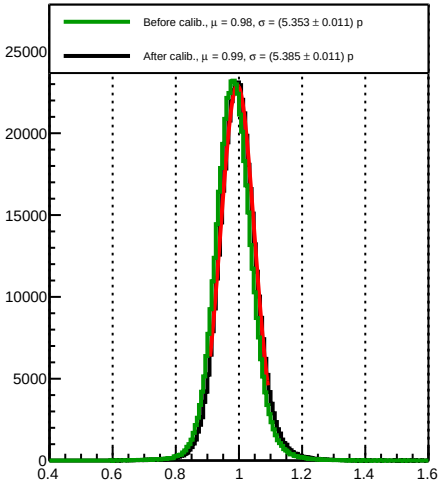
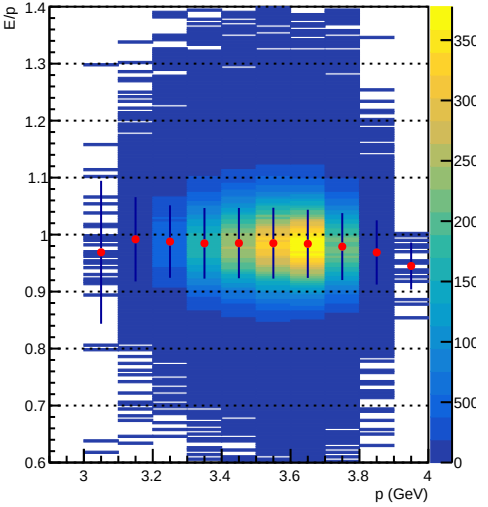
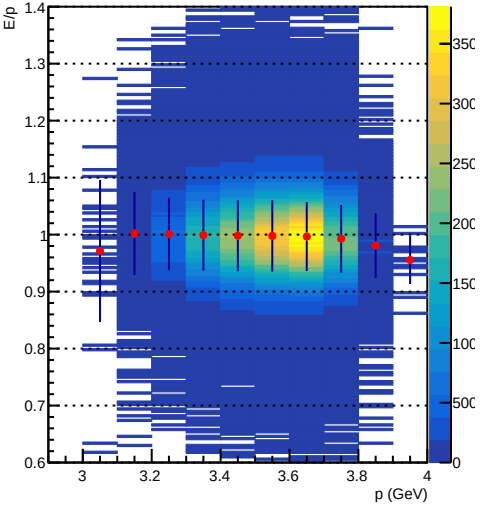
E/p (el. cut)



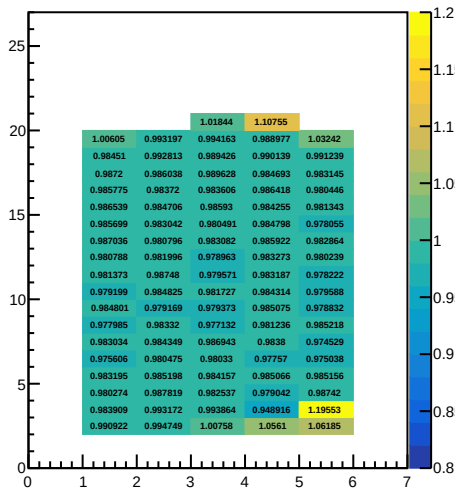
E/p vs p (el. cut)



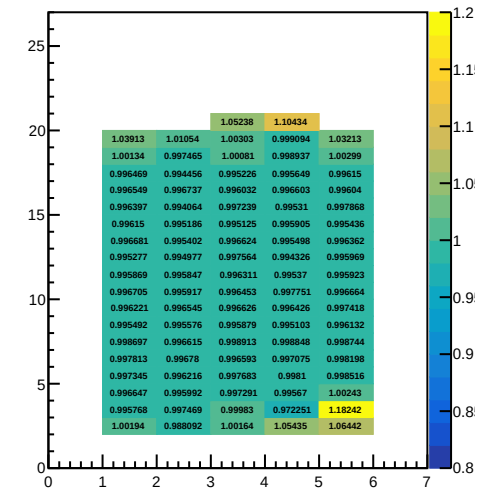
E/p vs p | After Calib. (el. cut)



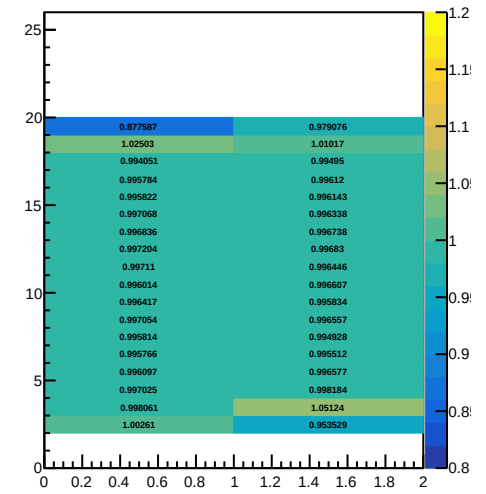
E/p per SH block (el. cut)



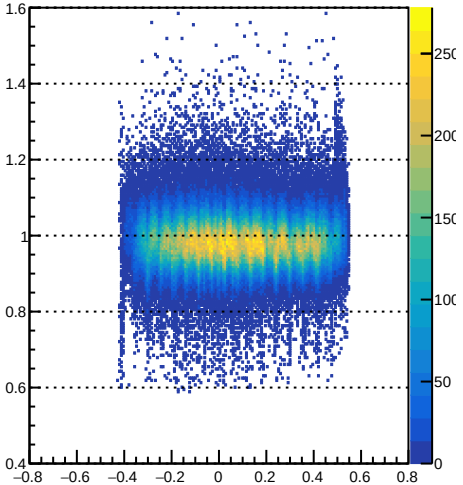
E/p per SH block | After Calib. (el. cut)



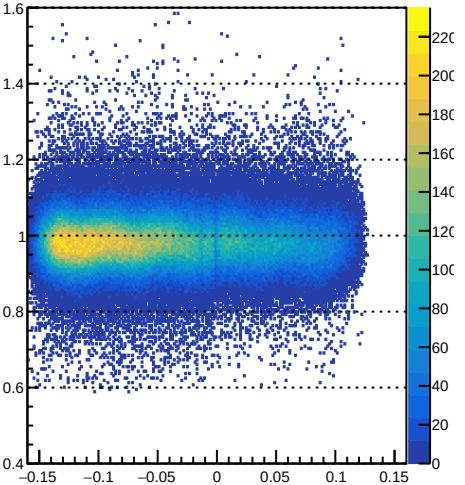
E/p per PS block | After Calib. (el. cut)



