

S1 resolution and SER problems: part1

Campaign V
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Algorithm:

11713f949ea5bffcc2f0ceb22d1267b5f314a5af

Merge branch 'barycenter' into 'master'

Cut list:

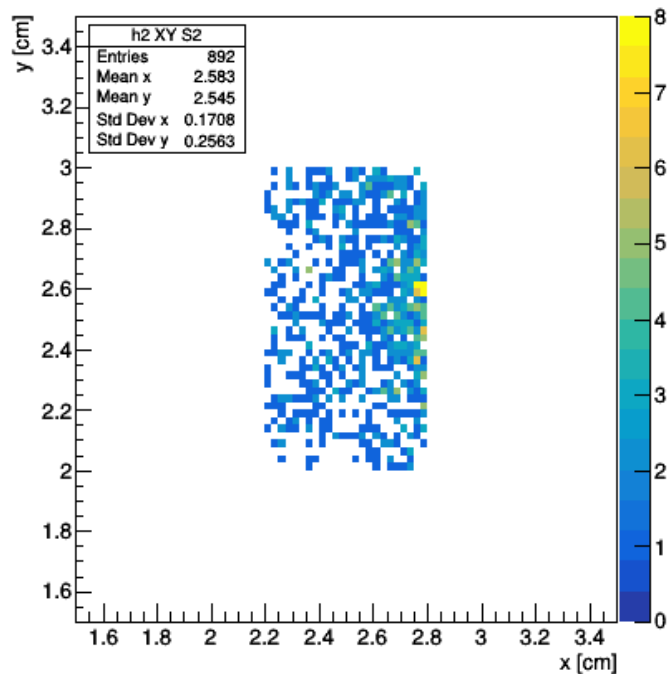
```
bool cls0_is_S1 = clusters.at(0)->f90 > 0.2;
bool cls0_is_full = clusters.at(0)->rep == 1;

bool cls0 = nc_i == 0;//cluster 0
bool cls1 = nc_i == 1;//cluster 1
bool is_S1 = nc == 2 && cls0 && cls0_is_full && cls0_is_S1;
bool is_S2 = nc == 2 && cls1 && cls0_is_full && cls0_is_S1;
bool is_S1_only = nc == 1 && cls0_is_full && cls0_is_S1;
bool is_S2_v2 = is_S2 && clusters.at(1)->f90 < 0.2;

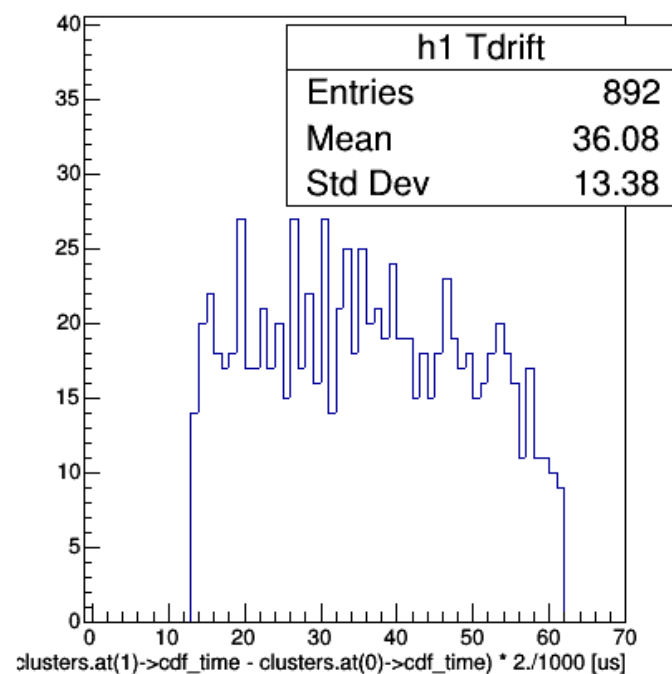
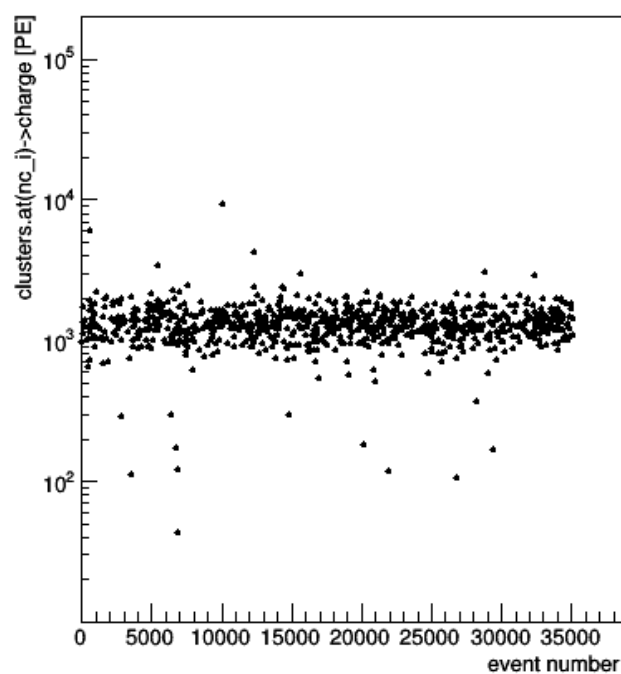
bool region_of_S2_uniformity =
(clusters.at(1)->pos_x > 2.2) && (clusters.at(1)->pos_x < 2.8) &&
(clusters.at(1)->pos_y > 2) && (clusters.at(1)->pos_y < 3);

bool is_good_r537_v1 = is_S1_S2 && region_of_S2_uniformity &&
clusters.at(0)->charge > 300 && clusters.at(0)->charge < 700;
```

