

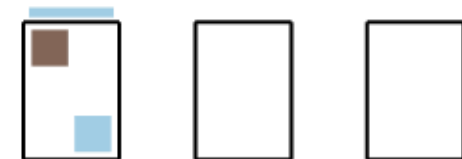
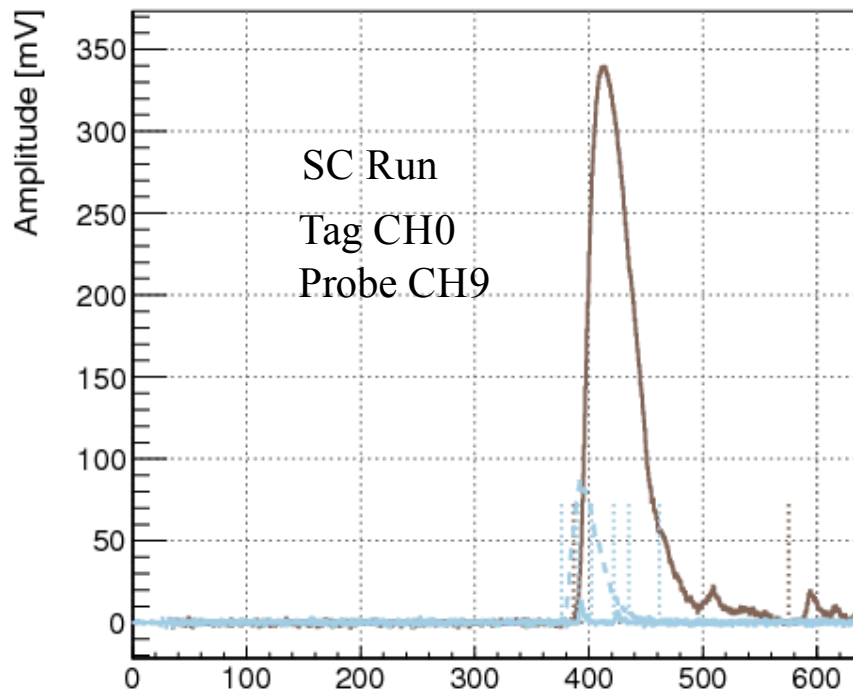
Trigger Efficiency

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 $|t_i - t_j| < 50\text{ns} \forall i, j$ w/ i, j permutations of probe, tag pulses
- At least one hit in each channel

Run 2191, File 475, Event 979 (beam off)

Channel 0, $V_{\max} = 339$, $N_{\text{pulses}} = 2$

387 ns: 339 mV, 26197 pVs, 188 ns

588 ns: 19 mV, 698 pVs, 80 ns

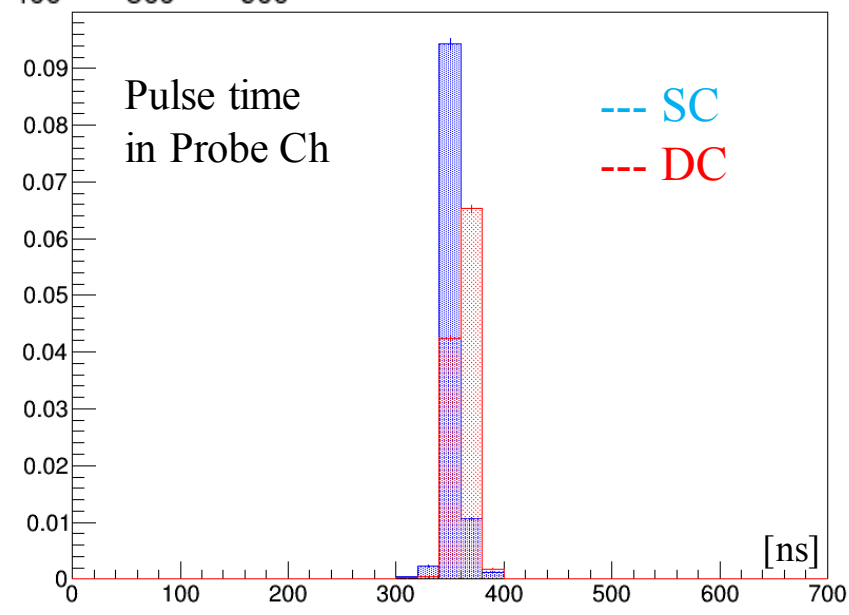
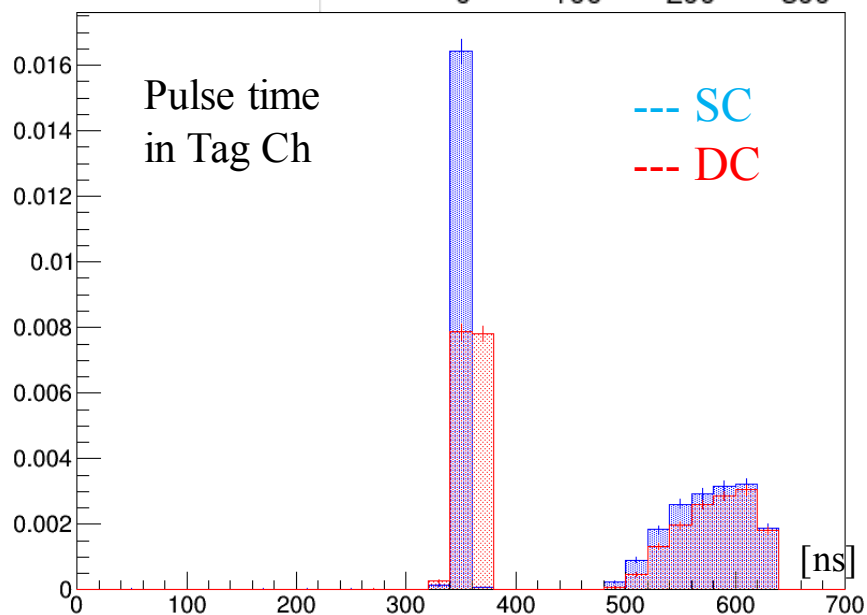
Channel 9, $V_{\max} = 13$, $N_{\text{pulses}} = 2$

