# VU Test Stand HG/LG Studies

Using milliCurie Sr90 source

# Test Scans

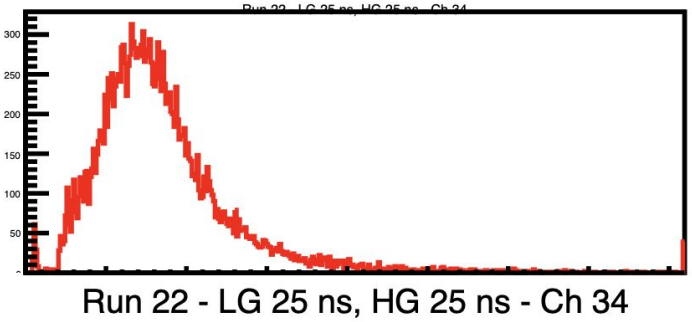
Using stack of 3 tiles.
Triggering on middle tile.

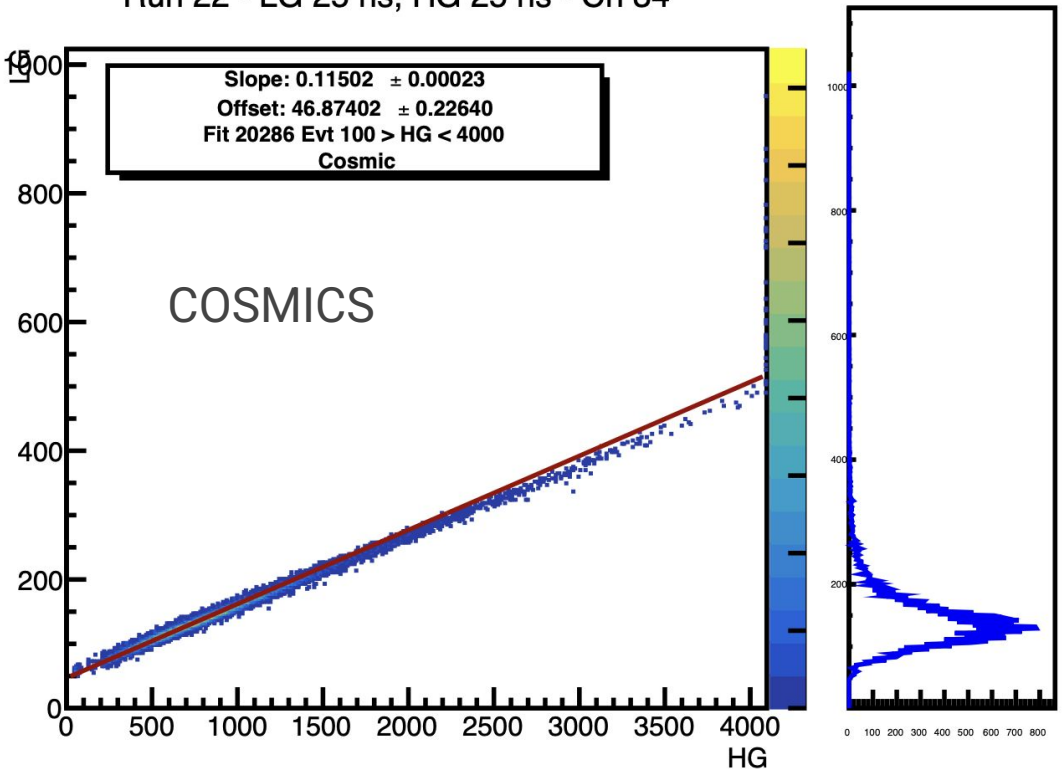
1. Shaping Time Scan: 12.5 to 87.5 ns
2. Rate Scan:
   a. 2 to 18 kHz using paper absorbers (Post-It notes)
   b. 2 to 80% reported “missed” triggers
3. Threshold Scan: 150 to 500 ADC units

# Analysis of HG/LG ratios

Fit for HG between 100 and 4000.

