E/p (el. cut)

Before calib., μ = 0.98, σ = (5.384 ± .026) p
After calib., μ = 1.00, σ = (5.408 ± .027) p

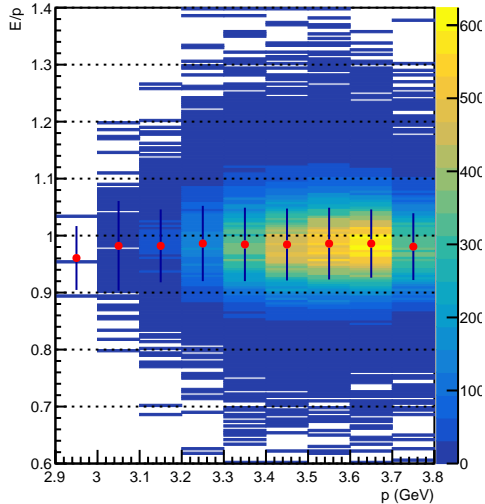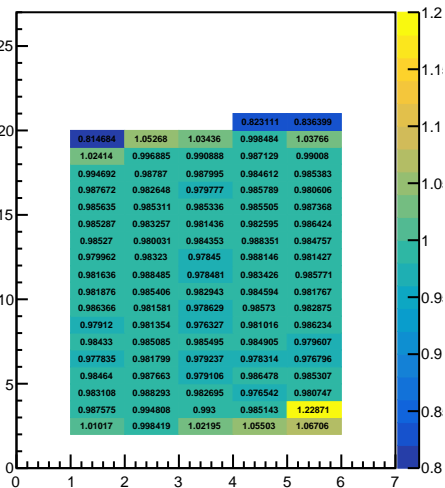**E/p vs p (el. cut)**

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

E/p per SH block (el. cut)

			0.823111	0.836399	
0.814684	1.05268	1.03436	0.988484	1.03766	
1.02414	0.996885	0.990888	0.987129	0.99008	
0.994692	0.98787	0.987995	0.984612	0.985383	
0.987672	0.982648	0.979777	0.985789	0.980606	
0.985635	0.985311	0.985336	0.985505	0.987368	
0.985287	0.983257	0.981436	0.982595	0.986424	
0.98527	0.980031	0.984353	0.988351	0.984757	
0.979962	0.98323	0.97845	0.988146	0.981427	
0.981636	0.988485	0.978481	0.983426	0.985771	
0.981876	0.985406	0.982943	0.984594	0.981767	
0.986366	0.981581	0.978629	0.98573	0.982875	
0.97912	0.981354	0.976327	0.981016	0.986234	
0.98433	0.985085	0.985495	0.984905	0.979607	
0.977835	0.981799	0.979237	0.978314	0.976796	
0.98464	0.987663	0.979106	0.986478	0.985307	
0.983108	0.988293	0.982695	0.976542	0.980747	
0.987575	0.994808	0.993	0.985143	1.22871	
1.01017	0.998419	1.02195	1.05503	1.06706	

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

			0.830038	0.840218	
1.12427	1.06501	1.06821	1.01374	1.04581	
0.999464	0.999789	1.00345	0.999115	1.02728	
0.999783	0.995064	0.99499	0.995839	1.00294	
0.997302	0.997399	0.996999	0.9954	0.996137	
0.99563	0.993179	0.997281	0.994858	0.998438	
0.995584	0.994531	0.995988	0.994577	0.997019	
0.996437	0.995386	0.995734	0.995945	0.997024	
0.995232	0.994396	0.996746	0.995237	0.99613	
0.995609	0.996719	0.995715	0.994351	0.995252	
0.996364	0.995129	0.996988	0.997433	0.998899	
0.996073	0.995905	0.994983	0.995623	0.996489	
0.995973	0.993518	0.997101	0.995808	0.997164	
0.998751	0.996386	0.997928	0.999385	0.997604	
0.99764	0.998058	0.995111	0.997004	0.998587	
0.997023	0.996538	0.998074	0.997885	1.00823	
0.997161	0.994711	0.996898	0.993613	1.02012	
0.996174	0.998776	0.998354	1.00206	1.18265	
1.00255	0.985225	1.02139	1.05273	1.05551	