C1.is_good_r537_v1 && C1.is_S2_v2



C1.is_good_r537_v1 && C1.is_S2_v2

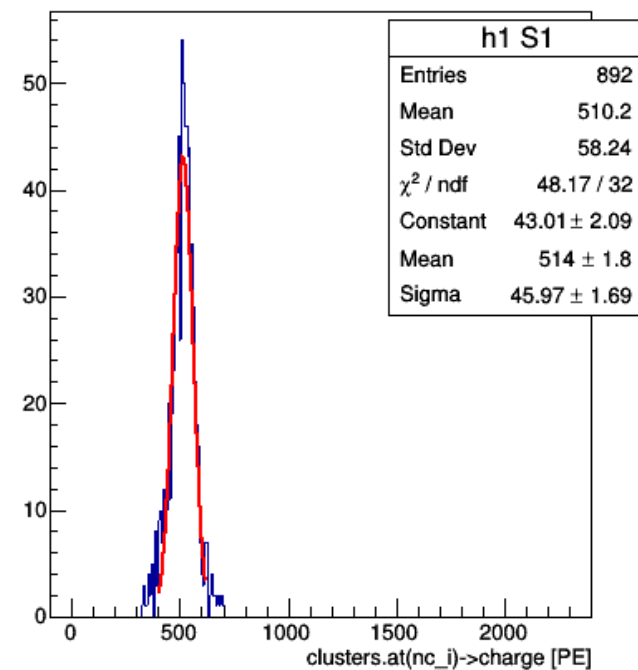
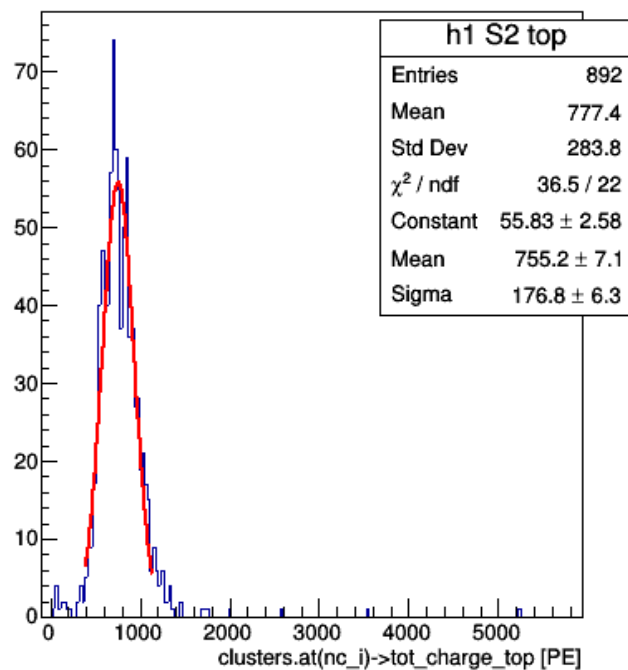
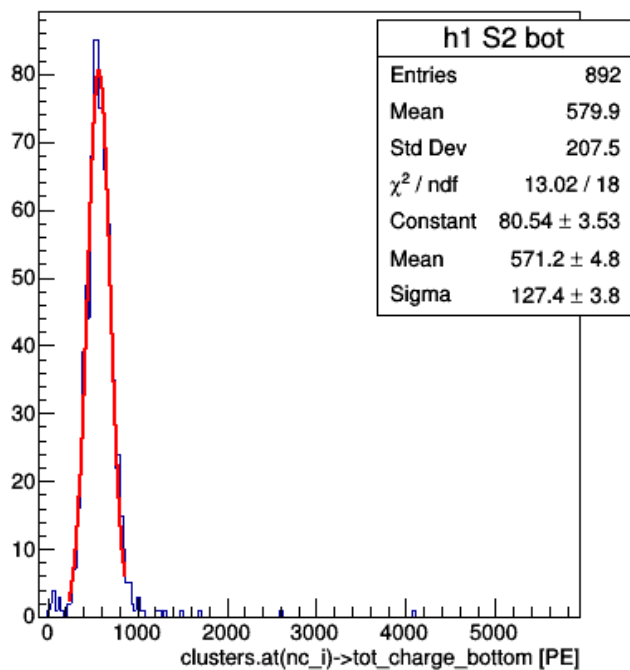


