

ClusteringAnalog - WIP

Outputs with corryvreckan @DESY 2021 dec

Yitao WU

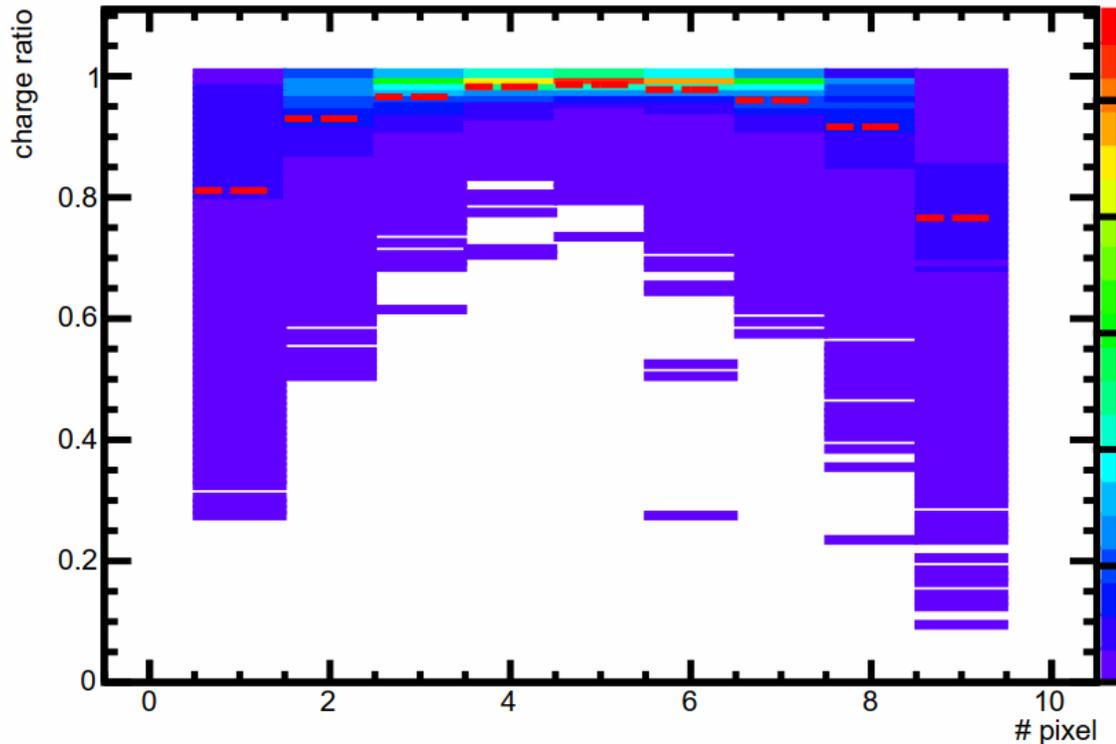
Source code (WIP for merge request): [GitLab](#)

https://gitlab.cern.ch/alice-its3-wp3/corryvreckan/-/merge_requests/21

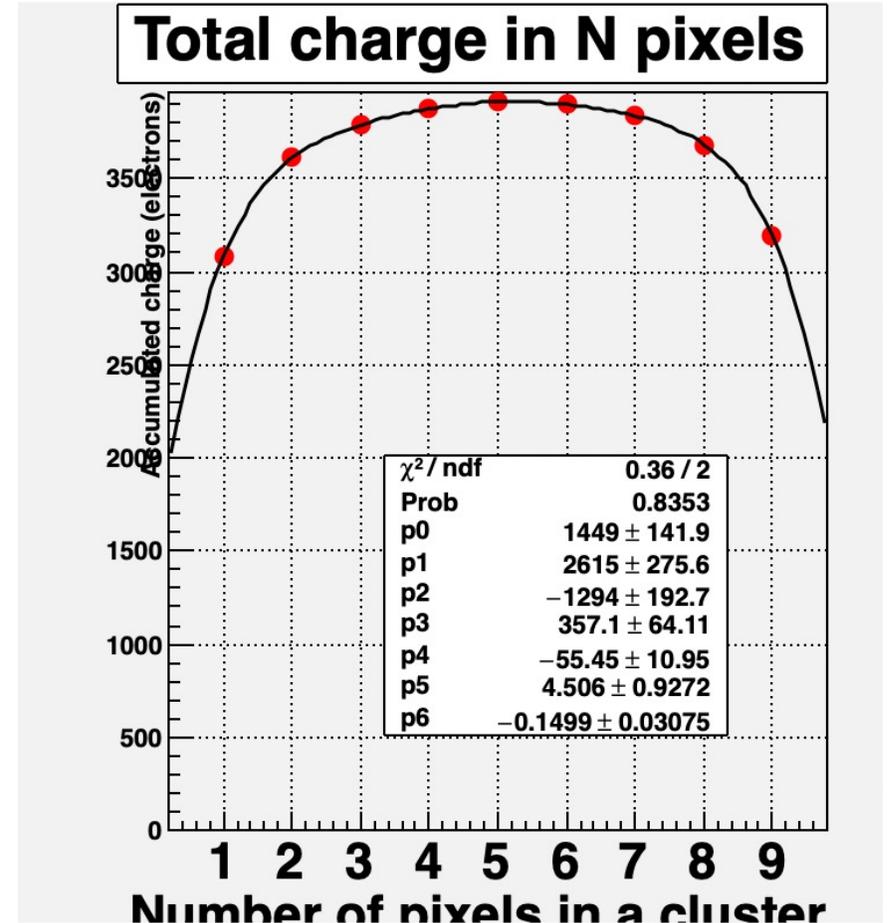
B4

sort pixels in cluster by charge, calculate sum of largest N pixels
define ratio over max. value (sum of all pixels with positive charges)
fill TH2 by clusters

CE65_4 Cluster total charge ratio in N pixels

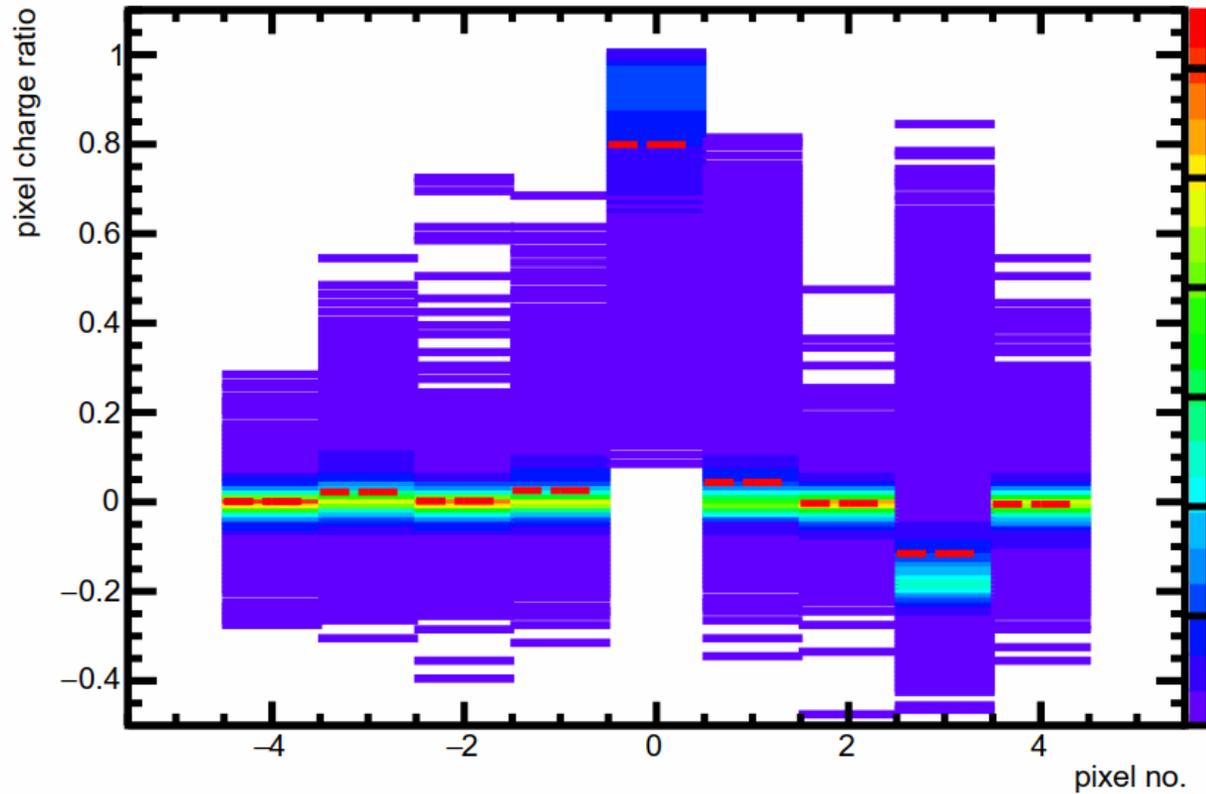


RED dash line, average charge ratio of each column (ProfileX)



