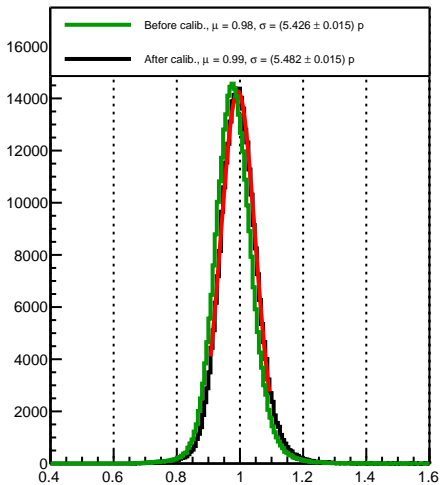
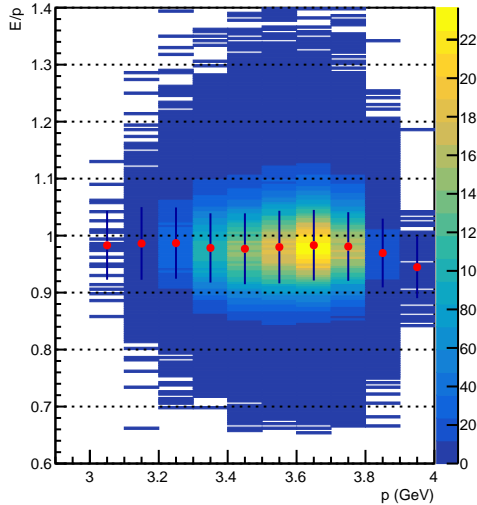


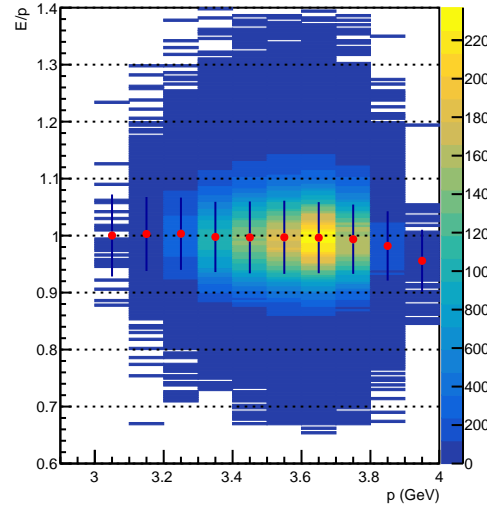
E/p (el. cut)



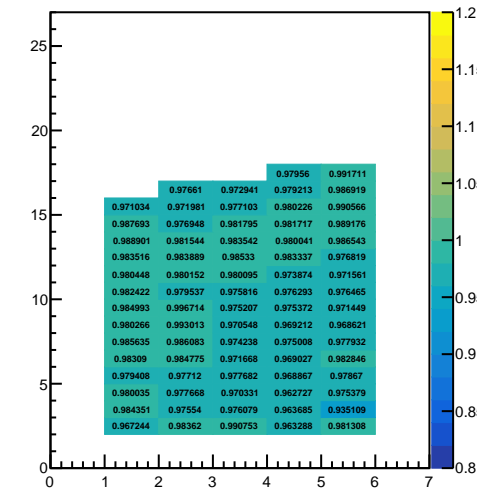
E/p vs p (el. cut)



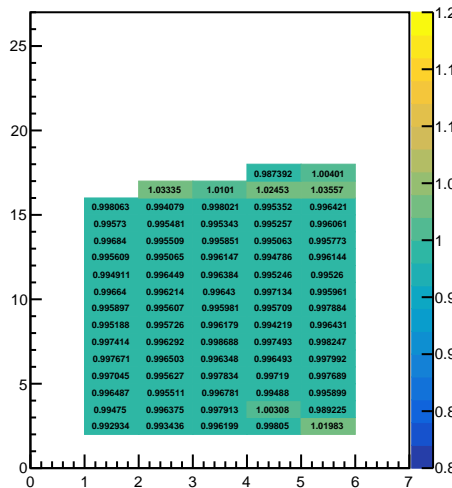
E/p vs p | After Calib. (el. cut)



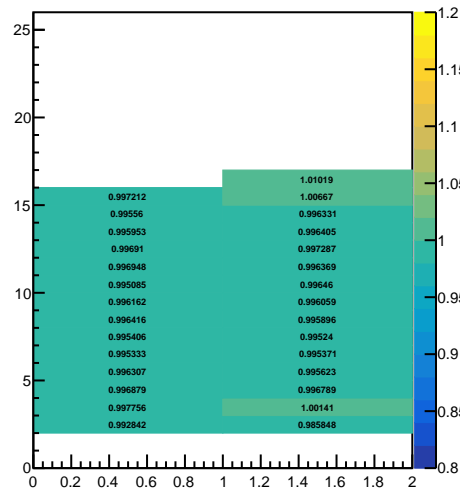
E/p per SH block (el. cut)