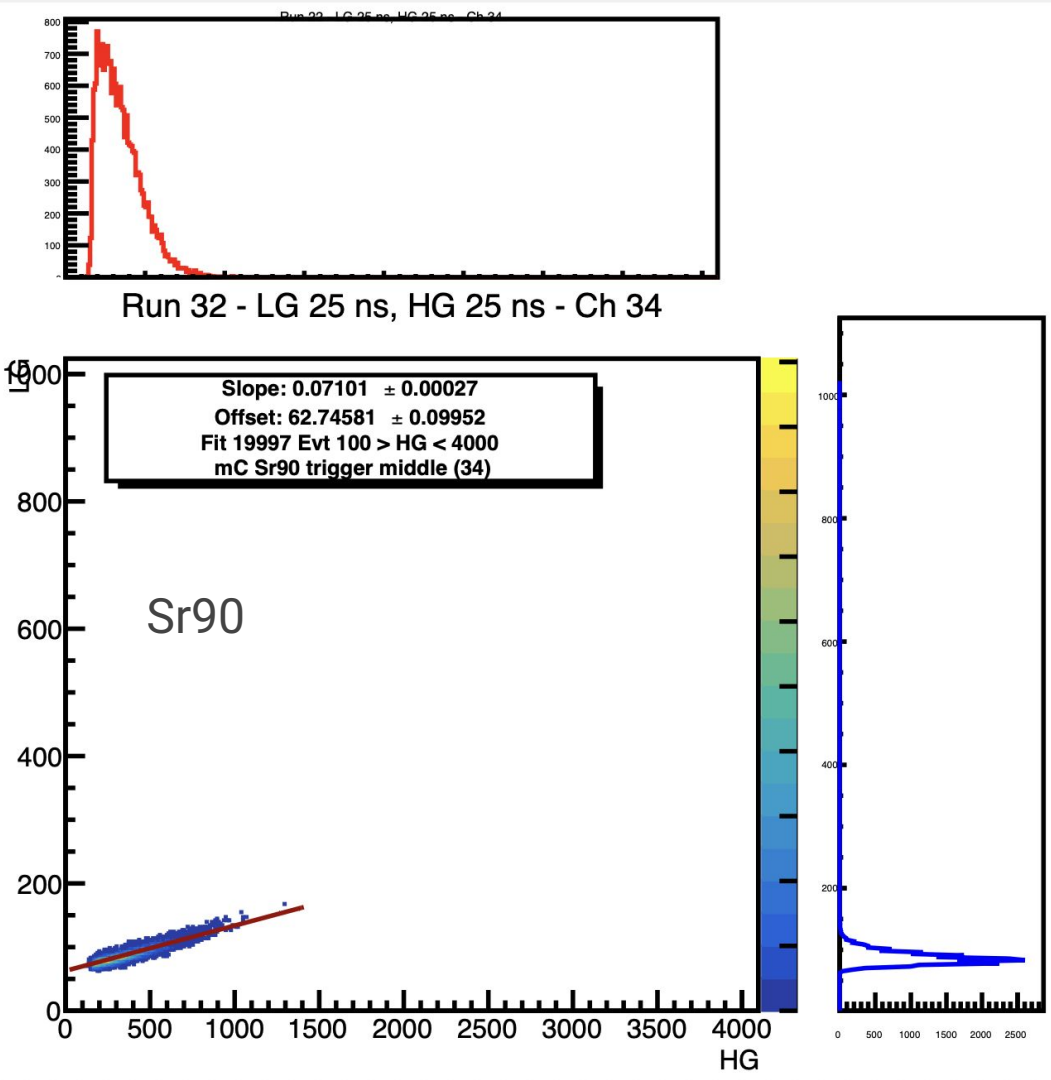
Cosmic data (shown right) seems to fit poorly above 2000, but statistics are low.



