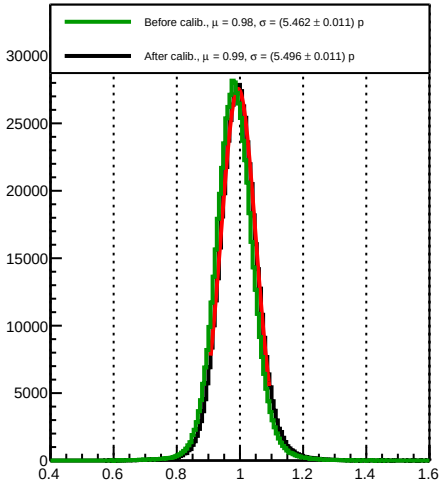
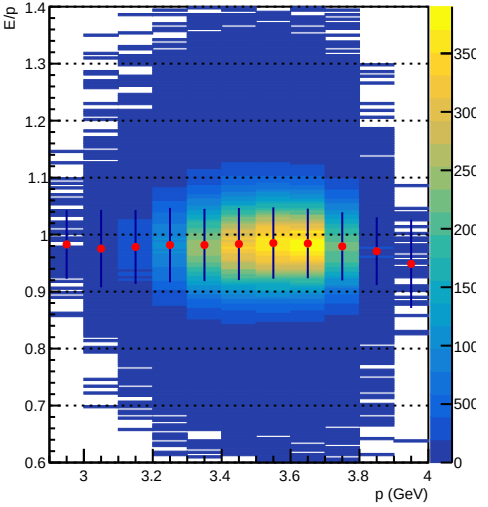
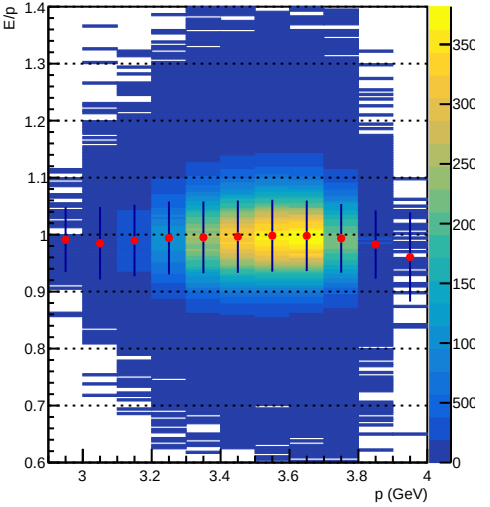
E/p (el. cut)



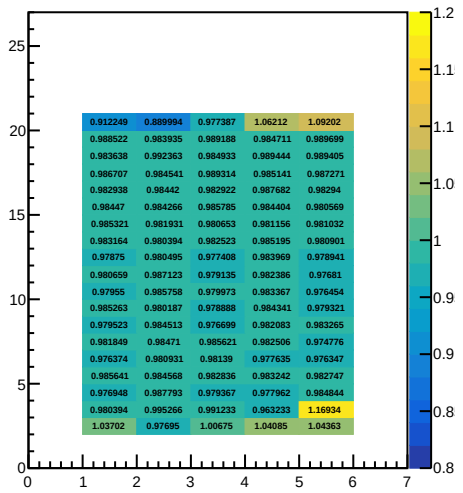
E/p vs p (el. cut)



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

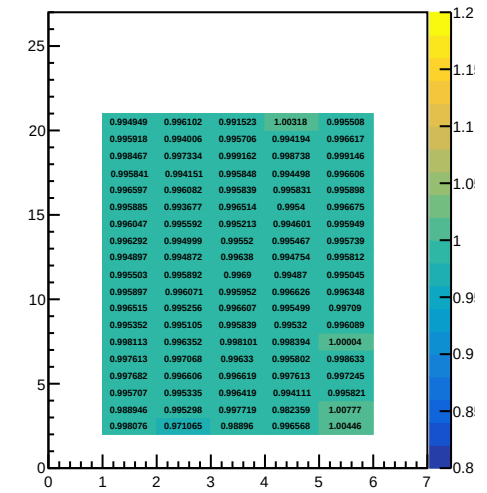


E/p per SH block (el. cut)



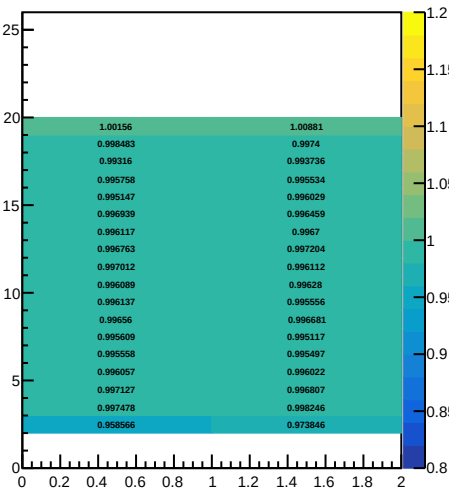
0.912249	0.889994	0.977387	1.06212	1.09202
0.988522	0.983935	0.989188	0.984711	0.989699
0.983638	0.992363	0.984933	0.989444	0.989405
0.986707	0.984541	0.989314	0.985141	0.987271
0.982938	0.98442	0.982922	0.987682	0.98294
0.98447	0.984266	0.985785	0.984404	0.980569
0.985321	0.981931	0.980653	0.981156	0.981032
0.983164	0.980394	0.982523	0.985195	0.980901
0.97875	0.980495	0.977408	0.983969	0.978941
0.980659	0.987123	0.979135	0.982386	0.97681
0.97955	0.985758	0.979973	0.983367	0.976454
0.985263	0.980187	0.978888	0.984341	0.979321
0.979523	0.984513	0.976699	0.982083	0.983265
0.981849	0.98471	0.985621	0.982506	0.974776
0.976374	0.980931	0.98139	0.977635	0.976347
0.985641	0.984568	0.982836	0.983242	0.982747
0.976948	0.987793	0.979367	0.977962	0.984844
0.980394	0.995266	0.991233	0.963233	1.16934
1.03702	0.97695	1.00675	1.04085	1.04363

