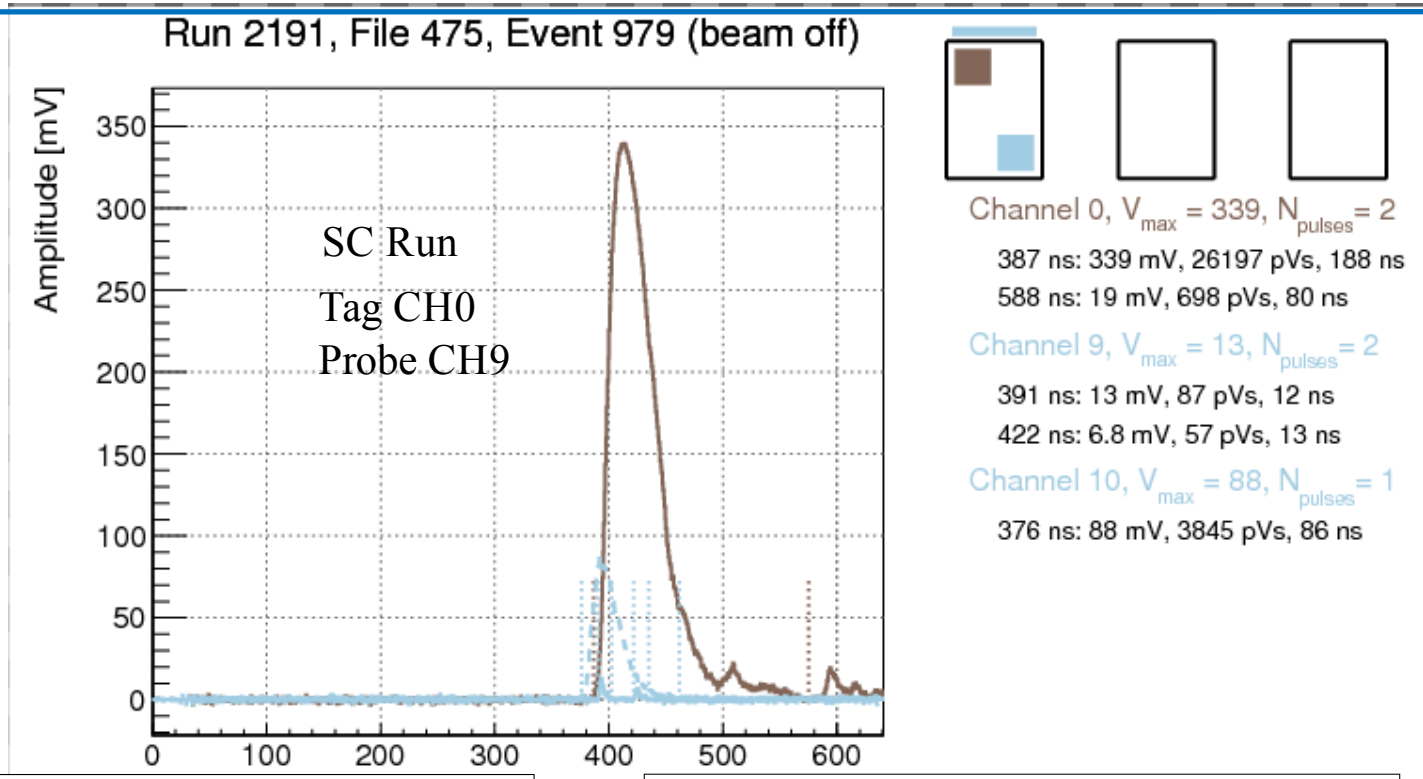
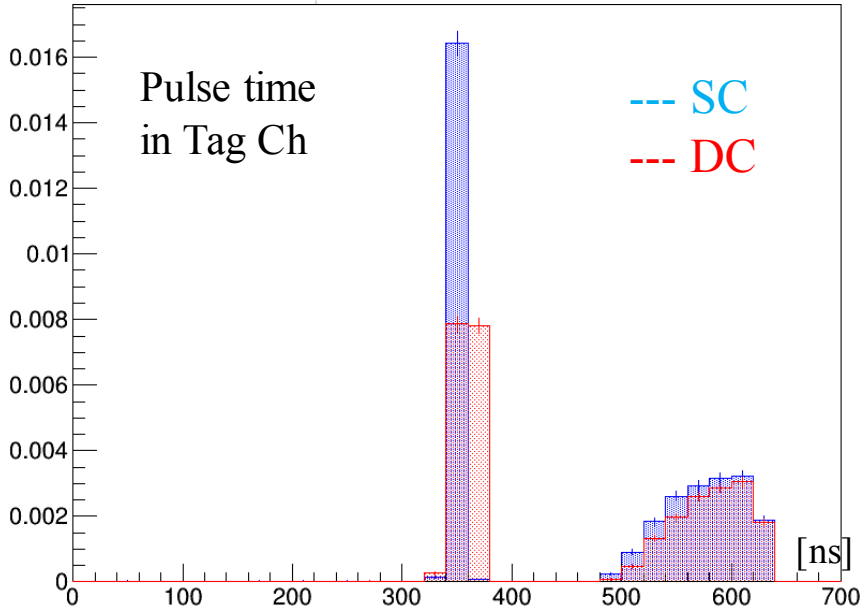
Trigger Efficiency

