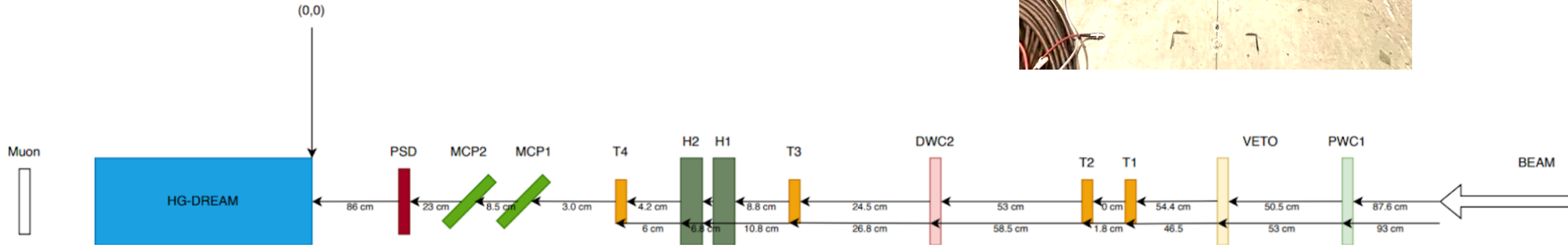
Test Beam Updates

08/27/2025

Test Beam

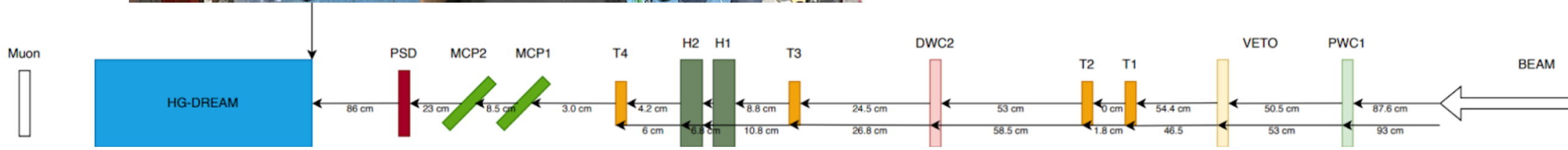
- First week of test beam for fiber HCal performed last week (August 13th - August 20th)

- Collected around 1.3M positron events and 500K pion events
  - Raw number, before any selections
  - Pion energy from 40GeV to 180GeV
  - Electron energy from 10GeV to 160GeV
  - ~600GB of data in total for test beam
- Second week scheduled around the end of September