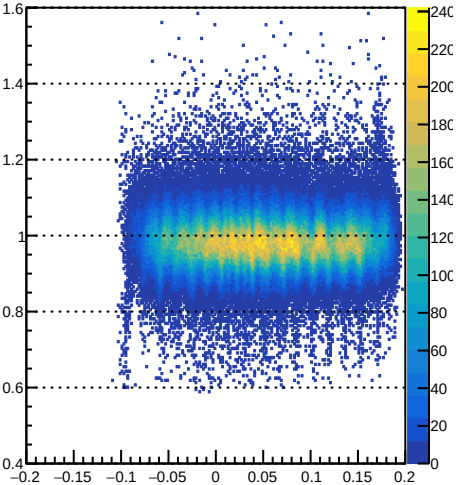
E/p vs Track x (el. cut)



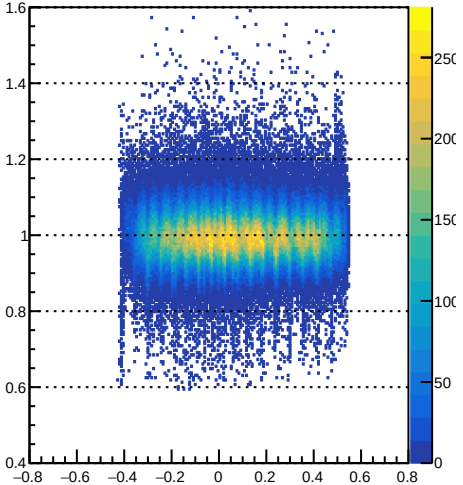
E/p vs Track y (el. cut)



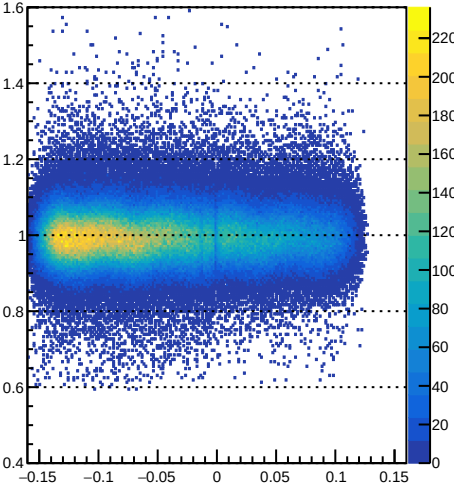
E/p vs Track theta (el. cut)



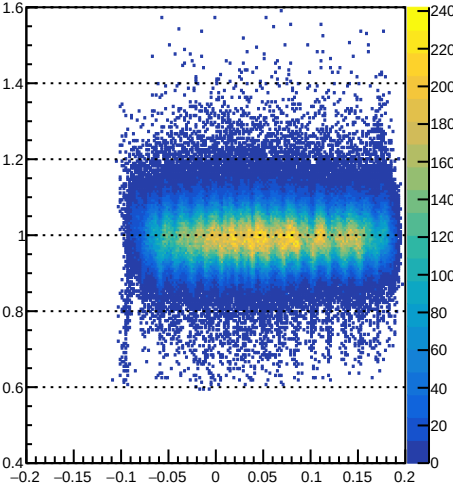
E/p vs Track x | After Calib. (el. cut)



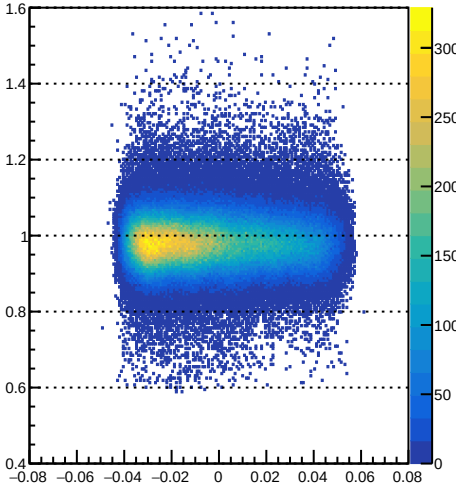
E/p vs Track y | After Calib. (el. cut)



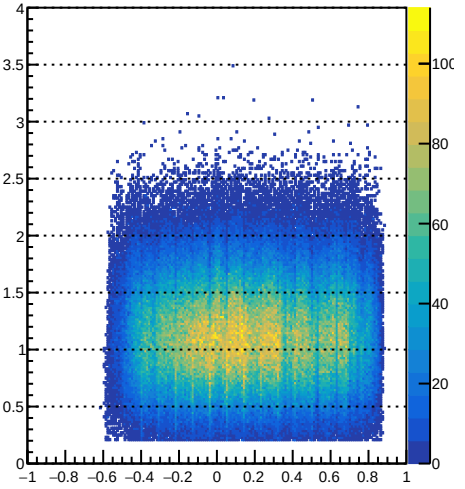
E/p vs Track theta | After Calib. (el. cut)



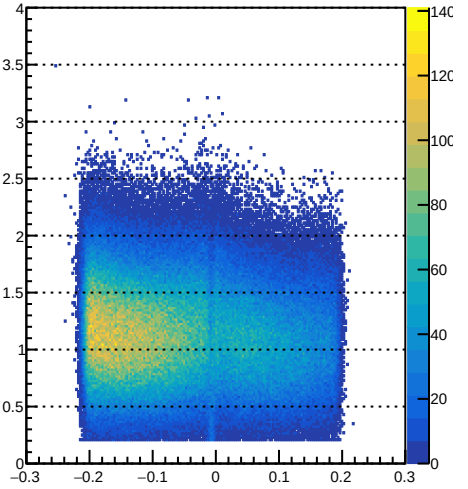
E/p vs Track phi (el. cut)



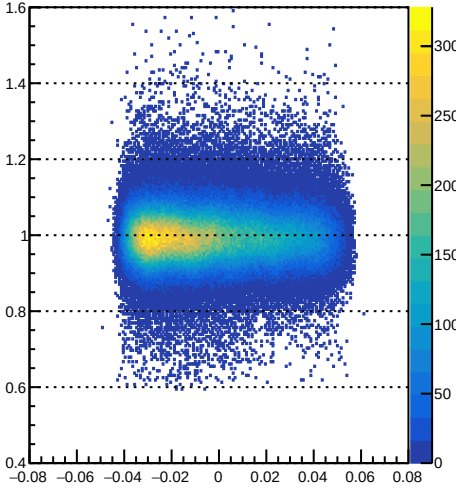
PS energy vs Track x (proj. at PS) (el. cut)



