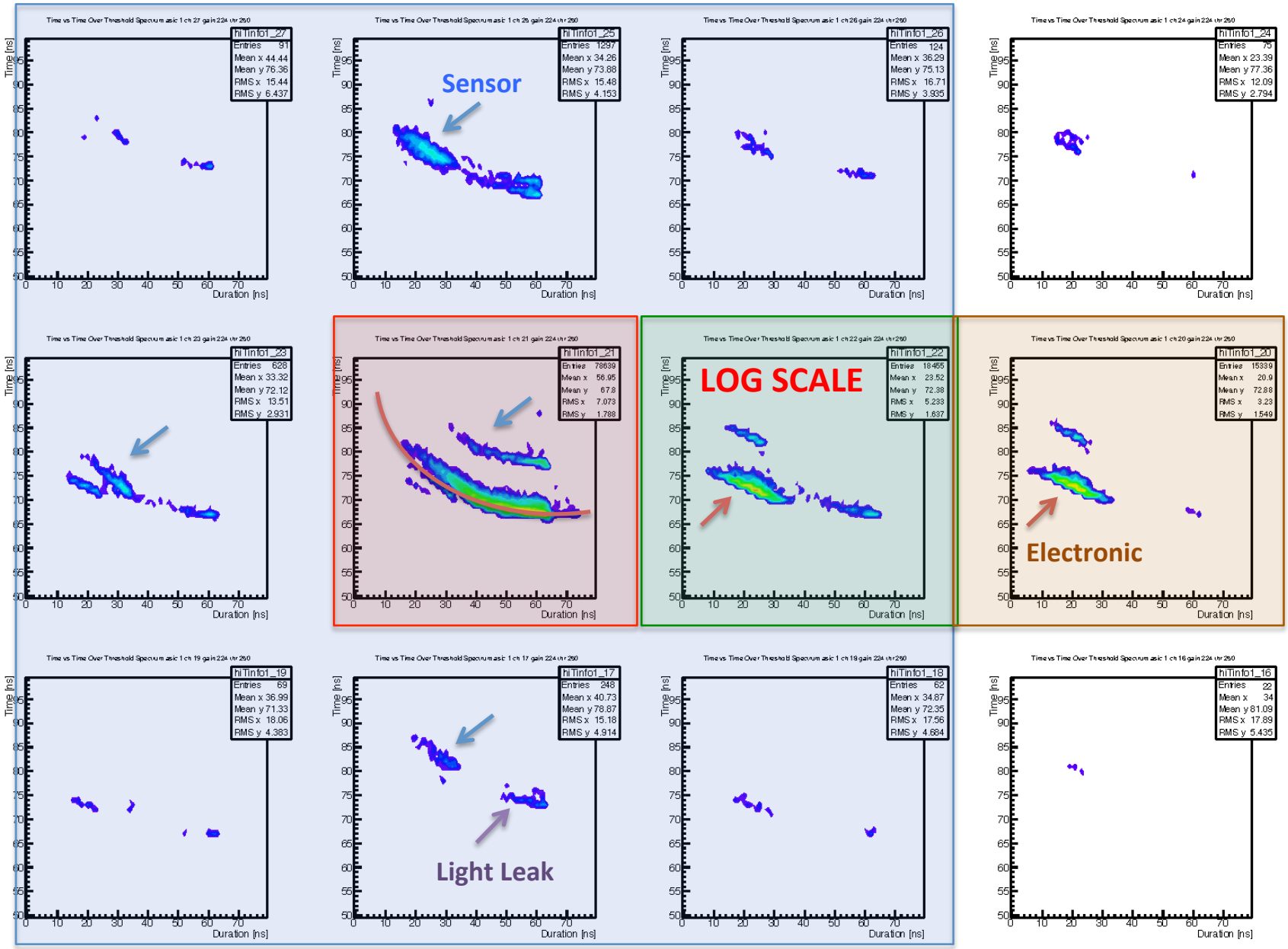
GA0501 @ Gain 1



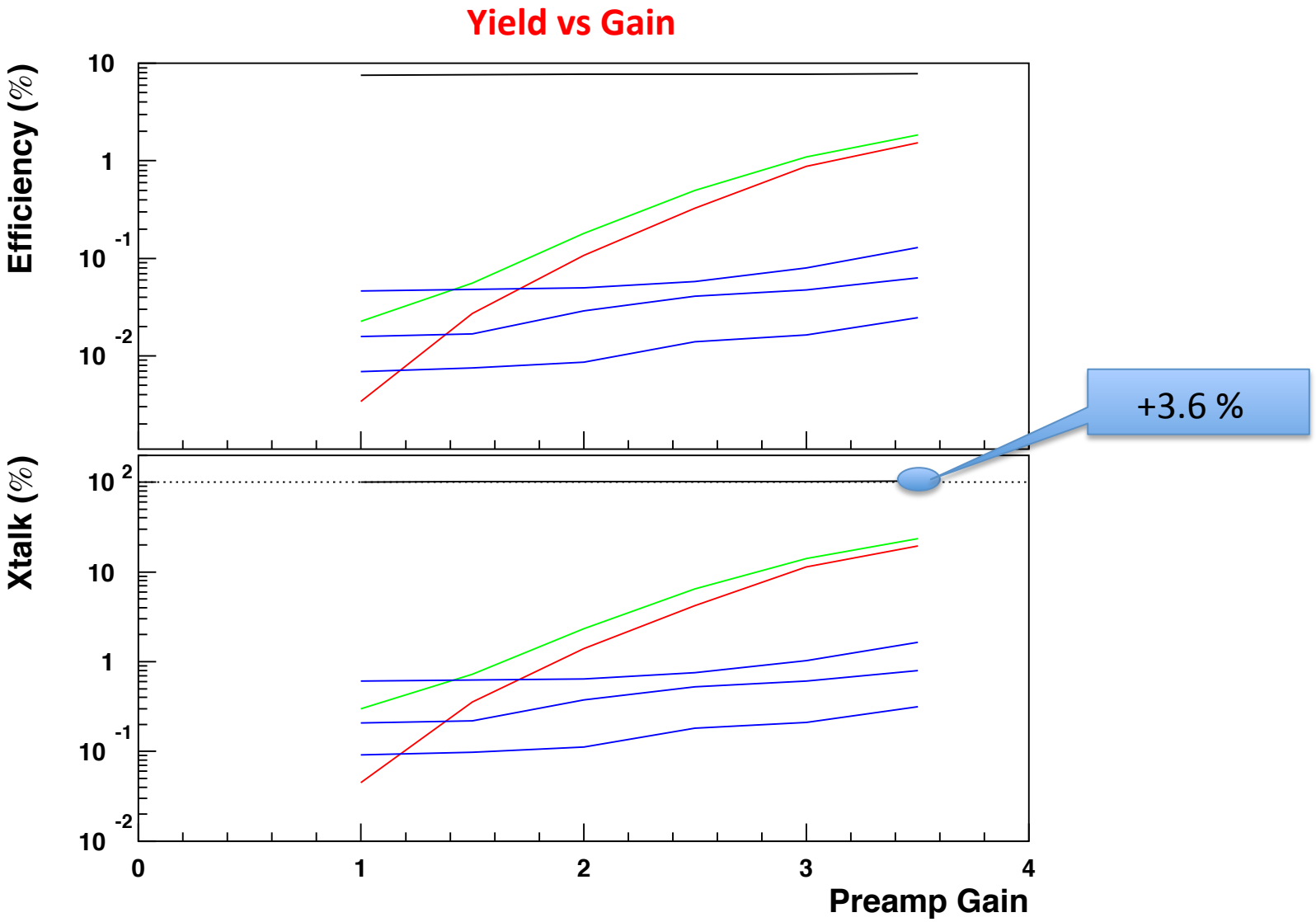
GA0501 @ Gain 4



