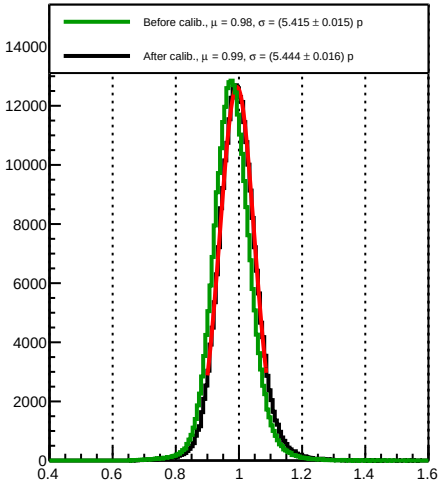
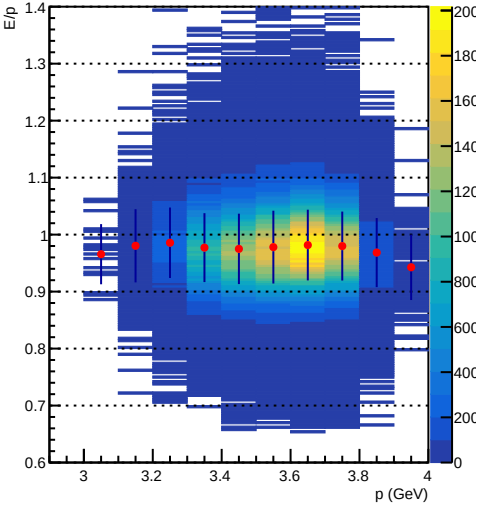
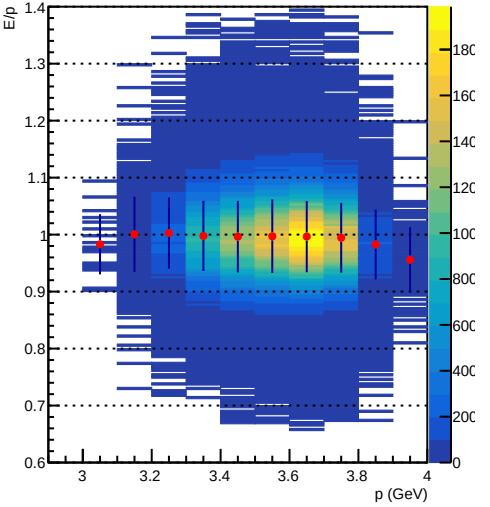
E/p (el. cut)



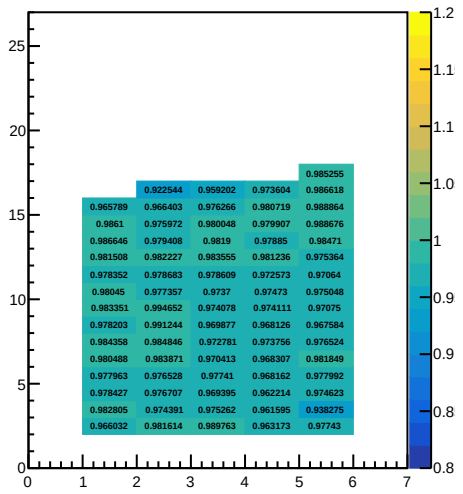
E/p vs p (el. cut)



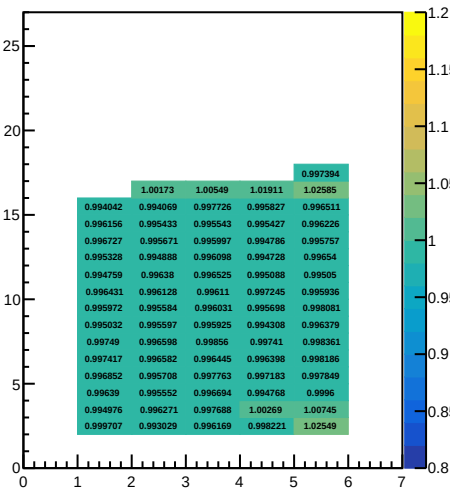
E/p vs p | After Calib. (el. cut)



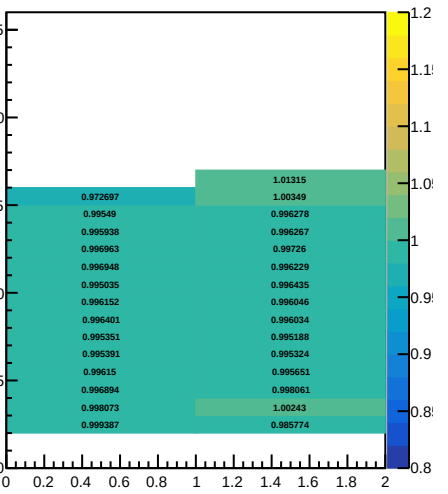
E/p per SH block (el. cut)



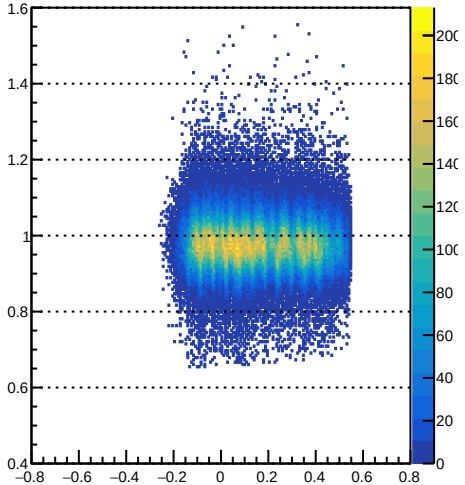
E/p per SH block | After Calib. (el. cut)