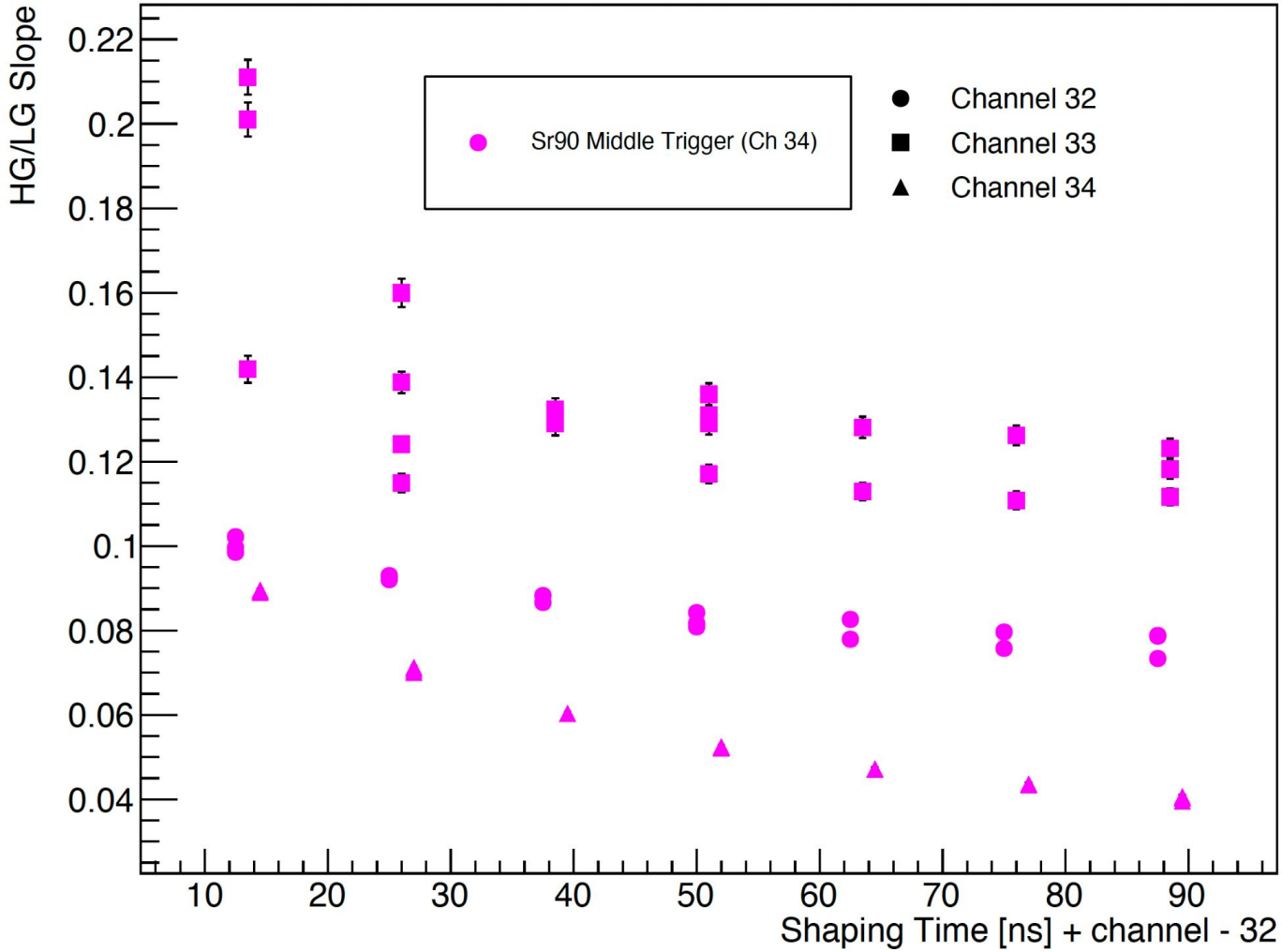



# Sr90
# HG/LG ratios