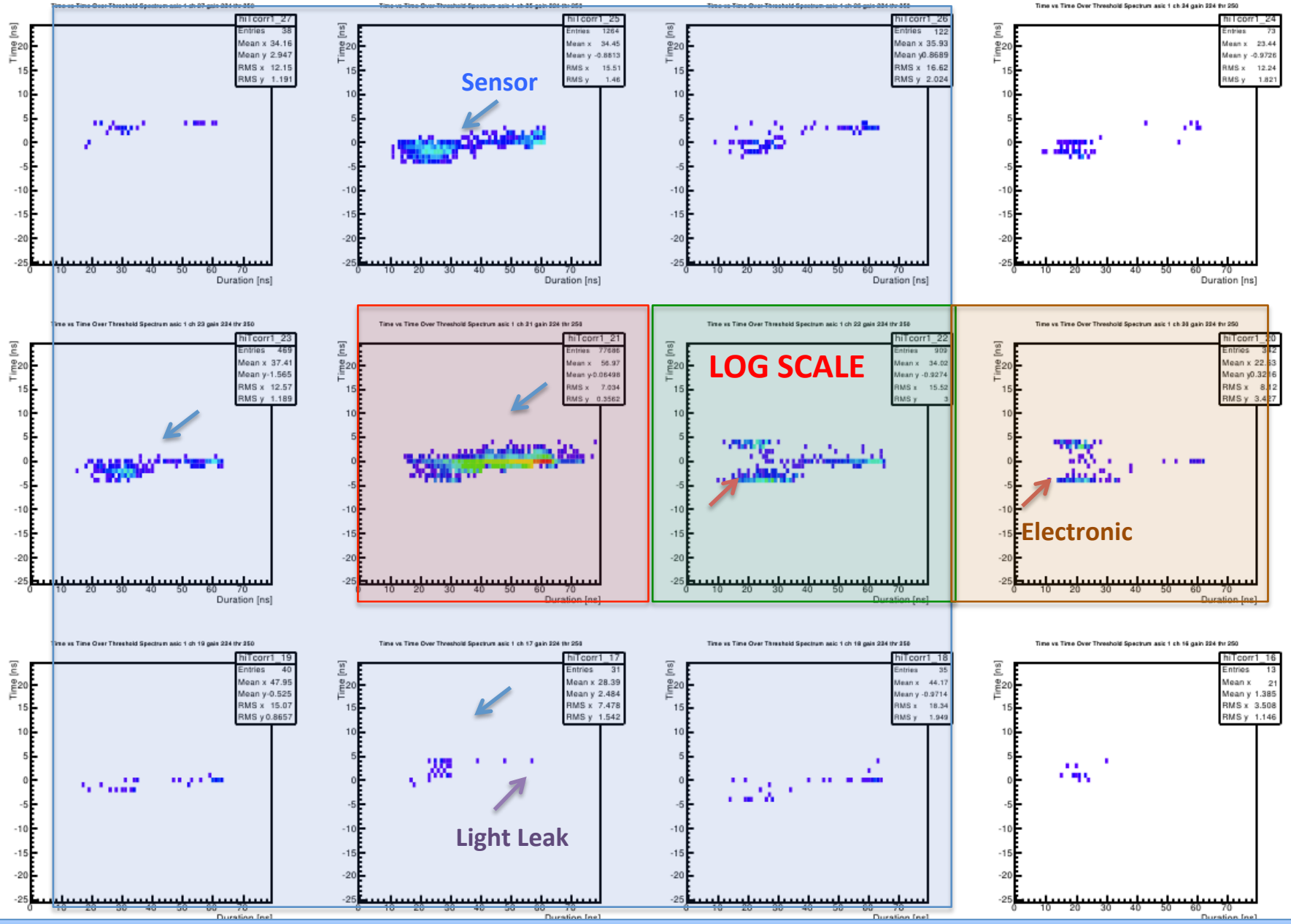
GA0501 @ Gain 4



GA0501


Yield vs Gain
Efficiency (%)
10
1
10 -1
10 -2
Xtalk (%)
10 2
10
1
10 -1
10 -2
0
1
2
3
4
Preamp Gain
+3.6 %

GA0501 @ Gain 4



GA0303 – Laser SPE – No mask