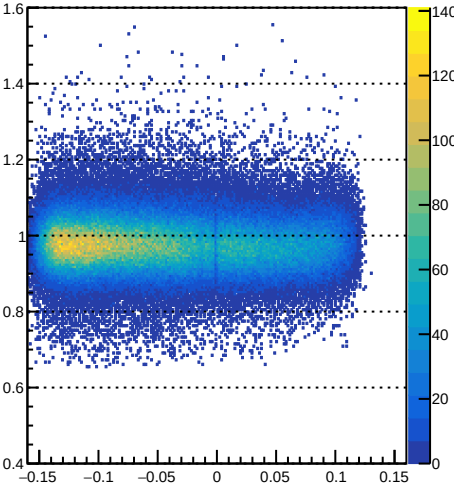
E/p per PS block | After Calib. (el. cut)



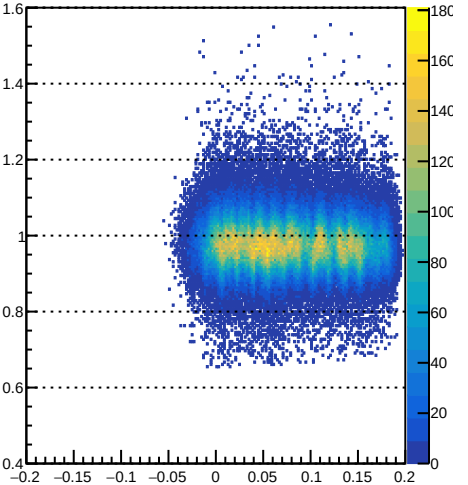
E/p vs Track x (el. cut)



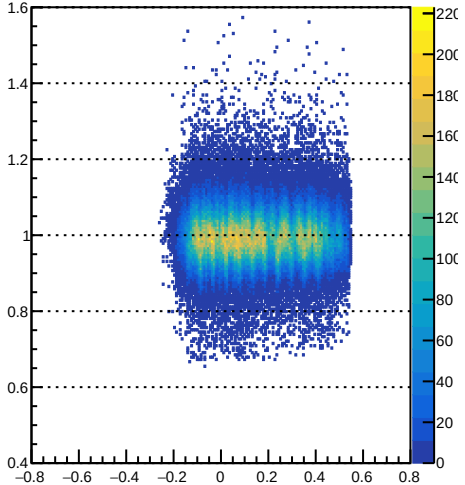
E/p vs Track y (el. cut)



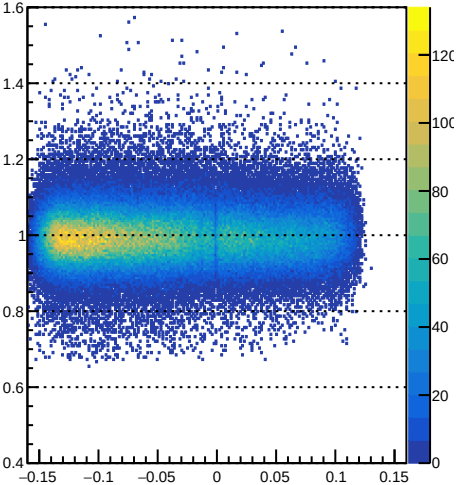
E/p vs Track theta (el. cut)



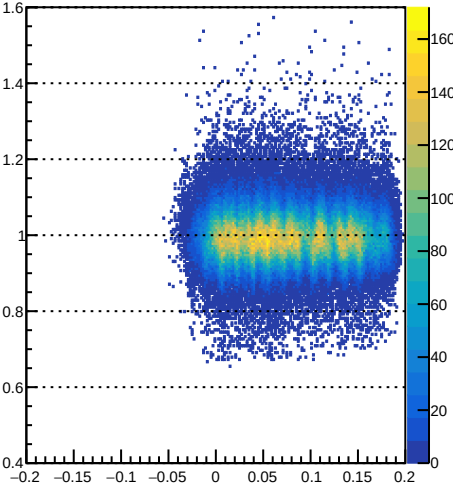
E/p vs Track x | After Calib. (el. cut)



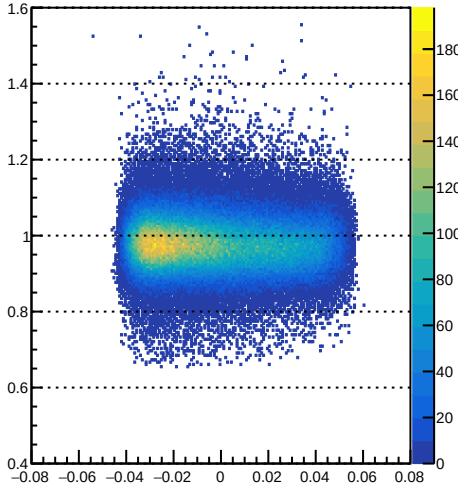
E/p vs Track y | After Calib. (el. cut)