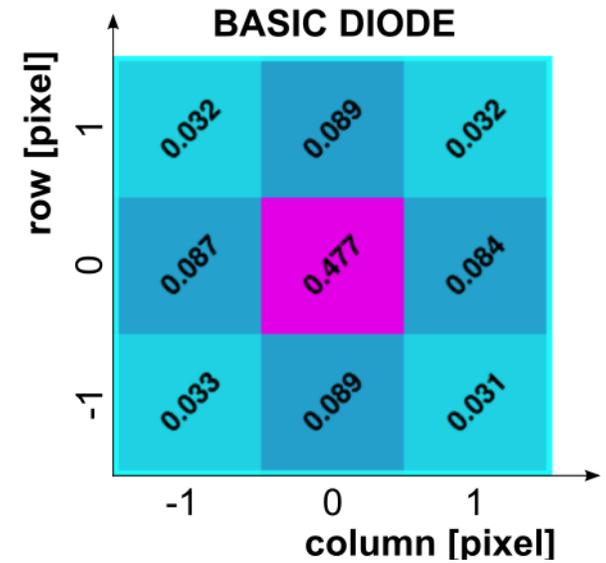
B4

CE65_4 Cluster charge distribution by ratio



RED dash line, average charge ratio of each column/pixel (ProfileX)