C1.is_good_r537_v1 && C1.is_S2_v2

Ph2, Am241, run 537

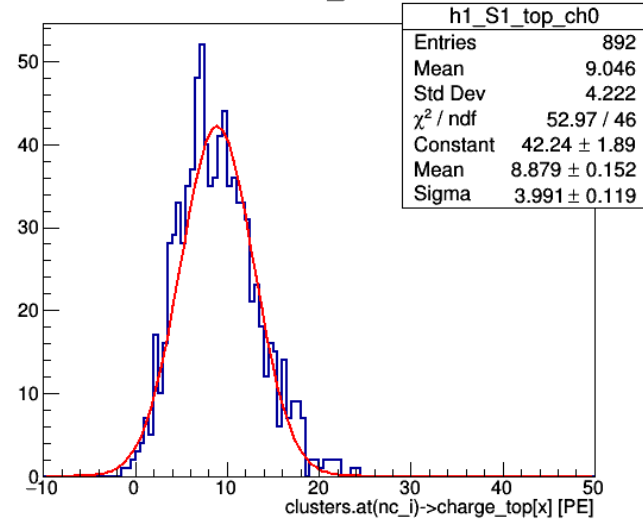
C1.is_good_r537_v1 && C1.is_S2_v2

C2.is_S1

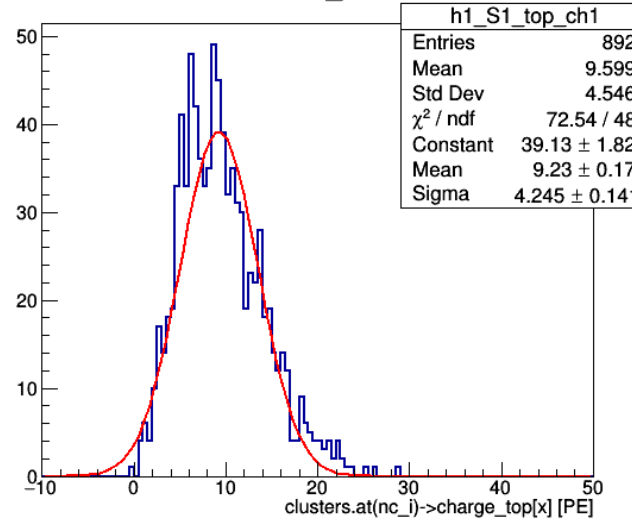


Ph2, Am241, run 537

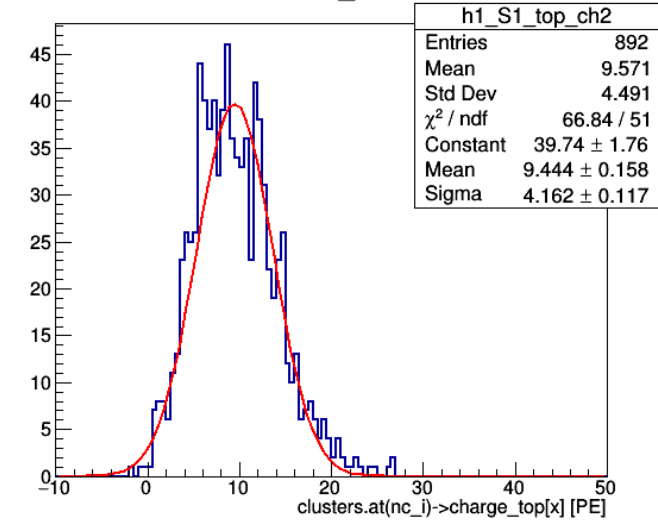
C2.is_S1



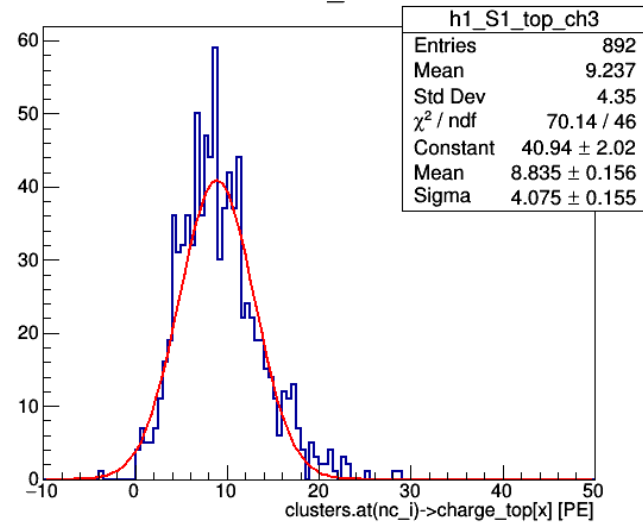
C2.is_S1



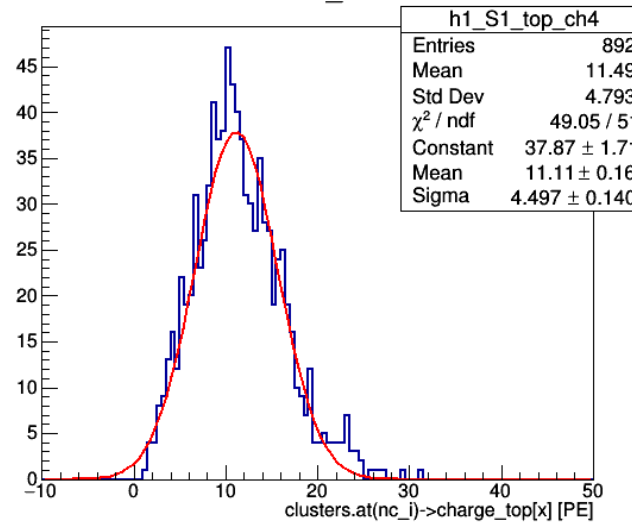
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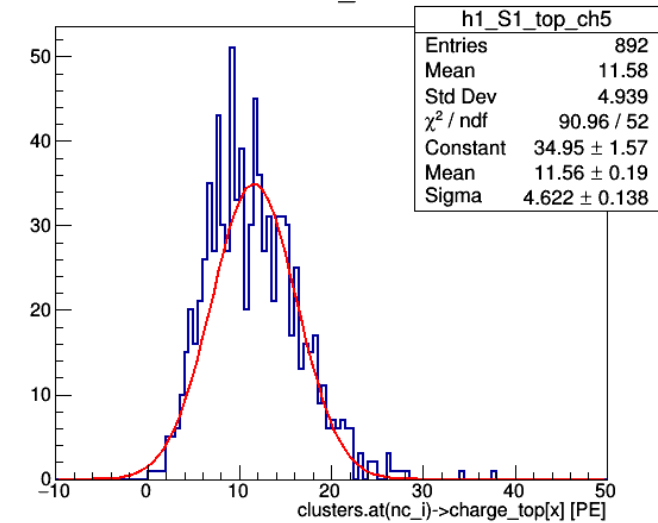
C2.is_S1



