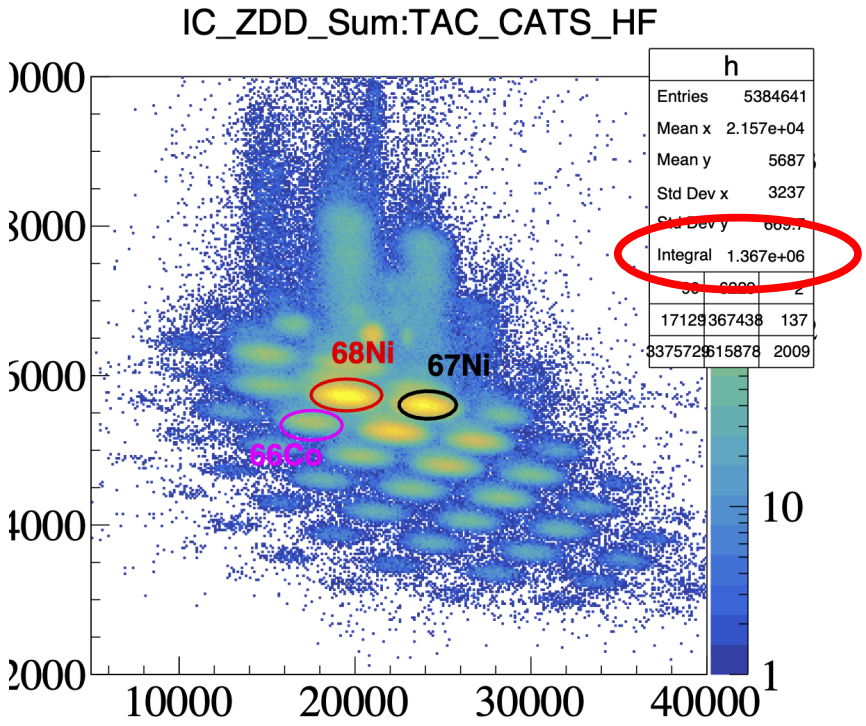
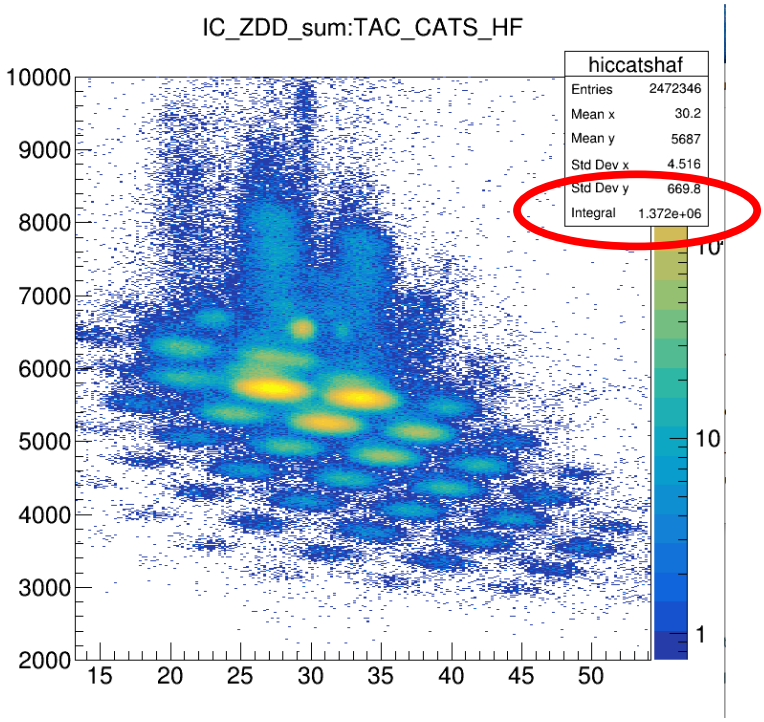
The PID plot in the ELOG is:



Now, we have 3 runs with cocktail beams, (#501-503) but we can't add them up to draw this because the Brho values were changed in between the runs according the logbook. A changed Brho value would mean that even for a particular isotope, we allowed a different section of the momentum that was passing through. Thus it will change the energy of the ion and so the blob will be shifted causing a cost in resolution.

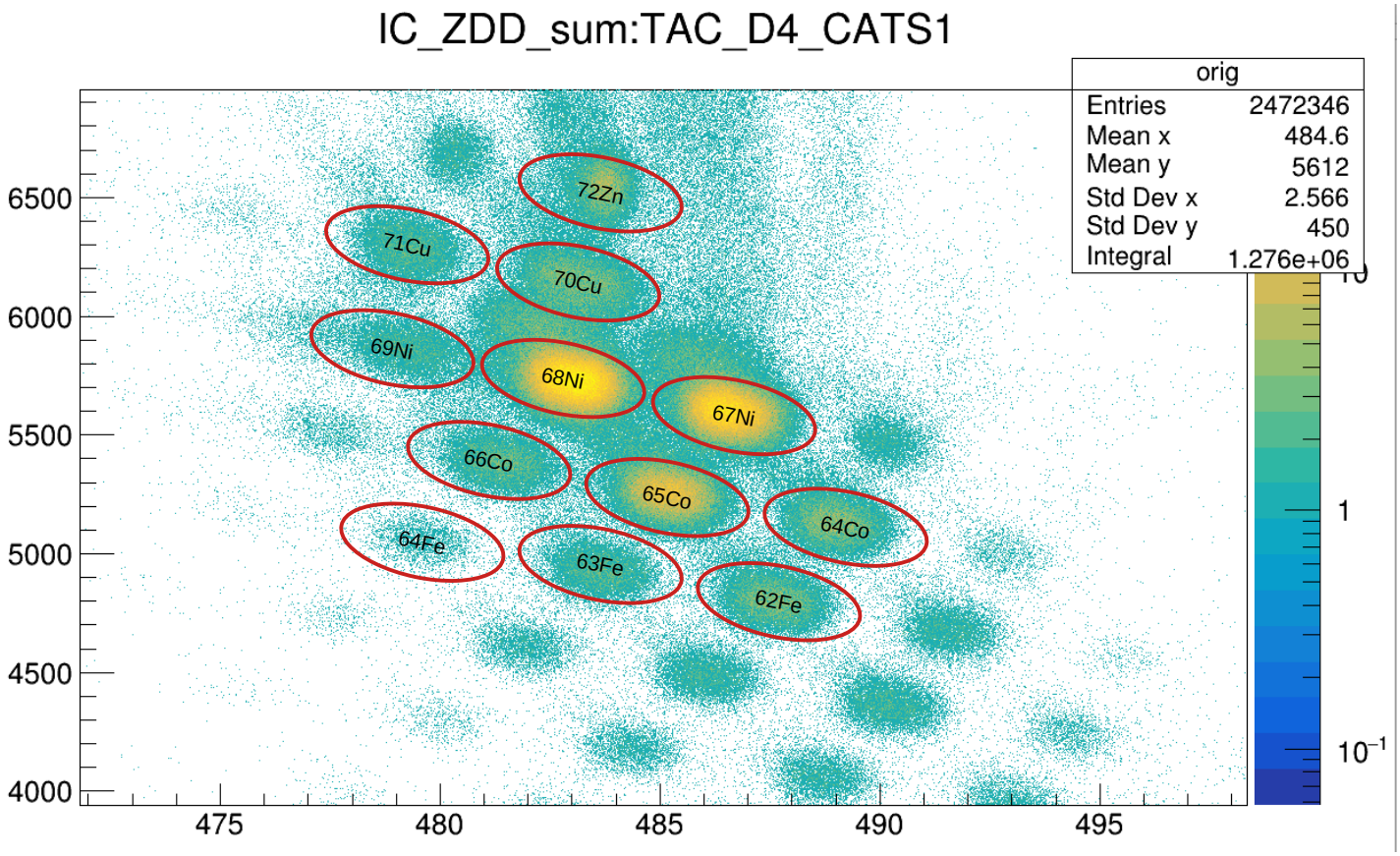
So I draw run #503 with the same TAC (just to confirm statistics):