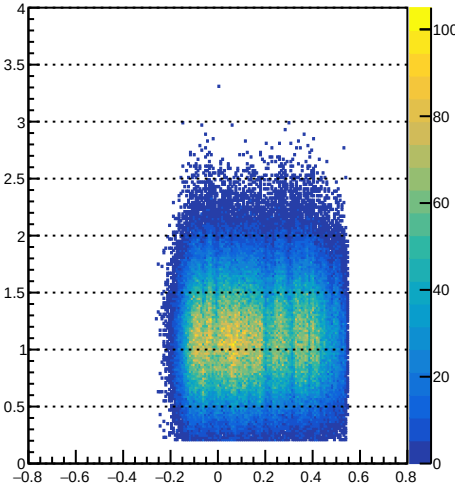
E/p vs Track theta | After Calib. (el. cut)



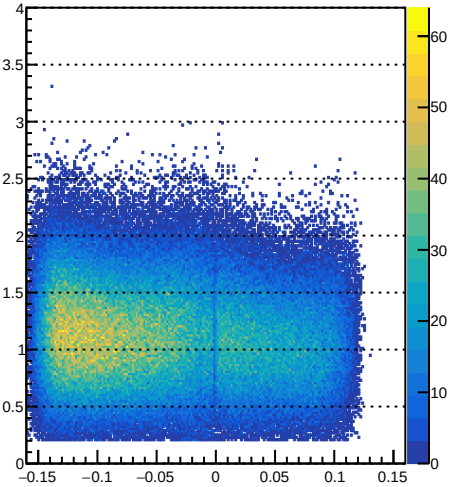
E/p vs Track phi (el. cut)



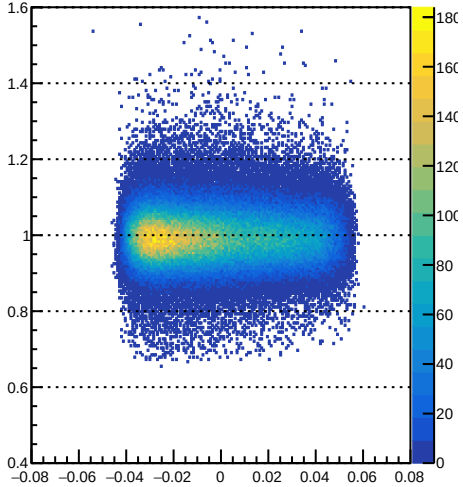
PS energy vs Track x (el. cut)



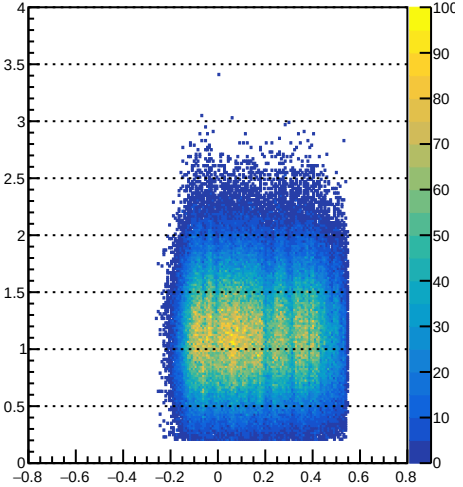
PS energy vs Track y (el. cut)



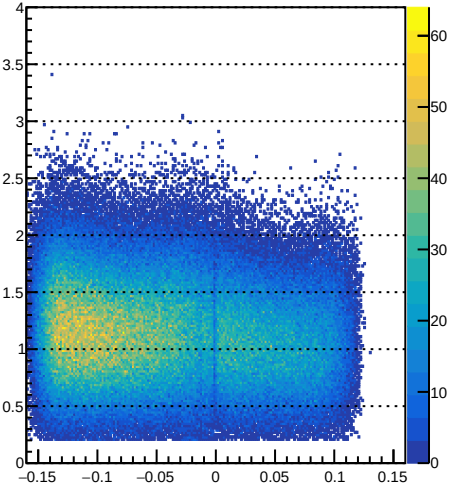
E/p vs Track phi | After Calib. (el. cut)