C2.is_S1

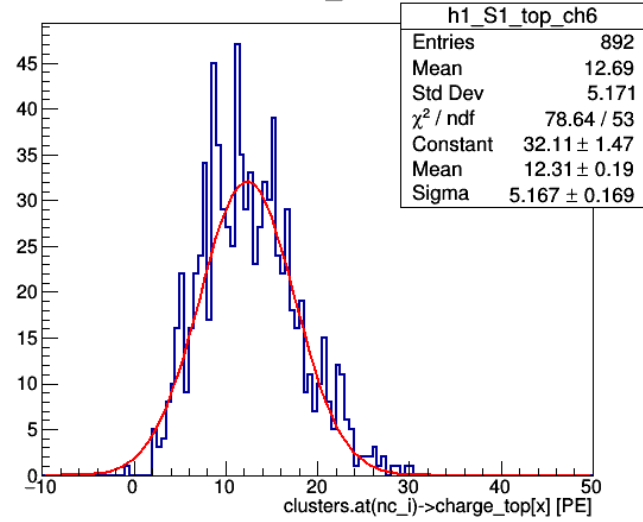


C2.is_S1

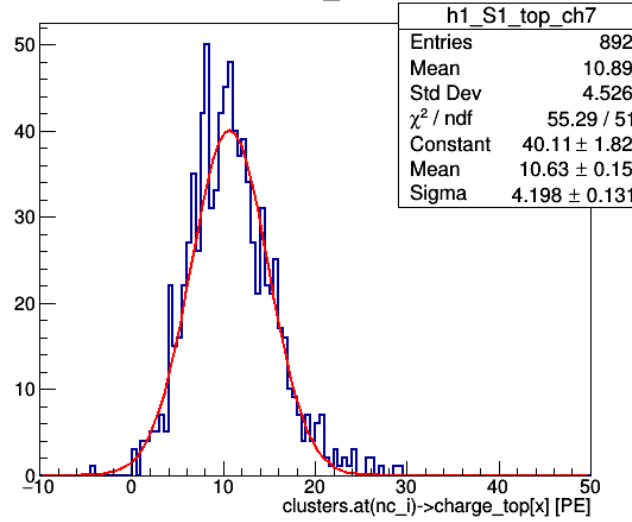


Ph2, Am241, run 537

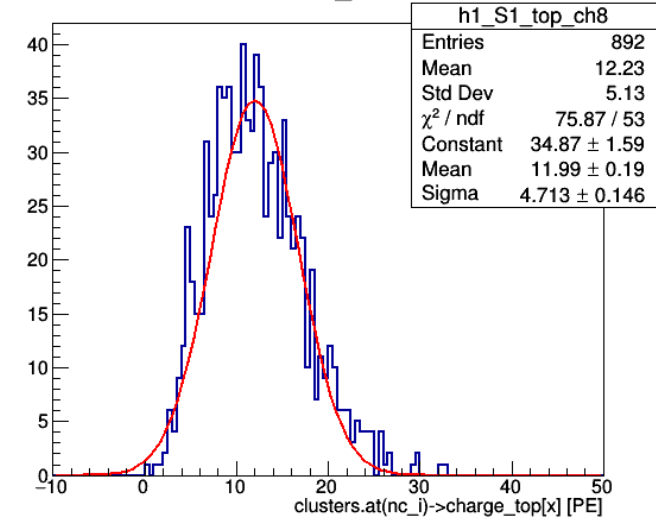
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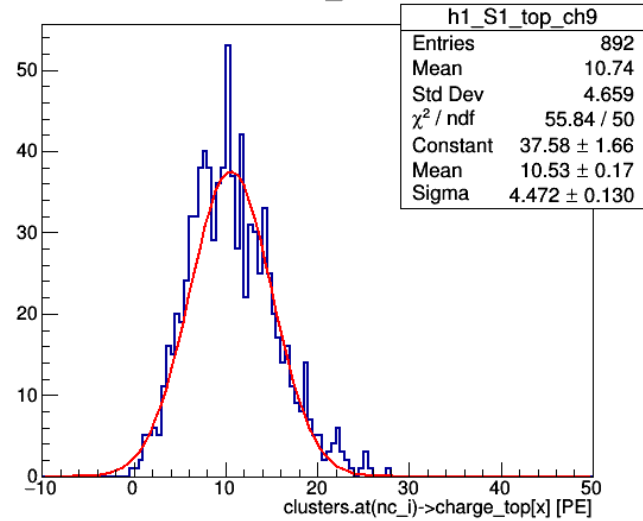
C2.is_S1



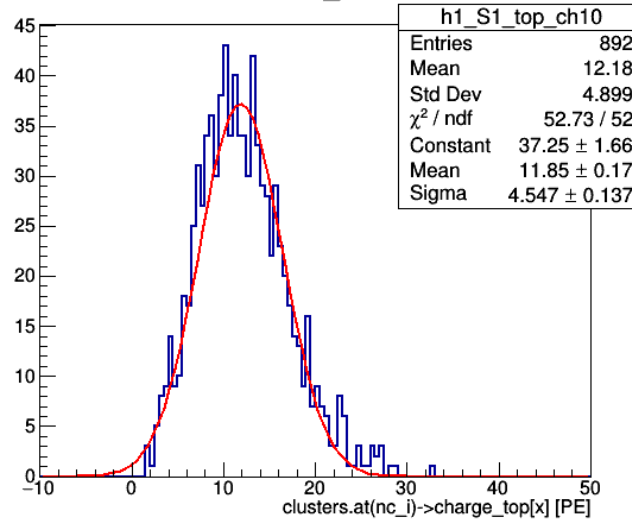
C2.is_S1



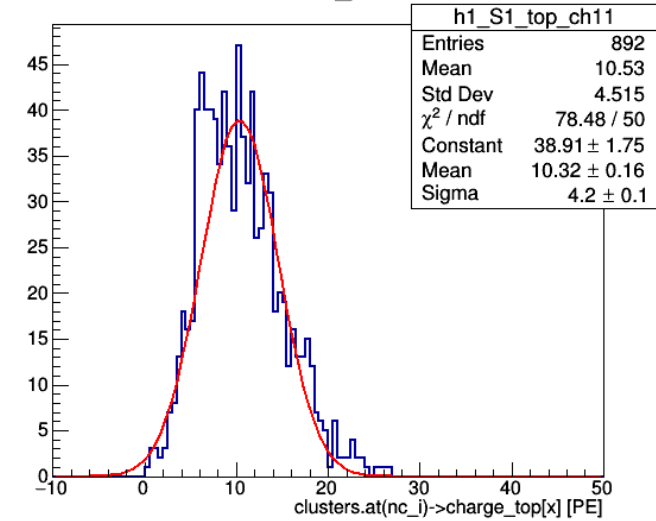
C2.is_S1



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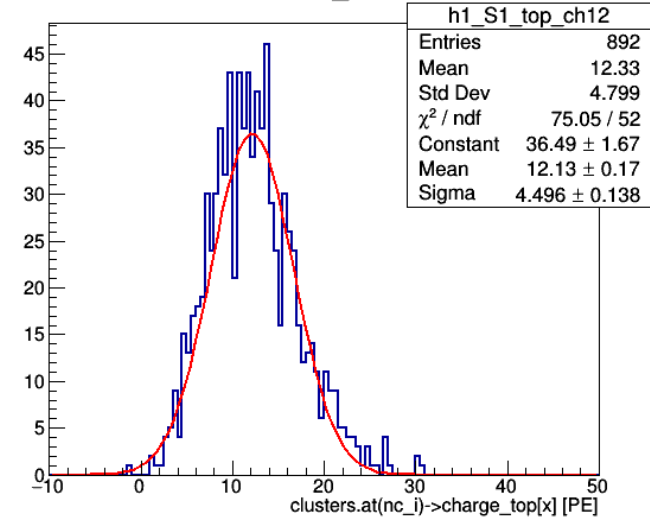