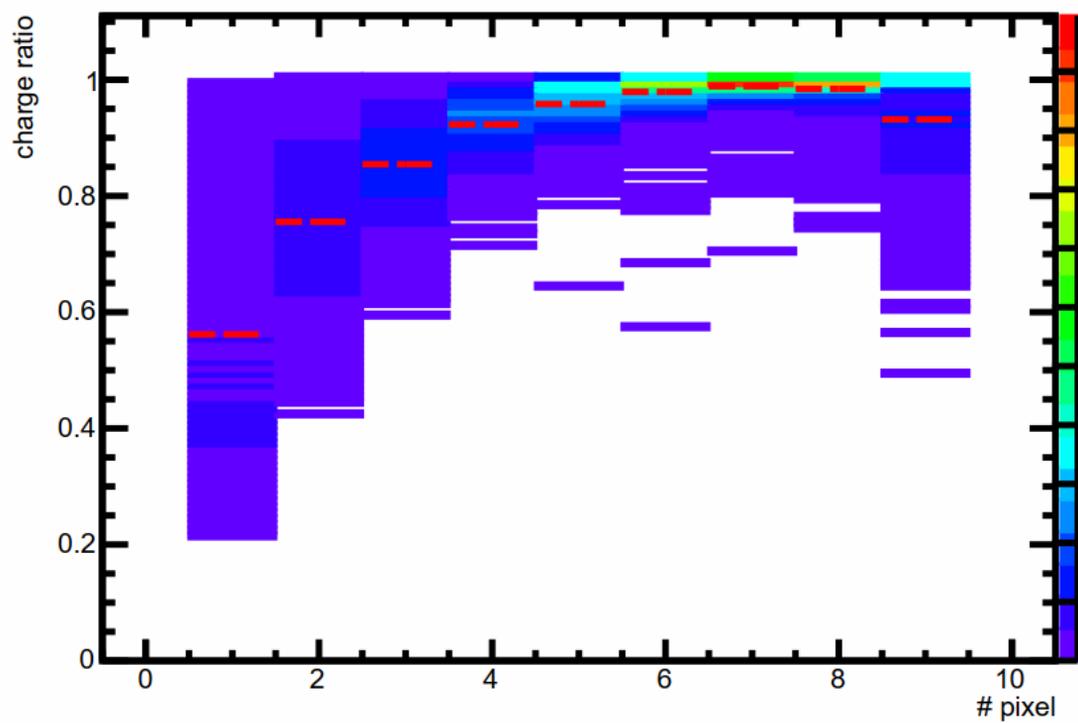
2	3	4
-1	0 Seed	1
-4	-3	-2



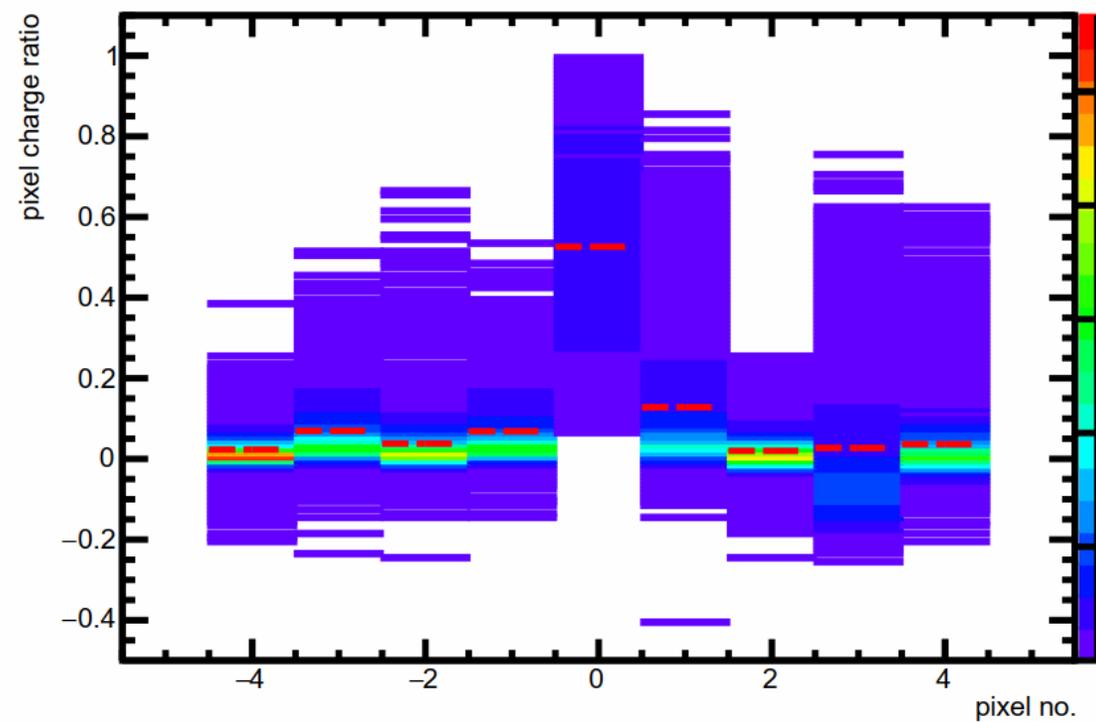
Charge sharing in CE65_A

A4

CE65_4 Cluster total charge ratio in N pixels

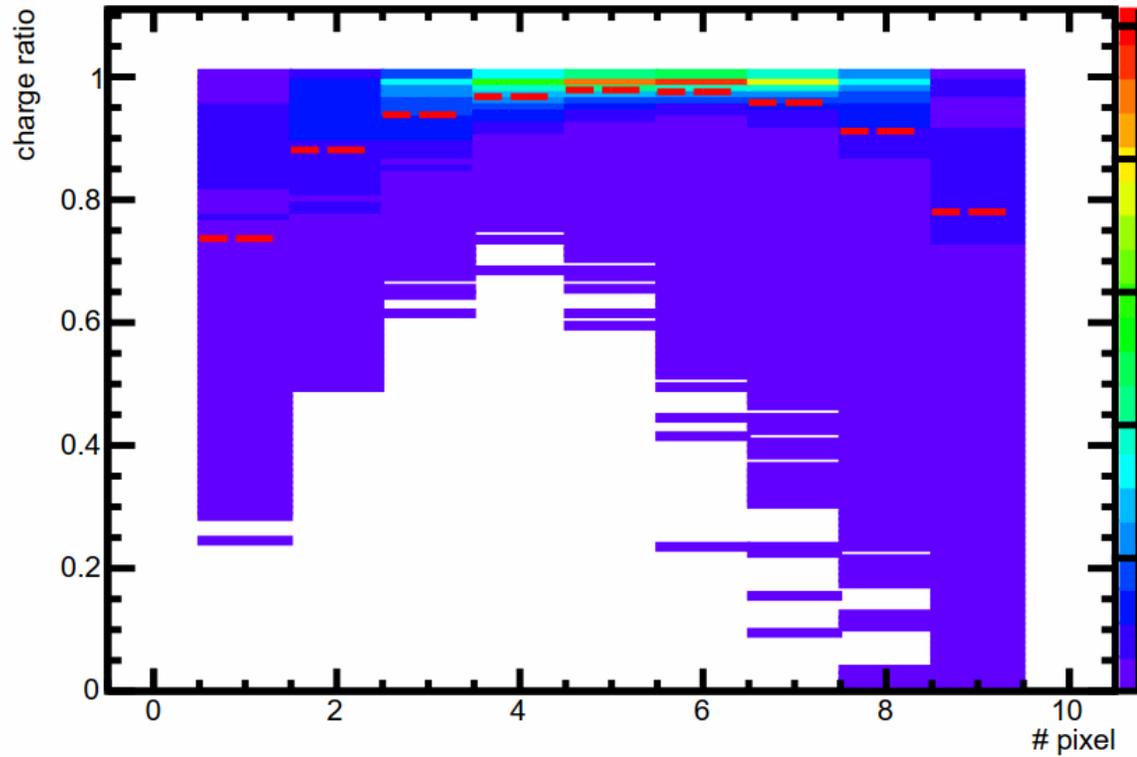


CE65_4 Cluster charge distribution by ratio

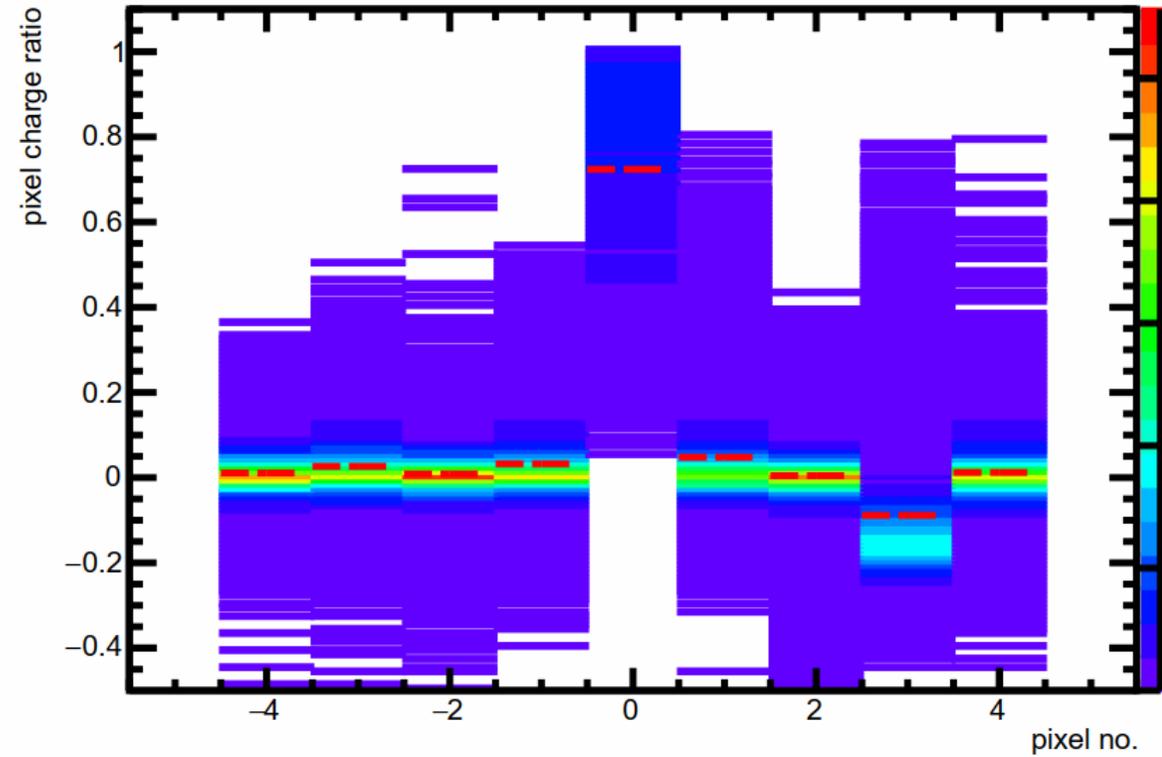


C4

CE65_4 Cluster total charge ratio in N pixels



CE65_4 Cluster charge distribution by ratio



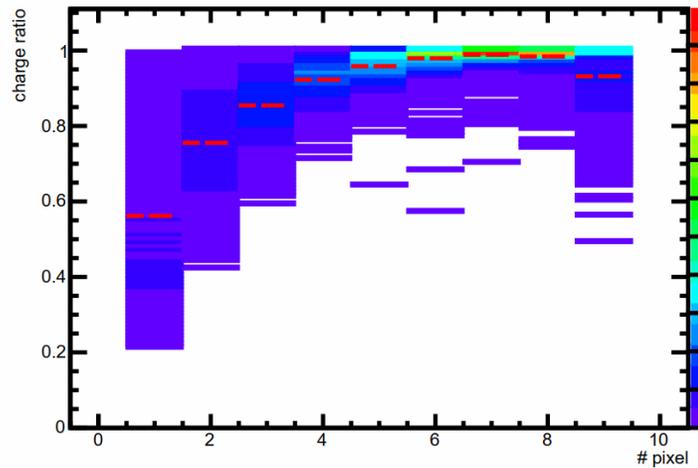
Cluster charge ratio

A —

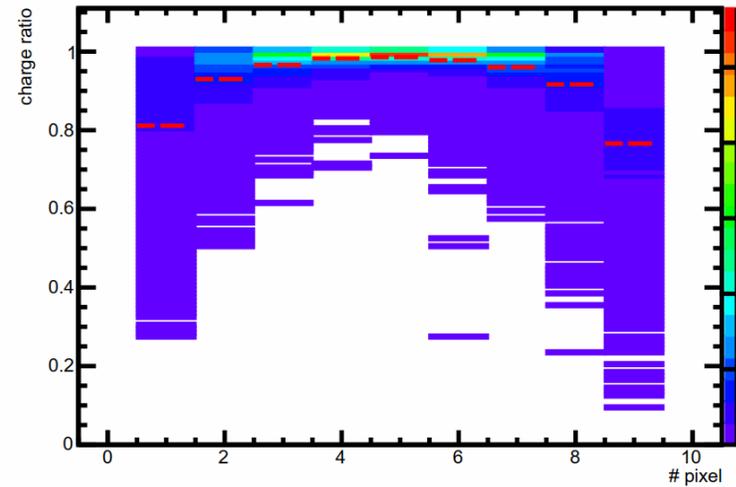
B

— C

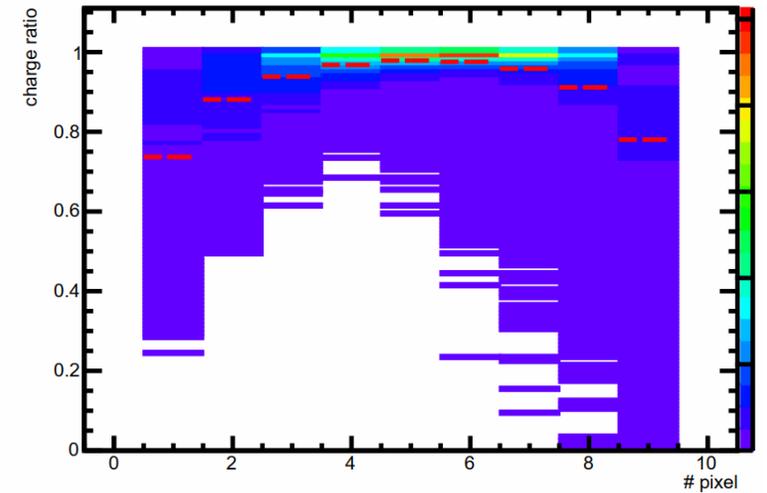
CE65_4 Cluster total charge ratio in N pixels