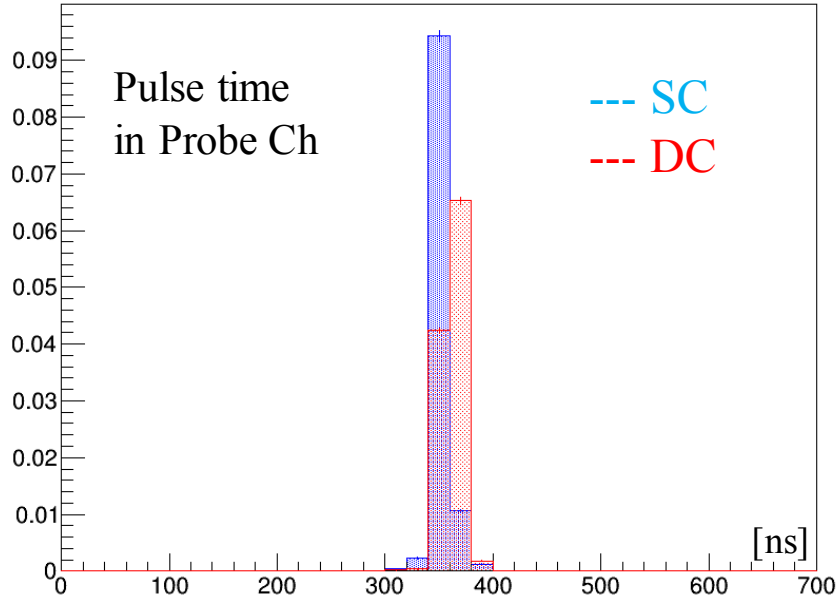
Francesco Setti

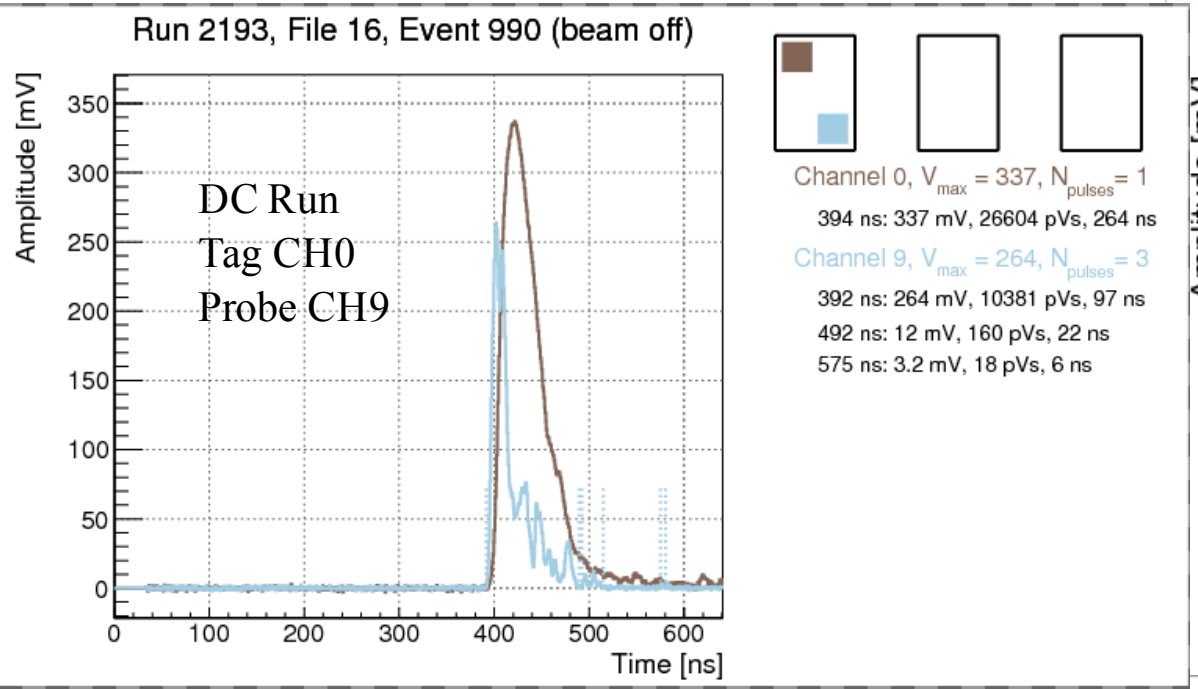
Event Selection:

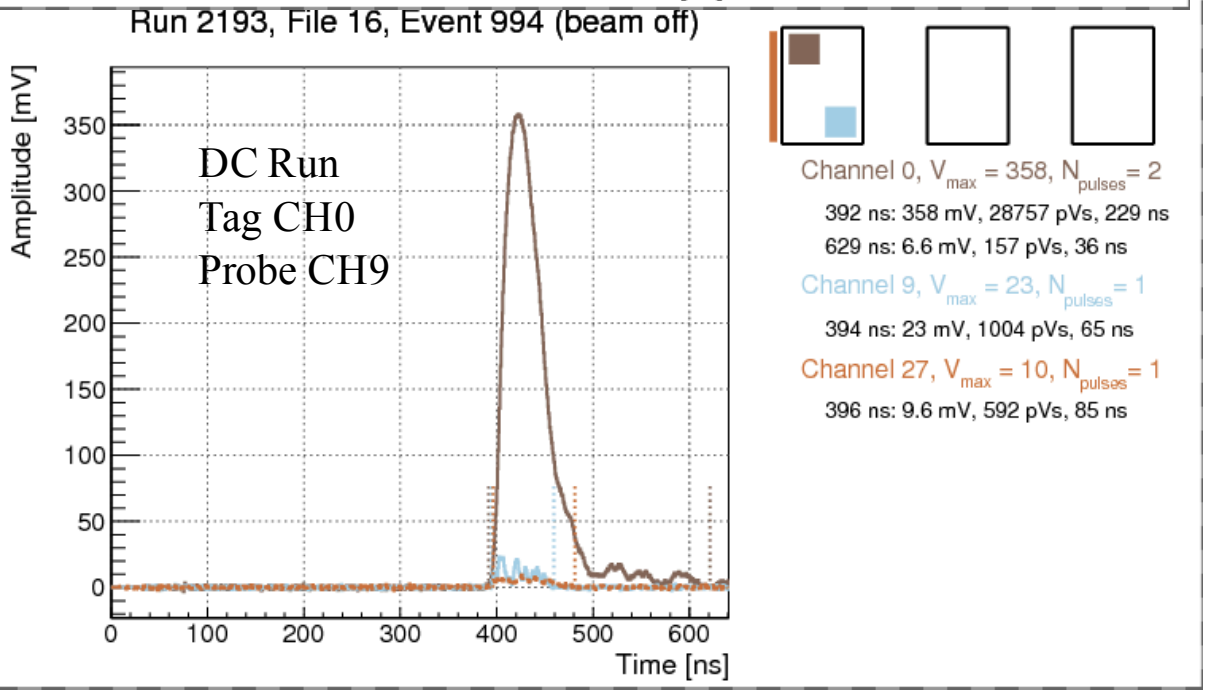
- Time requirements:
  - Tag Pulses: 0-700ns
  - Probe Pulses: 280-480ns
- Allow multiple hits in probe channel
  - Only use first hit (earliest)
  - Above Trigger Threshold
- Pass selection if $|t_i - t_j| < 50ns \ \forall \ i,j$ w/ i,j permutations of probe, tag pulses
- At least one hit in each channel