C2.is_S1

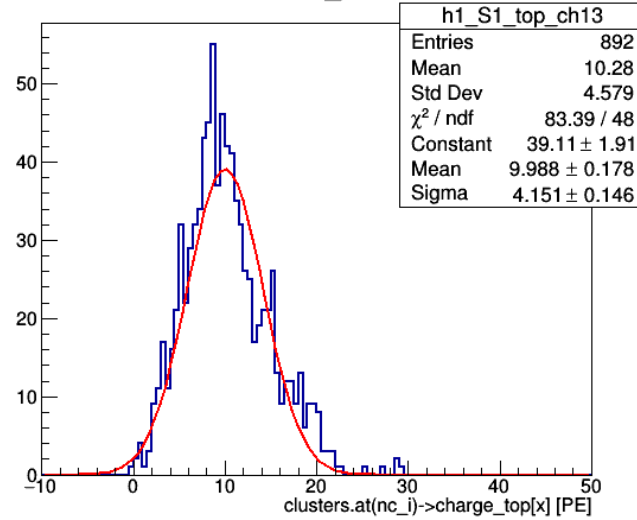


Ph2, Am241, run 537

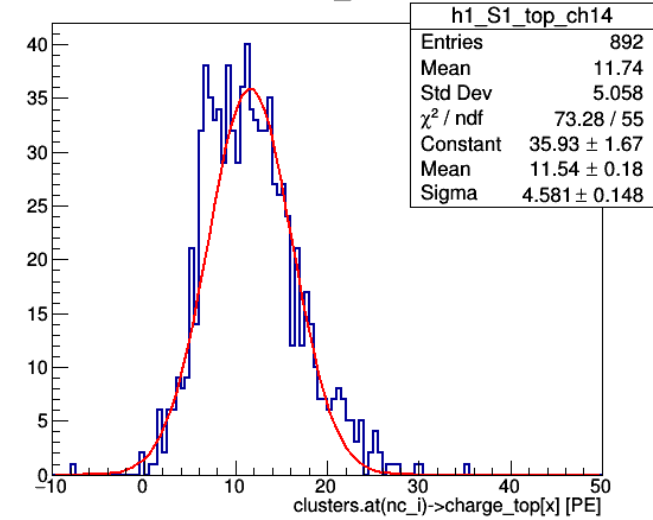
C2.is_S1



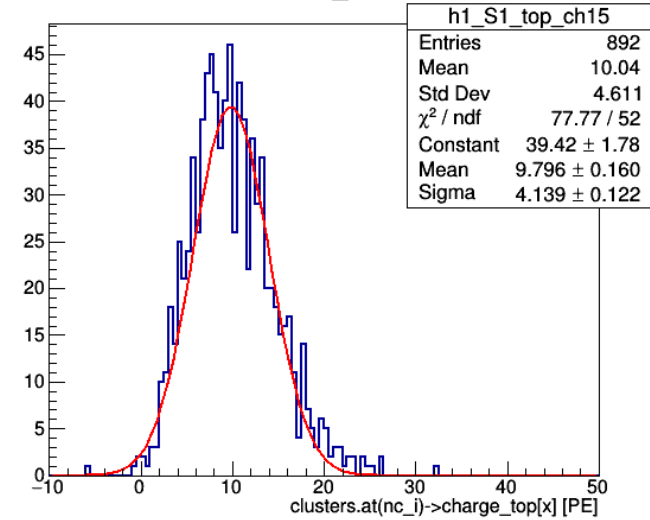
C2.is_S1



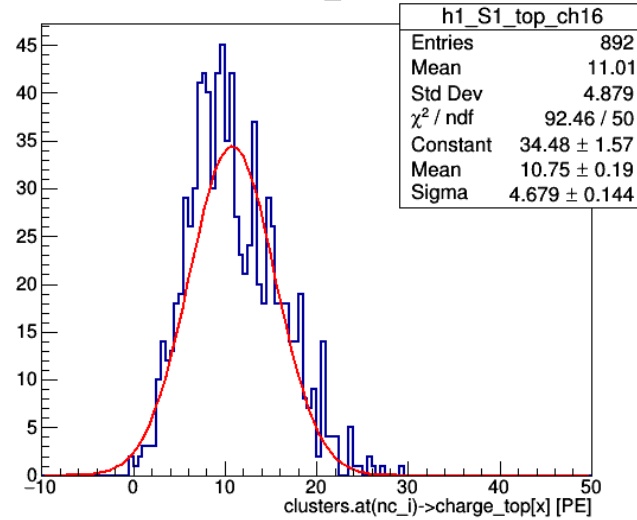
C2.is_S1



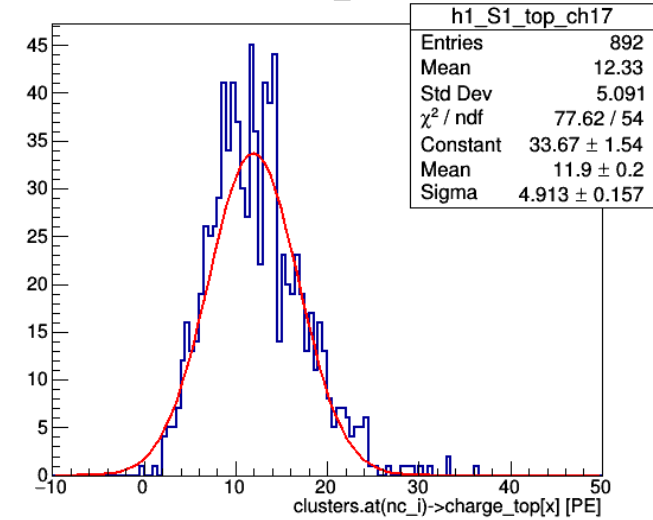
C2.is_S1



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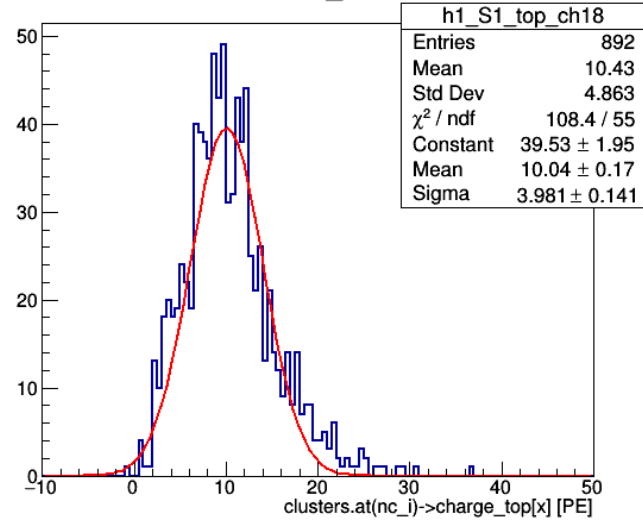