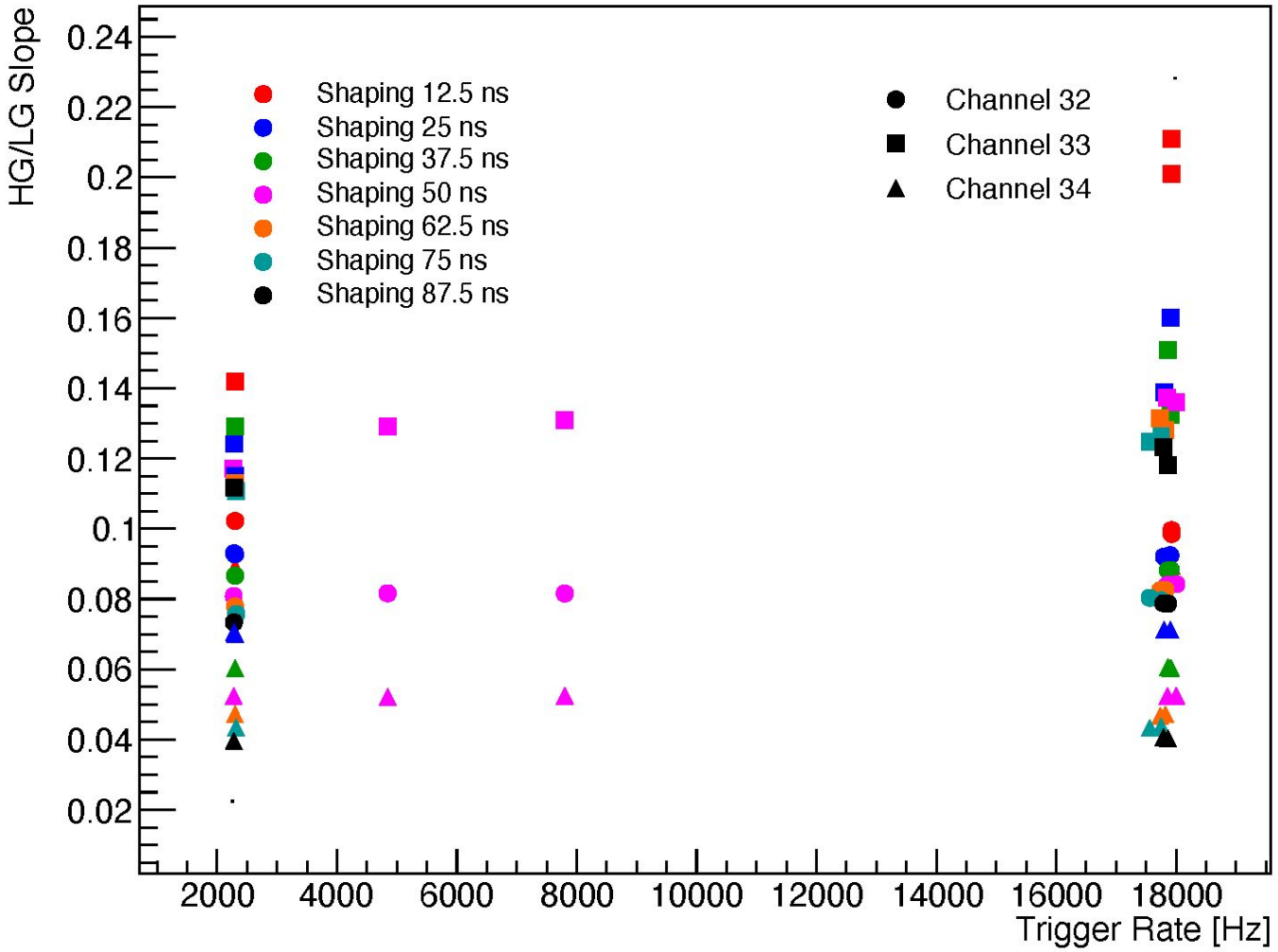
Sr90 has even fewer statistics above ADC of 1000.