CE65_4 Cluster total charge ratio in N pixels



CE65_4 Cluster total charge ratio in N pixels



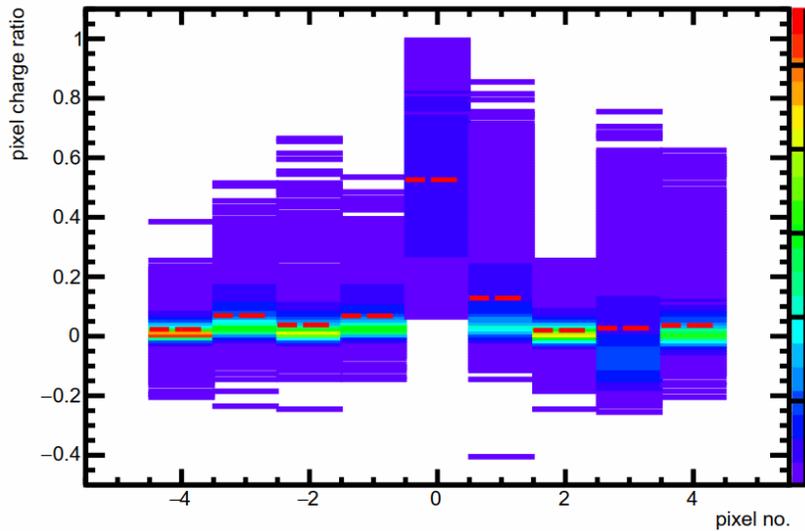
Cluster charge distribution

A –

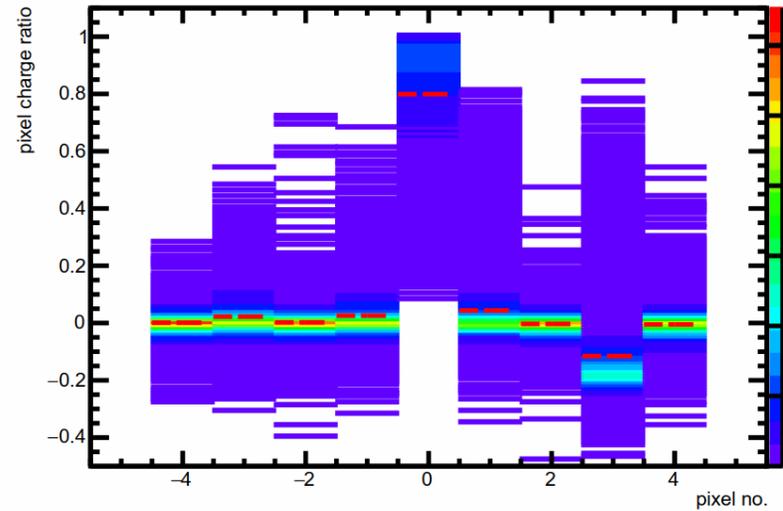
B

– C

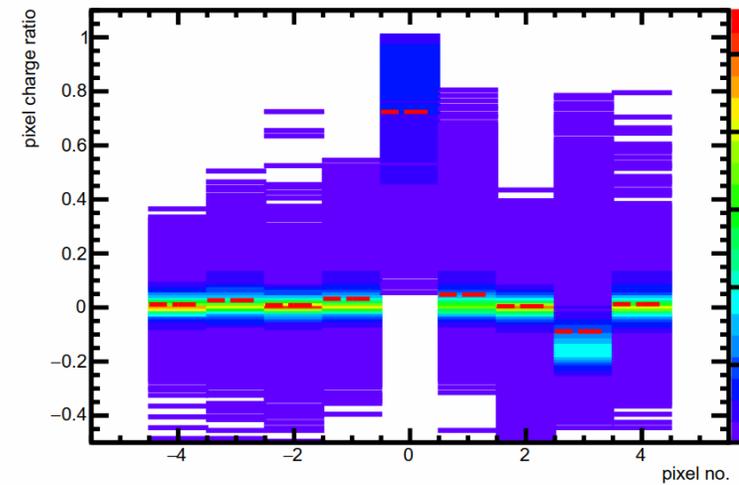
CE65_4 Cluster charge distribution by ratio



CE65_4 Cluster charge distribution by ratio

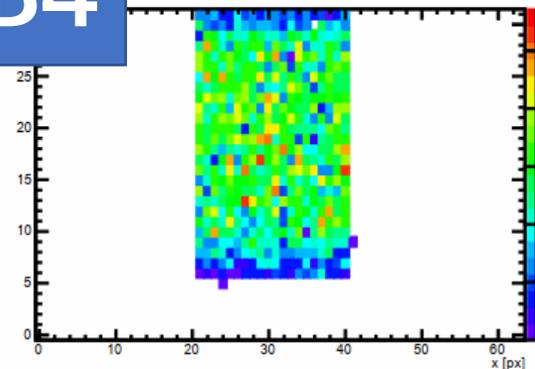


CE65_4 Cluster charge distribution by ratio

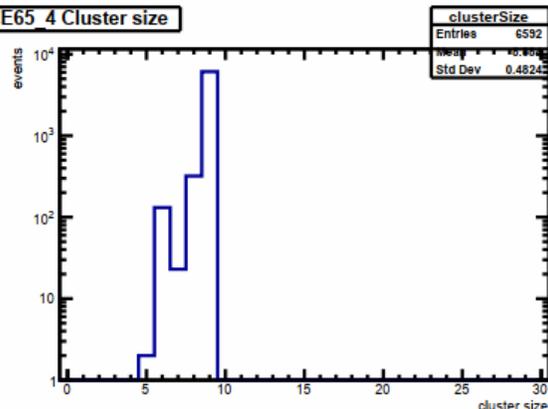


B4

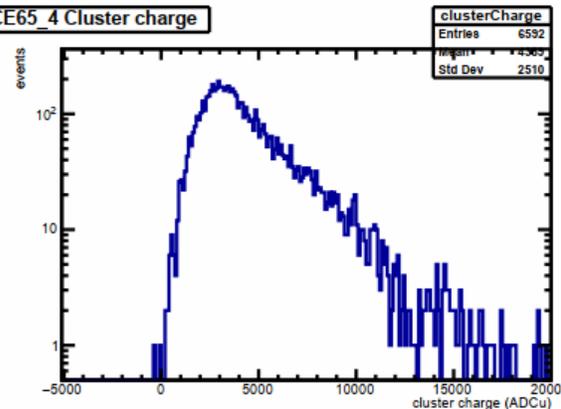
Position (local)



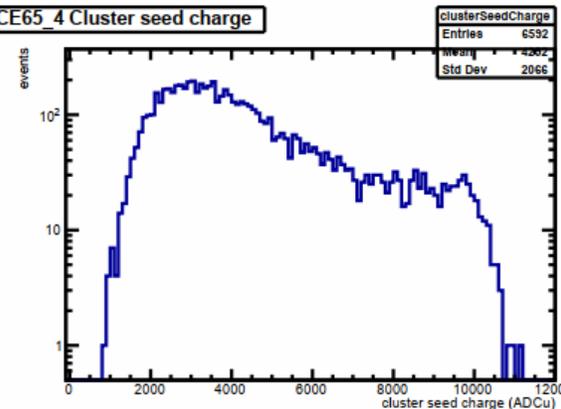
CE65_4 Cluster size



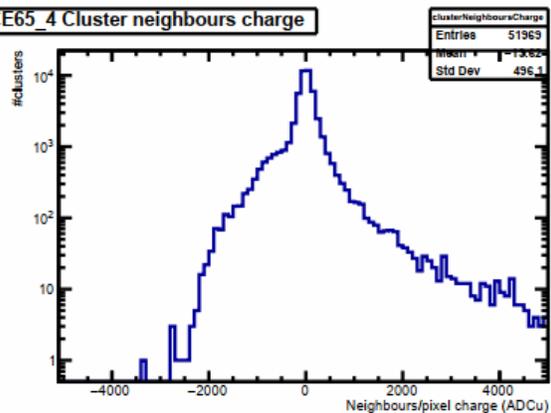
CE65_4 Cluster charge



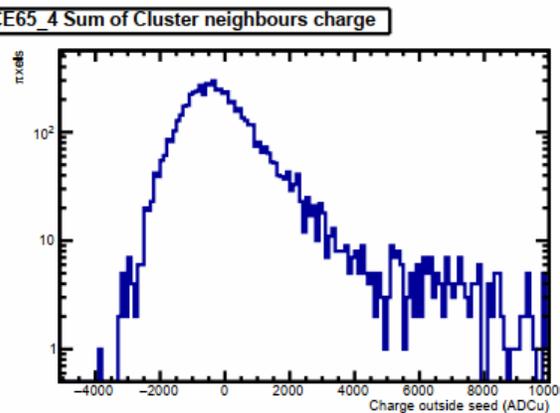
CE65_4 Cluster seed charge



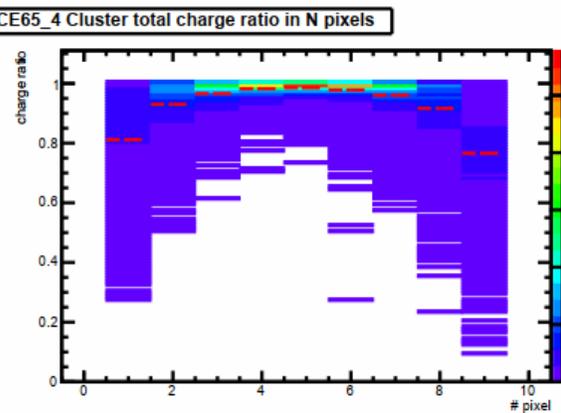
CE65_4 Cluster neighbours charge



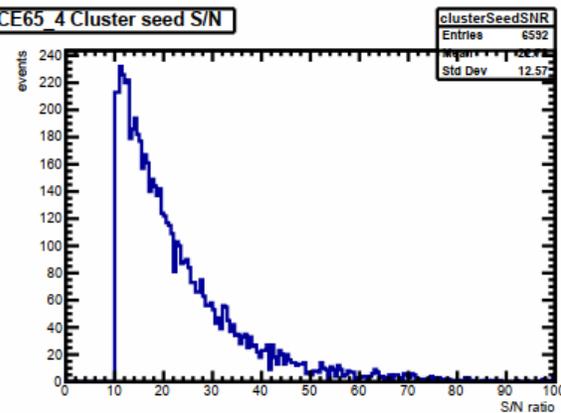
CE65_4 Sum of Cluster neighbours charge



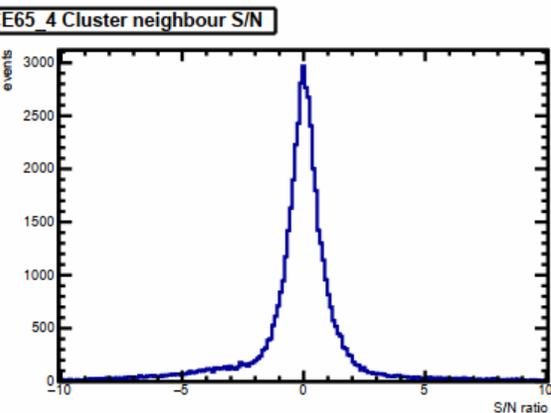
CE65_4 Cluster total charge ratio in N pixels



