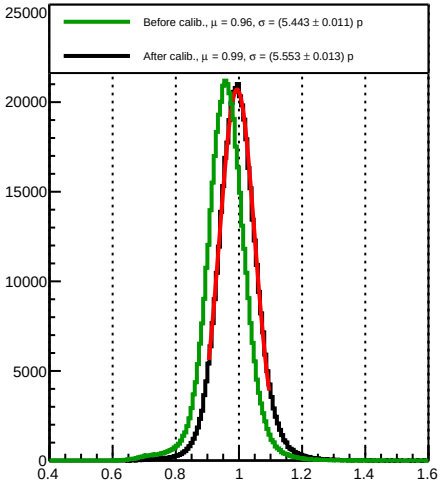
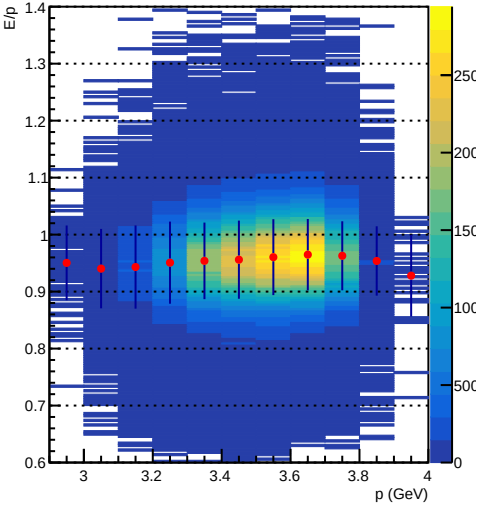
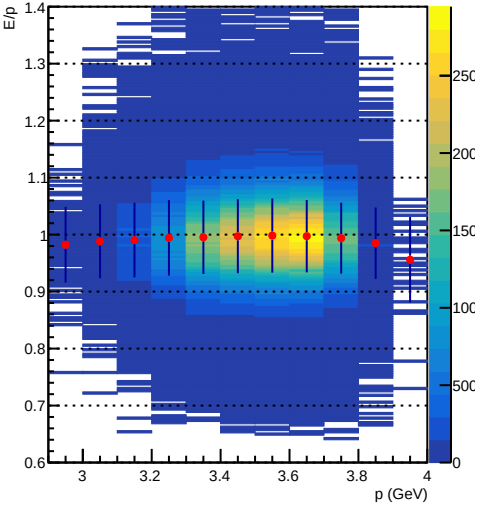
E/p (el. cut)



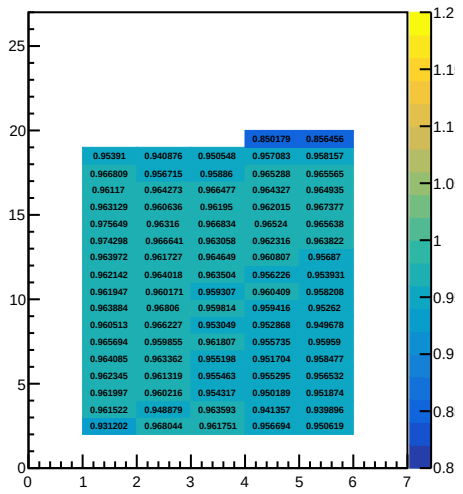
E/p vs p (el. cut)



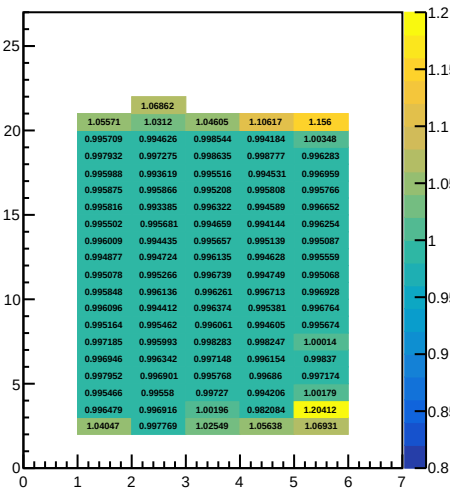
E/p vs p | After Calib. (el. cut)



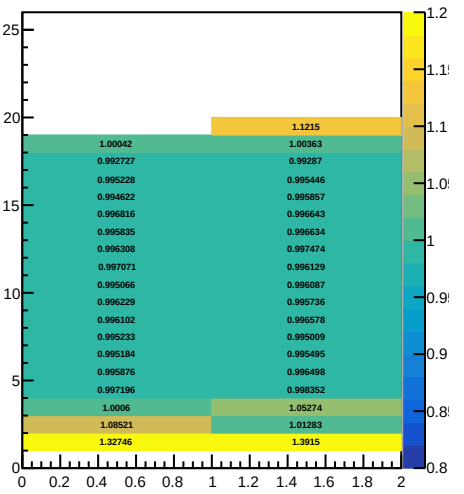
E/p per SH block (el. cut)