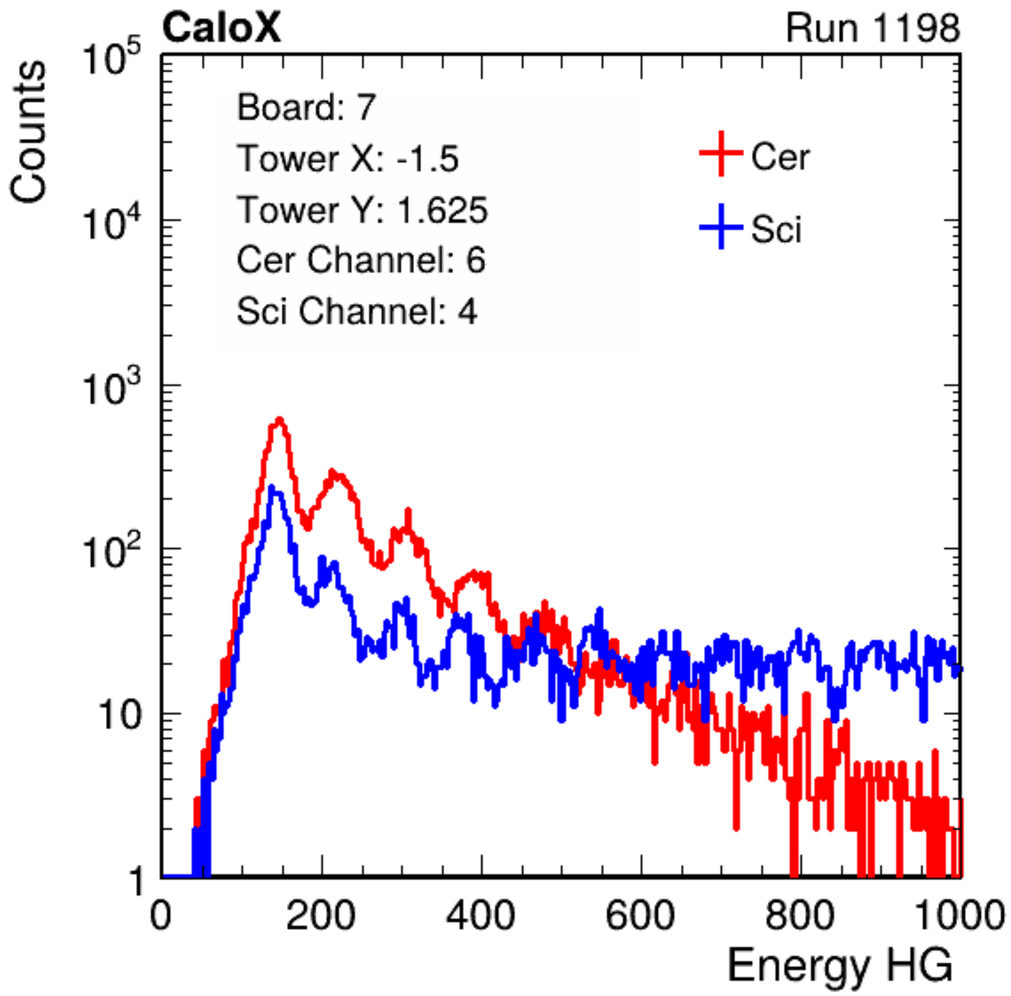


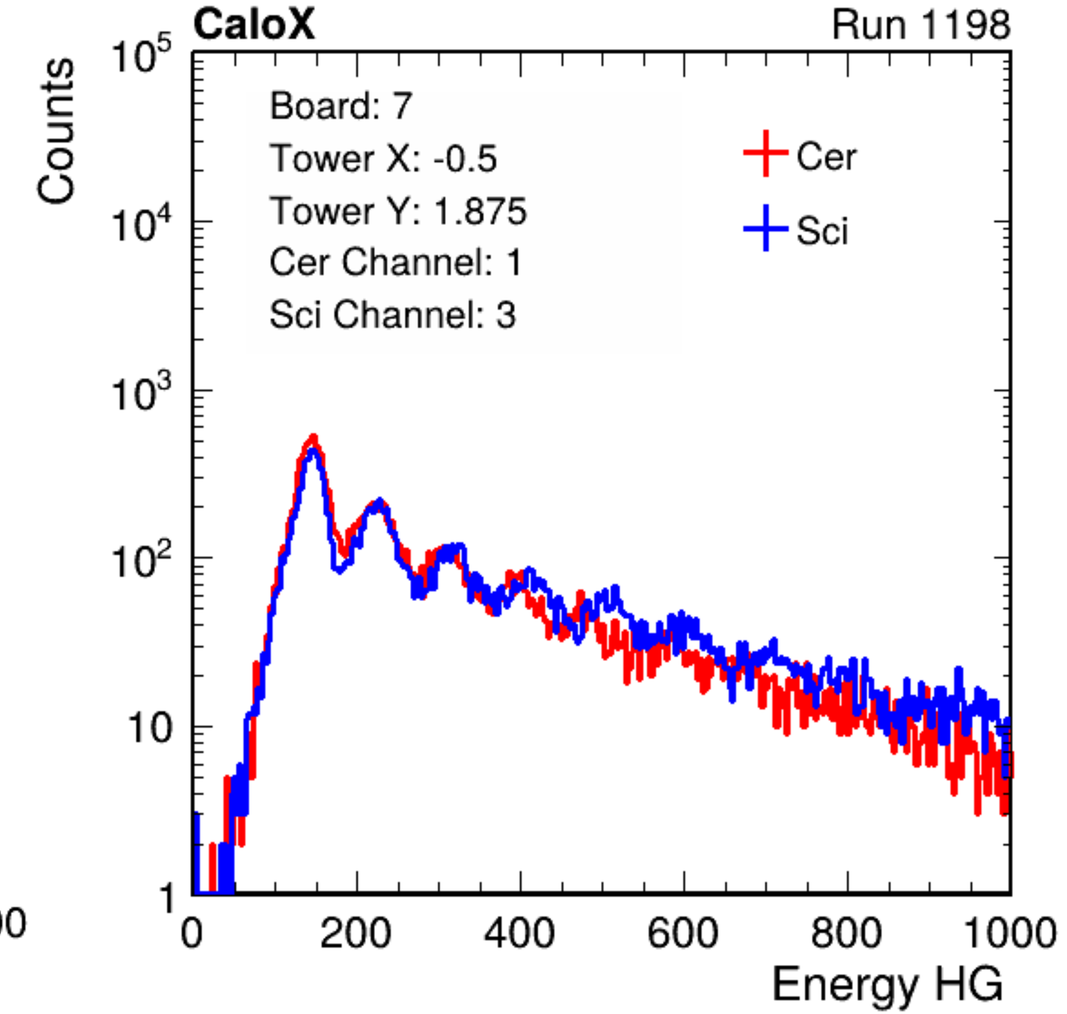
Test Beam


TEXAS TECH

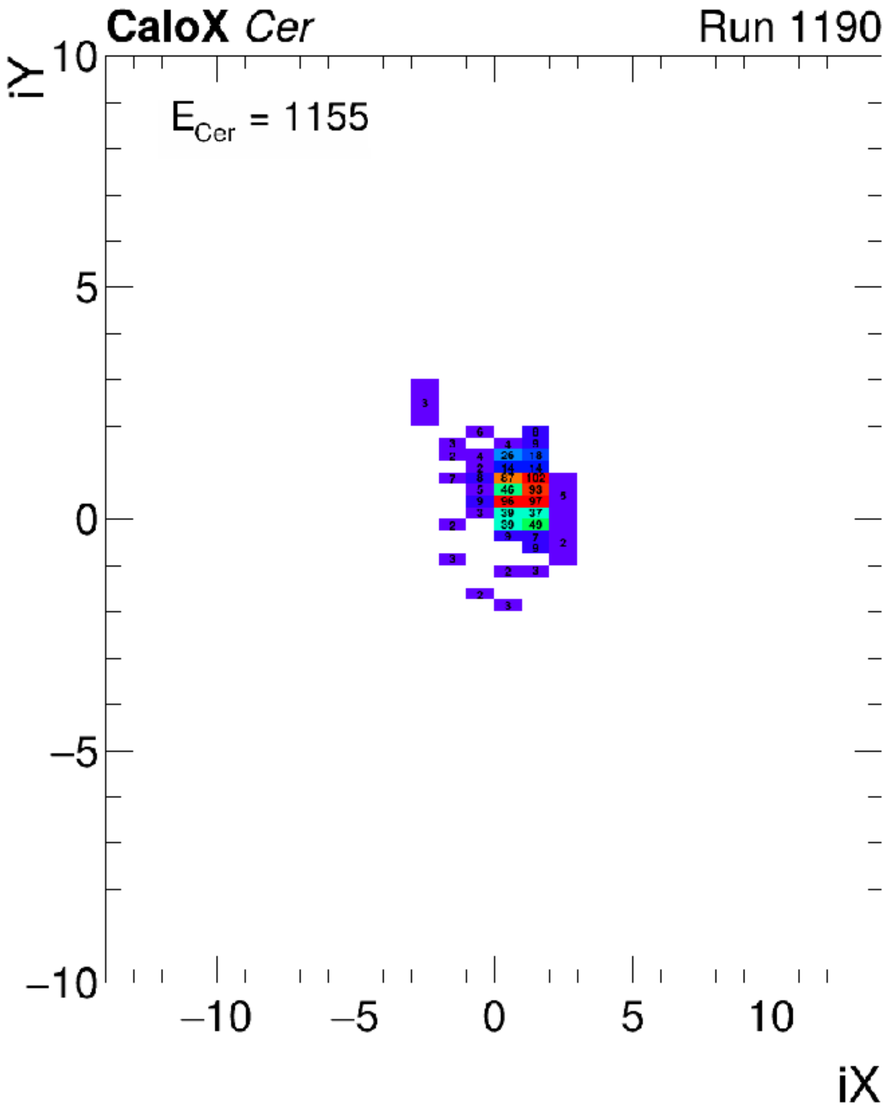

Muon
HG-DREAM
PSD
MCP2
MCP1
T4
H2
H1
T3
DWC2
T2
T1
VETO
PWC1
BEAM
86 cm
23 cm
8.5 cm
3.0 cm
4.2 cm
6 cm
6.8 cm
8.8 cm
10.8 cm
24.5 cm
26.8 cm
53 cm
58.5 cm
0 cm
1.8 cm
54.4 cm
46.5
50.5 cm
53 cm
87.6 cm
93 cm