C2.is_S1

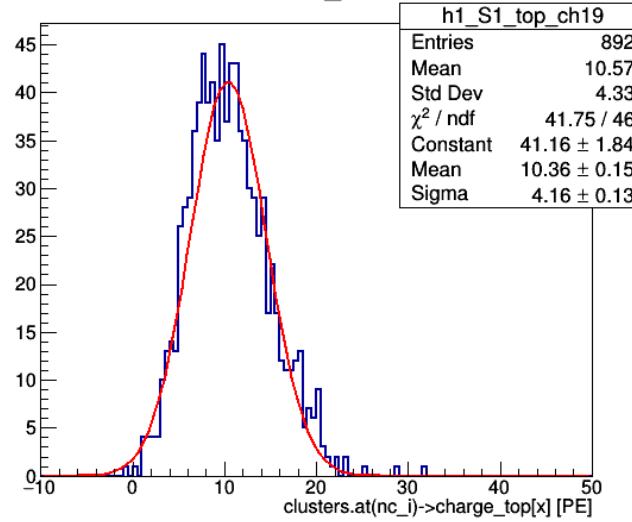


Ph2, Am241, run 537

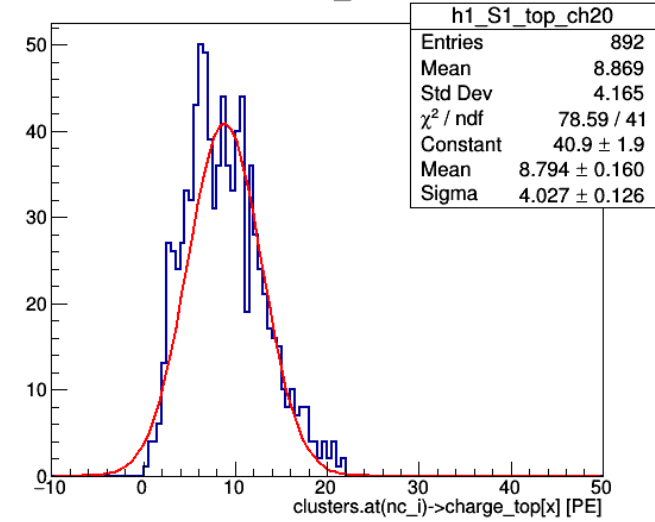
C2.is_S1



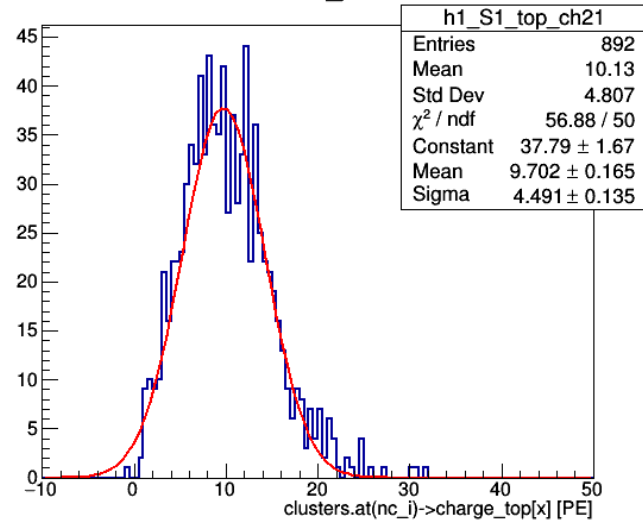
C2.is_S1



