CERN Timing Test Beam, July 2015
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Tests in the barracks :

Test 1 :
3 : MCP1, four fibers, low gain, 0.4 V @ 2900 V with laser at H4, run 36
6 : MCP2, three fibers, high gain, 0.25 V @ 2600 V with laser at H4, run 37
8 : small SiPM, one fiber, with cookie, 60 mV, run 38
7 : large SiPM, one fiber, run 40
Photek test : Photek and Hamamatsu with direct laser, run 41

Test 2 :
3: cell6, MCP1, four fibers, run 42, 2nd laser connector, 300 mv @ 2900 V, HV CH0
6 : cell 3, MCP2, four fibers, run 41, top laser connector, @ 2600 V, HV CH1
7: cell 7, large SiPM, CH4, run43, 3rd laser connector, 69.1 V, 75 mv
8 : cell8, small SiPM, CH3, run44, used 1st laser connector, 200 mv, 4 fibers

Log Book :

First Shift, Sunday, July 5, 2015, Sarah, Adi, Shervin

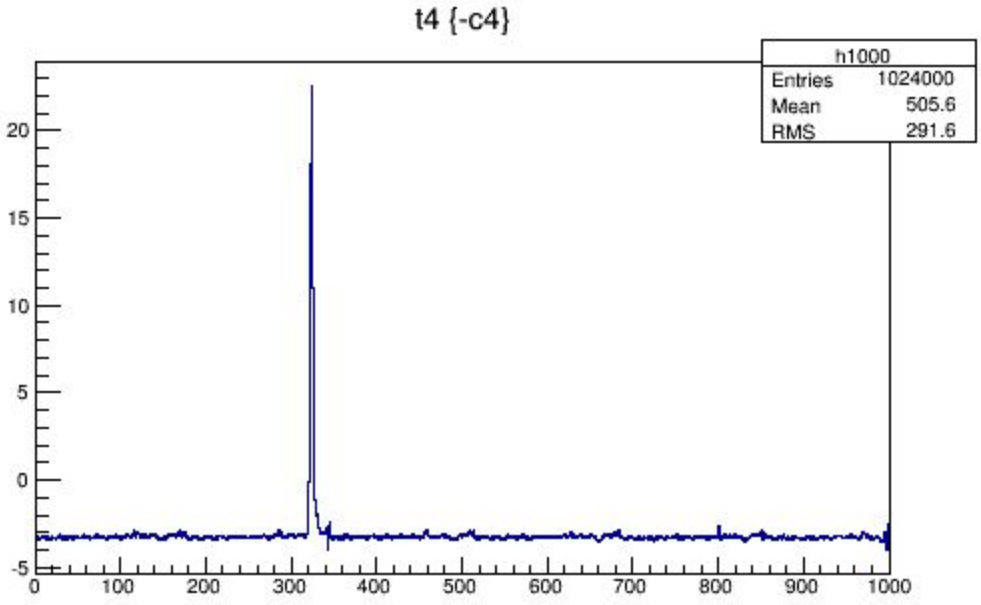
Table x position at 81cm, y position 2160.885

run 52 : test external trigger with muons.

See Photek mostly, rarely something in SH cell3 (MCP1)
Mean amplitude from 1k events : 0.012 V@4.8 kV

run 53 : 0.021 V@4.9 kV
1000 events

run 54 : 0.025 V@5.0 kV
1000 events
rate spill about few 100 per spill

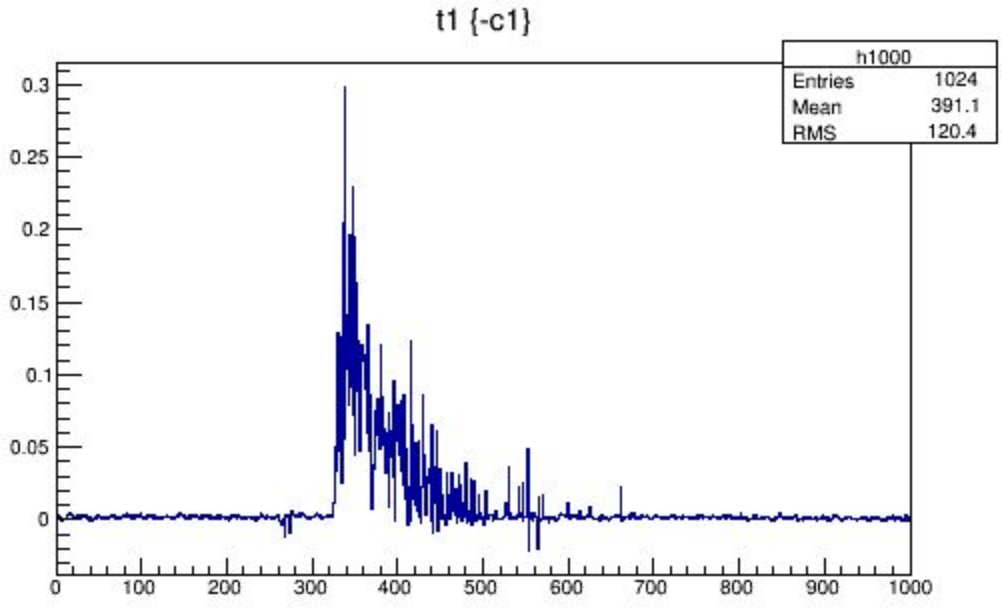


run 55 : include Photek in the trigger
1000 events
0.031 V@5 kV

THE PHOTEK PULSE IS VERY SHORT - 2 bins. Is this OK ?

run 56 : include Photek and SH MCP1
750 events
0.038 V @5 kV
event 3 : muons hit in CH1 ?
event 8 : muon in SH cell ?
event 11 : showering in SH cell ?

rate very low : 3 to 4 event per spill
trigger threshold : Photek -0.015, SH CELL -0.015

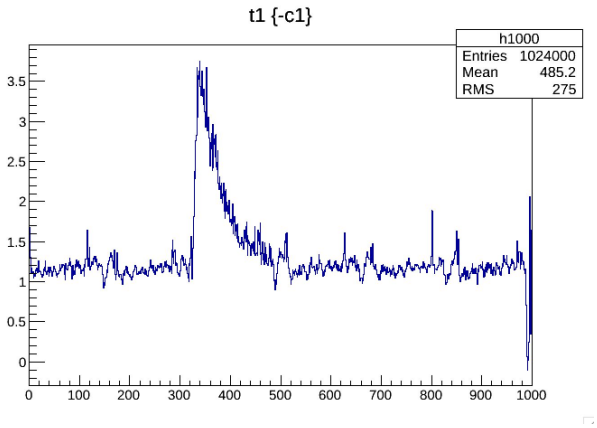


MCP1 in SH CELL, run56, event 11

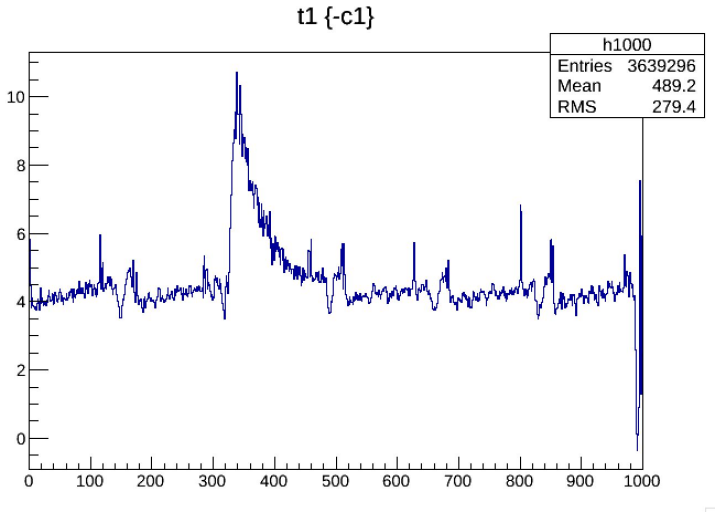
run 57 : photek and MCP1 trigger, threshold -0.015, -0.01
0.031V @5 kV for the following runs until further notice
1000 events
rate : 30 Hz

run 58 : photek and MCP1 trigger, threshold -0.015, -0.007
0.0285V
1000 events
rate : ~30 Hz

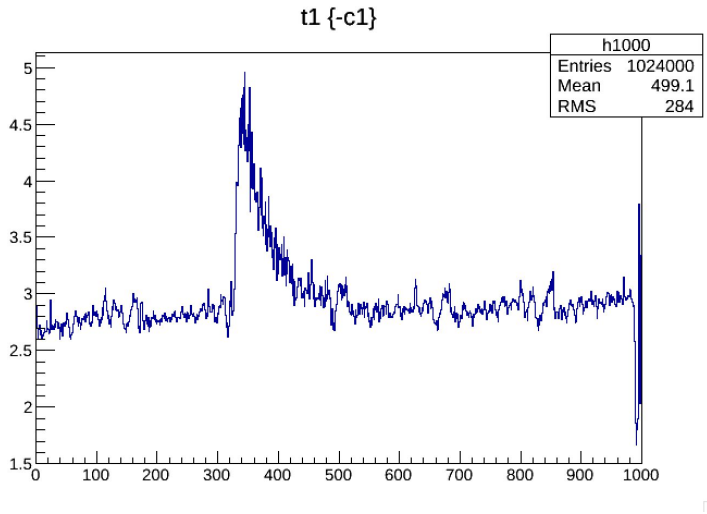
run 59 : photek and MCP1 trigger, threshold -0.015, -0.013
ch4: 0.031 V
ch1: 0.027V
1000 events
rate : ~10 Hz



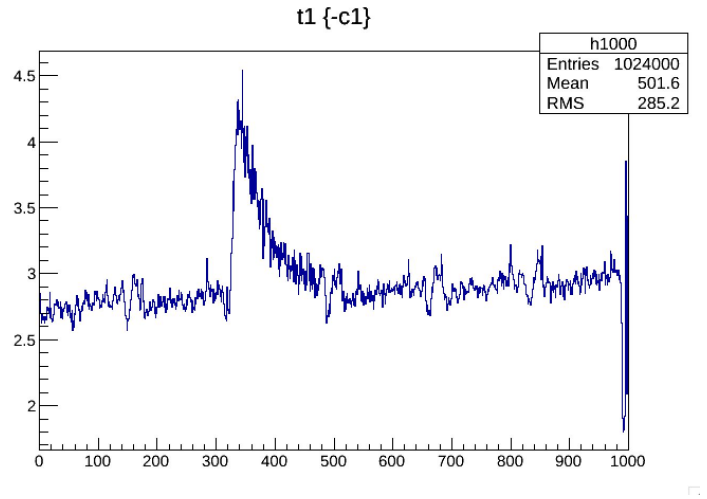
run 60 : photek and MCP1 trigger, threshold -0.015, -0.013
0.0295 V (c4)
c1: Much more noise, not a single sharp peak, largest peak ~0.007V
3554 events
rate : ~10 Hz



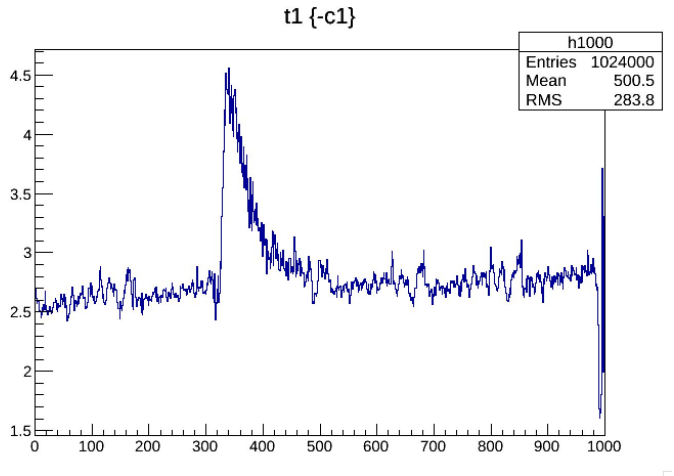
quick checks : see nothing in DRS2 for now, move table left and right by 1 cm, no obvious effect.
move table down to 2149.935 (-1 cm):
run 61 : photek and MCP1 trigger, threshold -0.015, -0.013
0.023 V (c4)
c1: 0.0023V
move table down to ~2139 (-2 cm) :



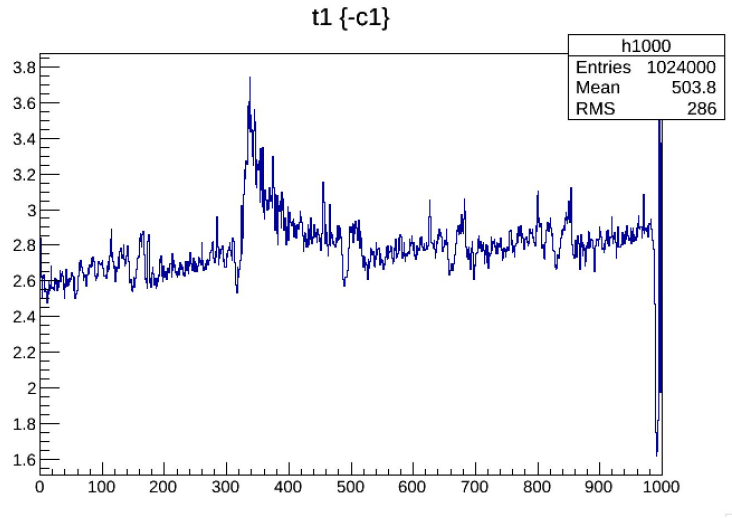
run 62 : photek and MCP1 trigger, threshold -0.015, -0.013
c1: 0.0018V
c4: 0.01275V