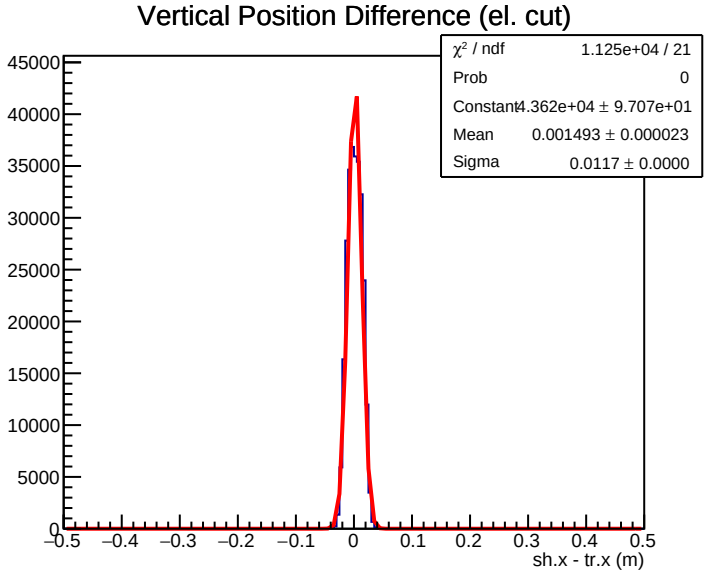


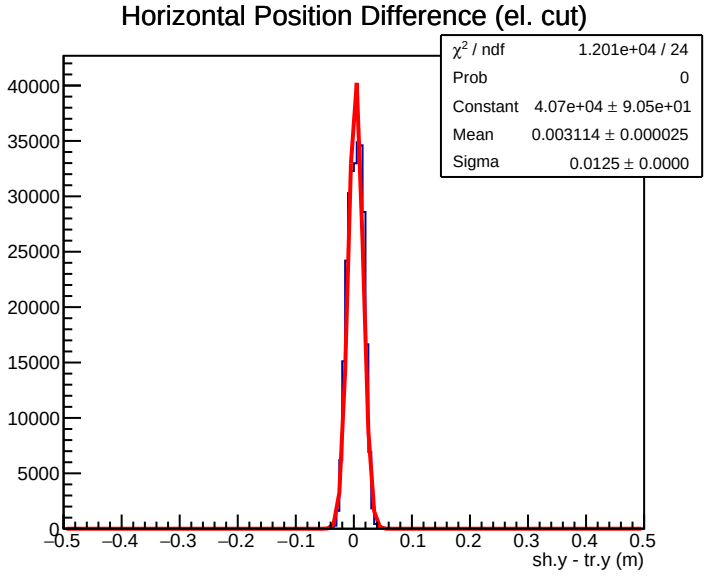
PS energy vs Track x | After Calib. (el. cut)

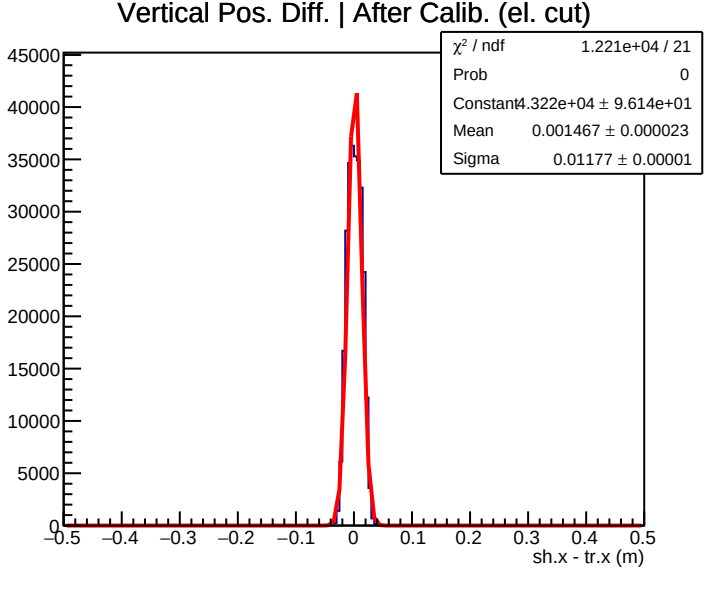


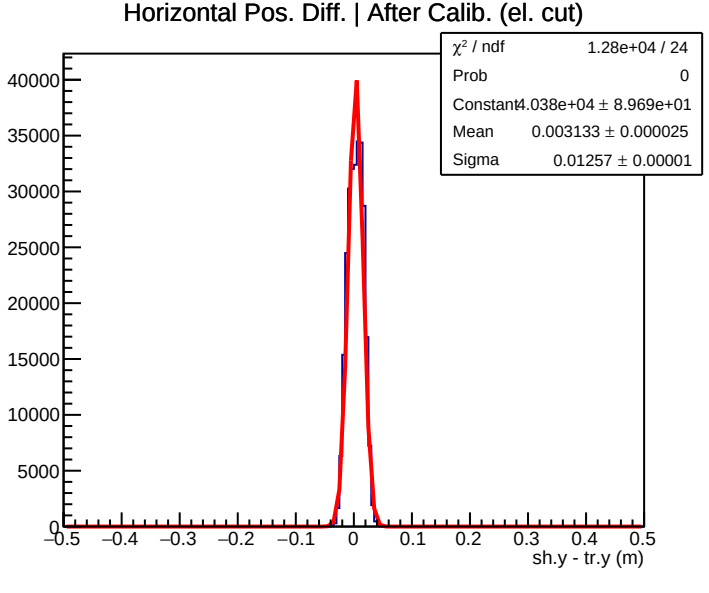
PS energy vs Track y | After Calib. (el. cut)