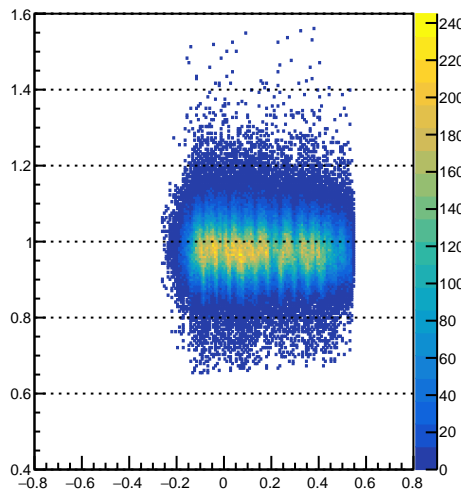
E/p per SH block | After Calib. (el. cut)



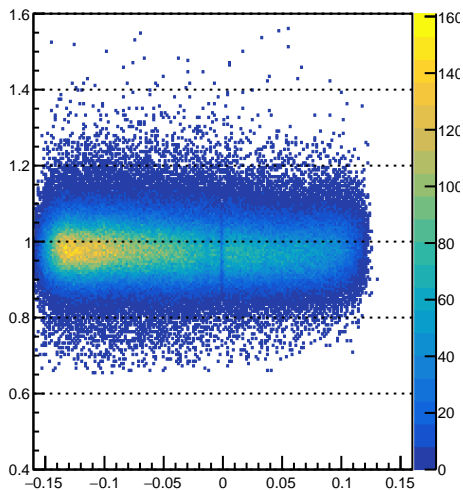
E/p per PS block | After Calib. (el. cut)



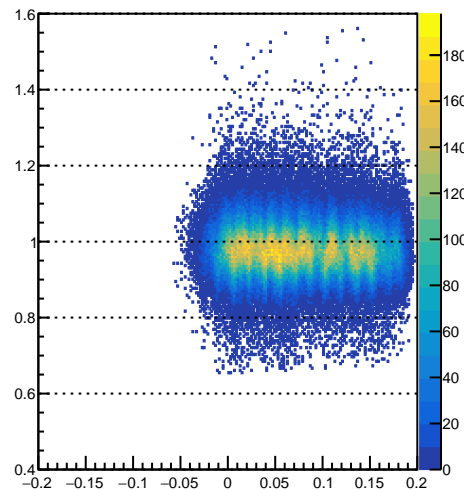
E/p vs Track x (el. cut)



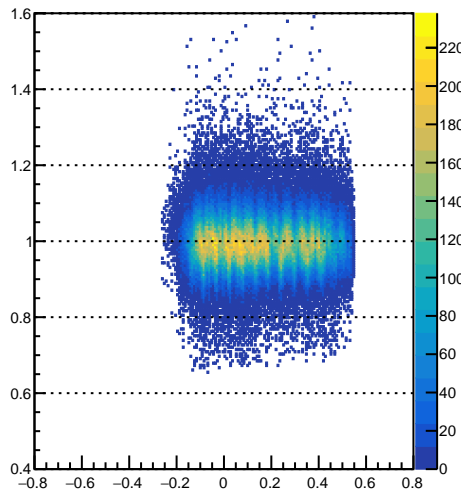
E/p vs Track y (el. cut)



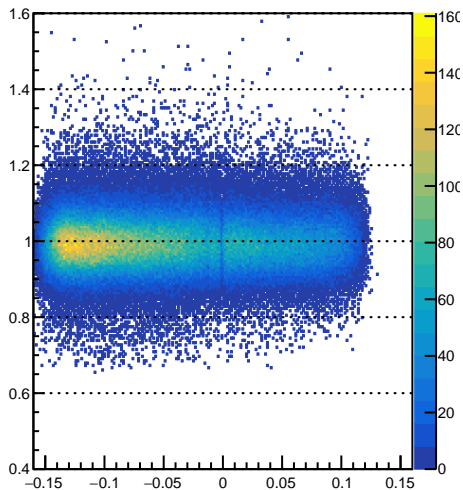
E/p vs Track theta (el. cut)



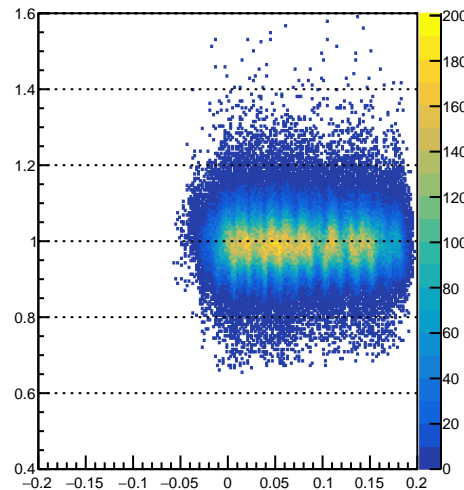
E/p vs Track x | After Calib. (el. cut)