391 ns: 13 mV, 87 pVs, 12 ns

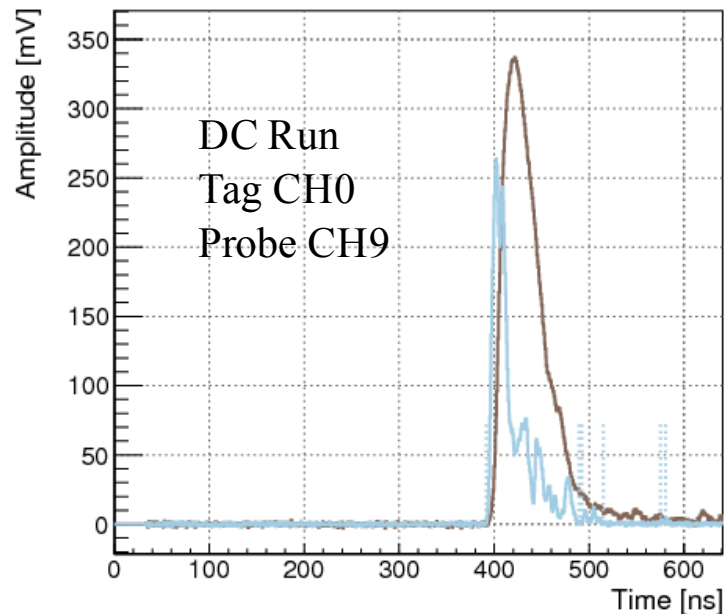
422 ns: 6.8 mV, 57 pVs, 13 ns




Channel 10, $V_{\max} = 88$, $N_{\text{pulses}} = 1$

376 ns: 88 mV, 3845 pVs, 86 ns

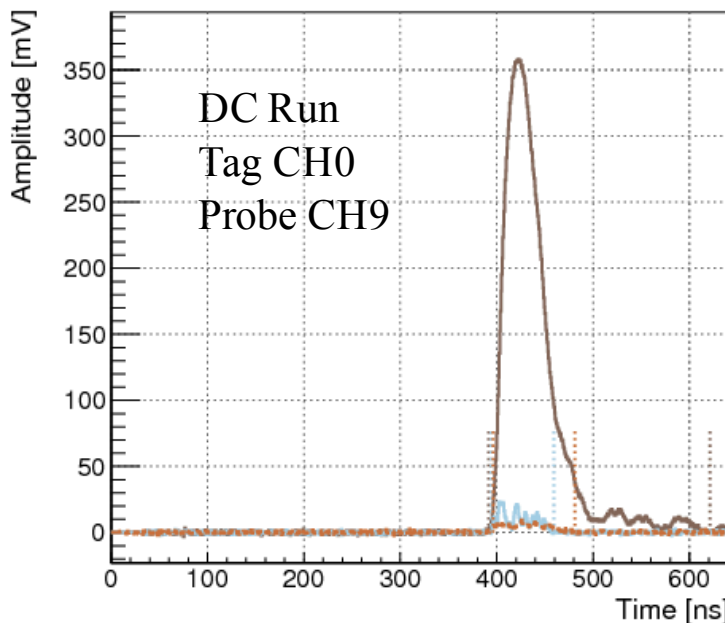





Run 2193, File 16, Event 990 (beam off)



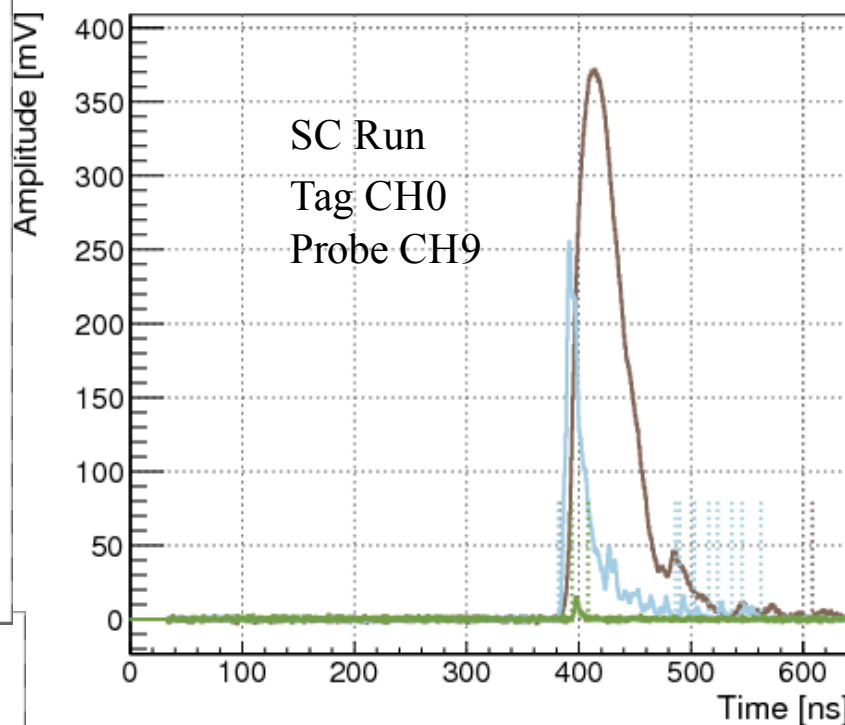
		
Channel 0, $V_{max} = 337$, $N_{pulses} = 1$		
394 ns: 337 mV, 26604 pVs, 264 ns		
Channel 9, $V_{max} = 264$, $N_{pulses} = 3$		
392 ns: 264 mV, 10381 pVs, 97 ns		
492 ns: 12 mV, 160 pVs, 22 ns		
575 ns: 3.2 mV, 18 pVs, 6 ns		