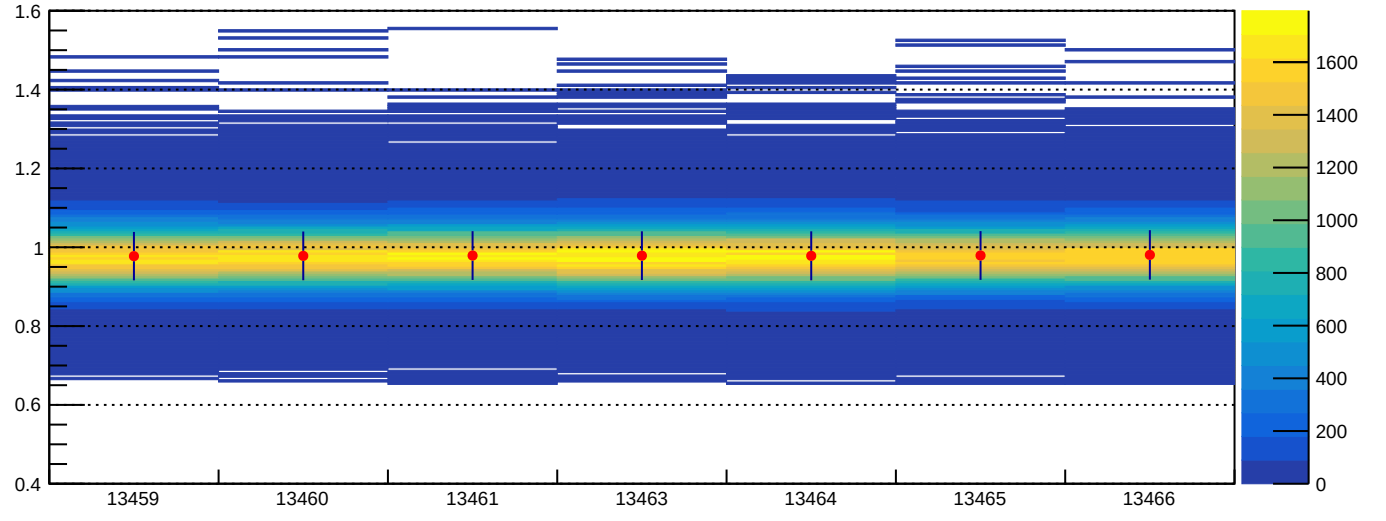


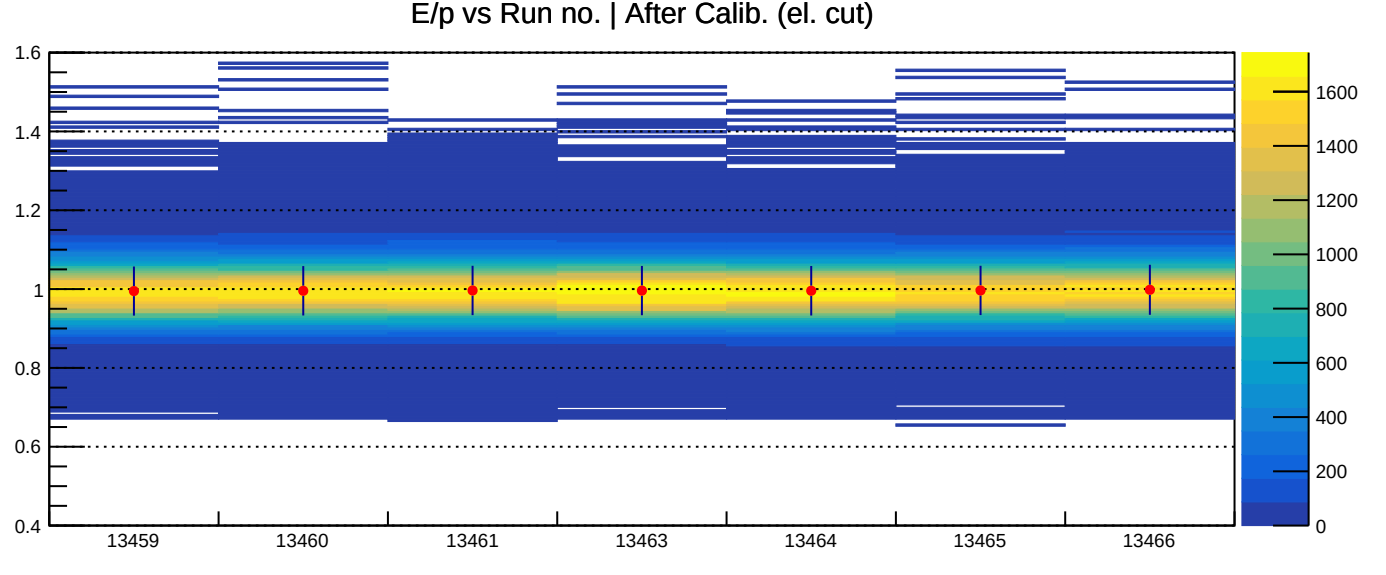

Vertical Position Difference (el. cut)
χ² / ndf 1.125e+04 / 21
Prob 0
Constant 4.362e+04 ± 9.707e+01
Mean 0.001493 ± 0.000023
Sigma 0.0117 ± 0.0000
sh.x - tr.x (m)


Horizontal Position Difference (el. cut)
χ² / ndf 1.201e+04 / 24
Prob 0
Constant 4.07e+04 ± 9.05e+01
Mean 0.003114 ± 0.000025
Sigma 0.0125 ± 0.0000
sh.y - tr.y (m)

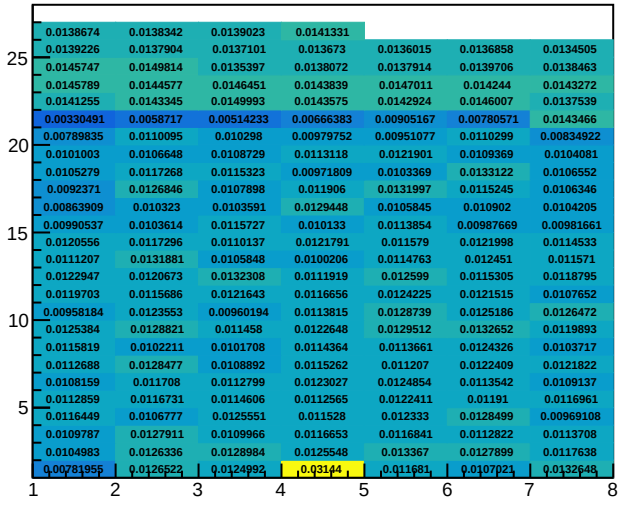

Vertical Pos. Diff. | After Calib. (el. cut)
χ² / ndf 1.221e+04 / 21
Prob 0
Constant 4.322e+04 ± 9.614e+01
Mean 0.001467 ± 0.000023
Sigma 0.01177 ± 0.00001
sh.x - tr.x (m)