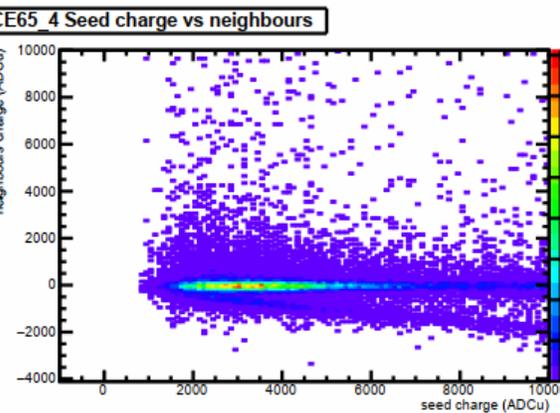
CE65_4 Cluster seed S/N



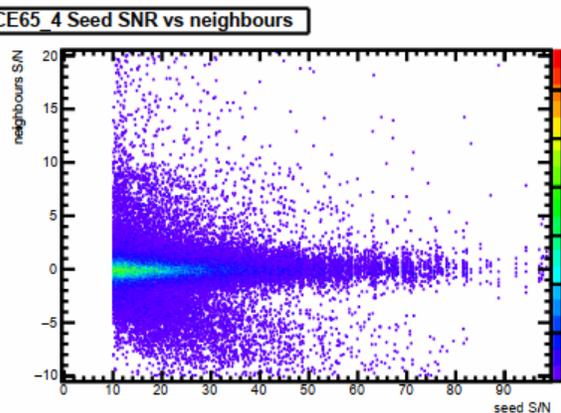
CE65_4 Cluster neighbour S/N



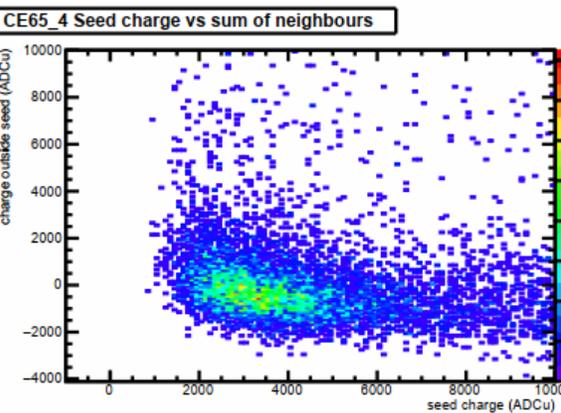
CE65_4 Seed charge vs neighbours



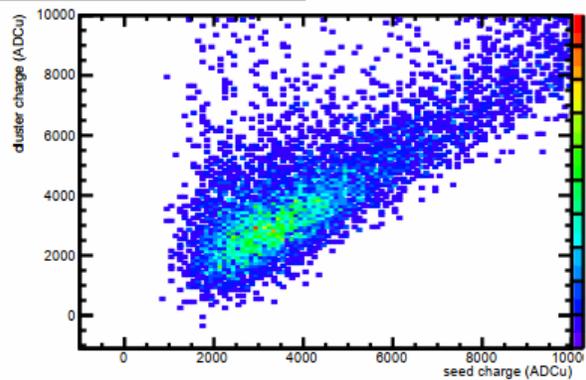
CE65_4 Seed SNR vs neighbours



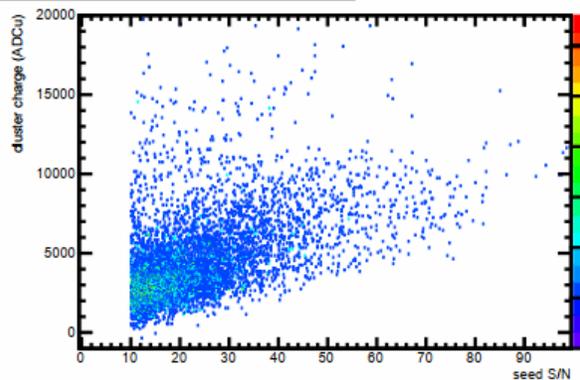
CE65_4 Seed charge vs sum of neighbours



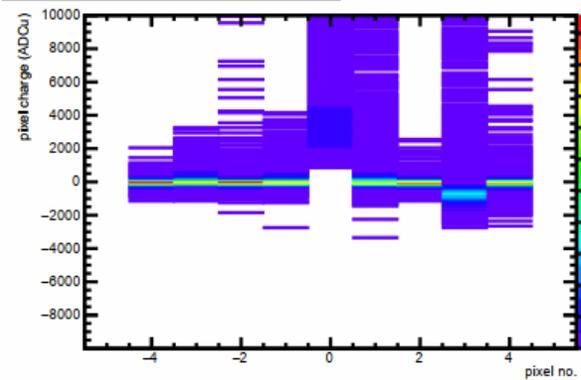
CE65_4 Seed charge vs cluster



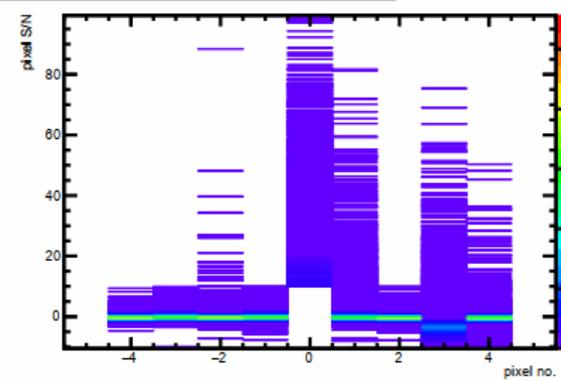
CE65_4 Seed SNR vs cluster charge



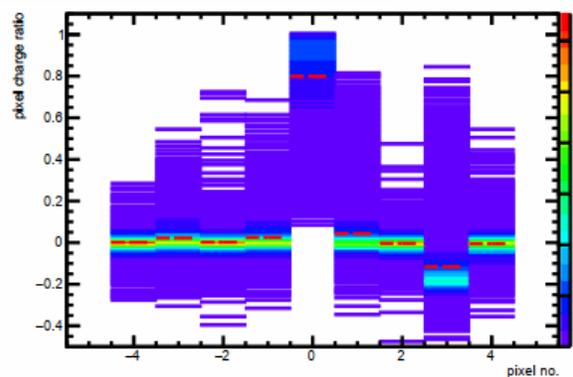
CE65_4 Cluster charge distribution



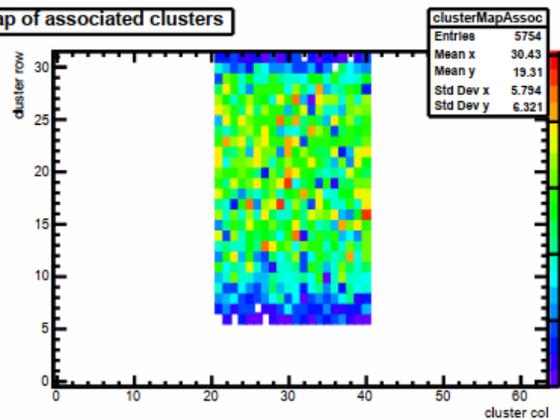
CE65_4 Cluster charge distribution by S/N ratio



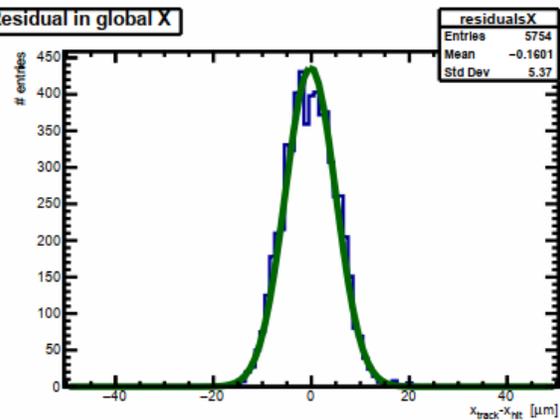
CE65_4 Cluster charge distribution by ratio