Run 2193, File 16, Event 994 (beam off)



		
Channel 0, $V_{max} = 358$, $N_{pulses} = 2$		
392 ns: 358 mV, 28757 pVs, 229 ns		
629 ns: 6.6 mV, 157 pVs, 36 ns		
Channel 9, $V_{max} = 23$, $N_{pulses} = 1$		
394 ns: 23 mV, 1004 pVs, 65 ns		
Channel 27, $V_{max} = 10$, $N_{pulses} = 1$		
396 ns: 9.6 mV, 592 pVs, 85 ns		

Run 2191, File 475, Event 961 (beam off)

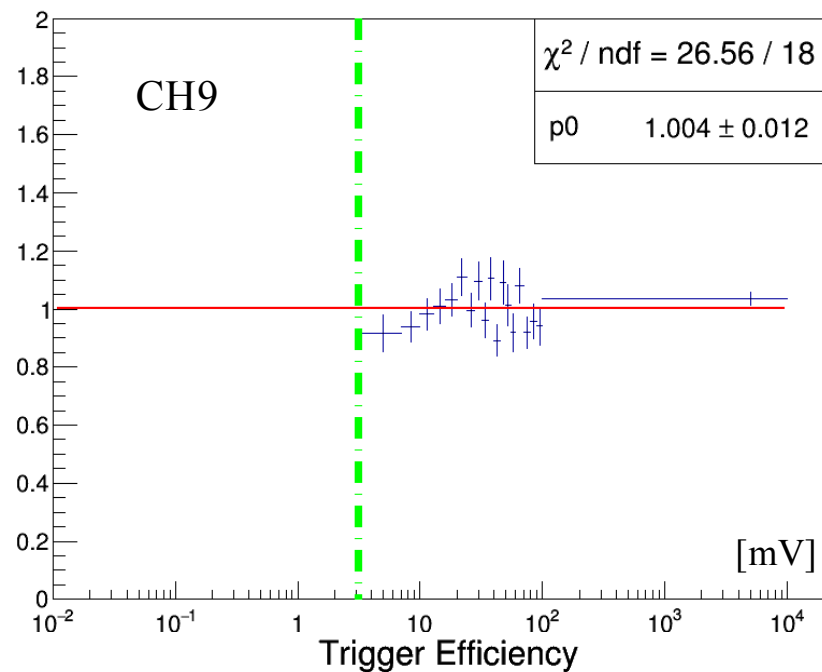


		
		
Channel 0, $V_{max} = 372$, $N_{pulses} = 2$		
383 ns: 372 mV, 30733 pVs, 225 ns		
611 ns: 6.3 mV, 147 pVs, 31 ns		
Channel 9, $V_{max} = 255$, $N_{pulses} = 5$		
382 ns: 255 mV, 8335 pVs, 104 ns		
490 ns: 16 mV, 121 pVs, 13 ns		
502 ns: 8.1 mV, 65 pVs, 13 ns		
Channel 24, $V_{max} = 15$, $N_{pulses} = 1$		
394 ns: 15 mV, 122 pVs, 14 ns		

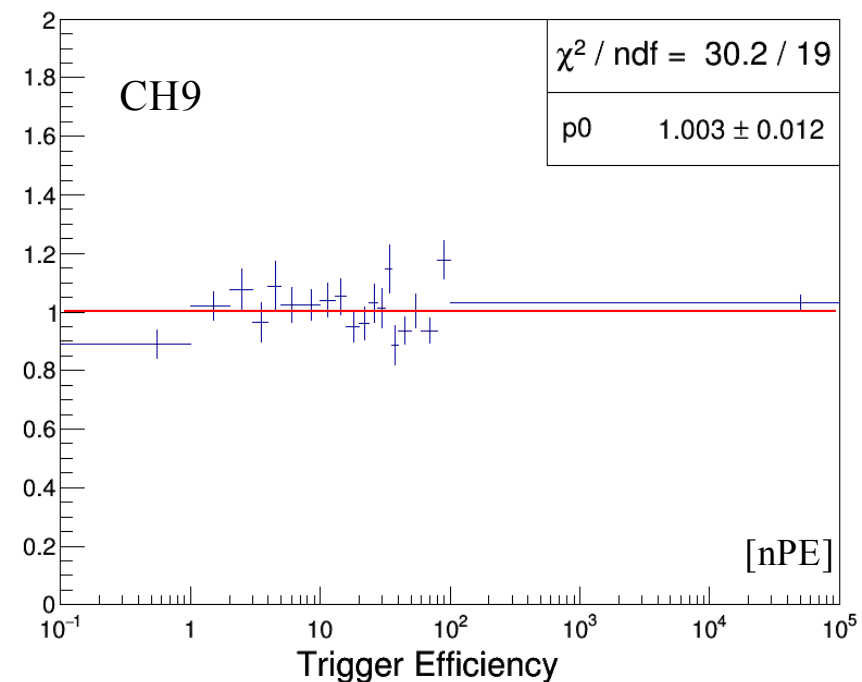
- larger shift time (online-offline) for SC over DC due to pulse rise time / trigger functioning
- Probe pulse time window: 280-480ns
- Keep earliest pulse