Horizontal Pos. Diff. | After Calib. (el. cut)
χ² / ndf 1.28e+04 / 24
Prob 0
Constant 4.038e+04 ± 8.969e+01
Mean 0.003133 ± 0.000025
Sigma 0.01257 ± 0.00001
sh.y - tr.y (m)

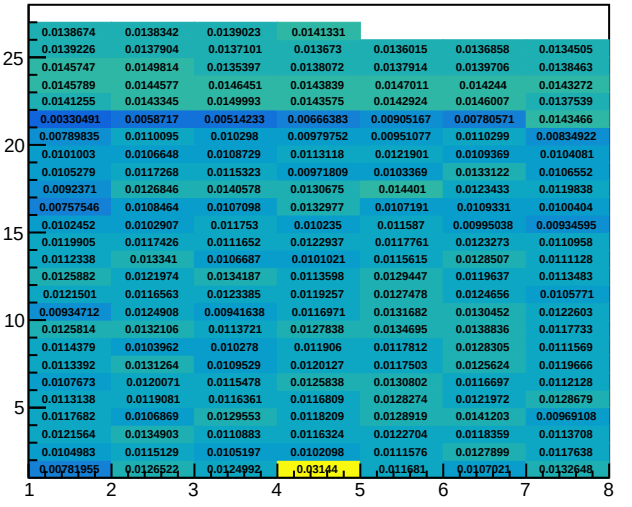

E/p vs Run no. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13459
13460
13461
13463
13464
13465
13466
1600
1400
1200
1000
800
600
400
200
0


E/p vs Run no. | After Calib. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13459
13460
13461
13463
13464
13465
13466
1600
1400
1200
1000
800
600
400
200
0