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

1.03383	1.04339
0.999469	1.00387
0.995313	0.997241
0.994916	0.996735
0.996835	0.996405
0.997022	0.995924
0.9968	0.996852
0.997954	0.996795
0.995802	0.995641
0.996831	0.995466
0.996575	0.996488
0.995541	0.994807
0.995153	0.996228
0.996366	0.999188
0.997013	1.00607
0.998577	1.05125
1.00345	1.0198
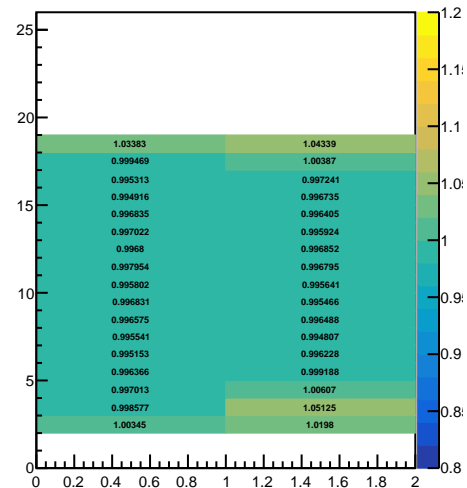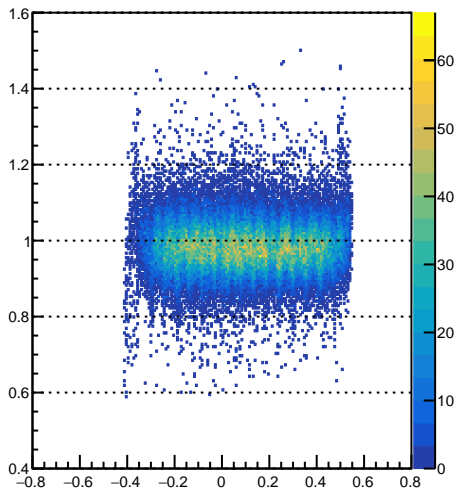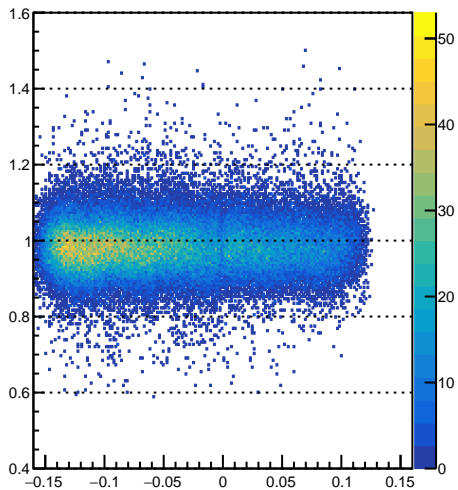
E/p vs Track x (el. cut) — E/p vs Track y (el. cut) — E/p vs Track theta (el. cut)