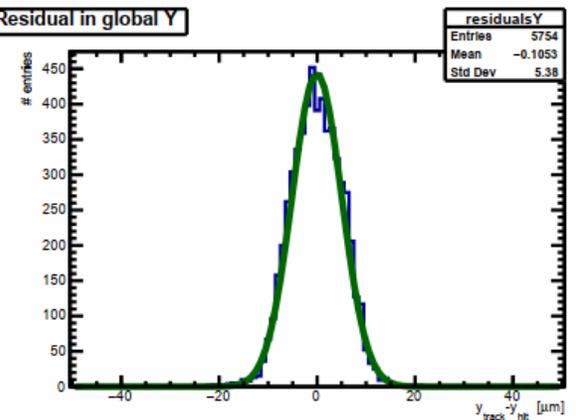
Map of associated clusters



Residual in global X

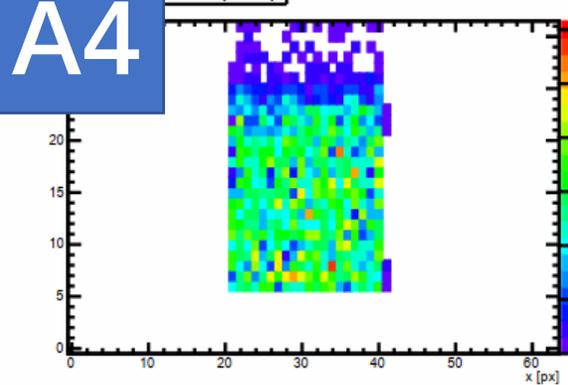


Residual in global Y

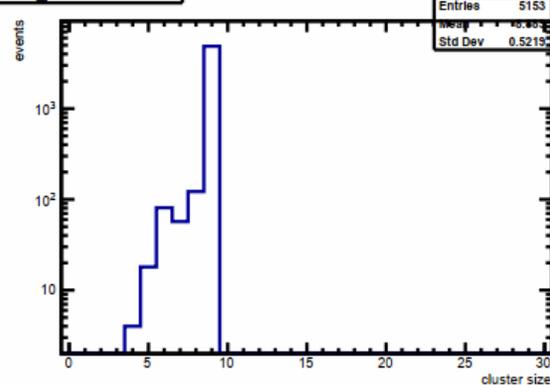


A4

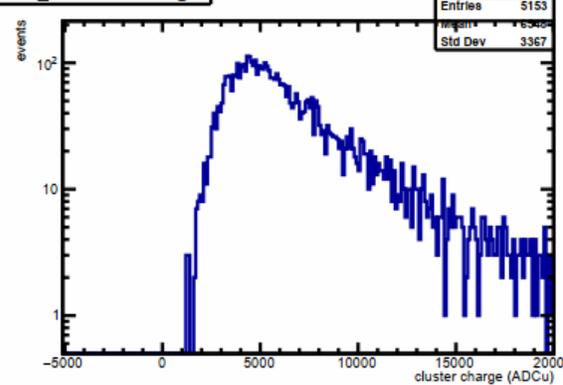
Position (local)



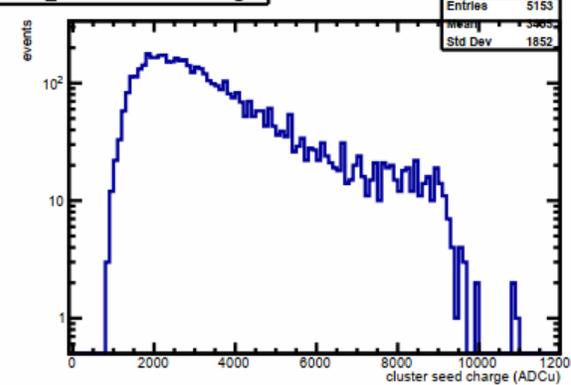
CE65_4 Cluster size



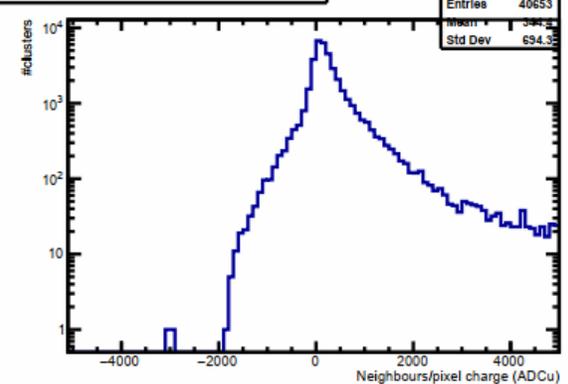
CE65_4 Cluster charge



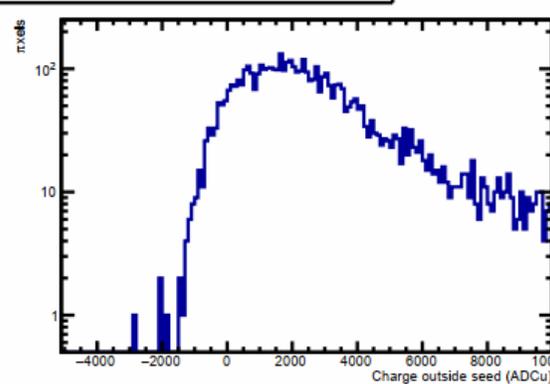
CE65_4 Cluster seed charge



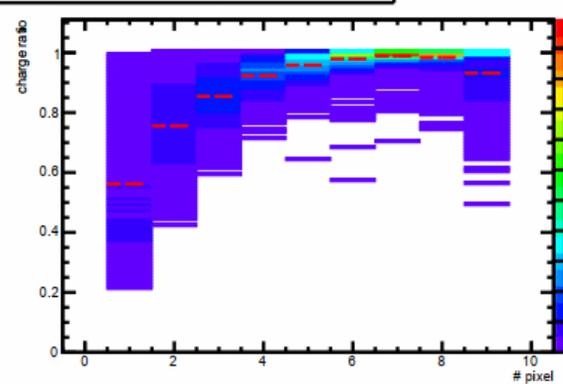
CE65_4 Cluster neighbours charge



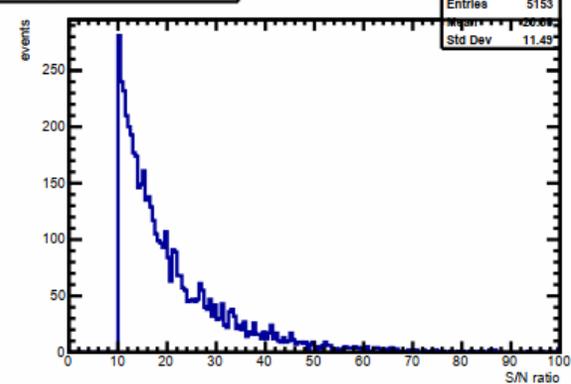
CE65_4 Sum of Cluster neighbours charge



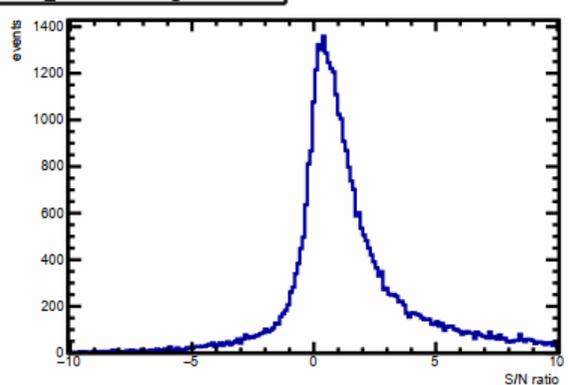
CE65_4 Cluster total charge ratio in N pixels