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



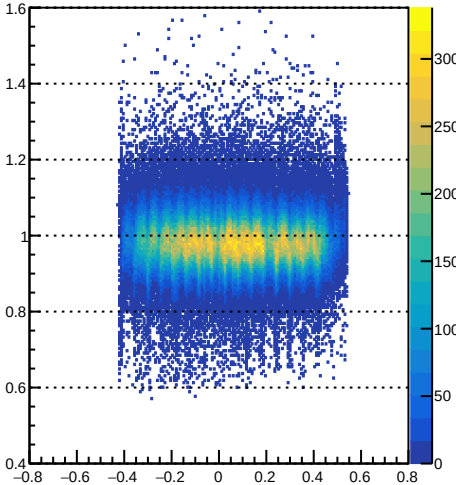
0.994949	0.996102	0.991523	1.00318	0.995508
0.995918	0.994006	0.995706	0.994194	0.996617
0.998467	0.997334	0.999162	0.998738	0.999146
0.995841	0.994151	0.995848	0.994498	0.996606
0.996597	0.996082	0.995839	0.995831	0.995898
0.995885	0.993677	0.996514	0.9954	0.996675
0.996047	0.995592	0.995213	0.994601	0.995949
0.996292	0.994999	0.99552	0.995467	0.995739
0.994897	0.994872	0.99638	0.994754	0.995812
0.995503	0.995892	0.9969	0.99487	0.995045
0.995897	0.996071	0.995952	0.996626	0.996348
0.996515	0.995256	0.996607	0.995499	0.99709
0.995352	0.995105	0.995839	0.99532	0.996089
0.998113	0.996352	0.998101	0.998394	1.00004
0.997613	0.997068	0.99633	0.995802	0.998633
0.997682	0.996606	0.996619	0.997613	0.997245
0.995707	0.995335	0.996419	0.994111	0.995821
0.988946	0.995298	0.997719	0.982359	1.00777
0.998076	0.971065	0.98896	0.996568	1.00446

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

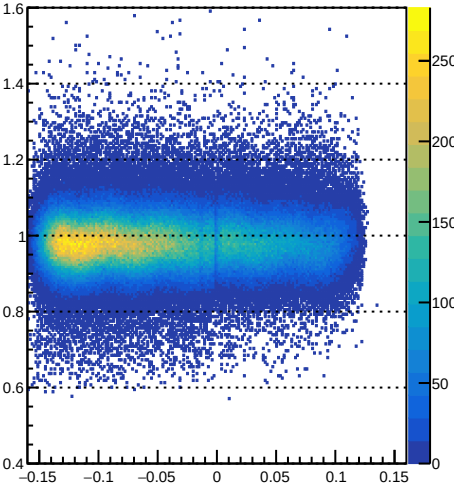


1.00156	1.00881
0.998483	0.9974
0.99316	0.993736
0.995758	0.995534
0.995147	0.996029
0.996939	0.996459
0.996117	0.9967
0.996763	0.997204
0.997012	0.996112
0.996089	0.99628
0.996137	0.995556
0.99656	0.996681
0.995609	0.995117
0.995558	0.995497
0.996057	0.996022
0.997127	0.996807
0.997478	0.998246
0.958566	0.973846

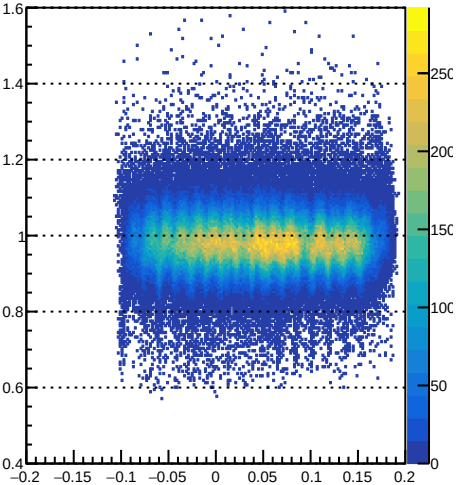
E/p vs Track x (el. cut)



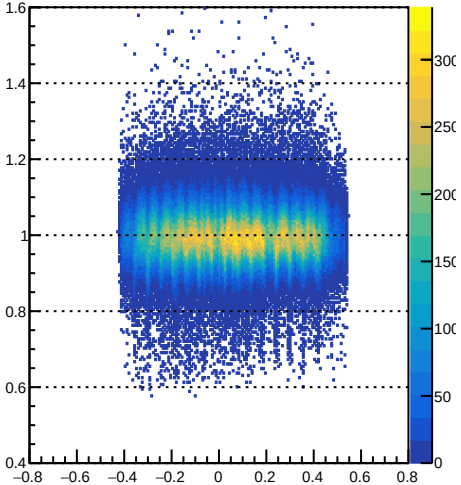
E/p vs Track y (el. cut)



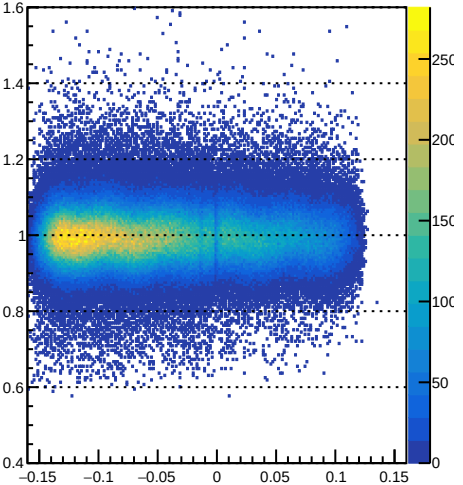
E/p vs Track theta (el. cut)



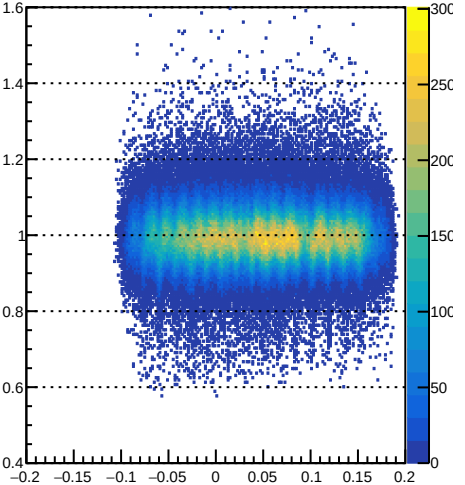
E/p vs Track x | After Calib. (el. cut)



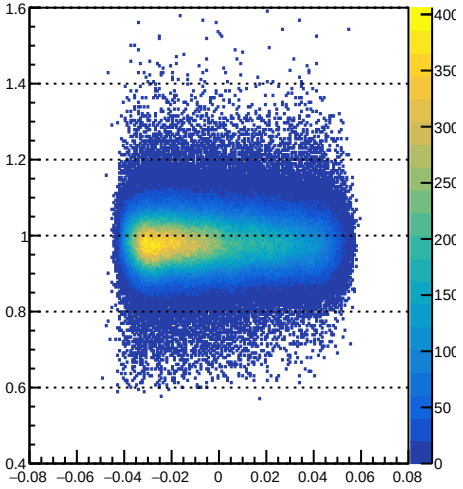
E/p vs Track y | After Calib. (el. cut)