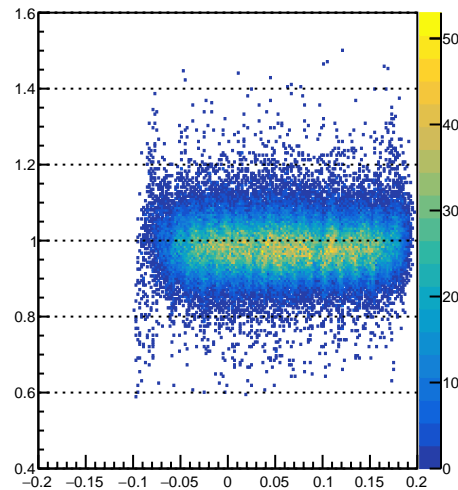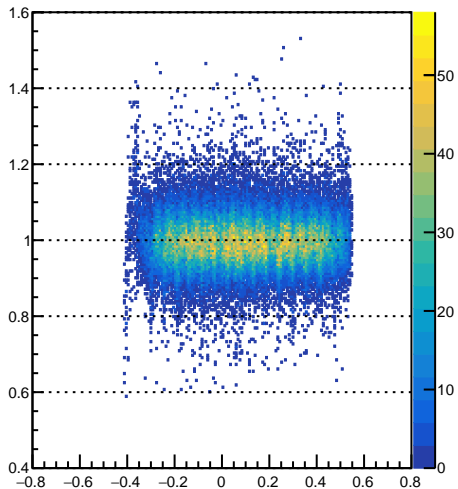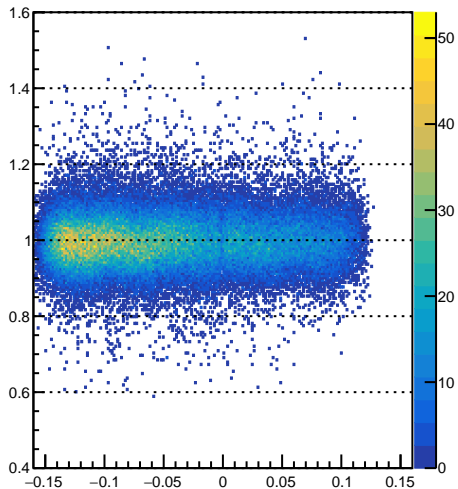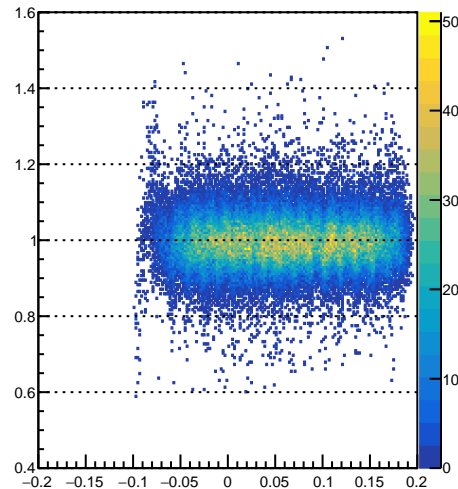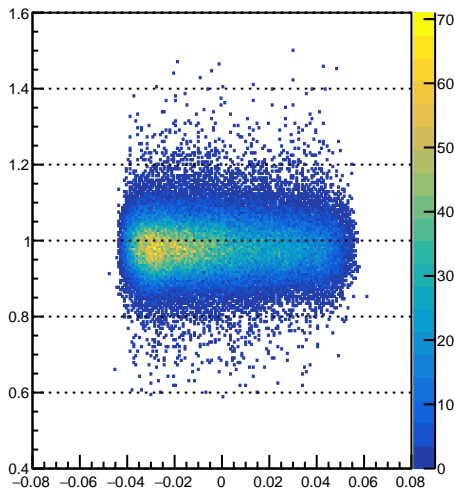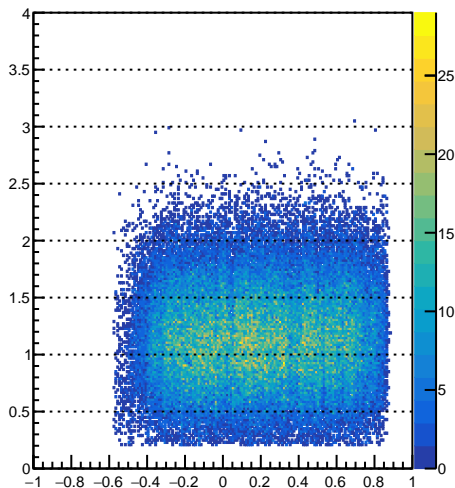E/p vs Track x | After Calib. (el. cut) — E/p vs Track y | After Calib. (el. cut) — E/p vs Track theta | After Calib. (el. cut)
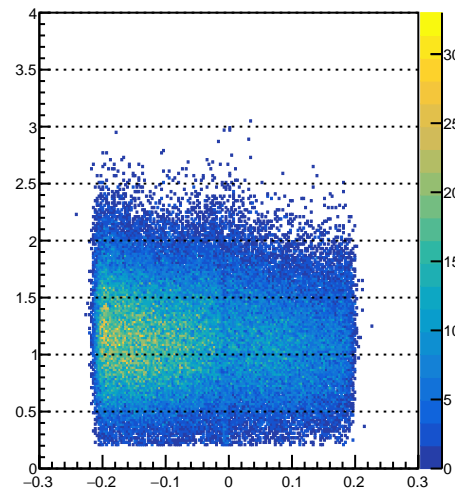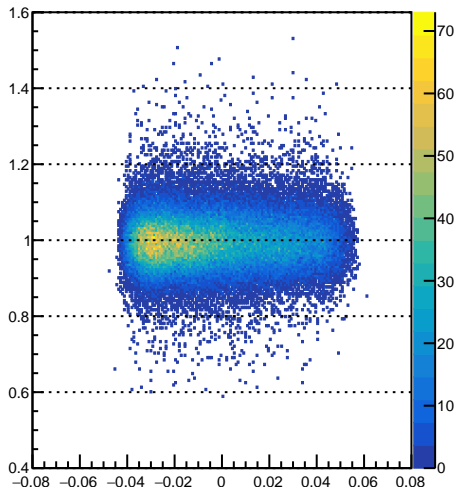
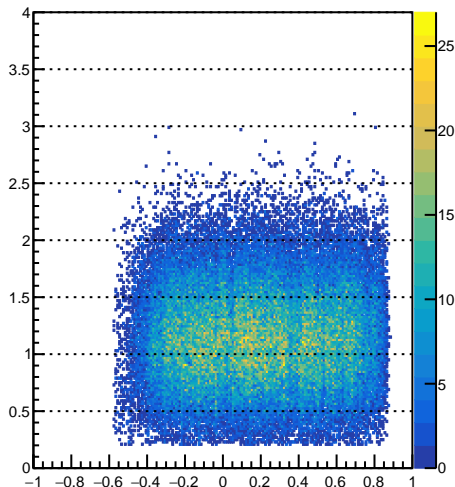**E/p vs Track phi (el. cut)** · **PS energy vs Track x (proj. at PS) (el. cut)** · **PS energy vs Track y (el. cut) (proj. at PS)**