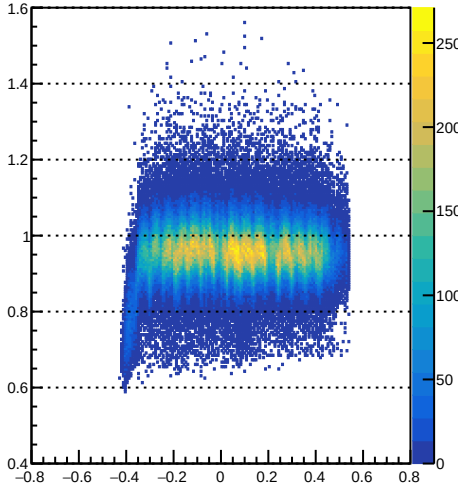
E/p per SH block | After Calib. (el. cut)



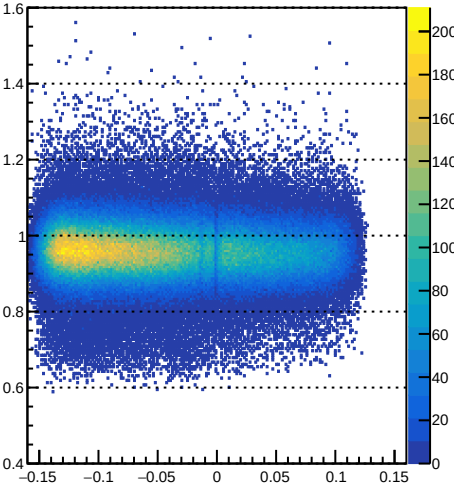
E/p per PS block | After Calib. (el. cut)



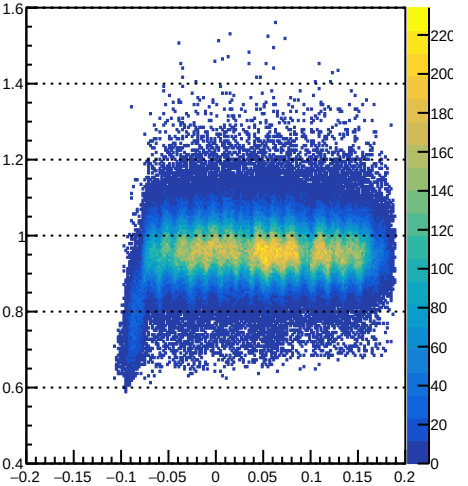
E/p vs Track x (el. cut)



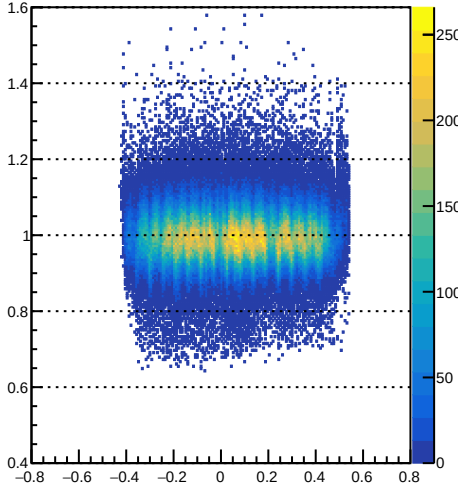
E/p vs Track y (el. cut)



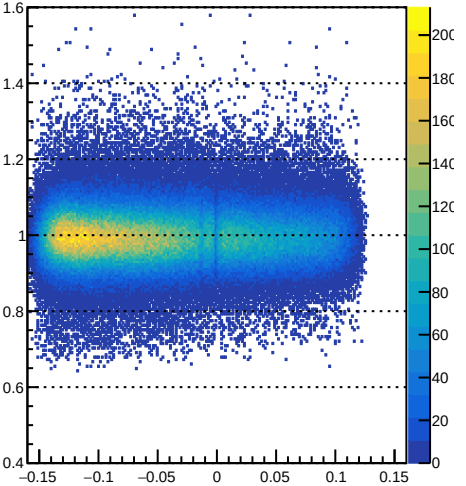
E/p vs Track theta (el. cut)



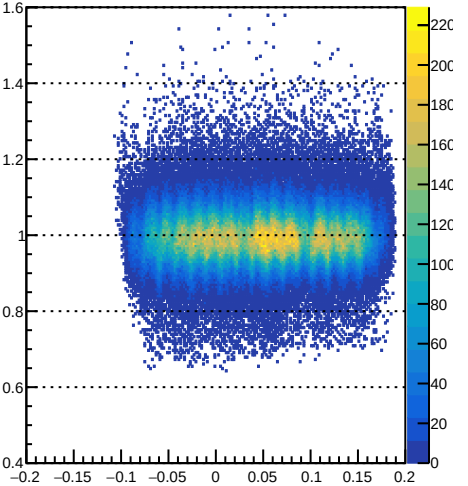
E/p vs Track x | After Calib. (el. cut)



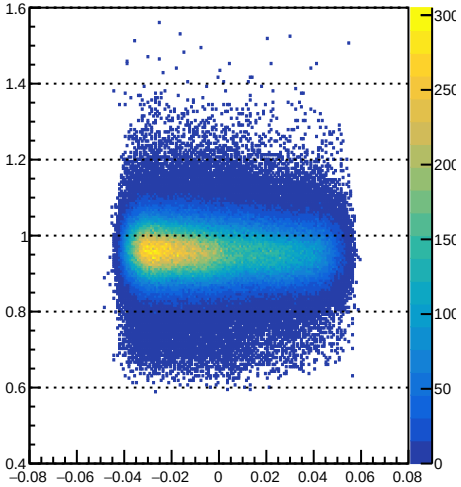
E/p vs Track y | After Calib. (el. cut)