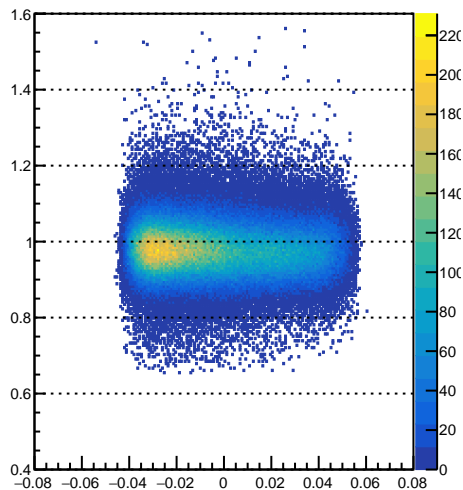
E/p vs Track y | After Calib. (el. cut)



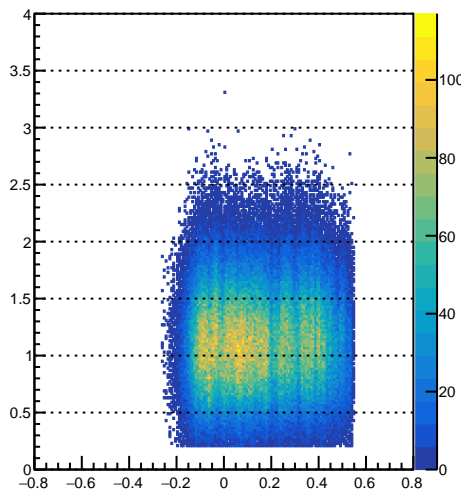
E/p vs Track theta | After Calib. (el. cut)



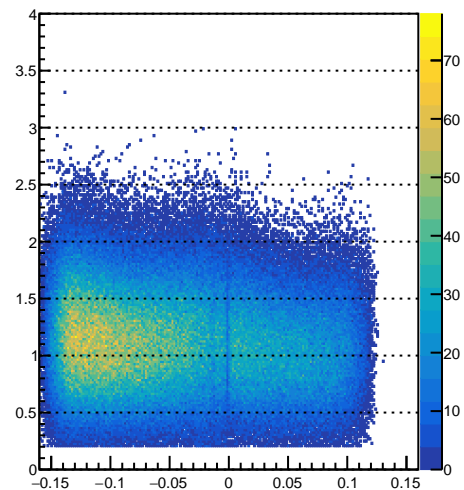
E/p vs Track phi (el. cut)



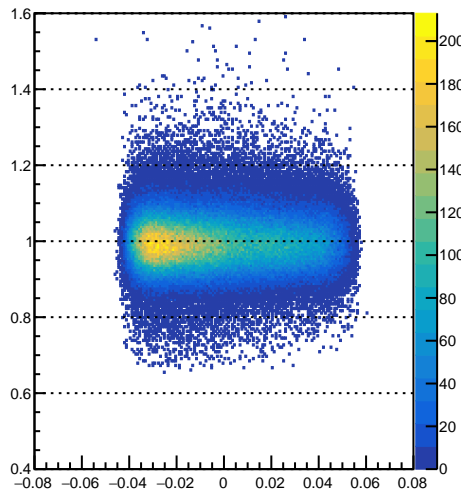
PS energy vs Track x (el. cut)



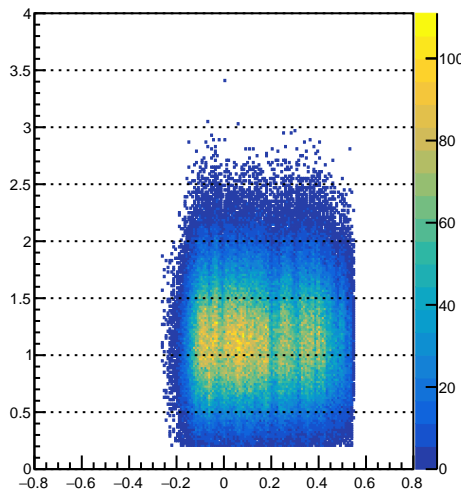
PS energy vs Track y (el. cut)



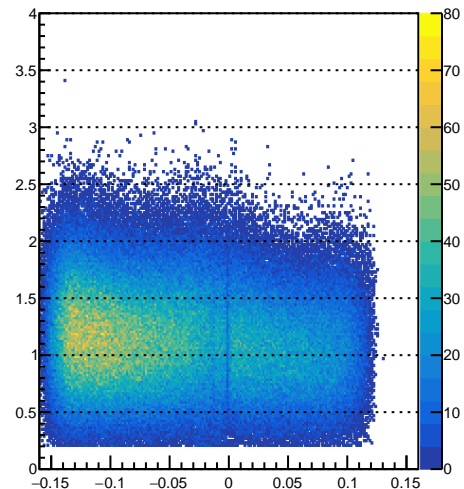
E/p vs Track phi | After Calib. (el. cut)