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

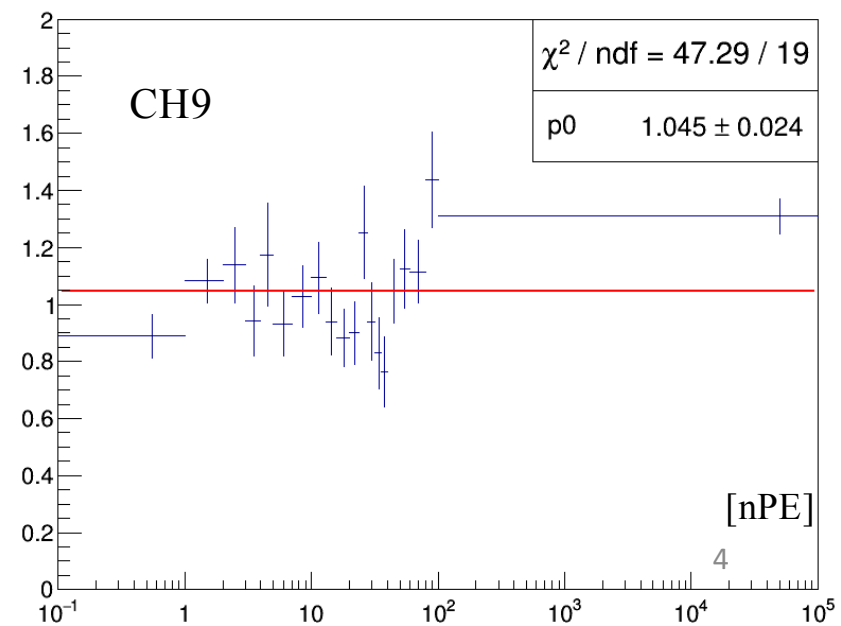
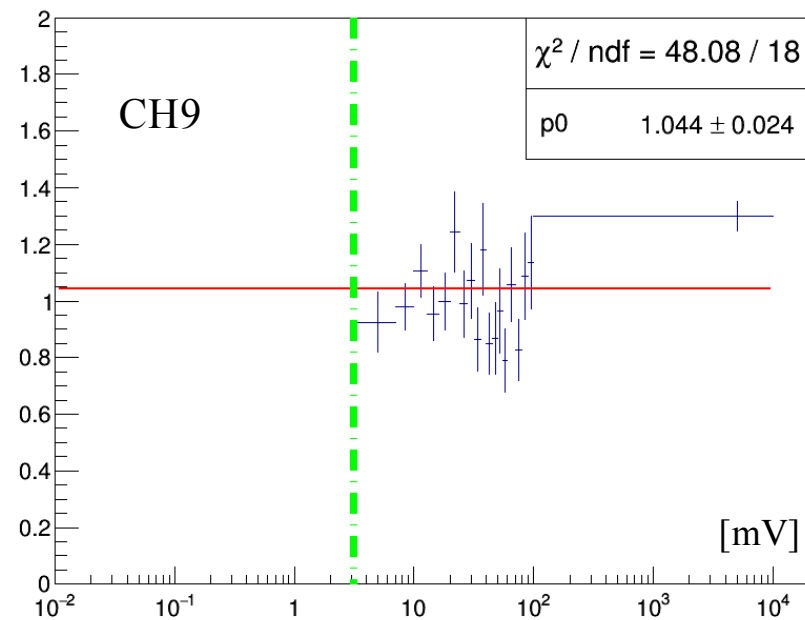
Trigger Efficiency



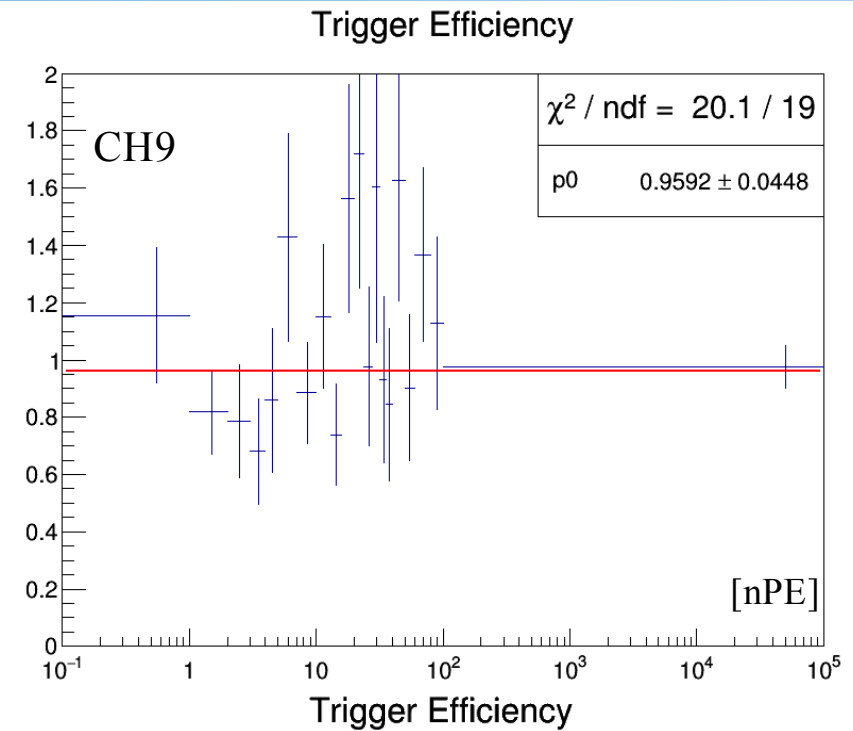
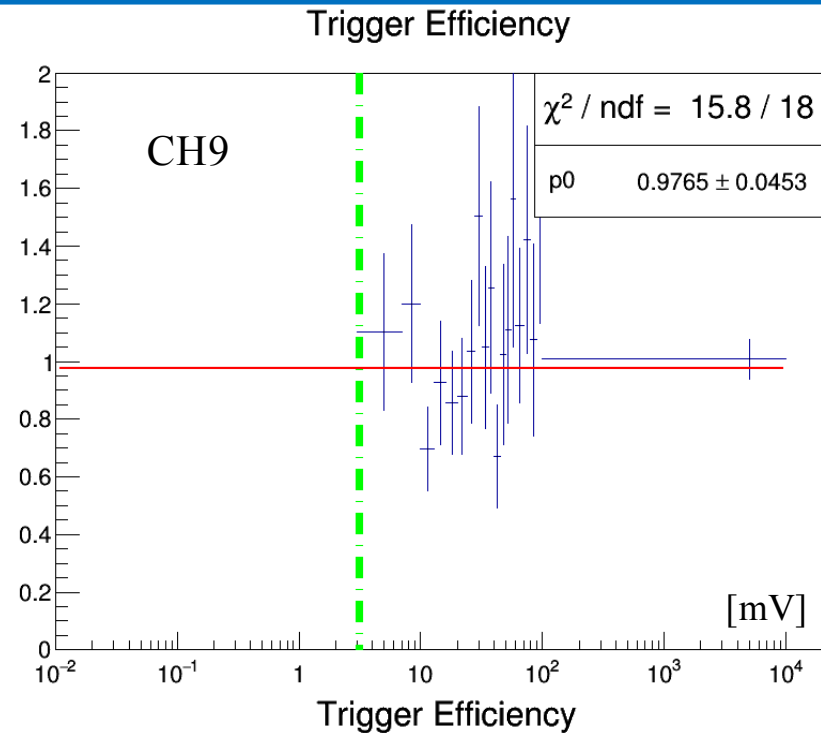
Trigger Efficiency



