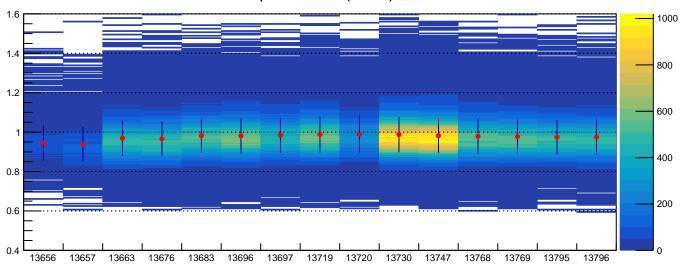
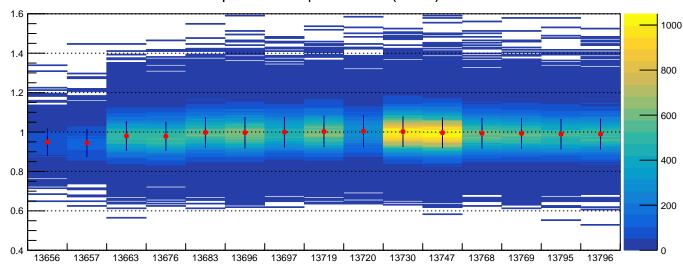


E/p vs Run no. (el. cut)



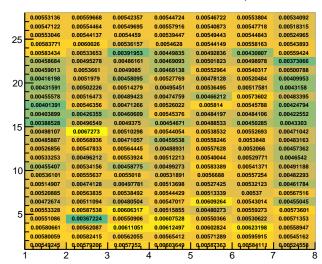
E/p vs Run no. | After Calib. (el. cut)