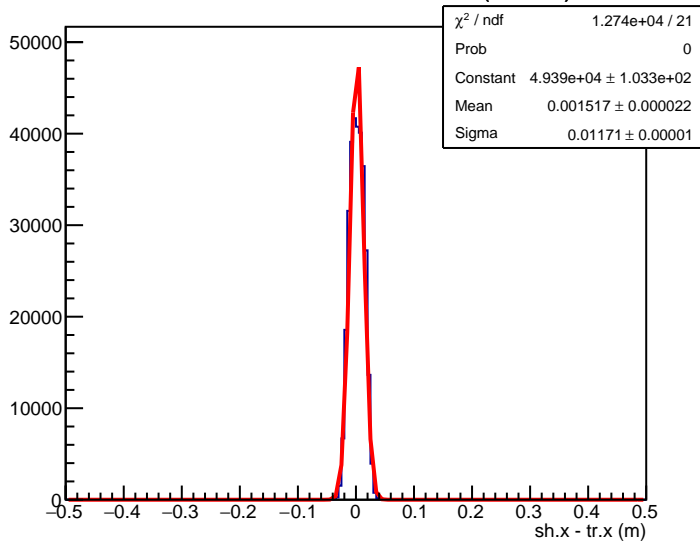
PS energy vs Track x | After Calib. (el. cut)



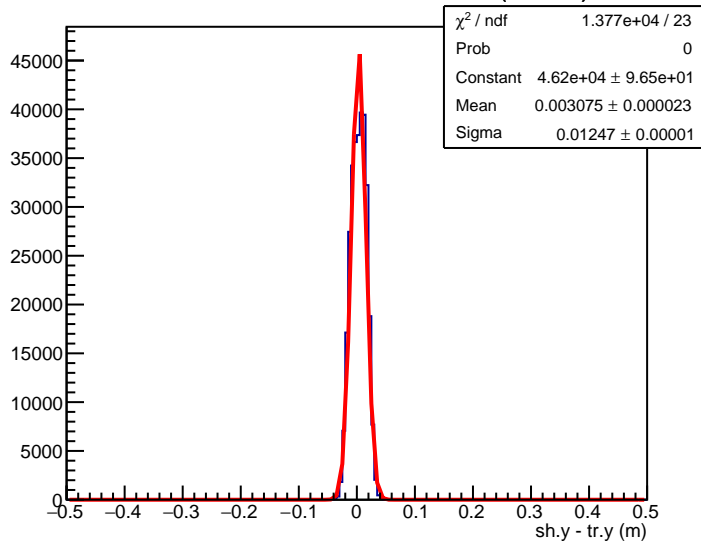
PS energy vs Track y | After Calib. (el. cut)



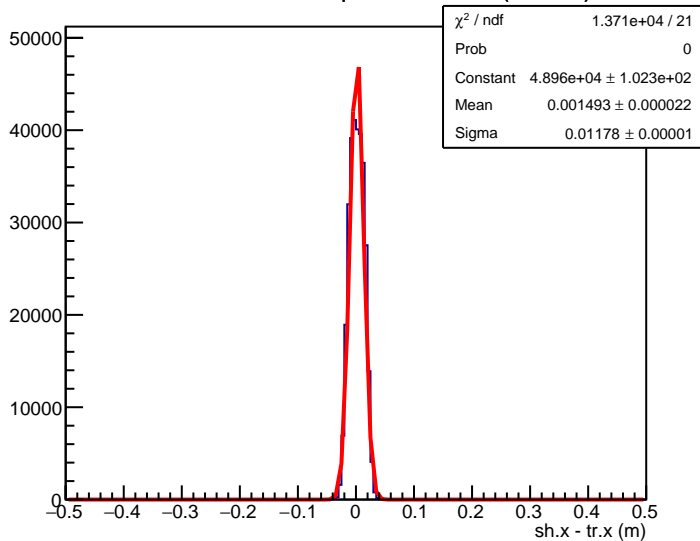
Vertical Position Difference (el. cut)



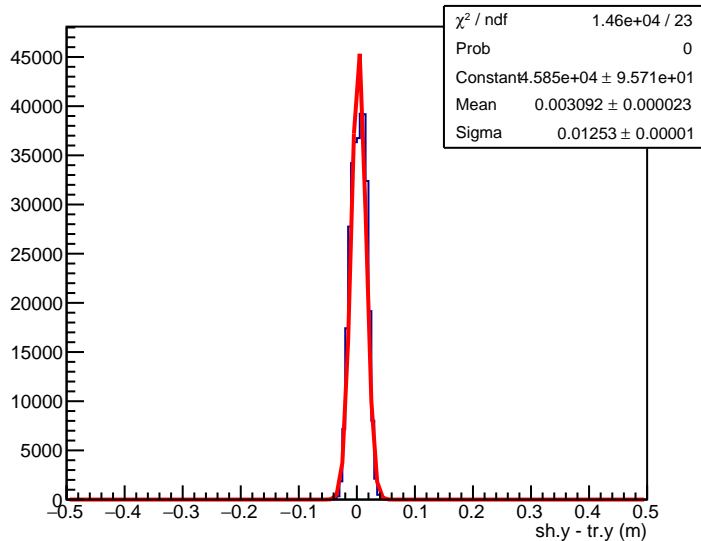
Horizontal Position Difference (el. cut)