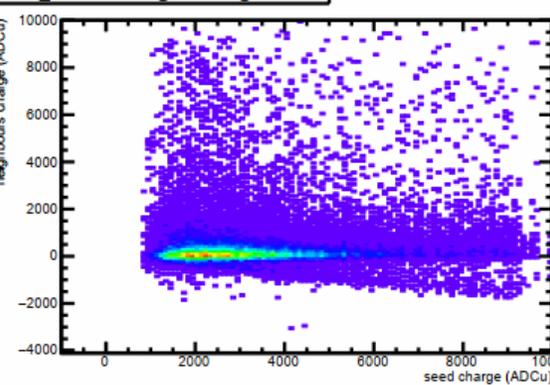
CE65_4 Cluster seed S/N



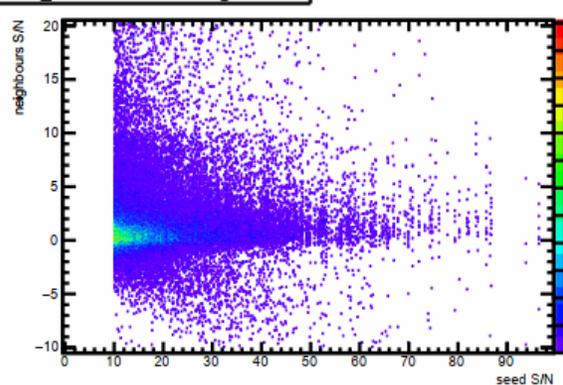
CE65_4 Cluster neighbour S/N



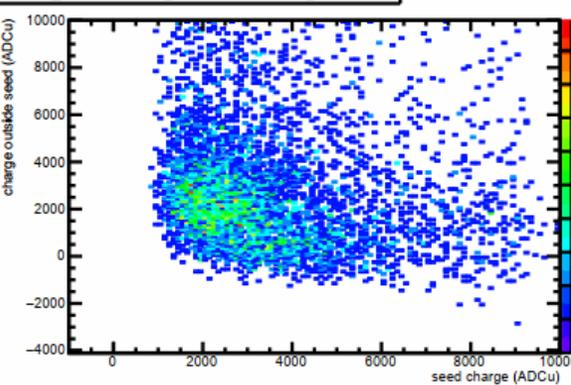
CE65_4 Seed charge vs neighbours



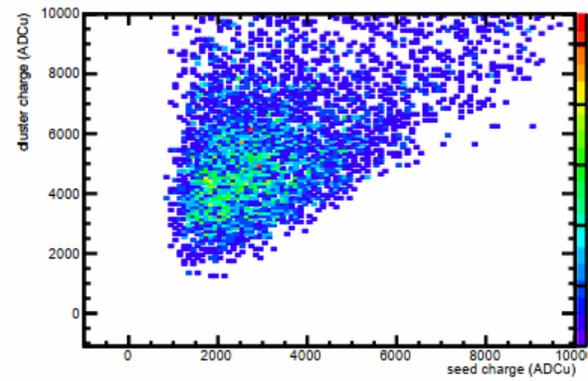
CE65_4 Seed SNR vs neighbours



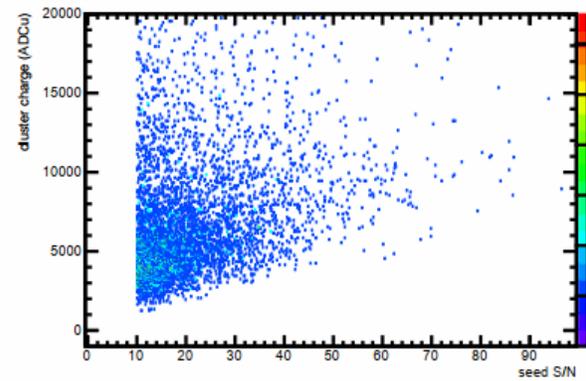
CE65_4 Seed charge vs sum of neighbours



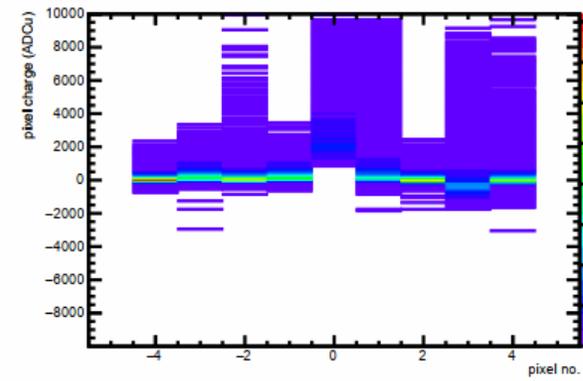
CE65_4 Seed charge vs cluster



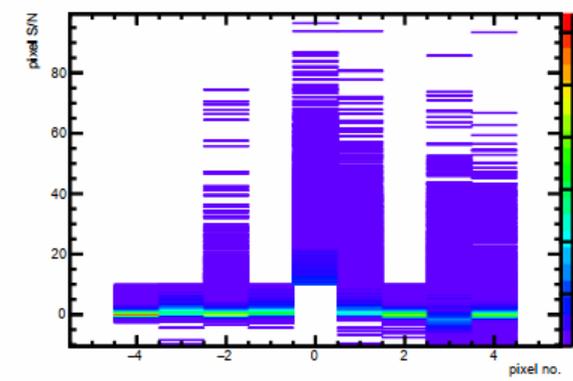
CE65_4 Seed SNR vs cluster charge



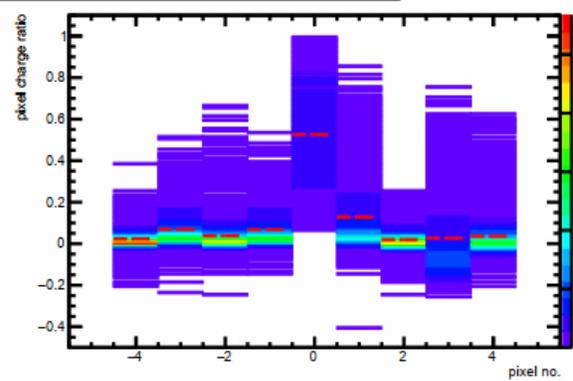
CE65_4 Cluster charge distribution



CE65_4 Cluster charge distribution by S/N ratio

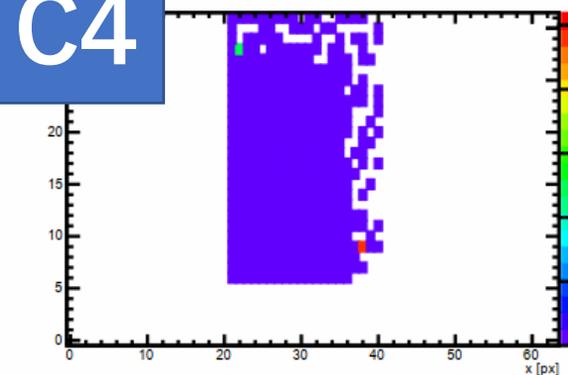


CE65_4 Cluster charge distribution by ratio

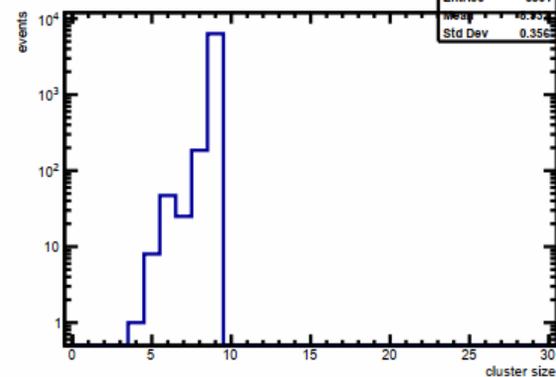


C4

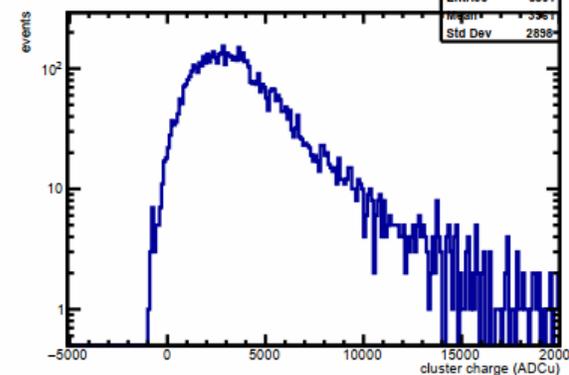
Position (local)