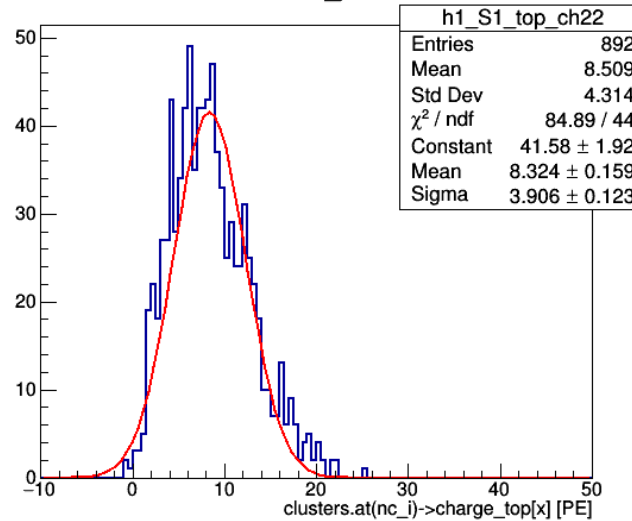
C2.is_S1

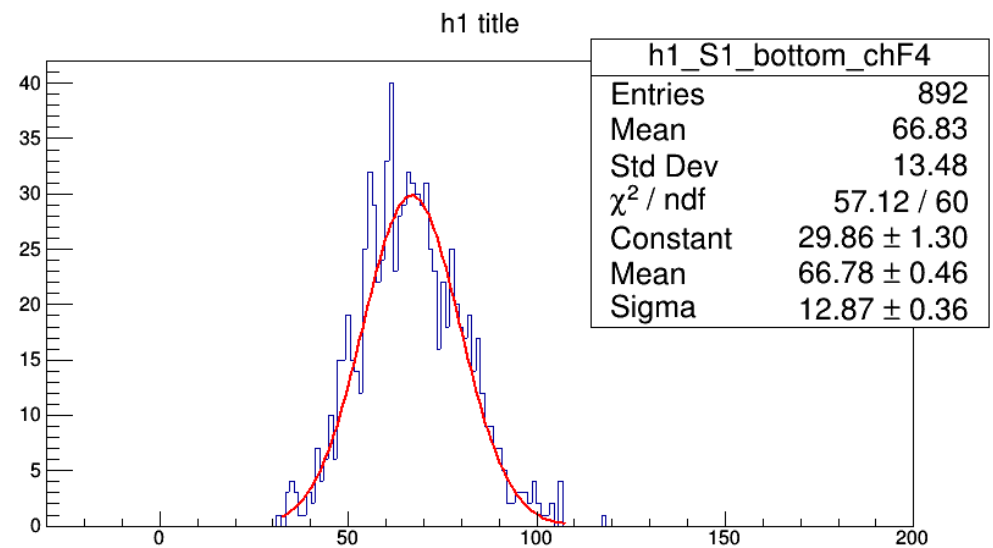
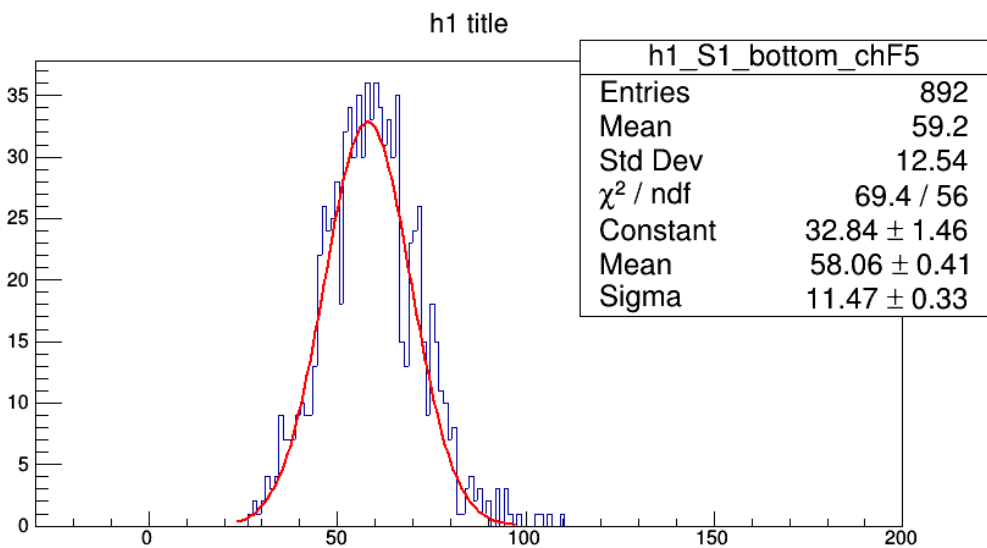
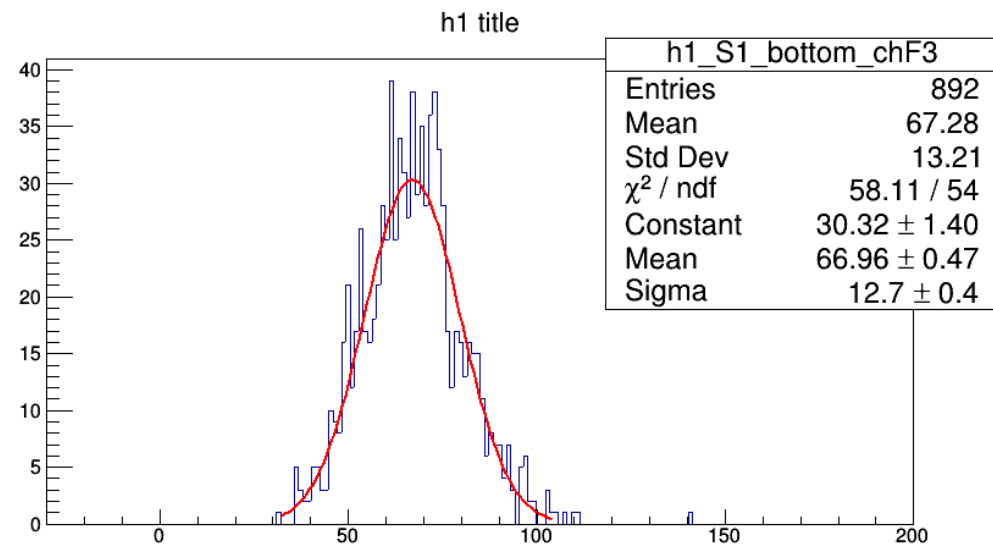
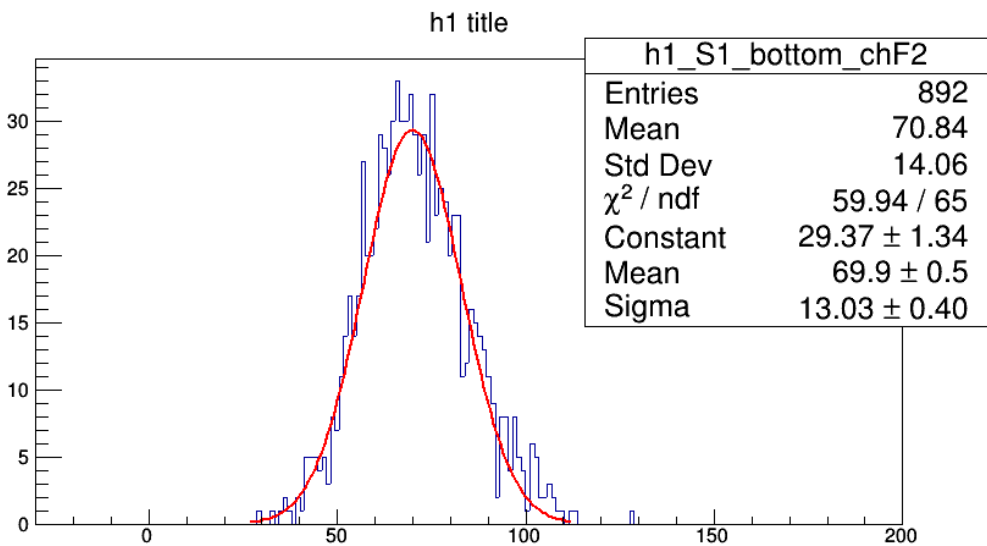