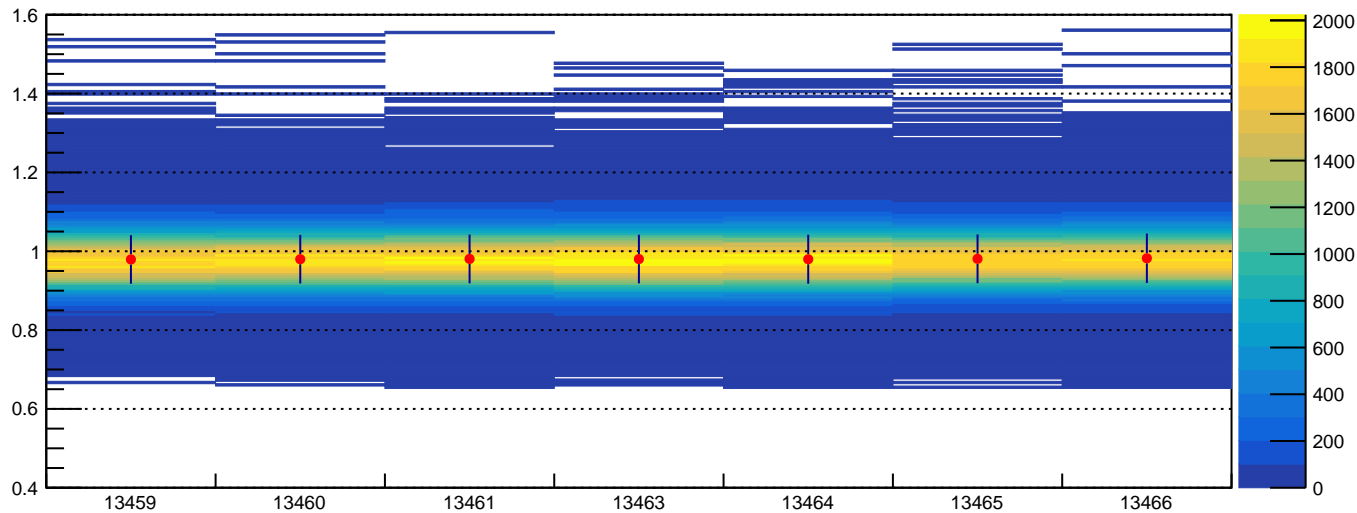
Vertical Pos. Diff. | After Calib. (el. cut)



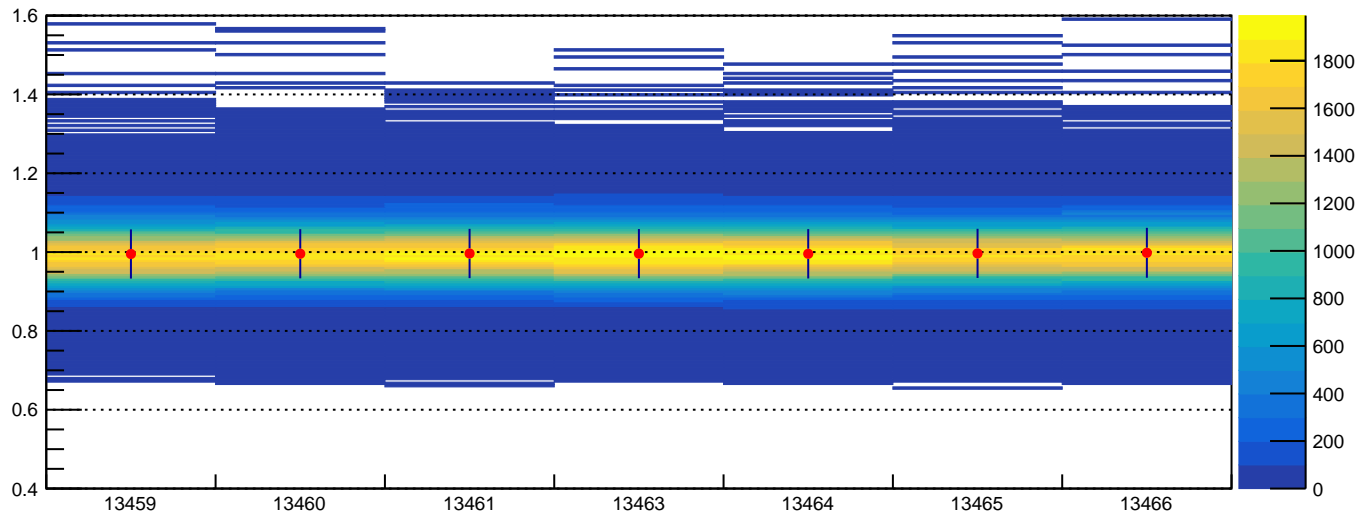
Horizontal Pos. Diff. | After Calib. (el. cut)