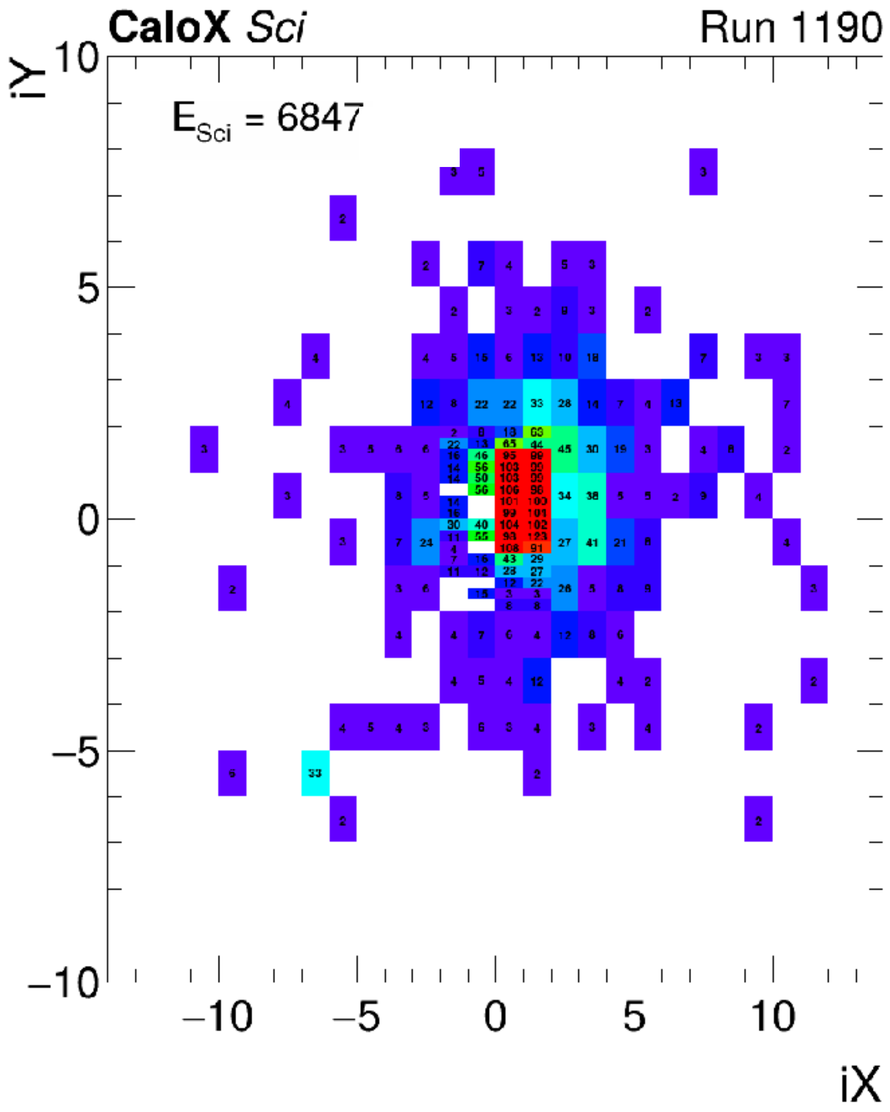
Channel Output



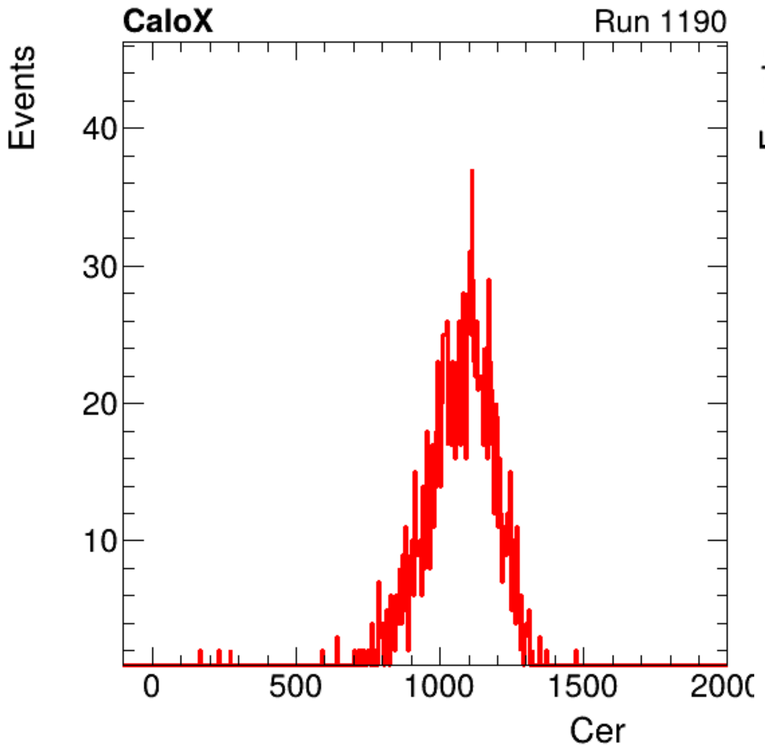


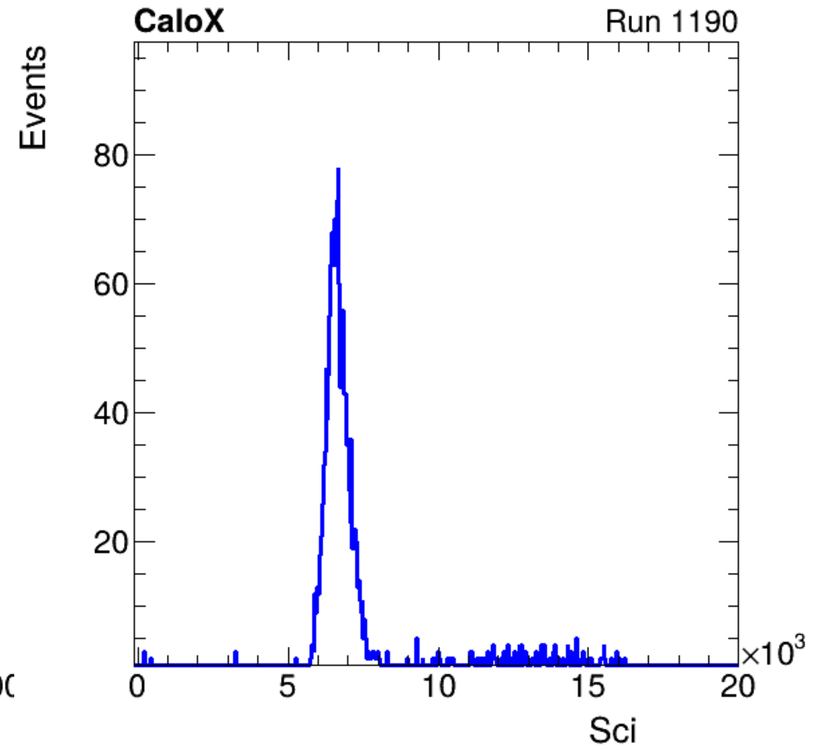
Event Display: EM

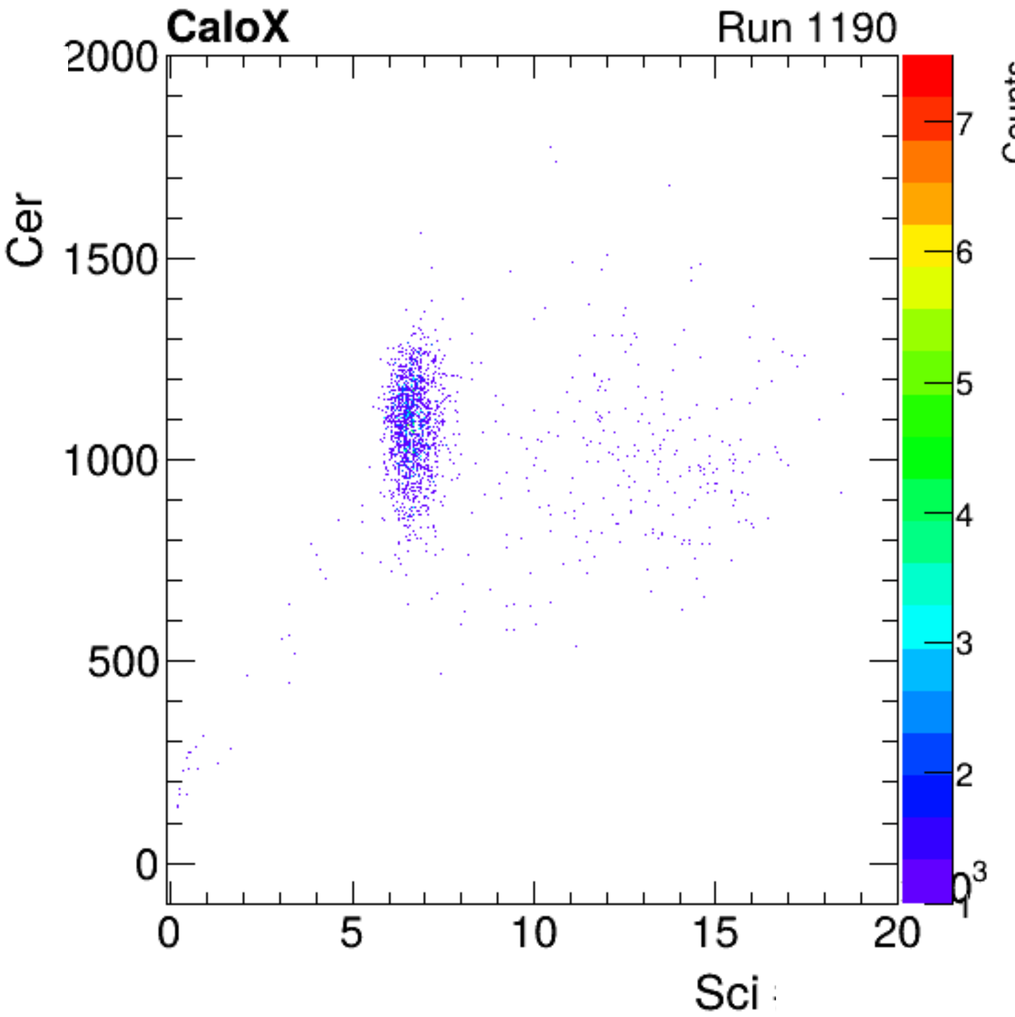




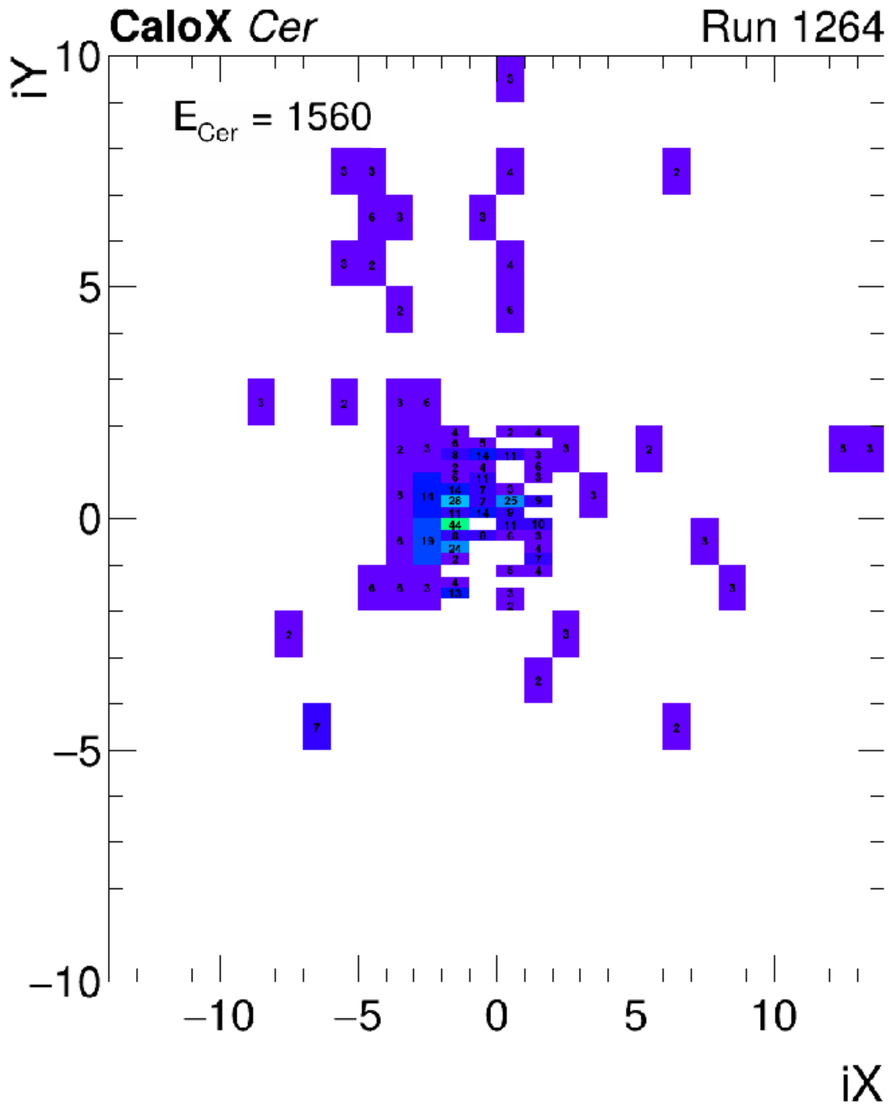
EM Energy Sum

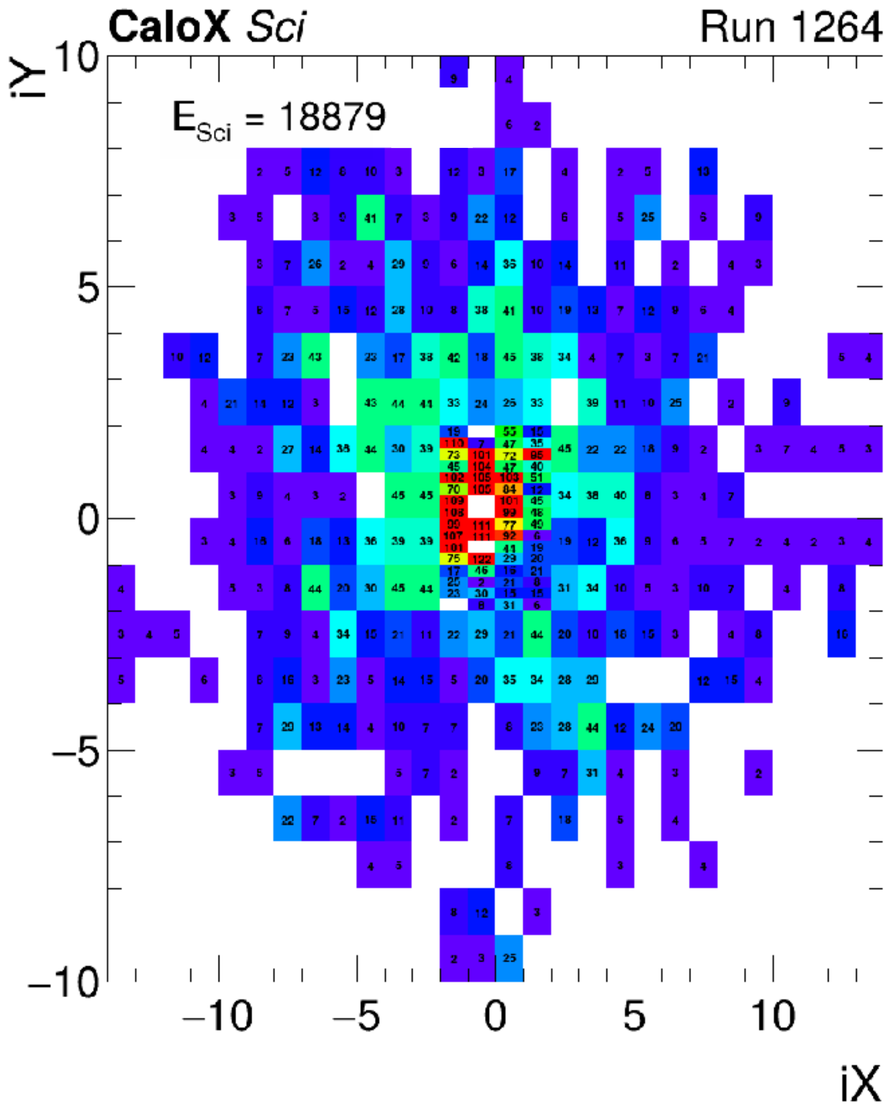




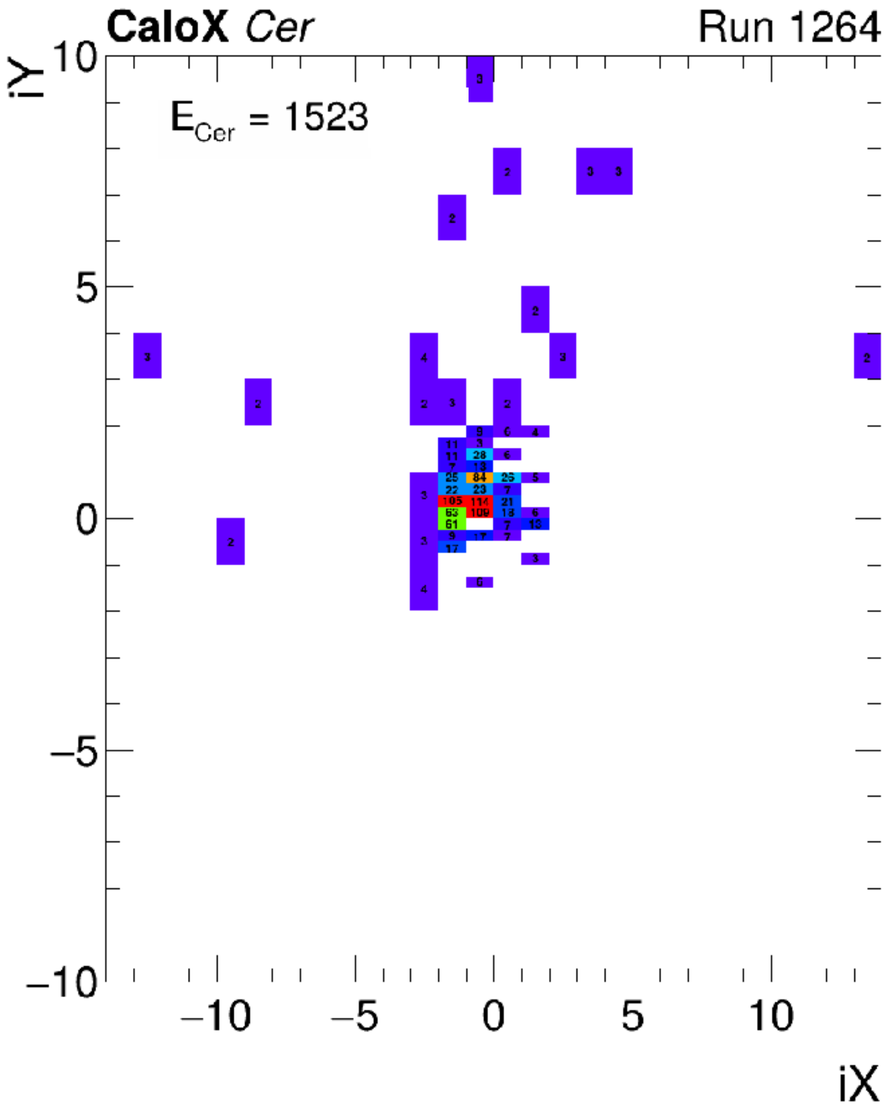


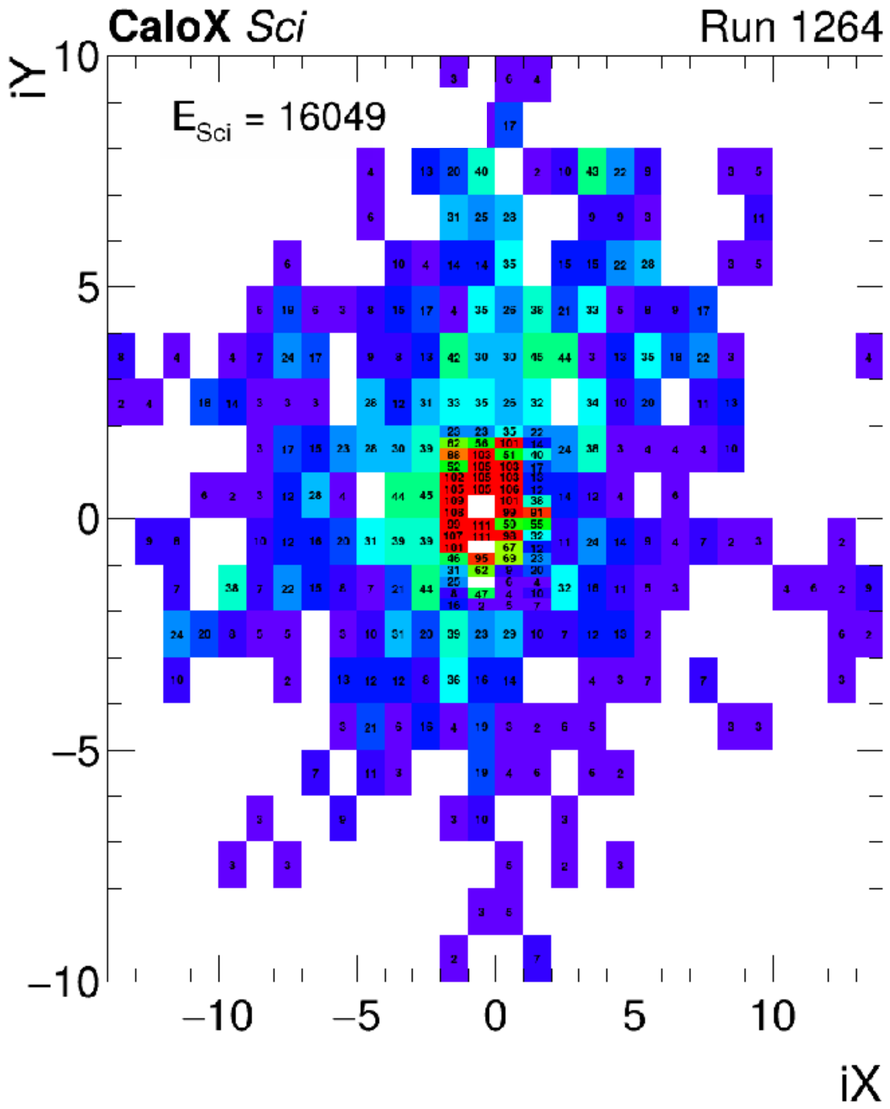
Event Display: Pion



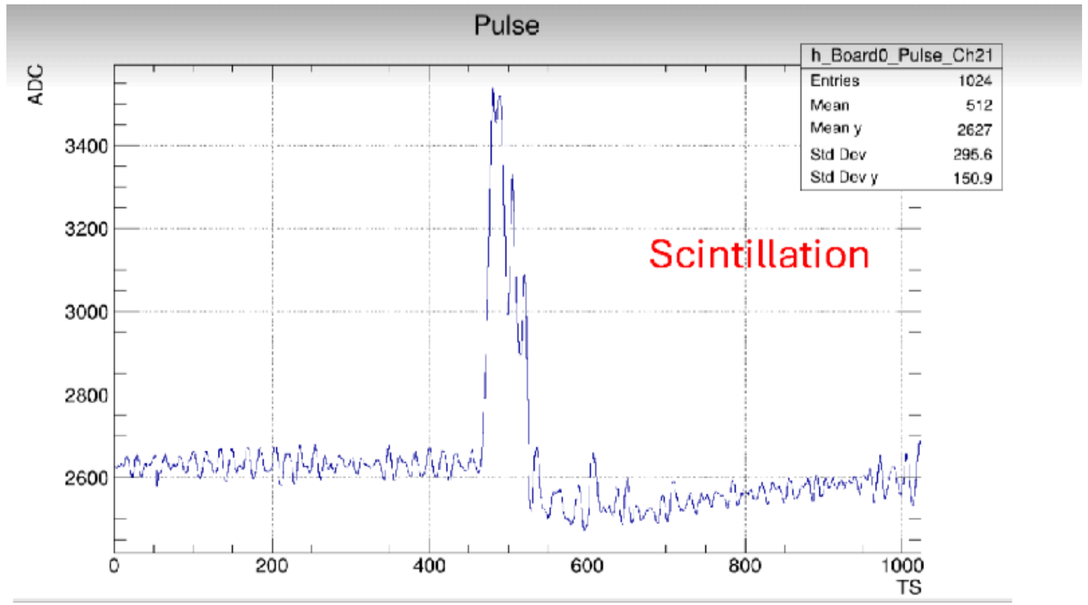


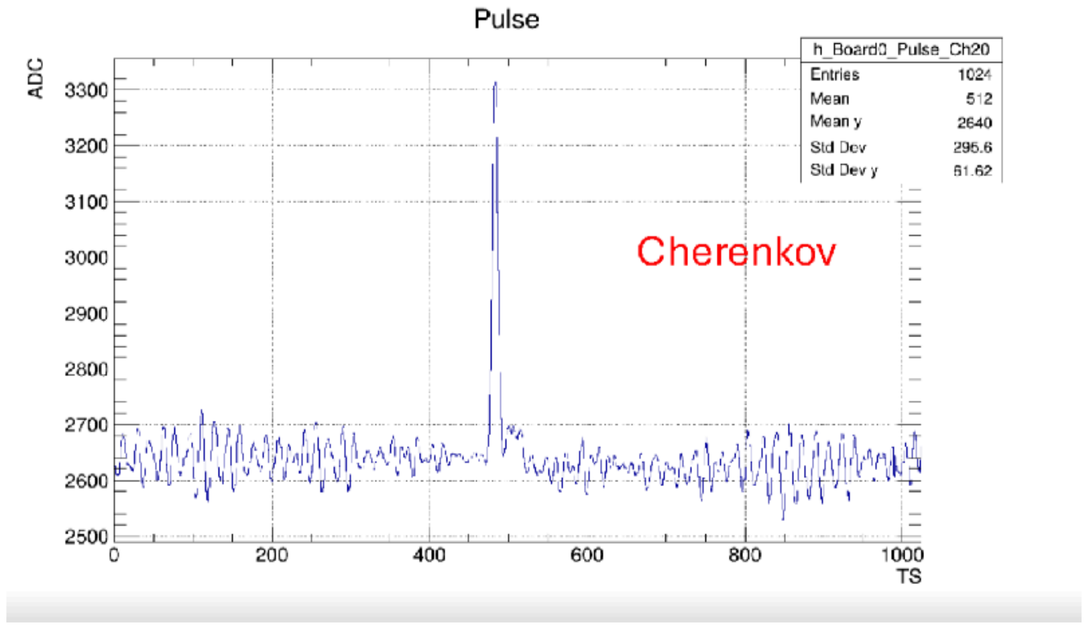
Event Display: Pion

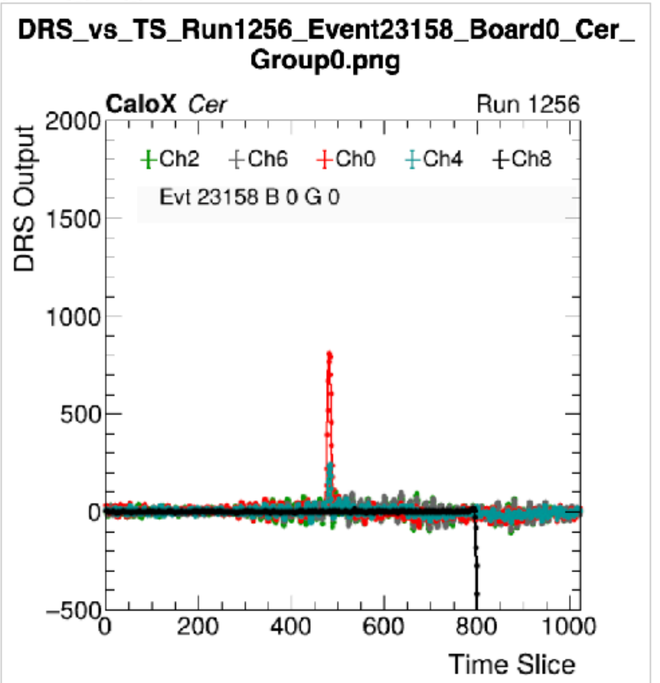


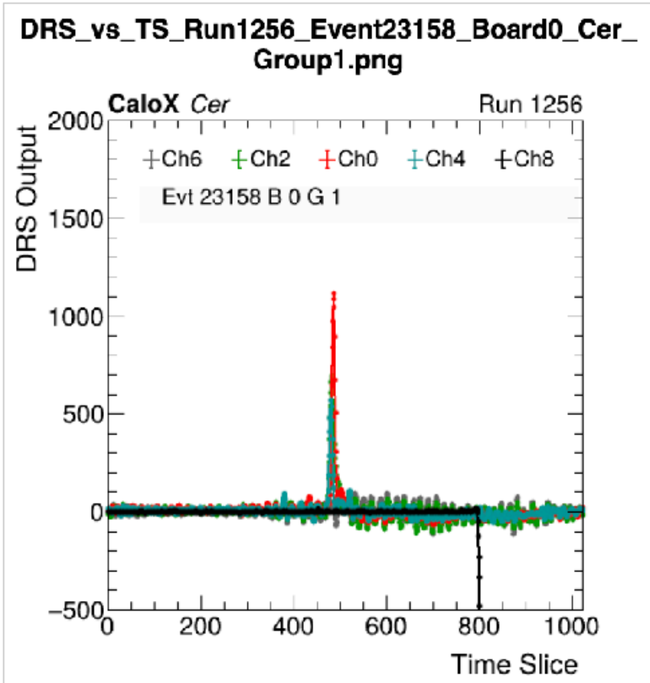


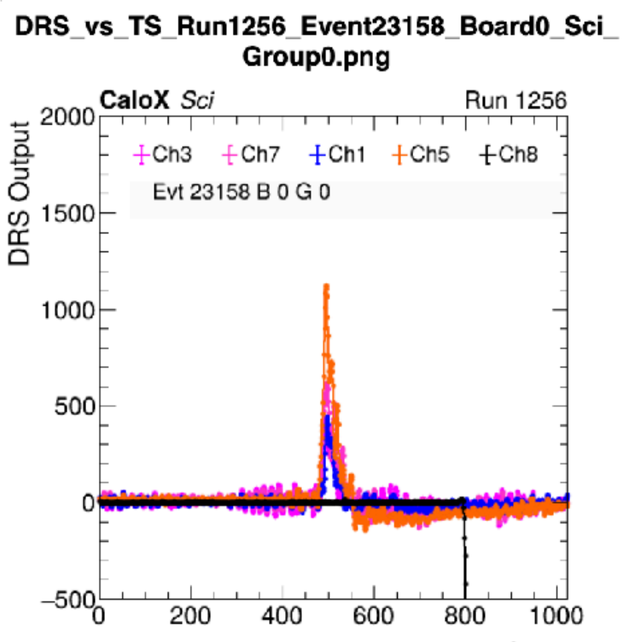
Pulse

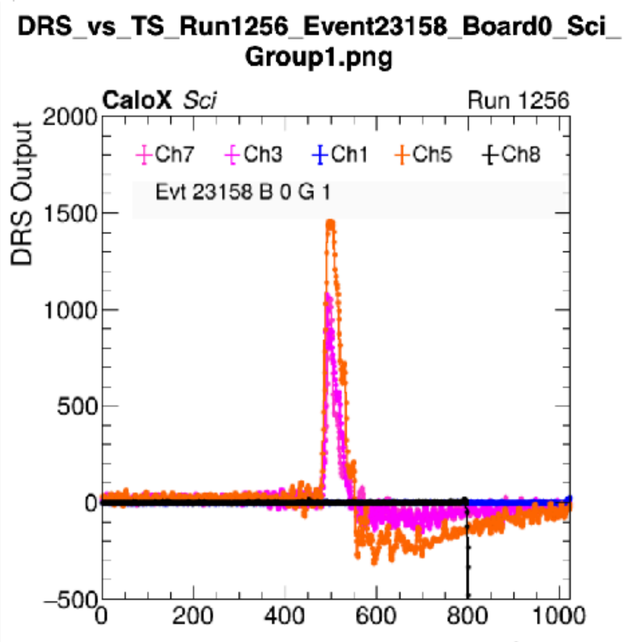

Pulse
h_Board0_Pulse_Ch21
Entries 1024
Mean 512
Mean y 2627
Std Dev 295.6
Std Dev y 150.9
ADC
TS
Scintillation