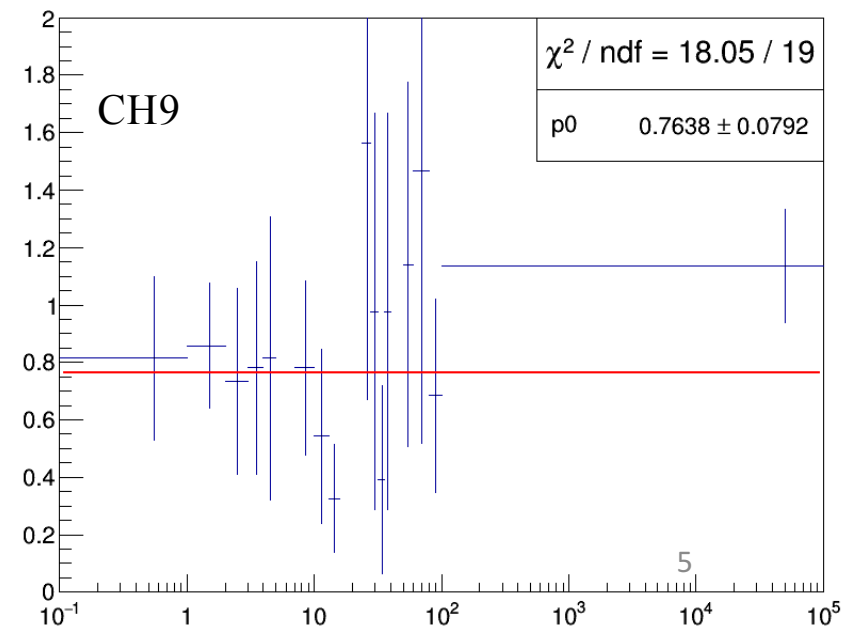
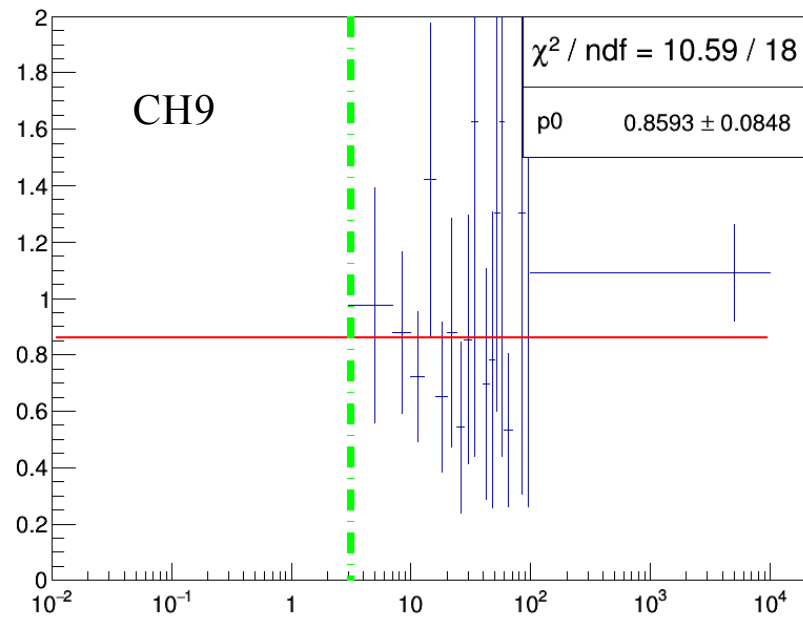
- Single pulse in probe Ch
- DC/SC