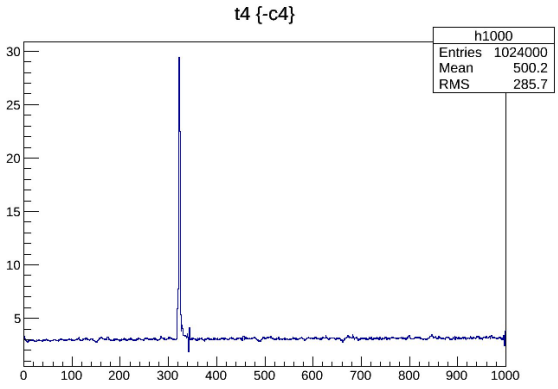
move table up to 2170.90 (+1cm) :
run 63 : photek and MCP1 trigger, threshold -0.015, -0.013
c1: 0.0018V
c4:0.0355V

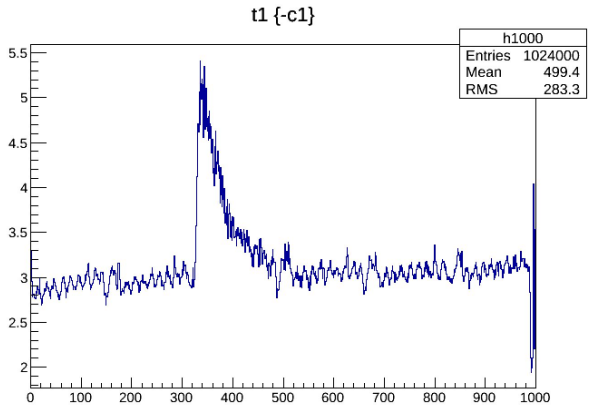


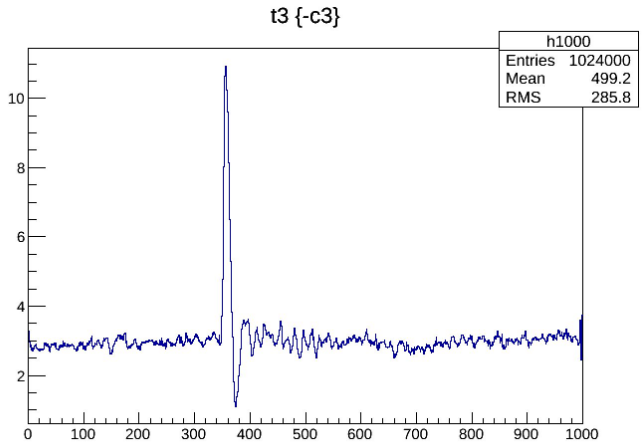
move table to 2180.350 (+2 cm) :
run 64 : photek and MCP1 trigger, threshold -0.015, -0.013
c1: 0.00105V
c4: 0.028V



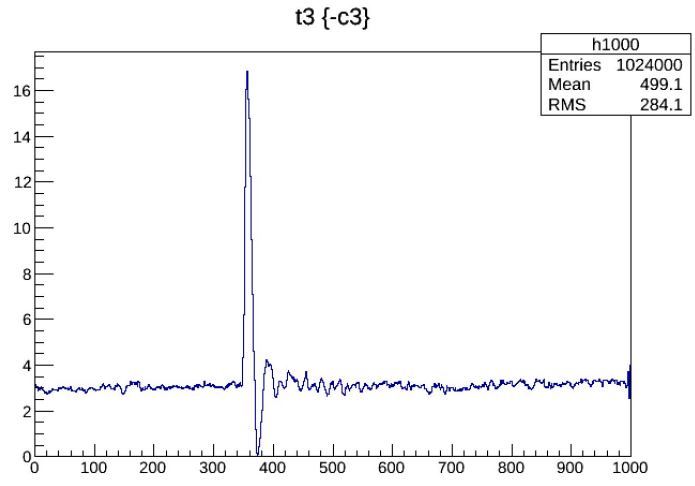
move table to 2160.770 (original), 80 cm (-1 cm Jura) :
run 65 : photek and MCP1 trigger, threshold -0.015, -0.013
1000 events
ch.3: 0.008V
ch4: 0.027V
ch1: 0.0025V





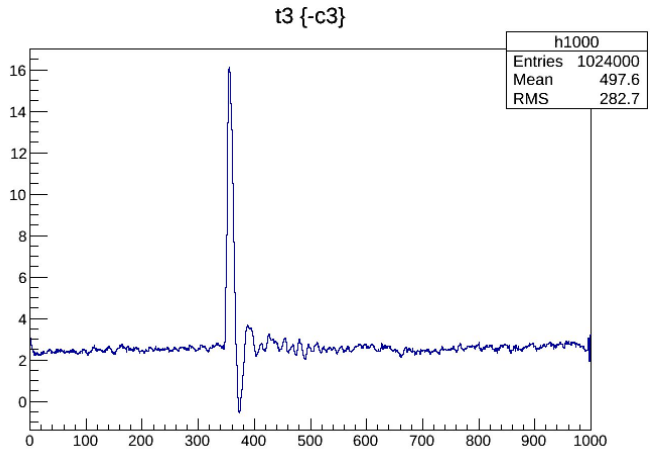


move table to 79 (-2 cm Jura)
run 66 : photek and MCP1 trigger, threshold -0.015, -0.013
ch3: 0.014V

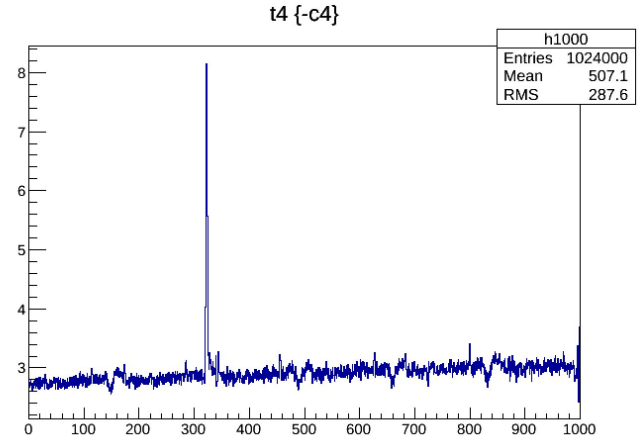


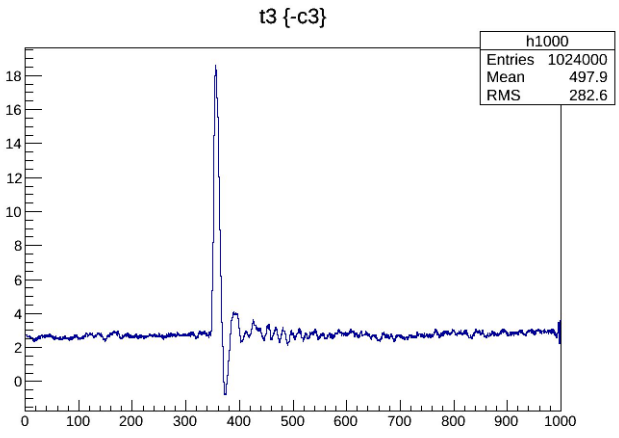
run 67 : photek trigger (MCP1 removed), threshold -0.015

move table to 78 (-3 cm Jura)
ch3: 0.0135

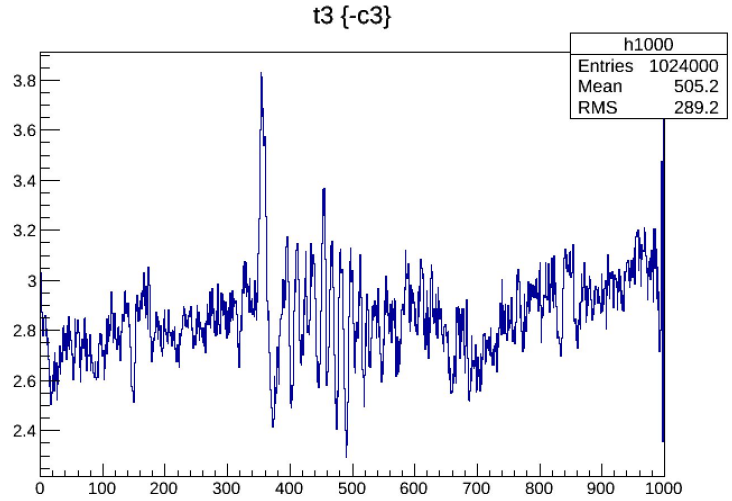


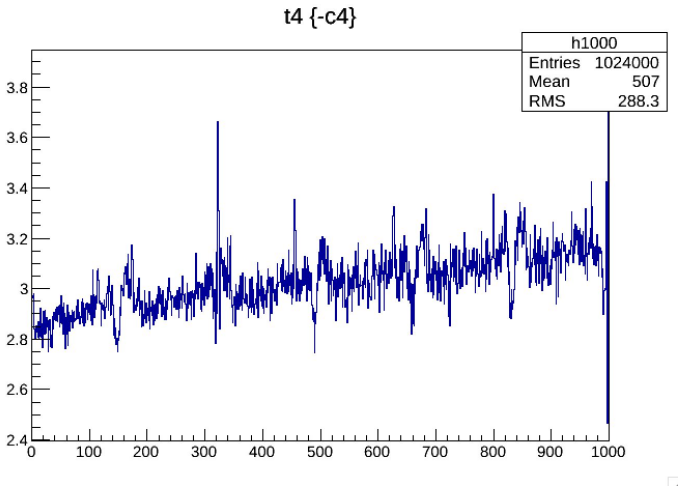
run 68 : photek trigger (MCP1 removed), threshold -0.015
Ch3: 0.0163V
Ch4: 0.0054





move table to 77 (-4 cm Jura)
run 69 : photek trigger (MCP1 removed), threshold -0.015
from scope, looks like we move passed the overlap of beam trigger and scint trigger on the box
Ch3: 0.001V
Ch4: 0.0054V
Lots of noise in this one:



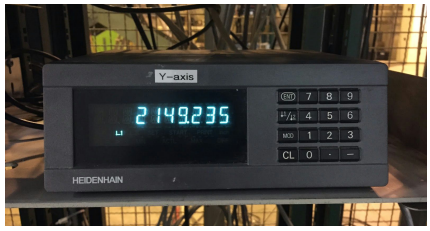


we conclude : no or little scint for 81 and 77, some rate for 80, 79, 78 ~consistent with 2 cm beam trigger => center in x
move table to 79 (-2 cm)
run 70 : photek trigger (MCP1 removed), threshold -0.015
declare 79 the default position for now.
another run as cross check

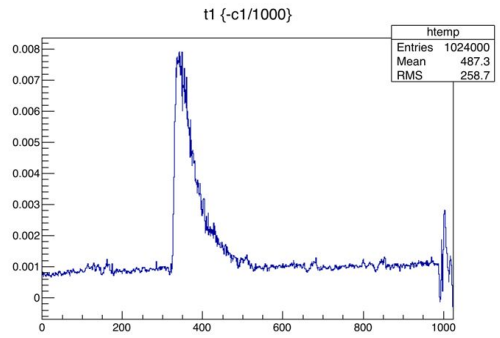
Switch to electrons

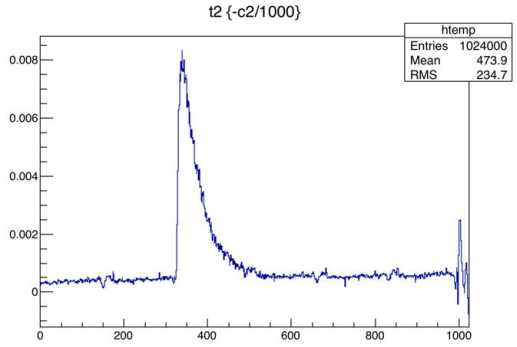
run 71
test run with electrons (Adi training Javier); don't recall exact settings

run 72
time 17:26
cell 6, MCP 1, DRS channel 2 (blue), HV channel 0, 3000 V
cell 3, MCP 2, DRS channel 1 (yellow), HV channel 1, 3000 V
reference, Photek, DRS channel 4 (green), HV channel 2, 5000 V
trigger: DRS channel 2 (V=-0.013) AND external (V=-0.015)
table position (x, y) = (79 cm, 2150 mm)

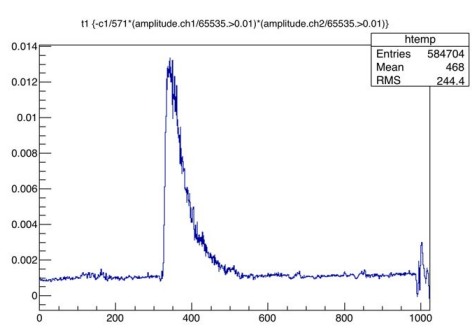


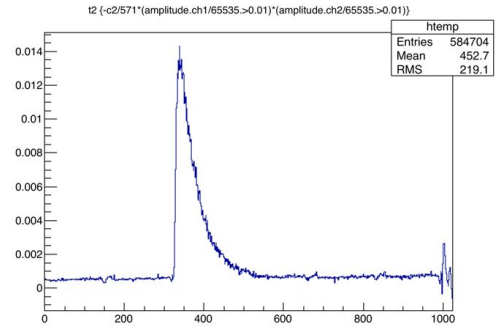
1000 events
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/1000")
T.Draw("t2>>htemp(1024,0,1024)","-c2/1000")





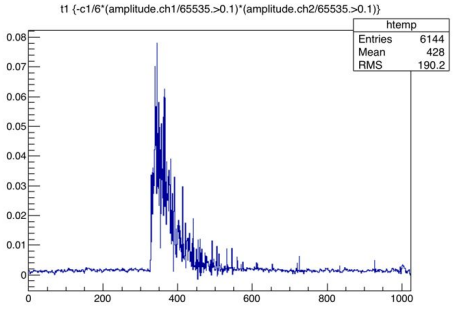
571 events with both MCP amplitudes above 10 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/571*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")
T.Draw("t2>>htemp(1024,0,1024)","-c2/571*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")

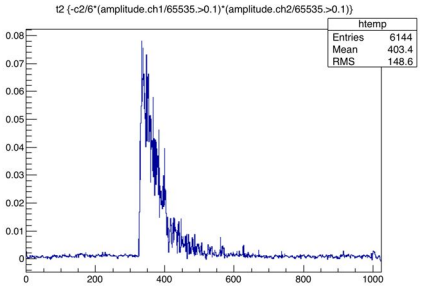




6 events with both MCP amplitudes above 100 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/6*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")