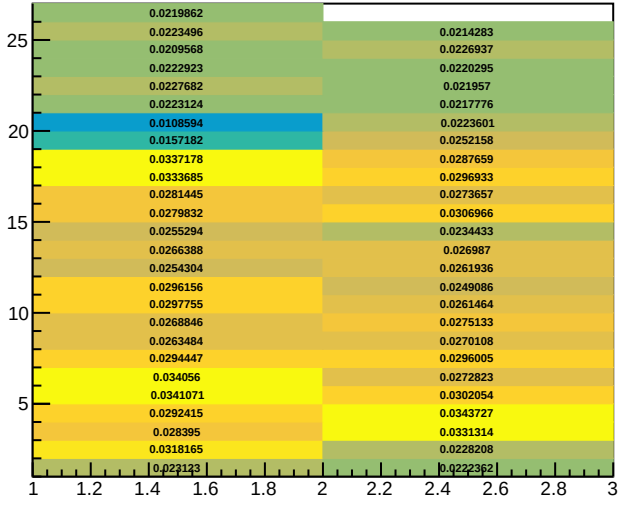
Old ADC Gain Coefficients | SH



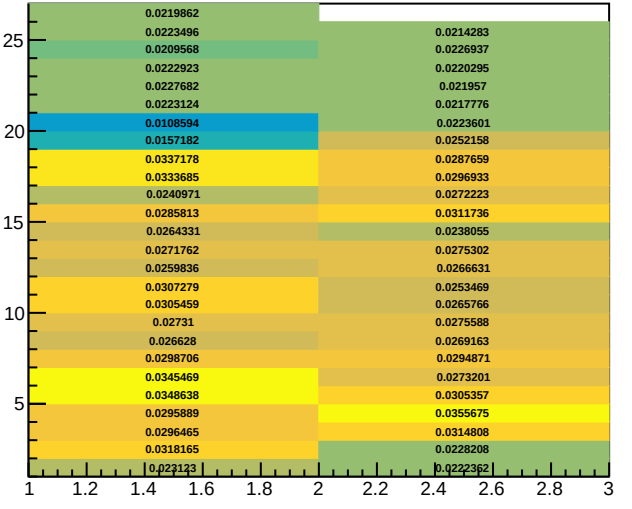
New ADC Gain Coefficients | SH

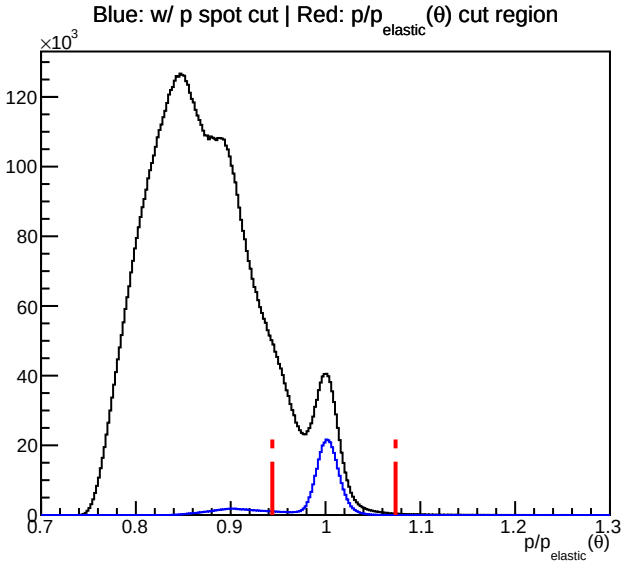


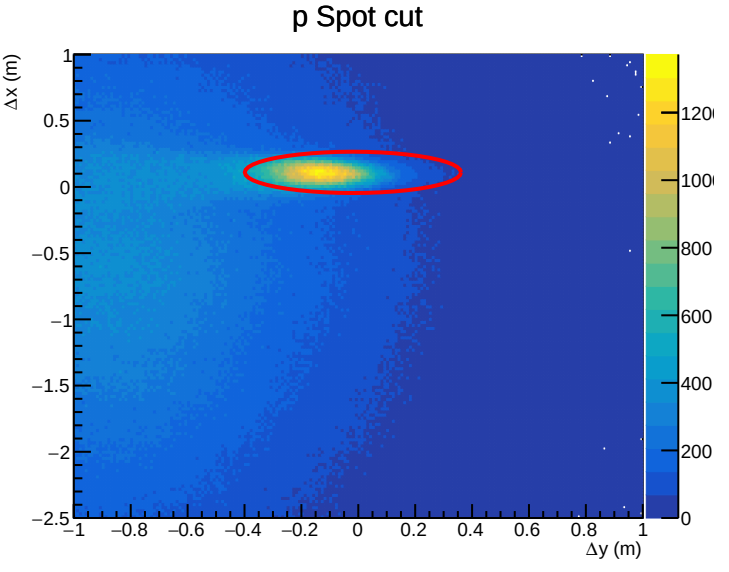
Old ADC Gain Coefficients | PS

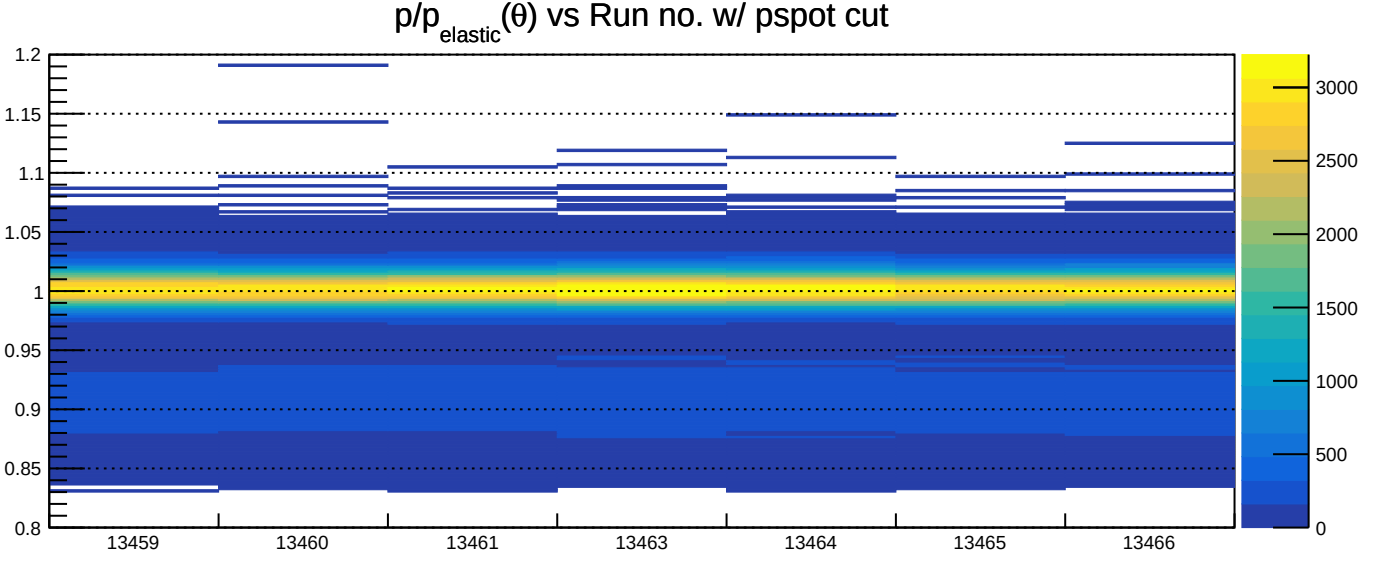


New ADC Gain Coefficients | PS

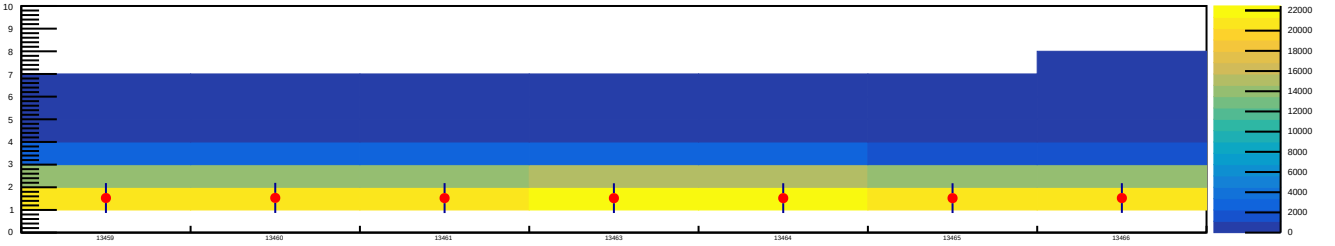



Blue: w/ p spot cut | Red: p/p_elastic(θ) cut region
×10^3
120
100
80
60
40
20
0
0.7
0.8
0.9
1
1.1
1.2
1.3
p/p_elastic(θ)