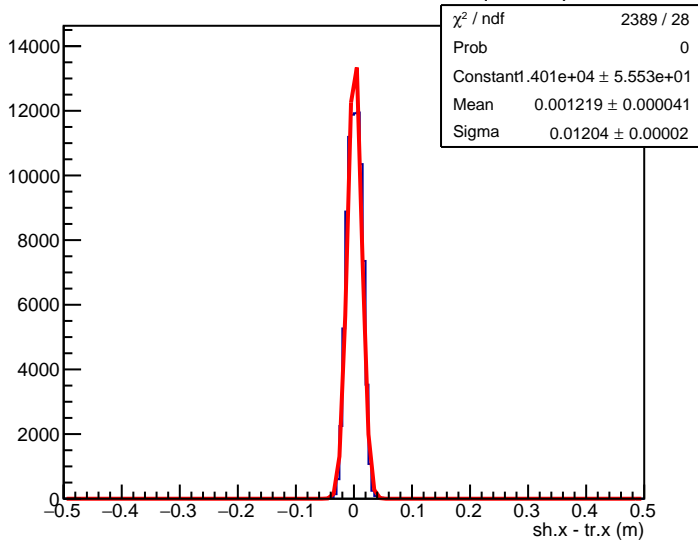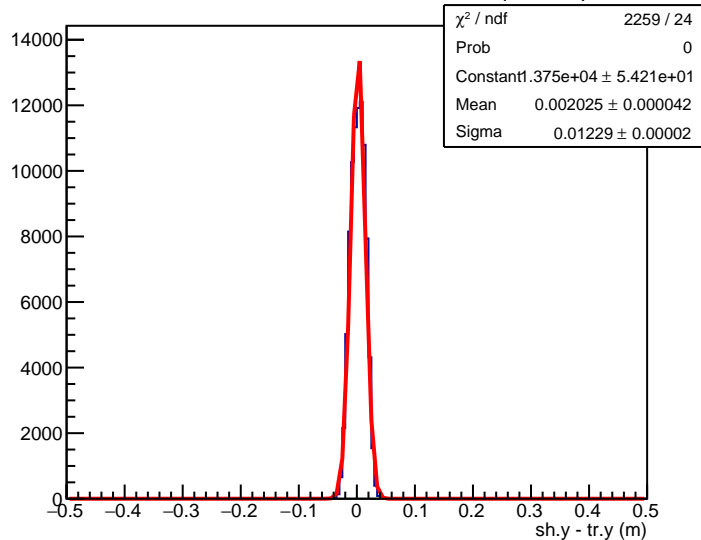**E/p vs Track phi | After Calib. (el. cut)** · **PS energy vs Track x (proj. at PS) | After Calib. (el. cut)** · **PS energy vs Track y (proj. at PS) | After Calib. (el. cut)**
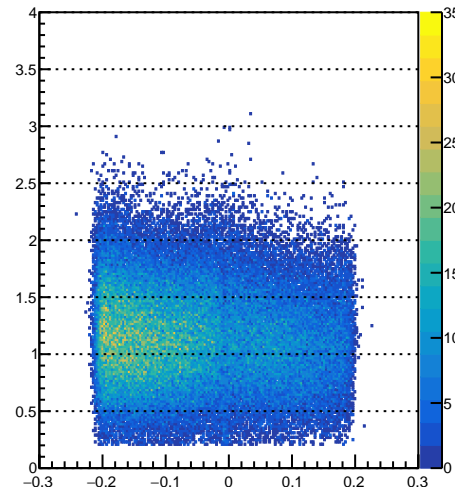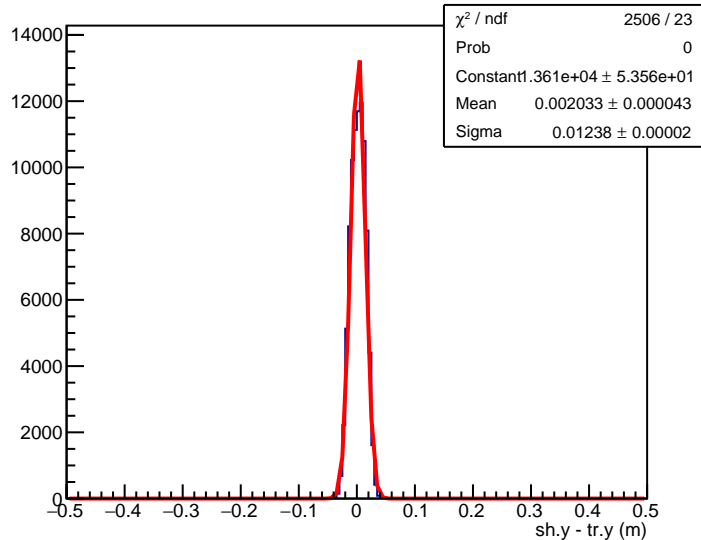
Vertical Position Difference (el. cut)