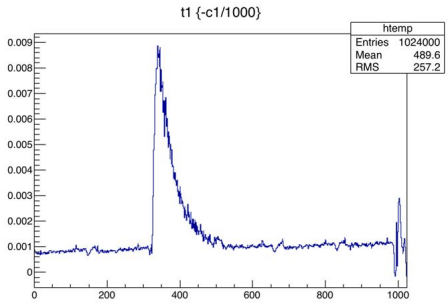
T.Draw("t2>>htemp(1024,0,1024)","-c2/6*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")



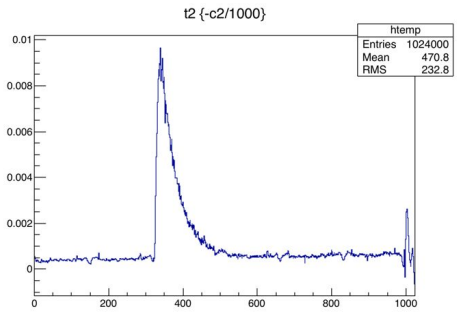


run 73
18:46
table position (x, y) = (79 cm, 2155 mm)

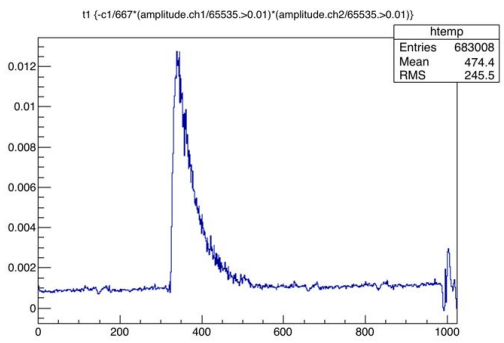
1000 events
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/1000")

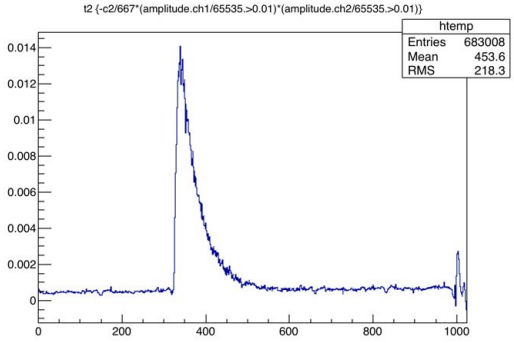


T.Draw("t2>>htemp(1024,0,1024)","-c2/1000")

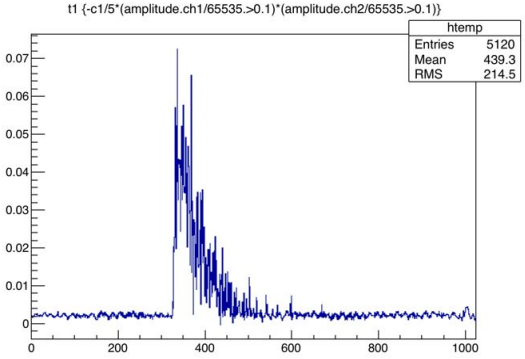


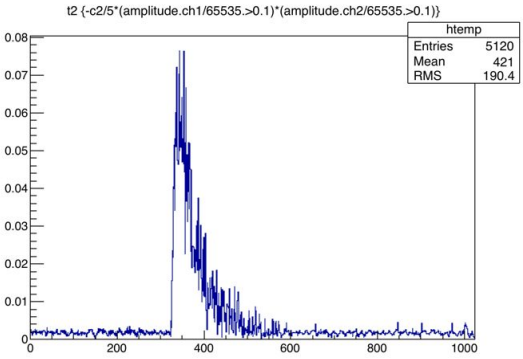
667 events with both MCP amplitudes above 10 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/667*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")
T.Draw("t2>>htemp(1024,0,1024)","-c2/667*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")



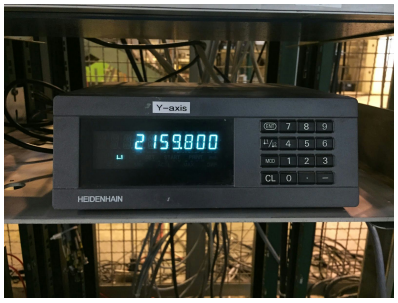


5 events with both MCP amplitudes above 100 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/5*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")
T.Draw("t2>>htemp(1024,0,1024)","-c2/5*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")

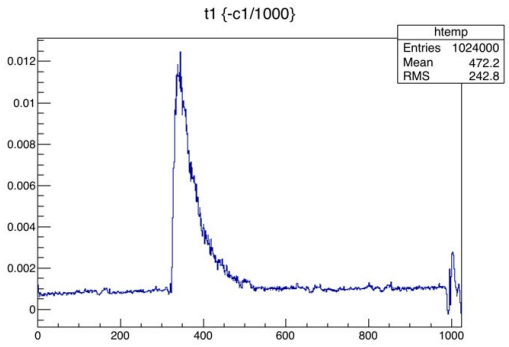


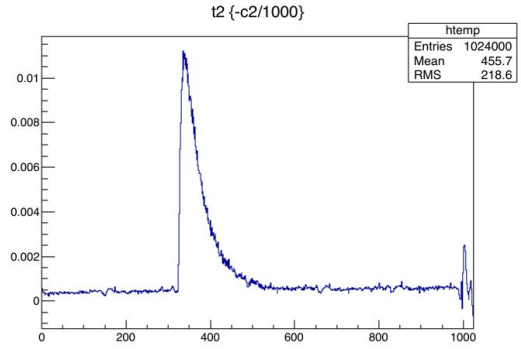


run 74
18:56
table position (x, y) = (79 cm, 2160 mm)

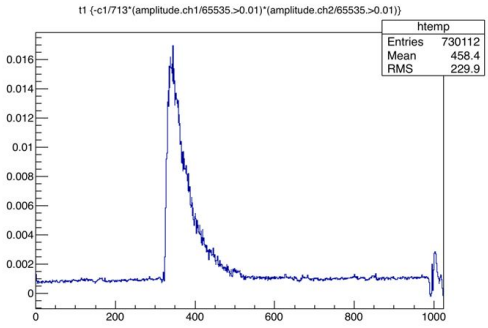


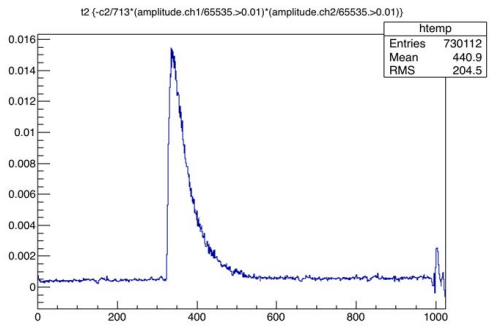
1000 events
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/1000") T.Draw("t2>>htemp(1024,0,1024)","-c2/1000")



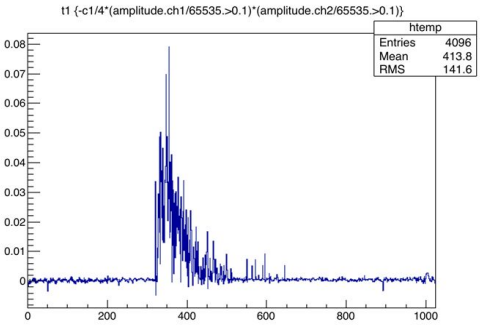


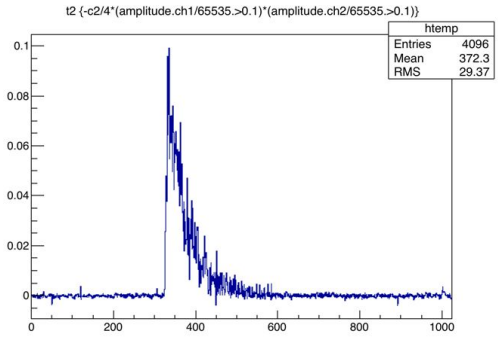
713 events with both MCP amplitudes above 10 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/713*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")
T.Draw("t2>>htemp(1024,0,1024)","-c2/713*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")





4 events with both MCP amplitudes above 100 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/4*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")
T.Draw("t2>>htemp(1024,0,1024)","-c2/4*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")

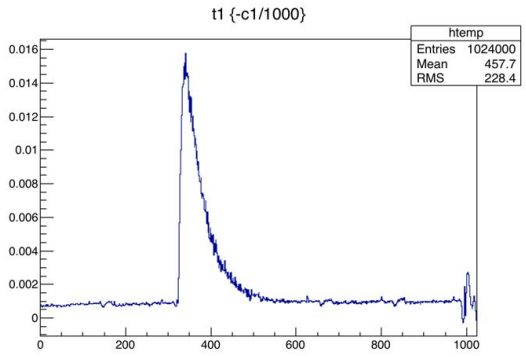




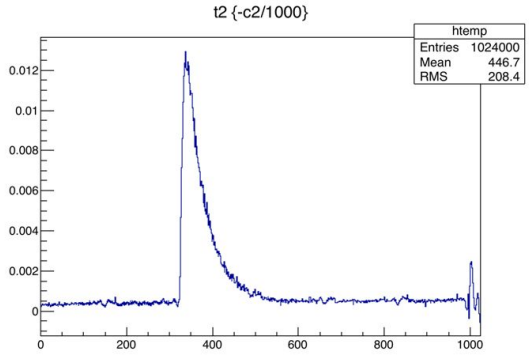
run 75
19:02
table position (x, y) = (79 cm, 2165 mm)

retroactive note: we were able to get the webcam to work on mac by using “macam”, attaching the desired webcam, and then selecting “SIF” mode before starting the camera playback. we have noticed that the camera does seem to freeze and only take one frame, so just keep stop/starting it, i guess. Javier might have done something nicer.

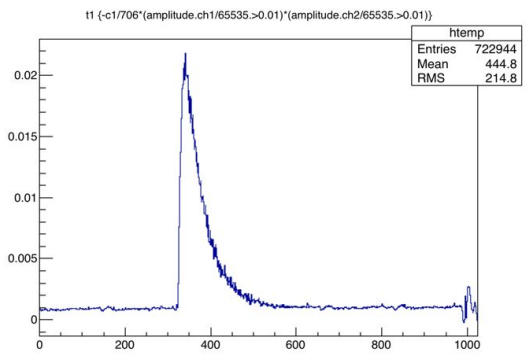
1000 events
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/1000")

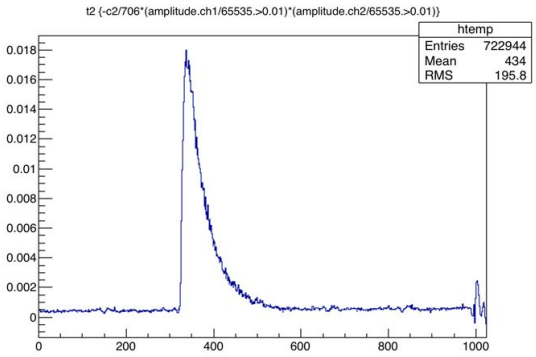


T.Draw("t2>>htemp(1024,0,1024)","-c2/1000")

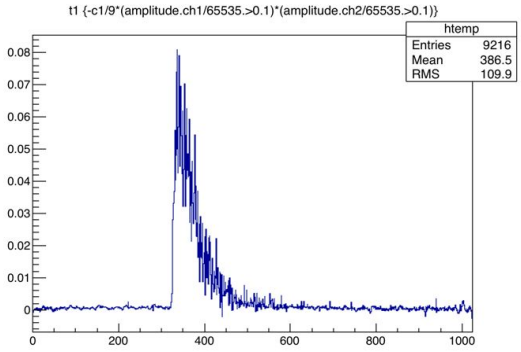


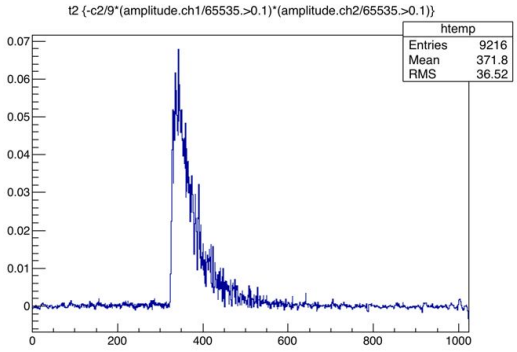
706 events with both MCP amplitudes above 10 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/706*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")
T.Draw("t2>>htemp(1024,0,1024)","-c2/706*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")





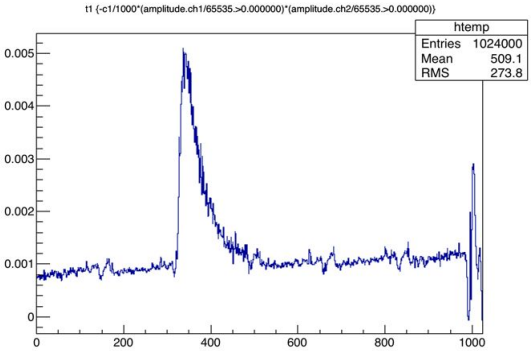
9 events with both MCP amplitudes above 100 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/9*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")
T.Draw("t2>>htemp(1024,0,1024)","-c2/9*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")



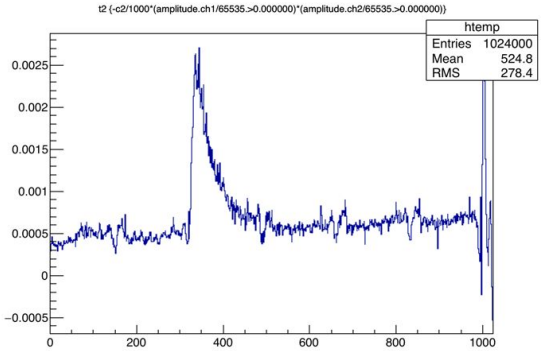


run 76
19:12
table position (x,y) = (79 cm, 2170 mm)