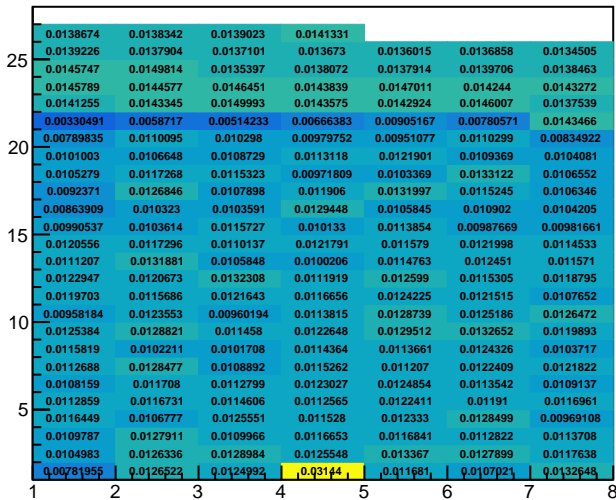
E/p vs Run no. (el. cut)



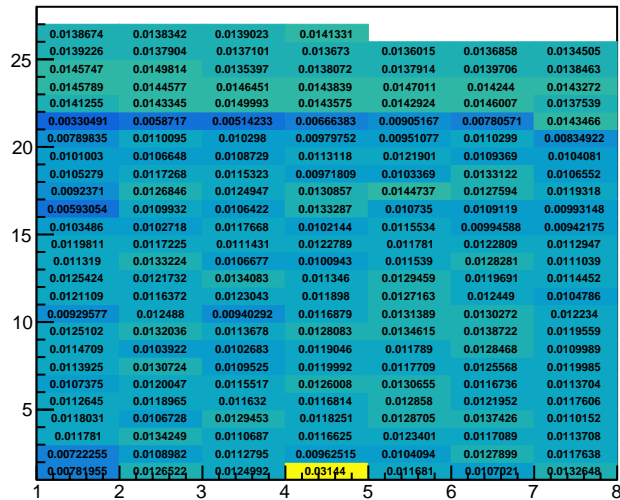
E/p vs Run no. | After Calib. (el. cut)