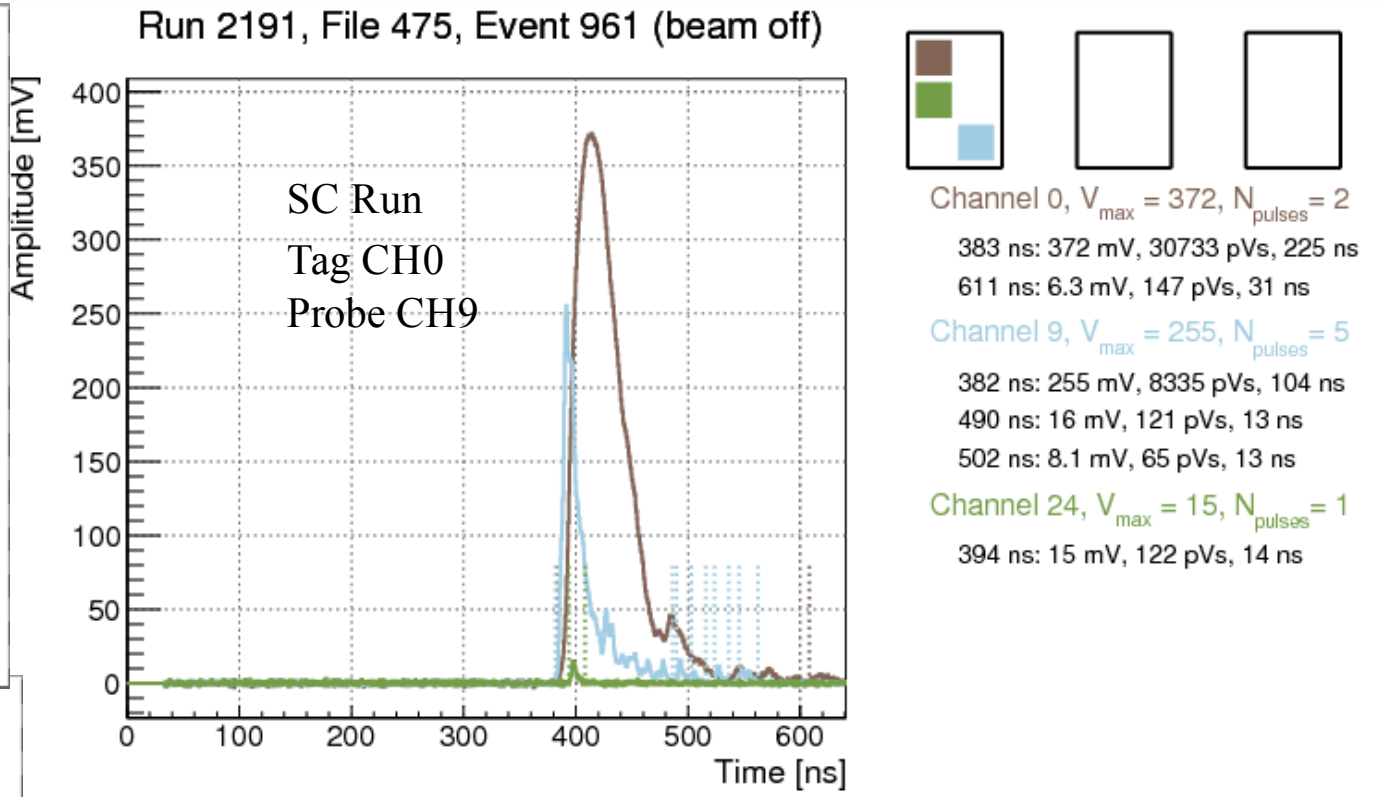






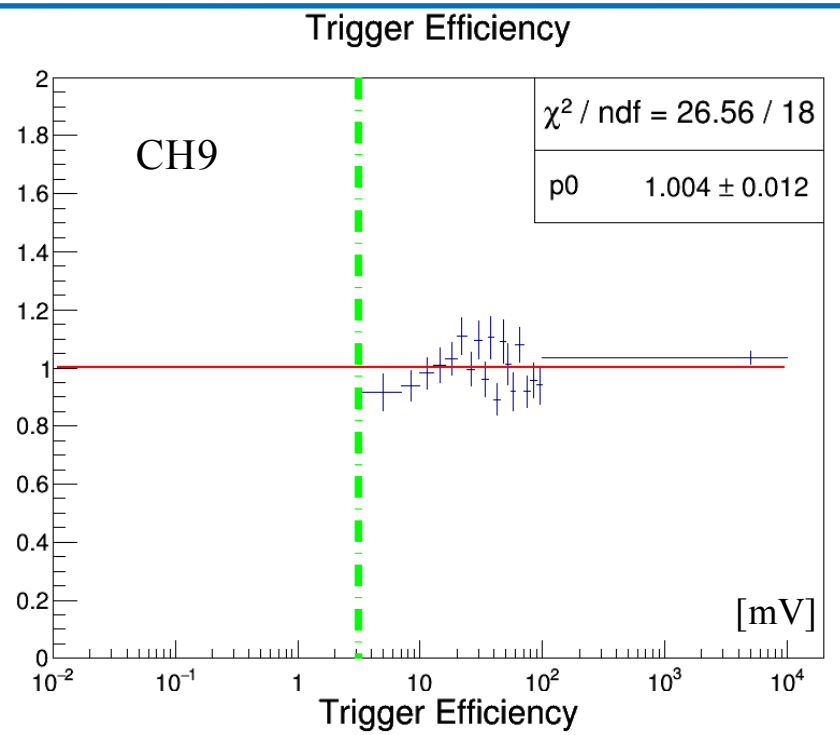


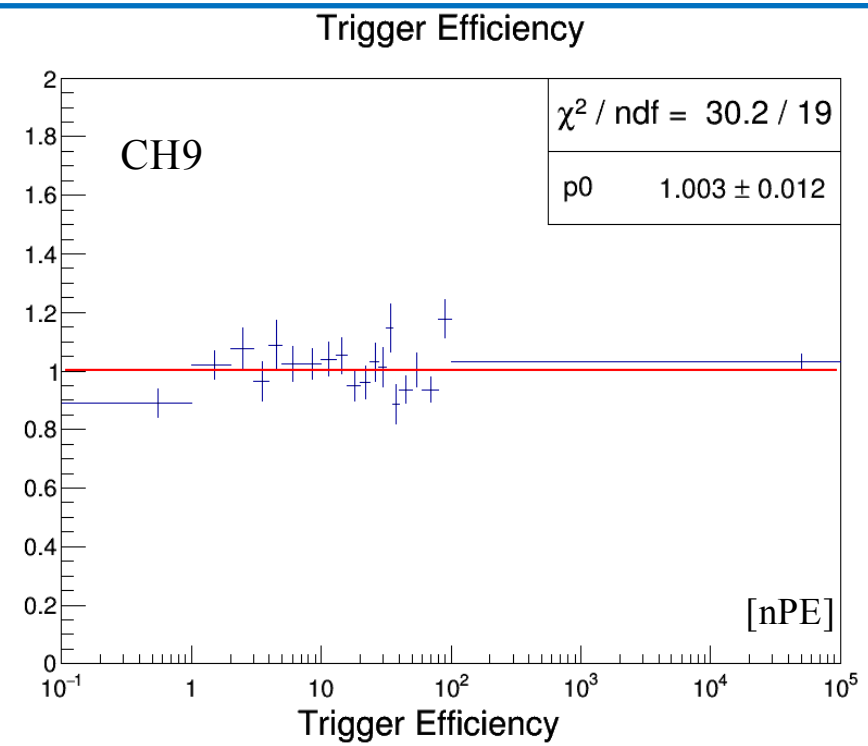




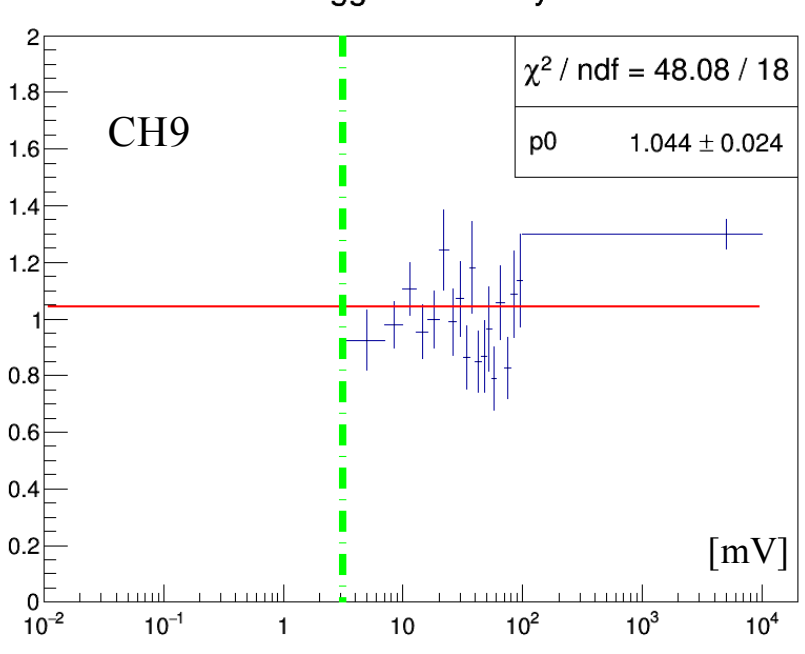
- larger shift time (online-offline) for