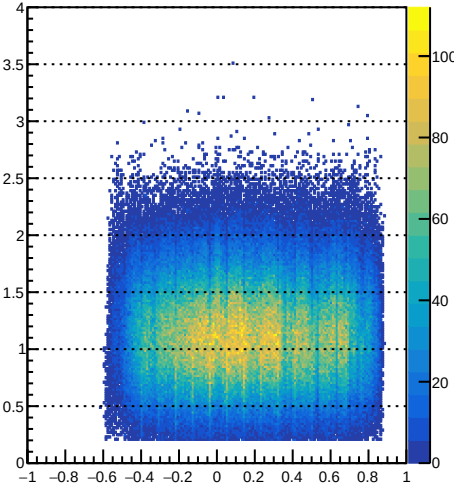
PS energy vs Track y (el. cut) (proj. at PS)



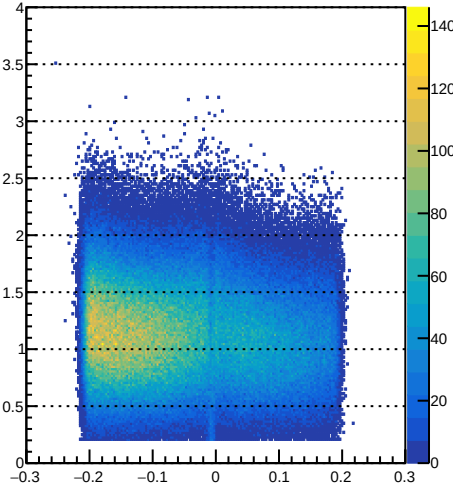
E/p vs Track phi | After Calib. (el. cut)

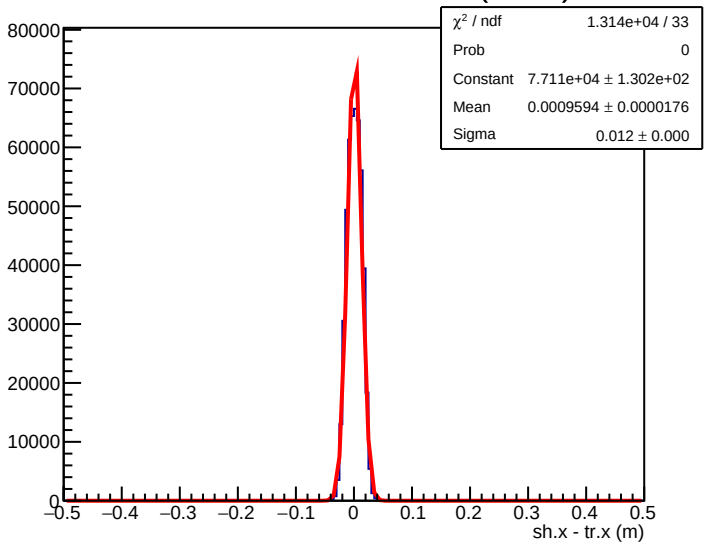


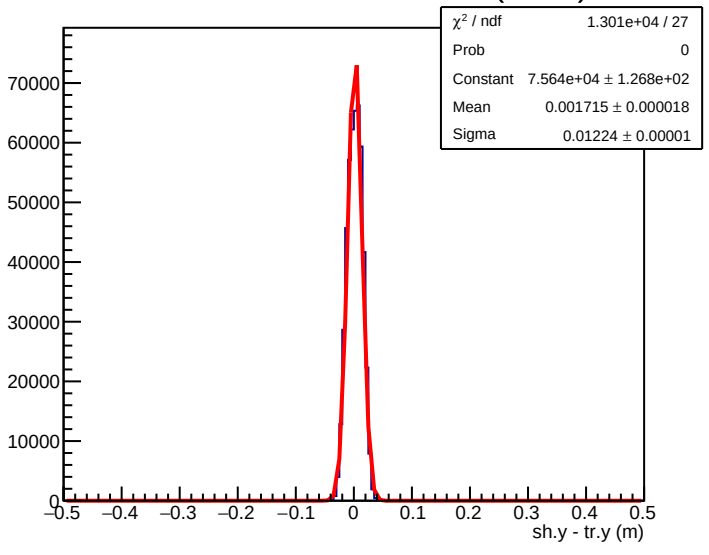
PS energy vs Track x (proj. at PS) | After Calib. (el. cut)