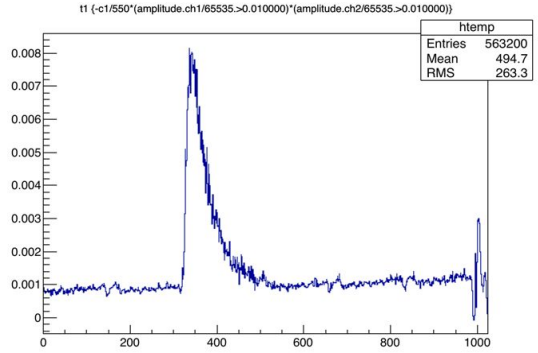
1000 events
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/1000")

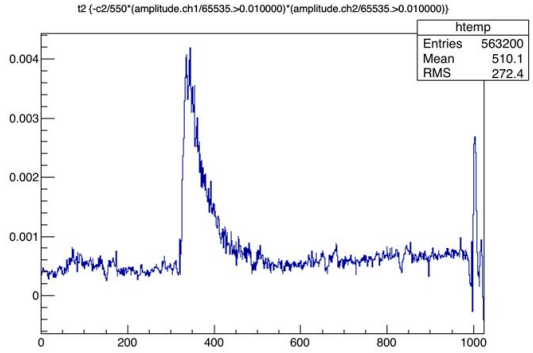


T.Draw("t2>>htemp(1024,0,1024)","-c2/1000")

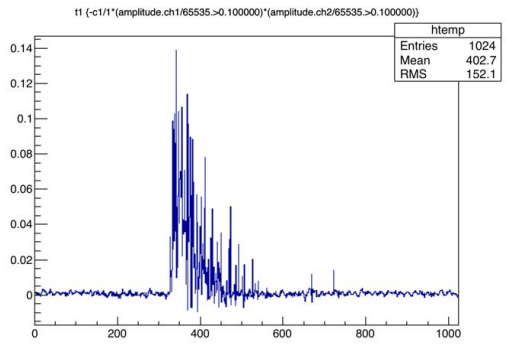


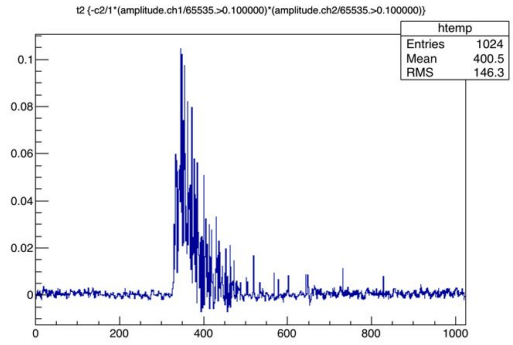
550 events with both MCP amplitudes above 10 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/550*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")
T.Draw("t2>>htemp(1024,0,1024)","-c2/550*(amplitude.ch1/65535.>0.01)*(amplitude.ch2/65535.>0.01)")





1 events with both MCP amplitudes above 100 mV
average pulses:
T.Draw("t1>>htemp(1024,0,1024)","-c1/1*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")
T.Draw("t2>>htemp(1024,0,1024)","-c2/1*(amplitude.ch1/65535.>0.1)*(amplitude.ch2/65535.>0.1)")





run 77
19:37
table position (x,y) = (79 cm, 2200 mm)

run 78
20:04
table position (x,y) = (79 cm, 2190 mm)

run 79
20:22
table position (x,y) = (79 cm. 2180 mm)

run 80

20:28
table position (x,y) = (79 cm. 2140 mm)

run 81
20:36
table position (x,y) = (80 cm, 2170 mm)

run 82
20:45
table position (x,y) = (81 cm, 2170 mm)

conclusion from the scan with electrons :
we find the “best” spot at 80 cm, 2170 mm, but with weak dependency on the position.
still the maximal amplitude is small
Javier wrote some automated scripts to get how many pulses are above a certain threshold
https://github.com/CaltechPrecisionTiming/DRS4DAQ

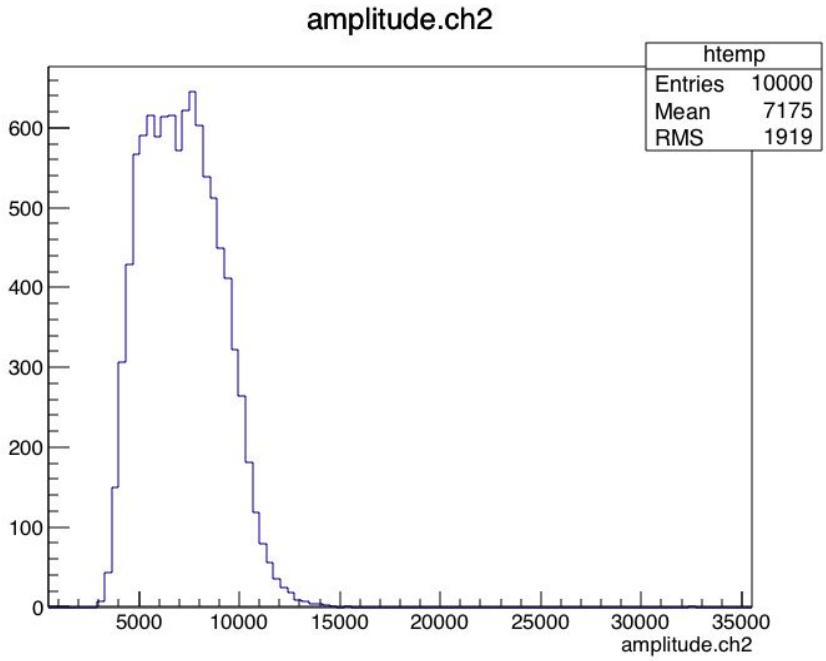
run 83 :
check DRS#2, SiPMs
we see signals, ~40 mV

access to change optical adaptors to CIT version.

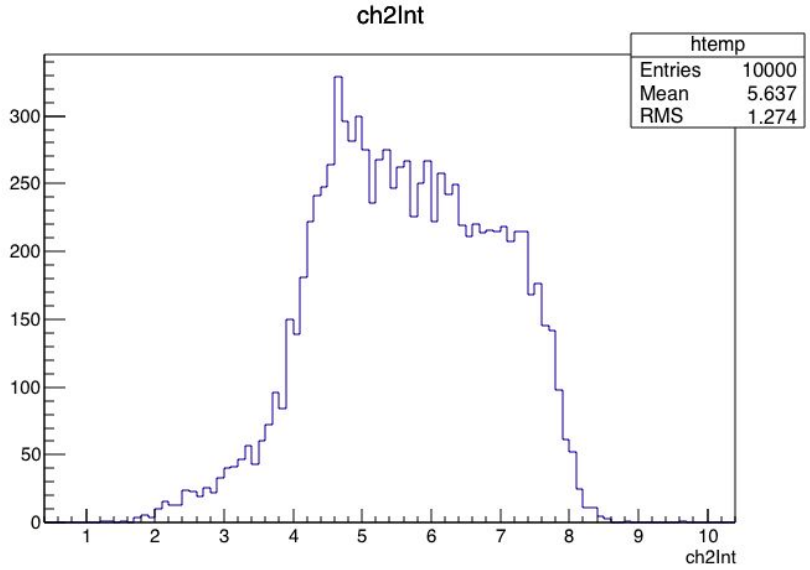
run 84
test DRS#1 - no effect ?
1000 events

Access to realign the small scintillator trigger with SH channel 3, and add the Photek MCP in the beam path.
run 85 (1000 events) and 86 (5304 events): electrons
table: x=81, y=2158
trigger: CH2 < -0.03, CH3 < -0.049
goal: measure electron energy peak in SH cell 3, with reference MCP in the beam
collected 10000 events in run 85, 5000 events in run 86

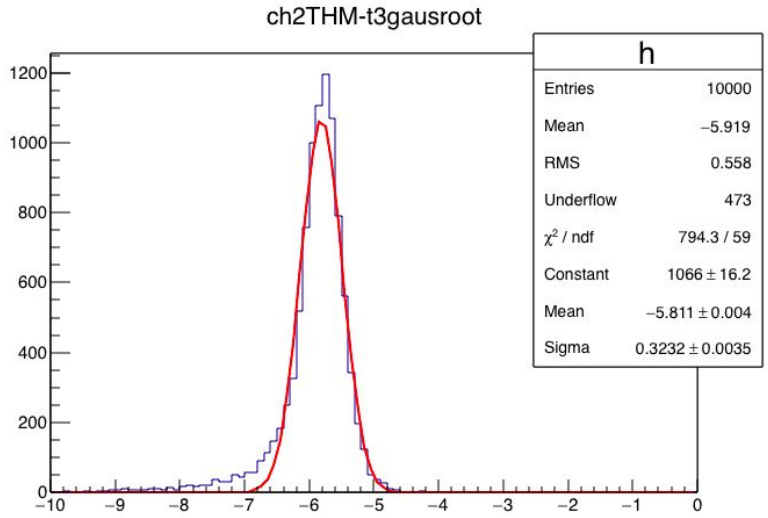
We plot the amplitude of the MCP (CH2) for events in run 85.



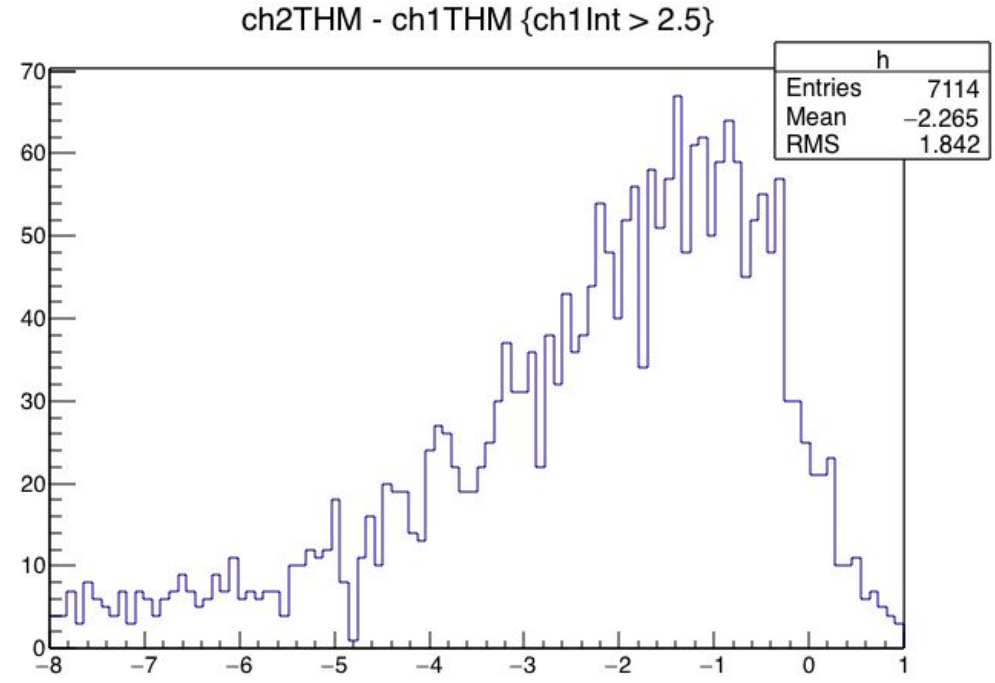
Integral of the MCP pulse:



Plotting the time between the reference MCP (gaussian fit) and the CH2 MCP (rising edge fit) gives a distribution with a resolution of ~300 ps (before any cuts).

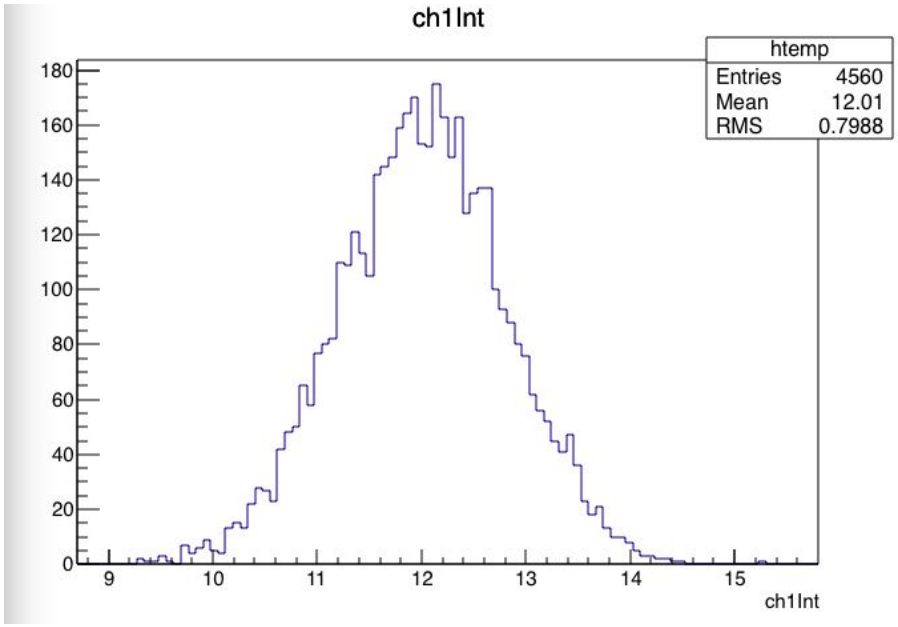


Time difference between CH1 and CH2, for events with a sizable signal in CH1:

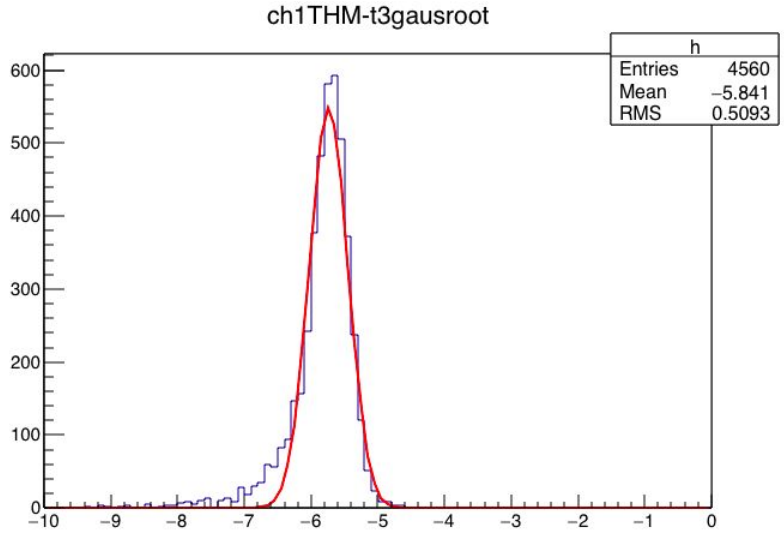


Access to move the scintillator trigger to SH channel 6.
Moved table to x=71.5
run 87: electrons
4560 events
table: x=71.5, y=2158
trigger: CH1 < -0.15, CH3 < -0.049
goal: measure electron energy peak in SH cell 6

Histogram of the integral of CH1 pulse:



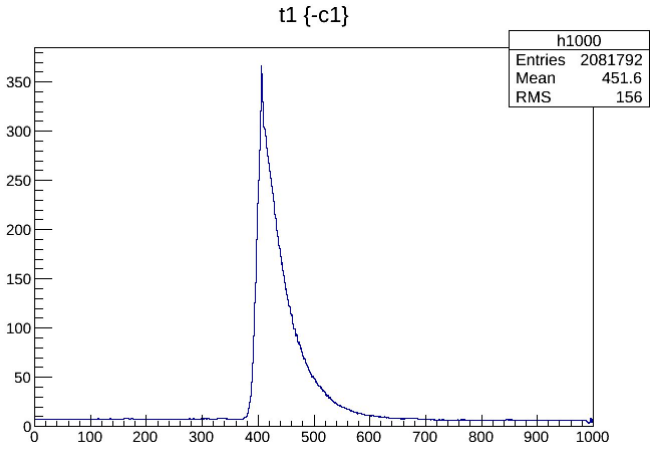
Time difference between reference and CH1 MCP. Sigma = 290 picoseconds.



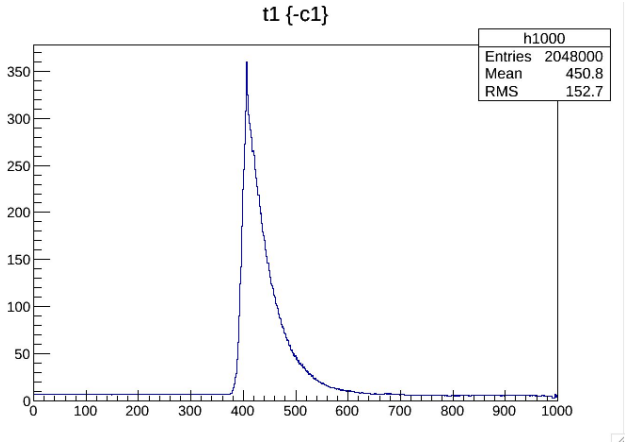
The plan now is to perform a 2D scan over x and y, triggering on the CH1 MCP and collecting ~10000 events per position. Then we will repeat with CH2, and CH1+CH2 if time allows. This will give a large sample of events for TOF measurements and allow us to find the optimal beam position.

Run 88: electrons
table: x=78, y=2170
trigger: CH1 < -0.15
We see ~50 events per spill
2033 events

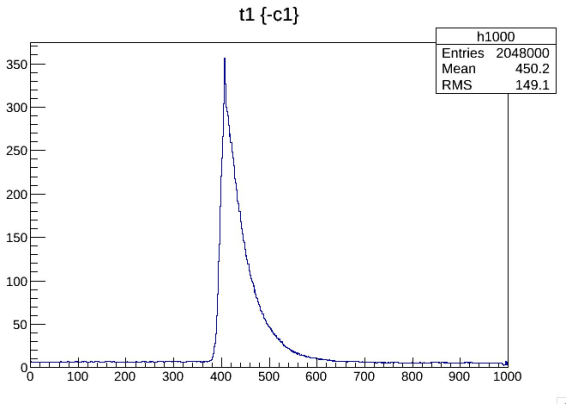
Ch 1: 0.178 V



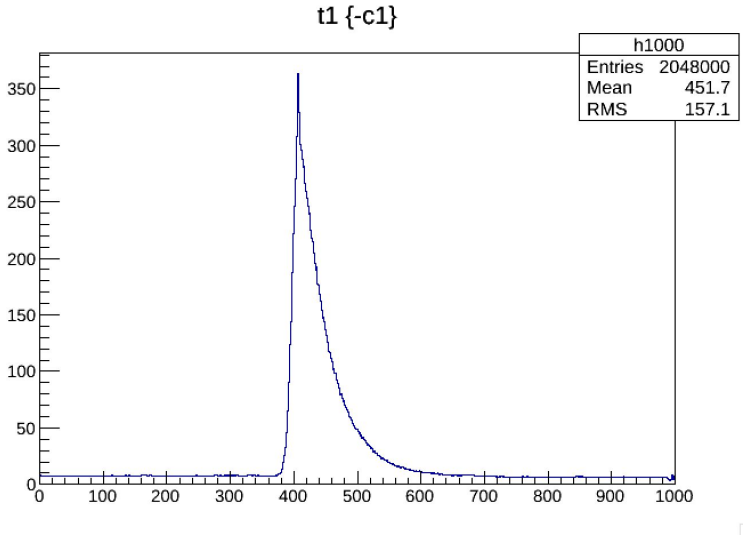
Run 89: electrons
table: x=79, y=2170
trigger: CH1 < -0.15
We see ~100 events per spill
2000 events
Ch 1: 0.181V



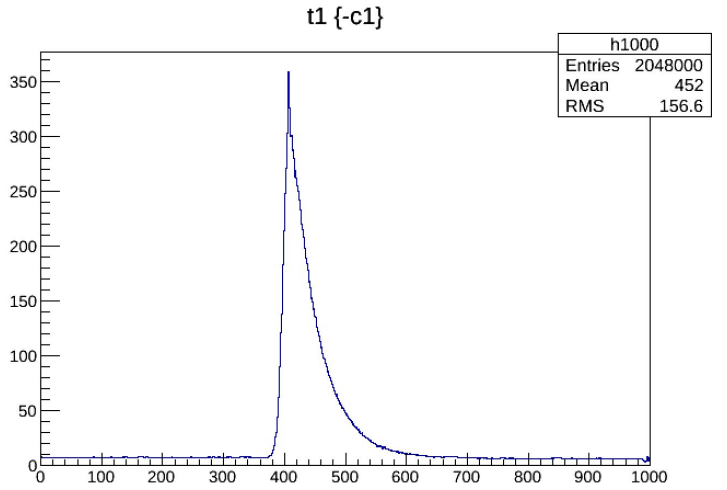
Run 90: electrons
table: x=80, y=2170
trigger: CH1 < -0.15
We see ~175 events per spill
2000 events
Ch1: 0.1785 V



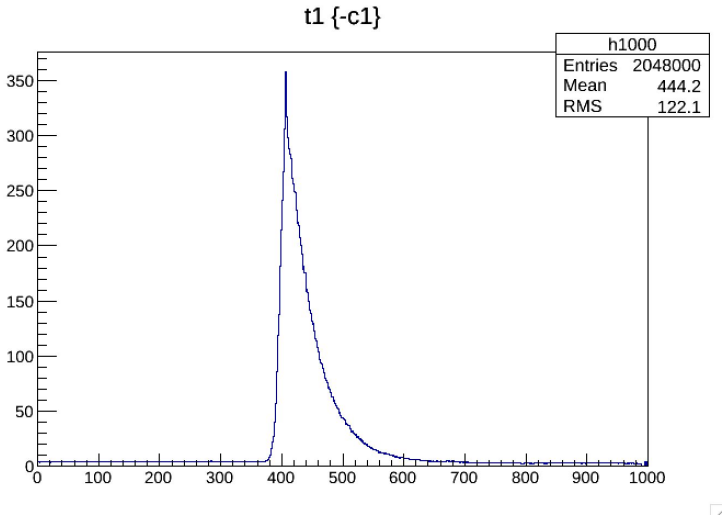
Run 91: electrons
table: x=79, y=2160
trigger: CH1 < -0.15
We see ~50 events per spill
2000 events
Ch. 1: 0.181



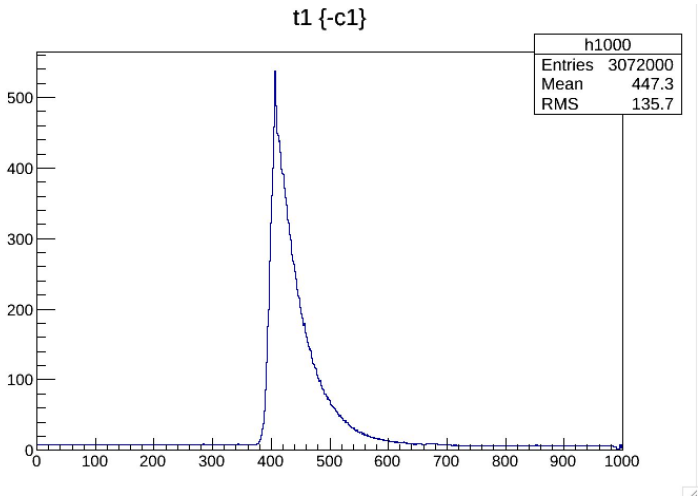
Run 92: electrons
table: x=80, y=2160
trigger: CH1 < -0.15
We see ~50 events per spill
2000 events
Ch1: 0.1785 V



Run 93: electrons
table: x=80, y=2180
trigger: CH1 < -0.15
We see ~300 events per spill.
2000 events
Ch1: 0.1805

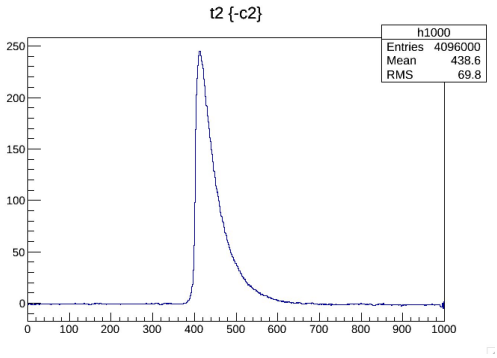


Run 94: electrons
table: x=79, y=2180
trigger: CH1 < -0.15
We see ~150 events per spill.
3000 events
Ch1: 0.18067

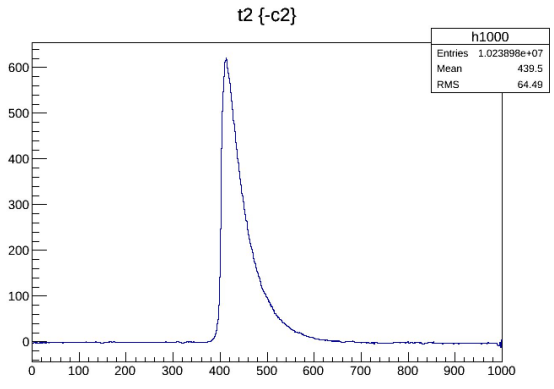


Now scan again, triggering on CH2

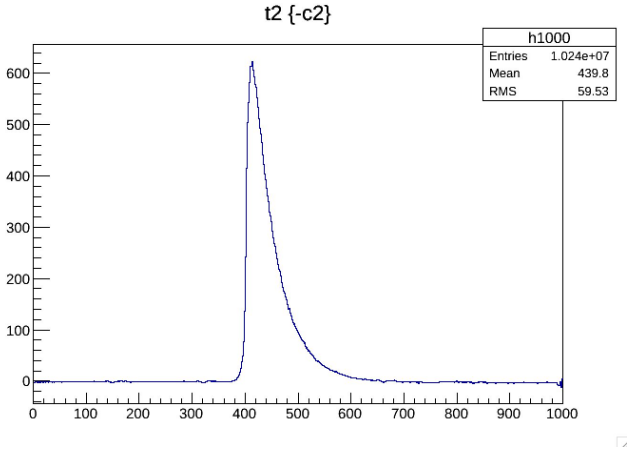
Run 95, 96: electrons
table: x=79, y=2180
trigger: CH2 < -0.03
We see ~2000 events per spill!
10,000 events
Ch2: 0.06125 V and 0.063V
95:



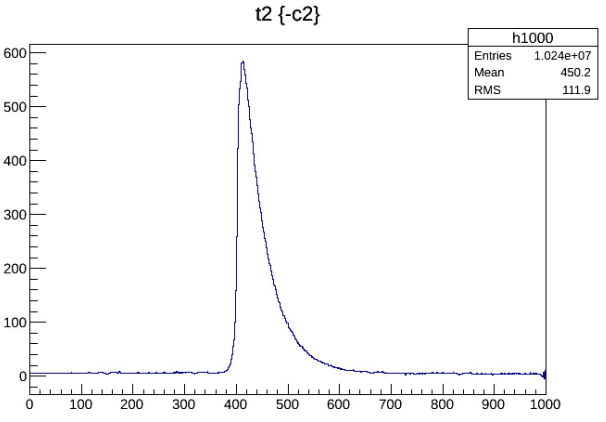
96:



Run 97: electrons
table: x=80, y=2180
trigger: CH2 < -0.03
We see ~2000 events per spill
10,000 events
Ch2: 0.063V

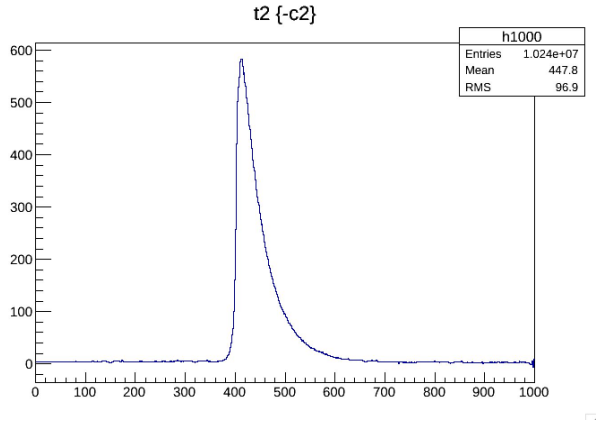


Run 98: electrons
table: x=80, y=2170
trigger: CH2 < -0.03
We see ~1000 events per spill
10,000 events
Ch2: 0.0585V

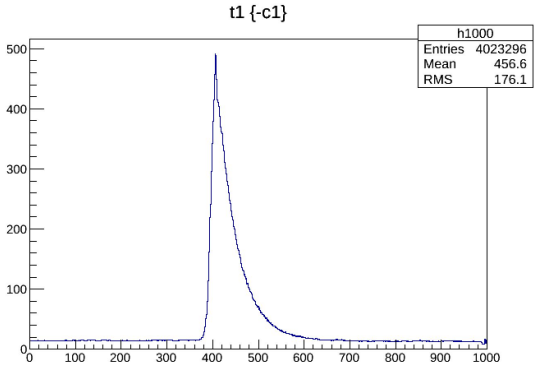


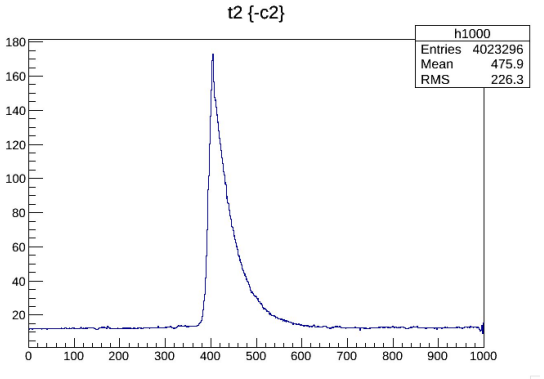
Run 99:electrons
table: x=79, y=2170
trigger: CH2 < -0.03
We see ~1000 events per spill
10,000 events

Ch2: 0.0587V



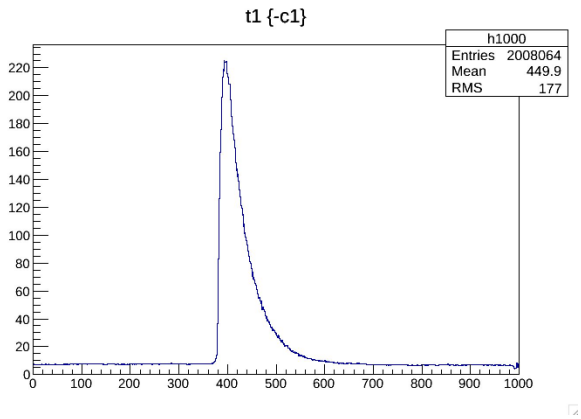
Run 100: electrons
table: x=80, y=2180
trigger: CH2 < -0.03 AND CH1 < -0.1
We see ~50 events per spill
3929 events
Ch1: 0.121V
Ch2: 0.0415V

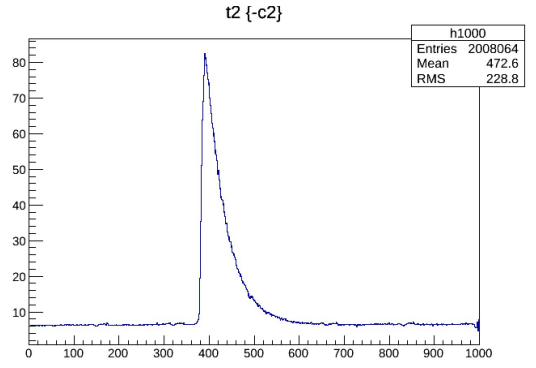


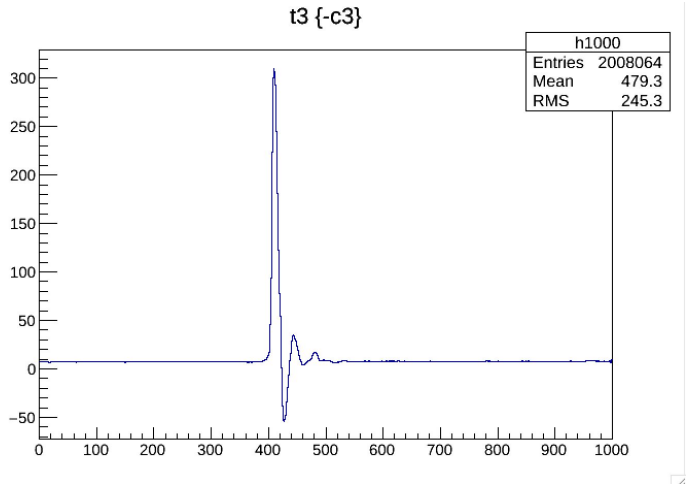


Run 101: same, but also require trigger on CH3. See ~30 events per spill. (recall, the trigger is on SH cell #6)
1961 events
Ch1: 0.1137V

Ch2: 0.03978V
Ch3: 0.156V



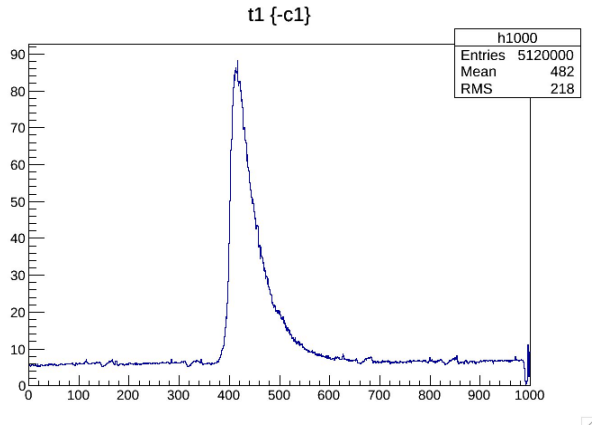


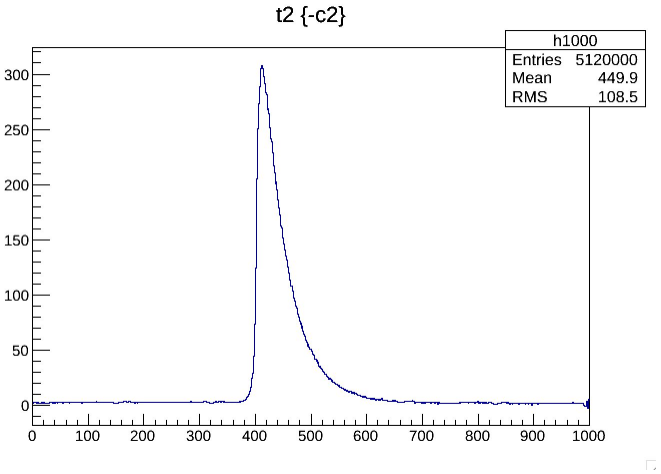


~Beginning of 7/6/15 7am-3pm shift~

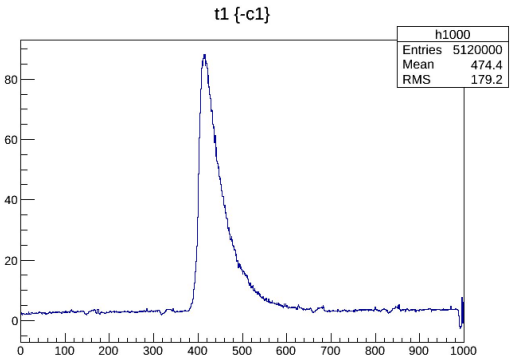
Scan:
Ch2:
Trigger: Ch1 - 0.15, Ch2 - 0.03

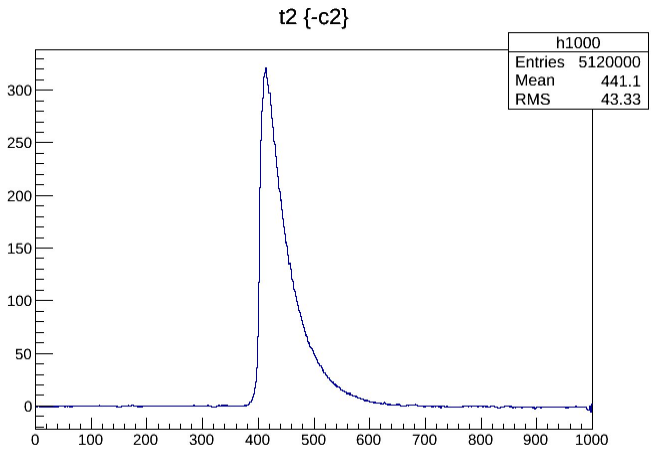
Run 102:
table: x=80, y = 2175.5
~<2000 events per spill
5000 events
Ch1: 0.0162V
Ch2: 0.063V



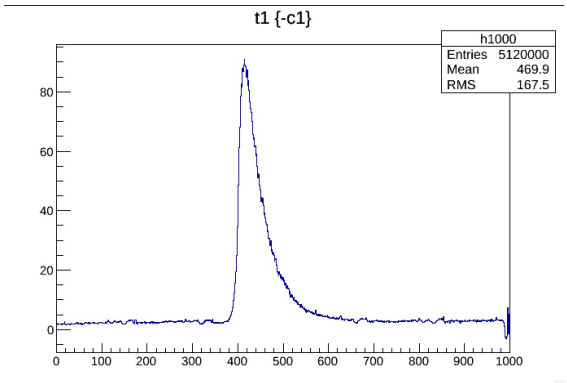


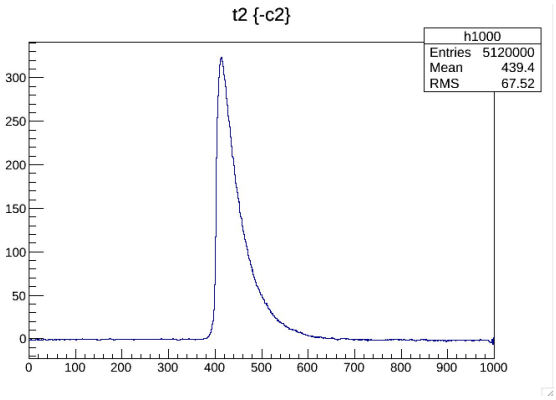
Run 103:
table: x=80, y = 2185.5
~2000 events per spill
5000 events
Ch1: 0.0174V
Ch2: 0.065V



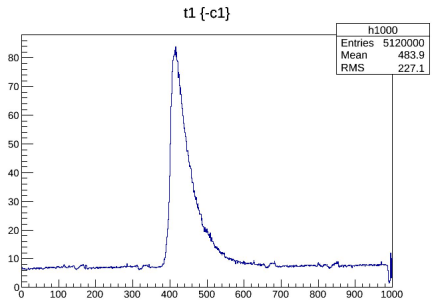


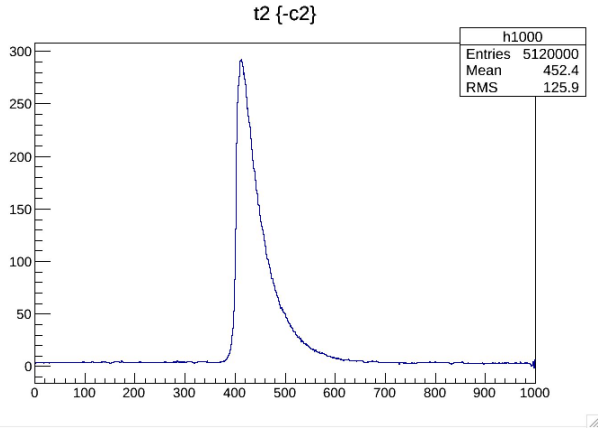
Run 104:
table: x=80, y = 2190
~2000 events per spill
5000 events
Ch1: 0.0176V
Ch2: 0.065V



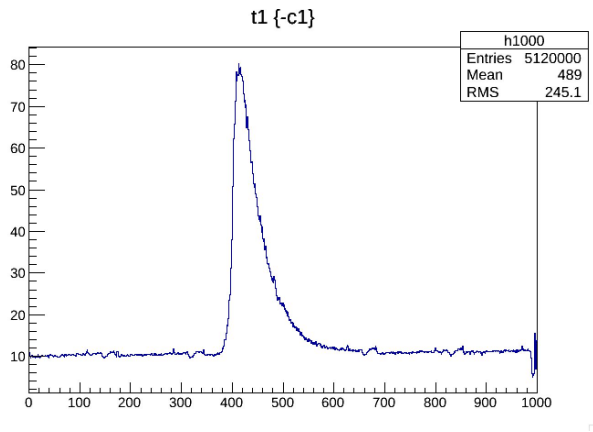


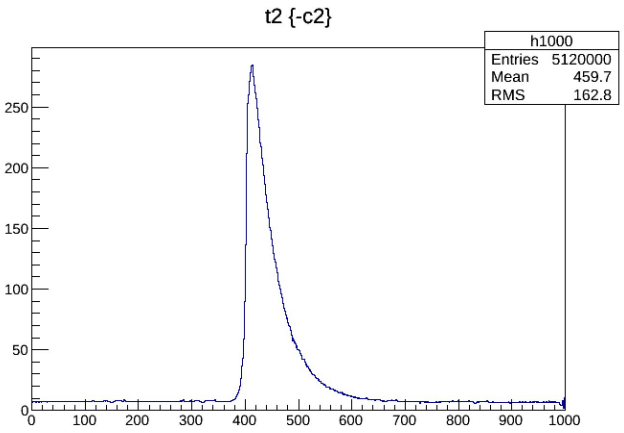
Run 105:
table: x=80, y = 2170
~500 events per spill
5000 events
Ch1: 0.0158V
Ch2: 0.0584V



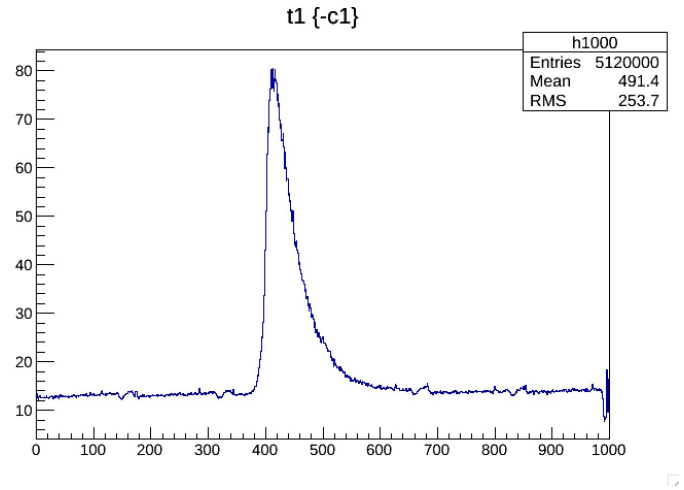


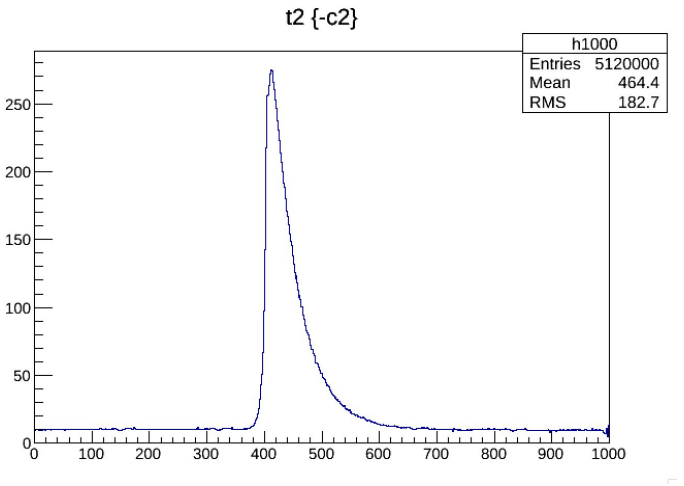
Run 106:
table: x=80, y = 2165
~300 events per spill
5000 events
Ch1: 0.014V
Ch2: 0.0576V



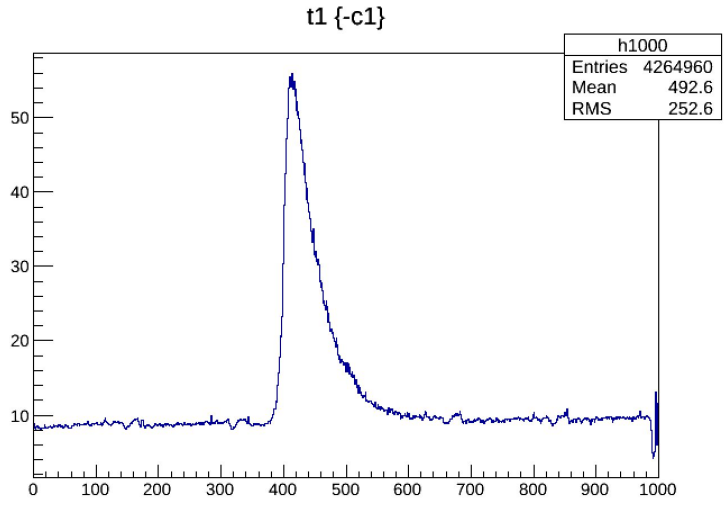


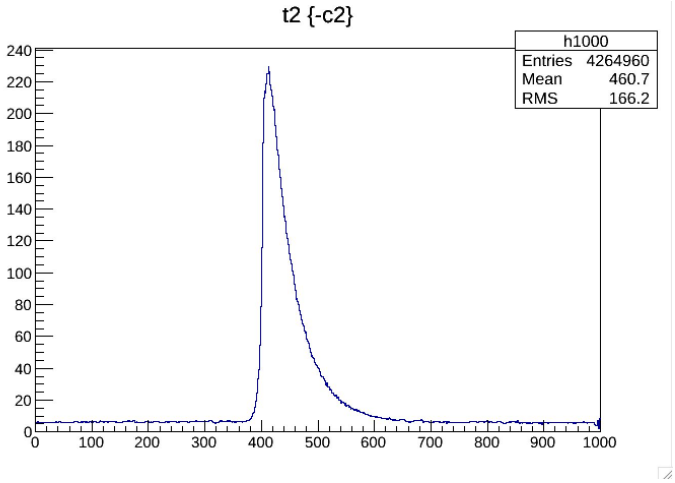
Run 107:
table: x=80, y = 2160
~150 events per spill
5000 events
Ch1: 0.0134V
Ch2: 0.054V





Run 108:
table: x=79, y = 2160
~250 events per spill
4165 events
Ch1: 0.0115V
Ch2: 0.054V

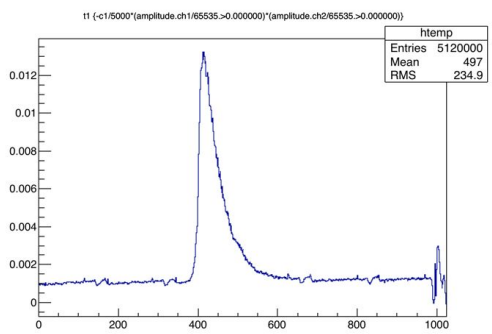


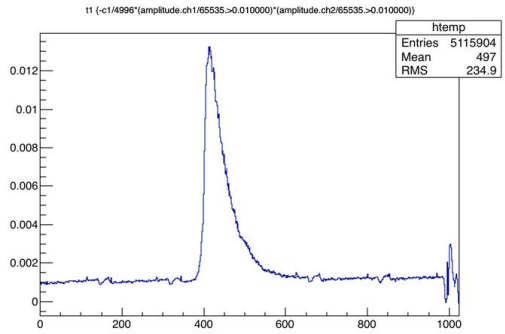


Run 109:
table: x=79, y = 2165
~600 events per spill
5000 events

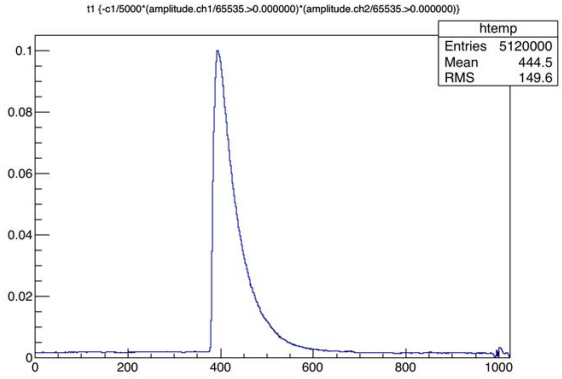
Run 110:
table: x=79, y = 2170
~1000 events per spill
5000 events

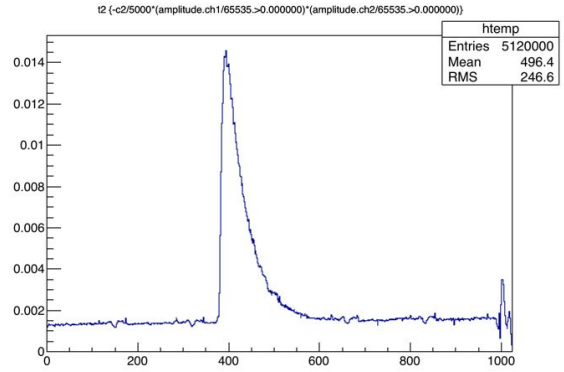
Run 111:
table: x=79, y = 2175
~events per spill
5000 events



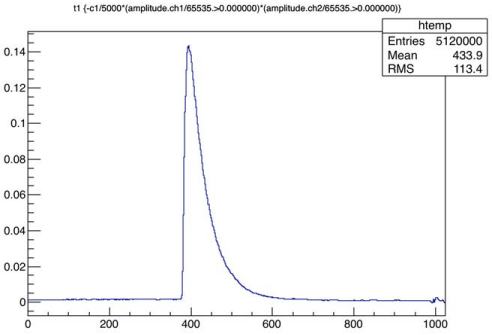


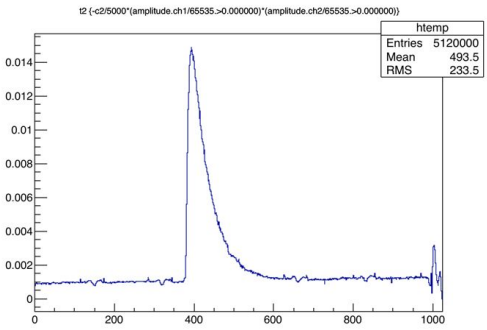
Run 112:
table: x=79, y = 2180
~events per spill
5000 events



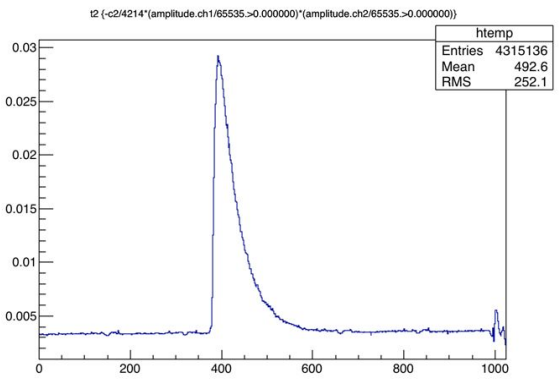


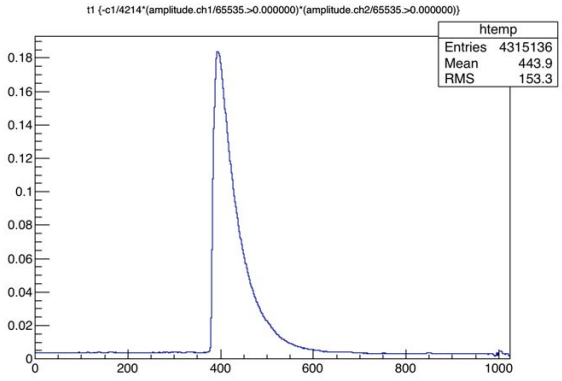
Run 113:
table: x=79, y = 2185
~events per spill
5000 events



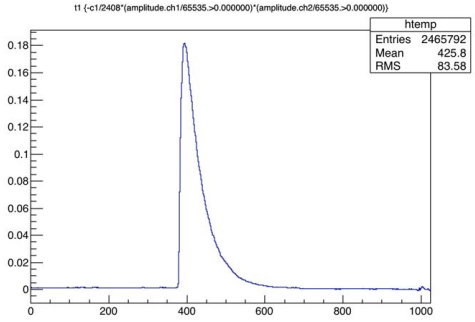


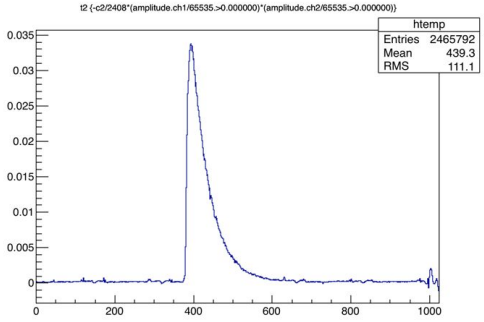
Run 114:
table: x=79, y = 2190
~events per spill
5000 events



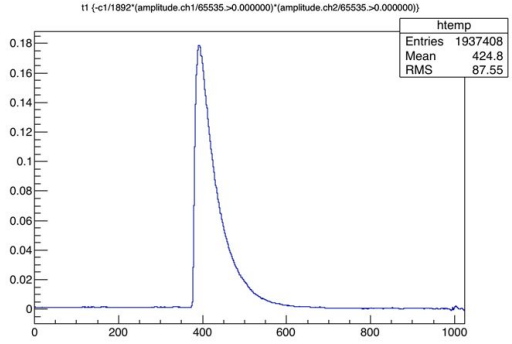


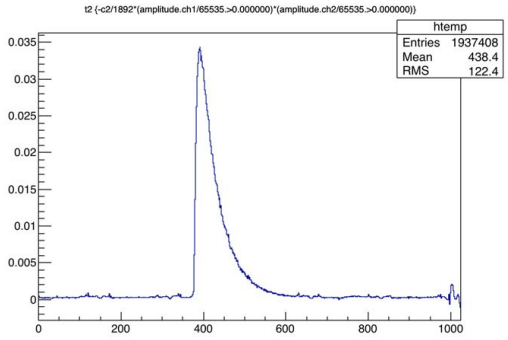
Run 115:
table: x=78, y = 2160
~events per spill
5000 events





Run 116:
table: x=78, y = 2165
~events per spill
5000 events





Run 117:
table: x=78, y = 2170
~events per spill
5000 events

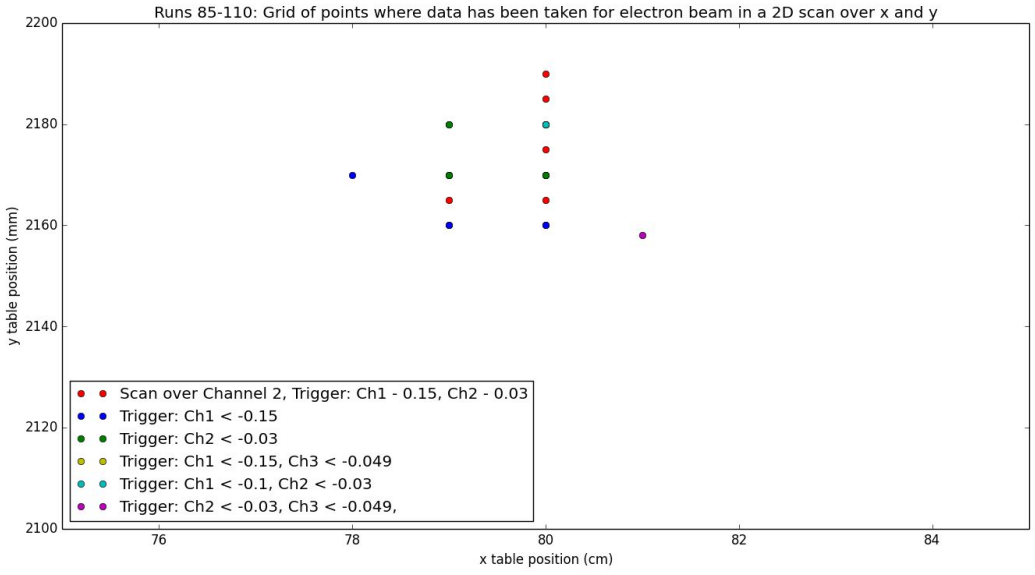
Run 118:
table: x=78, y = 2175
~events per spill
5000 events

Run 119:
table: x=78, y = 2180
~events per spill
5000 events

Run 120:
table: x=78, y = 2185
~events per spill
5000 events

Run 121:
table: x=78, y = 2190
~events per spill
5000 events

[blue=runs not done yet]

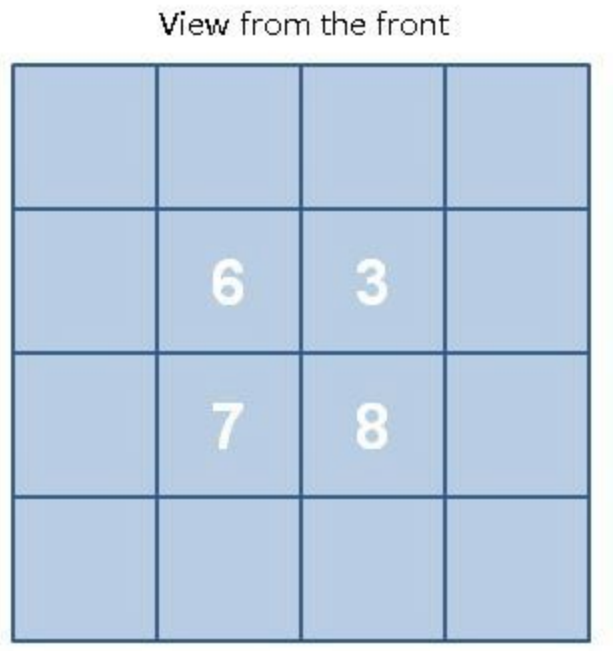


Modifications of the optical couplings and various test with them.
Important change : swap of fibers coupled to large SiPM to MCP2

Table x position at 81cm, y position 2160.885

Run 111, DRS#1, trigger ch1 & ch3

swap fibers between MCP2 and small SiPM.
Mapping now :
cell 3, MCP1, DRS1 ch2, HVch0
cell 8, MCP2, DRS1 ch1, HVch1
DRS1, ch3, scint counter, in front of cell8
DRS1, ch4, Photek
cell 6, large SiPM, DRS2
cell 7, small SiPM, DRS2



Run 112, trigger DRS ch1, ch3, threshold 20 mv, 18 mv
lower MCP2 voltage to 2.9 kV - finally :-)
5000 events

Run 113, trigger DRS ch1, ch3, threshold 50 mv, 18 mv
beam rate jumped by factor 2 ???
5000 events

load 150 GeV beam file
Run 114, trigger DRS ch1, ch3, threshold 100 mv, 18 mv
lower ch1 HV to 2700 V
4200 events

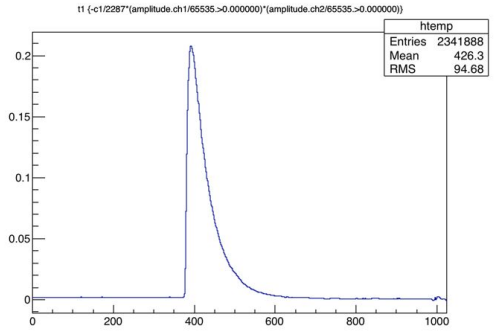
Run 115, trigger DRS ch1, ch3, threshold 100 mv, 18 mv
lower ch1 HV to 2700 V

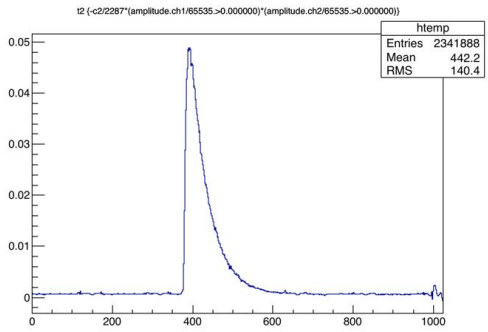
~2500 events **1 GS ?**

Run 116, trigger DRS ch1, ch3, threshold 100 mv, 18 mv
lower ch1 HV to 2700 V
5000 events

load 200 GeV beam file

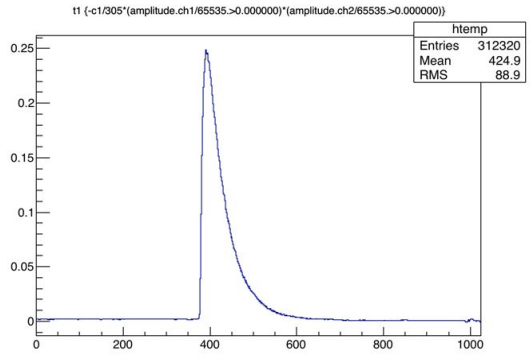
Run 117, trigger DRS ch1, ch3, threshold 100 mv, 18 mv
ch1 HV to 2700 V
2500 events, 200 GeV

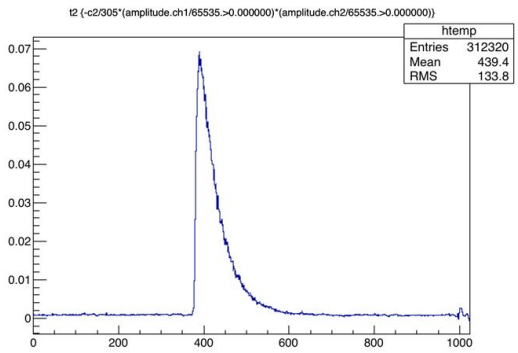




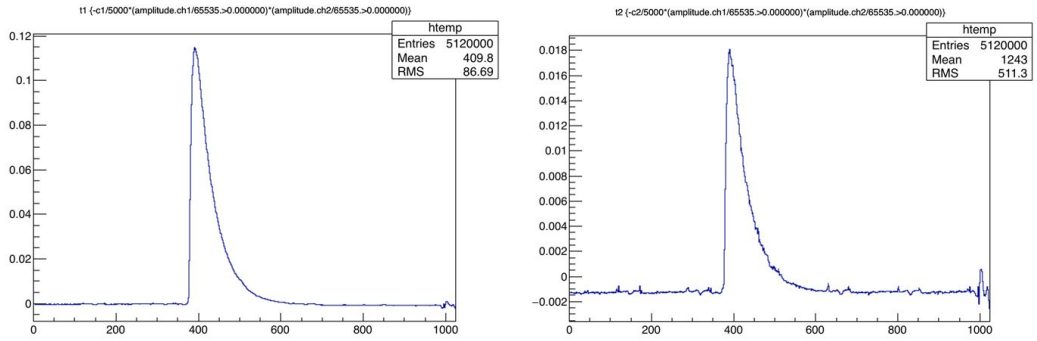
load 250 GeV beam file

Run 118, trigger DRS ch1, ch3, threshold 100 mv, 18 mv
ch1 HV to 2700 V
~300 events, 250 GeV

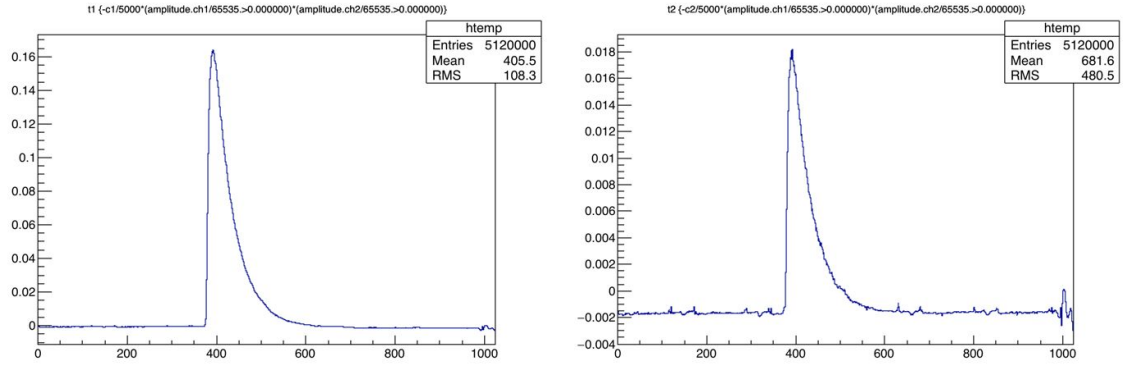




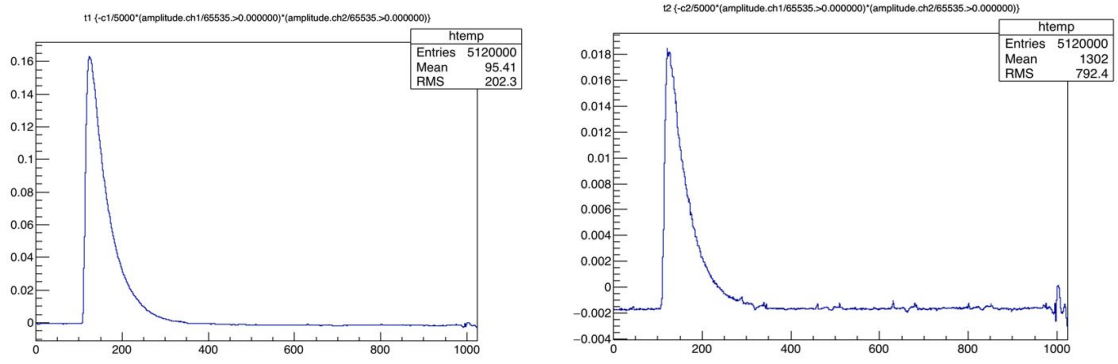
load 100 GeV beam file
Run 119, trigger DRS ch1, ch3, threshold 50 mv, 18 mv
ch1 HV to 2700 V
5000 events, 100 GeV



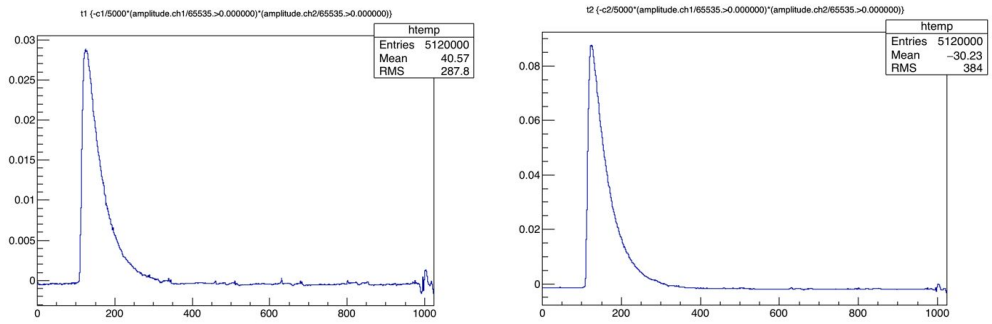
Run 120, trigger DRS ch1, ch3, threshold 50 mv, 18 mv
ch1 HV to 2800 V
5000 events, 100 GeV



Run 121, trigger DRS ch1, ch3, threshold 50 mv, 18 mv, move trigger to earlier bin
ch1 HV to 2800 V
5000 events, 100 GeV



Run 122, trigger DRS ch2, ch3, threshold 30 mv, 18 mv, move trigger counter up by 1cm
ch1 HV to 2800 V
5000 events, 100 GeV



Run 123, trigger DRS ch2, ch3, threshold 30 mv, 18 mv, move trigger counter up by 1cm
ch1 HV to 2700 V
5000 events, 150 GeV

To close off, we move the mother box onto the table.

New Setup

Run 124, ch3 trigger counter, ch1 Photek 10 dB 4.5 kV, ch2 Hama 10 db 3 kV, ch3 scint
150 GeV
2244 events

Run 125, ch3 trigger counter, ch1 Photek 20 dB 4.8 kV, ch2 Hama 6 db 2.95 kV, ch3 scint
150 GeV
5000 events

Run 126, ch3 trigger counter, ch1 Photek 20 dB 4.9 kV, ch2 Hama 6 db 2.95 kV, ch3 scint
150 GeV
5000 events

Run 127, ch3 trigger counter, ch1 Photek 20 dB 4.9 kV, ch2 Hama 6 db 2.95 kV, ch3 scint
moved table down by 5 mm
150 GeV
5000 events

Run plan for the night :
50, 100, 200, 250 GeV , each 10 k - in this order, rate and 200 is low and 250 very low.
Adjust attenuators on DRS box and/or HV as needed.
Photek HV 4.7 to 4.9.
Hama HV 2.8 to 3.0

-> We did 100, then 50, then 200, then 250 GeV <-

Run 128, ch3 trigger counter, ch1 Photek 20 dB 4.9 kV, ch2 Hama 6 db 2.95 kV, ch3 scint
moved table down by 5 mm
100 GeV
5000 events

Run 129, ch3 trigger counter, ch1 Photek 20 dB 4.9 kV, ch2 Hama 6 db 2.95 kV, ch3 scint
moved table down by 5 mm
50 GeV
5000 events

Run 130, ch3 trigger counter, ch1 Photek 20 dB 4.9 kV, ch2 Hama 6 db 2.95 kV, ch3 scint
moved table down by 5 mm
50 GeV
5000 events

Run 131, ch3 trigger counter, ch1 Photek 20 dB 4.9 kV, ch2 Hama 6 db 2.95 kV, ch3 scint
moved table down by 5 mm
200 GeV
5000 events

Run 132, ch3 trigger counter, ch1 Photek 20 dB 4.9 kV, ch2 Hama 6 db 2.95 kV, ch3 scint
moved table down by 5 mm
250 GeV
~1800 events before beam deactivated

Note: I forgot to transfer these files to afs, they are still on the machine locally

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Pictures from the single cell setup :