SC over DC due to pulse rise time / trigger functioning
- Probe pulse time window: 280-480ns
- Keep earliest pulse

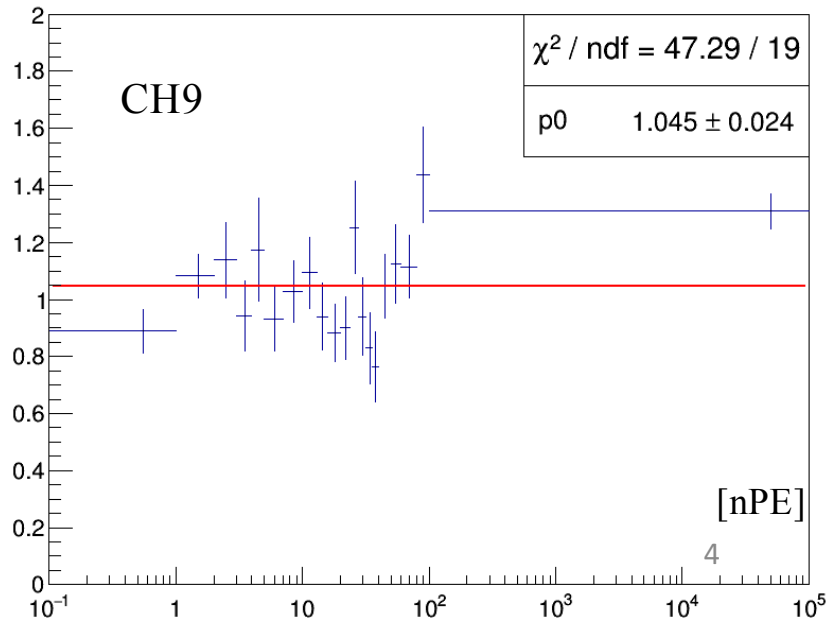
- 1+ pulses in probe Ch
- DC/SC
- About 3x more statistics