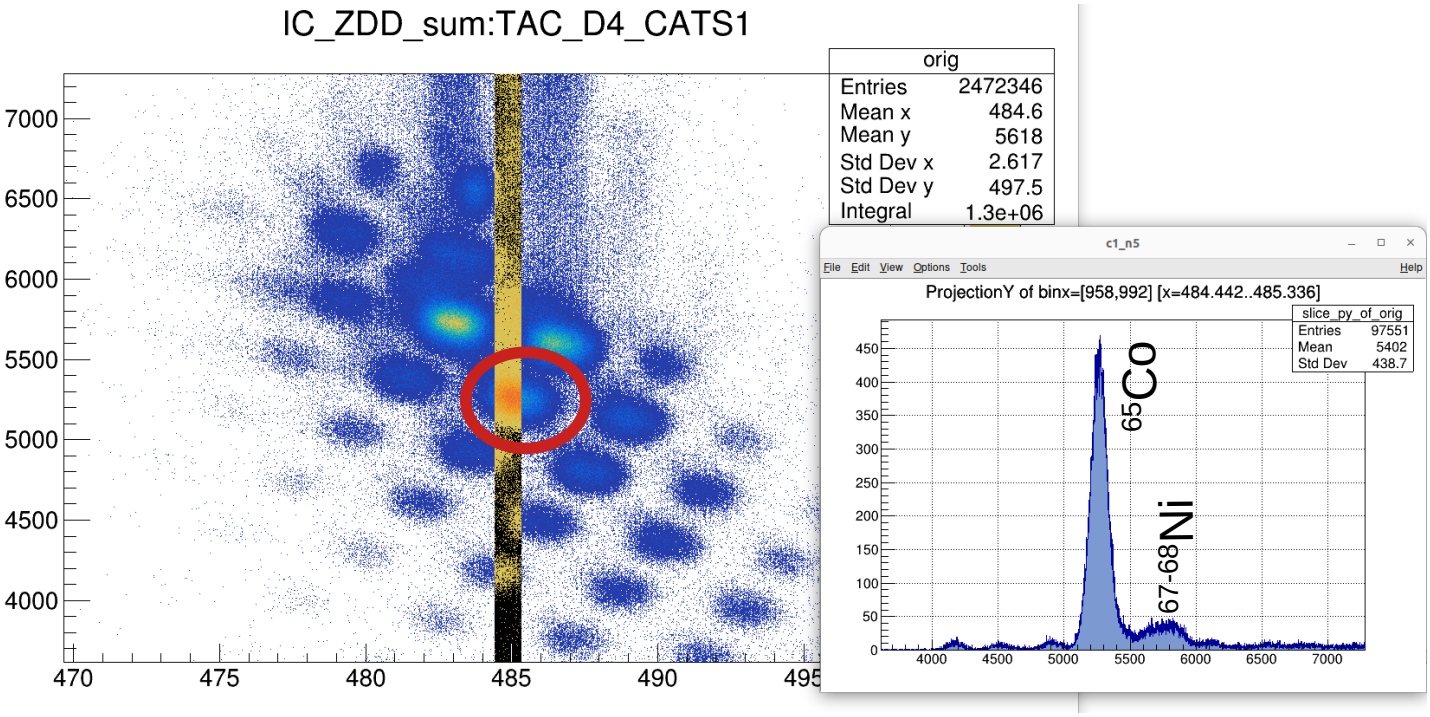
Same number...

Now, I draw the PID in CHIOs with TAC_D4_CATS to see the resolution. The blobs are identified with LISE++ (most of them which I was able to reproduce).