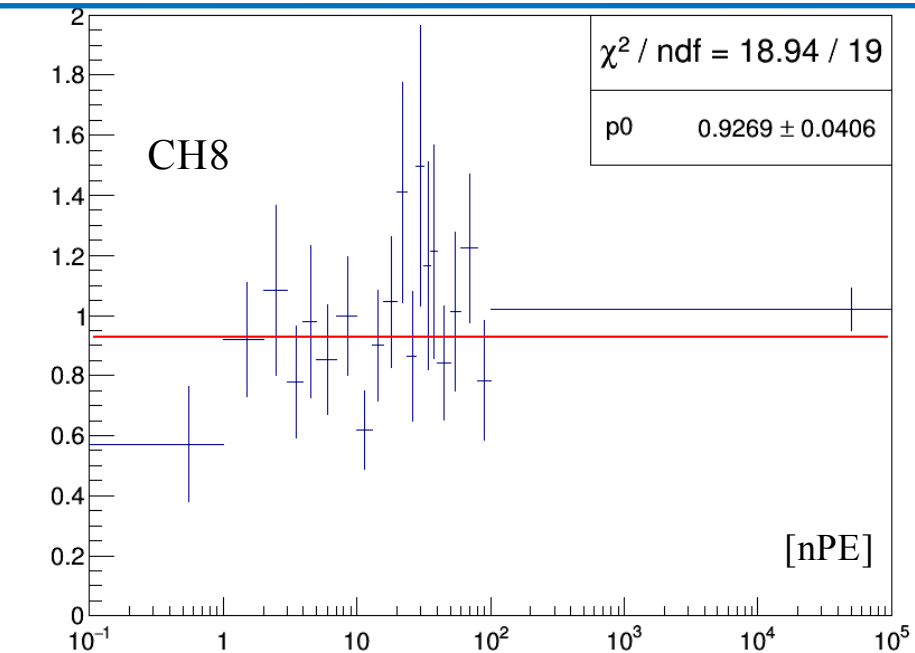
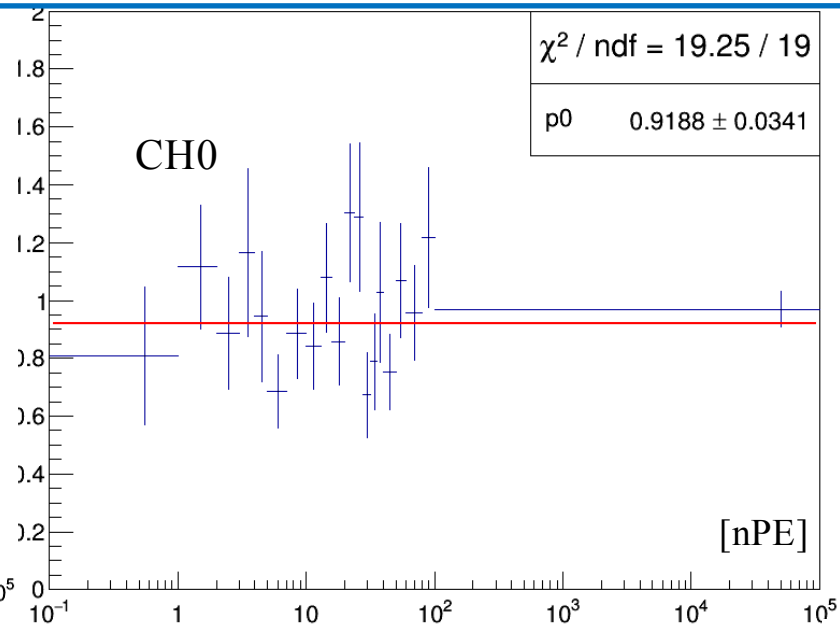
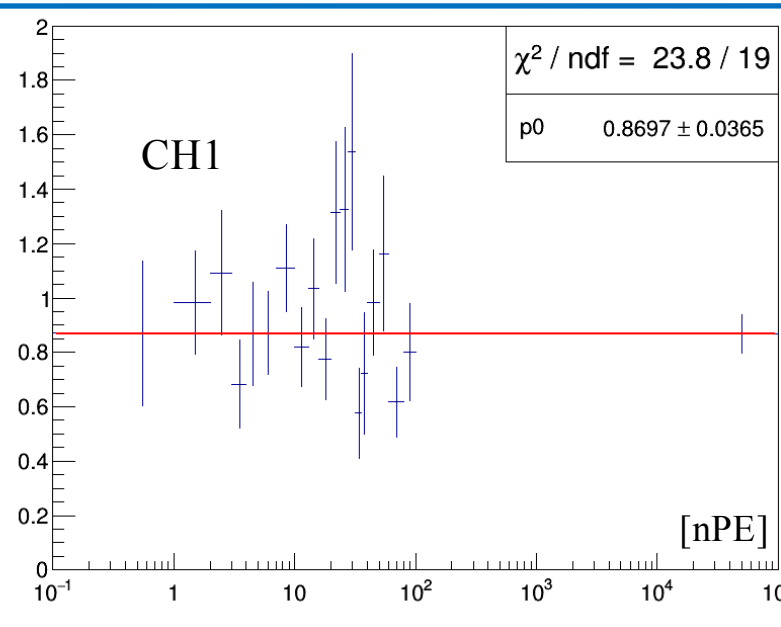