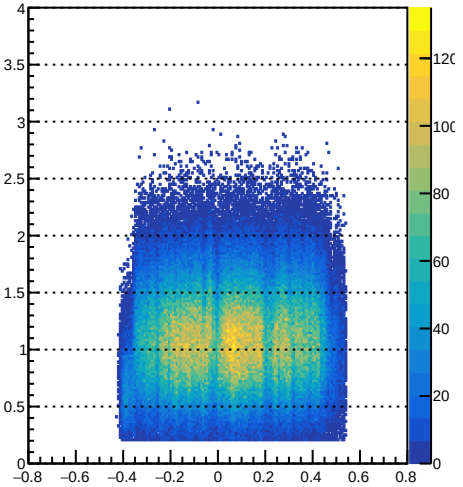
E/p vs Track theta | After Calib. (el. cut)



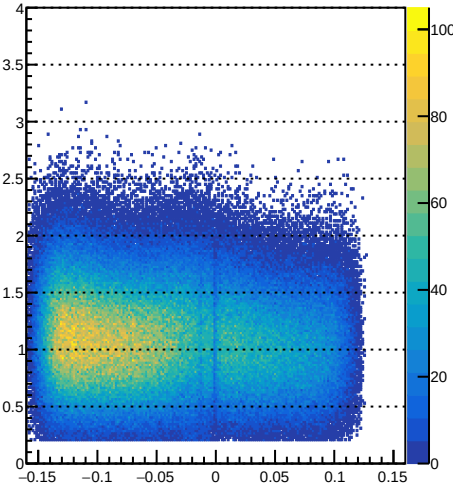
E/p vs Track phi (el. cut)



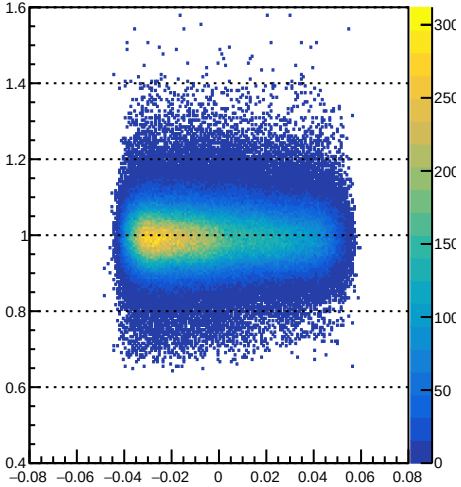
PS energy vs Track x (el. cut)



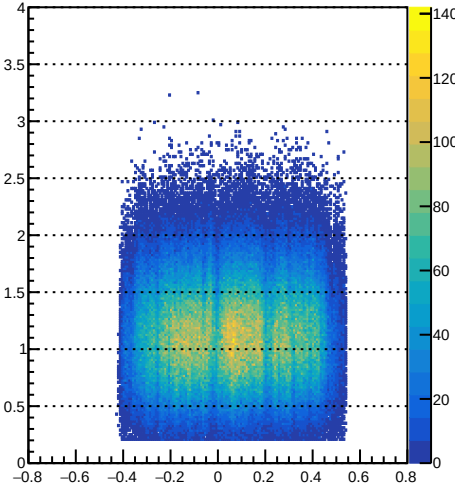
PS energy vs Track y (el. cut)



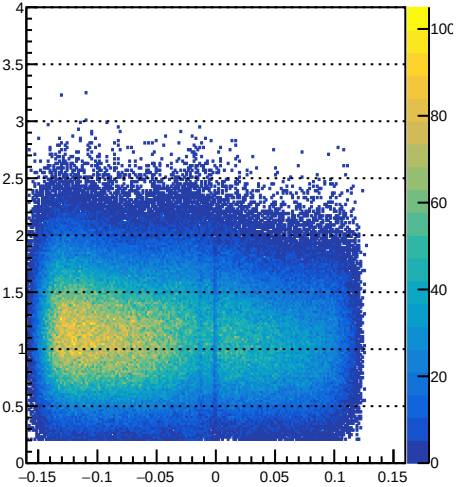
E/p vs Track phi | After Calib. (el. cut)



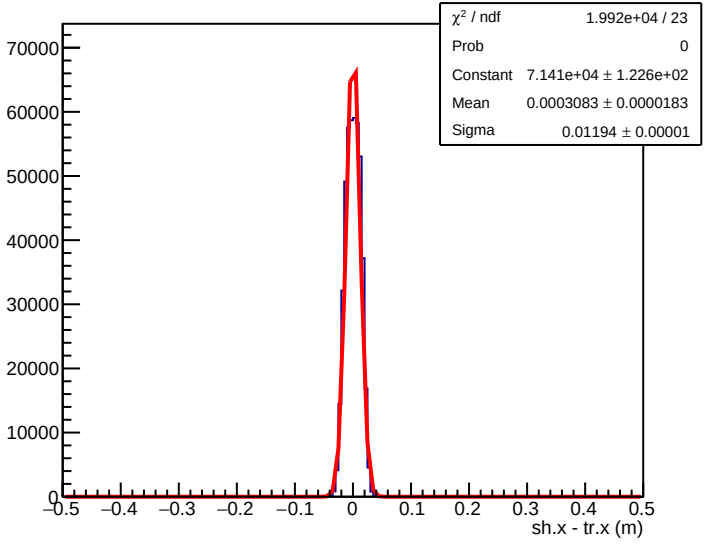
PS energy vs Track x | After Calib. (el. cut)



