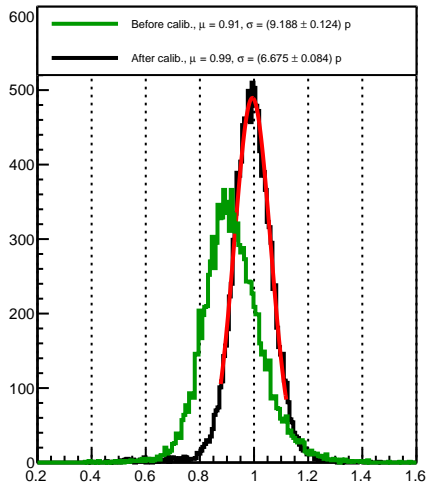
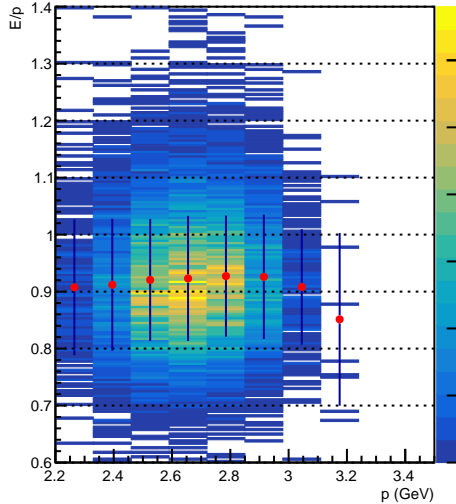


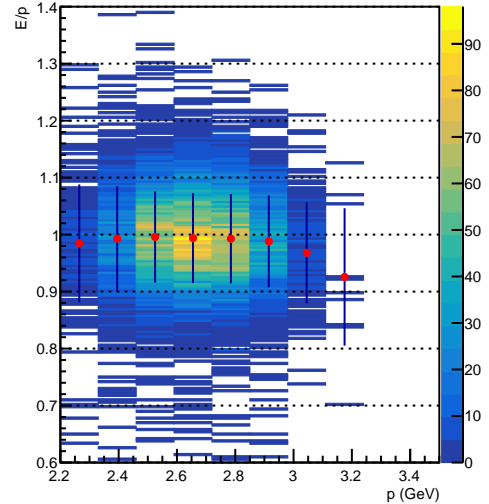
E/p (el. cut)



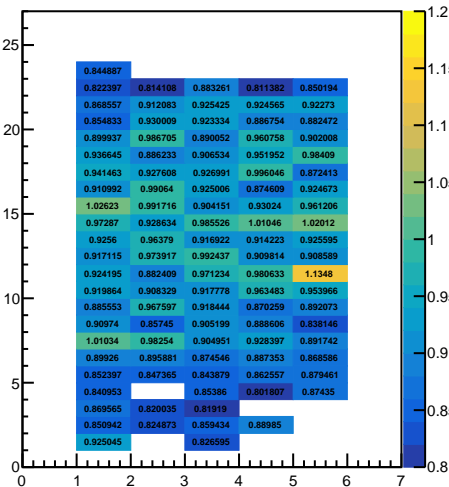
E/p vs p (el. cut)



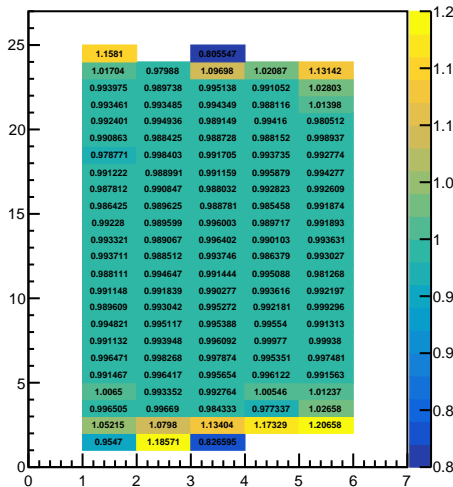
E/p vs p | After Calib. (el. cut)



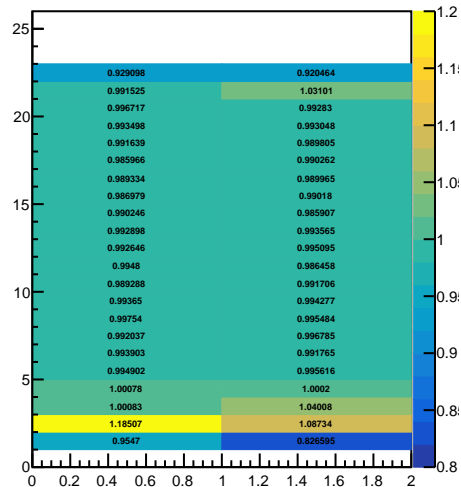
E/p per SH block (el. cut)



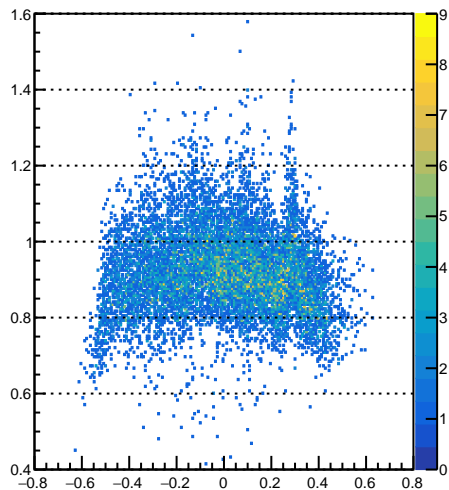
E/p per SH block | After Calib. (el. cut)