- 1+ pulses in probe Ch
- TC/DC

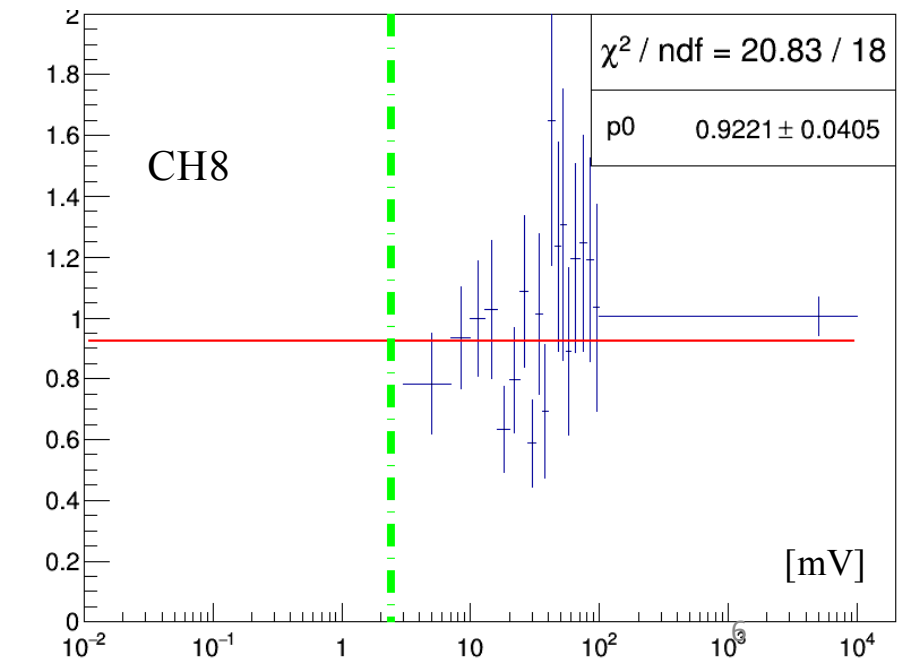
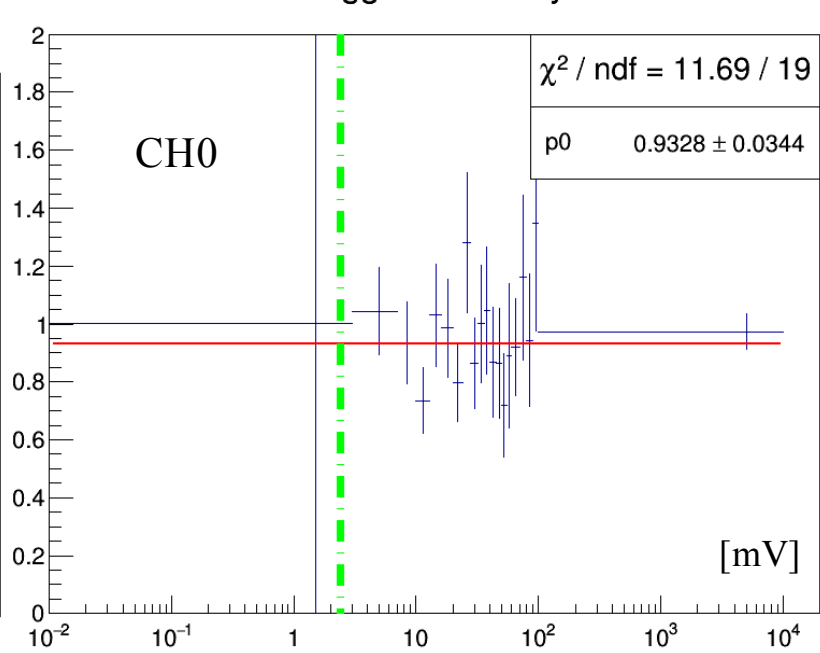
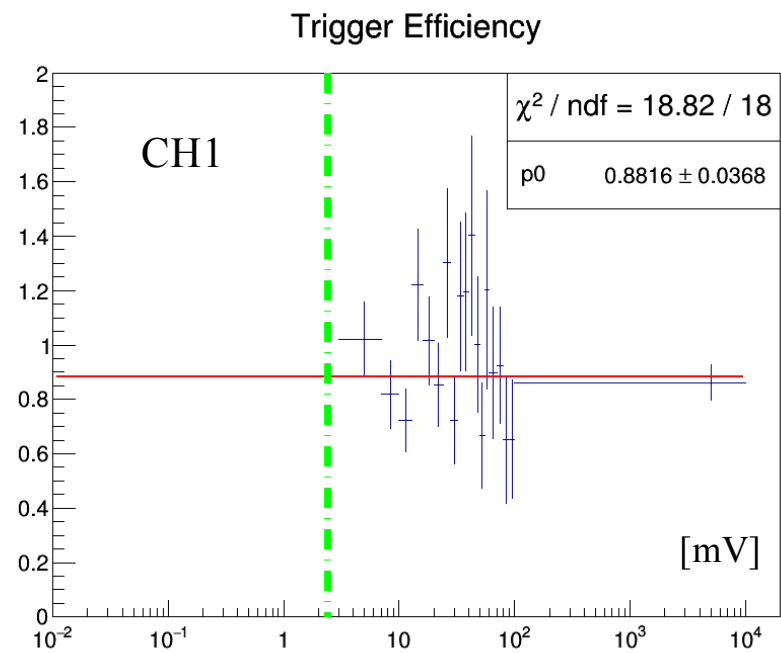