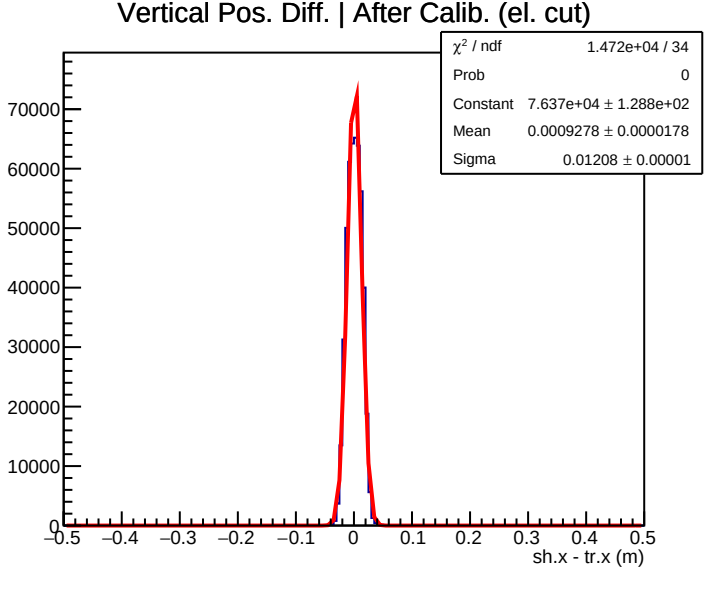


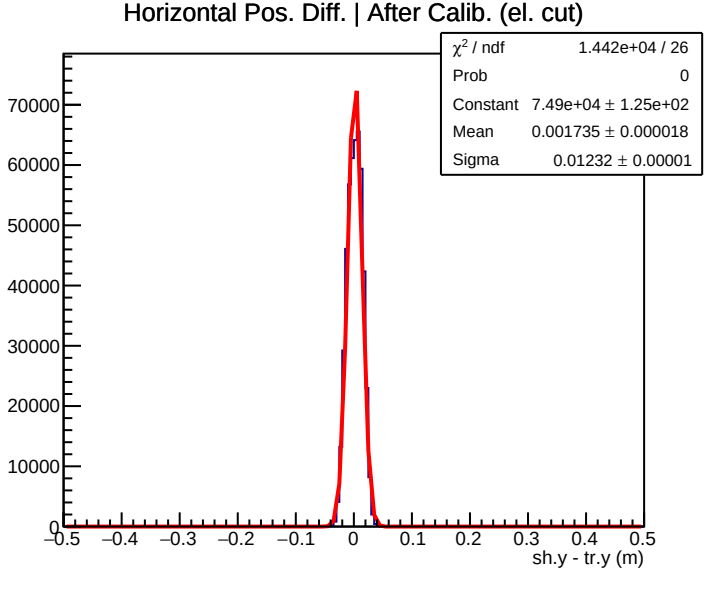
PS energy vs Track y (proj. at PS) | After Calib. (el. cut)

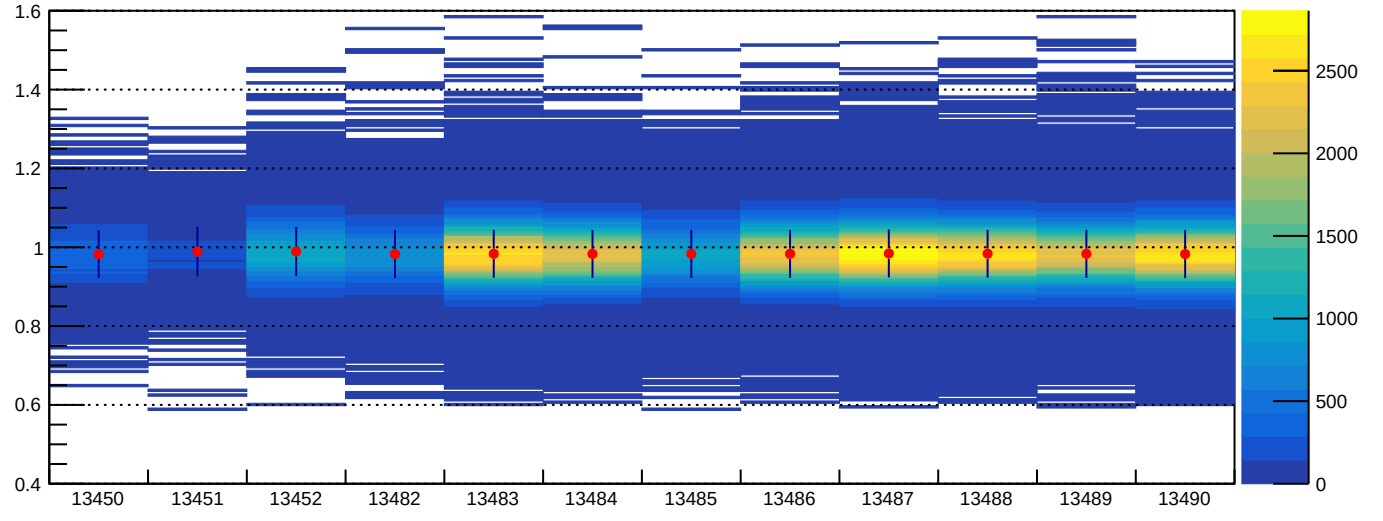


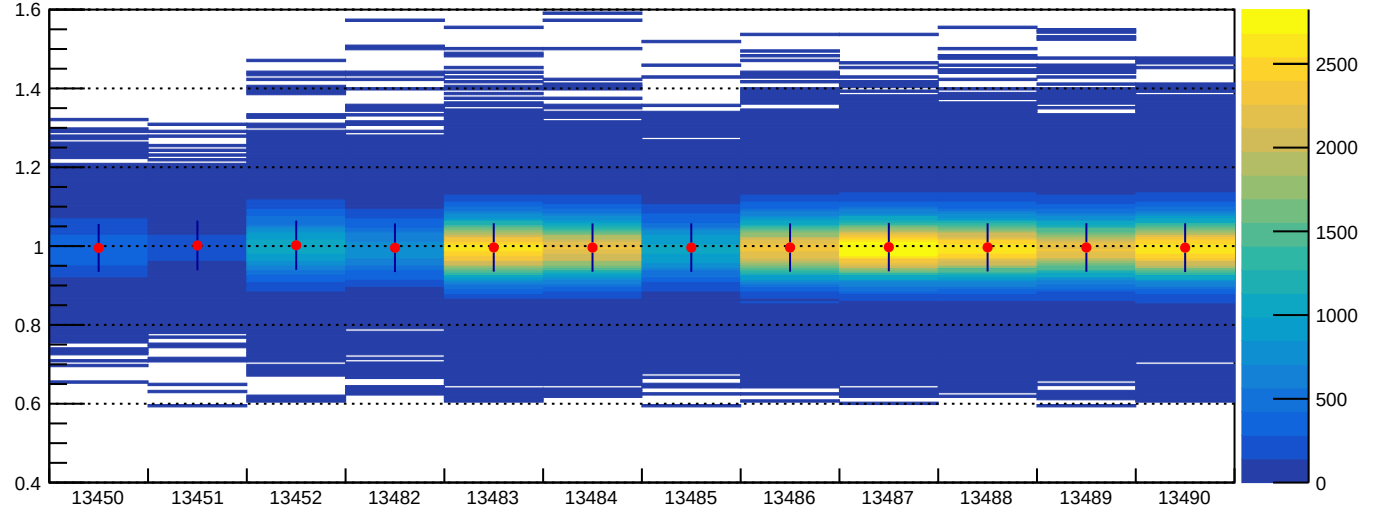

Vertical Position Difference (el. cut)
χ² / ndf 1.314e+04 / 33
Prob 0
Constant 7.711e+04 ± 1.302e+02
Mean 0.0009594 ± 0.0000176
Sigma 0.012 ± 0.000
sh.x - tr.x (m)