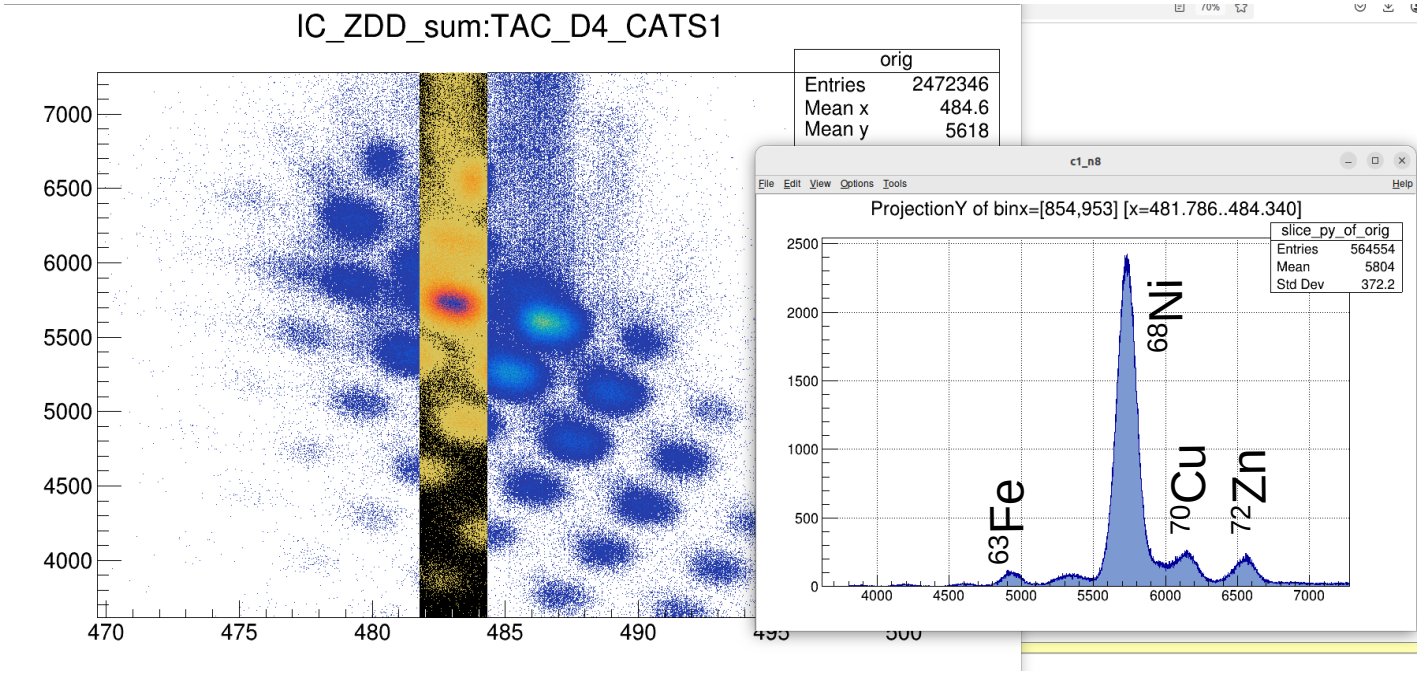
(1) IC-SUM vs TOF



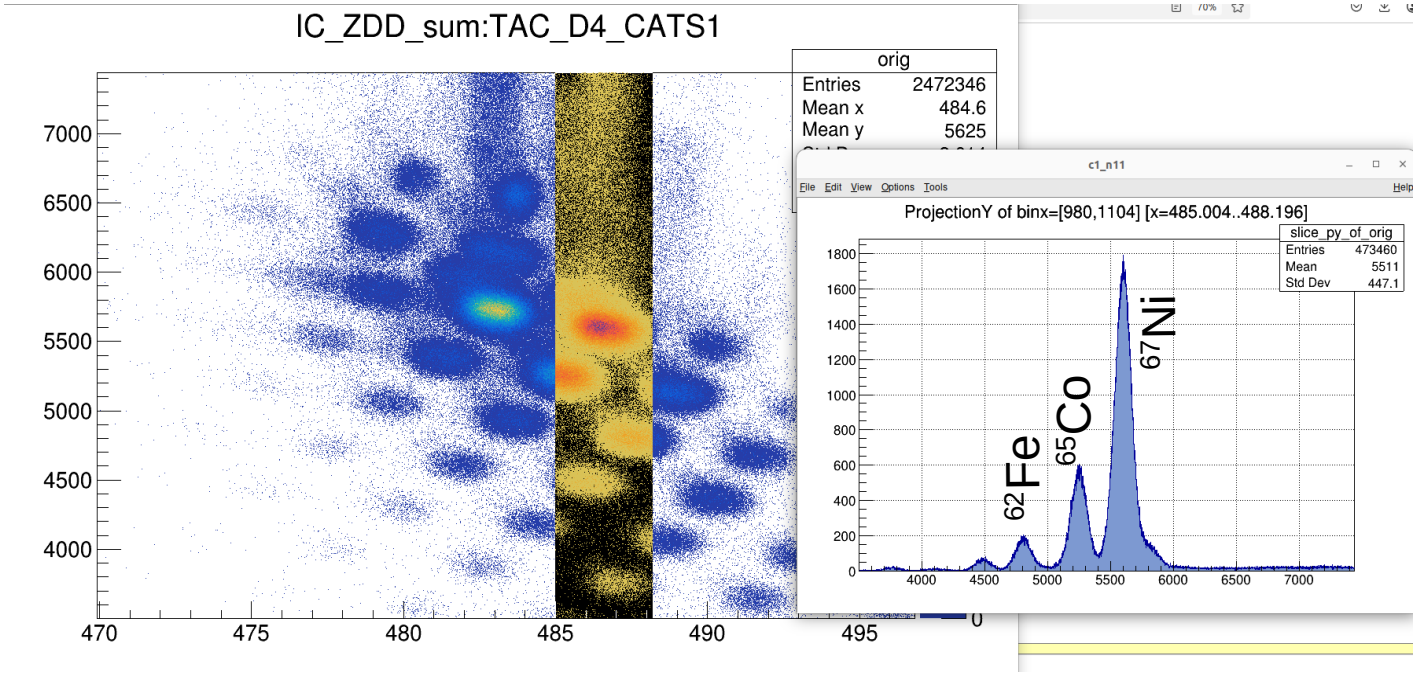
To see the resolution. I project the energy channels keeping a narrow window on x-axis:



Energy cent. ^{65}Co → 5263.94
Sigma → 61.90

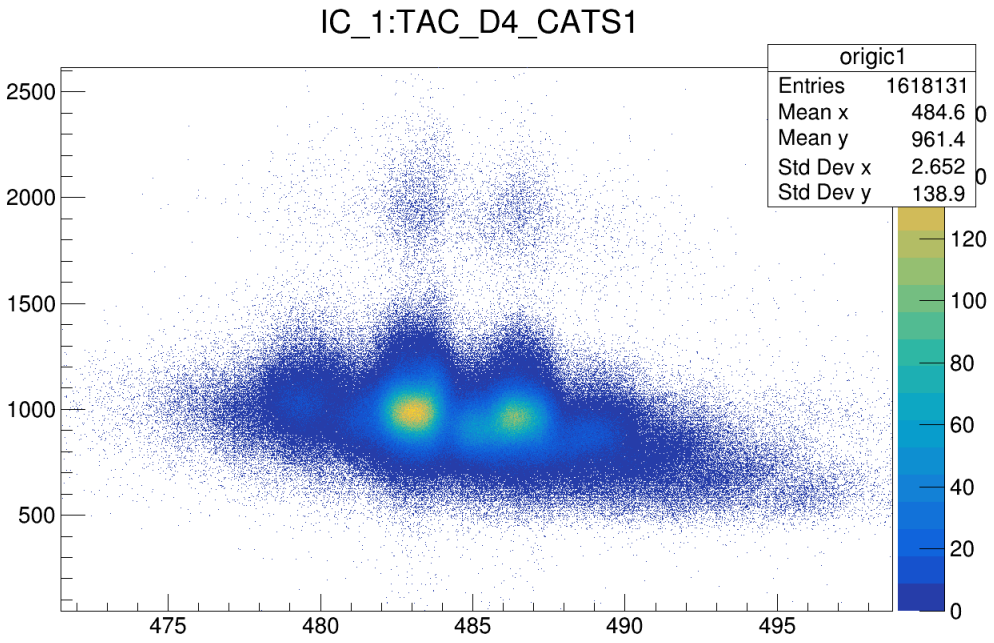


Energy cent. ^{68}Ni → 5729.10
Sigma → 64.38

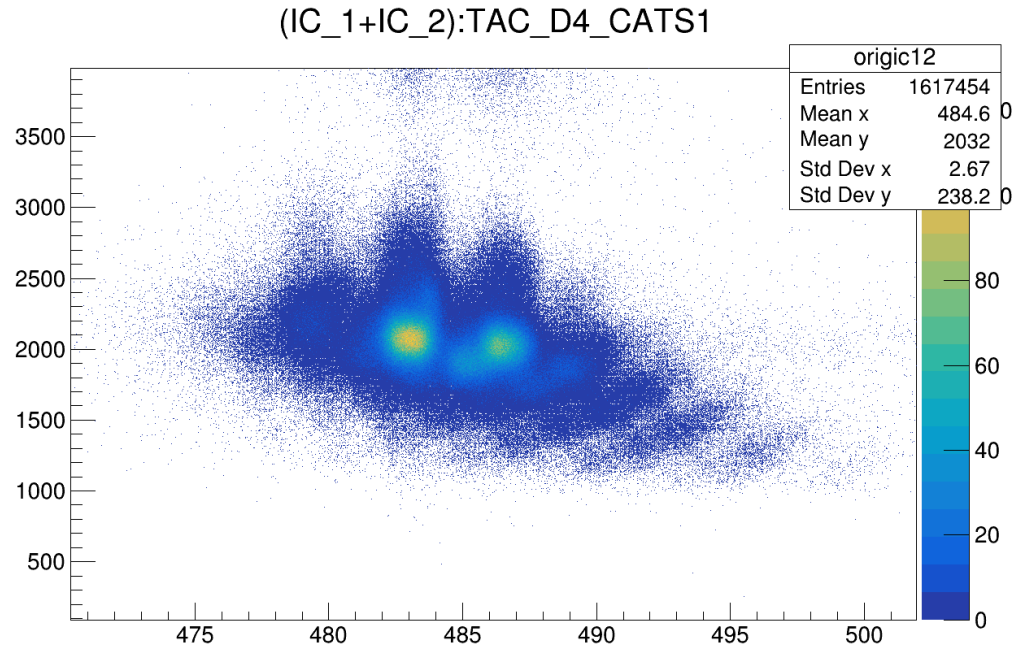


Energy cent. ^{67}Ni → 5598.64
Sigma → 62.16

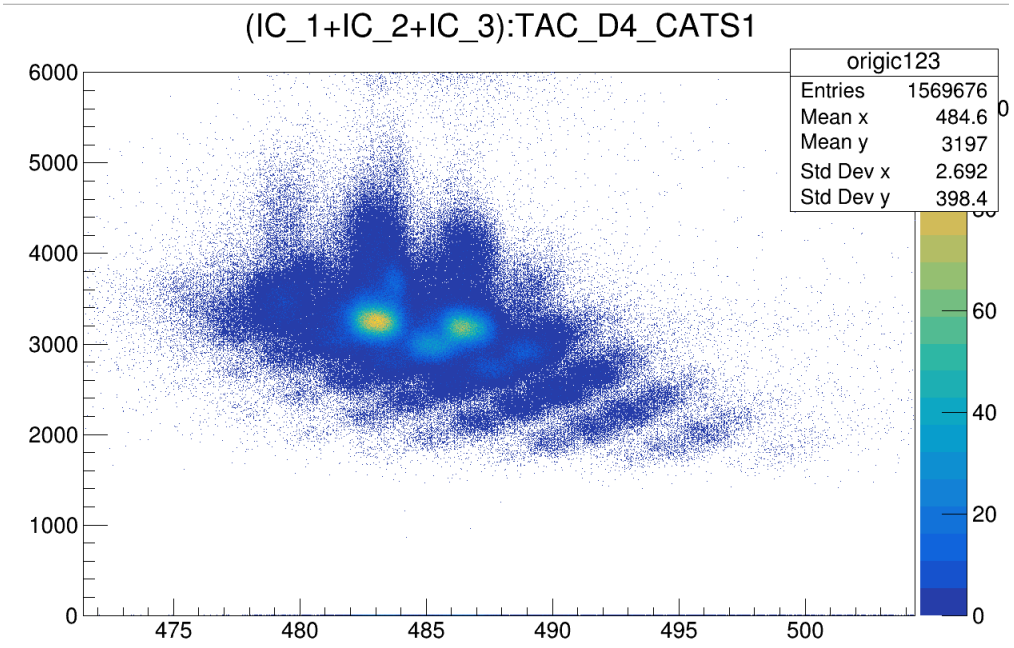
(2) IC_1 vs TOF_D4_CATS1



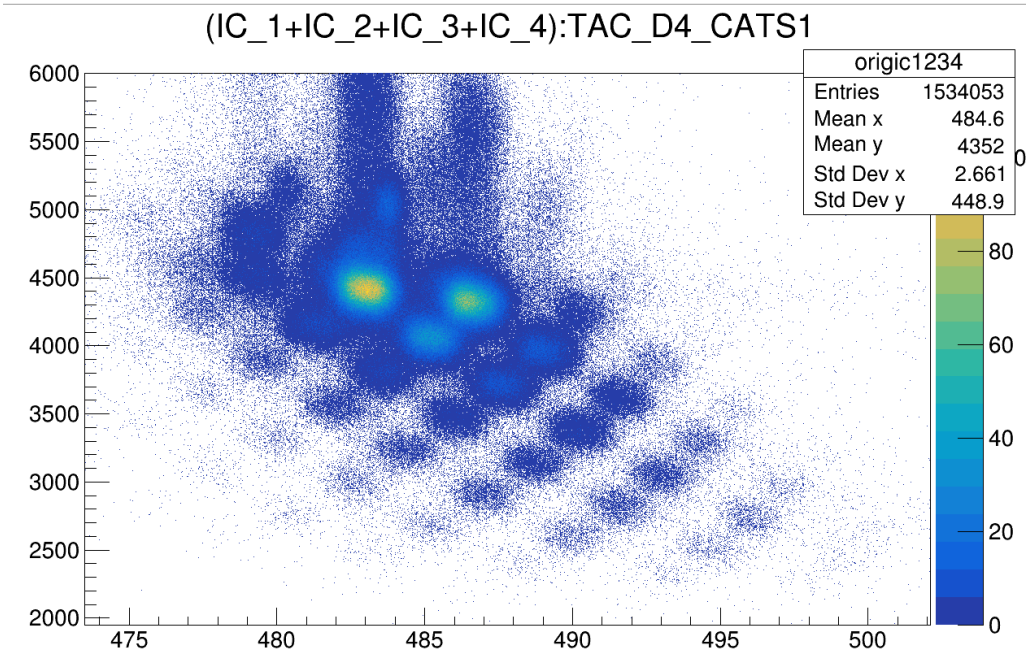
(3) IC_1 + IC_2 vs TOF_D4_CATS1



(4) IC_1 + IC_2 + IC_3 vs TOF_D4_CATS1

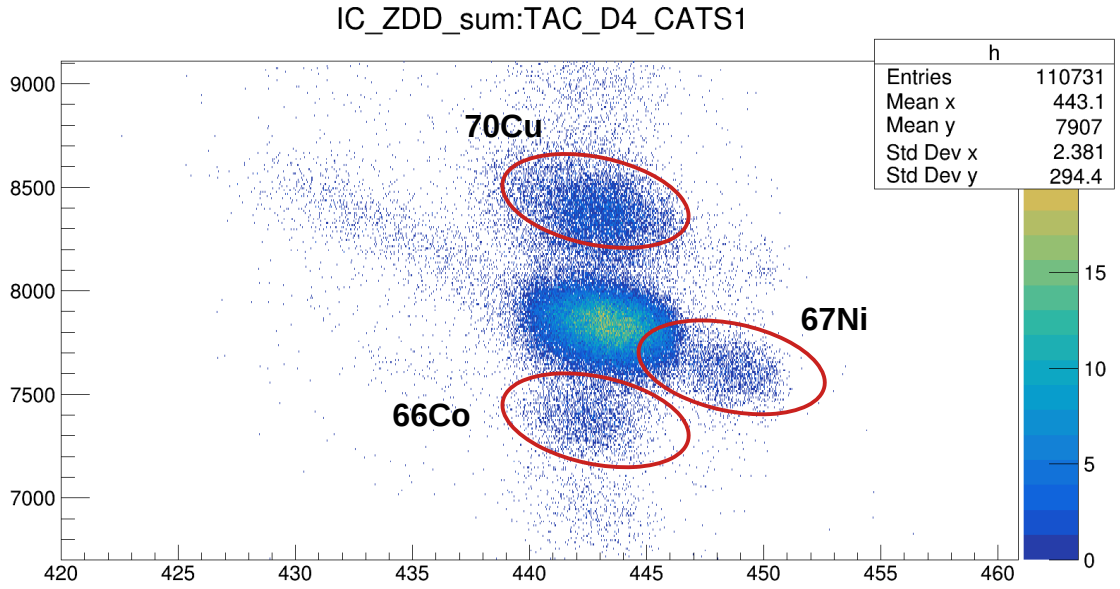


(5) IC_1 + IC_2 +IC_3 + IC_4 vs TOF_D4_CATS1



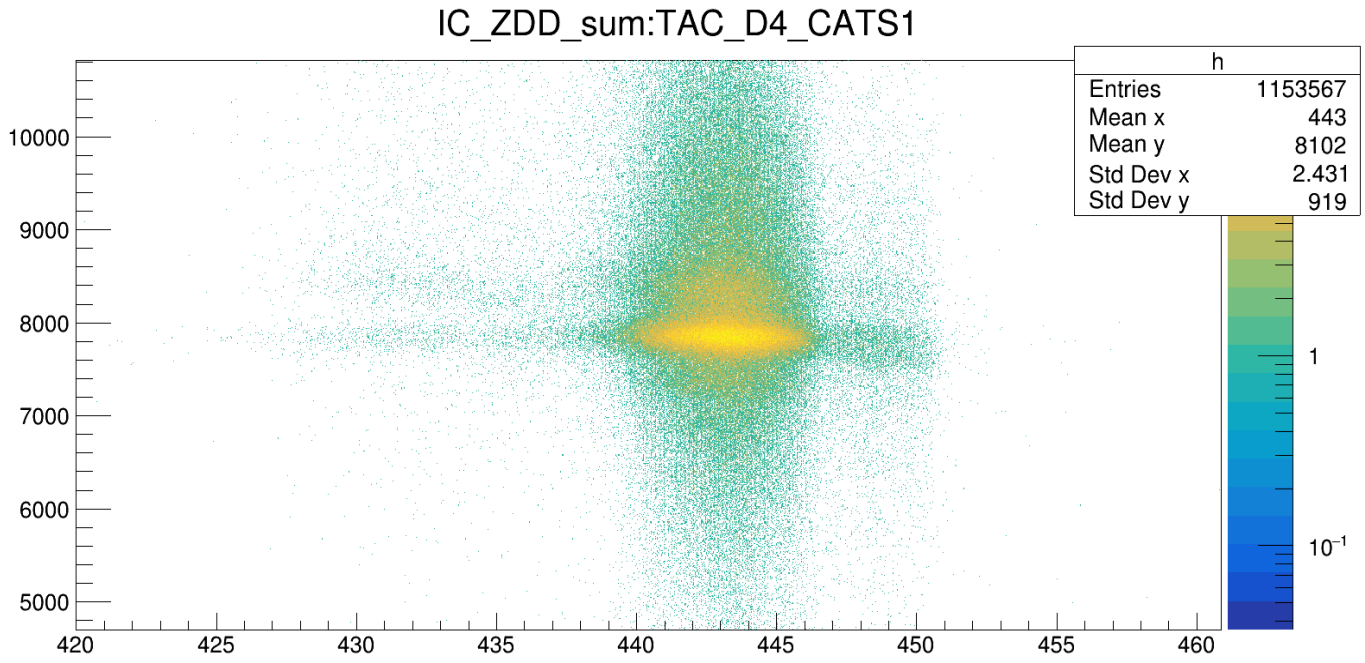
With Physics Runs