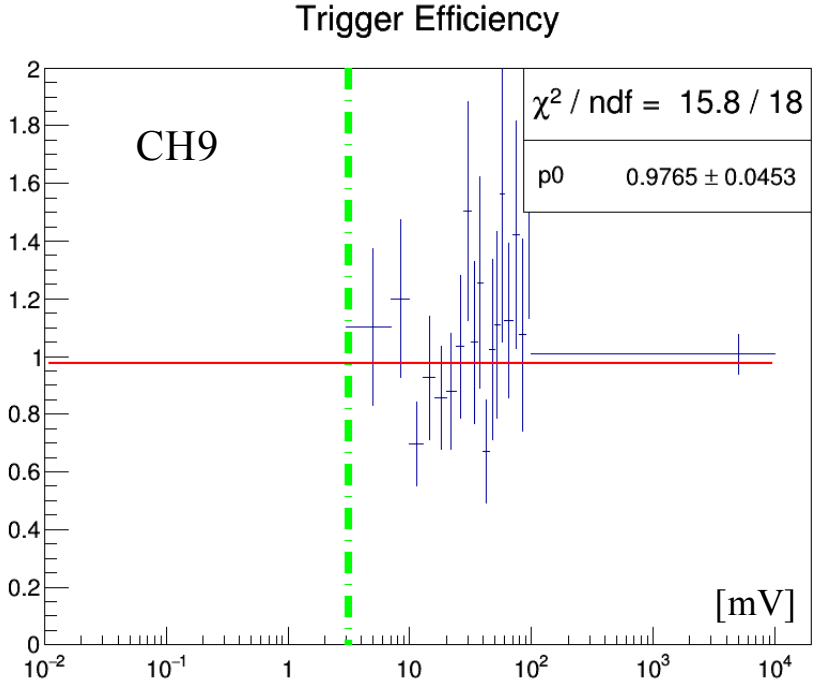


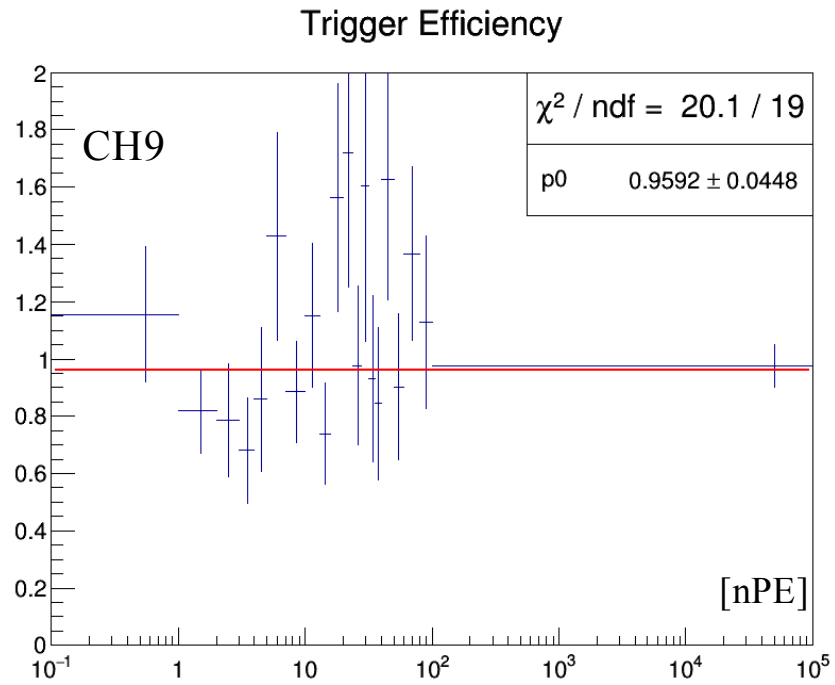
- Single pulse in probe Ch
- DC/SC



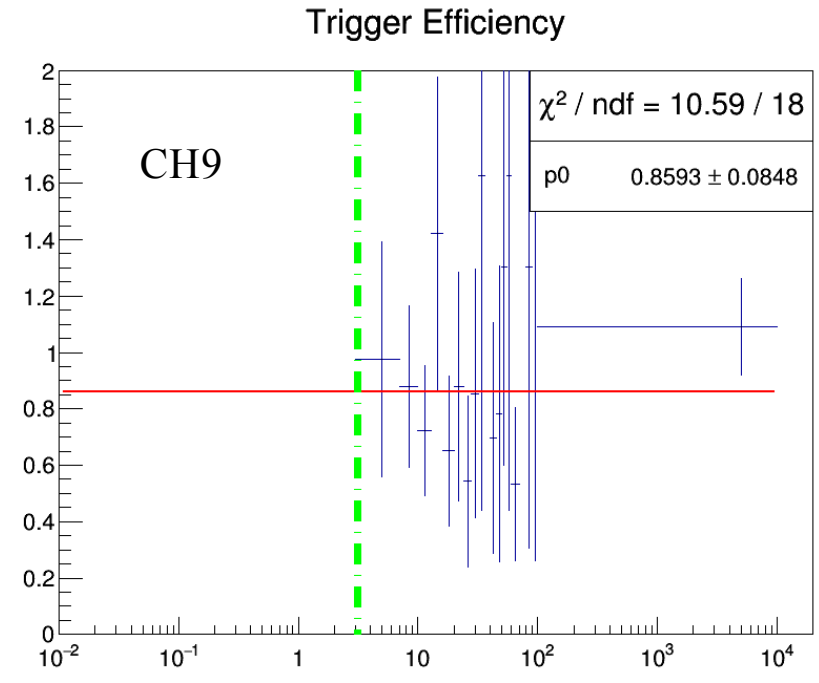


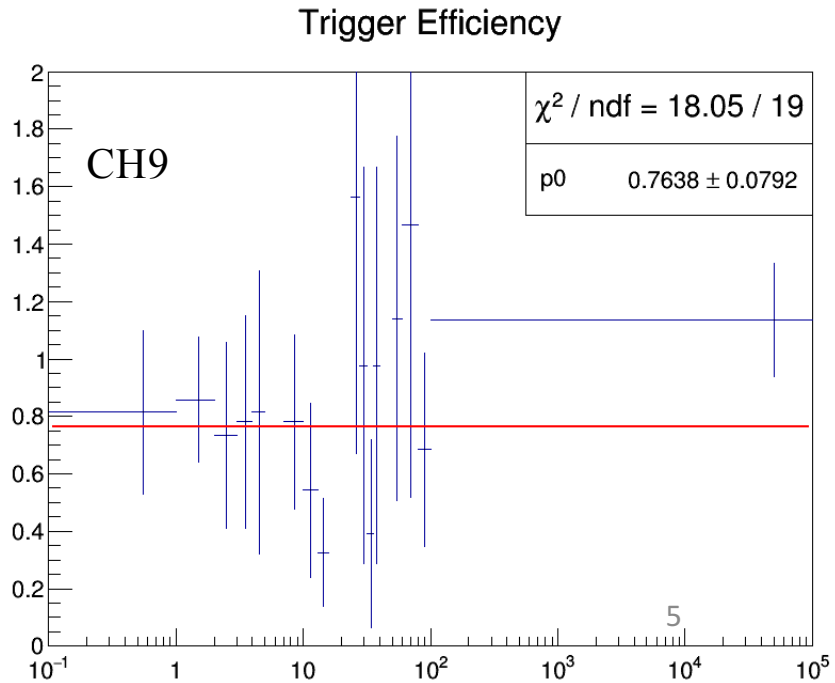
- 1+ pulses in probe Ch