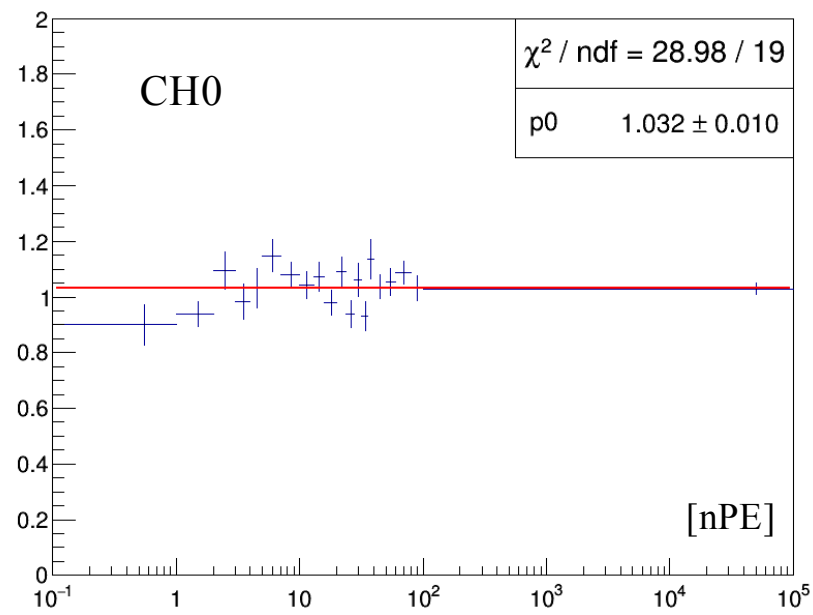
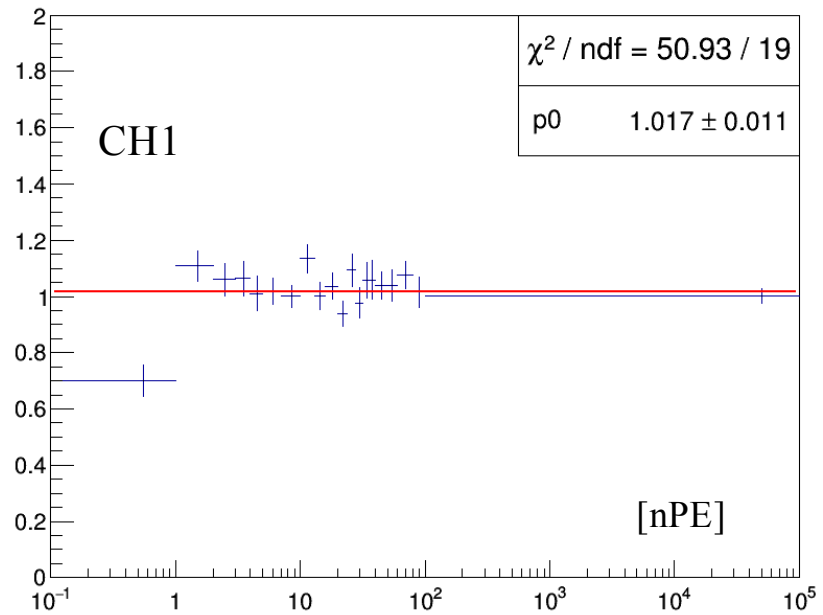
- Single pulse in probe Ch
- TC/DC



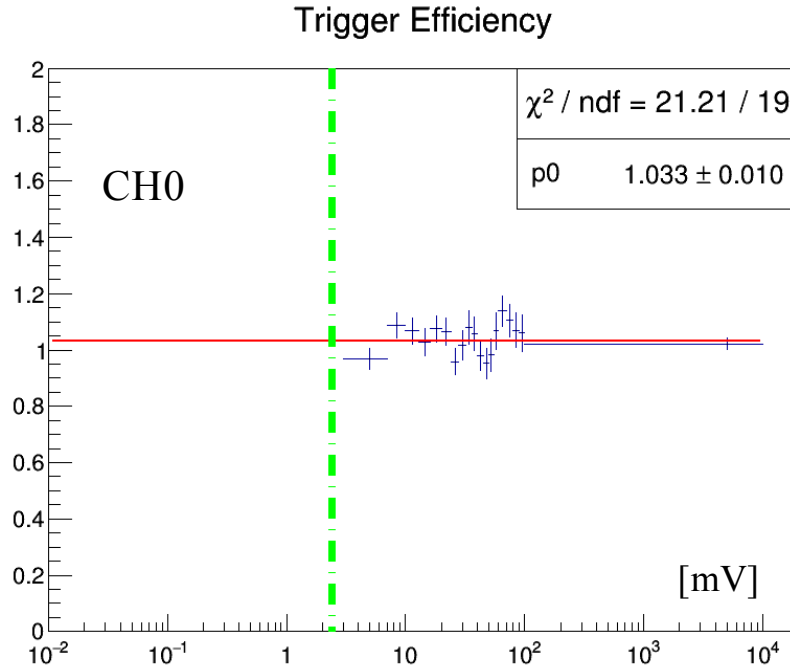
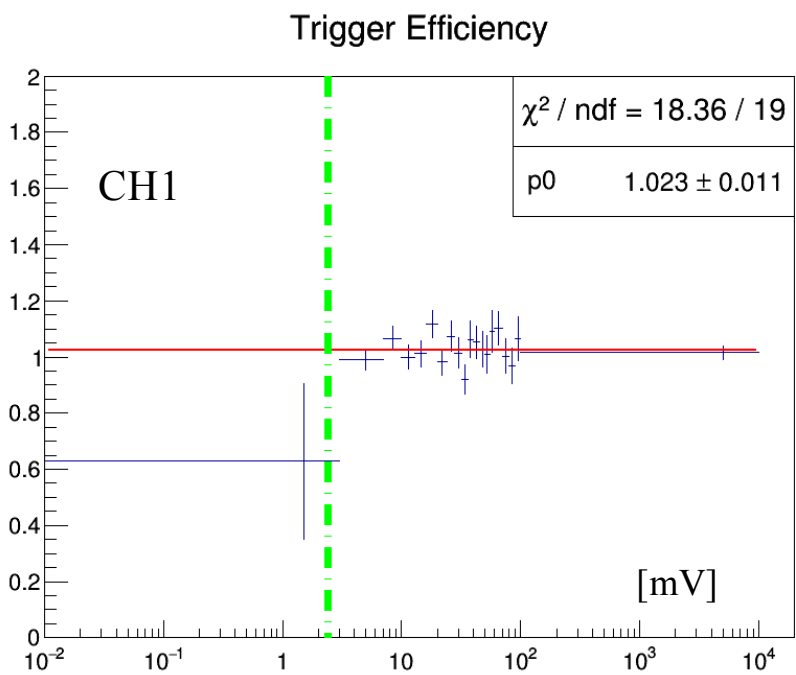
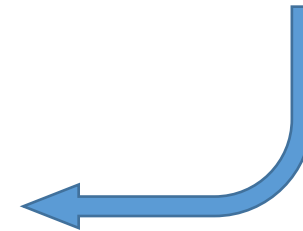


Trigger Efficiency





- Issues re-appear in DC/SC runs



To Do:

- Investigate bias effects on SC, DC, TC runs