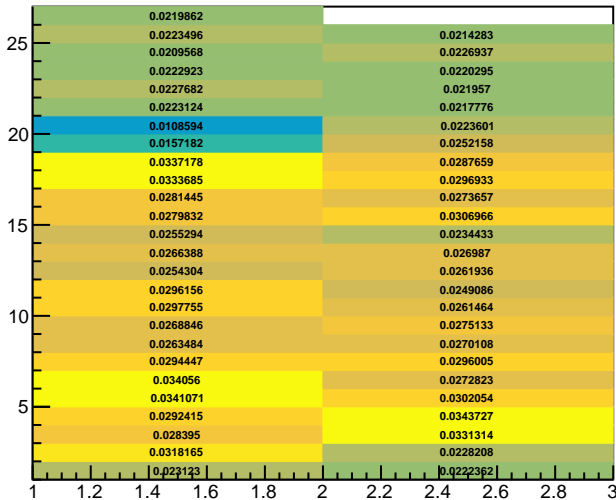
Old ADC Gain Coefficients | SH



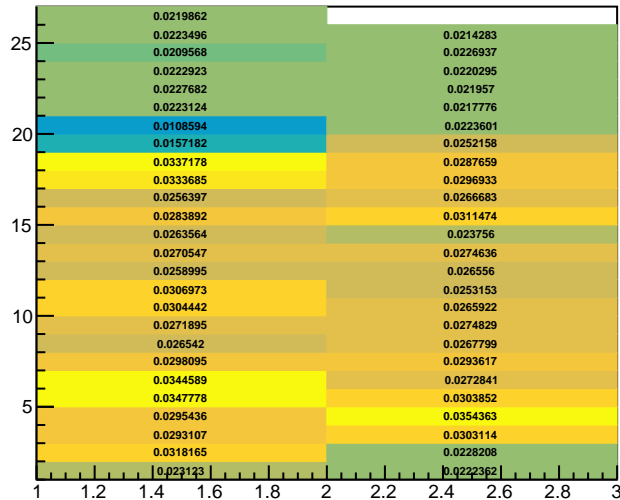
New ADC Gain Coefficients | SH



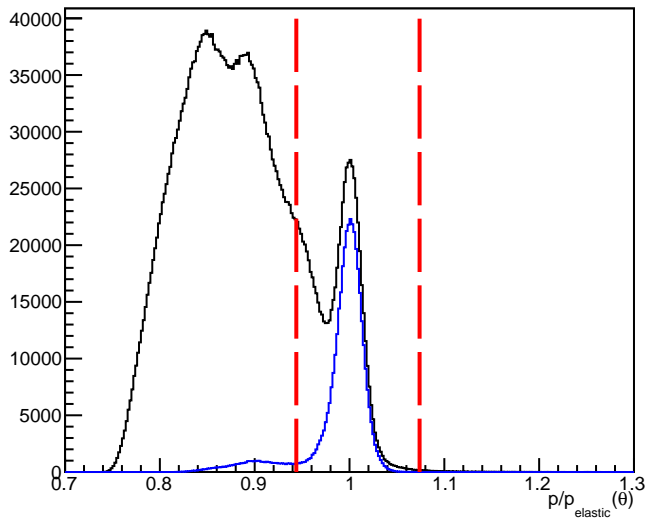
Old ADC Gain Coefficients | PS



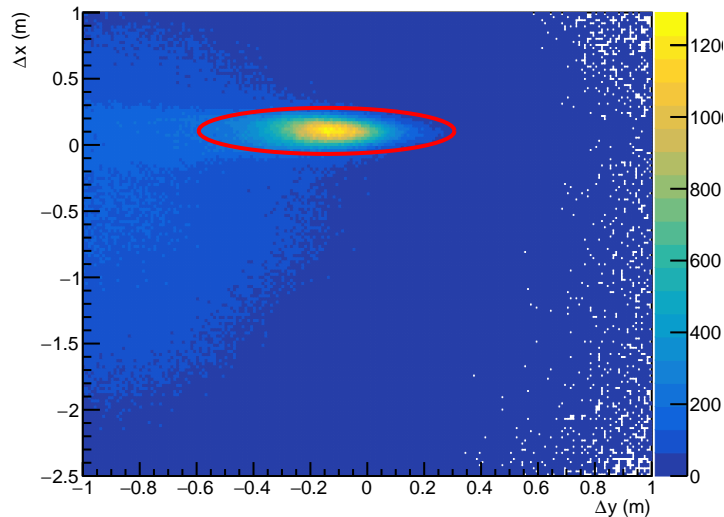
New ADC Gain Coefficients | PS



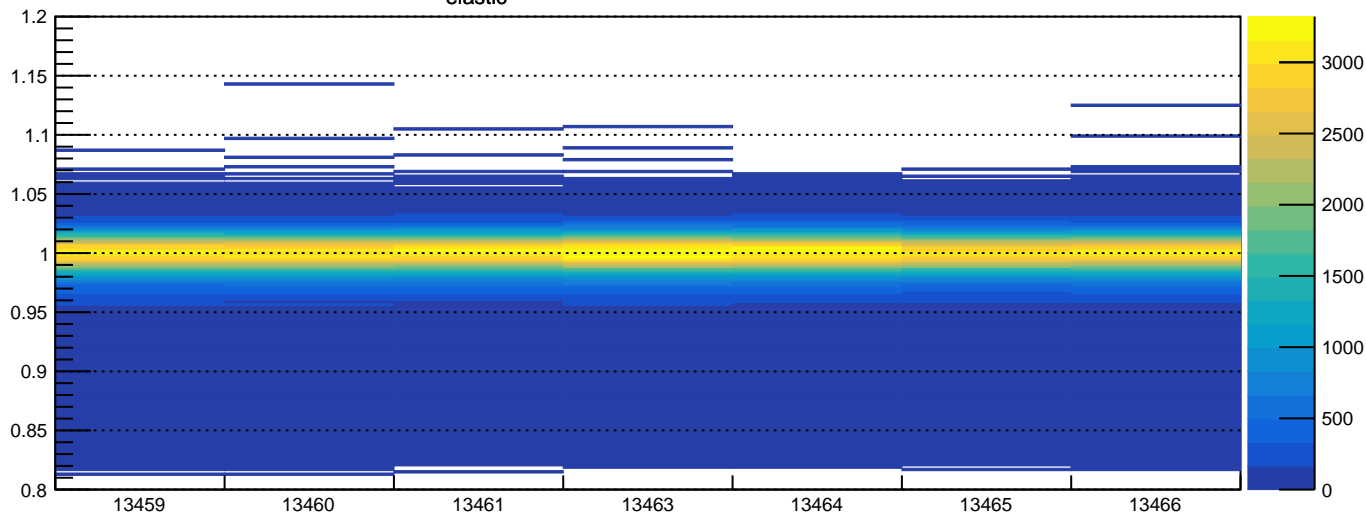
Blue: w/ p spot cut | Red:  $p/p_{\text{elastic}}(\theta)$  cut region