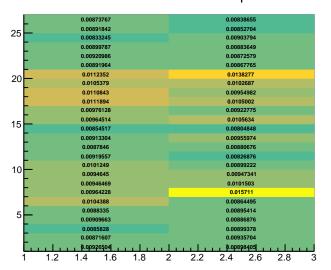
## Old ADC Gain Coefficients | SH

0.0055136								
25		0.00553136	0.00559668	0.00542357	0.00544724	0.00546722	0.00553804	0.00534092
25 0.00583771 0.0060026 0.00536157 0.0054628 0.00544149 0.00558163 0.00543893   0.005634344 0.00572721 0.0058309 0.00571257 0.00569575 0.00510246 0.0053309 0.00571257 0.005591655 0.0053279   0.00550427 0.00560337 0.0046208 0.00416844 0.0050231 0.00550278 0.00556932   0.00470628 0.00496888 0.00427920 0.00488845 0.0052352 0.0051038 0.00551638   0.0041014 0.00449453 0.00497202 0.00488845 0.00523562 0.0051038 0.00457684   0.00417338 0.00457888 0.00467728 0.00522745 0.0056550 0.0051038 0.0047335   0.00438544 0.00423024 0.00461843 0.00527999 0.00473375 0.00576583 0.00475638   0.0047343 0.0054848 0.00462324 0.004717275 0.0054348 0.00549747 0.00569916 0.00569916 0.00569916 0.00569916 0.00569916 0.00569916 0.00569916 0.00569916 0.00569916 0.0056	25	0.00547122	0.00554464	0.00549695	0.00557916	0.00540873	0.00547718	0.00518315
0.00583434		0.00553046	0.00544137	0.0054459	0.00539447	0.00549443	0.00544843	0.00524965
0.00562087		0.00583771	0.0060026	0.00536157	0.0054628	0.00544149	0.00558163	0.00543893
0.00550427 0.00560337 0.0046208 0.00416844 0.0050231 0.00550278 0.00556932   20 0.00470628 0.00496888 0.0044874 0.00502532 0.00464229 0.00535482 0.00531688   0.0047538 0.0049886 0.0048556 0.00453788 0.00461463 0.005523 0.0045538 0.0047335   0.0047538 0.0046344 0.00423024 0.006461843 0.00527999 0.0047335 0.00475785 0.00473357 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.00475785 0.0047577 0.0047577 0.0047577 0.0047577 0.0047577 0.0047577 0.0047577 0.0047577 0.0047577 0.0047577 0.0047577 0.0047577 0.0047577 0.0047717 0.0047717 0.0057374 0.0057747 0.0057747 0.0057747 0.0057747 0.0057747 0.0057747 0.0057747 0.0057747		0.00583434	0.00572721	0.0058556	0.00583509	0.00588179	0.00571589	0.00563379
20 0.00470628 0.00496888 0.00448674 0.00592532 0.00464229 0.00535482 0.00531484   0.00410014 0.00499846 0.00483556 0.00453788 0.00461863 0.005523 0.00776955   0.00417338 0.00535488 0.00467728 0.00523652 0.00537608 0.00473638   0.00417338 0.0043024 0.00461843 0.0052745 0.00673375 0.00478388 0.00478388   0.00448109 0.00482082 0.0046061 0.00493499 0.00456777 0.0045378   0.0048058 0.0064316 0.00509899 0.00530034 0.0052905 0.00541731 0.0047171   0.00599548 0.00532477 0.00552052 0.00490283 0.0054376 0.0052902 0.0046827   0.00508352 0.005314742 0.00509467 0.0056376 0.0056969 0.00568687   0.005648767 0.0056335 0.0054316 0.005418101 0.00553176 0.005469 0.0055668   0.00563139 0.0054316 0.0048087 0.0056996 0.0056996 0.0056996 0.0056		0.00562087	0.00575573	0.00510246	0.00538069	0.00571257	0.00591655	0.00532957
20 0.00410014 0.0049453 0.00497202 0.0048845 0.00523652 0.00510538 0.00475695   0.0045544 0.0049846 0.00483568 0.00467728 0.00522745 0.00565655 0.00537608 0.0047338   0.00417338 0.0053488 0.00467728 0.00522745 0.00566565 0.00537608 0.00473638   0.00436344 0.00423024 0.00461843 0.00521989 0.00473377 0.00478538 0.00395826   0.0048058 0.0064316 0.0050899 0.0053034 0.005222529 0.00471731 0.0047373   0.00509548 0.0052477 0.00550934 0.00522529 0.00541731 0.004781   0.005095589 0.00500941 0.00519918 0.0052511 0.00468282   0.005095780 0.00530041 0.00519918 0.00525151 0.00486987   0.00509581 0.00573281 0.00541742 0.00500419 0.00519918 0.005253511 0.00468252   0.00518257 0.0052878 0.005474742 0.00500419 0.00519918 0.00573235 0.0058868	20	0.00550427	0.00560337	0.0046208	0.00416844	0.00502231	0.00550278	0.00556932
0.0041014		0.00470628	0.00496888	0.00448674	0.00502532	0.00464229	0.00535482	0.00531484
0.00417338		0.00410014	0.0049453	0.00497202	0.00488845	0.00523652	0.00510538	0.00475695
15		0.00455454	0.00499846	0.00483556	0.00453788	0.00461463	0.005523	0.00479335
15 0.00415109 0.00484105 0.00492082 0.0046061 0.0043499 0.00456777 0.0043978   0.0048058 0.0064316 0.00508990 0.00530034 0.00525295 0.00541731 0.00471101   0.00509548 0.00532477 0.0052052 0.0049233 0.0054346 0.005029002 0.0049310   0.00508352 0.00497851 0.00514742 0.00504919 0.00551918 0.0052511 0.00462529   0.00516855 0.00529633 0.00543146 0.006481041 0.00553176 0.005649 0.0055888   0.0050878 0.00522973 0.00475575 0.00468976 0.00569576 0.00612793 0.0057328   0.00618119 0.00528855 0.0056035 0.00469876 0.0066959 0.0056375 0.0057328   0.00528720 0.0058705 0.00649876 0.0066959 0.0055275 0.0057328   0.005308661 0.005608661 0.00550966 0.00550956 0.00550957 0.0057328 0.0057328   0.00580661 0.00562087 0.00651496 0.006593454 0.00		0.00417338	0.00535488	0.00467728	0.00522745	0.00566565	0.00537608	0.00473638
15 0.00488058 0.0064316 0.00508989 0.0053034 0.00525295 0.00541731 0.00471101   0.0067343 0.0054948 0.00462224 0.00471275 0.0054348 0.00529002 0.00489281   0.00509548 0.00532477 0.005505052 0.004090283 0.00548767 0.00509916 0.00462282   0.00508352 0.00467172 0.00500419 0.0051918 0.0052311 0.00469897   0.00516855 0.00529603 0.00431416 0.0048104 0.0055888 0.00572112 0.00558895   0.00461811 0.00597245 0.00568055 0.00468976 0.0069567 0.00612733 0.0063033   0.00587209 0.00597338 0.00688976 0.0068957 0.0061273 0.00567328   0.00587209 0.00597338 0.0068976 0.0068944 0.00559275 0.0055973   0.00580661 0.00562087 0.0061095 0.00550545 0.0055035 0.0055035   0.005800699 0.00562087 0.0061095 0.0055035 0.0055035 0.0055035 0.0055035 0.005	15	0.00436344	0.00423024	0.00461843	0.00521989	0.00473357	0.00478538	0.00395826
0.00489058 0.00643148 0.00542924 0.00547275 0.00523020 0.00489381   0.00509548 0.00523477 0.00552052 0.004471275 0.0054348 0.00529002 0.00489381   0.00509552 0.00509502 0.00490283 0.00543767 0.00559016 0.00462529   0.00508352 0.00458751 0.00541742 0.00500419 0.0051918 0.00552111 0.004682529   0.00516855 0.00529603 0.00543146 0.00481041 0.00553176 0.005469 0.00555895   0.0050878 0.0045279 0.00475575 0.00469876 0.00509576 0.00612793 0.0055386   0.00528720 0.0052885 0.0056035 0.00469876 0.0066957 0.00612793 0.00557302   0.00537020 0.00587050 0.0068744 0.00583454 0.00559025 0.0055442 0.00550365 0.00559036 0.00550365 0.00559188 0.00550362 0.00571323   0.00580661 0.00562087 0.00611051 0.00612497 0.0062824 0.00623188 0.005599515 0.005599515 0.00		0.00415109	0.00484105	0.00492082	0.0046061	0.00493499	0.00456777	0.00453978
0.00509548 0.00532477 0.00552052 0.00490283 0.00548767 0.00509916 0.00462529   0.00508352 0.00547472 0.0050419 0.0051916 0.00548767 0.0050919 0.00525311 0.0054819 0.0051917 0.00563531 0.00553176 0.00553176 0.005649 0.0055889   0.00516855 0.0052279 0.0047357 0.00480252 0.00509276 0.005027112 0.0055389   0.00631139 0.00522795 0.0056035 0.00469876 0.0066957 0.00612793 0.0056323   0.00531080 0.00528885 0.00564176 0.00587402 0.0058976 0.00587402 0.00553056 0.0053065 0.0057328   0.00581086 0.00614396 0.00559096 0.00697528 0.00550366 0.00530622 0.00571353   0.00580099 0.00582847 0.00512497 0.00650366 0.00530622 0.00571353   0.00580099 0.00582415 0.00562055 0.005645162 0.00571289 0.00559915 0.00559965   0.00580099 0.00582415 0.00562055 0.00564516		0.00488058	0.0064316	0.00508989	0.00530034	0.00525295	0.00541731	0.00471101
0.00508352 0.00497851 0.00541742 0.00500419 0.00519918 0.00525311 0.00496897   1.00464877 0.00506335 0.00453146 0.00481041 0.0055176 0.0057211 0.00558895   0.00502878 0.0045279 0.00473557 0.00480252 0.00509576 0.006134 0.00573218   0.00461811 0.00597245 0.00568035 0.00469876 0.00469557 0.00612793 0.00563732   0.00587209 0.00597328 0.00568074 0.00588744 0.00583454 0.00559273 0.0057328   0.00580661 0.0054896 0.005697528 0.00550366 0.00559273 0.0057328   0.005800691 0.00582085 0.00568075 0.00588744 0.00583454 0.00559273 0.0057320   0.005800601 0.00582085 0.00568674 0.00583454 0.00559273 0.0057320   0.005800509 0.005822415 0.00562055 0.005656141 0.00577289 0.0058975128 0.0058975128 0.005897729 0.005897729 0.005897729 0.005897729 0.0058977129 0.0058977129		0.0047343	0.0054948	0.00482324	0.00471275	0.0054348	0.00529002	0.00489381
10 0.00454877 0.00506335 0.00453146 0.00481041 0.00553176 0.0054699 0.00555895   0.00516855 0.00526903 0.00534891 0.00540540 0.0052976 0.006134 0.0055868   0.00602878 0.0045279 0.004573557 0.0046022 0.00590576 0.006134 0.0057328   0.00631139 0.00526885 0.0056076 0.006177 0.00687674 0.006834544 0.0052875 0.00557302   0.0052709 0.00570738 0.00688976 0.00568744 0.005834544 0.00559273 0.0057328   0.00580661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.0056906661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.005690661 0.0056906661 0.0056906661 0.0056906661		0.00509548	0.00532477	0.00552052	0.00490283	0.00548767	0.00509916	0.00462529
10 0.00516855 0.00529603 0.00534891 0.00504584 0.00529688 0.00572112 0.0058688   0.0061278 0.0046279 0.0043557 0.00480876 0.0069876 0.0061879 0.00612793 0.006323   0.00631139 0.0052885 0.0058047 0.0061997 0.0060957 0.00653675 0.00557402   5 0.00551086 0.006614996 0.00607528 0.00550366 0.00530622 0.00571353   0.00580661 0.006614996 0.00607528 0.00550366 0.00530622 0.00571353   0.00580699 0.00580287 0.00617497 0.00607528 0.00650366 0.00630622 0.00571353   0.00580699 0.00580287 0.00617497 0.00607528 0.00650366 0.00630622 0.00571353   0.0058075 0.00580641 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 0.00617497 <td rowspan="9"></td> <td>0.00508352</td> <td>0.00497851</td> <td>0.00541742</td> <td>0.00500419</td> <td>0.00519918</td> <td>0.00525311</td> <td>0.00496897</td>		0.00508352	0.00497851	0.00541742	0.00500419	0.00519918	0.00525311	0.00496897
0.00516855 0.0052678 0.0045279 0.0057328 0.00596957 0.0061634 0.0057328   0.00461811 0.00597245 0.00560535 0.00460876 0.0069576 0.006134 0.0057328   0.00631139 0.00526885 0.0050417 0.00613967 0.00608759 0.0065875 0.00557328   0.00527038 0.00688976 0.00586744 0.00583454 0.005592973 0.00573601   0.00551086 0.00614896 0.00550906 0.0067528 0.00550366 0.00530622 0.00573601   0.00580059 0.00524245 0.00562055 0.00565142 0.00571289 0.00599951 0.00558047   0.00580059 0.00524215 0.00520555 0.00565614 0.00571289 0.00599951 0.00549591   0.0058059 0.00524215 0.0052055 0.00565614 0.00571289 0.00599951 0.0054128   0.0058059 0.0052415 0.0052055 0.00565614 0.0058053 0.0058059951 0.0054128   0.0058059 0.0052415 0.00560554 0.00571289 0.00599951		0.00454877	0.00506335	0.00453146	0.00481041	0.00553176	0.005469	0.00555895
0.00461811 0.00597245 0.00565035 0.00468876 0.00469557 0.00612793 0.0060323   0.00631139 0.00526885 0.0050417 0.0061937 0.0060590 0.0065959 0.0055875 0.00557502   0.00570290 0.0057038 0.00688976 0.0058674 0.00683454 0.00559273 0.00575702   0.00551086 0.00614896 0.00550906 0.00677528 0.00550366 0.00530622 0.00571353   0.00580050 0.00582415 0.00562055 0.005656541 0.006771289 0.00599951 0.00454162   0.0054245 0.00579252 0.00590344 0.005837363 0.00584112 0.00584112		0.00516855	0.00529603	0.00534891	0.00504584	0.00528688	0.00572112	0.0055868
0.00631139 0.00526885 0.0050417 0.00813967 0.00606959 0.00563675 0.00557402   5 0.00587209 0.00557038 0.00568976 0.00586744 0.00583454 0.00559273 0.00573601   0.0055096 0.0055096 0.00505096 0.00550366 0.00550362 0.00571239   0.00580661 0.00562087 0.00611051 0.00612497 0.00602824 0.00623198 0.00558947   0.00580059 0.00582415 0.00562055 0.005654162 0.00571289 0.00599915 0.0054162   0.0054245 0.00579206 0.0057952 0.00603649 0.00587363 0.00584112 0.00545162		0.00502878	0.0045279	0.00473557	0.00480252	0.00509576	0.006134	0.00573328
0.00587209 0.00957038 0.00668976 0.00586744 0.00583454 0.00559273 0.00573601   0.00551086 0.005614886 0.00550906 0.00667528 0.00550366 0.00560362 0.00571353   0.00580061 0.00562087 0.00611051 0.00612497 0.00602242 0.00623188 0.0053318 0.0053418   0.00580059 0.00582415 0.00562055 0.00565412 0.00571289 0.00599915 0.00544162   0.00549245 0.00579296 0.0057952 0.00503649 0.00587363 0.00584112 0.00524558		0.00461811	0.00597245	0.00565035	0.00469876	0.00469557	0.00612793	0.0060323
5 0.00551086 0.00614896 0.00550906 0.00607528 0.00550366 0.00530622 0.00571353   0.00580661 0.00582087 0.00611051 0.00612497 0.00620224 0.00623198 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.00558915 0.0058915		0.00631139	0.00526885	0.0050417	0.00813967	0.00606959	0.00563675	0.00557402
0.00551086 0.00562087 0.00561051 0.00567528 0.00550366 0.00530622 0.00530622   0.00580059 0.00582415 0.00562055 0.00565412 0.00571289 0.00599915 0.00543162   0.0054245 0.0057252 0.005606412 0.00571289 0.00599915 0.00543162   0.00540245 0.0057029 0.0057029 0.00546162 0.00546162 0.00546162		0.00587209	0.00957038	0.00868976	0.00586744	0.00583454	0.00559273	0.00573601
0.00580059 0.00582415 0.00562055 0.00565412 0.00571289 0.00595915 0.00545162 0.00549245   0.00579206   0.0057352   0.00603649   0.00587363   0.00584111   0.00524558		0.00551086	0.00614896	0.00550906	0.00607528	0.00550366	0.00530622	0.00571353
Q00549245   Q.00579206   Q.0057352   Q00603649   Q.00587363   Q.00584111   Q00524558		0.00580661	0.00562087	0.00611051	0.00612497	0.00602824	0.00623198	0.00558947
		0.00580059	0.00582415	0.00562055	0.00565412	0.00571289	0.00595915	0.00545162
1 2 2 4 5 6 7		0.00549245	0.00579206	9.0957352	0.00603649	0.00587363	0.00584111	0,00524558
	7	1 2	) :	3	4	5	6	7

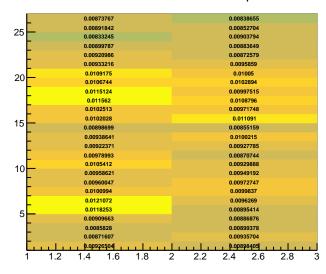
# New ADC Gain Coefficients | SH

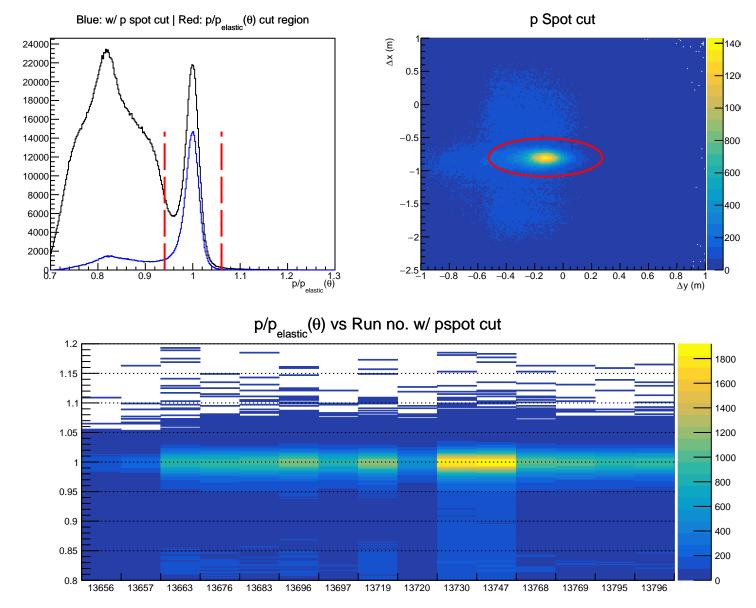


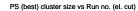
### Old ADC Gain Coefficients | PS

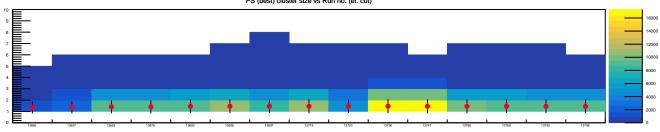


# New ADC Gain Coefficients | PS

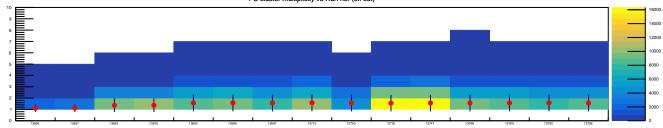




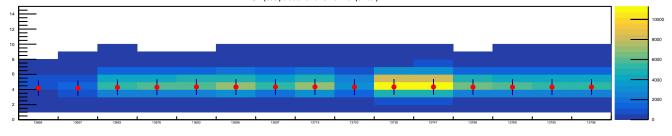




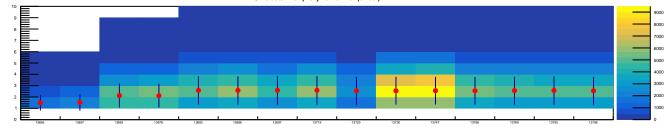
#### PS cluster multiplicity vs Run no. (el. cut)



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







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Date of creation: 8/18/2023
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### Configfile: BBCal\_replay/macros/Combined\_macros/cfg/sbs9-sbs70p.cfg

Total # events analyzed: 7493655, Preparing for replay pass: 2 E/p (before calib.) |  $\mu = 0.97$ ,  $\sigma = (6.856 \pm 0.018)$  p

E/p (after calib.)  $| \mu = 0.99, \sigma = (6.647 \pm 0.019) p$ 

### 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]-0.025)<0.3,

PS cluster energy > 0.2 GeV

p\_recon > 1.2 GeV/c # events passed global cuts: 2279971

**Elastic cuts:** 

 $|p/p_{ol}(\theta) - 1.001| \le 6.0*0.010$ 

proton spot cut ranges:

 $\Delta x$  (m): Mean = -0.8000, 3.0 $\sigma$  = 0.0960

 $\Delta y$  (m): Mean = -0.1250, 4.0 $\sigma$  = 0.1000 # events passed global & elastic cuts: 282434

Other cuts:

Minimum # events per block: 200, (Cluster) hit threshold: 0.02 GeV

### Various offsets:

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

Momentum calibration factors: A = 0.270277690, B = 0.885406510, C = 0.0,  $\theta_{\text{nitch}}^{\text{GEM}}$  = 10.0°, d<sub>BB</sub> = 1.5500 m

Macro processing time: CPU 515.4s | Real 630.5s