- TC/DC

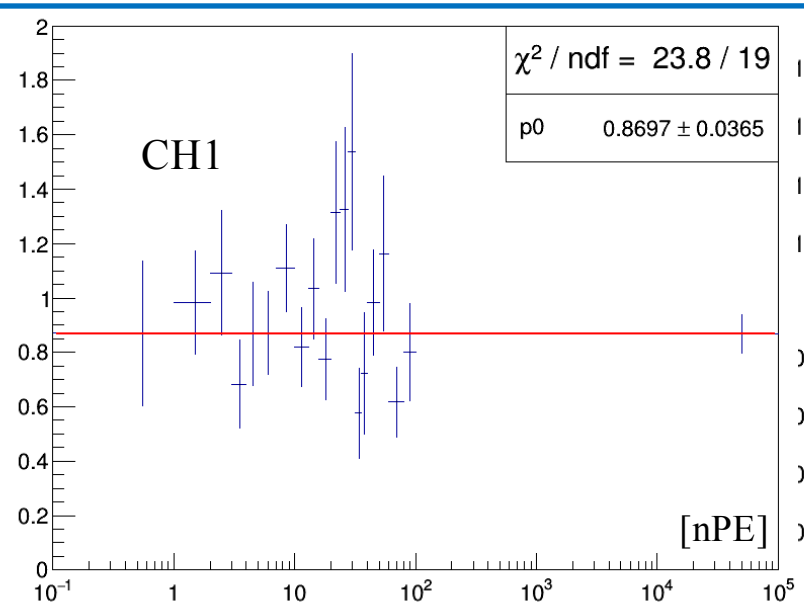


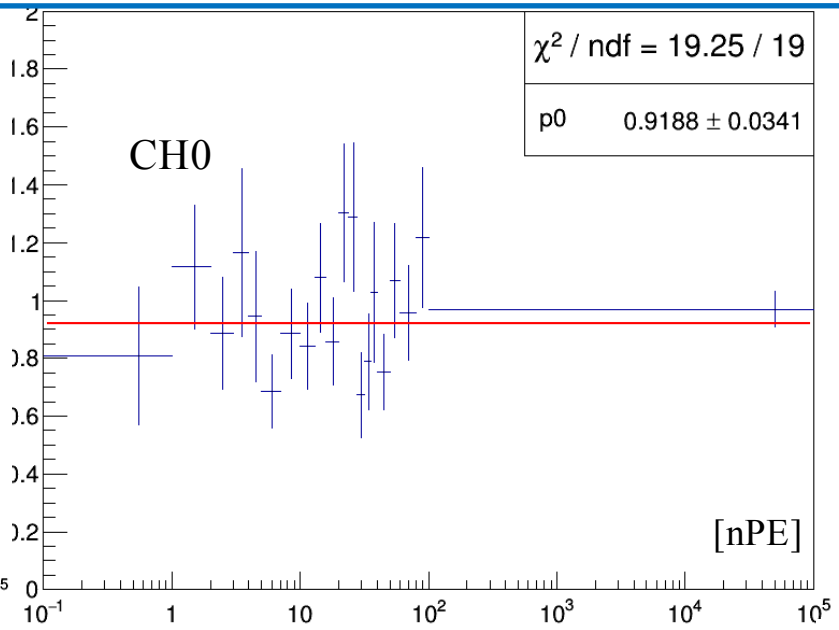


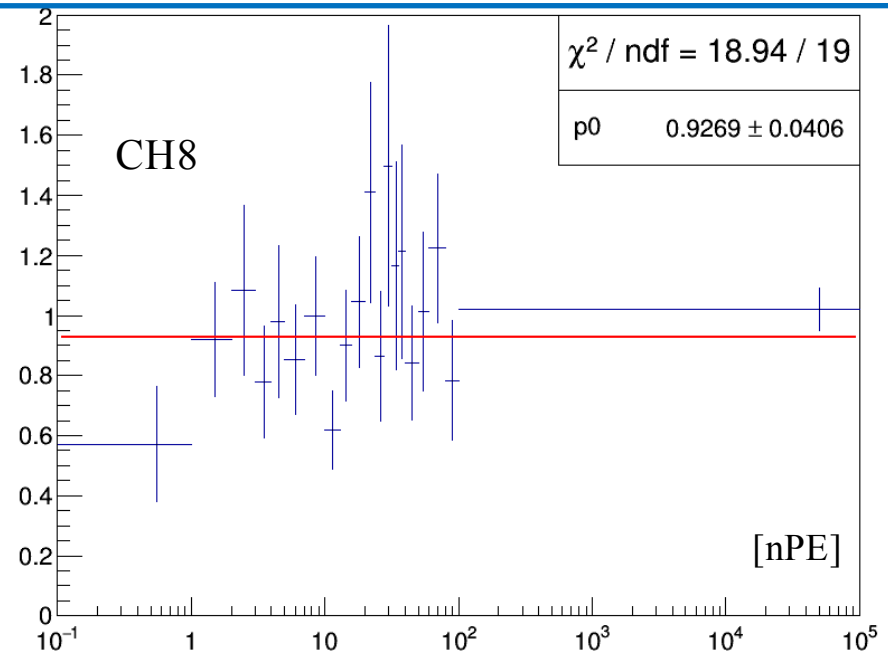
- Single pulse in probe Ch
- TC/DC

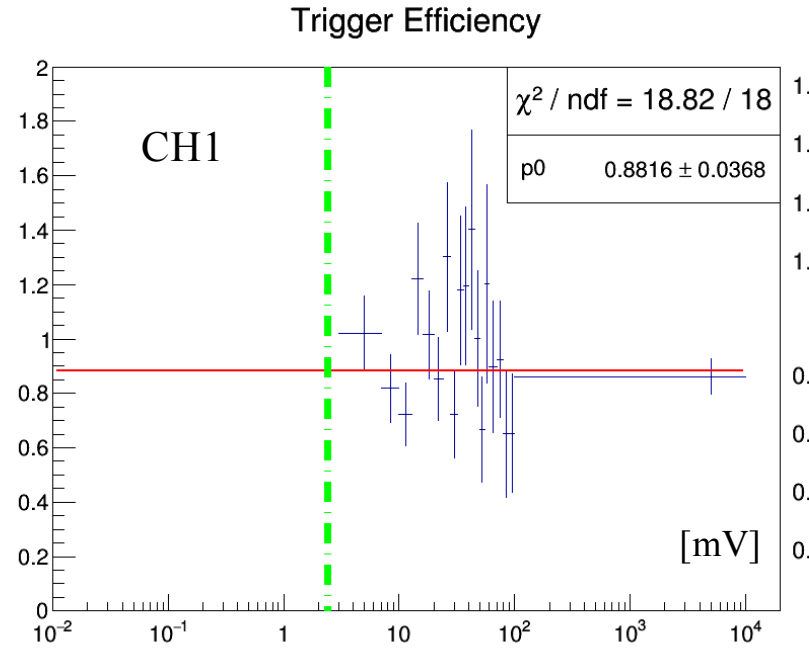