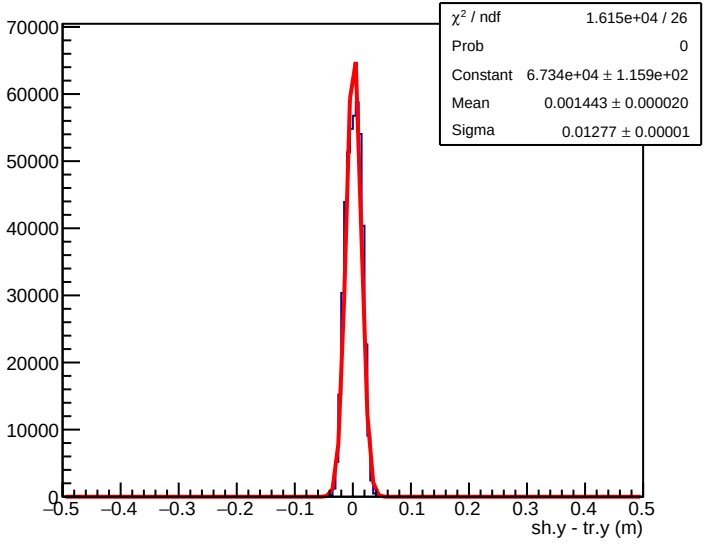
PS energy vs Track y | After Calib. (el. cut)



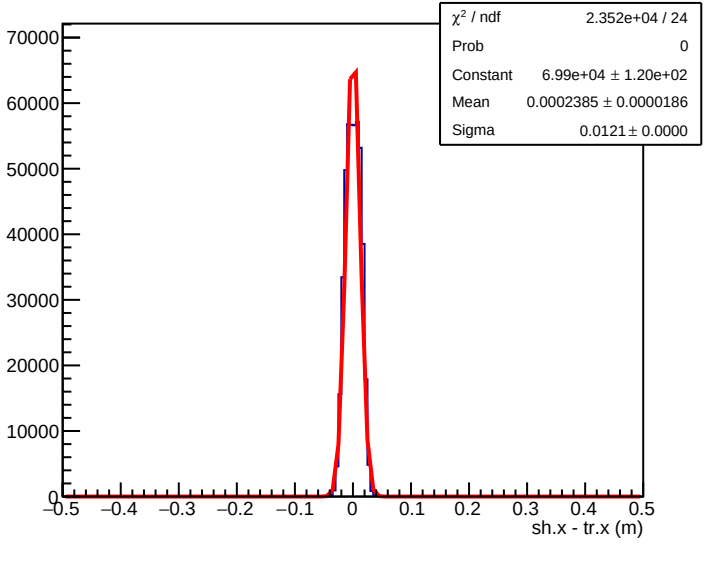
Vertical Position Difference (el. cut)



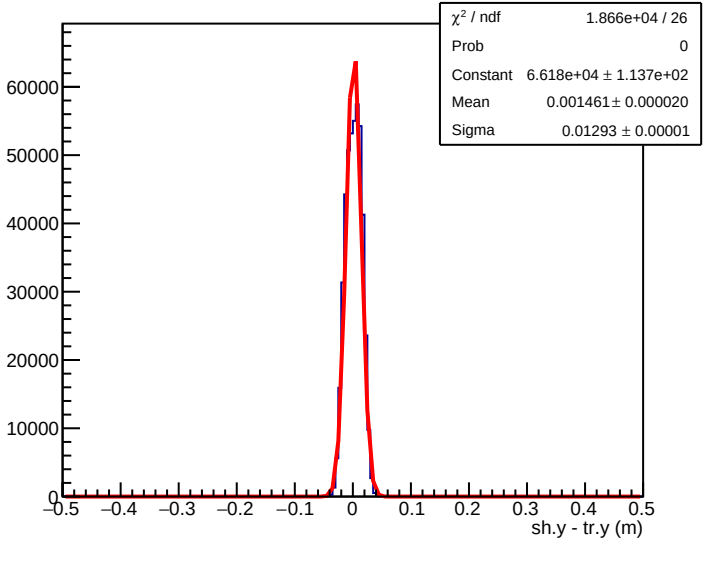
Horizontal Position Difference (el. cut)