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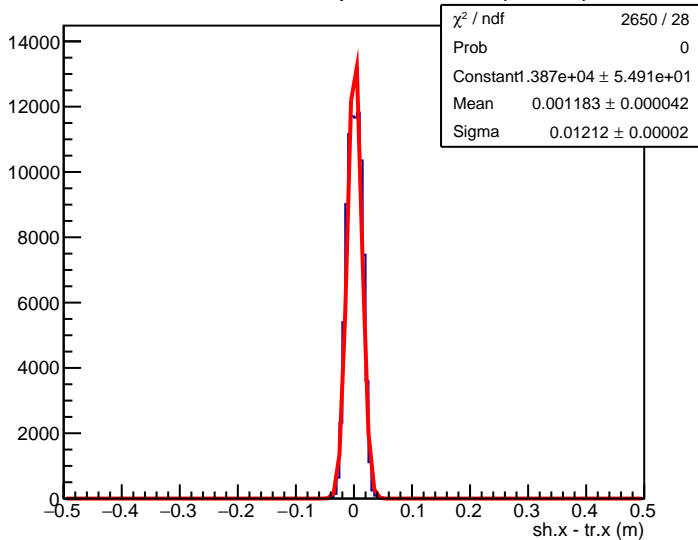
Horizontal Pos. Diff. | After Calib. (el. cut)

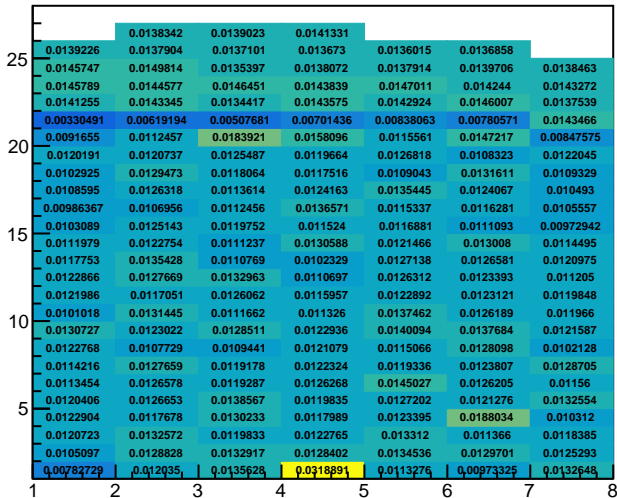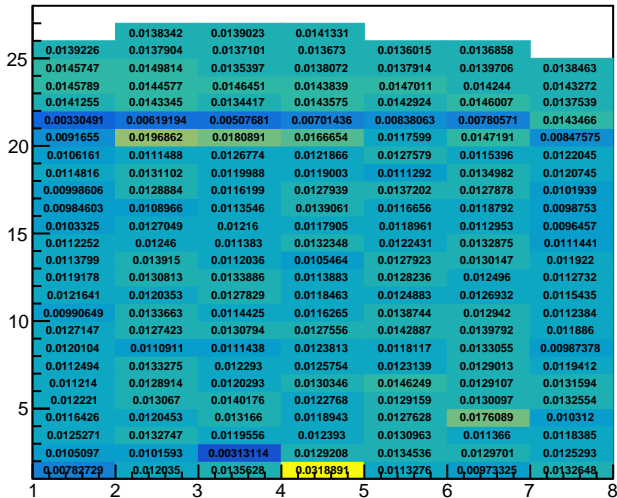|	
χ² / ndf	2506 / 23
Prob	0
Constant	1.361e+04 ± 5.356e+01
Mean	0.002033 ± 0.000043
Sigma	0.01238 ± 0.00002

sh.y - tr.y (m)

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

13580
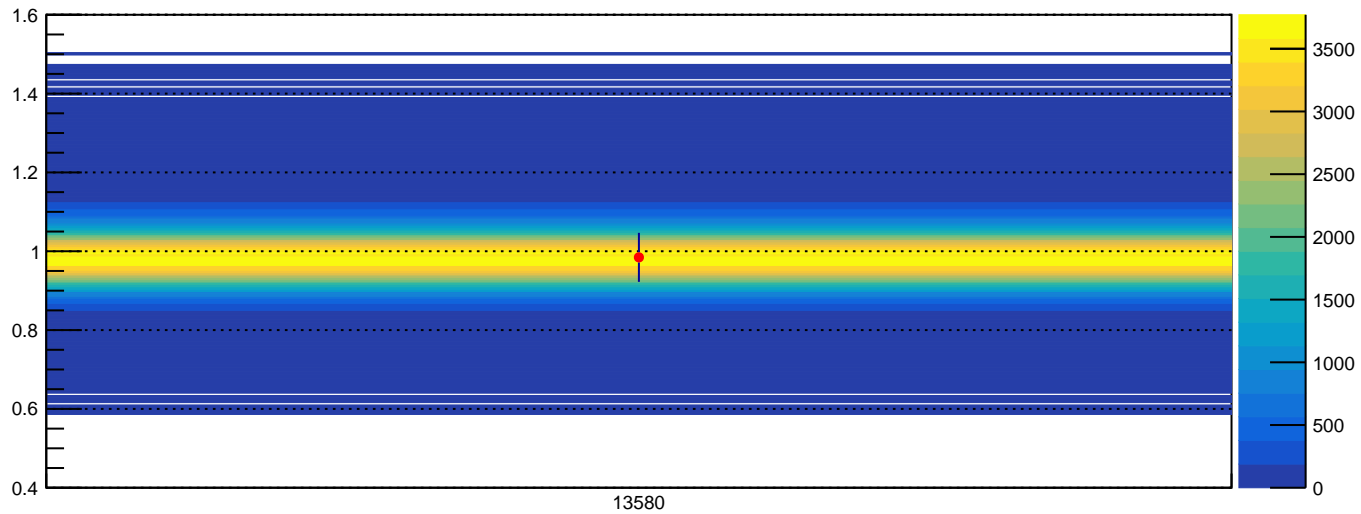
E/p vs Run no. | After Calib. (el. cut)