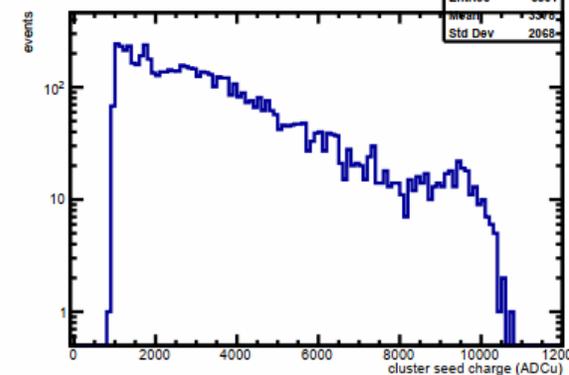
CE65_4 Cluster size



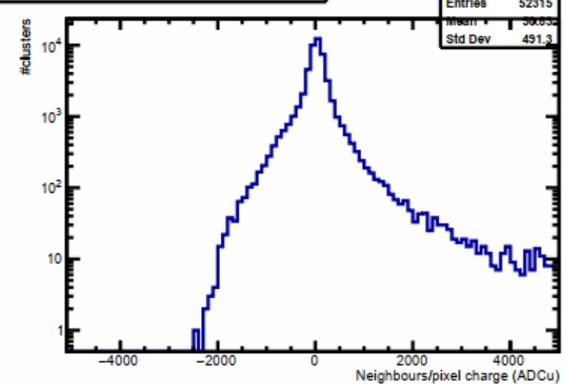
CE65_4 Cluster charge



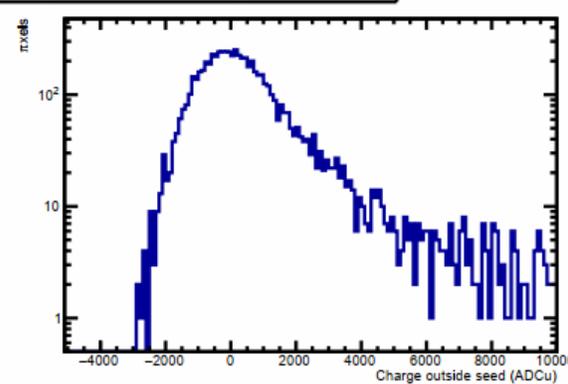
CE65_4 Cluster seed charge



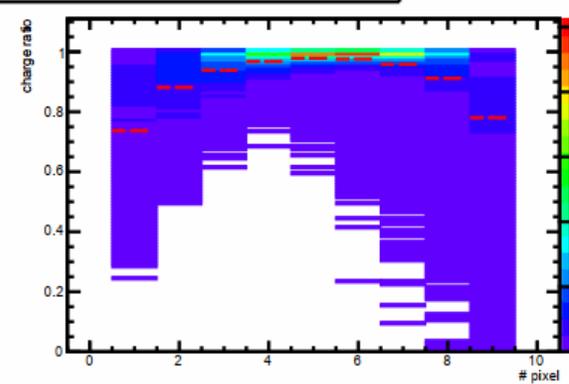
CE65_4 Cluster neighbours charge



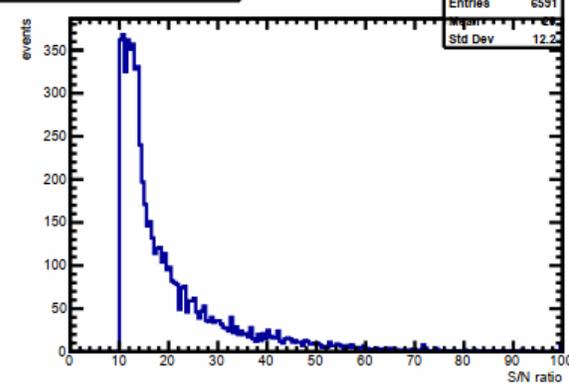
CE65_4 Sum of Cluster neighbours charge



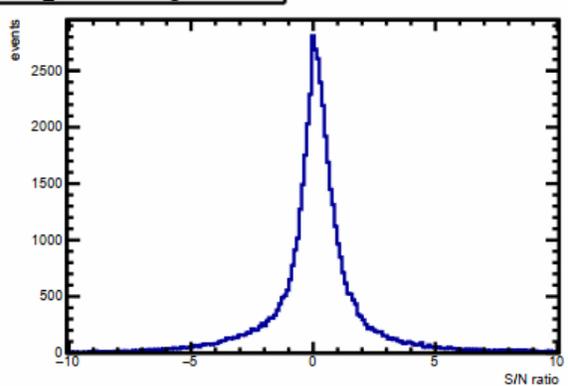
CE65_4 Cluster total charge ratio in N pixels



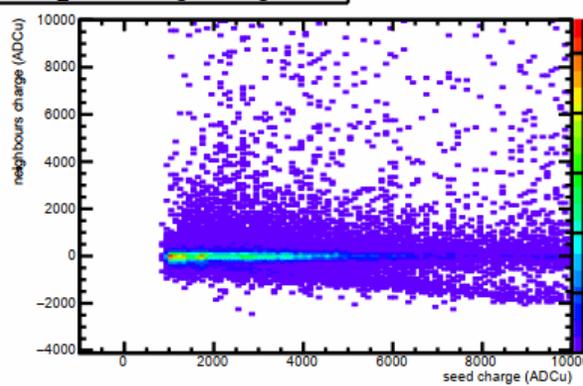
CE65_4 Cluster seed S/N



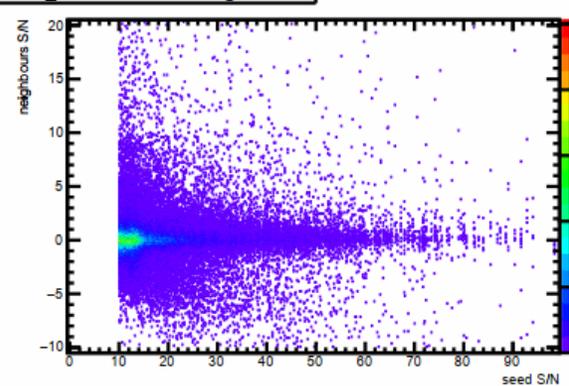
CE65_4 Cluster neighbour S/N



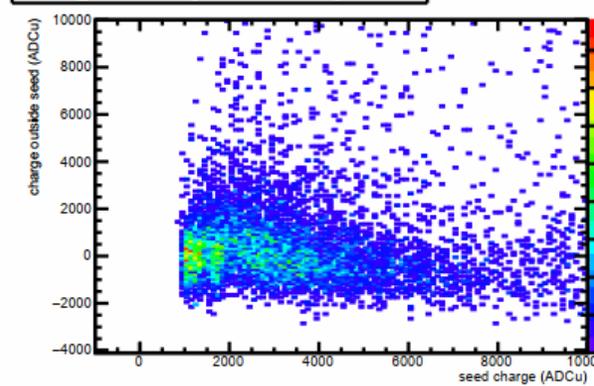
CE65_4 Seed charge vs neighbours



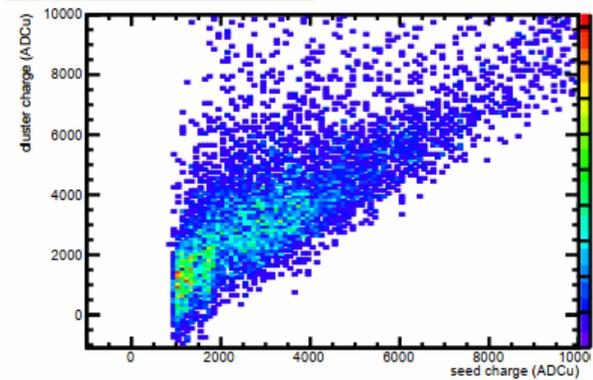
CE65_4 Seed SNR vs neighbours



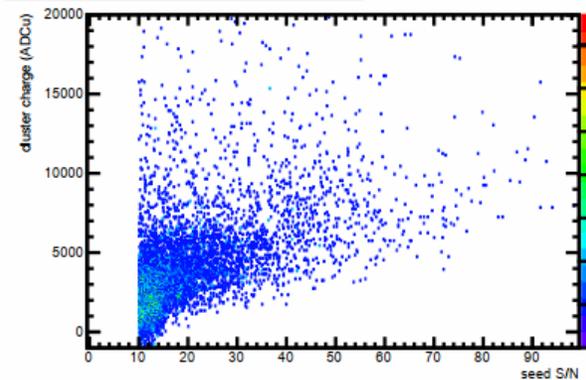
CE65_4 Seed charge vs sum of neighbours



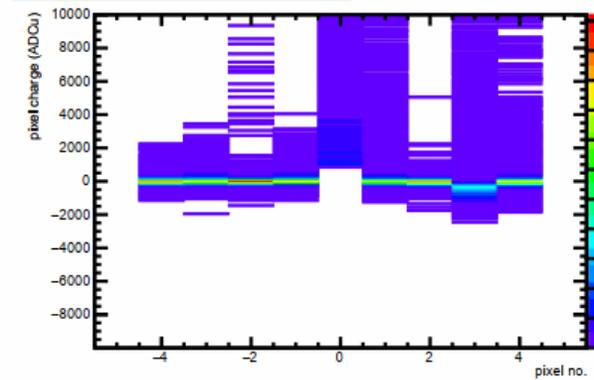
CE65_4 Seed charge vs cluster



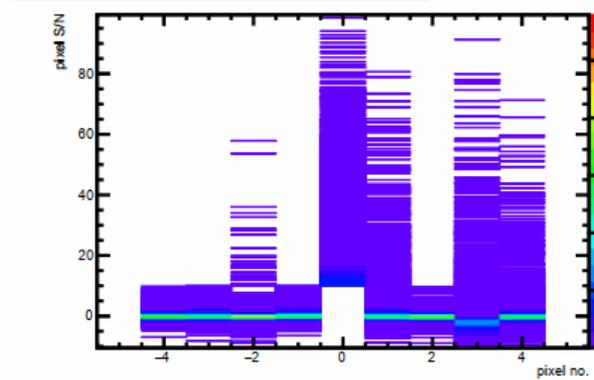
CE65_4 Seed SNR vs cluster charge



CE65_4 Cluster charge distribution



CE65_4 Cluster charge distribution by S/N ratio



CE65_4 Cluster charge distribution by ratio