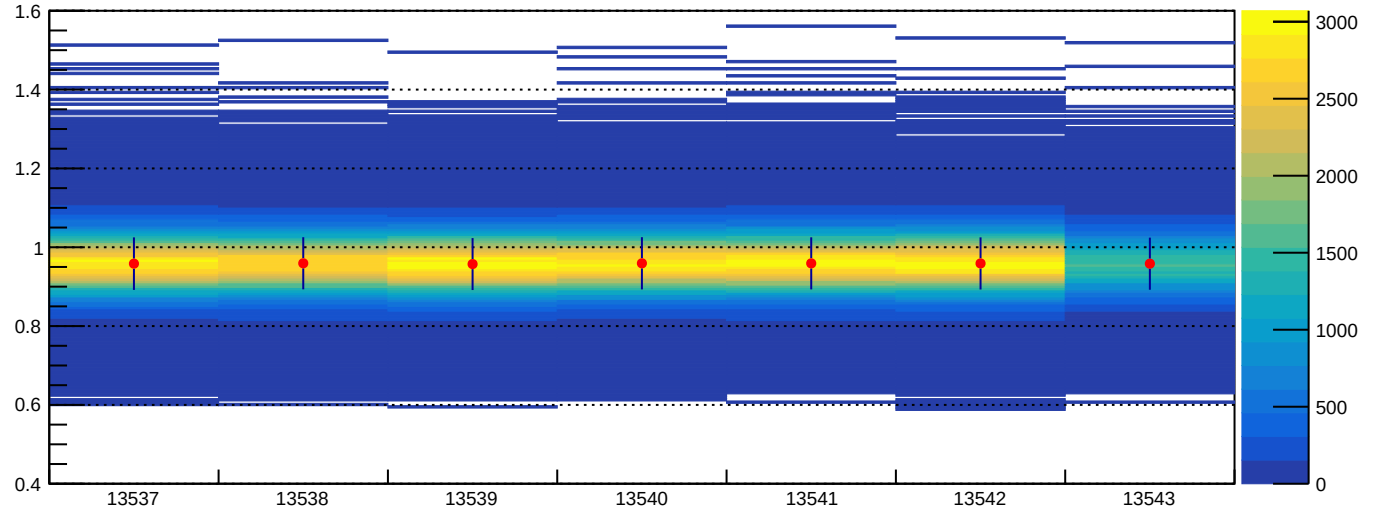


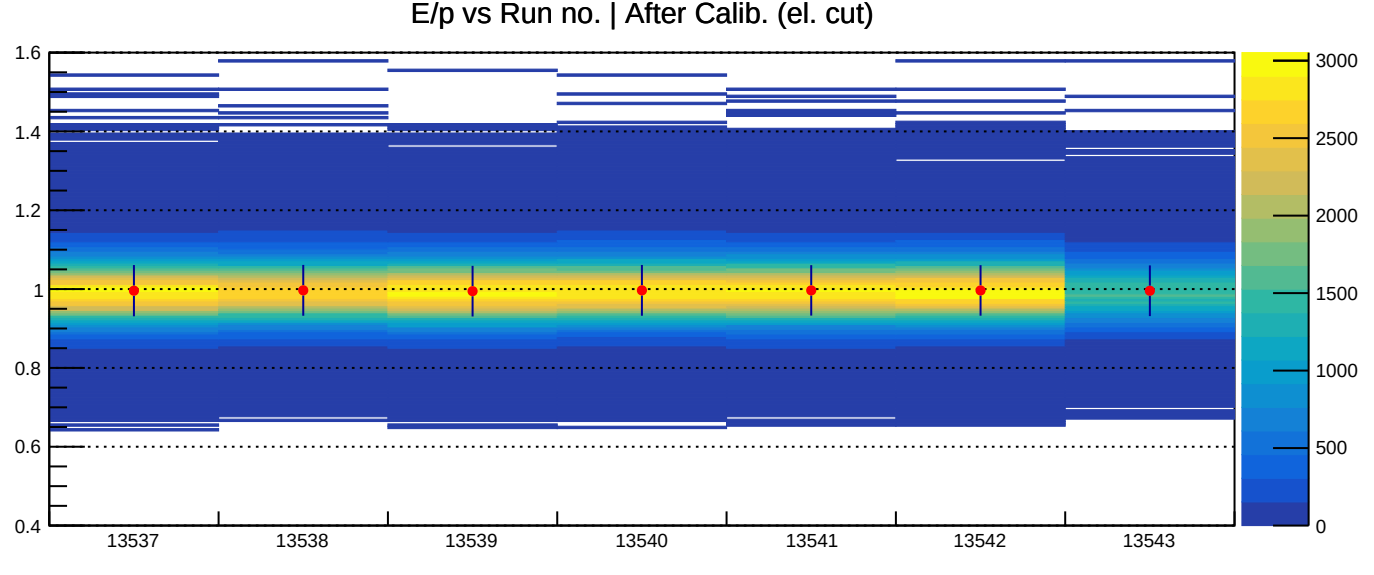
Vertical Pos. Diff. | After Calib. (el. cut)



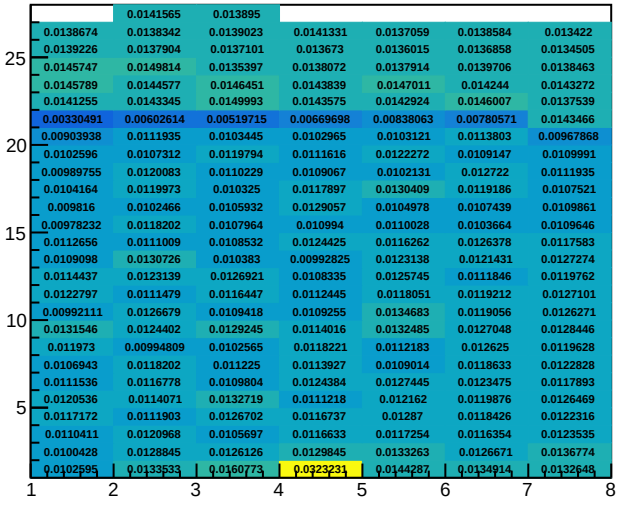
Horizontal Pos. Diff. | After Calib. (el. cut)