13580
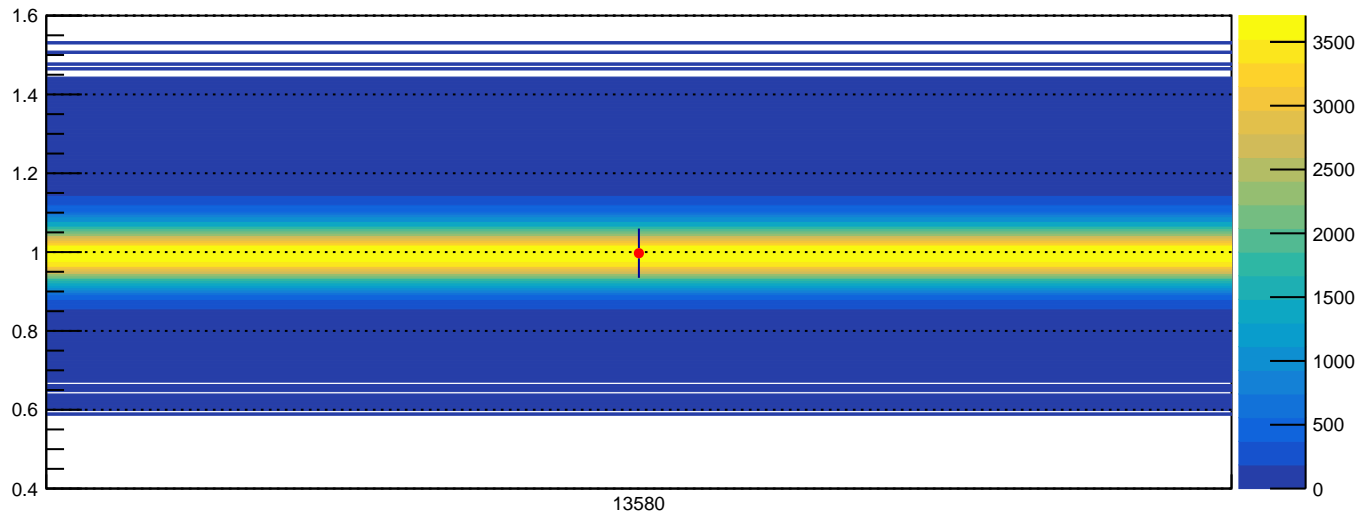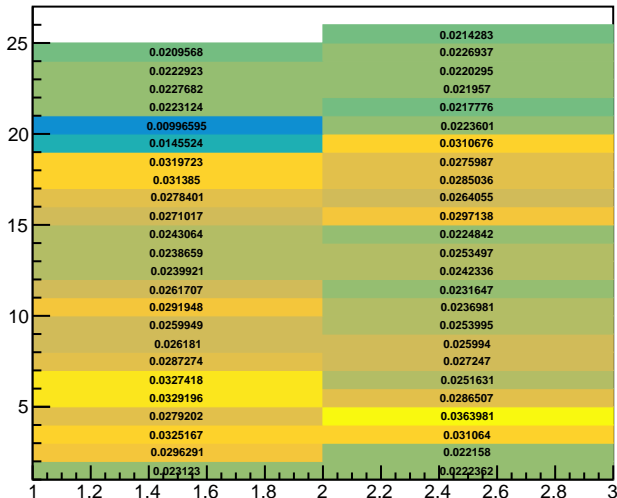
Old ADC Gain Coefficients | SH
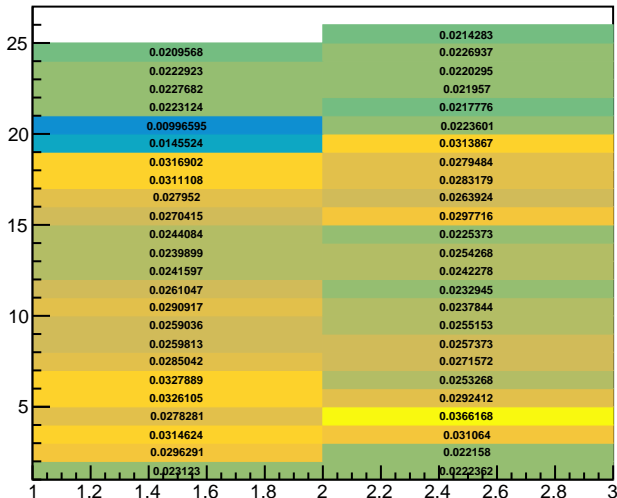
New ADC Gain Coefficients | SH
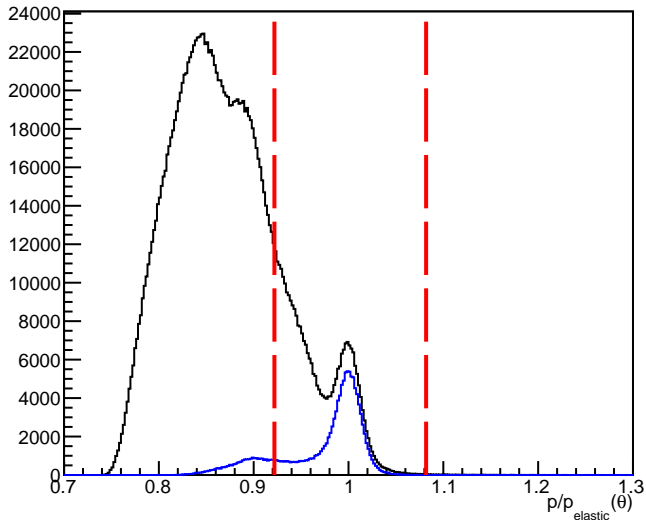
Old ADC Gain Coefficients | PS