I use one full run (#523) with good amount of data with PLASTIC TRIGGER. Note: I check the data in MUST2 with Plastic TRIGGER data and there are barely any entries (20 in MUST2 out of 100k in GATCONF), which means PL-TR data contains beam that didn't make reaction. While MMG triggered data has ~500k entries out of ~1M in the GATCONF.



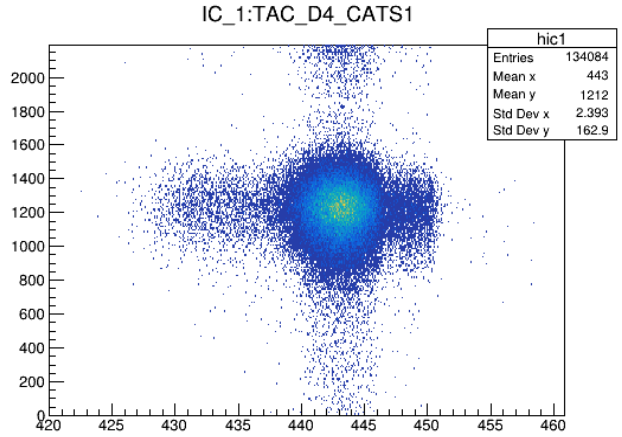
With my current understanding, I suspect the blobs must be the same as they are in the PID. That is, they should be 70Cu, 67Ni, and 66 Co. For confirming this I am trying to make use of gates in