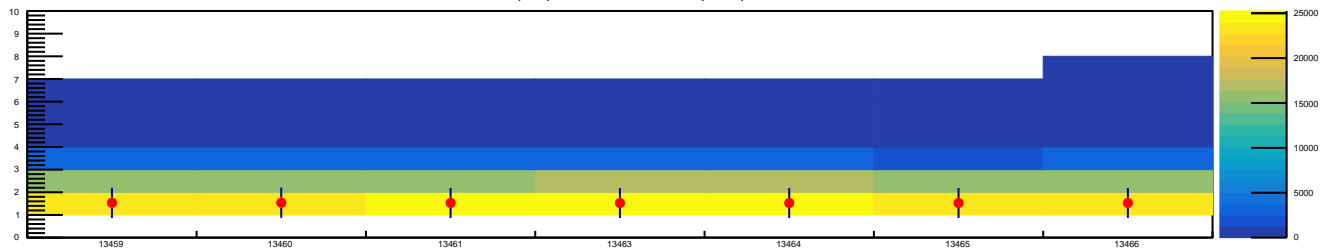
p Spot cut



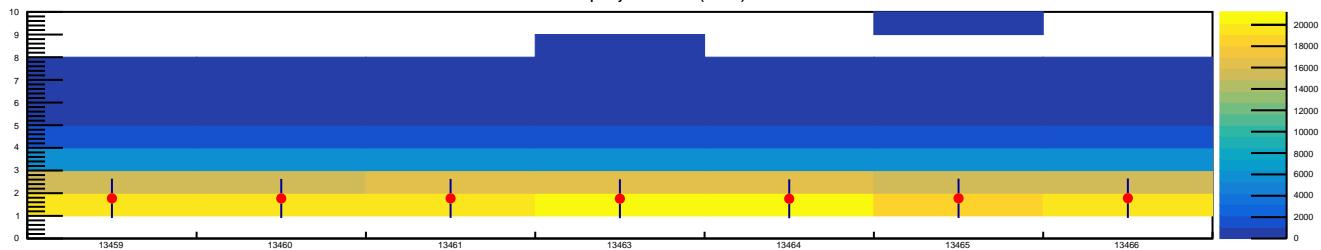
$p/p_{\text{elastic}}(\theta)$  vs Run no. w/ pspot cut



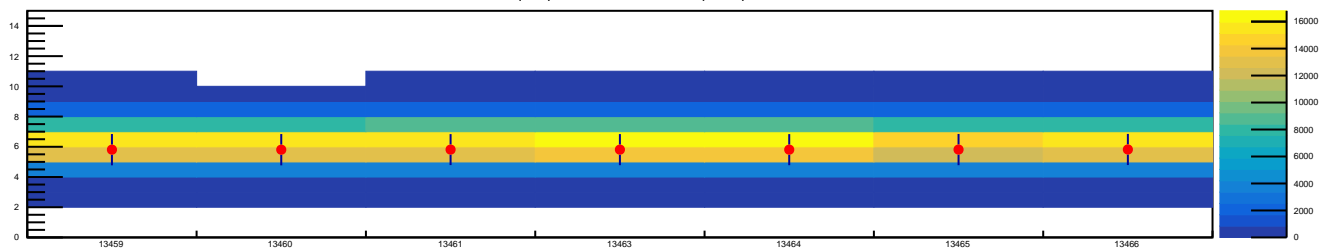
PS (best) cluster size vs Run no. (el. cut)



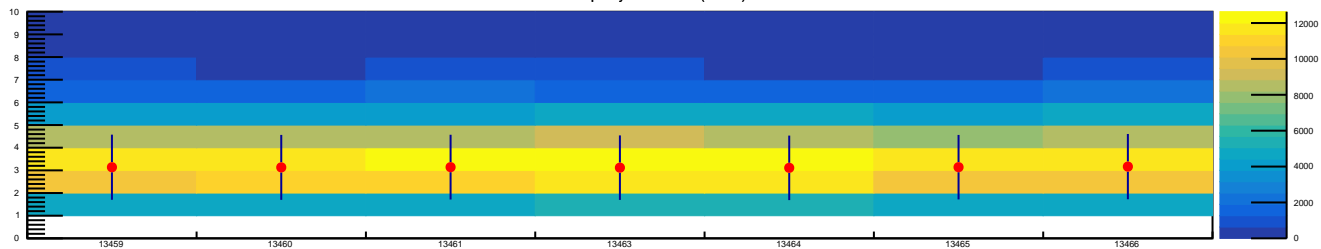
PS cluster multiplicity vs Run no. (el. cut)



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



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





Date of creation: 8/29/2023

Configfile: BBCal\_replay/macros/Combined\_macros/cfg/sbs8-sbs0p.cfg

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

E/p (before calib.) |  $\mu = 0.98$ ,  $\sigma = (5.426 \pm 0.015) p$

E/p (after calib.) |  $\mu = 0.99$ ,  $\sigma = (5.482 \pm 0.015) p$

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, abs(sbs.hcal.atimeblk-bb.sh.atimeblk-47.)<5.\*2.5,

PS cluster energy > 0.2 GeV

p\_recon > 2.9 GeV/c

# events passed global cuts: 3324293

Elastic cuts:

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

proton spot cut ranges:

$\Delta x$  (m): Mean = 0.1060,  $2.0\sigma = 0.0870$

$\Delta y$  (m): Mean = -0.1430,  $2.5\sigma = 0.1800$

# events passed global & elastic cuts: 372762

Other cuts:

Minimum # events per block: 300, (Cluster) hit threshold: 0.02 GeV

Various offsets:

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

Mom. calib. params: A = 0.289504670, B = 1.039268300, C = 0.0, Avy = 0.000000, Bvy = 0.000000,  $\theta_{pitch}^{GEM} = 10.0^\circ$ ,  $d_{BB} = 1.9747$  m

Macro processing time: CPU 1341.1s | Real 1407.5s