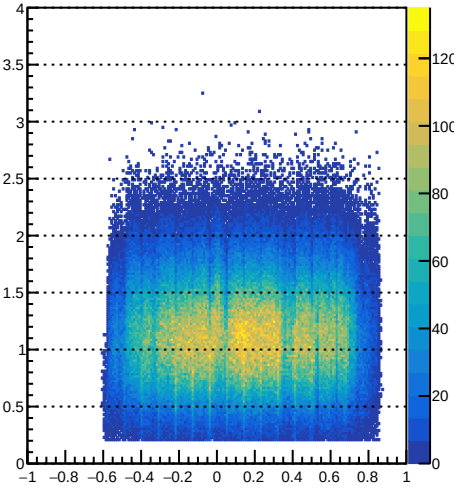
E/p vs Track theta | After Calib. (el. cut)



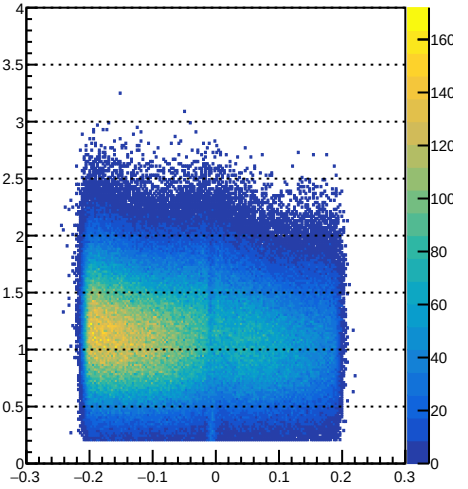
E/p vs Track phi (el. cut)



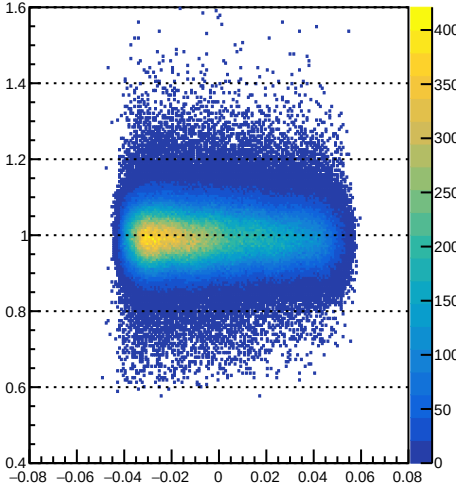
PS energy vs Track x (proj. at PS) (el. cut)



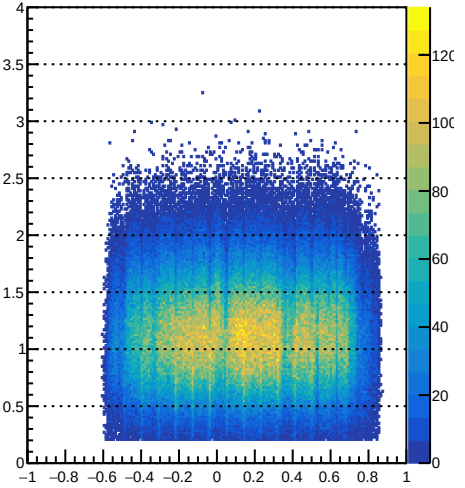
PS energy vs Track y (el. cut) (proj. at PS)



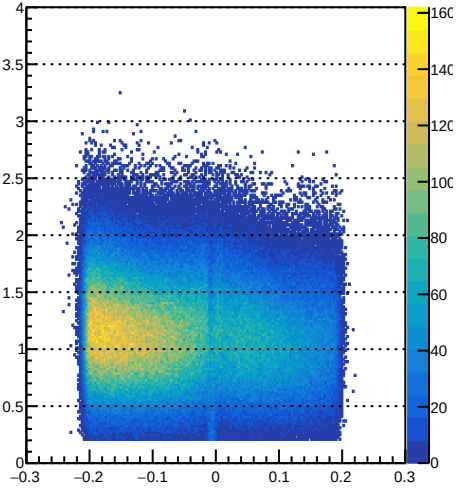
E/p vs Track phi | After Calib. (el. cut)

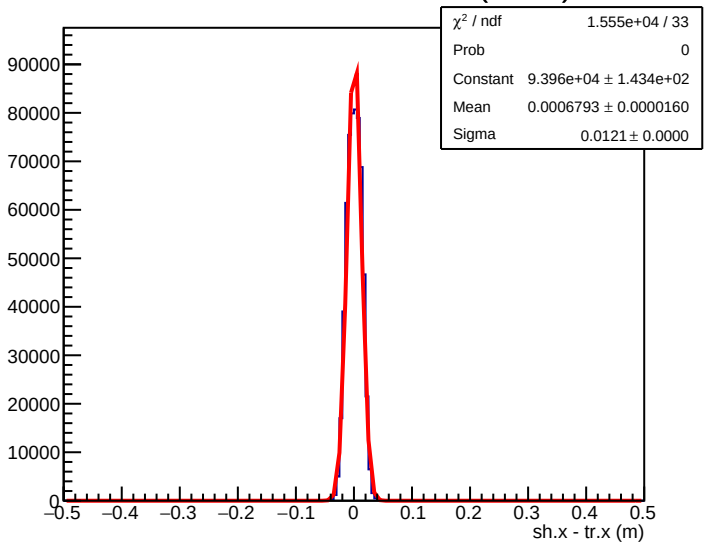


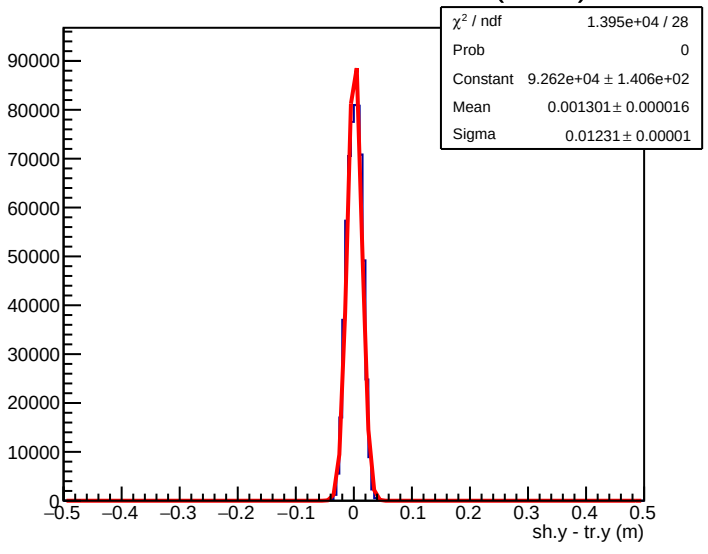
PS energy vs Track x (proj. at PS) | After Calib. (el. cut)

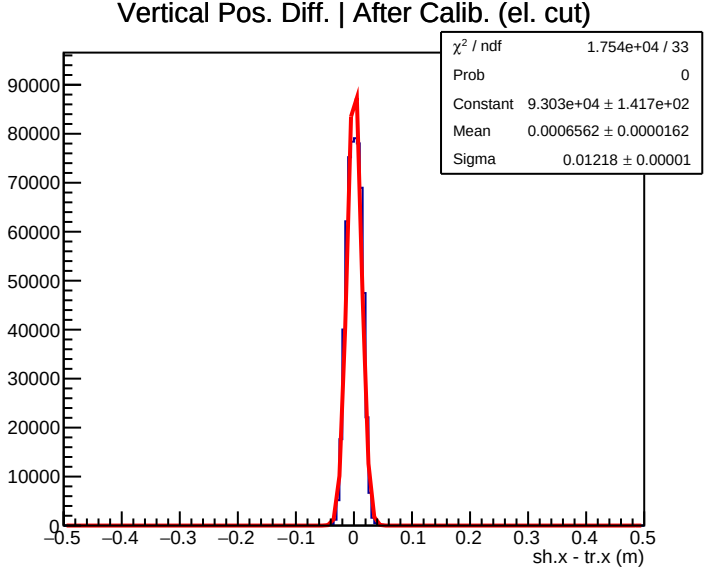


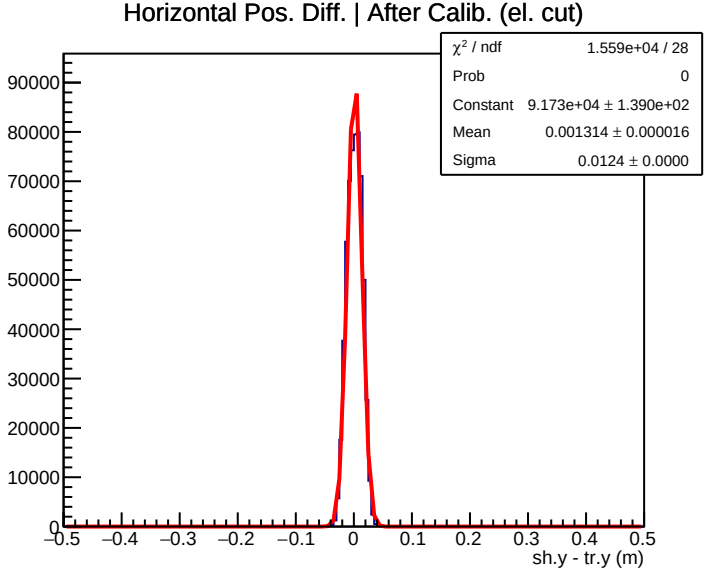
PS energy vs Track y (proj. at PS) | After Calib. (el. cut)

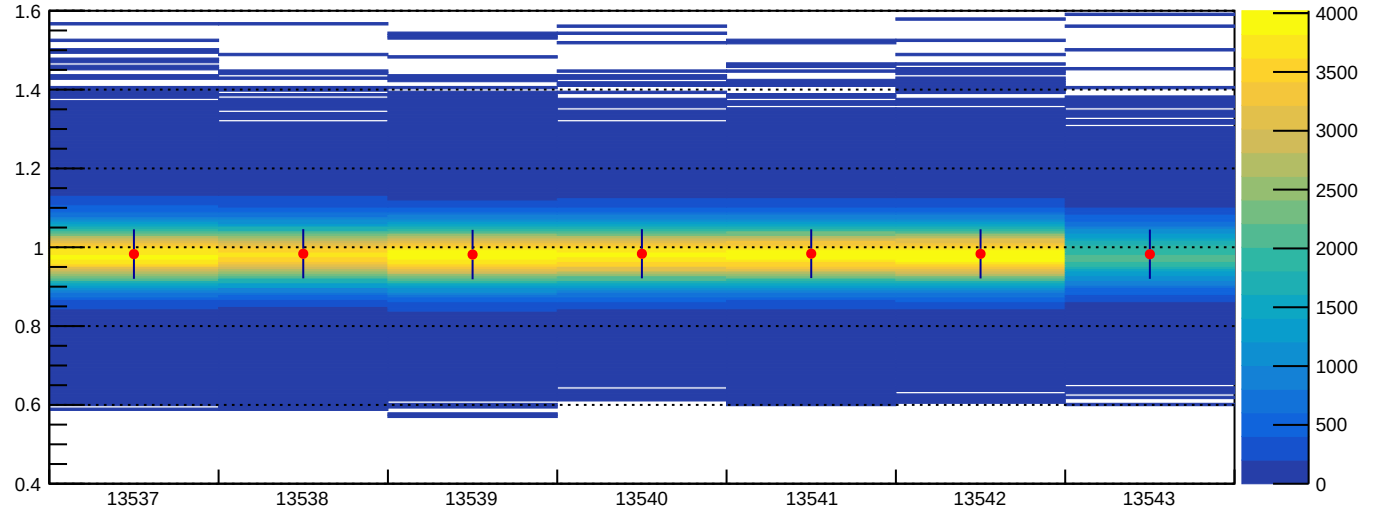


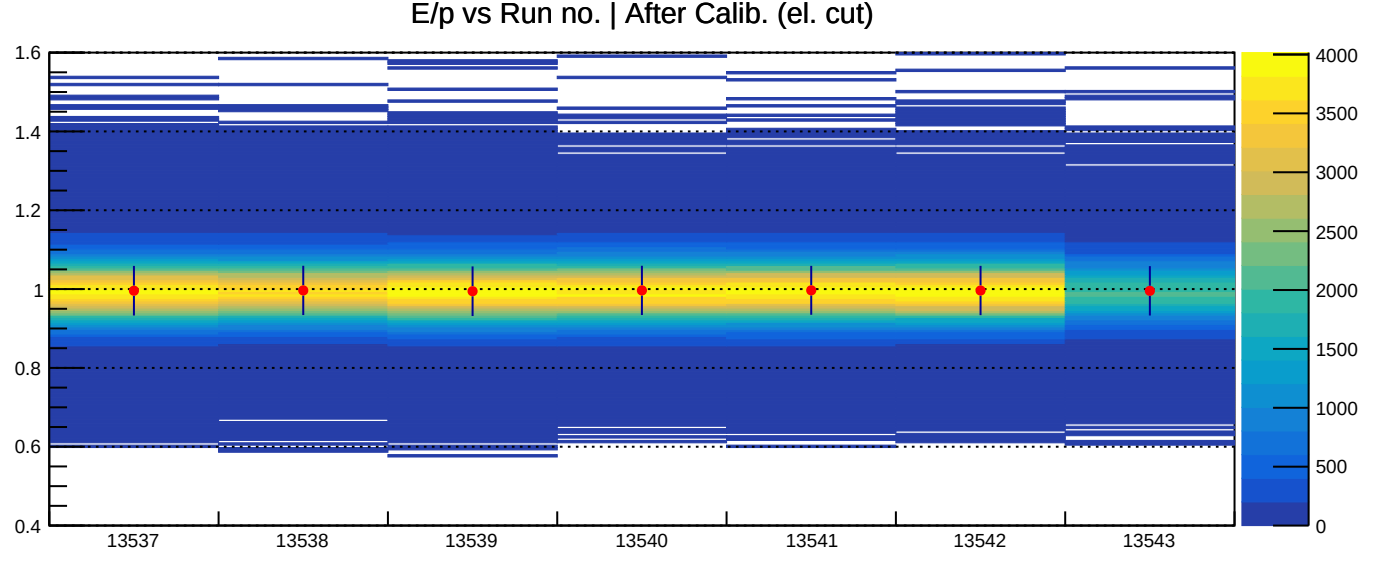

Vertical Position Difference (el. cut)
χ² / ndf 1.555e+04 / 33
Prob 0
Constant 9.396e+04 ± 1.434e+02
Mean 0.0006793 ± 0.0000160
Sigma 0.0121 ± 0.0000
sh.x - tr.x (m)


Horizontal Position Difference (el. cut)
χ² / ndf 1.395e+04 / 28
Prob 0
Constant 9.262e+04 ± 1.406e+02
Mean 0.001301 ± 0.000016
Sigma 0.01231 ± 0.00001
sh.y - tr.y (m)

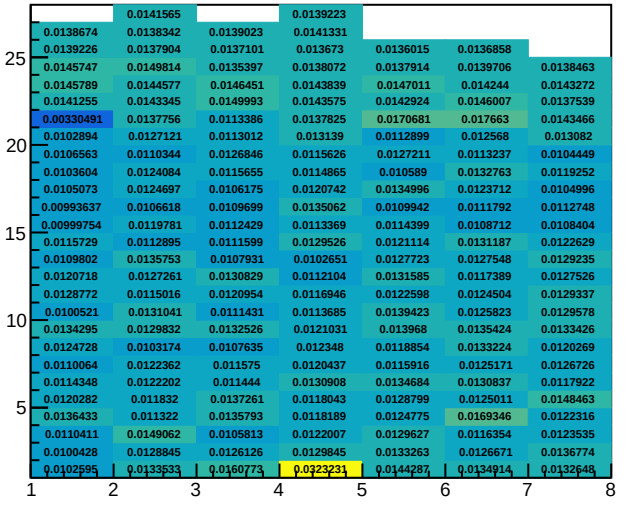

Vertical Pos. Diff. | After Calib. (el. cut)
χ² / ndf 1.754e+04 / 33
Prob 0
Constant 9.303e+04 ± 1.417e+02
Mean 0.0006562 ± 0.0000162
Sigma 0.01218 ± 0.00001
sh.x - tr.x (m)


Horizontal Pos. Diff. | After Calib. (el. cut)
χ² / ndf 1.559e+04 / 28
Prob 0
Constant 9.173e+04 ± 1.390e+02
Mean 0.001314 ± 0.000016
Sigma 0.0124 ± 0.0000
sh.y - tr.y (m)

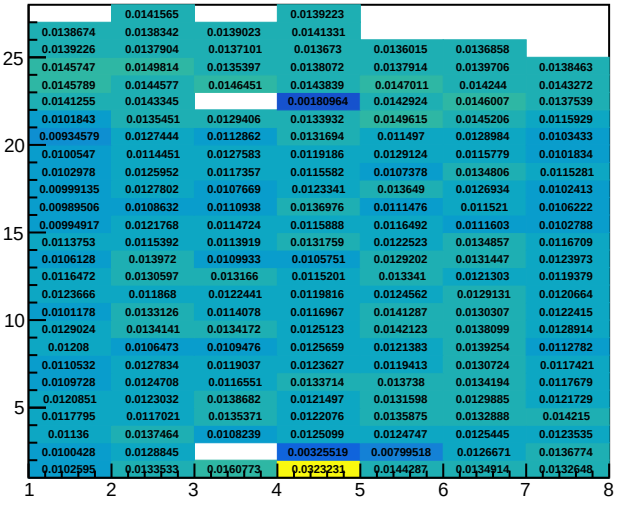

E/p vs Run no. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13537
13538
13539
13540
13541
13542
13543
4000
3500
3000
2500
2000
1500
1000
500
0


E/p vs Run no. | After Calib. (el. cut)
1.6
1.4
1.2
1
0.8
0.6
0.4
13537
13538
13539
13540
13541
13542
13543
4000
3500
3000
2500
2000
1500
1000
500
0

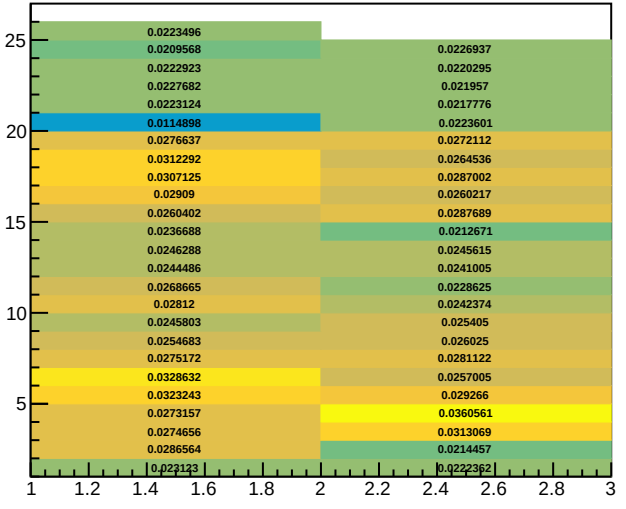
Old ADC Gain Coefficients | SH



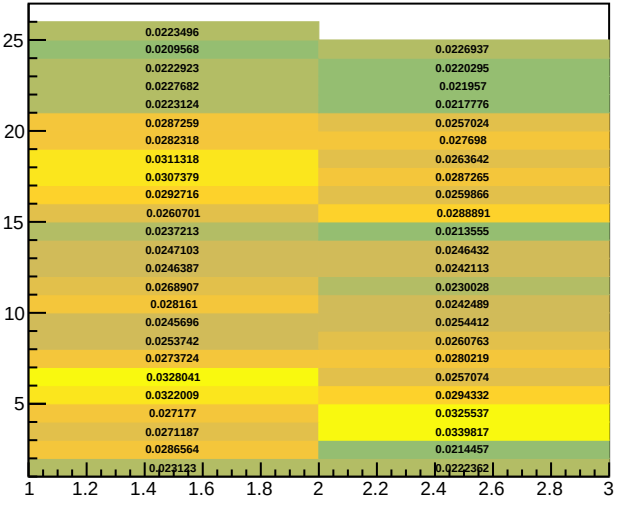
New ADC Gain Coefficients | SH

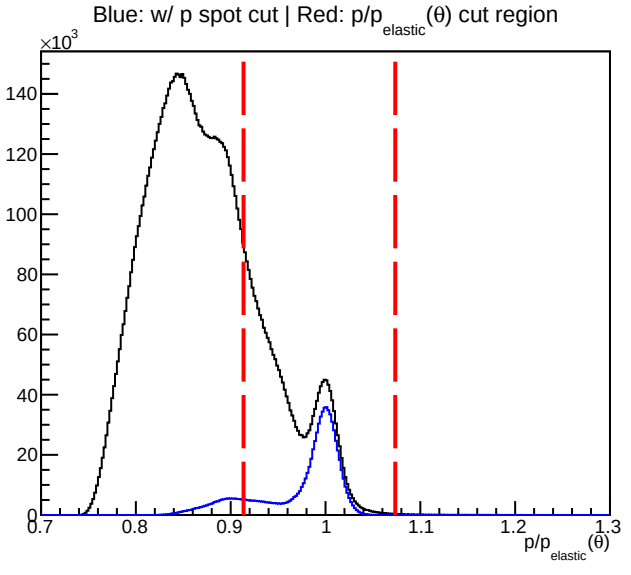


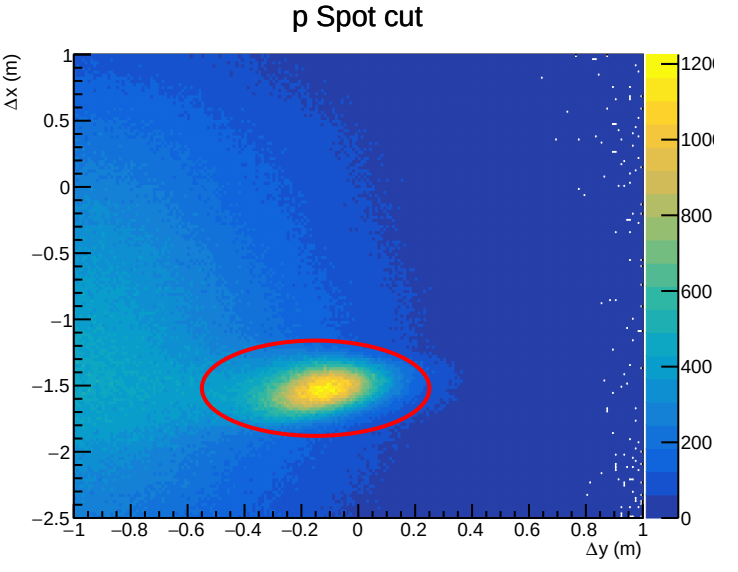
Old ADC Gain Coefficients | PS

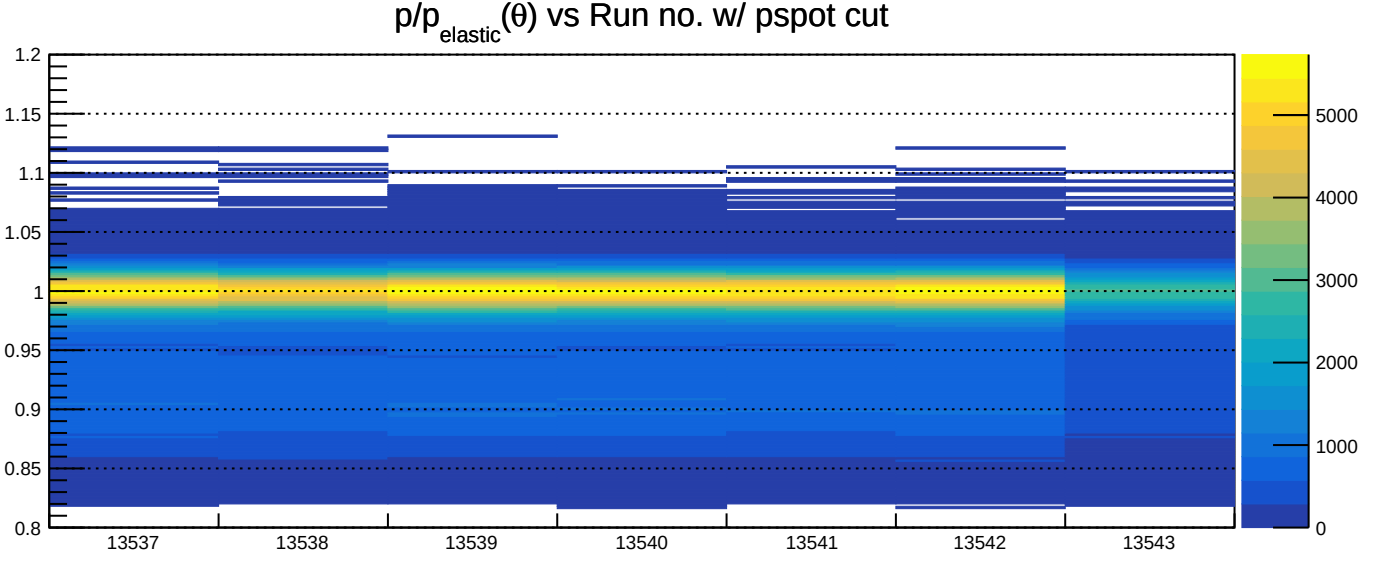


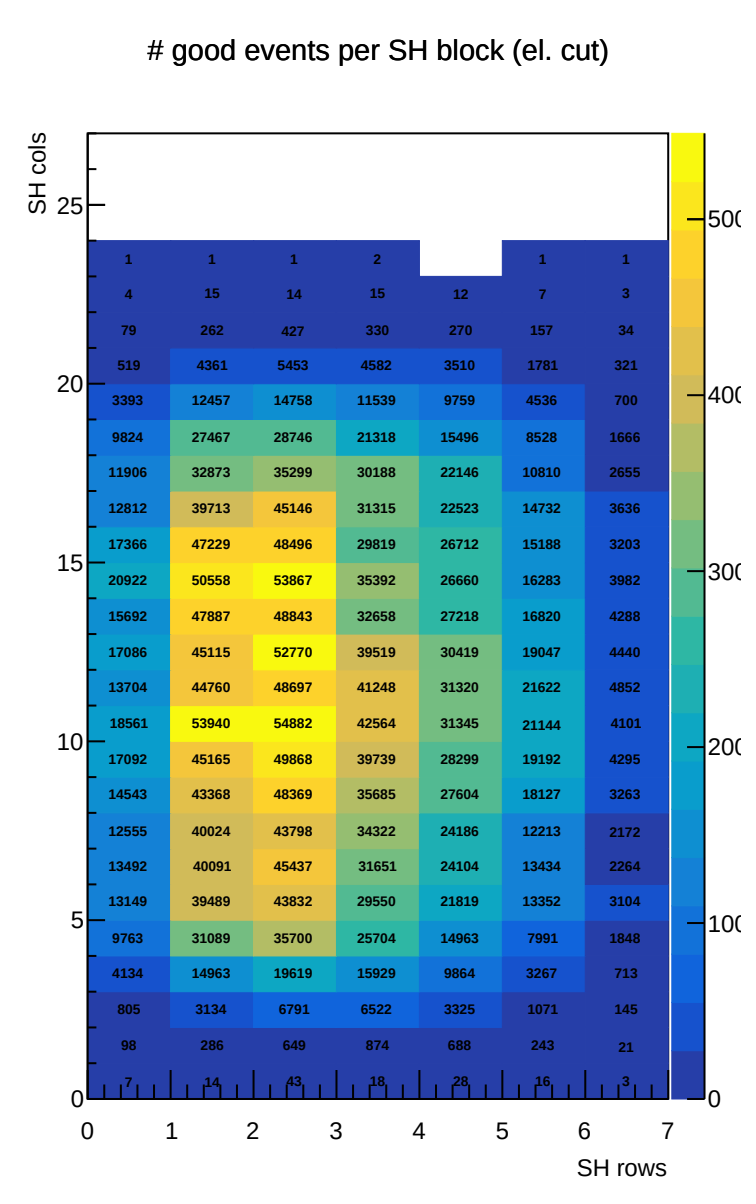
New ADC Gain Coefficients | PS

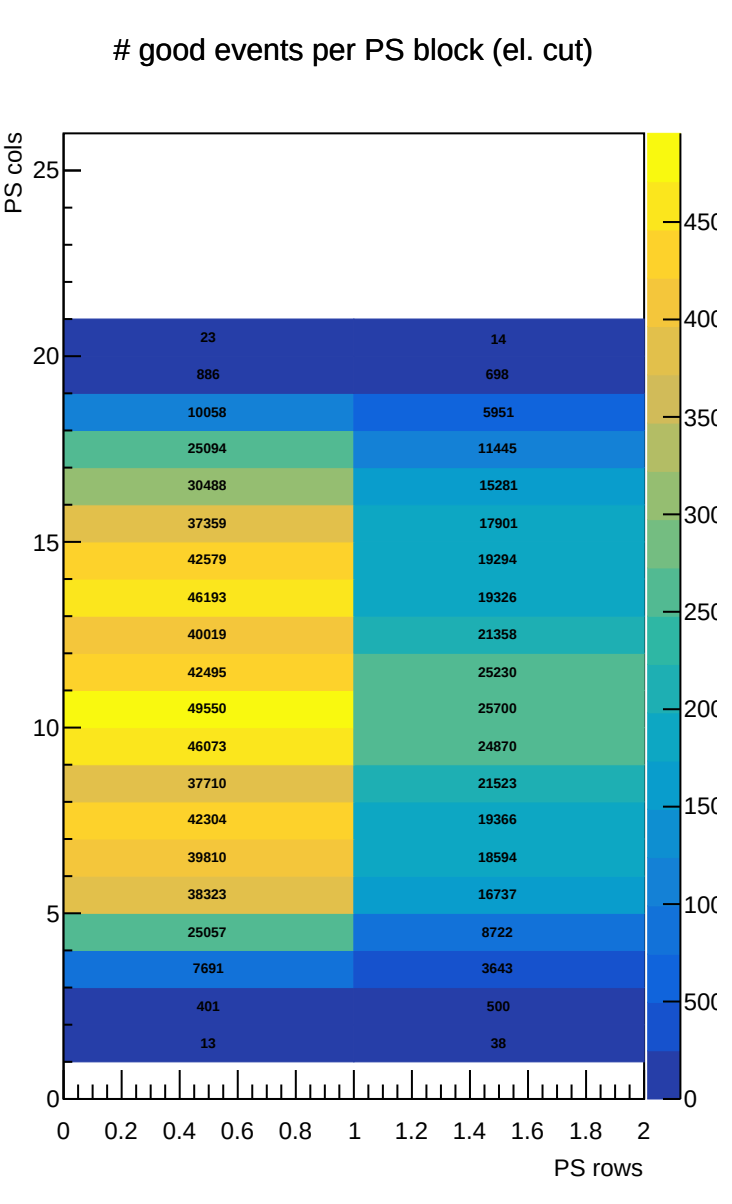



Blue: w/ p spot cut | Red: p/p_elastic(θ) cut region
×10^3
140
120
100
80
60
40
20
0
0.7
0.8
0.9
1
1.1
1.2
1.3
p/p_elastic(θ)