Exogam and try to find any correlated gamma that can help me identify the nuclei. Another way... I will also try reproducing the same in LISE++ suit. Now I will work on the content of ^{67}Ni with respect to run number which I will show in a later report.

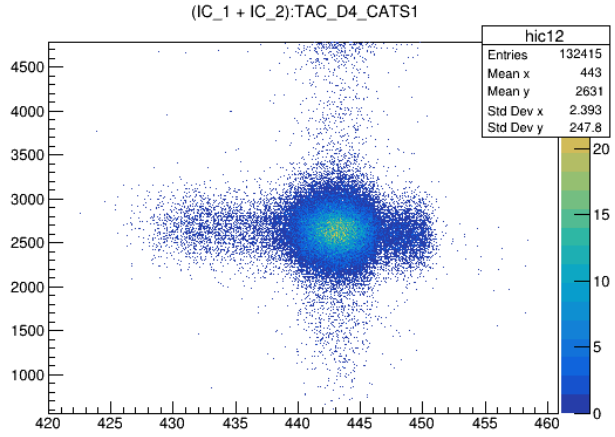
For now, I make the same plot with MMG trigger

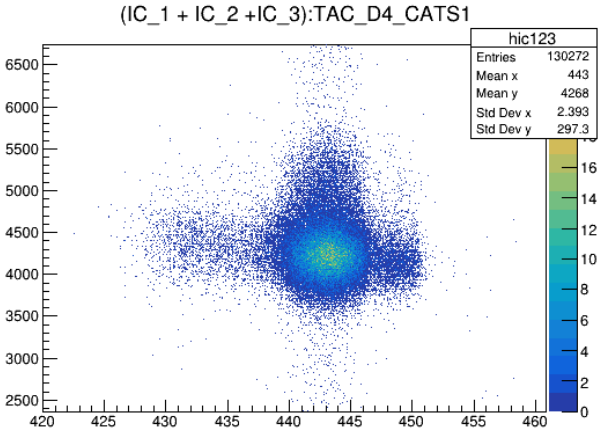


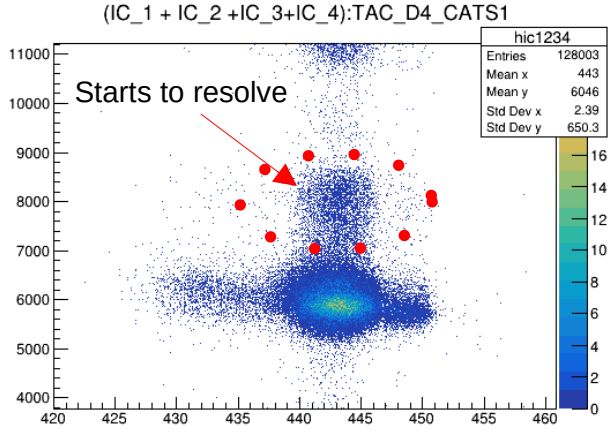
And with the same TAC, I show the plots of
(1) IC_1
(2) IC_1 + IC_2
(3) IC_1 + IC_2 + IC_3
(4) IC_1 + IC_2 + IC_3 + IC_4

(PLASTIC TRIGGER)