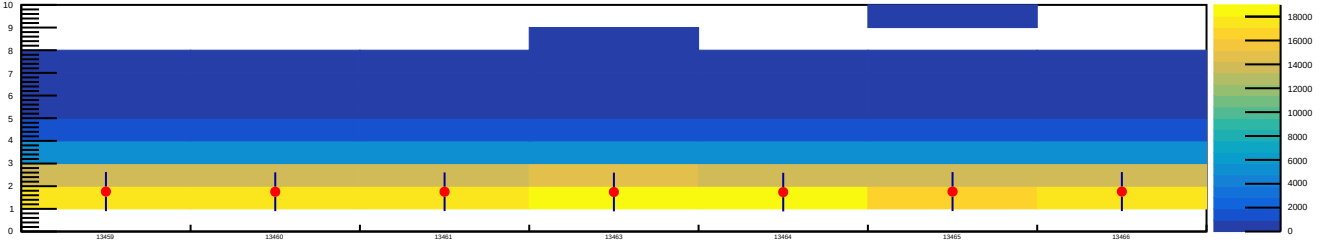

p Spot cut
Δx (m)
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
−1
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1
Δy (m)
1200
1000
800
600
400
200
0


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
13459
13460
13461
13463
13464
13465
13466
3000
2500
2000
1500
1000
500
0

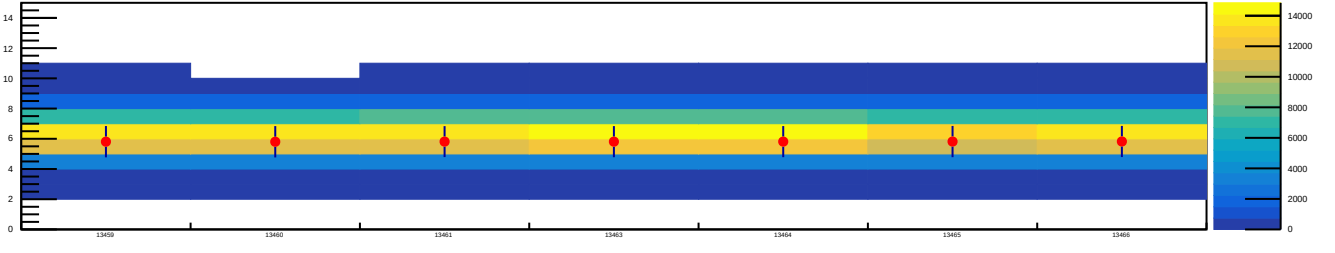
PS (best) cluster size vs Run no. (el. cut)



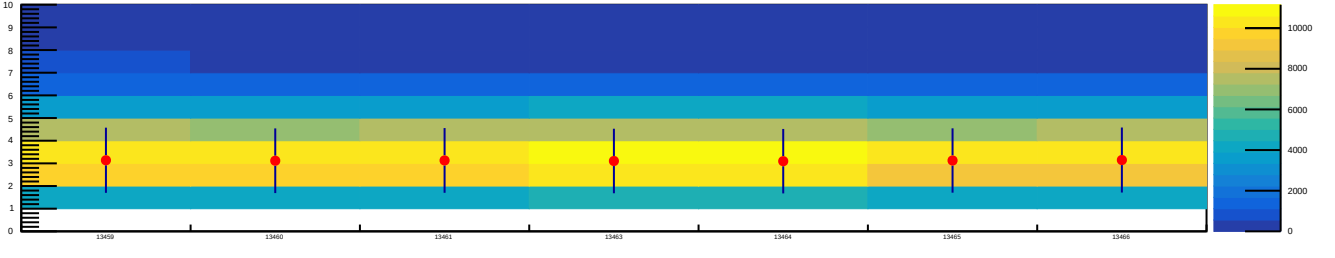
PS cluster multiplicity vs Run no. (el. cut)



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



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



Date of creation: 8/18/2023

Configfile: BBCal_replay/macros/Combined_macros/cfg/sbs8-sbs0p.cfg

Total # events analyzed: 24209121, Preparing for replay pass: 2

E/p (before calib.) | μ = 0.98, σ = (5.415 $\pm$ 0.015) p

E/p (after calib.) | μ = 0.99, σ = (5.444 $\pm$ 0.016) 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: 9278723

Elastic cuts:

$|p/p_{el}(\theta) - 1.009| \leq 5.0*0.013$

proton spot cut ranges:

Δx (m): Mean = 0.1100, 2.0σ = 0.0780
Δy (m): Mean = -0.0190, 2.0σ = 0.1900

 # events passed global & elastic cuts: 325153

Other cuts:

Minimum # events per block: 500, (Cluster) hit threshold: 0.02 GeV

Various offsets:

Momentum fudge factor: 1.00, BBCAL cluster energy scale factor: 1.00
Momentum calibration factors: A = 0.289504670, B = 1.039268300, C = 0.0, θ_{pitch}^{GEM} = 10.0^{o}, d_{BB} = 1.9747 m

Macro processing time: CPU 1491.6s | Real 2170.7s