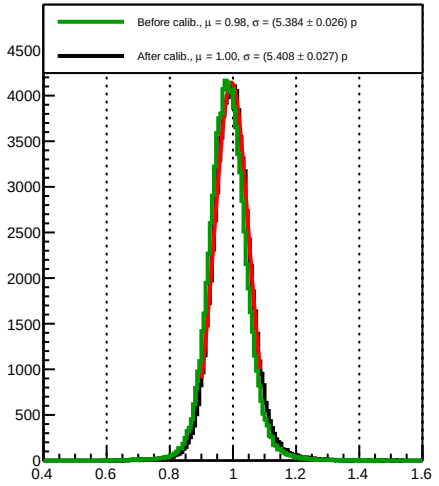
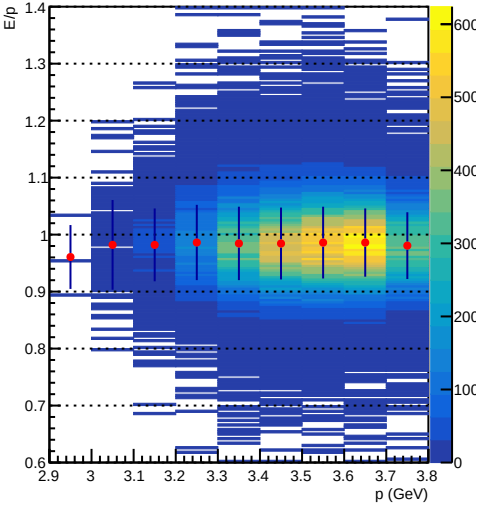
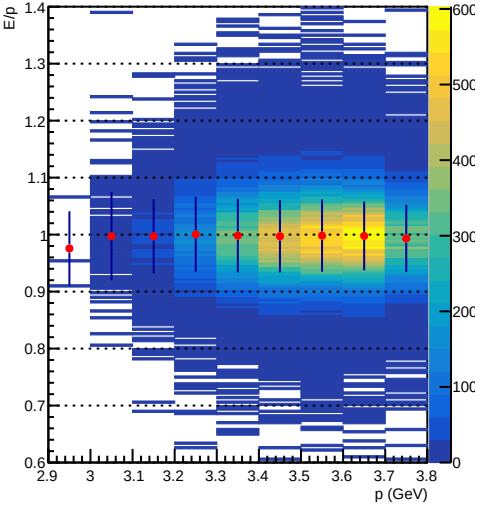
E/p (el. cut)



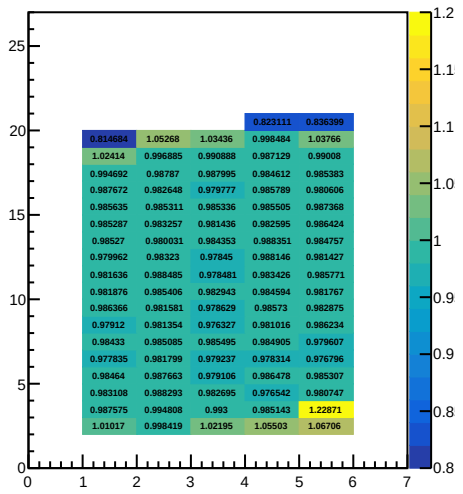
E/p vs p (el. cut)



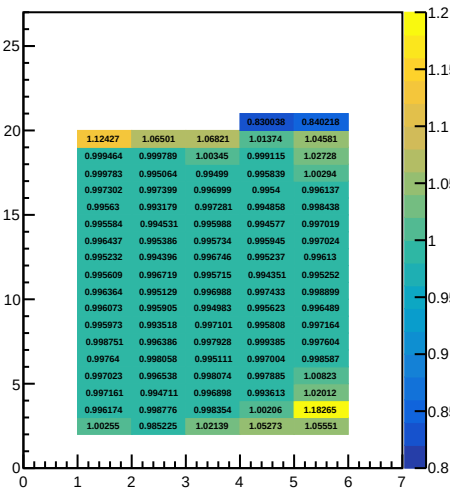
E/p vs p | After Calib. (el. cut)



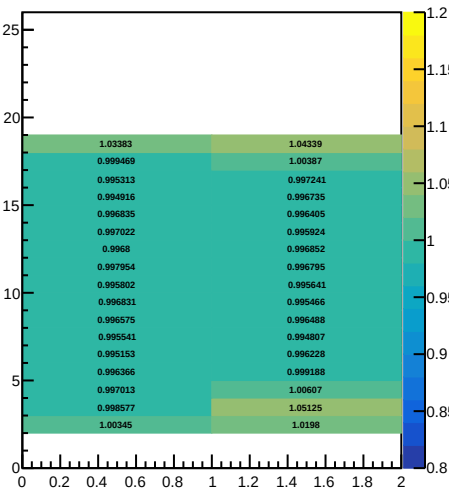
E/p per SH block (el. cut)



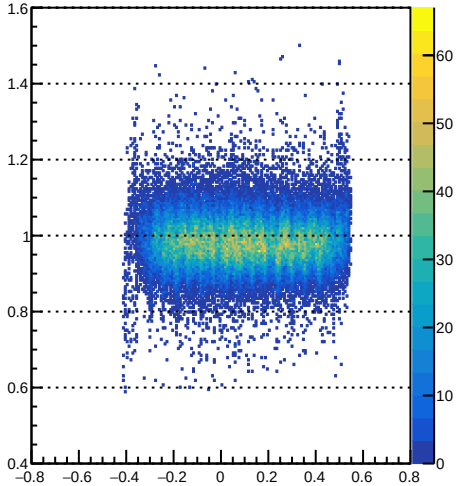
E/p per SH block | After Calib. (el. cut)



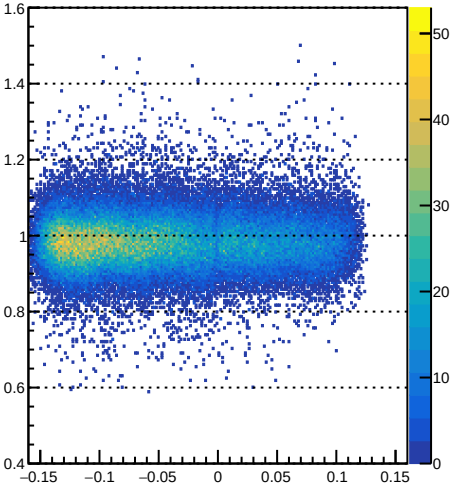
E/p per PS block | After Calib. (el. cut)



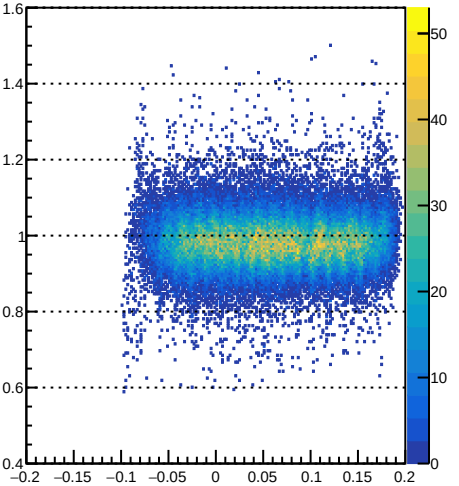
E/p vs Track x (el. cut)



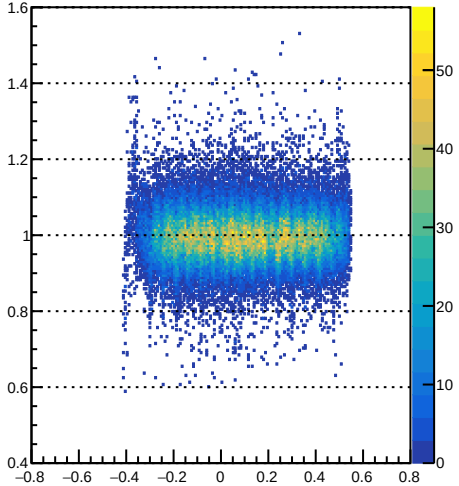
E/p vs Track y (el. cut)



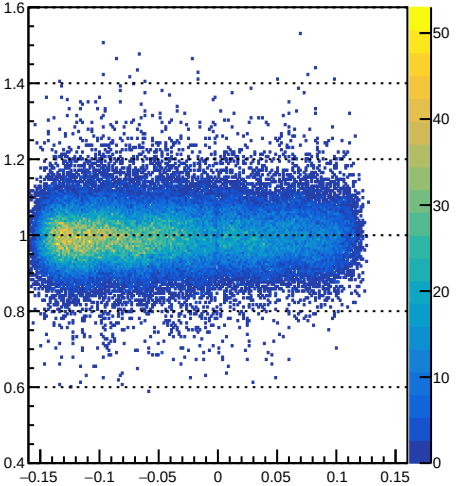
E/p vs Track theta (el. cut)



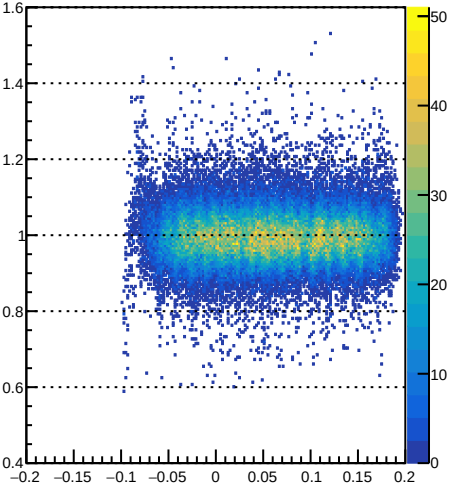
E/p vs Track x | After Calib. (el. cut)



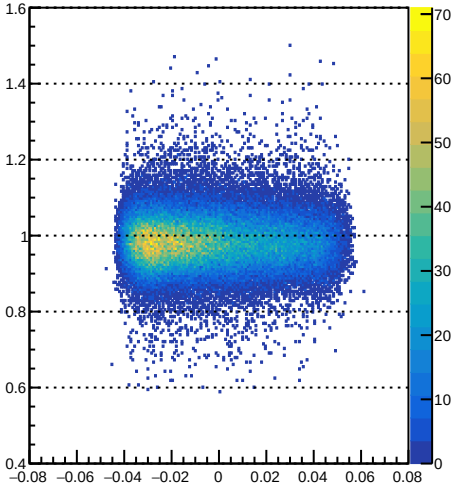
E/p vs Track y | After Calib. (el. cut)



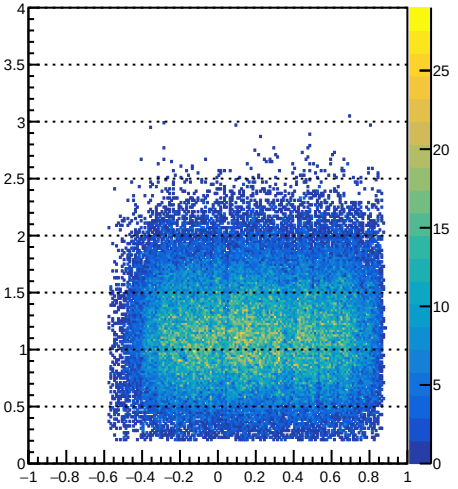
E/p vs Track theta | After Calib. (el. cut)



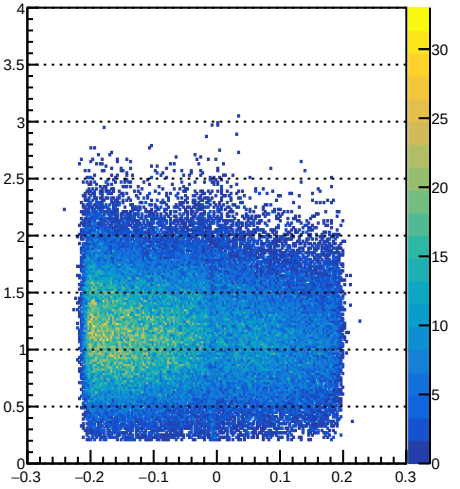
E/p vs Track phi (el. cut)



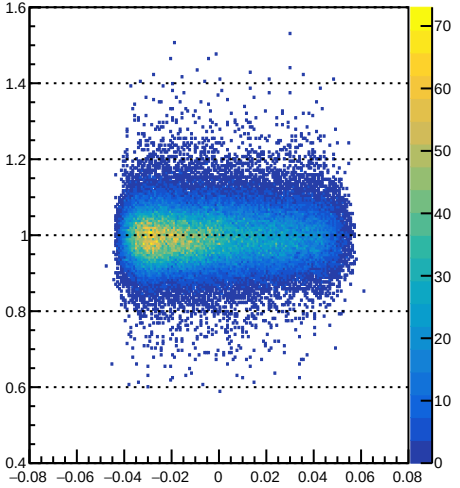
PS energy vs Track x (proj. at PS) (el. cut)



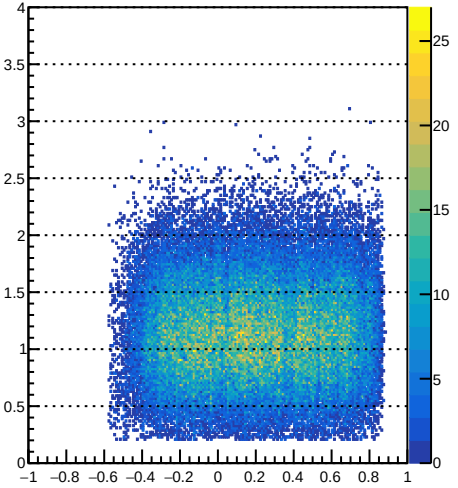
PS energy vs Track y (el. cut) (proj. at PS)



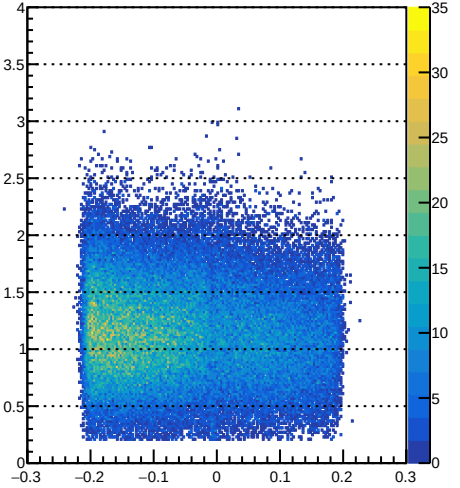
E/p vs Track phi | After Calib. (el. cut)

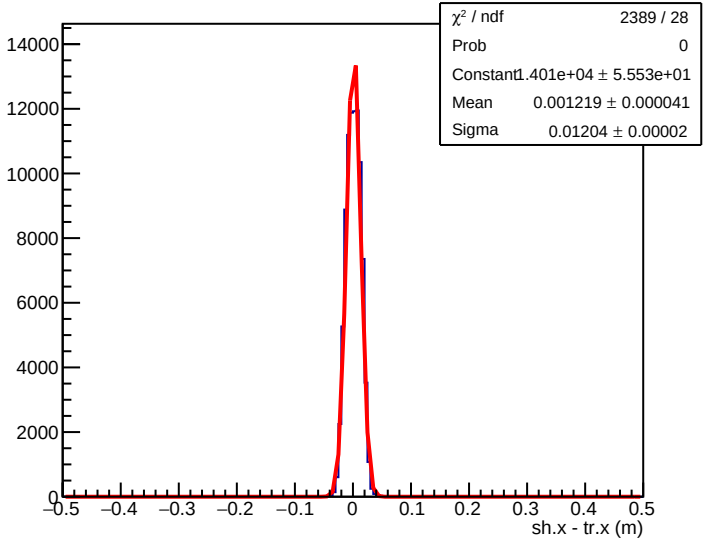


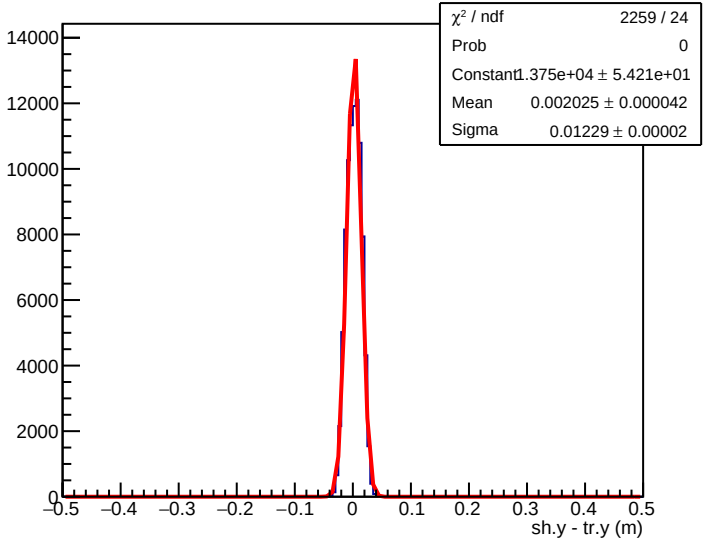
PS energy vs Track x (proj. at PS) | After Calib. (el. cut)

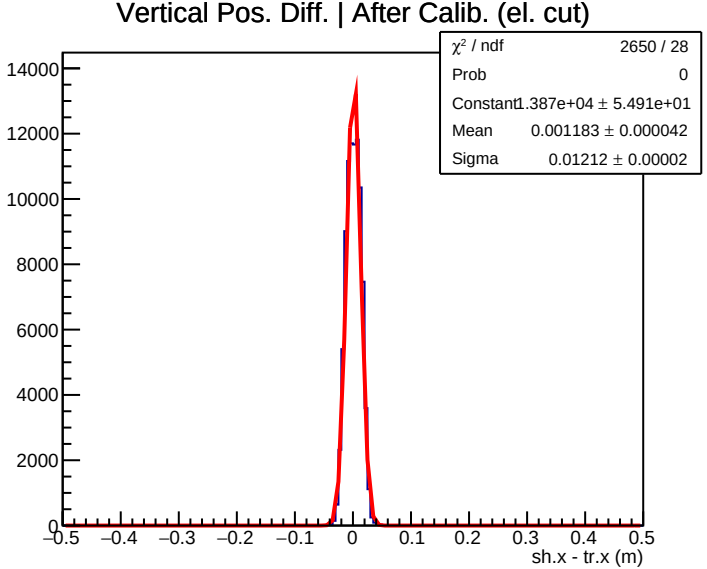


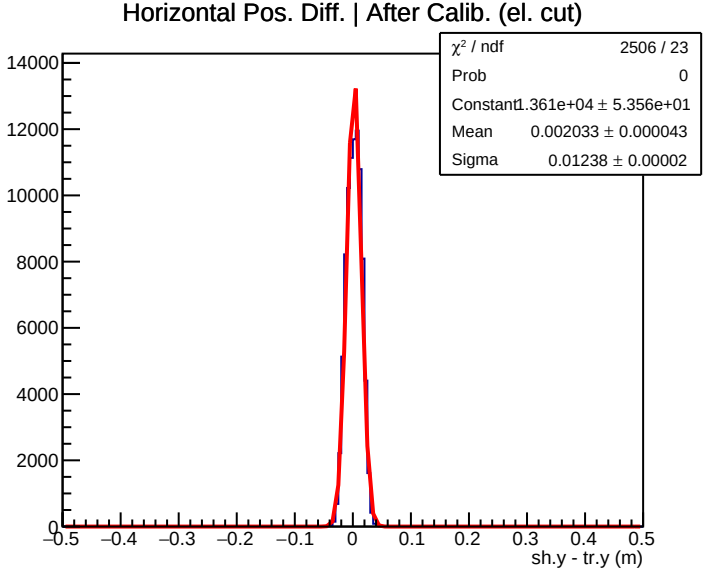
PS energy vs Track y (proj. at PS) | After Calib. (el. cut)

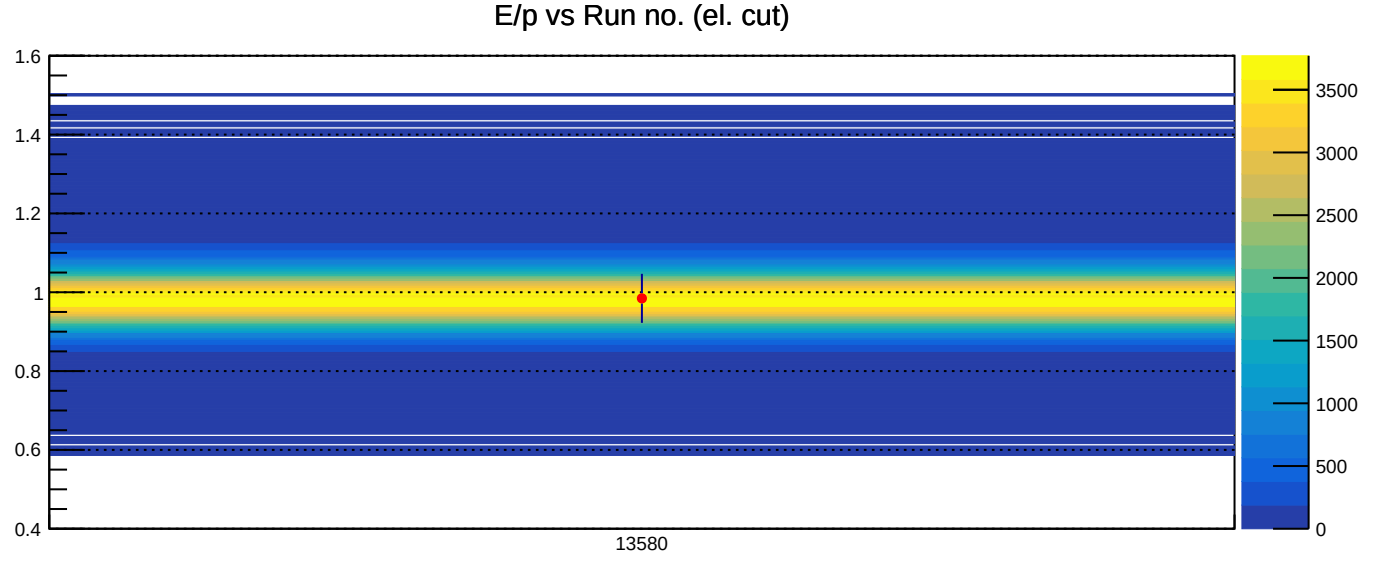


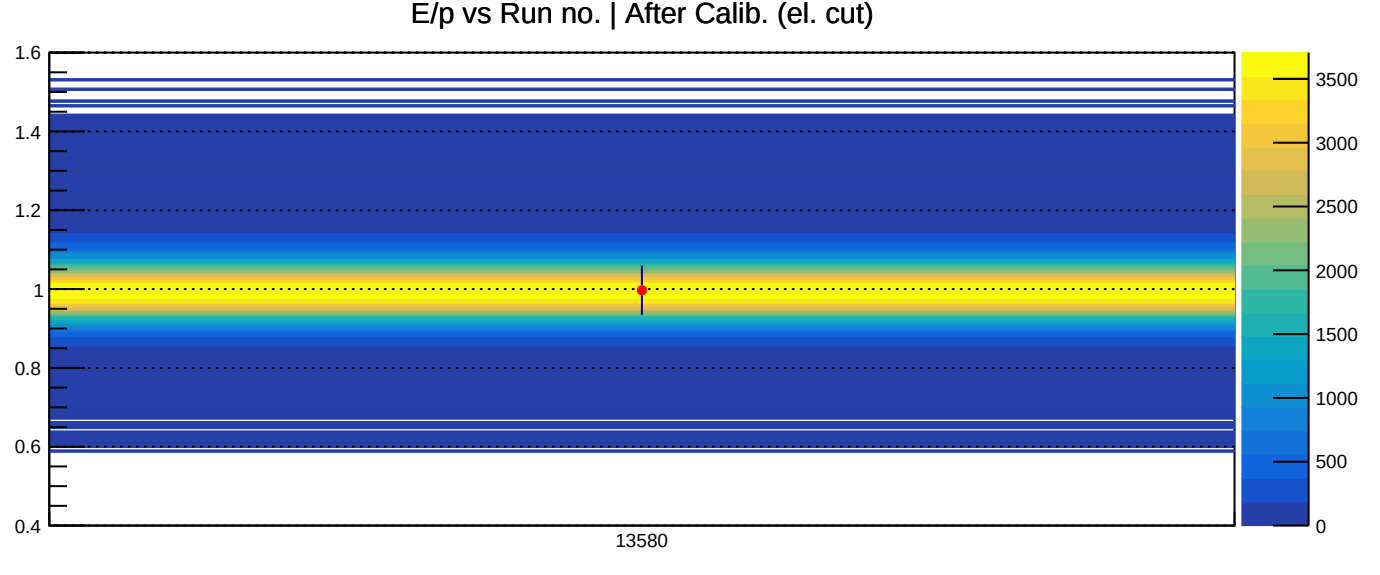

Vertical Position Difference (el. cut)
χ² / ndf 2389 / 28
Prob 0
Constant 1.401e+04 ± 5.553e+01
Mean 0.001219 ± 0.000041
Sigma 0.01204 ± 0.00002
sh.x - tr.x (m)


Horizontal Position Difference (el. cut)
χ² / ndf 2259 / 24
Prob 0
Constant 1.375e+04 ± 5.421e+01
Mean 0.002025 ± 0.000042
Sigma 0.01229 ± 0.00002
sh.y - tr.y (m)

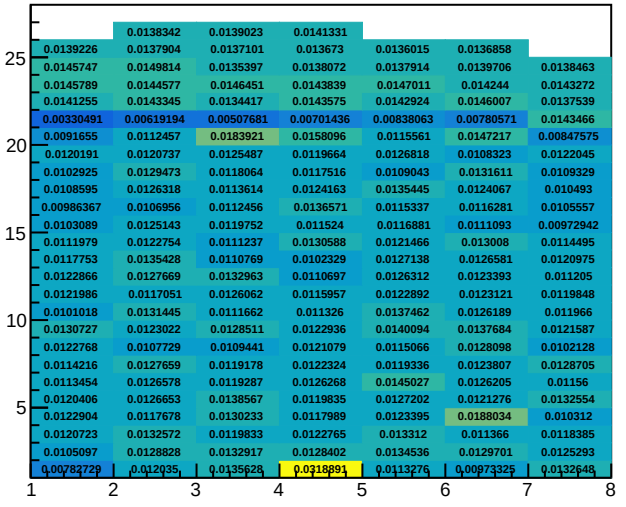

Vertical Pos. Diff. | After Calib. (el. cut)
χ² / ndf 2650 / 28
Prob 0
Constant 1.387e+04 ± 5.491e+01
Mean 0.001183 ± 0.000042
Sigma 0.01212 ± 0.00002
sh.x - tr.x (m)


Horizontal Pos. Diff. | After Calib. (el. cut)
χ² / ndf 2506 / 23
Prob 0
Constant 1.361e+04 ± 5.356e+01
Mean 0.002033 ± 0.000043
Sigma 0.01238 ± 0.00002
sh.y - tr.y (m)

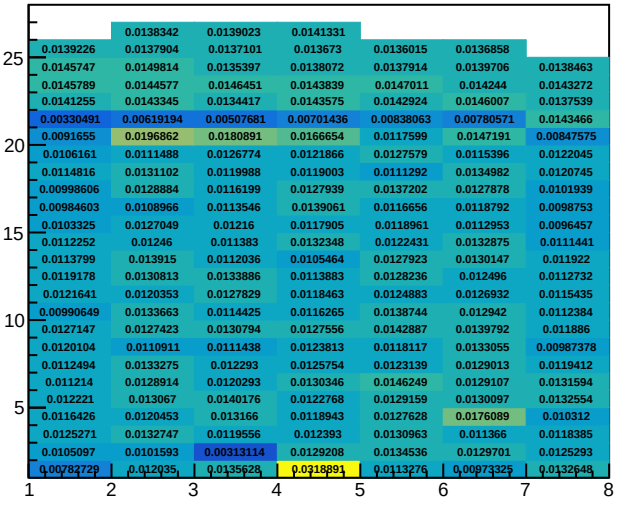

E/p vs Run no. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13580
3500
3000
2500
2000
1500
1000
500
0


E/p vs Run no. | After Calib. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13580
3500
3000
2500
2000
1500
1000
500
0

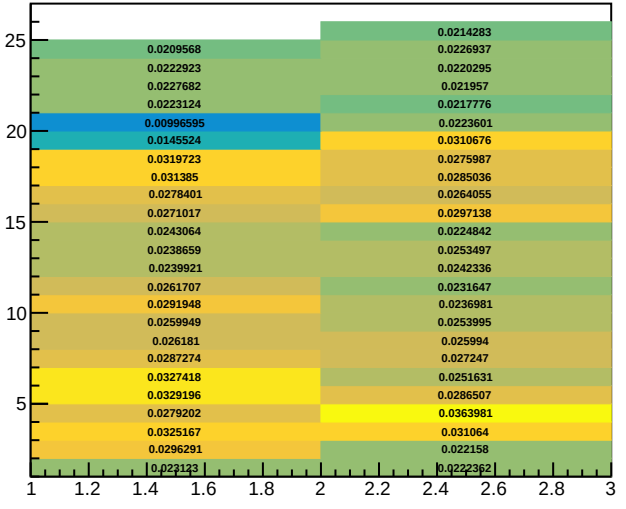
Old ADC Gain Coefficients | SH



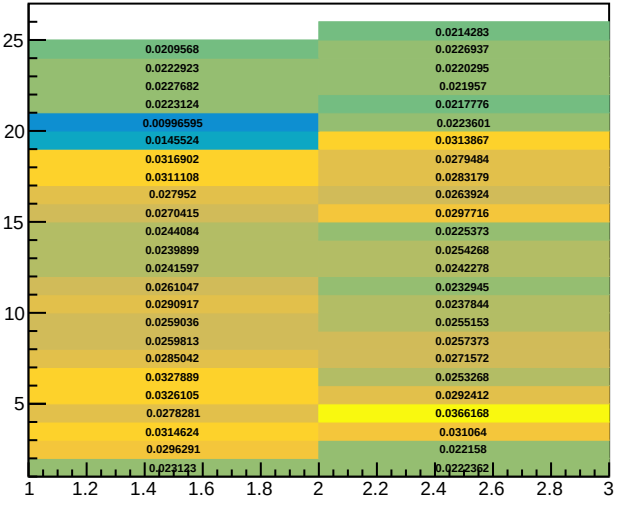
New ADC Gain Coefficients | SH

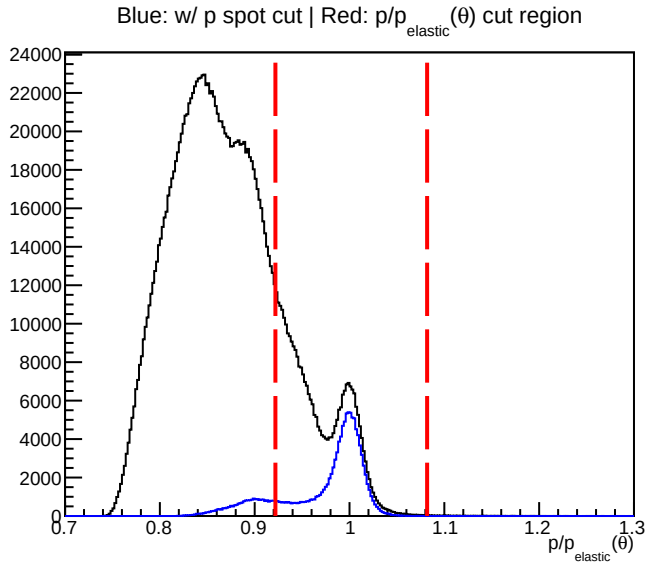


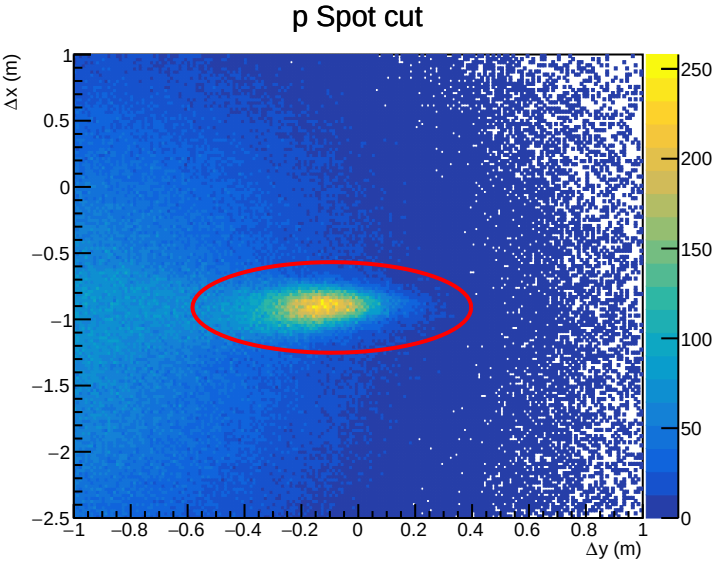
Old ADC Gain Coefficients | PS

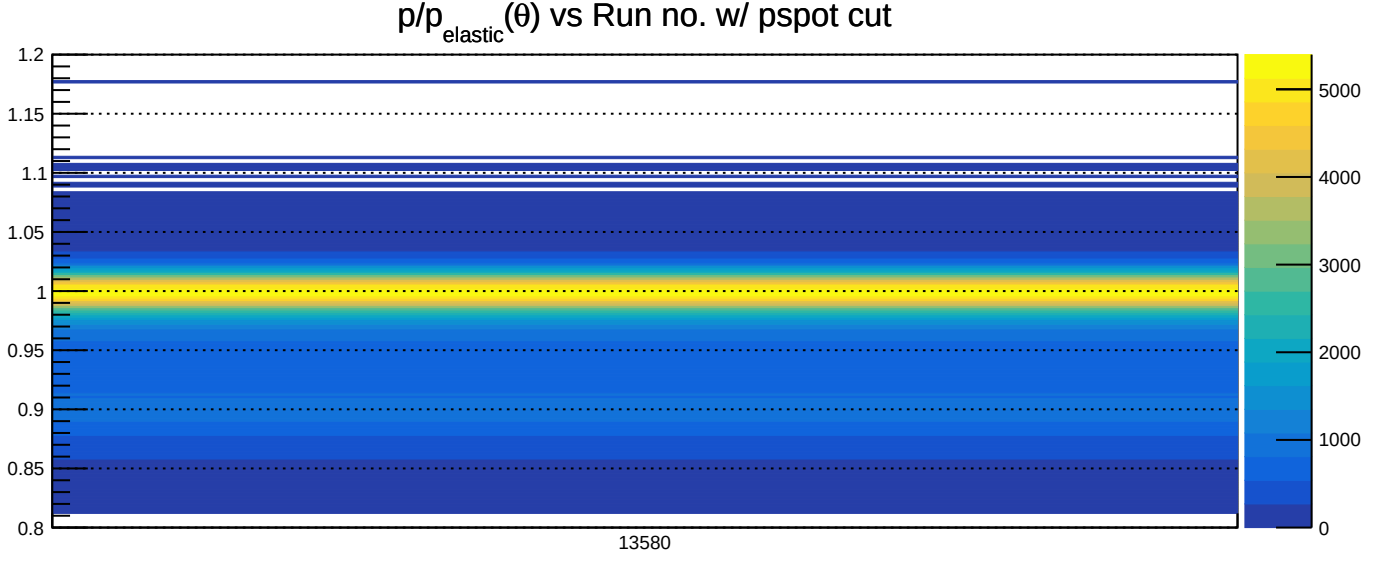


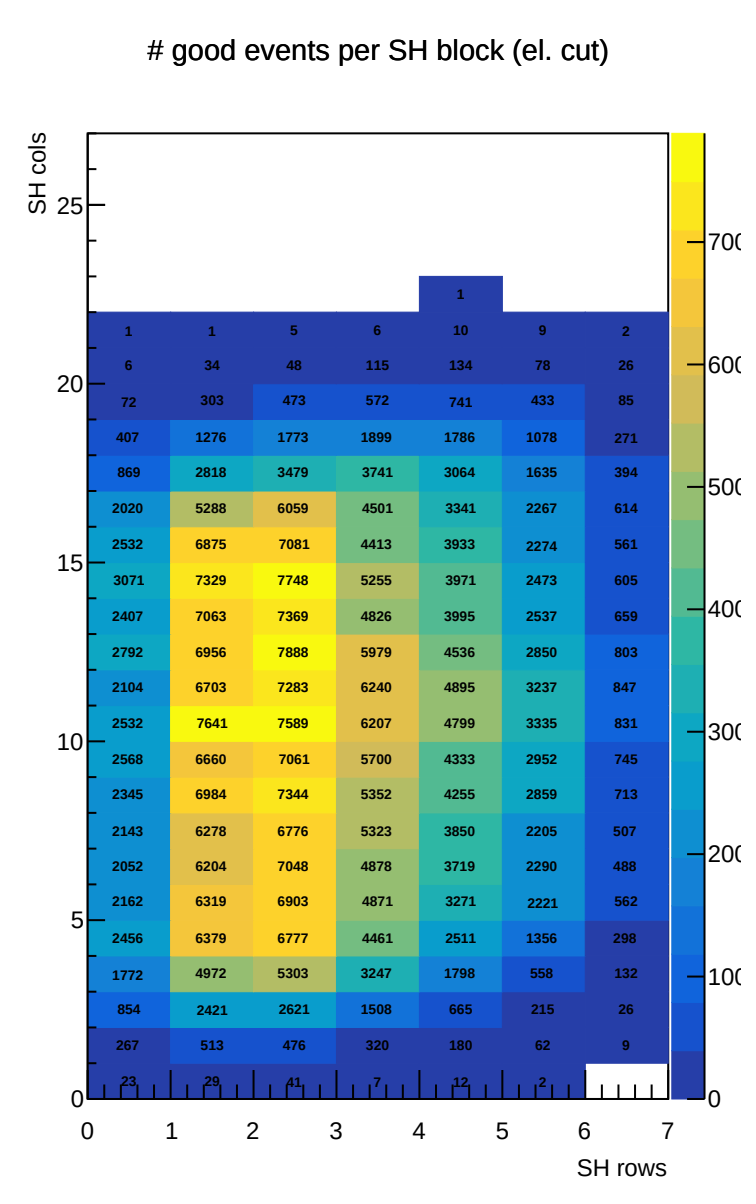
New ADC Gain Coefficients | PS

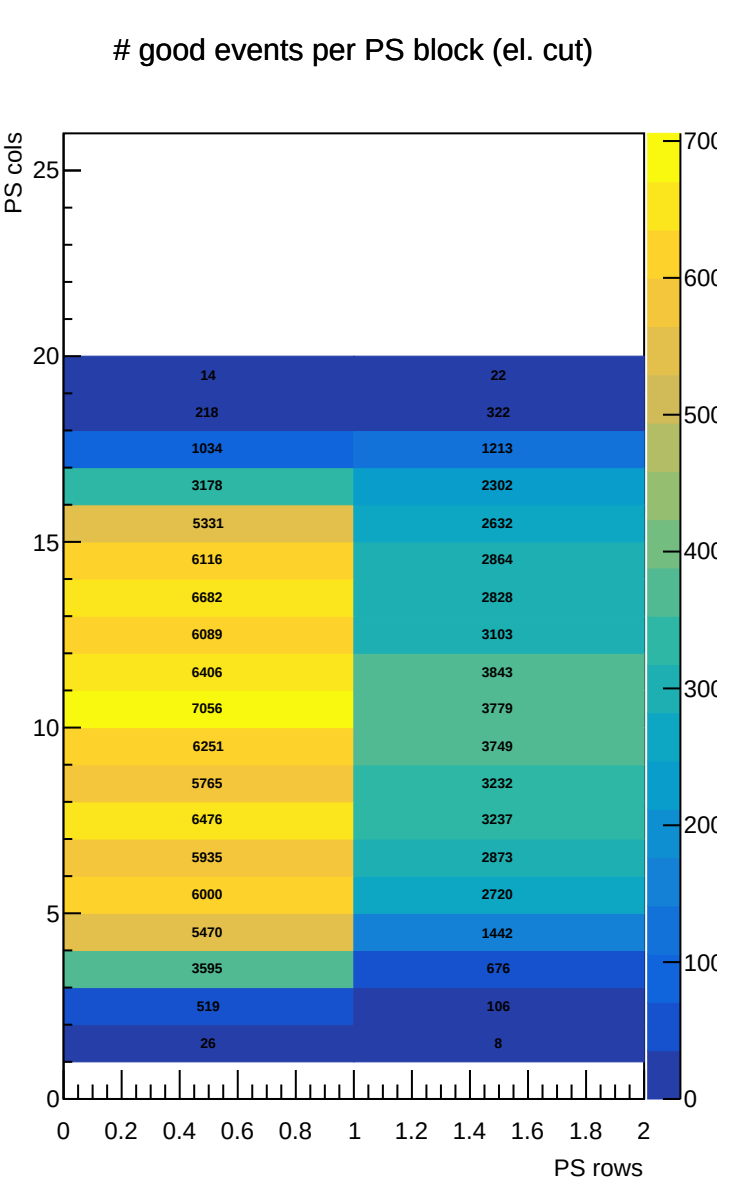



Blue: w/ p spot cut | Red: p/p_elastic(θ) cut region
24000
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
0.7
0.8
0.9
1
1.1
1.2
1.3
p/p_elastic(θ)

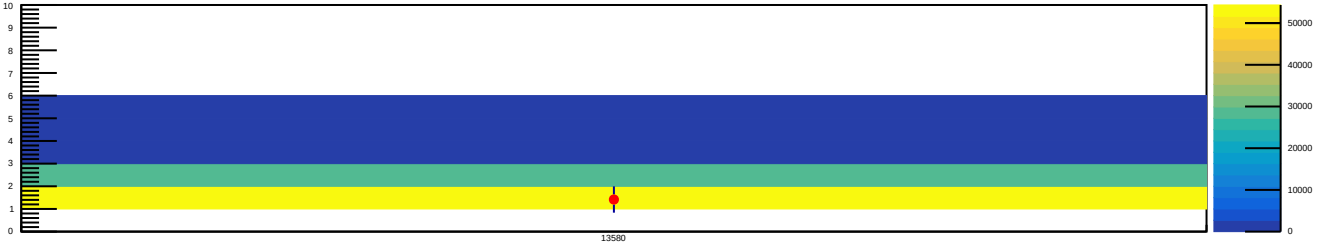

p Spot cut
Δx (m)
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
−1
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1
Δy (m)
250
200
150
100
50
0


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
13580
5000
4000
3000
2000
1000
0

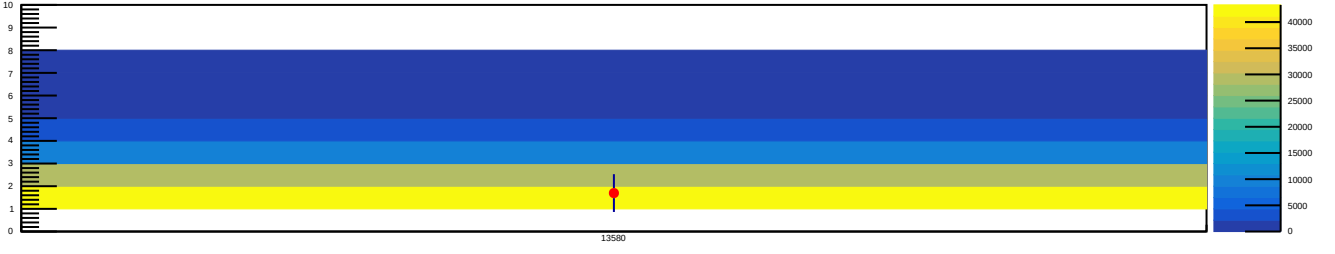

good events per SH block (el. cut)
SH cols
SH rows
1
1 1 5 6 10 9 2
6 34 48 115 134 78 26
72 303 473 572 741 433 85
407 1276 1773 1899 1786 1078 271
869 2818 3479 3741 3064 1635 394
2020 5288 6059 4501 3341 2267 614
2532 6875 7081 4413 3933 2274 561
3071 7329 7748 5255 3971 2473 605
2407 7063 7369 4826 3995 2537 659
2792 6956 7888 5979 4536 2850 803
2104 6703 7283 6240 4895 3237 847
2532 7641 7589 6207 4799 3335 831
2568 6660 7061 5700 4333 2952 745
2345 6984 7344 5352 4255 2859 713
2143 6278 6776 5323 3850 2205 507
2052 6204 7048 4878 3719 2290 488
2162 6319 6903 4871 3271 2221 562
2456 6379 6777 4461 2511 1356 298
1772 4972 5303 3247 1798 558 132
854 2421 2621 1508 665 215 26
267 513 476 320 180 62 9
23 29 41 7 12 2


good events per PS block (el. cut)
PS cols
PS rows
14 22
218 322
1034 1213
3178 2302
5331 2632
6116 2864
6682 2828
6089 3103
6406 3843
7056 3779
6251 3749
5765 3232
6476 3237
5935 2873
6000 2720
5470 1442
3595 676
519 106
26 8

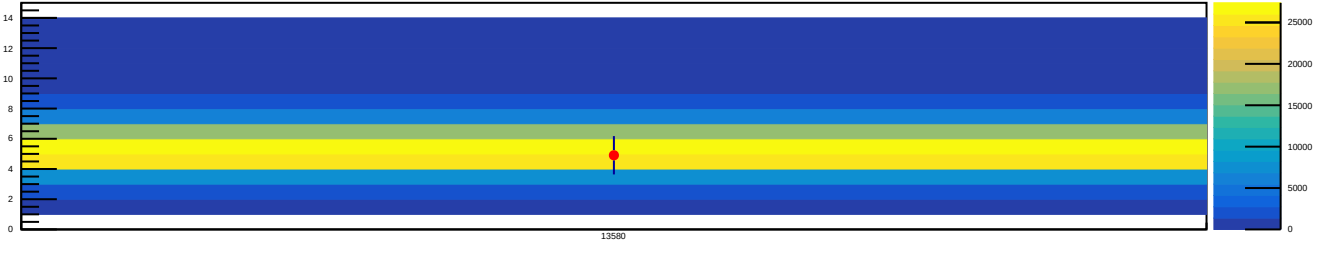
PS (best) cluster size vs Run no. (el. cut)



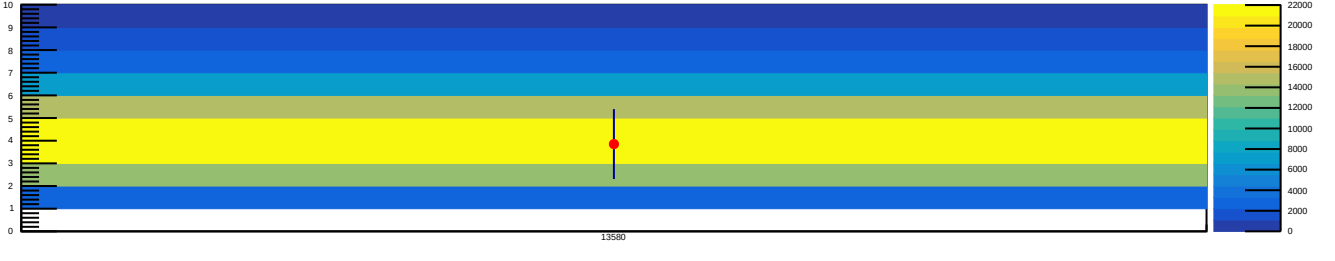
PS cluster multiplicity vs Run no. (el. cut)



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



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



Date of creation: 12/11/2023

Configfile: BBCal_replay/macros/Combined_macros/cfg/sbs8-sbs50p.cfg

Total # events analyzed: 4271863, Preparing for replay pass: 2

E/p (before calib.) | μ = 0.98, σ = (5.384 $\pm$ 0.026) p

E/p (after calib.) | μ = 1.00, σ = (5.408 $\pm$ 0.027) 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: 1649379

Elastic cuts:

$|p/p_{el}(\theta) - 1.002| \leq 5.0*0.016$

proton spot cut ranges:

Δx (m): Mean = -0.9100, 3.0σ = 0.1140
Δy (m): Mean = -0.0930, 2.5σ = 0.1960

events passed global & elastic cuts: 109129

Other cuts:

Minimum # events per block: 300 | 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 334.1s | Real 567.4s