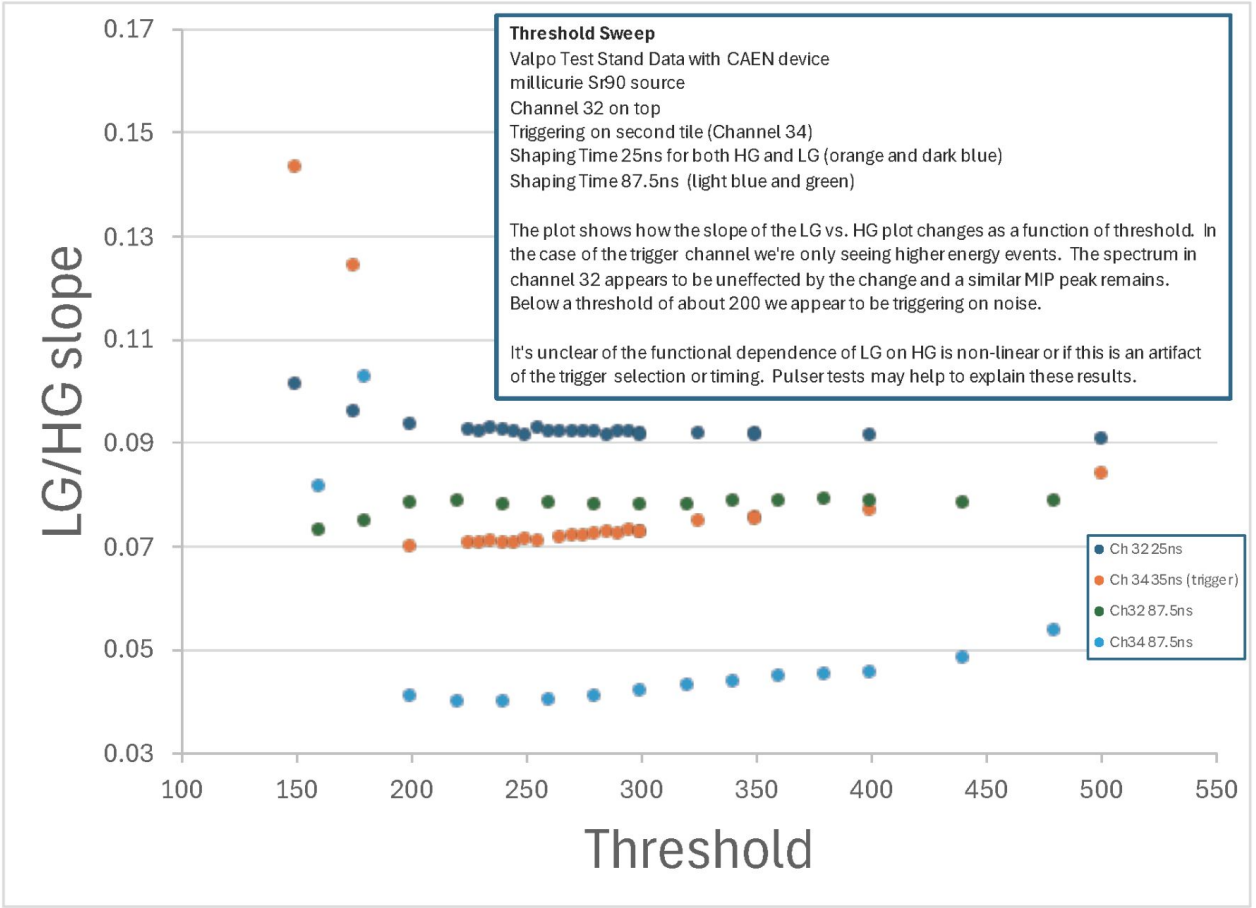
# Shaping Time Scan



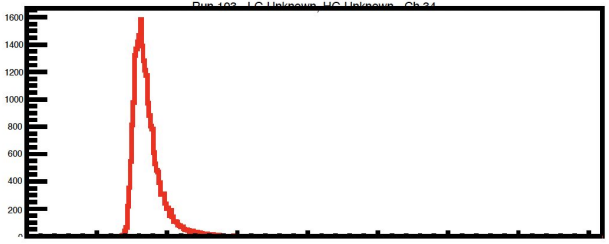
# Rate Scan


HG/LG Slope
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
Shaping 12.5 ns
Shaping 25 ns
Shaping 37.5 ns
Shaping 50 ns
Shaping 62.5 ns
Shaping 75 ns
Shaping 87.5 ns
Channel 32
Channel 33
Channel 34
2000
4000
6000
8000
10000
12000
14000
16000
18000
Trigger Rate [Hz]

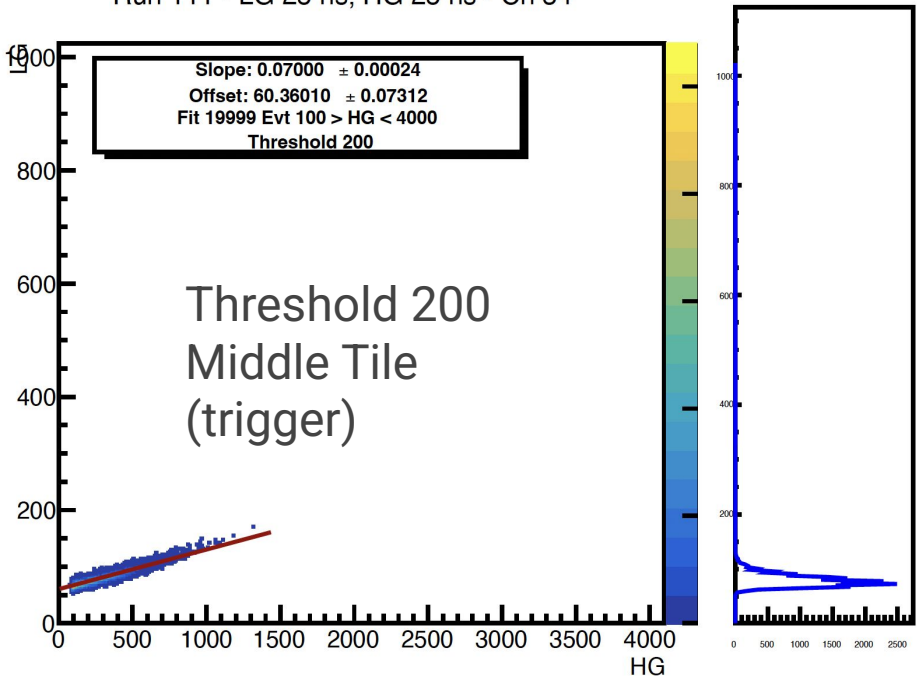
# Threshold Scan

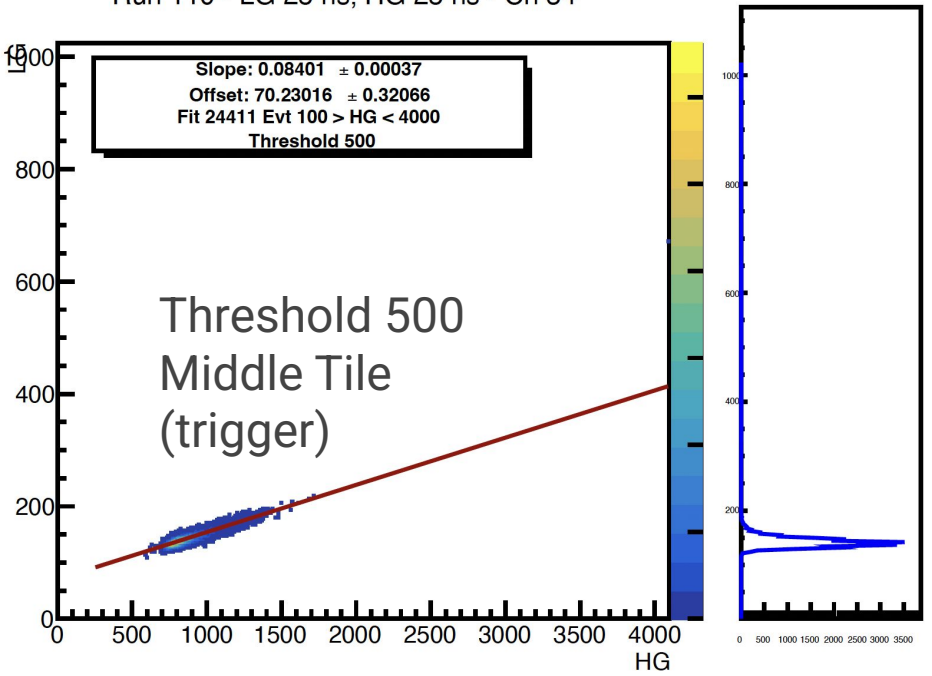


Run 111 - LG 25 ns, HG 25 ns - Ch 34

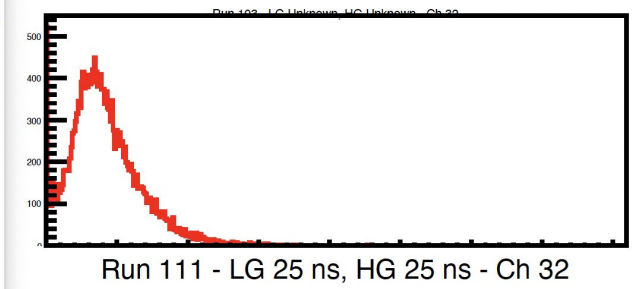


Run 110 - LG 25 ns, HG 25 ns - Ch 34

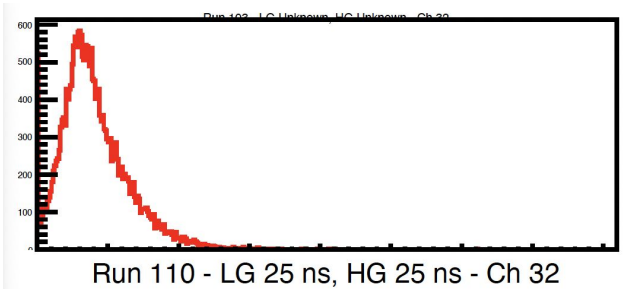


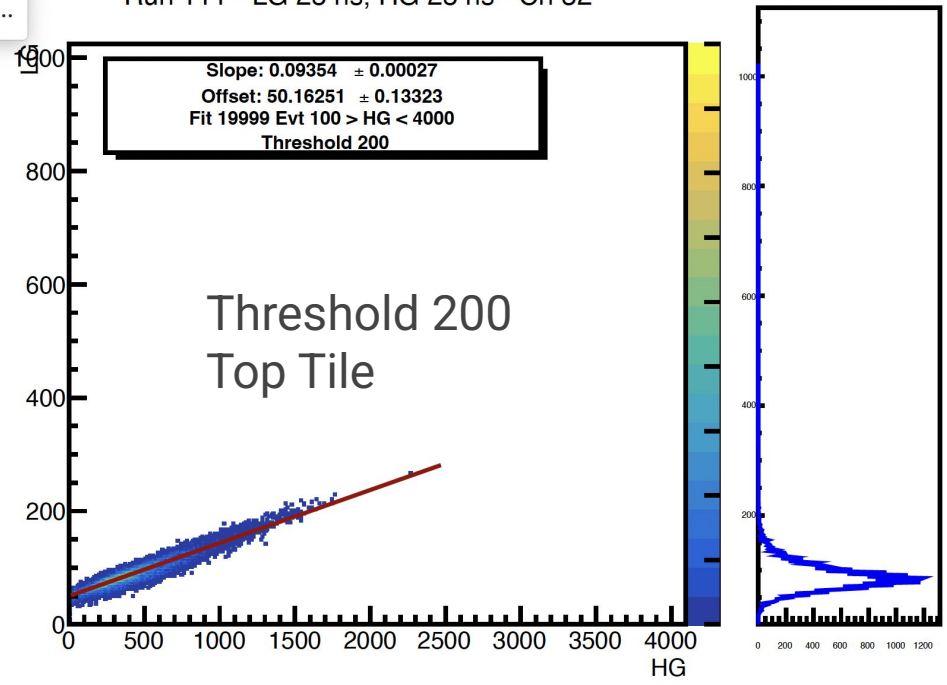

Middle Tile trigger changes the output range and can trigger on noise.

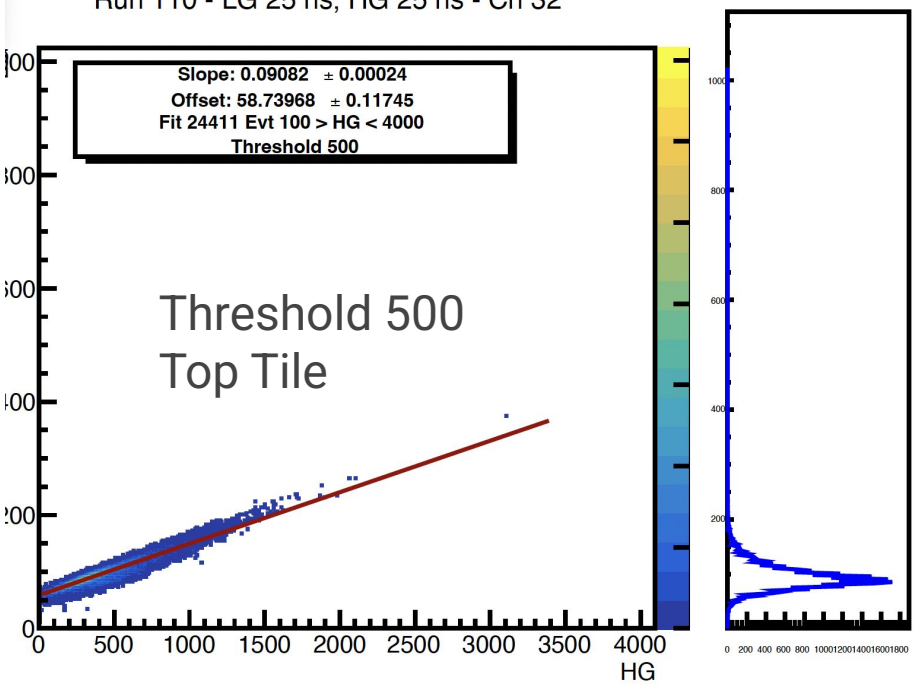


Run 111 - LG 25 ns, HG 25 ns - Ch 32



Run 110 - LG 25 ns, HG 25 ns - Ch 32




Top Tile spectra does not change substantially with threshold trigger.