Pulse
h_Board0_Pulse_Ch20
Entries 1024
Mean 512
Mean y 2640
Std Dev 295.6
Std Dev y 61.62
ADC
TS
Cherenkov


DRS_vs_TS_Run1256_Event23158_Board0_Cer_Group0.png
CaloX Cer
Run 1256
Ch2 Ch6 Ch0 Ch4 Ch8
Evt 23158 B 0 G 0
DRS Output
Time Slice

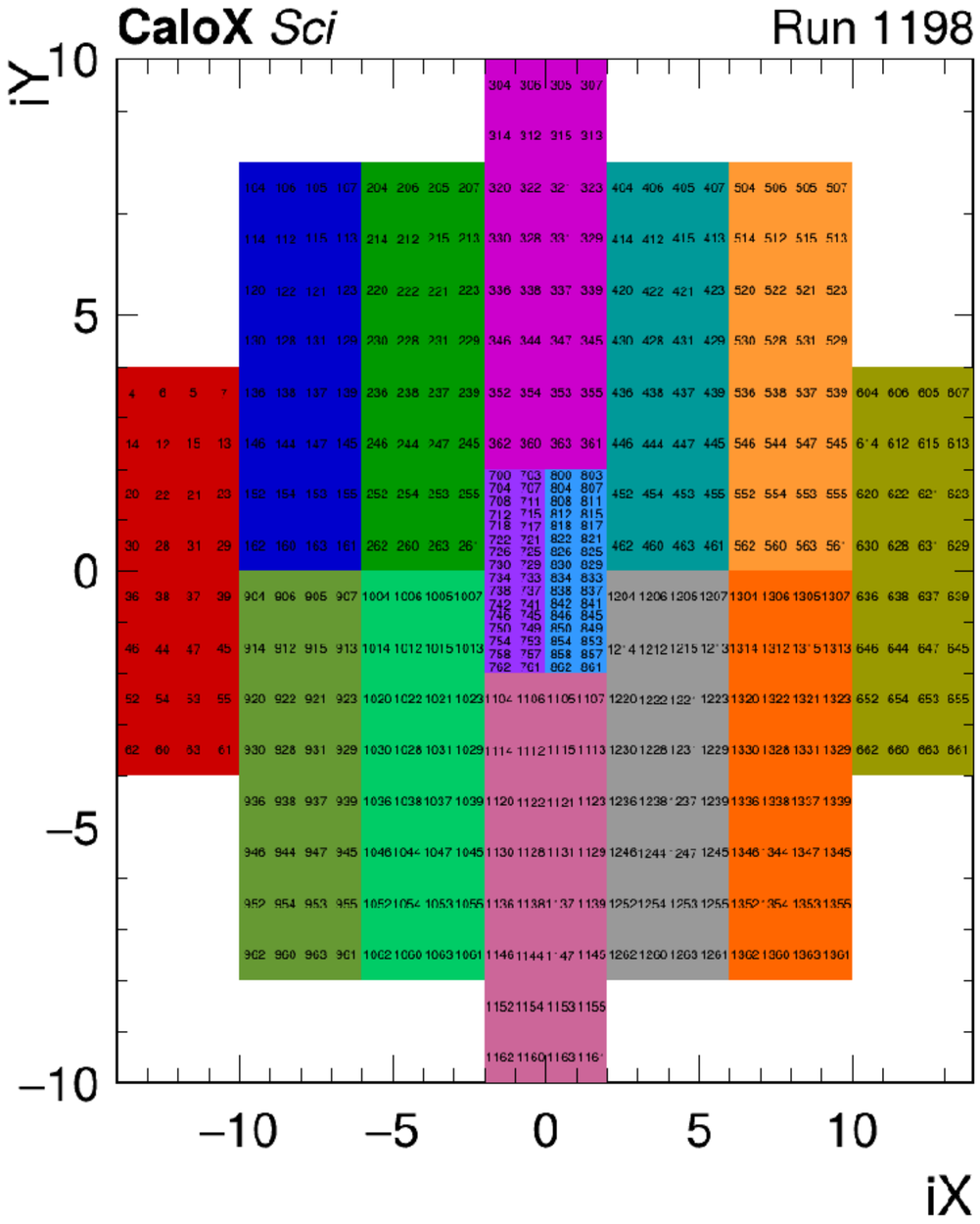

DRS_vs_TS_Run1256_Event23158_Board0_Cer_Group1.png
CaloX Cer
Run 1256
Ch6 Ch2 Ch0 Ch4 Ch8
Evt 23158 B 0 G 1
DRS Output
Time Slice


DRS_vs_TS_Run1256_Event23158_Board0_Sci_Group0.png
CaloX Sci
Run 1256
Ch3 Ch7 Ch1 Ch5 Ch8
Evt 23158 B 0 G 0
DRS Output