Horizontal Position Difference (el. cut)
χ² / ndf 1.301e+04 / 27
Prob 0
Constant 7.564e+04 ± 1.268e+02
Mean 0.001715 ± 0.000018
Sigma 0.01224 ± 0.00001
sh.y - tr.y (m)

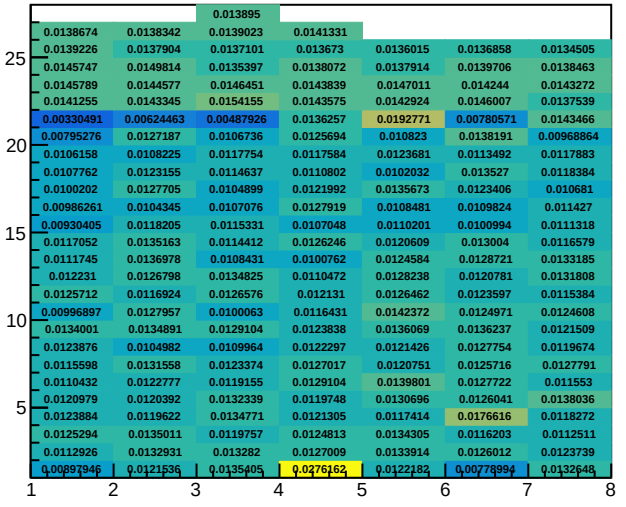

Vertical Pos. Diff. | After Calib. (el. cut)
χ² / ndf 1.472e+04 / 34
Prob 0
Constant 7.637e+04 ± 1.288e+02
Mean 0.0009278 ± 0.0000178
Sigma 0.01208 ± 0.00001
sh.x - tr.x (m)


Horizontal Pos. Diff. | After Calib. (el. cut)
χ² / ndf 1.442e+04 / 26
Prob 0
Constant 7.49e+04 ± 1.25e+02
Mean 0.001735 ± 0.000018
Sigma 0.01232 ± 0.00001
sh.y - tr.y (m)

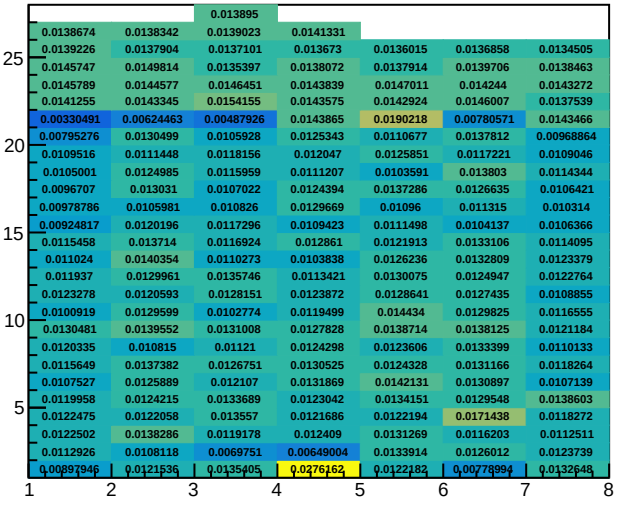

E/p vs Run no. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13450
13451
13452
13482
13483
13484
13485
13486
13487
13488
13489
13490
2500
2000
1500
1000
500
0


E/p vs Run no. | After Calib. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13450
13451
13452
13482
13483
13484
13485
13486
13487
13488
13489
13490
2500
2000
1500
1000
500
0

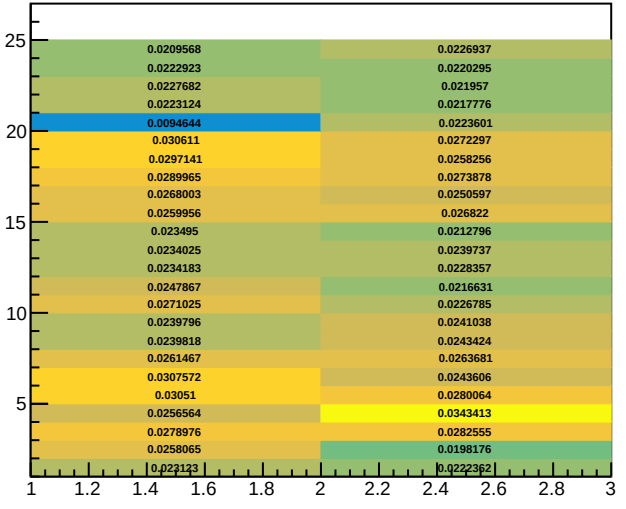
Old ADC Gain Coefficients | SH



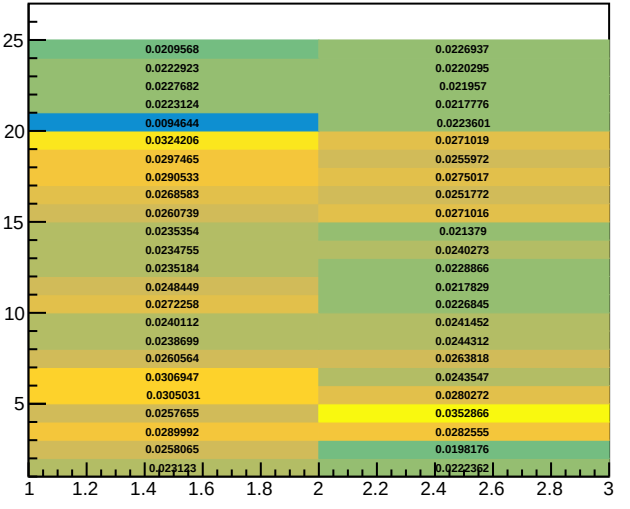
New ADC Gain Coefficients | SH

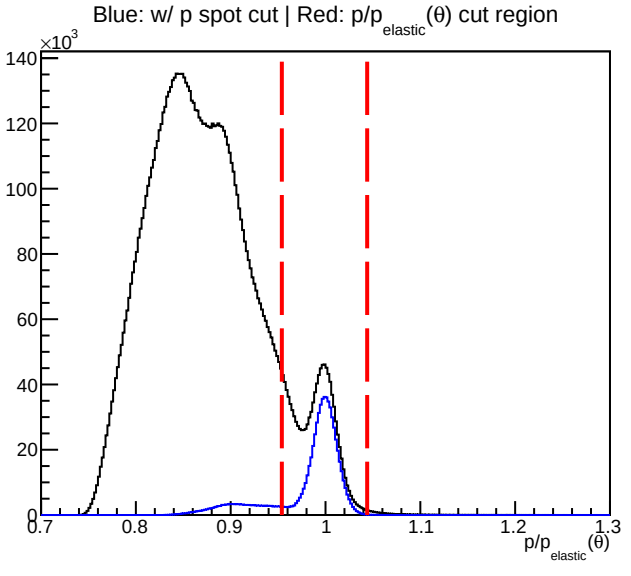


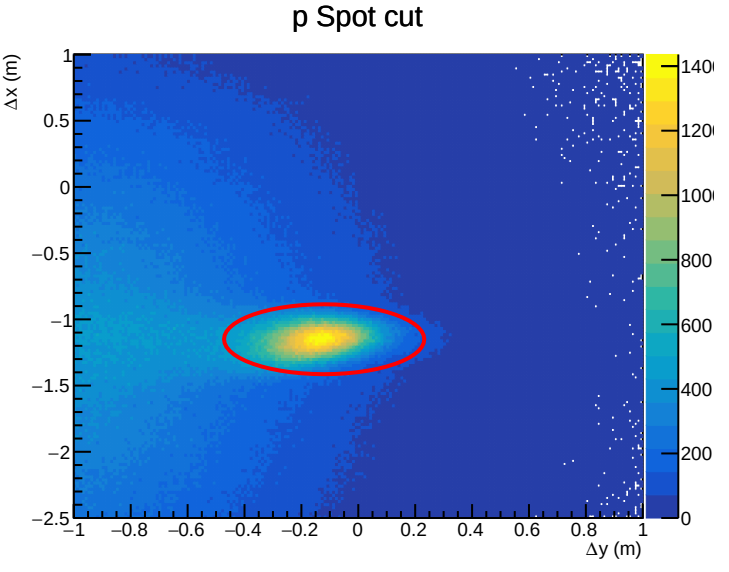
Old ADC Gain Coefficients | PS

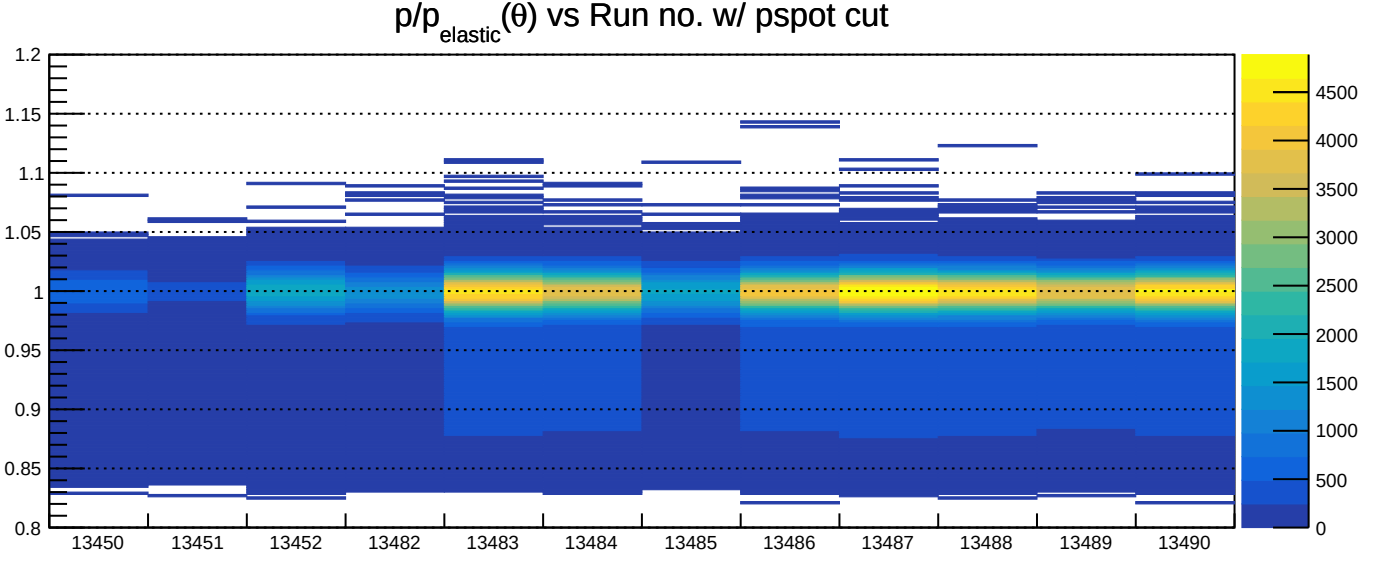


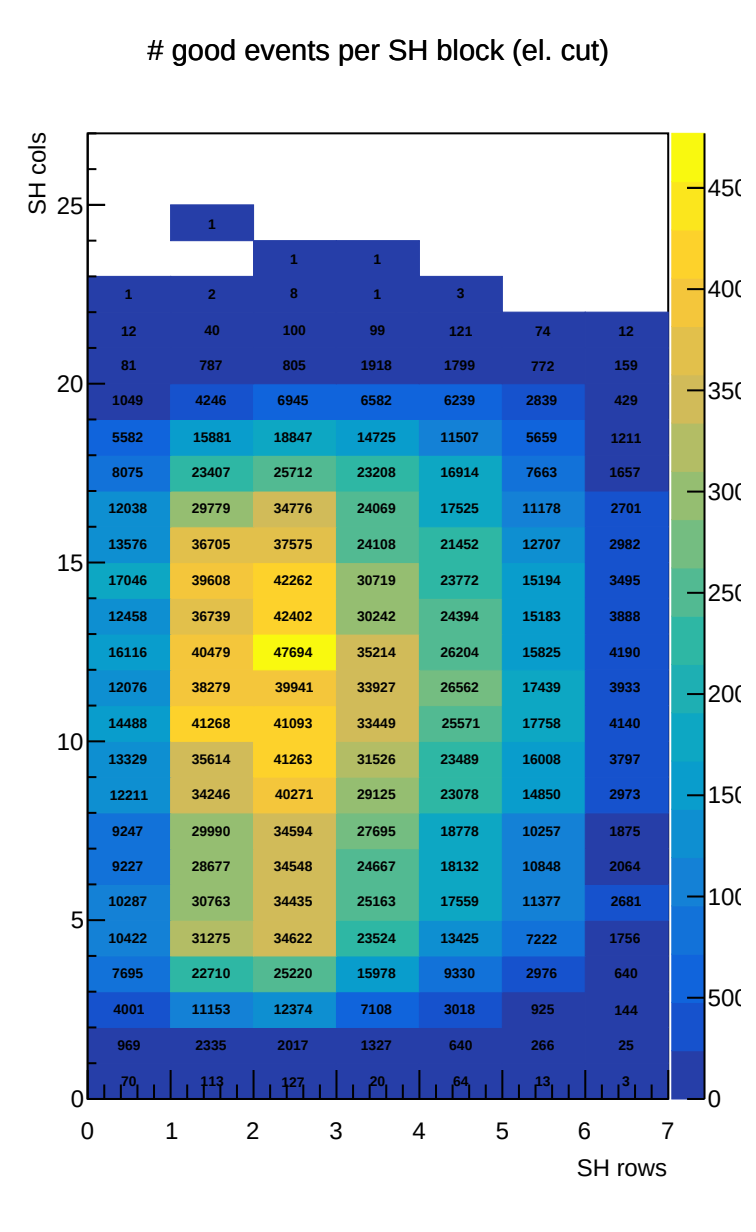
New ADC Gain Coefficients | PS

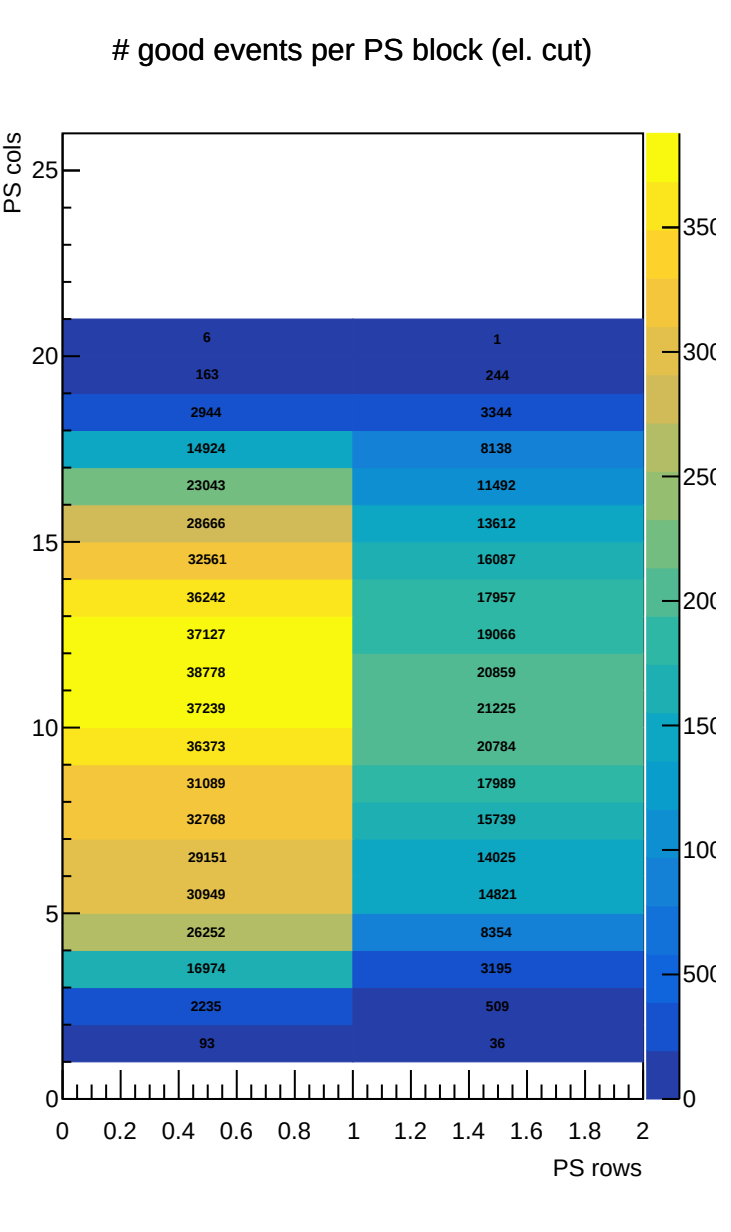



Blue: w/ p spot cut | Red: p/p_elastic(θ) cut region
×10^3
140
120
100
80
60
40
20
0
0.7
0.8
0.9
1
1.1
1.2
1.3
p/p_elastic(θ)

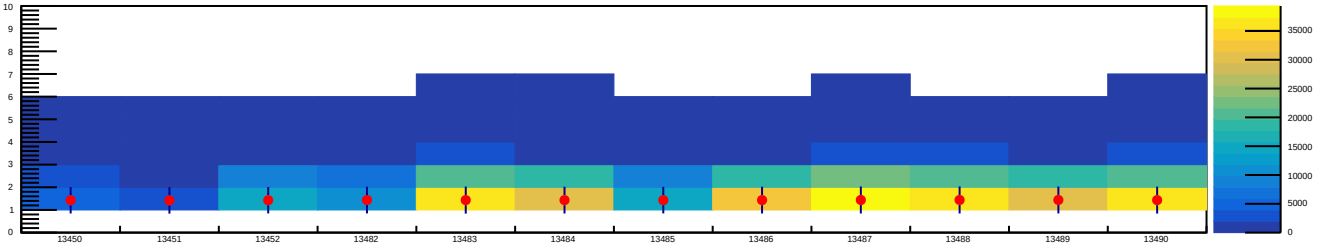

p Spot cut
Δx (m)
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
−1
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1
Δy (m)
1400
1200
1000
800
600
400
200
0


p/p_elastic(θ) vs Run no. w/ pspot cut
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
13450
13451
13452
13482
13483
13484
13485
13486
13487
13488
13489
13490
4500
4000
3500
3000
2500
2000
1500
1000
500
0

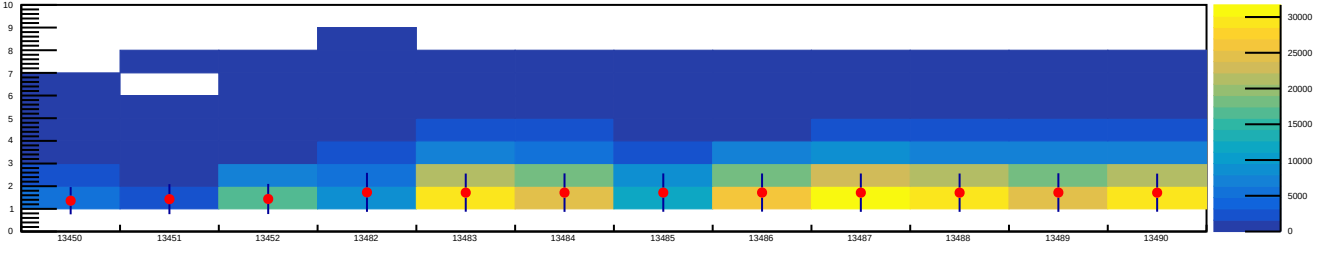

good events per SH block (el. cut)
SH cols
SH rows
0 1 2 3 4 5 6 7
0 5 10 15 20 25
1
1 1
1 2 8 1 3
12 40 100 99 121 74 12
81 787 805 1918 1799 772 159
1049 4246 6945 6582 6239 2839 429
5582 15881 18847 14725 11507 5659 1211
8075 23407 25712 23208 16914 7663 1657
12038 29779 34776 24069 17525 11178 2701
13576 36705 37575 24108 21452 12707 2982
17046 39608 42262 30719 23772 15194 3495
12458 36739 42402 30242 24394 15183 3888
16116 40479 47694 35214 26204 15825 4190
12076 38279 39941 33927 26562 17439 3933
14488 41268 41093 33449 25571 17758 4140
13329 35614 41263 31526 23489 16008 3797
12211 34246 40271 29125 23078 14850 2973
9247 29990 34594 27695 18778 10257 1875
9227 28677 34548 24667 18132 10848 2064
10287 30763 34435 25163 17559 11377 2681
10422 31275 34622 23524 13425 7222 1756
7695 22710 25220 15978 9330 2976 640
4001 11153 12374 7108 3018 925 144
969 2335 2017 1327 640 266 25
70 113 127 20 64 13 3
0 50 100 150 200 250 300 350 400 450


good events per PS block (el. cut)
PS cols
PS rows
0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8 2
0 5 10 15 20 25
6 1
163 244
2944 3344
14924 8138
23043 11492
28666 13612
32561 16087
36242 17957
37127 19066
38778 20859
37239 21225
36373 20784
31089 17989
32768 15739
29151 14025
30949 14821
26252 8354
16974 3195
2235 509
93 36
0 50 100 150 200 250 300 350

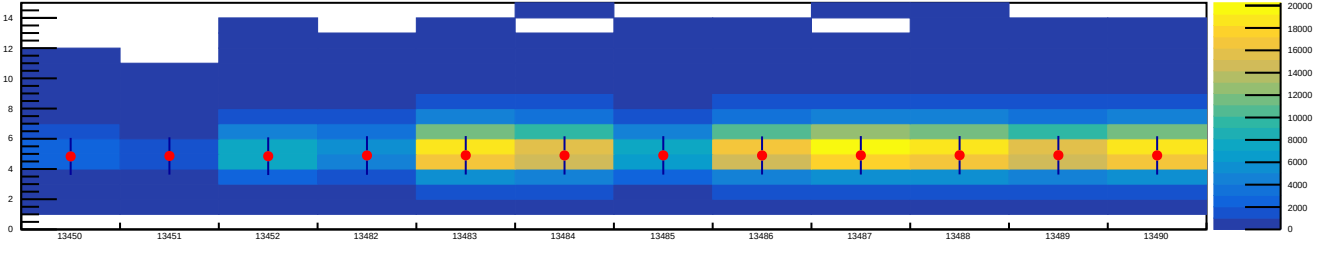
PS (best) cluster size vs Run no. (el. cut)



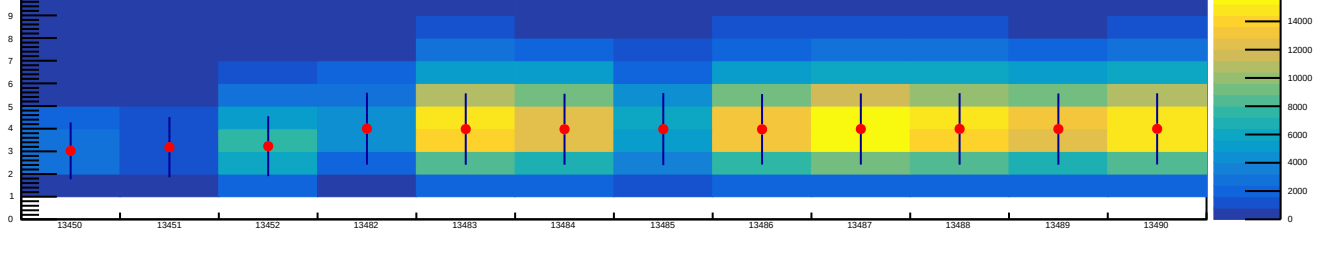
PS cluster multiplicity vs Run no. (el. cut)



SH (best) cluster size vs Run no. (el. cut)



SH cluster multiplicity vs Run no. (el. cut)



Date of creation: 12/12/2023

Configfile: BBCal_replay/macros/Combined_macros/cfg/sbs8-sbs70p-set1.cfg

Total # events analyzed: 24034193, Preparing for replay pass: 2

E/p (before calib.) | μ = 0.98, σ = (5.353 $\pm$ 0.011) p

E/p (after calib.) | μ = 0.99, σ = (5.385 $\pm$ 0.011) p

Global cuts:

bb.tr.n==1, abs(bb.tr.vz[0])<0.08, bb.gem.track.nhits>3,
abs(bb.tr.r_x[0]-0.9*bb.tr.r_th[0]+0.035)<0.345,
PS cluster energy > 0.2 GeV
p_recon > 2.9 GeV/c

 # events passed global cuts: 9930005

Elastic cuts:

$|p/p_{el}(\theta) - 0.999| \leq 3.0*0.015$

proton spot cut ranges:

Δx (m): Mean = -1.1500, 2.0σ = 0.1320
Δy (m): Mean = -0.1200, 2.0σ = 0.1760

 # events passed global & elastic cuts: 585719

Other cuts:

Minimum # events per block: 1200 | Cluster hit threshold: 0.02 GeV (SH), 0.01 GeV (PS)
Cluster tmax cut: 10.0 ns (SH), 10.0 ns (PS) | Cluster energy fraction cut: 0.0 GeV (SH), 0.0 GeV (PS)

Various offsets:

Momentum fudge factor: 1.00, BBCAL cluster energy scale factor: 1.00

Macro processing time: CPU 2058.1s | Real 4011.0s