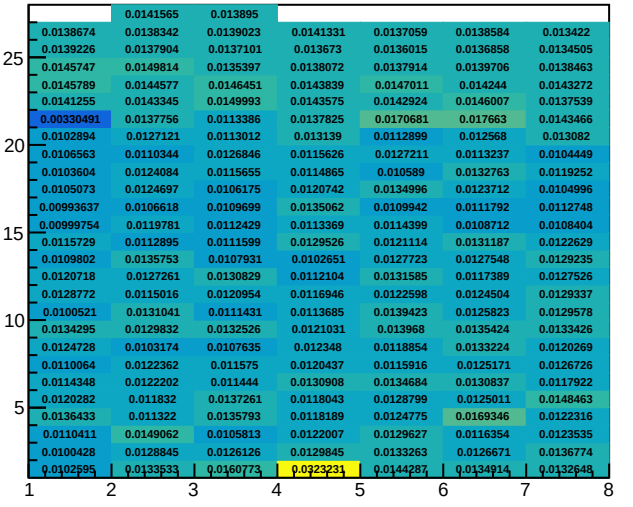

E/p vs Run no. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13537
13538
13539
13540
13541
13542
13543
3000
2500
2000
1500
1000
500
0


E/p vs Run no. | After Calib. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13537
13538
13539
13540
13541
13542
13543
3000
2500
2000
1500
1000
500
0