C2.is_S1



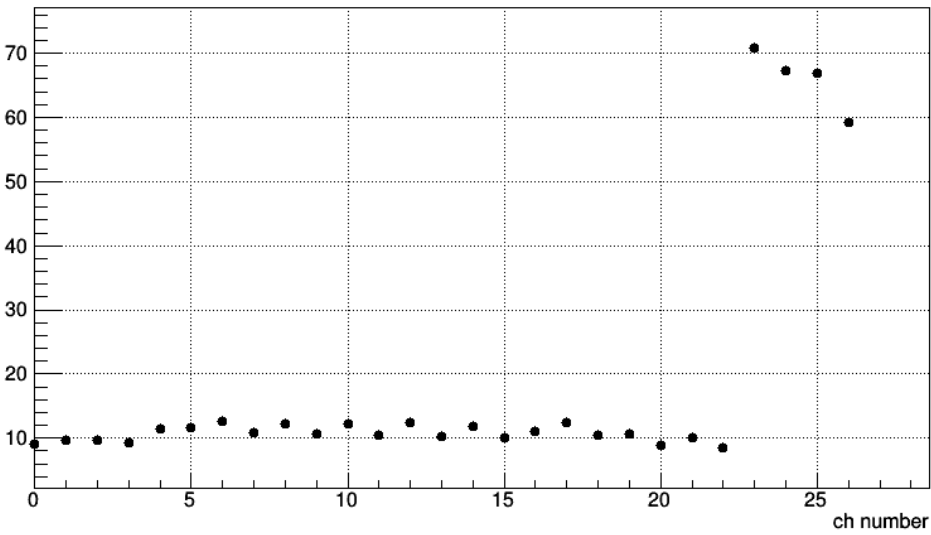
C2.is_S1



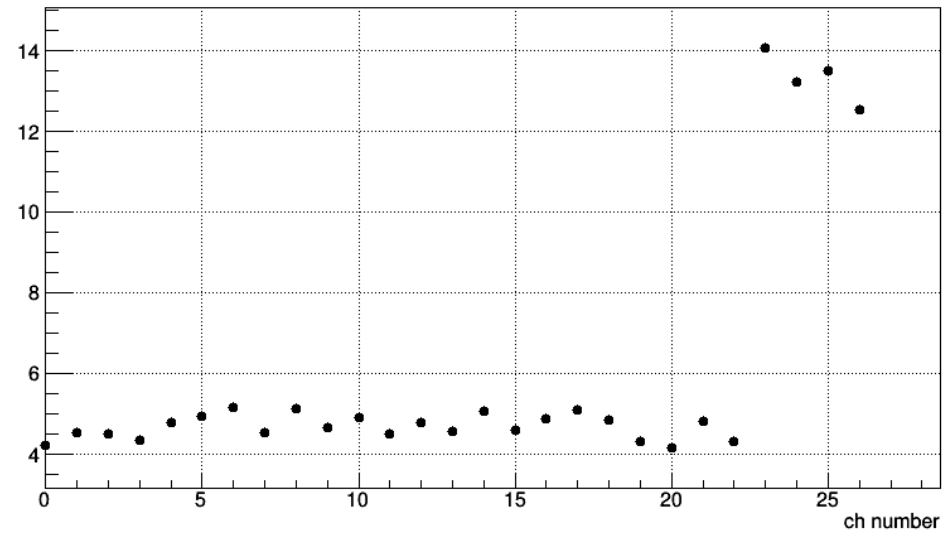


Ph2, Am241, run 537

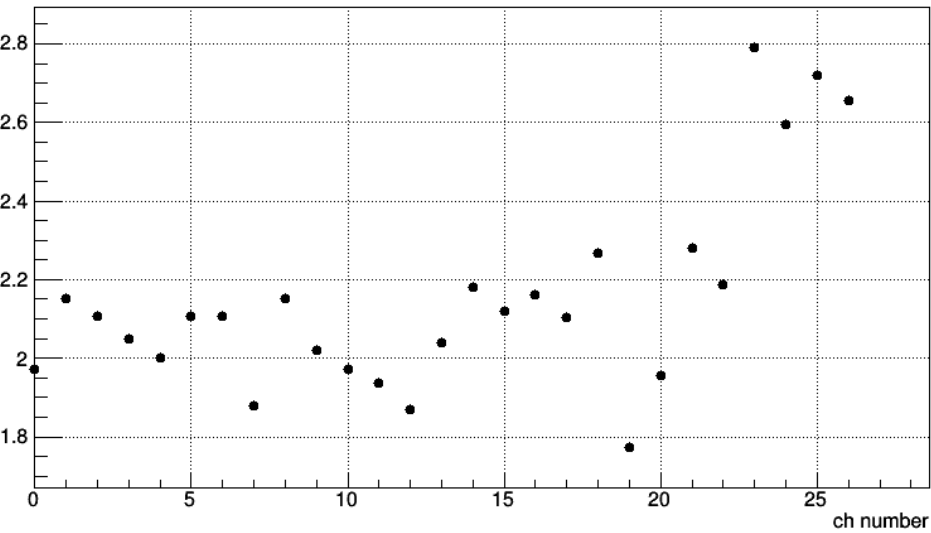
Mean from hist [PE]



StdDev from hist [PE]



Fano (Mean and StdDev from hist) [PE]



Ch 0 – 22: top SiPMs
Ch 23 – 26: bottom SiPMs

ToyMC using data from Ph2, Am241, run 537