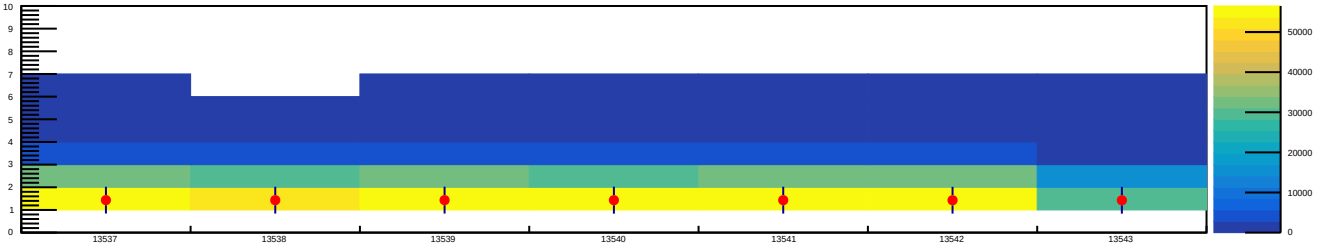

p Spot cut
Δx (m)
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
−1
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1
Δy (m)
1200
1000
800
600
400
200
0


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
13537
13538
13539
13540
13541
13542
13543
5000
4000
3000
2000
1000
0

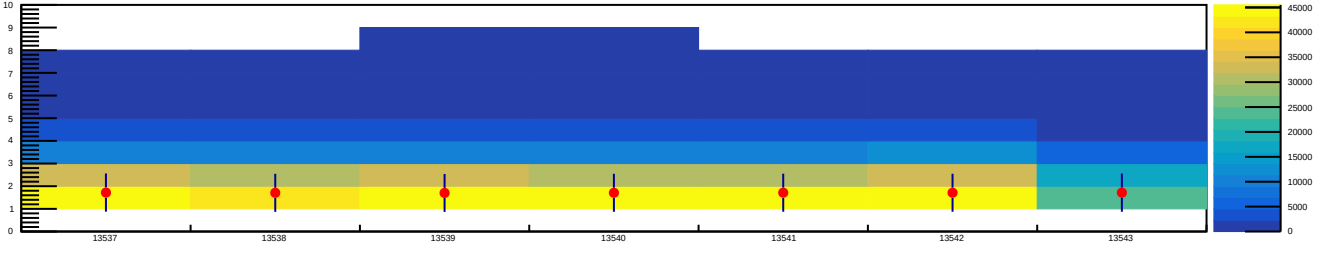

good events per SH block (el. cut)
SH cols
SH rows
1 1 1 2 1 1
4 15 14 15 12 7 3
79 262 427 330 270 157 34
519 4361 5453 4582 3510 1781 321
3393 12457 14758 11539 9759 4536 700
9824 27467 28746 21318 15496 8528 1666
11906 32873 35299 30188 22146 10810 2655
12812 39713 45146 31315 22523 14732 3636
17366 47229 48496 29819 26712 15188 3203
20922 50558 53867 35392 26660 16283 3982
15692 47887 48843 32658 27218 16820 4288
17086 45115 52770 39519 30419 19047 4440
13704 44760 48697 41248 31320 21622 4852
18561 53940 54882 42564 31345 21144 4101
17092 45165 49868 39739 28299 19192 4295
14543 43368 48369 35685 27604 18127 3263
12555 40024 43798 34322 24186 12213 2172
13492 40091 45437 31651 24104 13434 2264
13149 39489 43832 29550 21819 13352 3104
9763 31089 35700 25704 14963 7991 1848
4134 14963 19619 15929 9864 3267 713
805 3134 6791 6522 3325 1071 145
98 286 649 874 688 243 21
7 14 43 18 28 16 3


good events per PS block (el. cut)
PS cols
PS rows
23 14
886 698
10058 5951
25094 11445
30488 15281
37359 17901
42579 19294
46193 19326
40019 21358
42495 25230
49550 25700
46073 24870
37710 21523
42304 19366
39810 18594
38323 16737
25057 8722
7691 3643
401 500
13 38

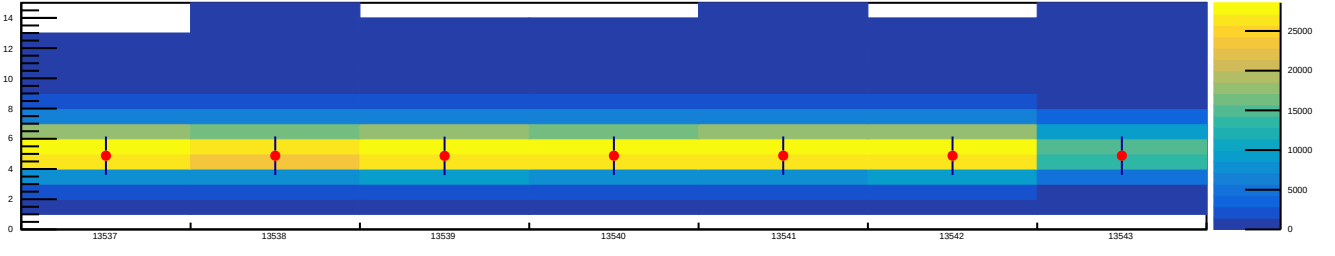
PS (best) cluster size vs Run no. (el. cut)



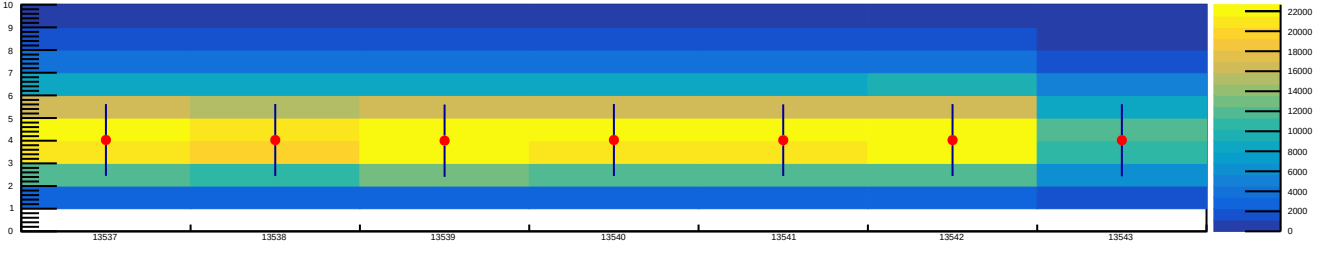
PS cluster multiplicity vs Run no. (el. cut)



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-sbs100p.cfg

Total # events analyzed: 27050753, Preparing for replay pass: 2

E/p (before calib.) | μ = 0.98, σ = (5.462 $\pm$ 0.011) p

E/p (after calib.) | μ = 0.99, σ = (5.496 $\pm$ 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: 10603584

Elastic cuts:

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

proton spot cut ranges:

Δx (m): Mean = -1.5200, 2.0σ = 0.1800
Δy (m): Mean = -0.1500, 2.0σ = 0.2000

 # events passed global & elastic cuts: 722993

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 2255.2s | Real 6180.2s