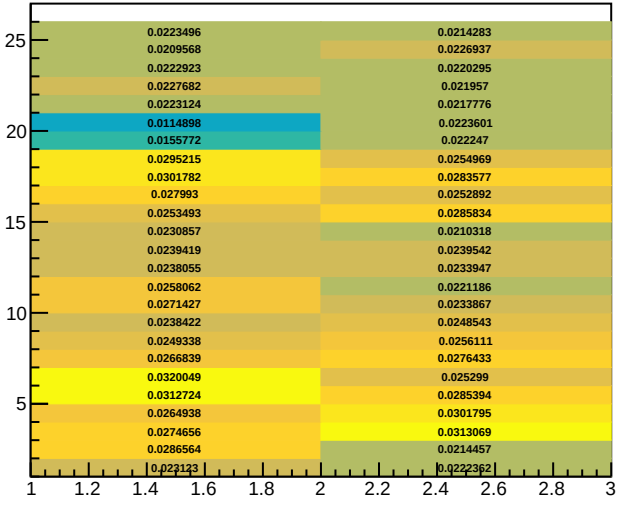
Old ADC Gain Coefficients | SH



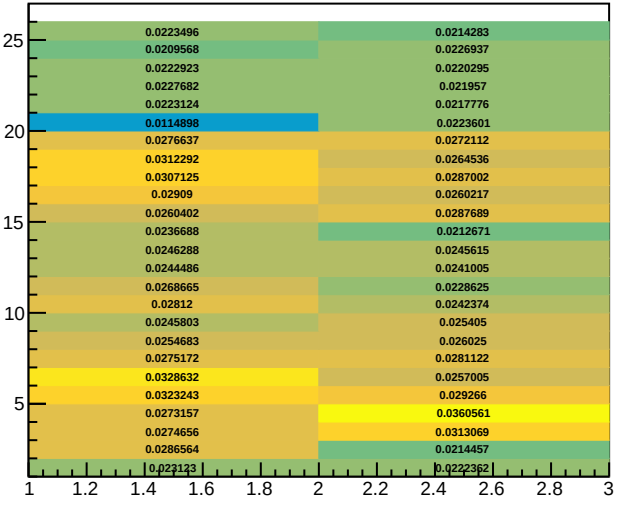
New ADC Gain Coefficients | SH

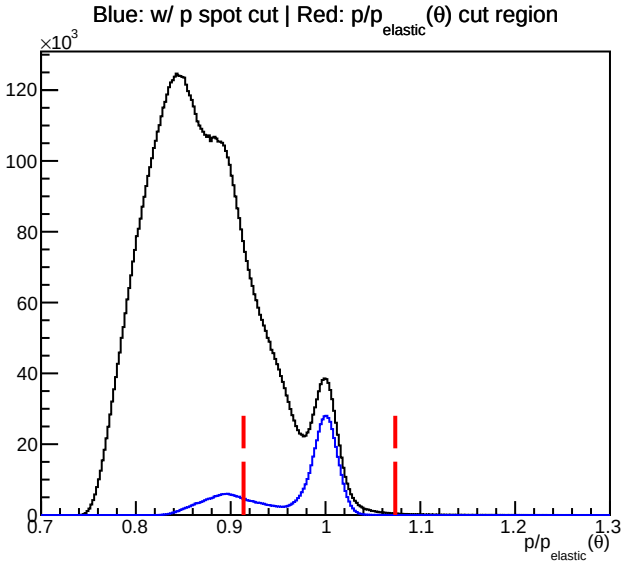


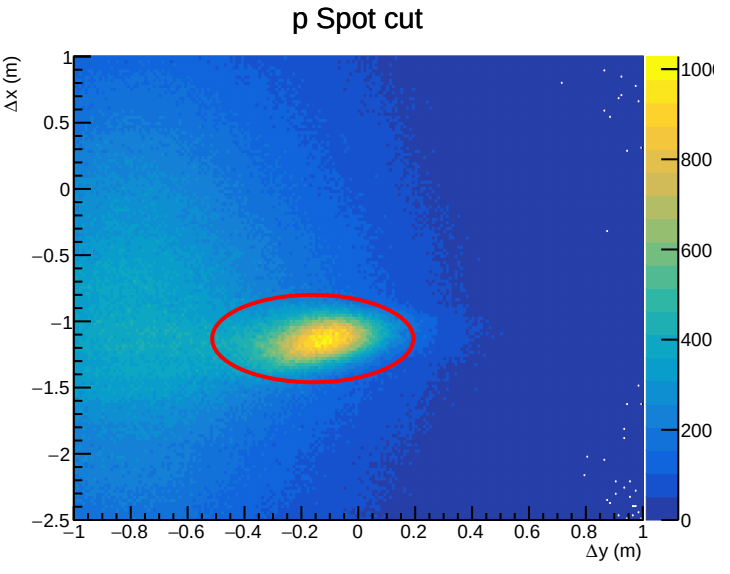
Old ADC Gain Coefficients | PS

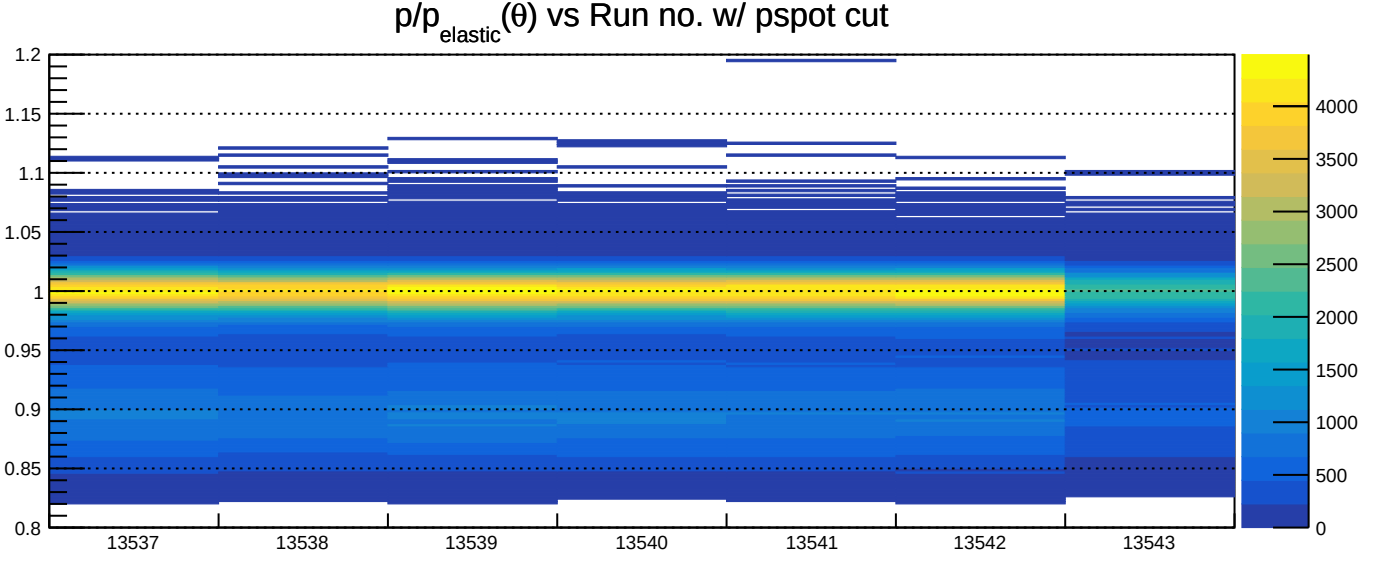


New ADC Gain Coefficients | PS

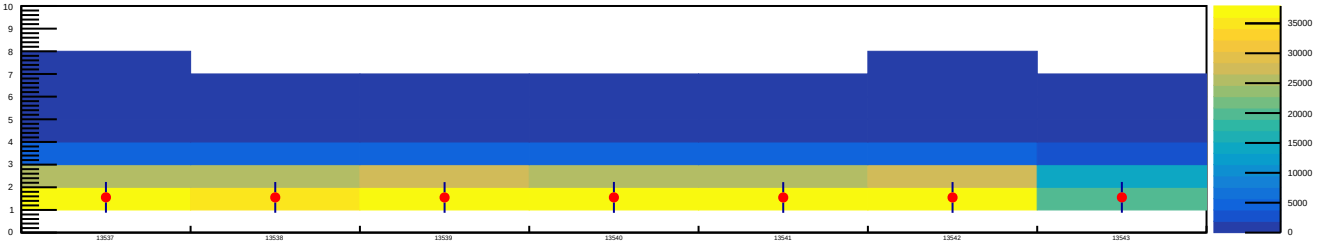



Blue: w/ p spot cut | Red: p/p_elastic(θ) cut region
×10^3
120
100
80
60
40
20
0
0.7
0.8
0.9
1
1.1
1.2
1.3
p/p_elastic(θ)