DRS_vs_TS_Run1256_Event23158_Board0_Sci_Group1.png
CaloX Sci
Run 1256
Ch7 Ch3 Ch1 Ch5 Ch8
Evt 23158 B 0 G 1
DRS Output

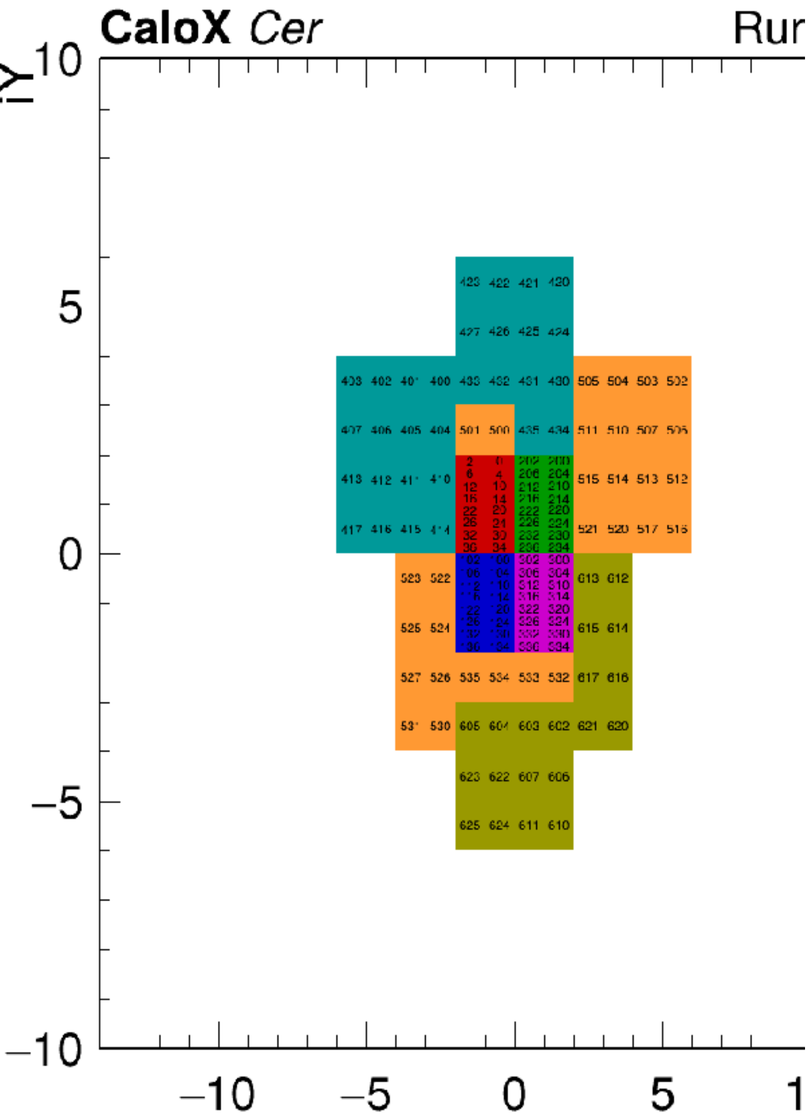
Back Up

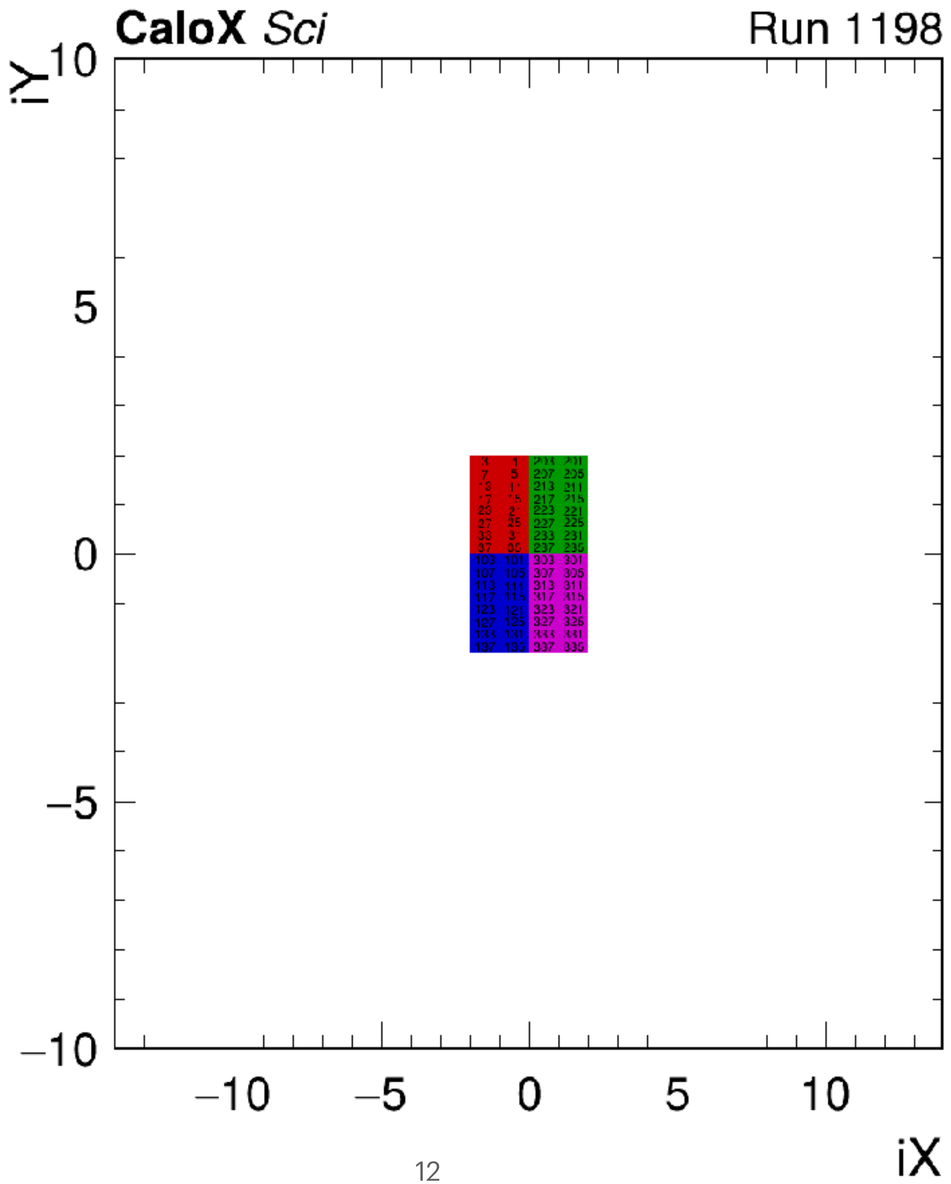
FERS Channels



- 896 channels in FERS in total, split evenly between C and S channels
  - 128 channels with 3mm SiPM, each channel corresponds to a tower of 1.2cm x 0.4cm. “High Granularity”
  - 768 channels with 6mm SiPM, each channel corresponds to a tower of 1.2cm x 1.6cm

DRS Channels (Timing)





- 224 channels in DRS in total, split evenly between C and S channels
  - 64 channels for S, reading out “high granularity” part of S
  - 160 channels for C, reading out “central“ part of detector
- 5GS sampling frequency, so in each event, read out every 200ps per channel