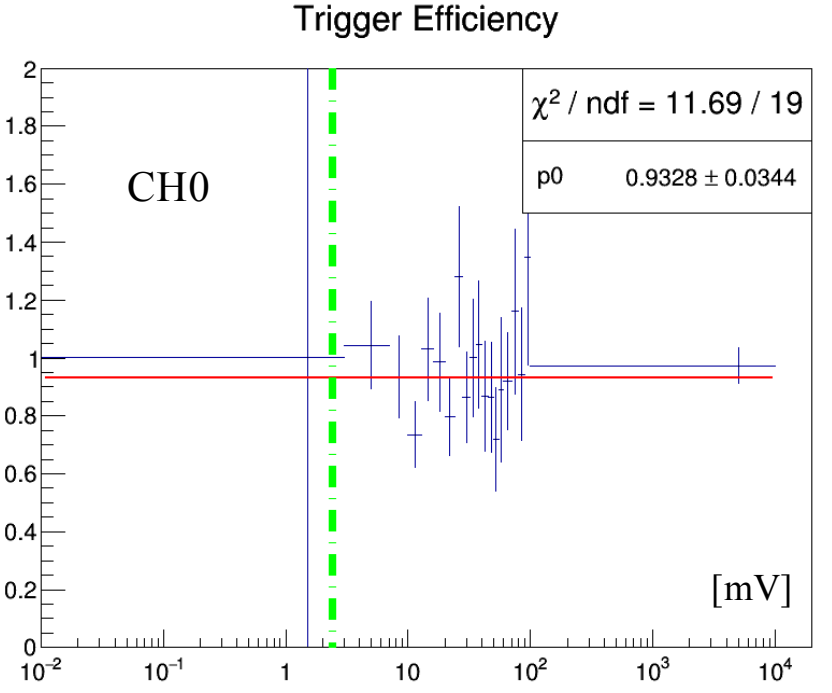


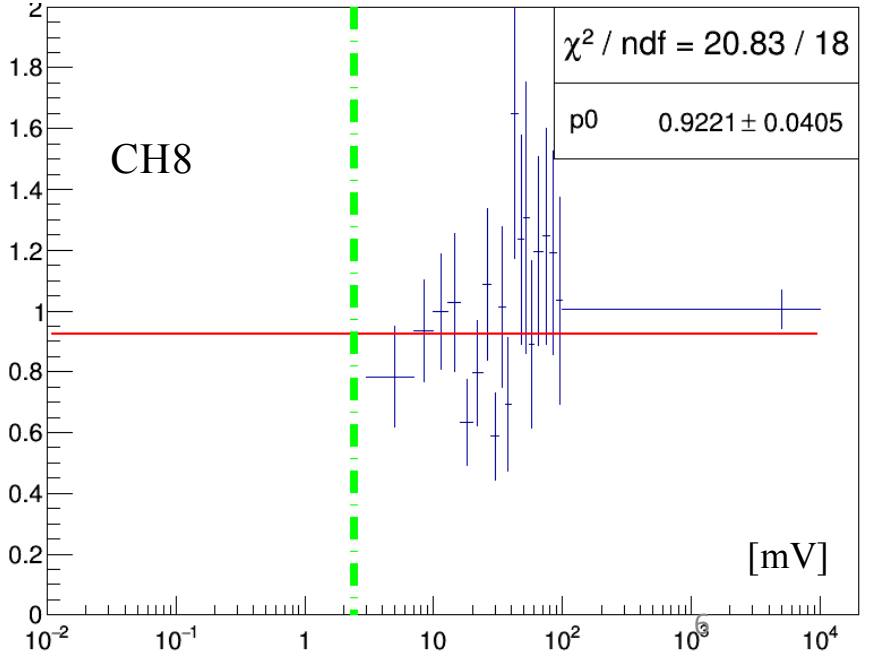

CH1
χ² / ndf = 23.8 / 19
p0 0.8697 ± 0.0365
[nPE]

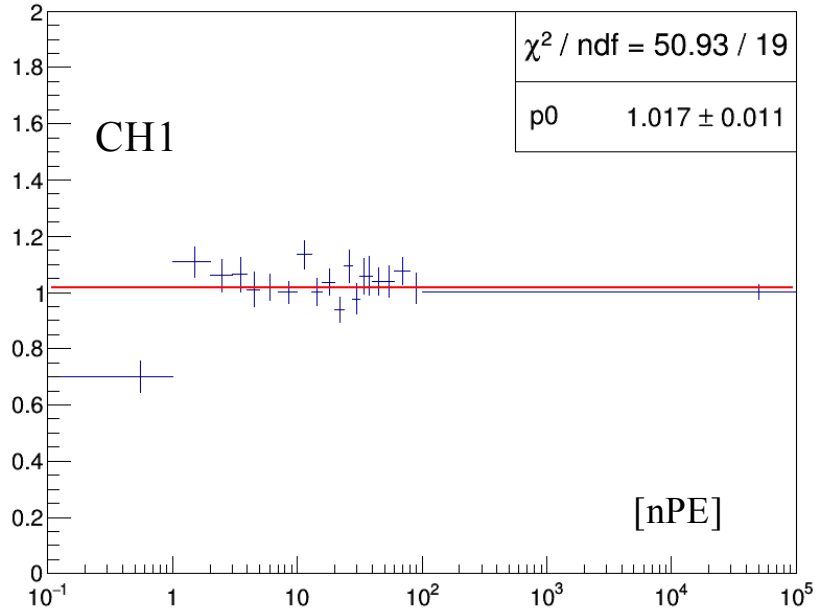

CH0
χ² / ndf = 19.25 / 19
p0 0.9188 ± 0.0341
[nPE]