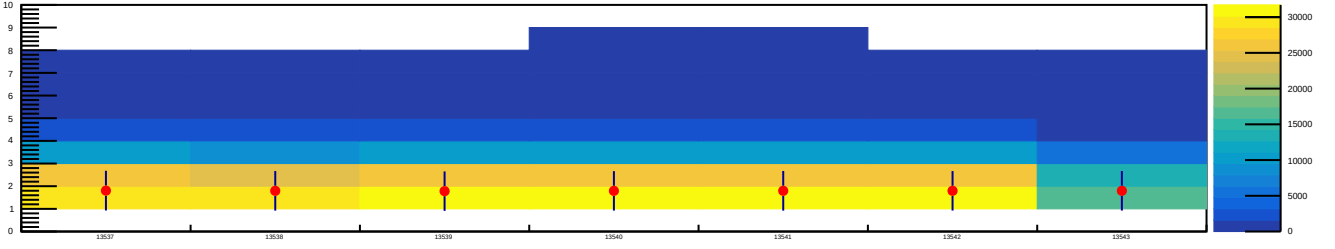

p Spot cut
Δx (m)
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
−1
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1
Δy (m)
1000
800
600
400
200
0


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
13537
13538
13539
13540
13541
13542
13543
4000
3500
3000
2500
2000
1500
1000
500
0

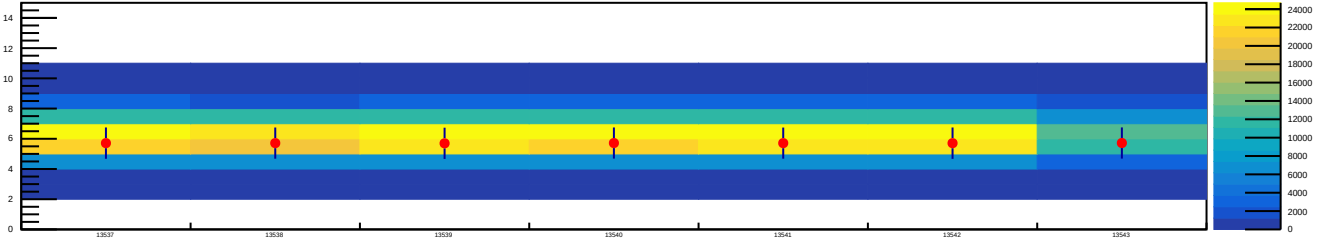
PS (best) cluster size vs Run no. (el. cut)



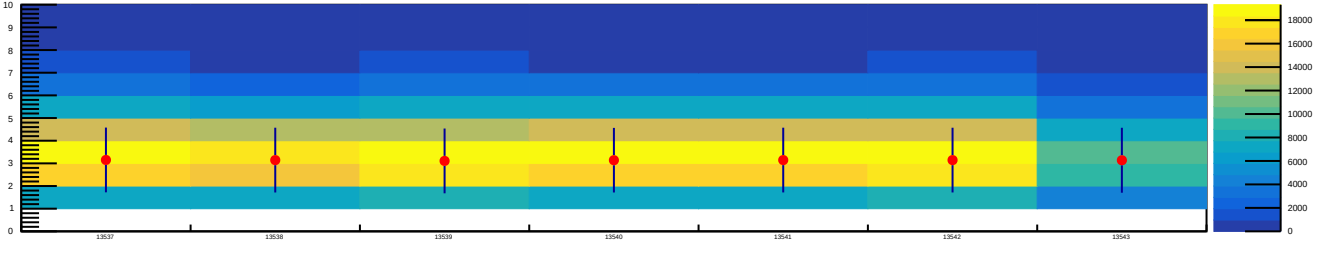
PS cluster multiplicity vs Run no. (el. cut)



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-sbs100p.cfg

Total # events analyzed: 23243707, Preparing for replay pass: 2

E/p (before calib.) | μ = 0.96, σ = (5.443 $\pm$ 0.011) p

E/p (after calib.) | μ = 0.99, σ = (5.553 $\pm$ 0.013) 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: 9007335

Elastic cuts:

$|p/p_{el}(\theta) - 0.994| \leq 5.0*0.016$

proton spot cut ranges:

Δx (m): Mean = -1.1300, 2.0σ = 0.1650
Δy (m): Mean = -0.1600, 2.0σ = 0.1770

 # events passed global & elastic cuts: 540232

Other cuts:

Minimum # events per block: 900, (Cluster) hit threshold: 0.02 GeV

Various offsets:

Momentum fudge factor: 1.00, BBCAL cluster energy scale factor: 1.00
Momentum calibration factors: A = 0.294057360, B = 1.033995100, C = 0.0, θ_{pitch}^{GEM} = 10.0^{o}, d_{BB} = 1.9747 m

Macro processing time: CPU 1568.3s | Real 1898.8s