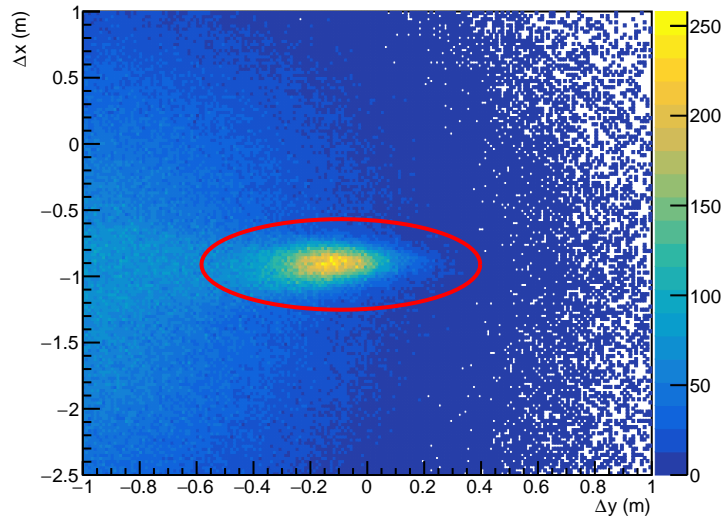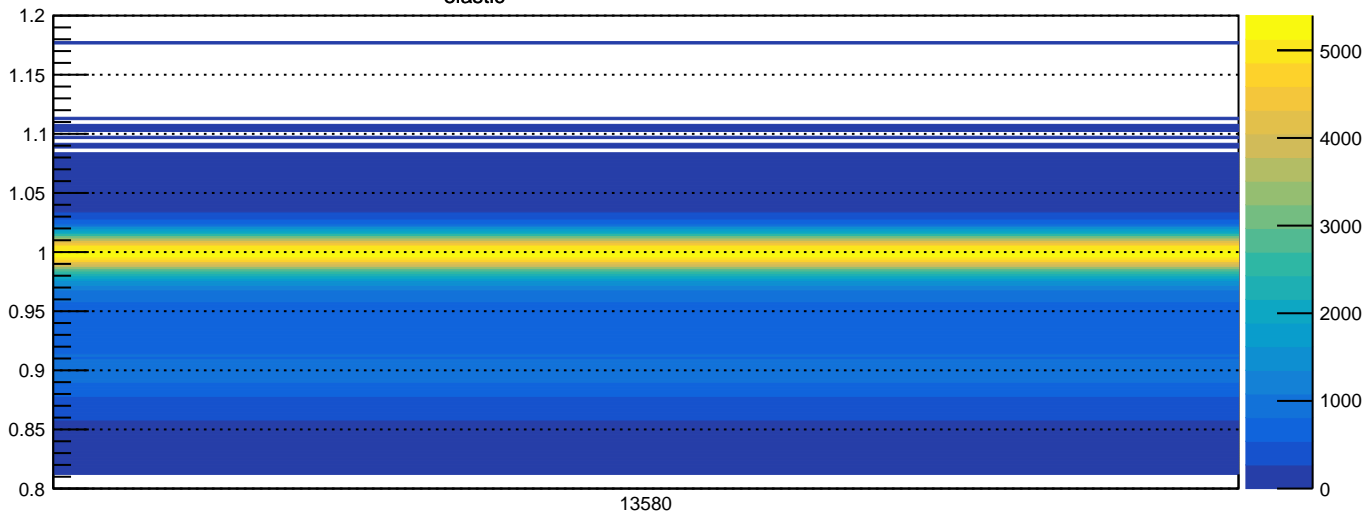
New ADC Gain Coefficients | PS
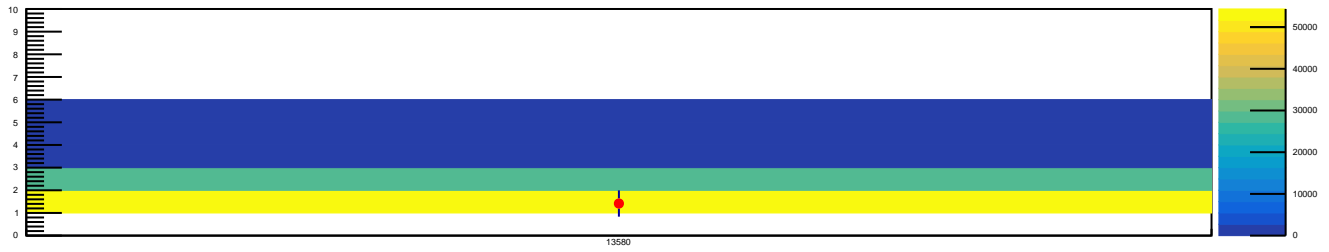
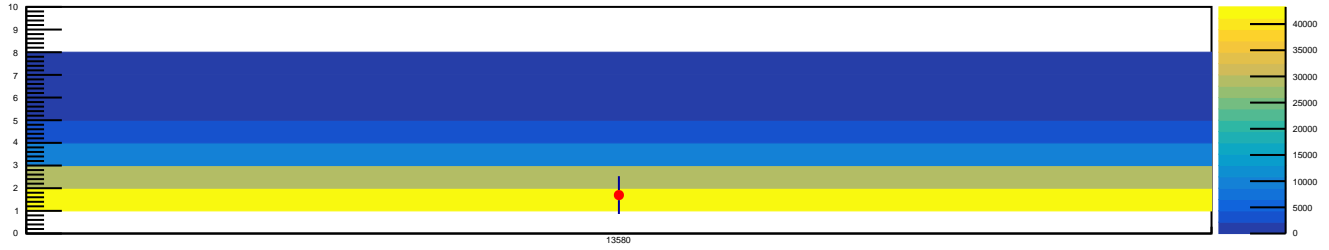Blue: w/ p spot cut | Red: $p/p_{elastic}(\theta)$ cut region