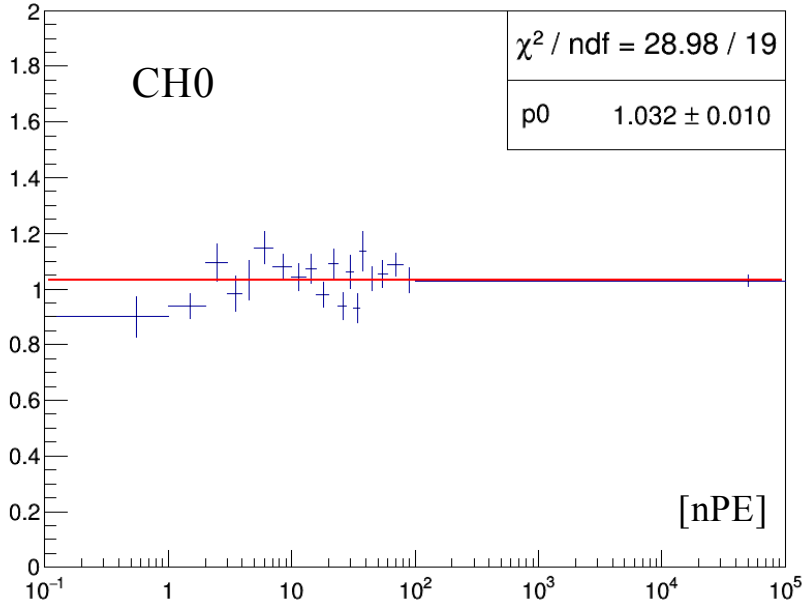

CH8
χ² / ndf = 18.94 / 19
p0 0.9269 ± 0.0406
[nPE]


Trigger Efficiency
CH1
χ² / ndf = 18.82 / 18
p0 0.8816 ± 0.0368
[mV]

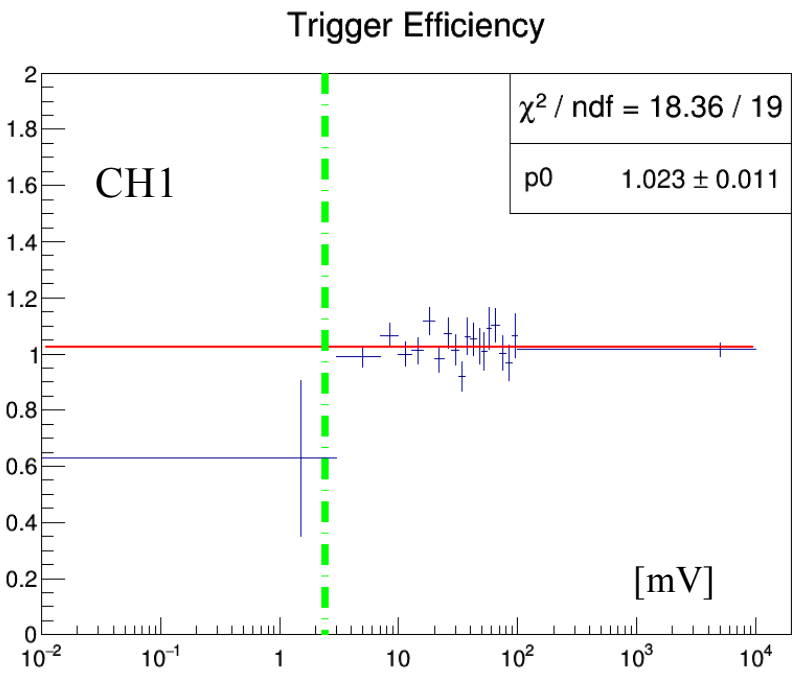

Trigger Efficiency
CH0
χ² / ndf = 11.69 / 19
p0 0.9328 ± 0.0344
[mV]

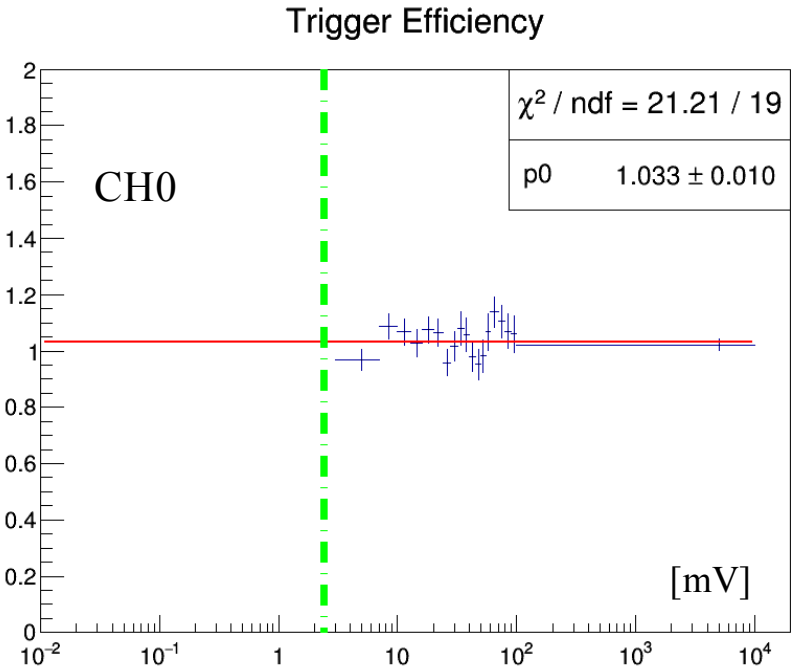

CH8
χ² / ndf = 20.83 / 18
p0 0.9221 ± 0.0405
[mV]





- Issues re-appear in DC/SC runs





To Do:

- Investigate bias effects on SC, DC, TC runs