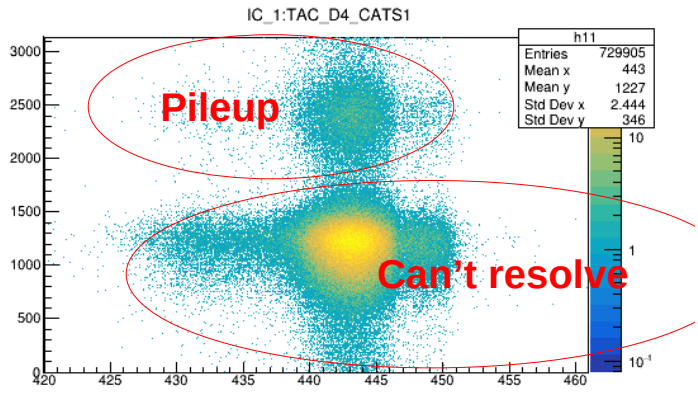


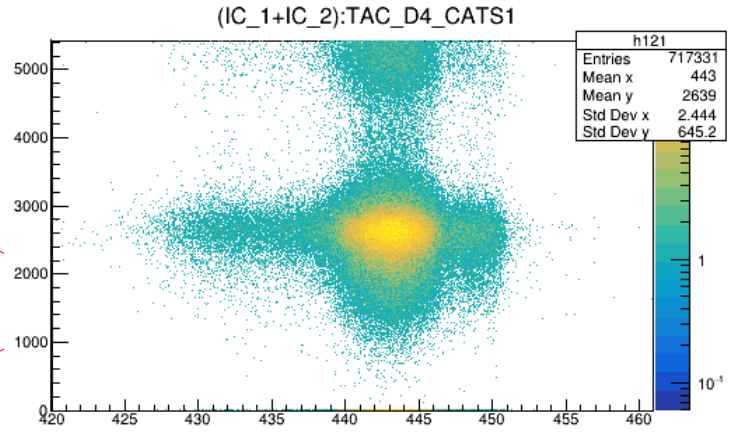


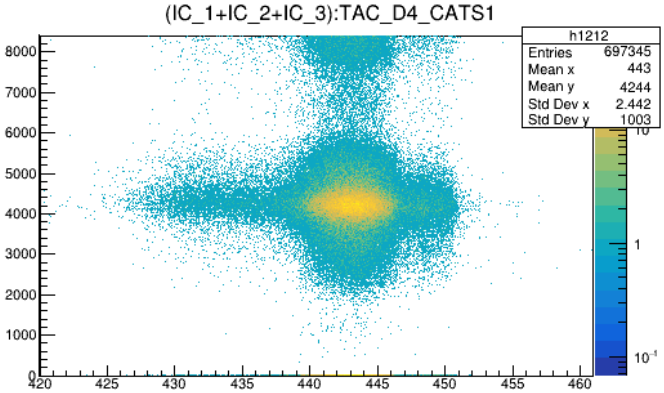


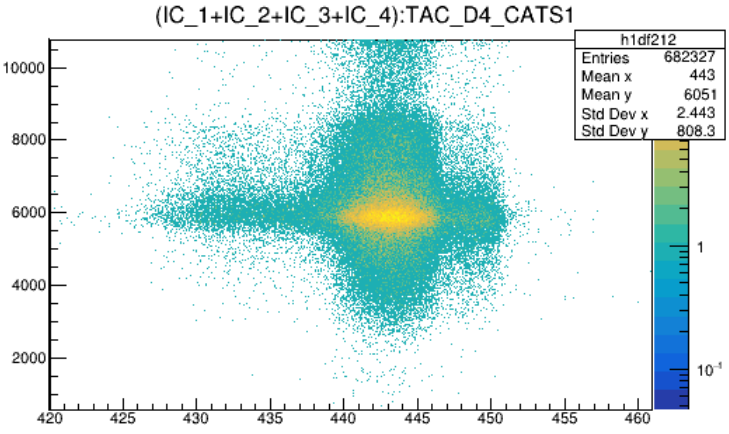


(MMG TRIGGER) (in log scale)