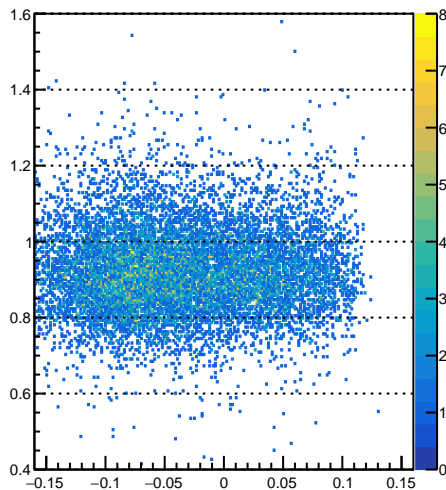
E/p per PS block | After Calib. (el. cut)



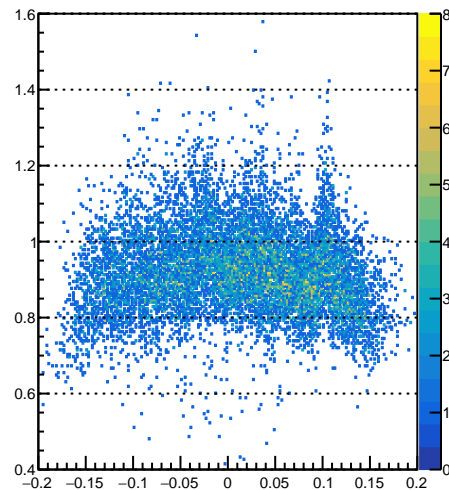
E/p vs Track x (el. cut)



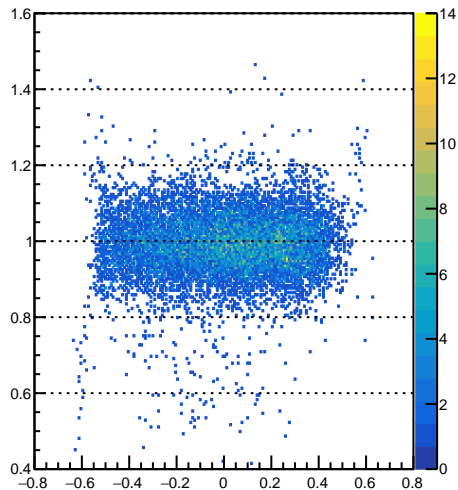
E/p vs Track y (el. cut)



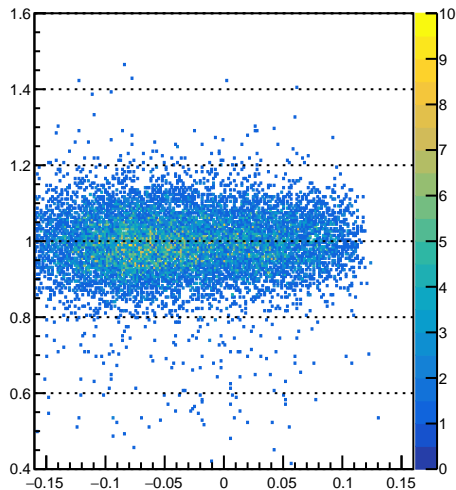
E/p vs Track theta (el. cut)



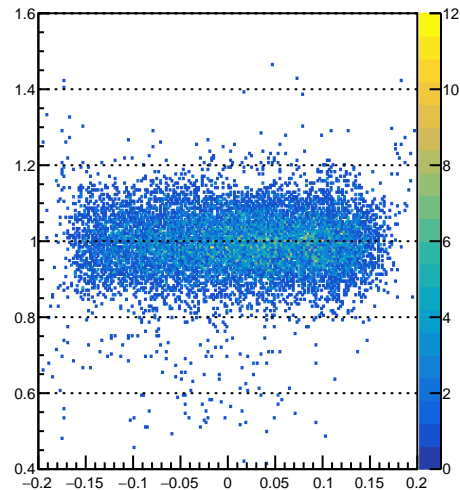
E/p vs Track x | After Calib. (el. cut)



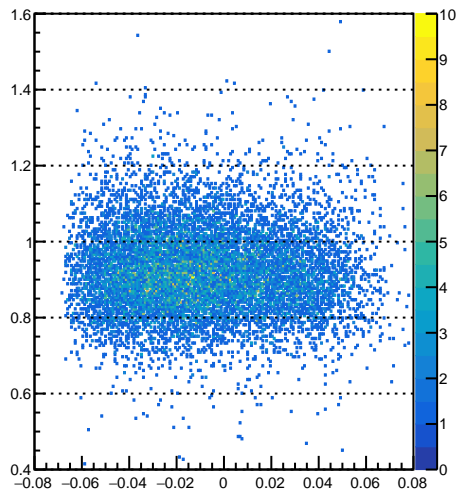
E/p vs Track y | After Calib. (el. cut)



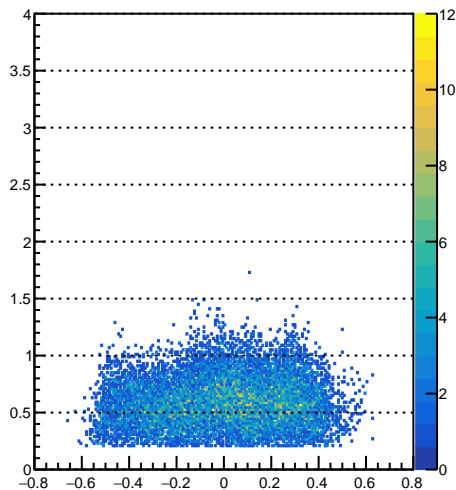
E/p vs Track theta | After Calib. (el. cut)



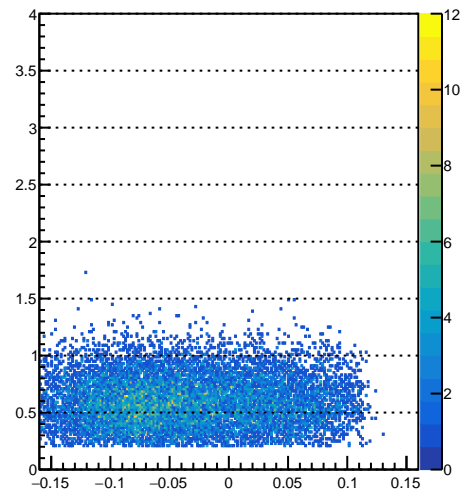
E/p vs Track phi (el. cut)



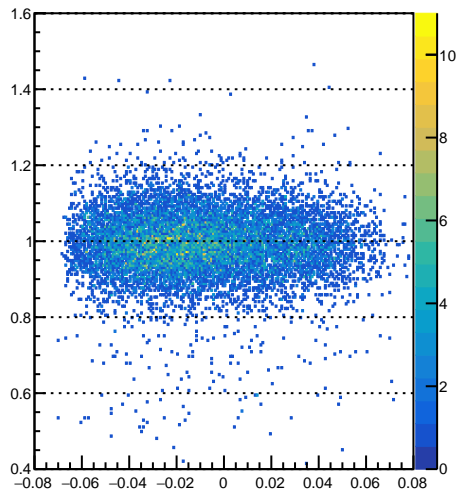
PS energy vs Track x (el. cut)



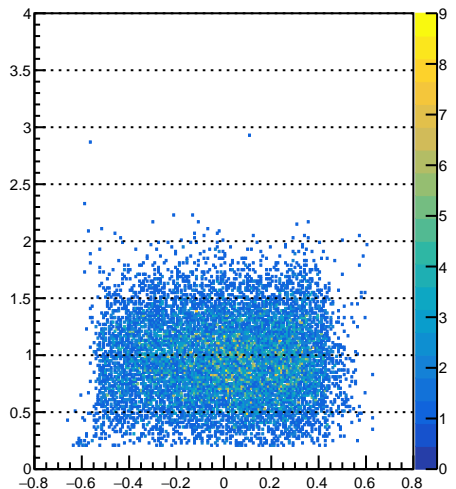
PS energy vs Track y (el. cut)



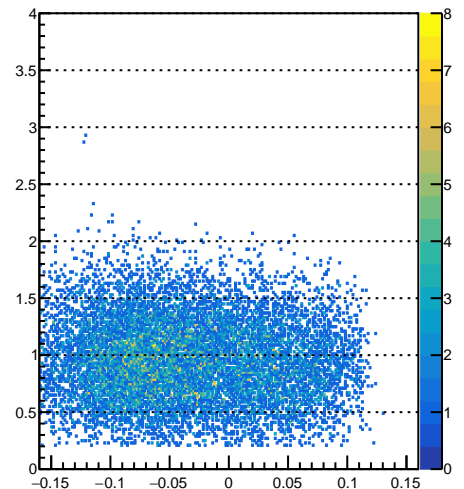
E/p vs Track phi | After Calib. (el. cut)



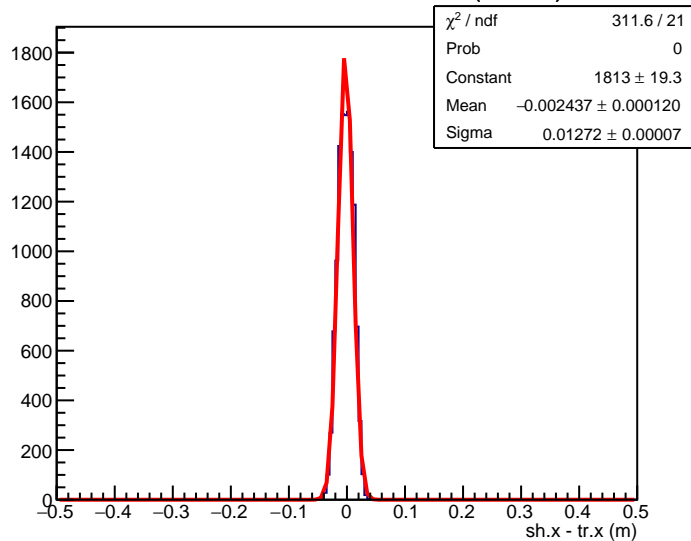
PS energy vs Track x | After Calib. (el. cut)



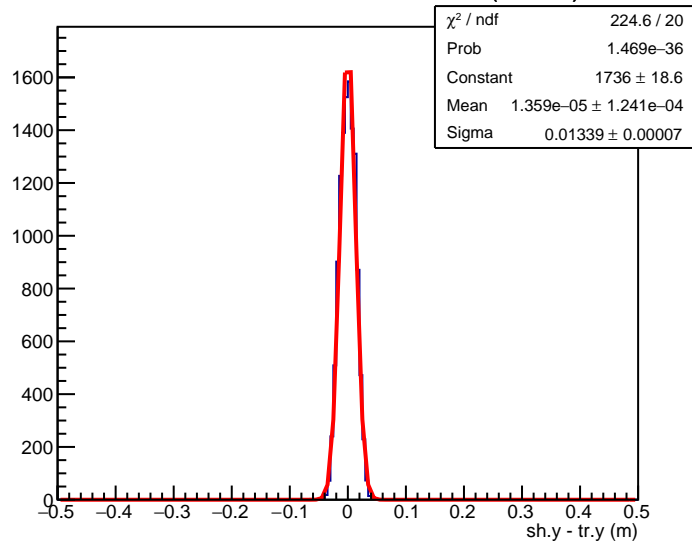
PS energy vs Track y | After Calib. (el. cut)



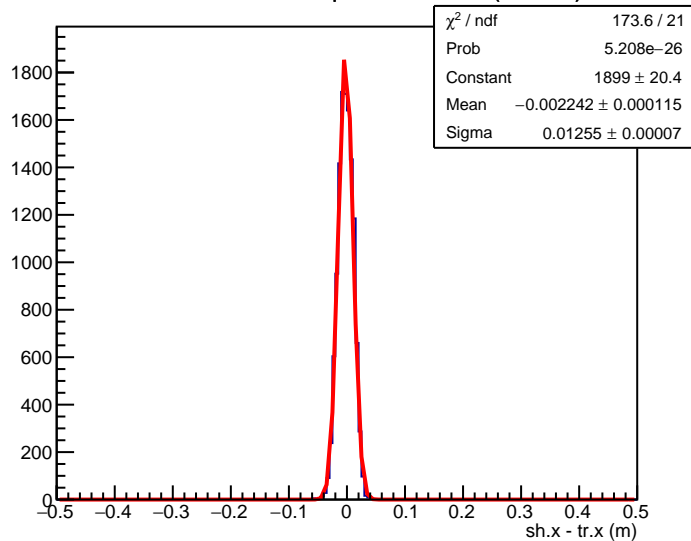
Vertical Position Difference (el. cut)



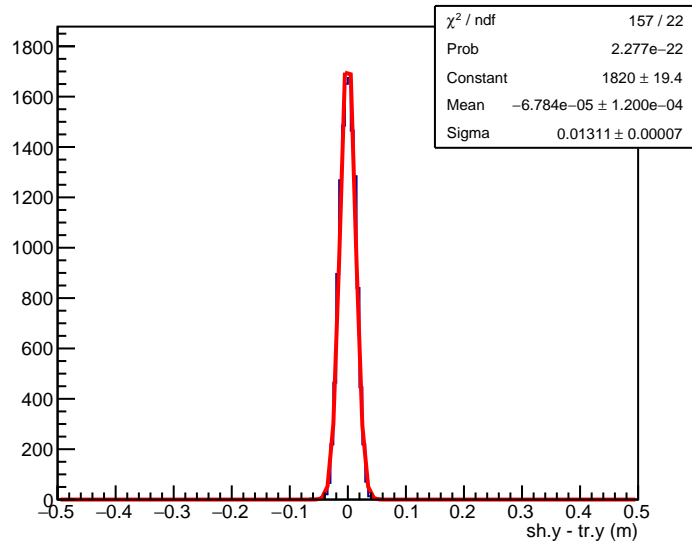
Horizontal Position Difference (el. cut)



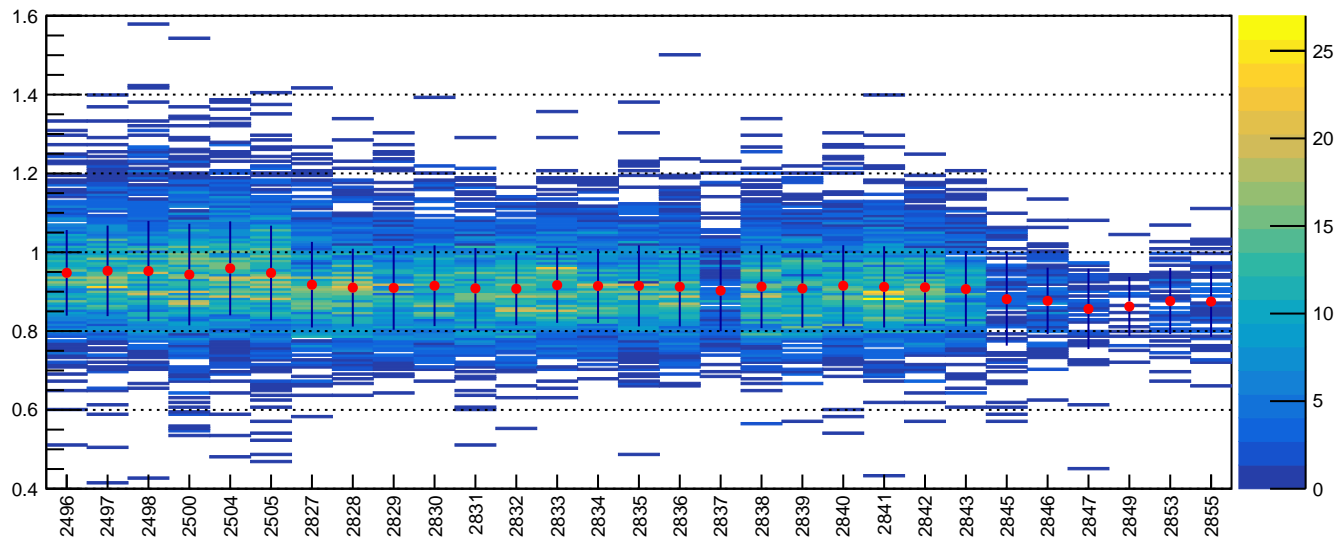
Vertical Pos. Diff. | After Calib. (el. cut)



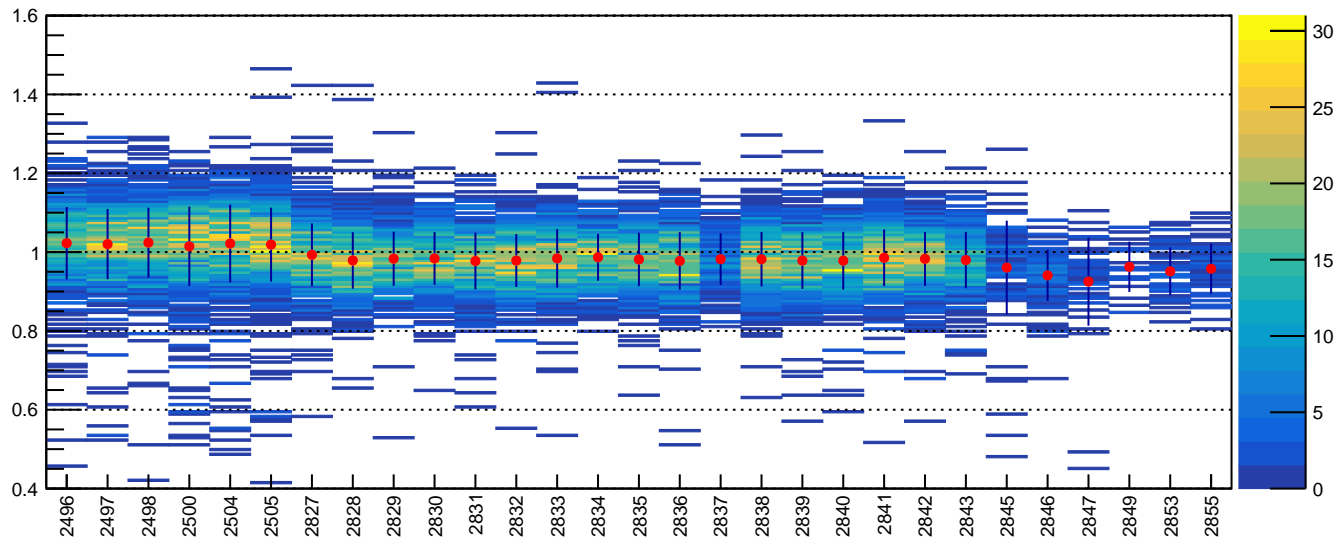
Horizontal Pos. Diff. | After Calib. (el. cut)



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



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



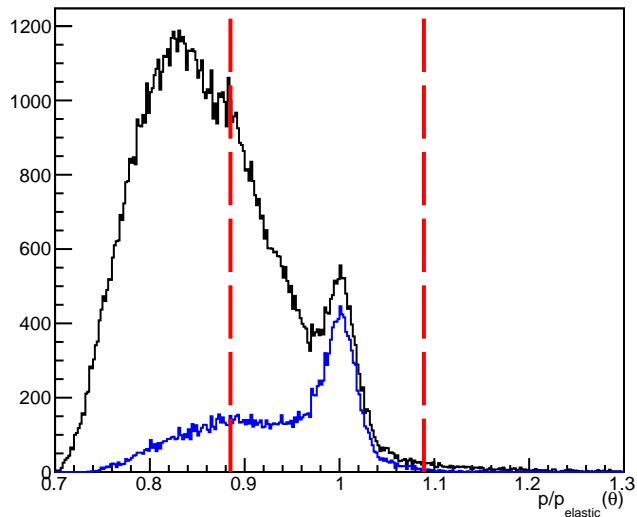
0.00875614	0.00886060	0.00863069	0.00864313	0.00858195	0.00846061	0.00826958
0.00850490	0.00897259	0.00881228	0.00895356	0.00864143	0.00878039	0.00832471
0.00863199	0.00863388	0.00865097	0.00866551	0.00878247	0.00863335	0.00827209
0.00868538	0.00951413	0.00862377	0.00872976	0.00866936	0.00870784	0.00898531
0.00903764	0.00918671	0.00937643	0.00922151	0.00917703	0.008467	0.00953175
0.0087061	0.00911614	0.0092823	0.00908545	0.00904395	0.00922978	0.00917025
0.0087057	0.00916657	0.00955832	0.00911832	0.00969696	0.00862828	0.00936071
0.00899195	0.00917088	0.0095803	0.0092309	0.00940383	0.00913226	0.00913235
0.008827	0.00973556	0.00905704	0.00962269	0.0094772	0.00980405	0.00947033
0.00900637	0.00935916	0.00958107	0.00888643	0.00974873	0.00932315	0.0102008
0.00915404	0.00938558	0.010108	0.00923400	0.00915554	0.00965411	0.00919518
0.00913695	0.00923888	0.00910491	0.00971819	0.00921118	0.0093729	0.00940693
0.00962603	0.00924387	0.00908086	0.00930529	0.00946864	0.00957236	0.00989582
0.00901924	0.0090146	0.009382	0.00963232	0.00925079	0.00878626	0.00934657
0.00931521	0.00955571	0.00939628	0.00940581	0.00916546	0.00898262	0.00940678
0.00869477	0.00961863	0.0092353	0.00960082	0.00878668	0.0079026	0.00982375
0.00931545	0.0094969	0.00958407	0.0091763	0.00920926	0.00942638	0.00952966
0.00949056	0.00905811	0.00930316	0.00912795	0.00982056	0.00868911	0.00928046
0.0097335	0.00947382	0.00890303	0.0093305	0.0095922	0.0087361	0.00978179
0.00890967	0.0100086	0.00967158	0.00911293	0.00976606	0.0097903	0.00945325
0.00961626	0.00926928	0.00942517	0.00913103	0.00961543	0.00957275	0.0103133
0.00893662	0.00907727	0.00878203	0.00920568	0.00964641	0.00885952	0.00955987
0.00905864	0.00917441	0.00866137	0.009122804	0.00911357	0.0087301	0.00951955
0.0086431	0.00989824	0.00845345	0.00958504	0.00868136	0.00893931	0.00929333
0.00905056	0.00805165	0.0096664	0.00967763	0.00953335	0.0095452	0.00921778
0.00909542	0.00895522	0.00869311	0.00869438	0.00872575	0.00897099	0.00967366
0.00912698	0.00930611	0.00954235	0.00975294	0.00994576	0.010109	0.00938558

25	0.00875614	0.00886049	0.00830639	0.00864313	0.00858195	0.00846061	0.00826958
	0.00805049	0.00897259	0.00881228	0.00895356	0.00864143	0.00878039	0.008328417
	0.00863199	0.00863388	0.00865097	0.00866551	0.00878247	0.00863335	0.00827209
20	0.00921902	0.00908189	0.012352	0.0123523	0.0158366		0.00898351
	0.00748886	0.00995655	0.00955741	0.00822041	0.00996361	0.00843225	0.00953175
	0.00760366	0.00889735	0.00851305	0.00824692	0.00814283	0.00803132	0.0116564
	0.00726786	0.00919422	0.00808733	0.00804443	0.00958648	0.00860785	0.00809467
	0.00647493	0.00868149	0.00693222	0.00867464	0.00752043	0.00840152	0.00853115
	0.00772874	0.00736642	0.00826614	0.00857019	0.00864306	0.00772618	0.00865191
	0.00776626	0.00813515	0.008395	0.0077779	0.00731144	0.00993878	0.00524966
	0.00610883	0.00859817	0.00746192	0.00810331	0.00913936	0.0085456	0.0068495
	0.00753017	0.00710881	0.00757532	0.00923843	0.00805906	0.0079392	0.00796317
	0.00551718	0.00807977	0.00845617	0.00768689	0.00770513	0.00758044	0.00665194
15	0.0089149	0.00842511	0.00809808	0.0087822	0.00870833	0.00896168	0.00830222
	0.00714061	0.00922263	0.00791531	0.00773539	0.00894386	0.00893365	0.0074762
	0.00988889	0.00864092	0.00942374	0.00808887	0.00890004	0.00595751	0.00872648
	0.00878064	0.00827536	0.0087982	0.00854861	0.00840648	0.0091497	0.00747692
	0.00745669	0.00898515	0.00727623	0.00821395	0.00995139	0.00858931	0.0108572
	0.00881664	0.00905681	0.00964984	0.00875553	0.00944571	0.00975863	0.00842946
	0.0092298	0.00769217	0.00784162	0.00873848	0.00879491	0.00943791	0.00847115
	0.00836993	0.00867156	0.00858991	0.00860962	0.00596274	0.00915089	0.00956295
	0.00849566	0.00863709	0.00829047	0.00899063	0.00991534	0.00806842	0.0110074
	0.00844328	0.00879926	0.00970605	0.00871368	0.00982533	0.00843289	0.00905057
5	0.0111014	0.0076054	0.0090541	0.010001	0.0100746	0.00993435	0.00929333
	0.00905056	0.00776847	0.00851572	0.0105399	0.0132643	0.0182887	0.00921778
	0.00909542	0.00898522	0.00889311	0.00869438	0.00872575	0.00897099	0.00967366
	0.00912698	0.00930611	0.00954235	0.00975294	0.00994576	0.010109	0.00838558
	1	2	3	4	5	6	7

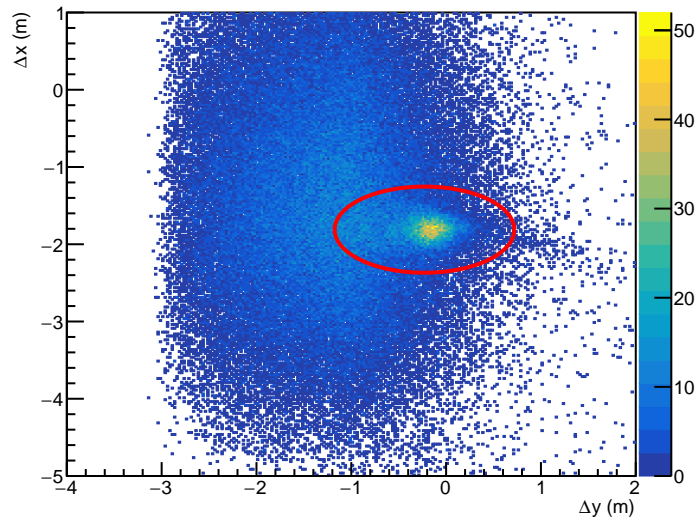
Number of Cases	Iteration Range	Iteration Value
1	1 to 2	0.0148997
24	2 to 2.4	0.0141979, 0.0143977, 0.0136493, 0.0145152, 0.0148491, 0.0143407, 0.014845, 0.0147886, 0.0148215, 0.0147418, 0.0142546, 0.0150803, 0.0137562, 0.0142171, 0.0140021, 0.0142631, 0.0140984, 0.0146045, 0.0141808, 0.0151389, 0.014275, 0.0141345, 0.0145612, 0.0138712, 0.0140403
1	2.4 to 3	0.0147051

Value	Category 1 (Blue)	Category 2 (Yellow)	Category 3 (Green)
0.0141979	1.0	0.0	0.0
0.0143977	1.0	0.0	0.0
0.0136493	1.0	0.0	0.0
0.0581313	1.0	0.0	0.0
0.02872	1.0	0.0	0.0
0.0231627	1.0	0.0	0.0
0.026093	1.0	0.0	0.0
0.0264882	1.0	0.0	0.0
0.0297669	1.0	0.0	0.0
0.0259224	1.0	0.0	0.0
0.0265244	1.0	0.0	0.0
0.0224481	1.0	0.0	0.0
0.0216181	1.0	0.0	0.0
0.0210144	1.0	0.0	0.0
0.0212895	1.0	0.0	0.0
0.024167	1.0	0.0	0.0
0.0239731	1.0	0.0	0.0
0.0229027	1.0	0.0	0.0
0.0212025	1.0	0.0	0.0
0.0252197	1.0	0.0	0.0
0.0271744	1.0	0.0	0.0
0.027472	1.0	0.0	0.0
0.0236537	1.0	0.0	0.0
0.0357749	1.0	0.0	0.0
0.0140403	1.0	0.0	0.0
0.0148997	1.0	0.0	0.0
0.0137099	0.0	0.0	1.0
0.0145996	0.0	0.0	1.0
0.0143437	0.0	0.0	1.0
0.0236057	0.0	0.0	1.0
0.021222	0.0	0.0	1.0
0.0228203	0.0	0.0	1.0
0.024265	0.0	0.0	1.0
0.0225597	0.0	0.0	1.0
0.0238109	0.0	0.0	1.0
0.0229306	0.0	0.0	1.0
0.0252543	0.0	0.0	1.0
0.0196095	0.0	0.0	1.0
0.0223455	0.0	0.0	1.0
0.0217659	0.0	0.0	1.0
0.0196957	0.0	0.0	1.0
0.0212639	0.0	0.0	1.0
0.0217081	0.0	0.0	1.0
0.0224879	0.0	0.0	1.0
0.0254052	0.0	0.0	1.0
0.0220256	0.0	0.0	1.0
0.0262832	0.0	0.0	1.0
0.0222154	0.0	0.0	1.0
0.0142801	0.0	0.0	1.0
0.0151406	0.0	0.0	1.0
0.0147095	0.0	0.0	1.0

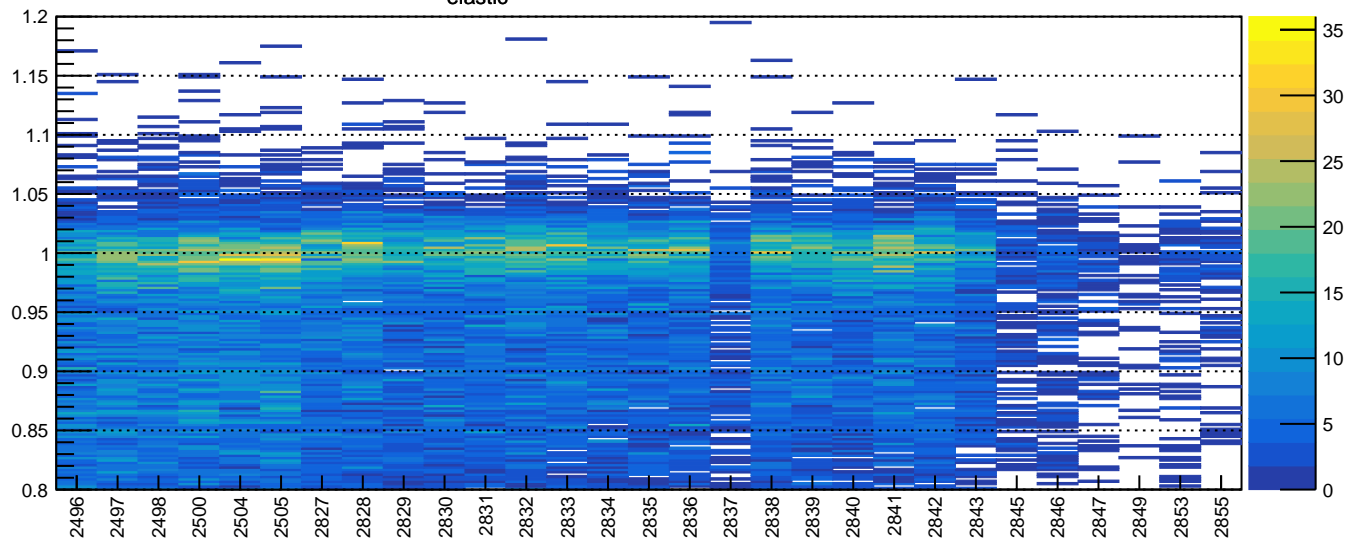
Blue: w/ p spot cut | Red:  $p/p_{\text{elastic}}(\theta)$  cut region



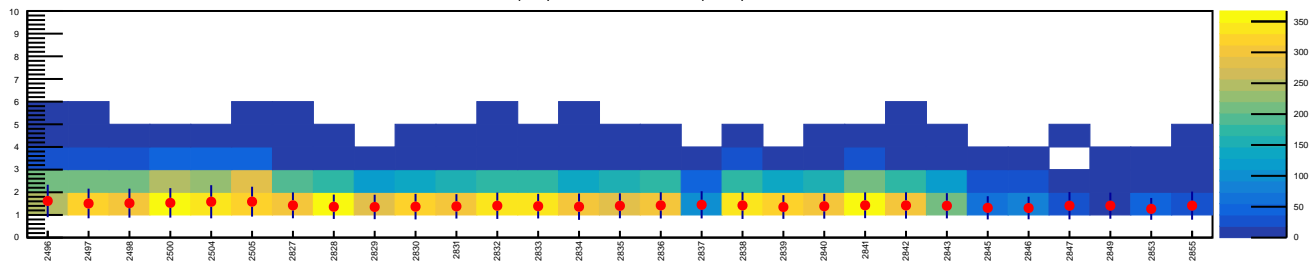
p Spot cut



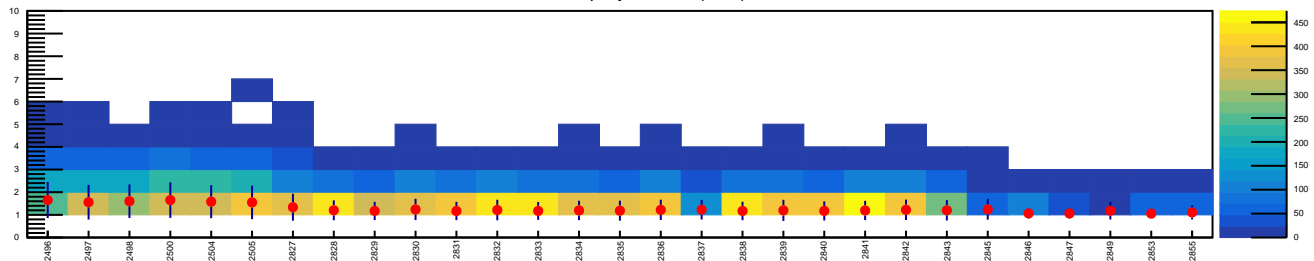
$p/p_{\text{elastic}}(\theta)$  vs Run no. w/ pspot cut



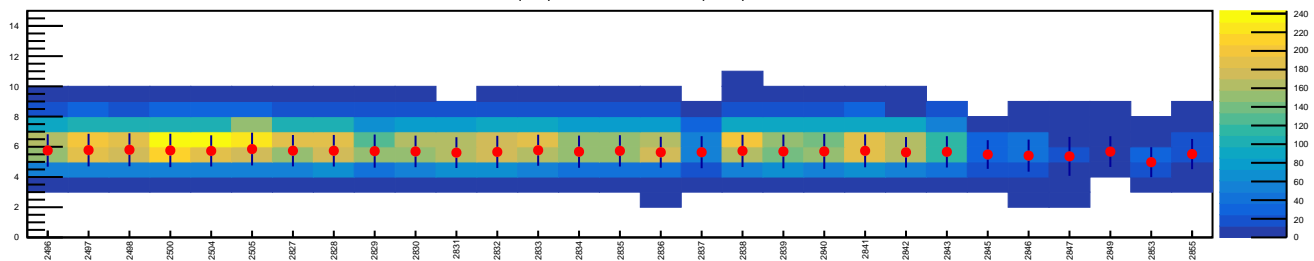
PS (best) cluster size vs Run no. (el. cut)



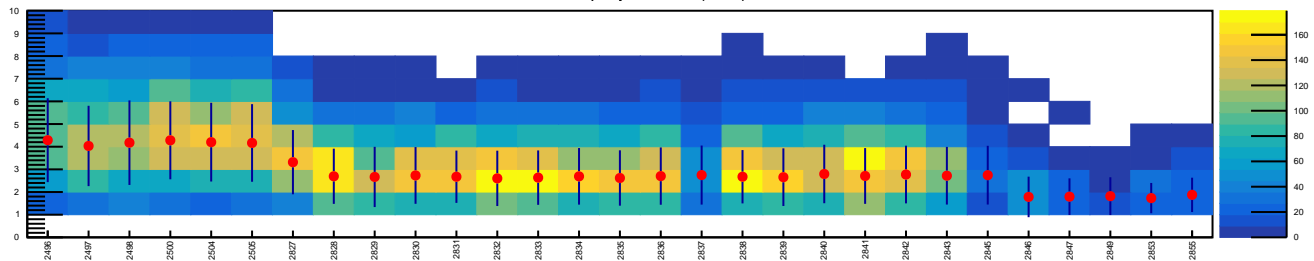
PS cluster multiplicity vs Run no. (el. cut)



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



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





Date of creation: 8/31/2023

Configfile: BBCal\_replay/macros/Combined\_macros/cfg/GEN3.cfg

Total # events analyzed: 18174726, Preparing for replay pass: 0

E/p (before calib.) |  $\mu = 0.91$ ,  $\sigma = (9.188 \pm 0.124) p$

E/p (after calib.) |  $\mu = 0.99$ ,  $\sigma = (6.675 \pm 0.084) p$

Global cuts:

bb.tr.n==1, abs(bb.tr.vz[0])<0.27, bb.gem.track.nhits>3,

PS cluster energy > 0.2 GeV

p\_recon > 2.2 GeV/c

# events passed global cuts: 109649

Elastic cuts:

$|p/p_{el}(\theta) - 0.987| \leq 3.0 \cdot 0.034$

proton spot cut ranges:

$\Delta x$  (m): Mean = -1.8110,  $3.0\sigma = 0.1860$

$\Delta y$  (m): Mean = -0.2280,  $3.0\sigma = 0.3160$

# events passed global & elastic cuts: 15459

Other cuts:

Minimum # events per block: 20, (Cluster) hit threshold: 0.02 GeV

Various offsets:

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

Mom. calib. params: A = 0.277651030, B = 0.932092801, C = 0.0, Avy = 0.017583, Bvy = -33.807332,  $\theta_{pitch}^{GEM} = 10.0^\circ$ ,  $d_{BB} = 1.6300$  m

Macro processing time: CPU 821.9s | Real 1383.6s