p Spot cut

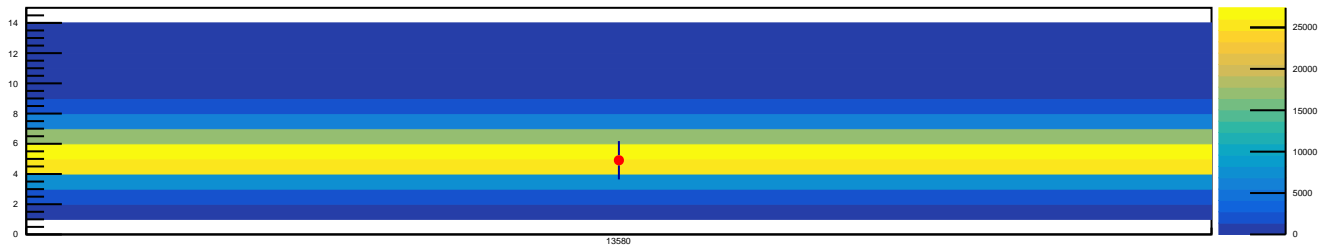$p/p_{elastic}(\theta)$ vs Run no. w/ pspot cut
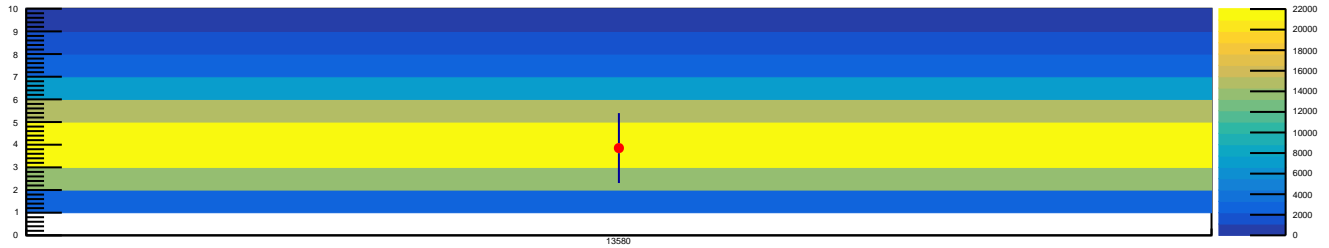
PS (best) cluster size vs Run no. (el. cut)

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: 11/20/2023
Configfile: BBCal_replay/macros/Combined_macros/cfg/qa-newclalgo-10ns-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$_{el}$(θ) - 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 352.0s | Real 1033.9s