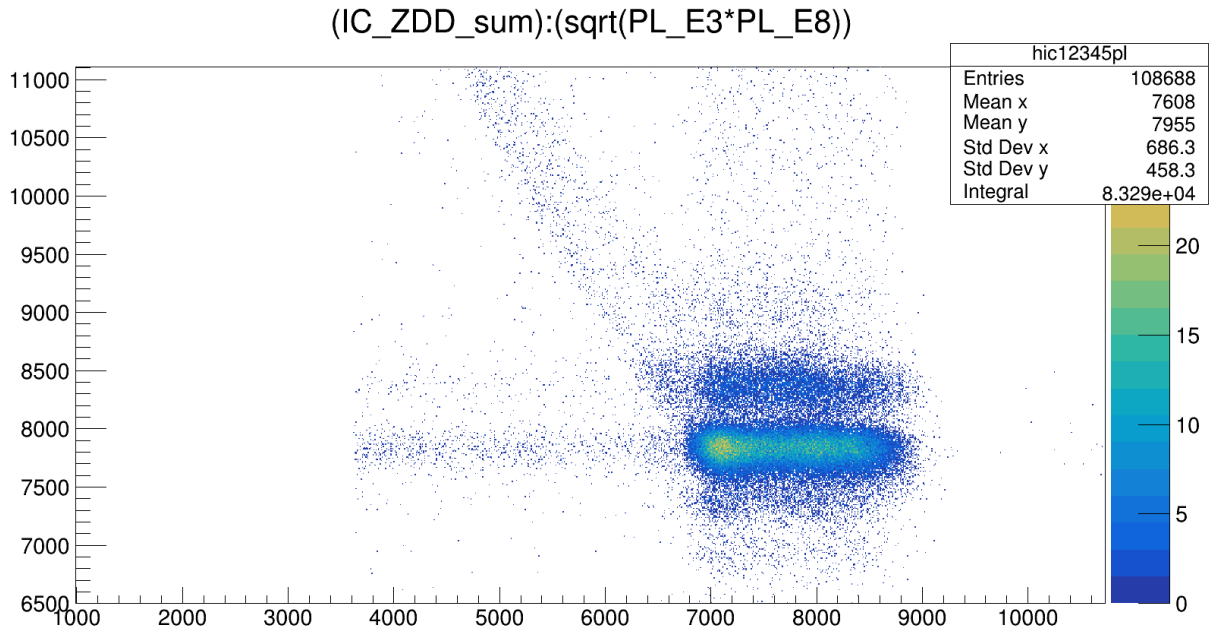




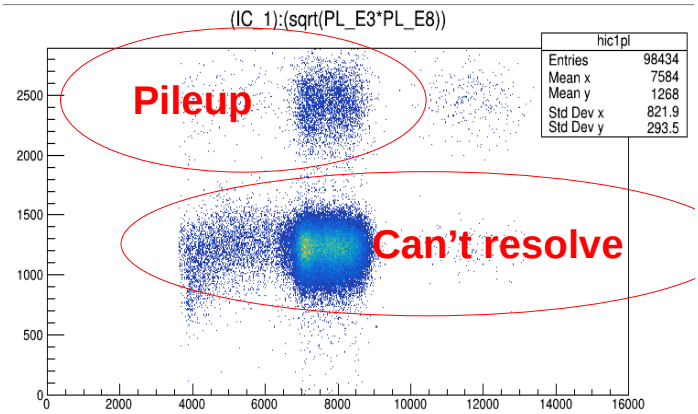


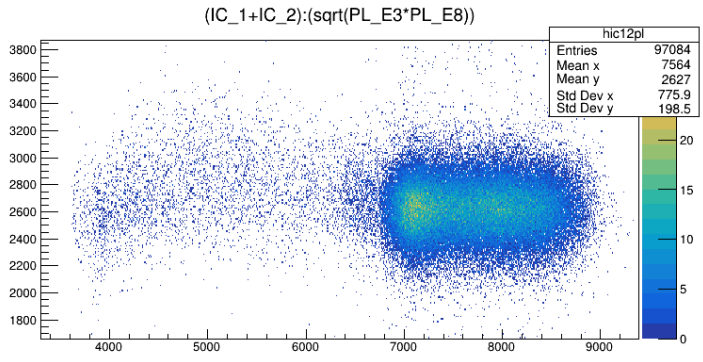
Can I separate the blobs some other way? For example by using plastics?

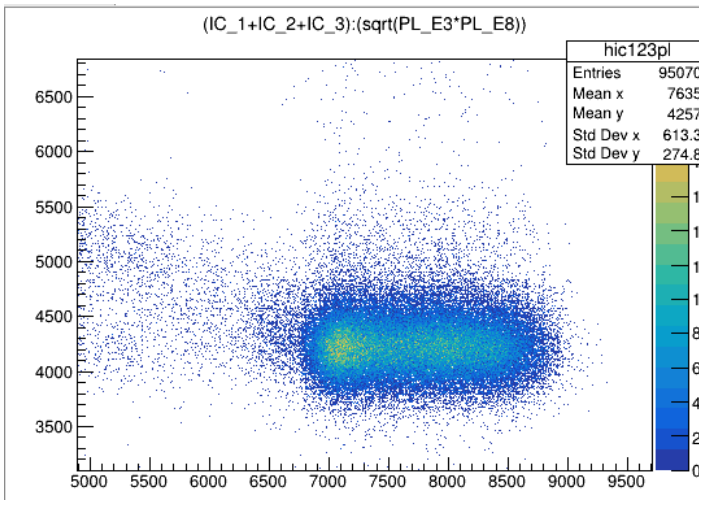
Below is the plot of IC_sum energy vs sq. root of PL3 * PL 8 (index starting from 1) :

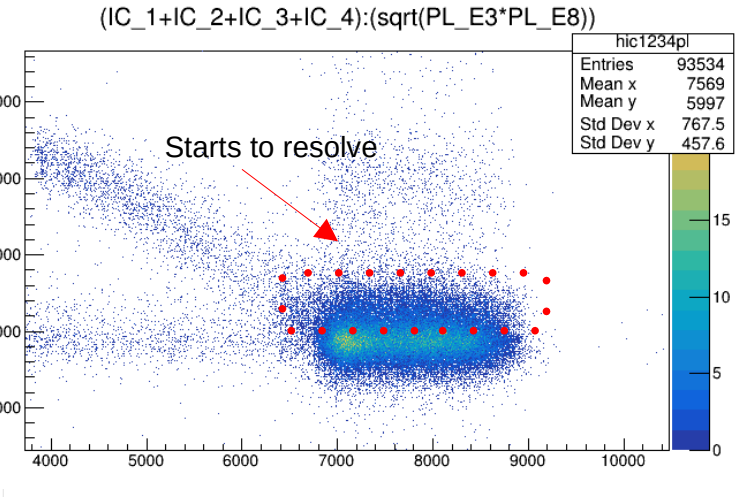


And with the same TAC, I show the plots of
(1) IC_1
(2) IC_1 + IC_2
(3) IC_1 + IC_2 + IC_3
(4) IC_1 + IC_2 + IC_3 + IC_4



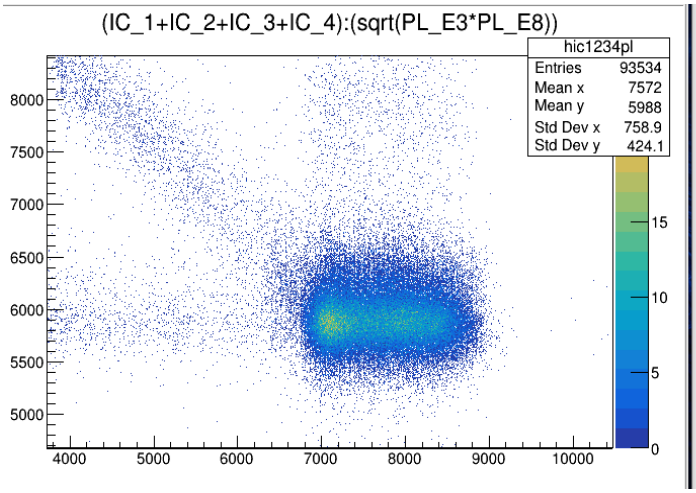


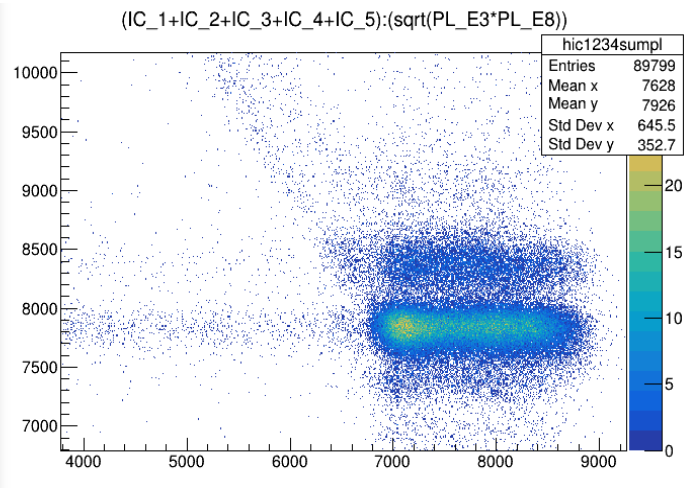




The difference in structures by the inclusion of 5th CHIO is clear in the side by side comparison of the two figures below:

The first fig. Represents the sum of first 4 CHIOs (1+2+3+4) against Plastic energy (sqrt (E3*E8)) on x-axis and the second one is sum of all 5 CHIOs.





Merely 5th CHIO can't be used either: