Pilot blade in recent global runs

Tamás Álmos VÁMI[1]

[1] Wigner RCP, Budapest

Global Runs in August

LHC Fill 5222
InjectionScheme 25ns_2040b_2028_1697_1712_72bpi_30inj

Date: 2016-08-19
Run number: 279071 (3h40min)
Run number: 279072 (0h2min)
Run number: 279073 (0h26min)
All: *4h8min*

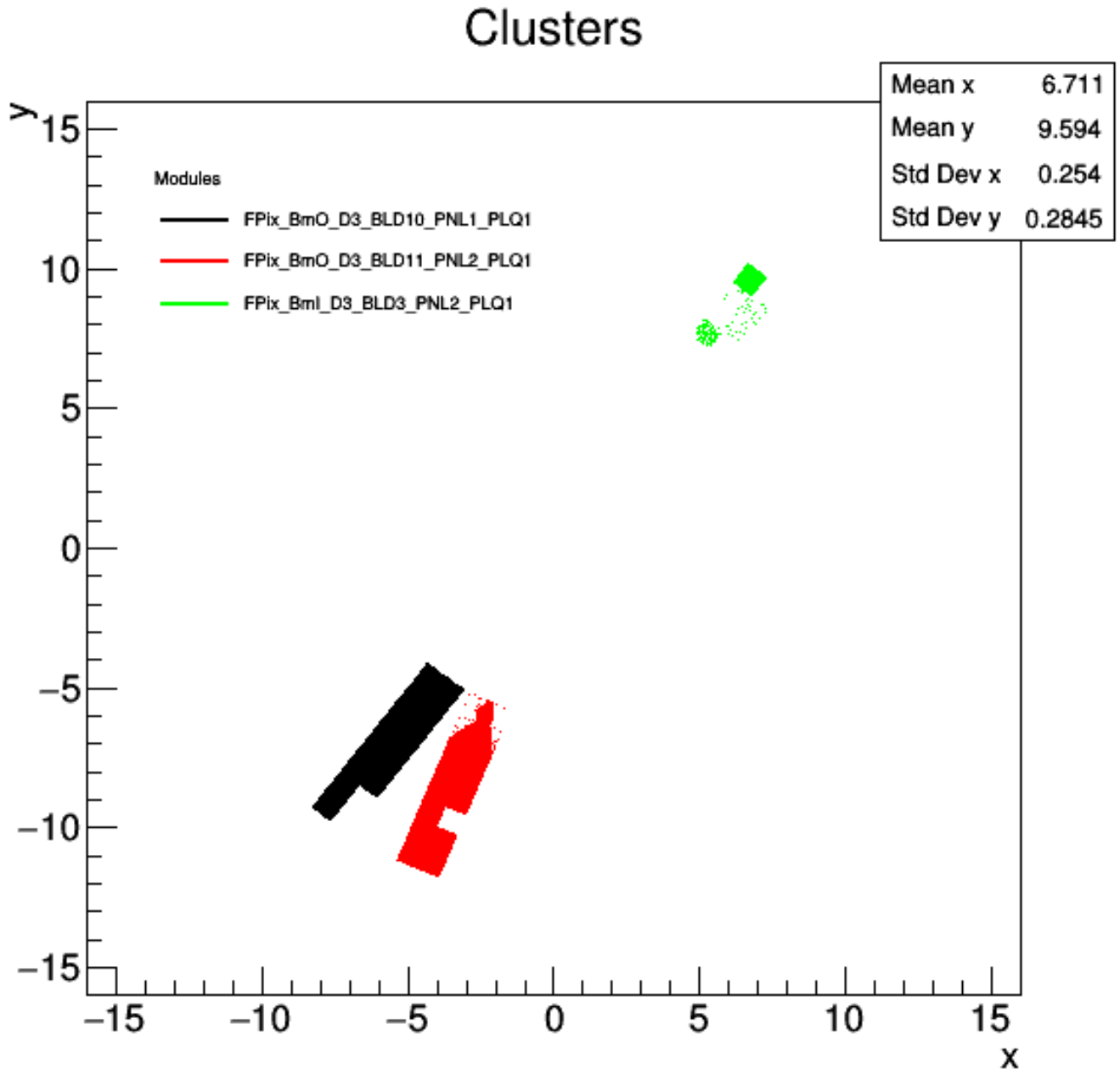
Pilot Blade configuration

3 modules configured (2 BmO + 1 BmI - signal splitted).

FPix_BmO_D3_BLD10_PNL1_PLQ1
FPix_BmO_D3_BLD11_PNL2_PLQ1
FPix_BmI_D3_BLD3_PNL2_PLQ1

FED 40 included
FED 1240 excluded (uTCA port)

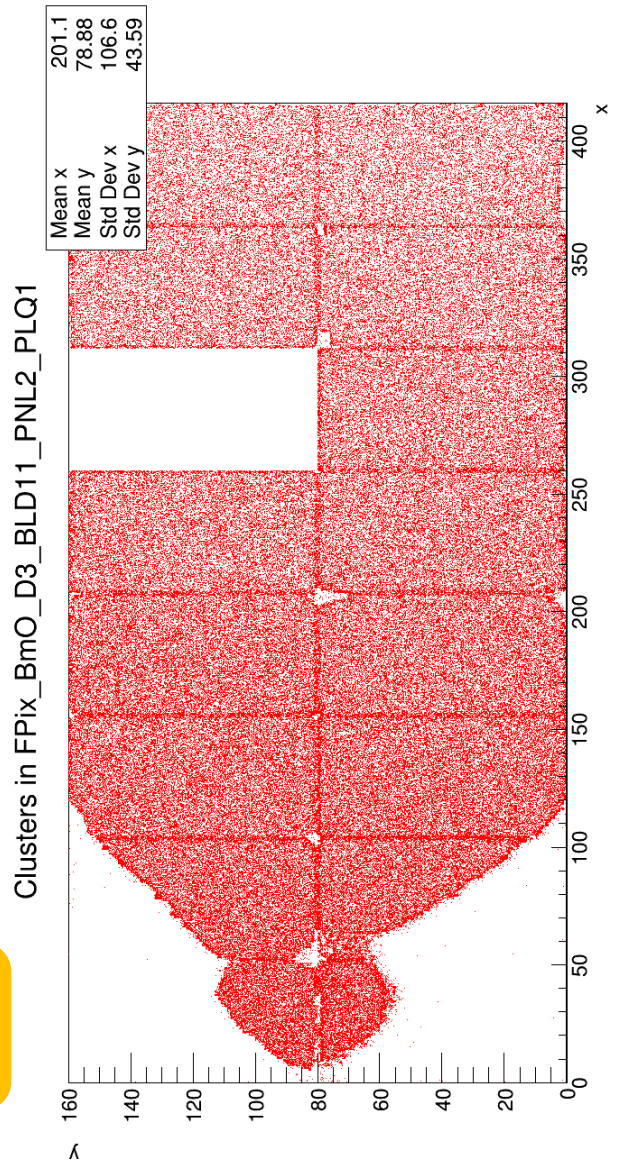
Clusters

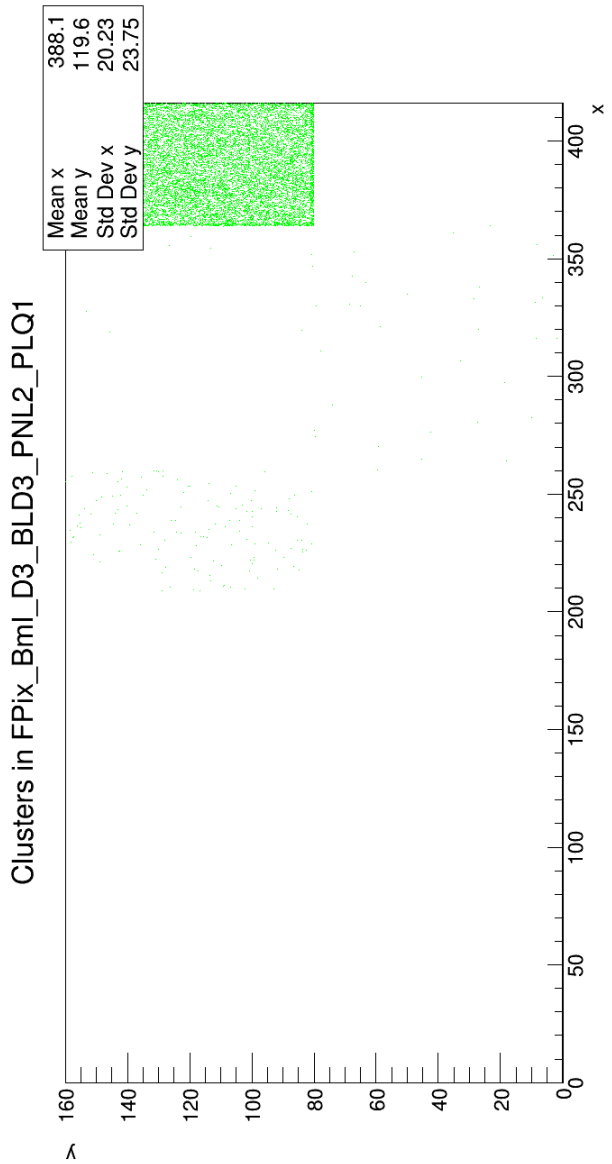


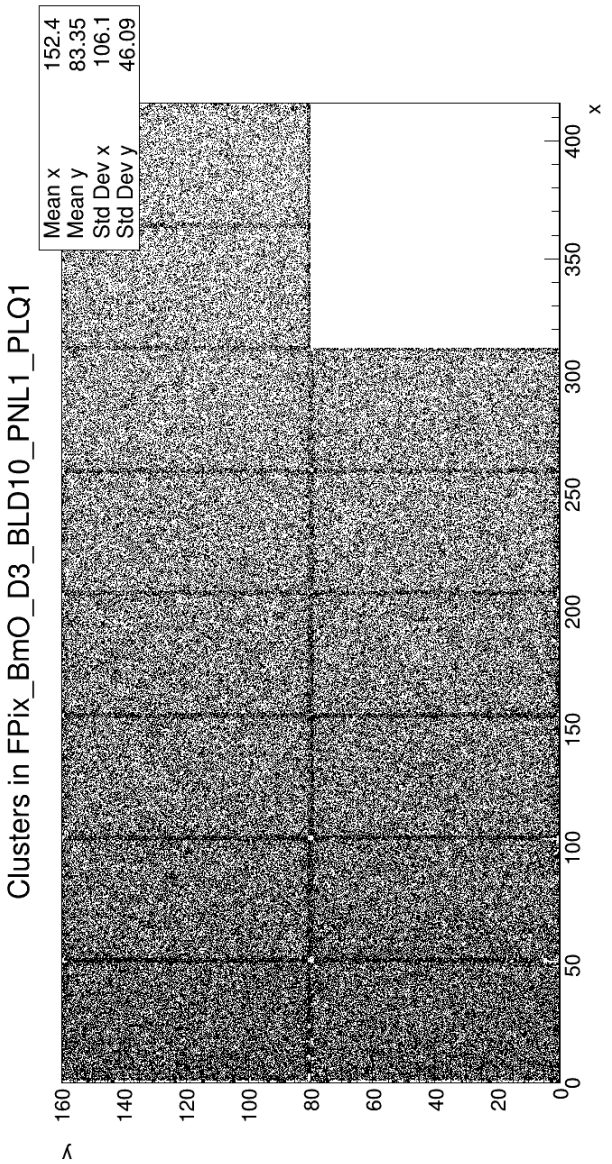
Global positions

Clusters

Local positions



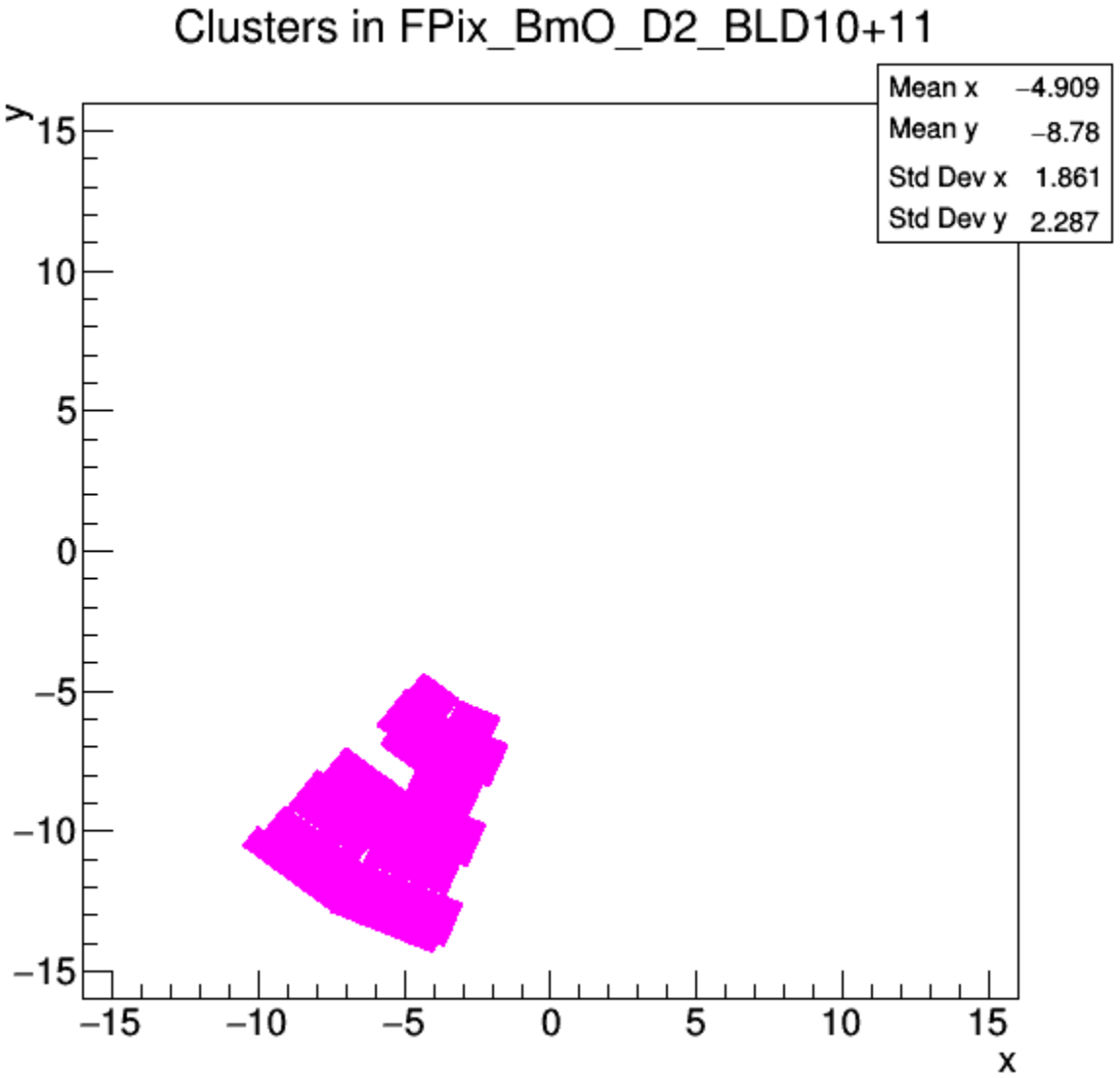




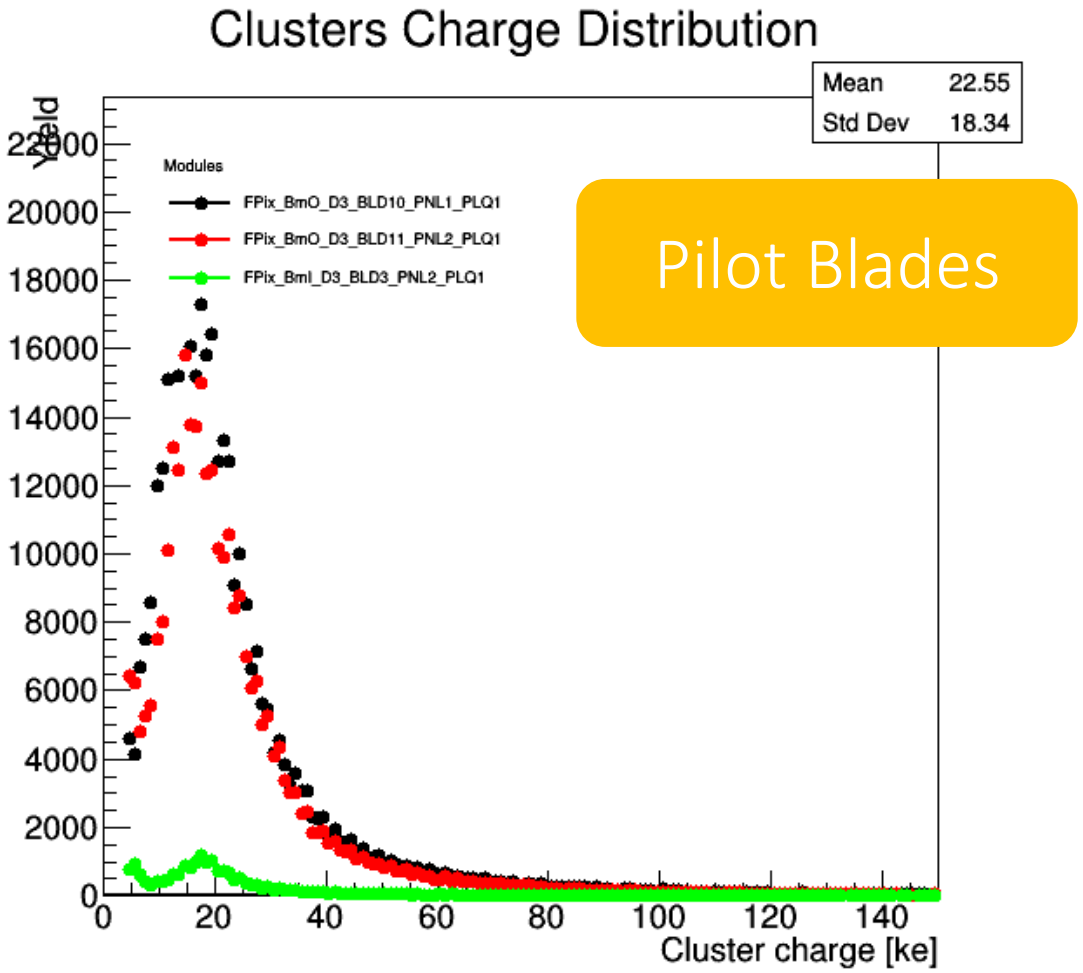
Comparison blade

Disk 2 blade that is located before the Pilot Blades

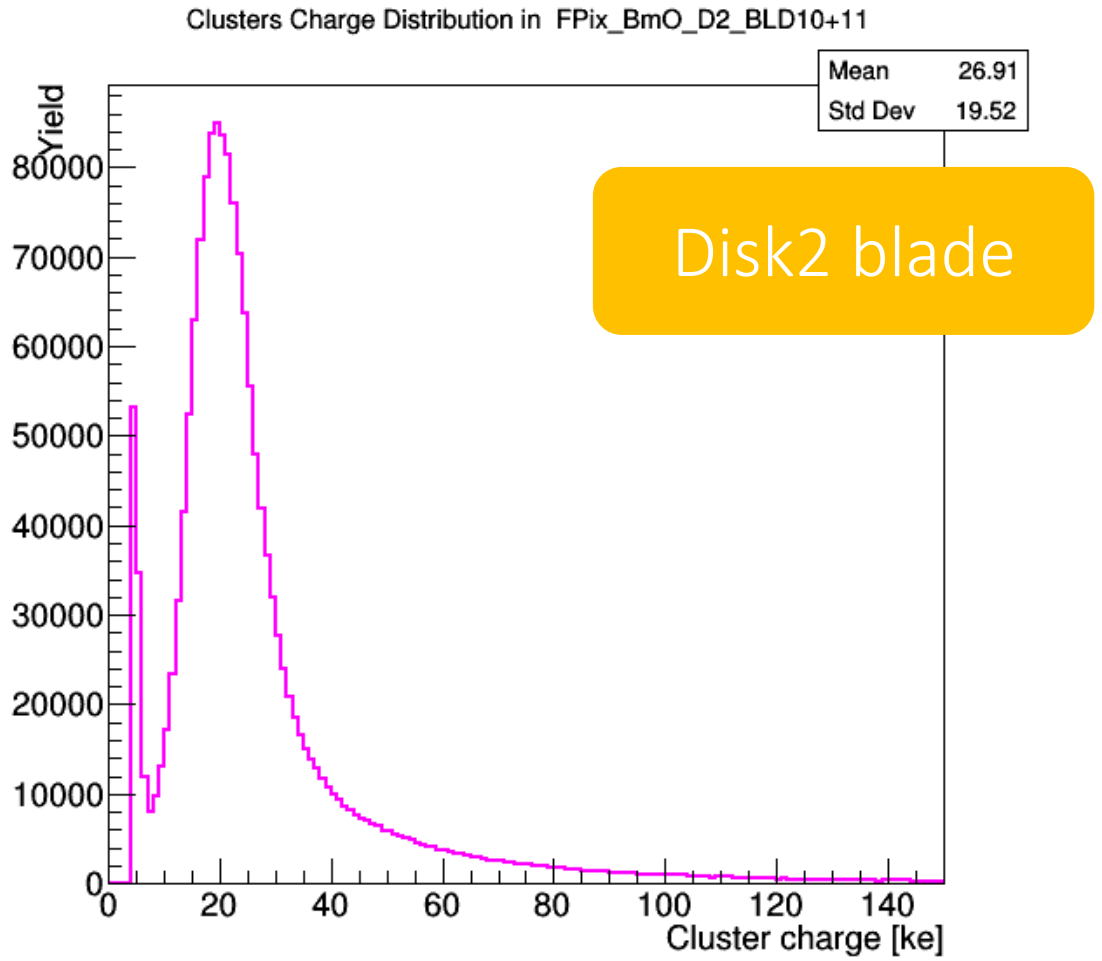
To be able to compare with the Pilot Blade



Cluster charge

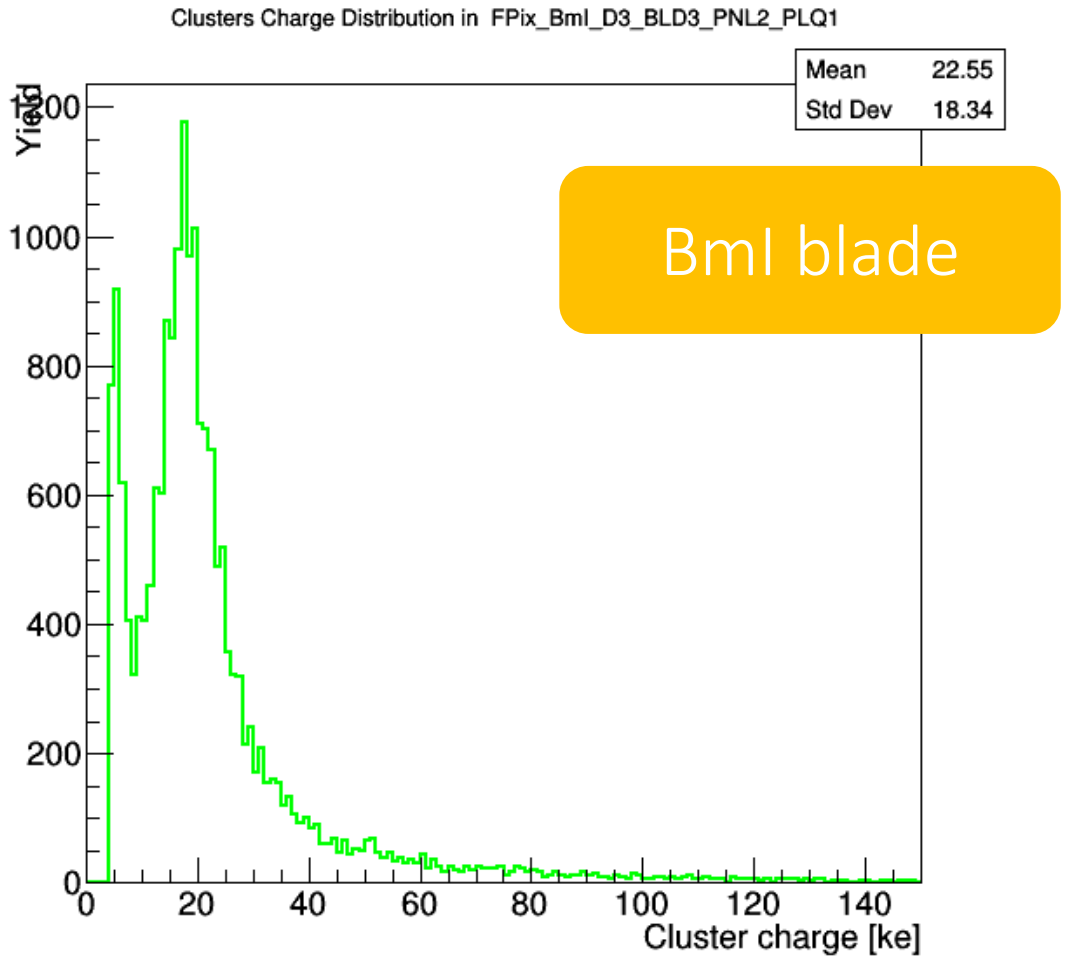


Pilot Blades

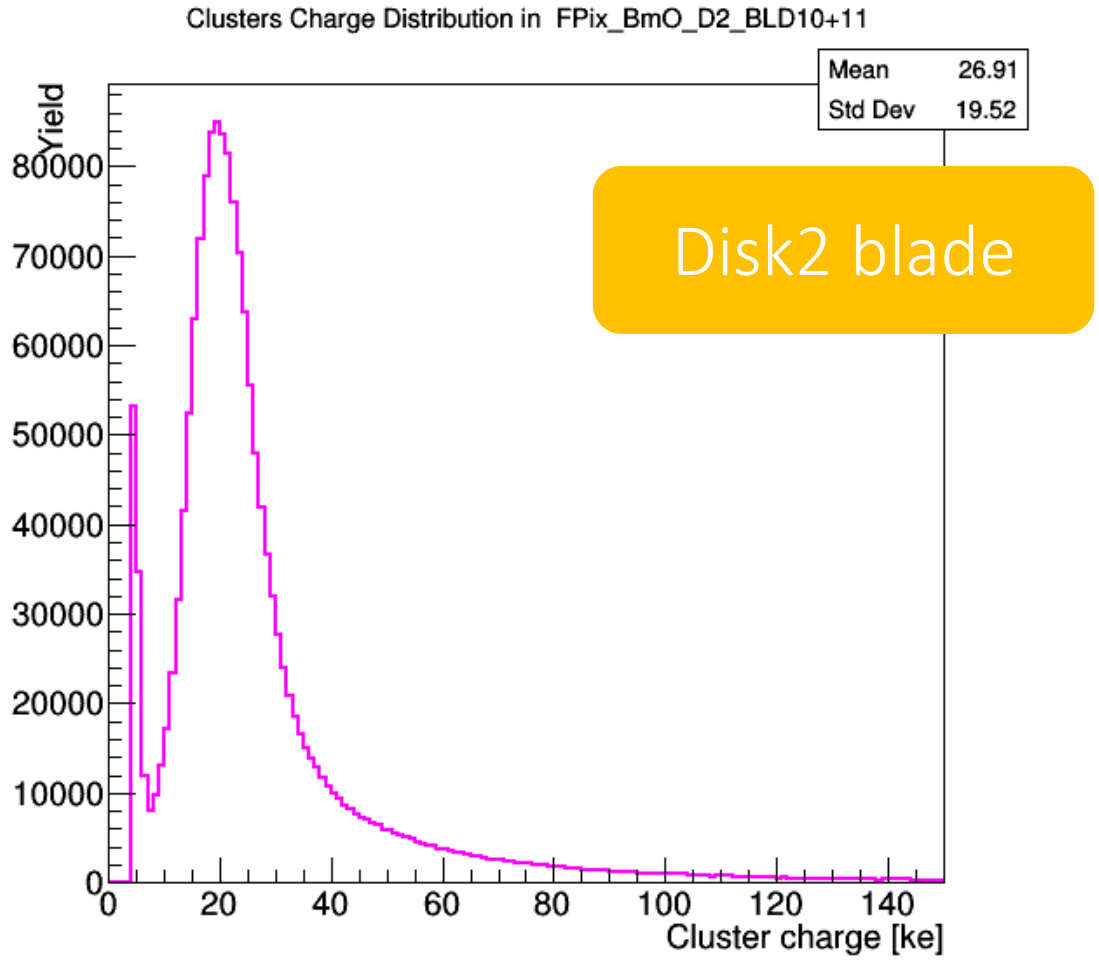


Disk2 blade

Cluster charge

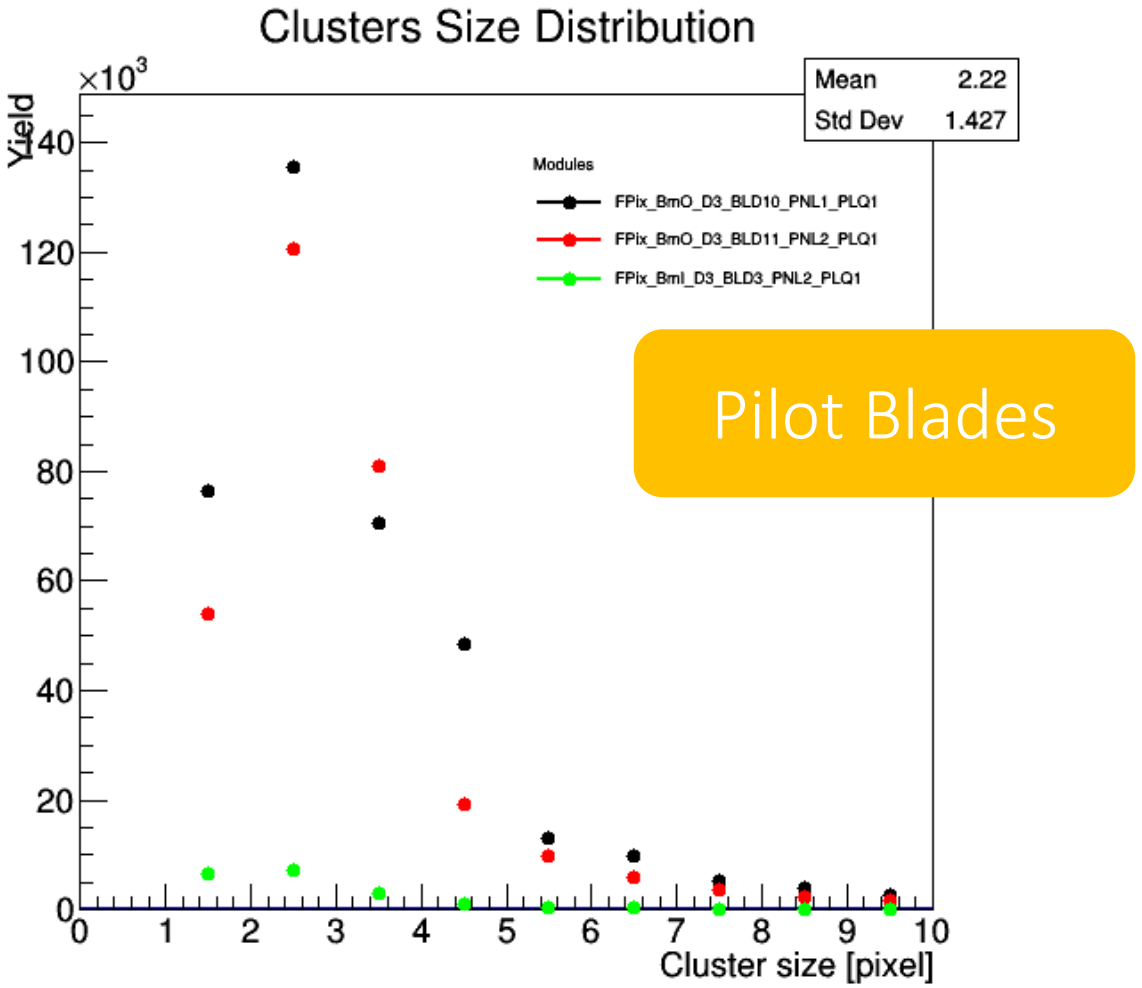


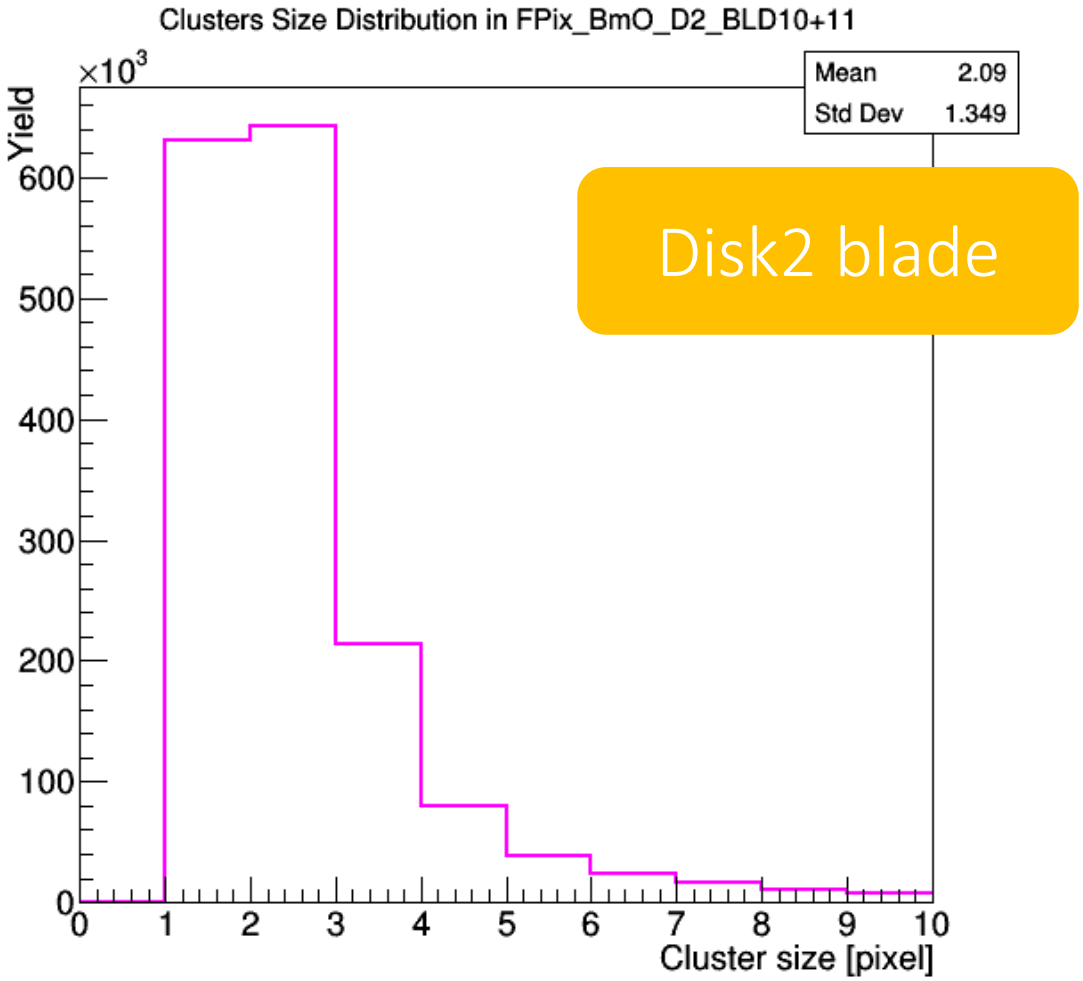
BmI blade



Disk2 blade

Cluster size



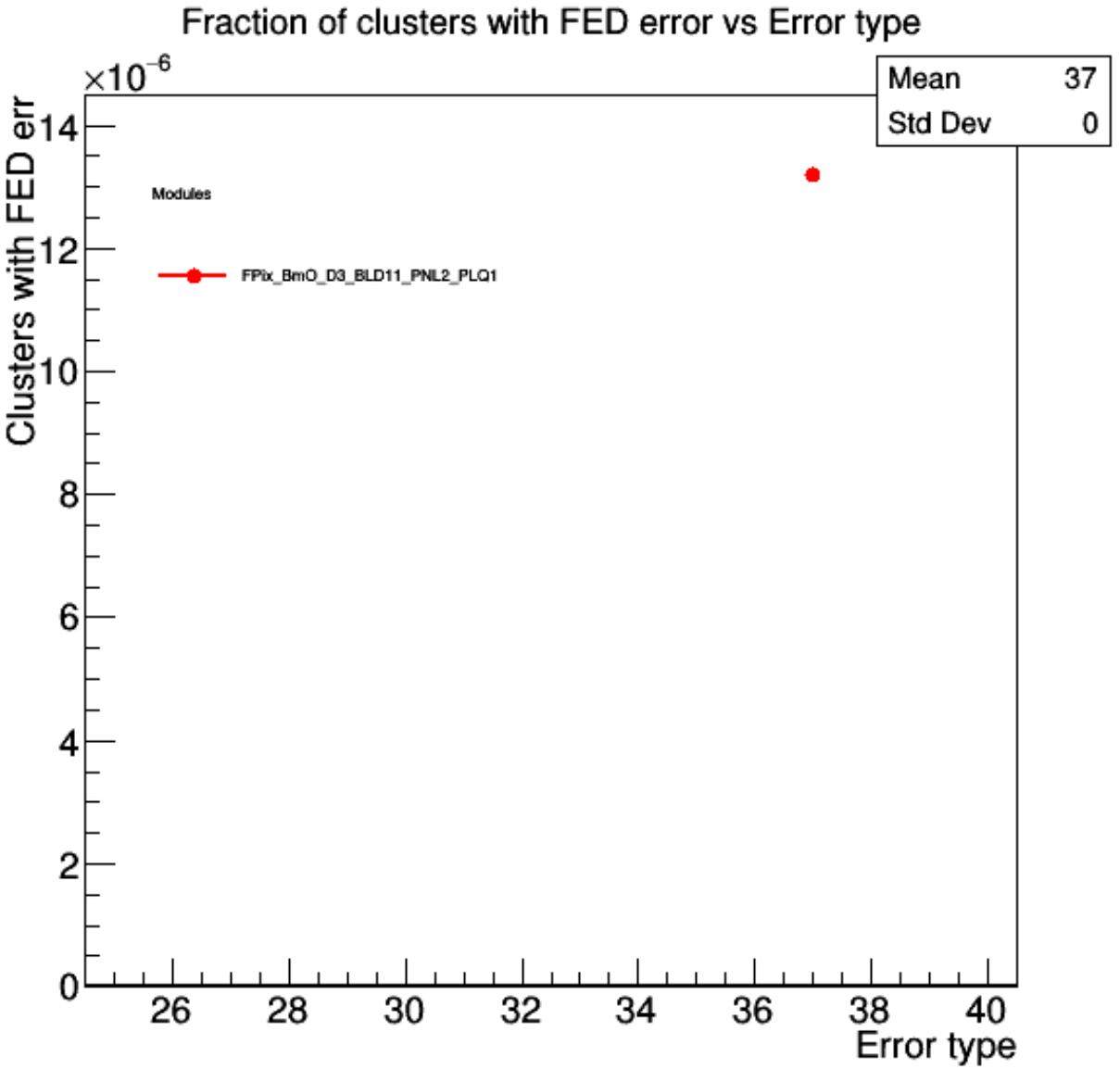


FED Errors

Fraction of clusters with Fed error is $1.3 * 10^{-6}$

Only on one blade

The error type is 37
ie. invalid dcol or pixel value

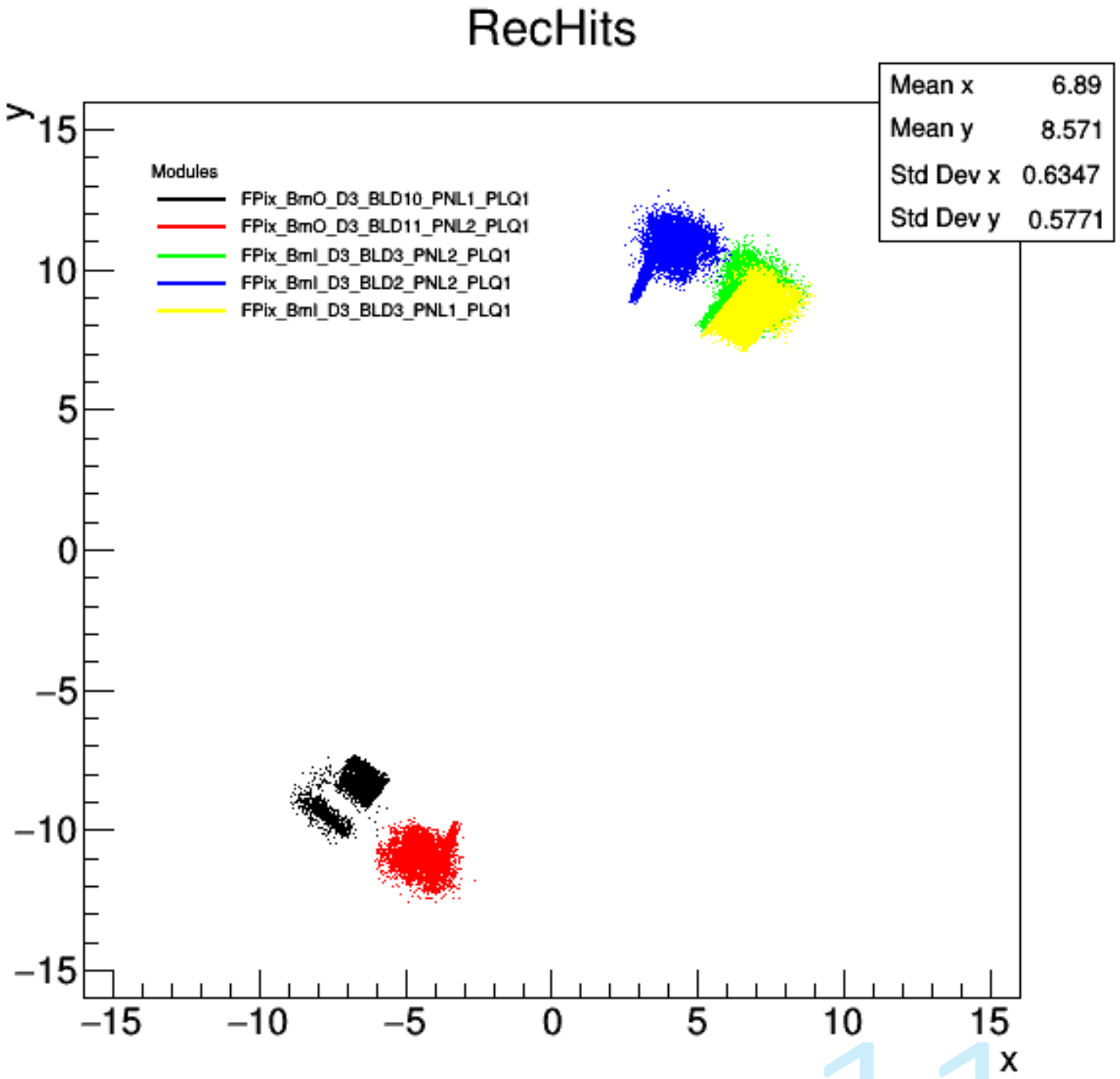


RecHits

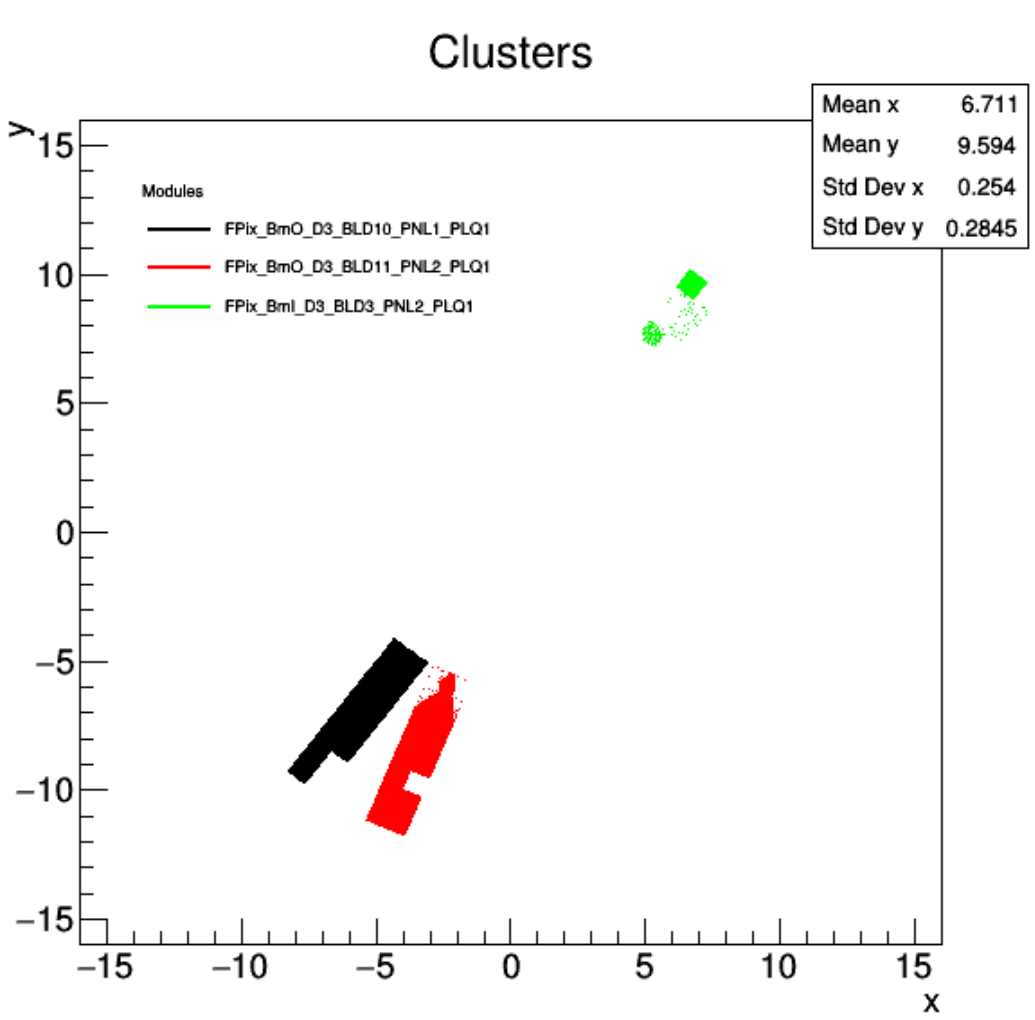
Since it was a global run we can study RecHits

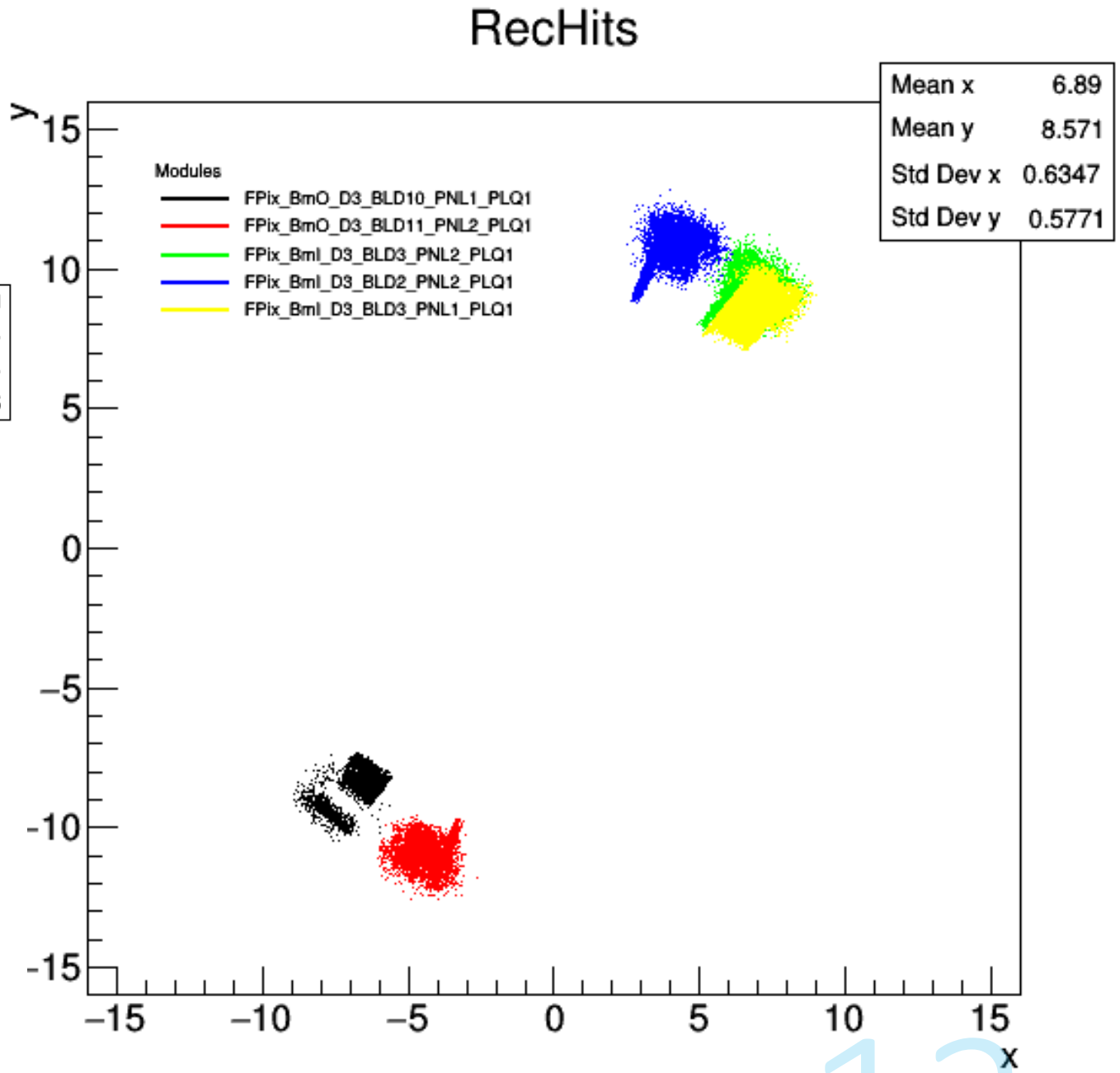
Projected hits from Disk1/2 hits (+Barrel L1)

Residual: Distance between the rechits and the nearest clusters

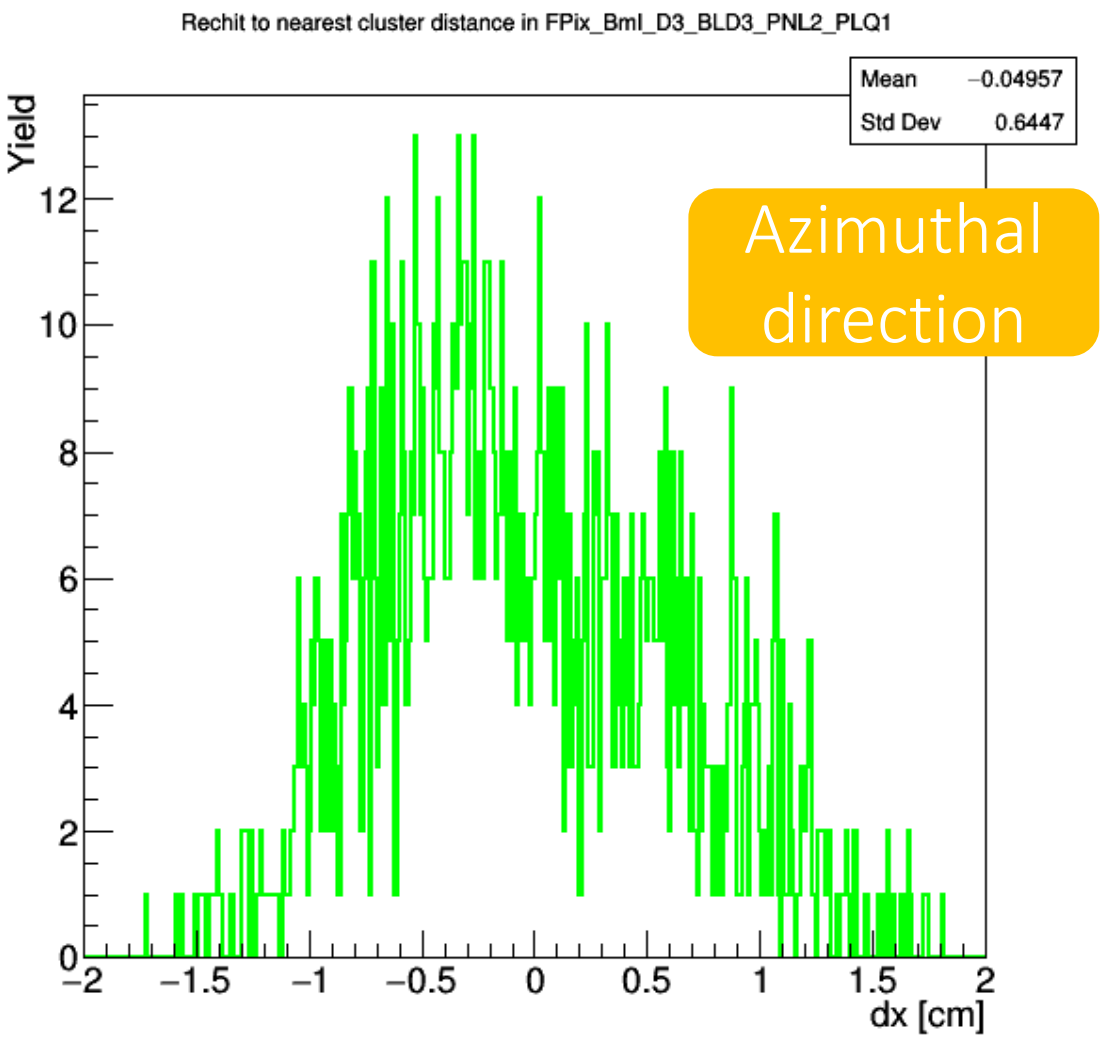


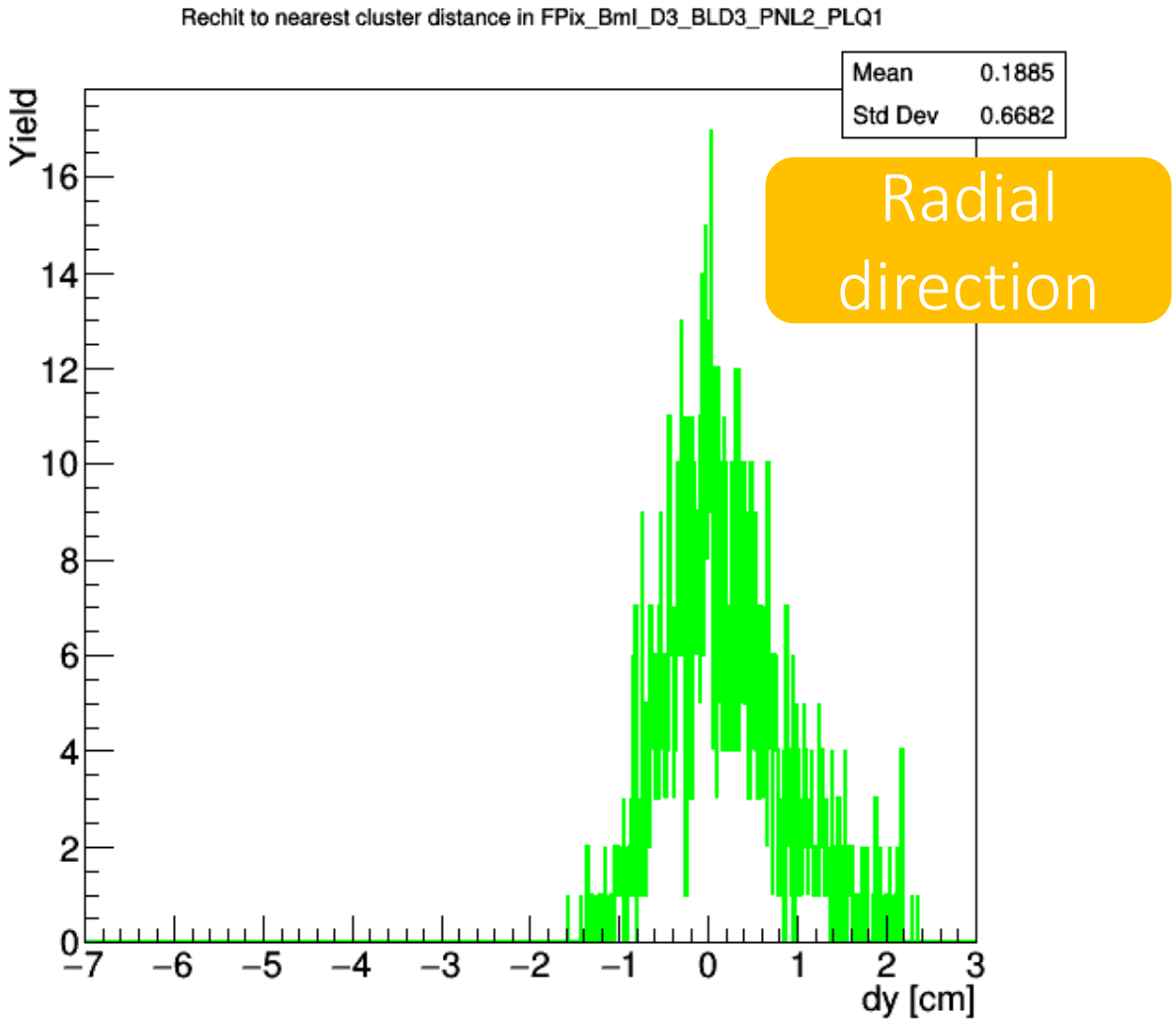
RecHit vs Cluster



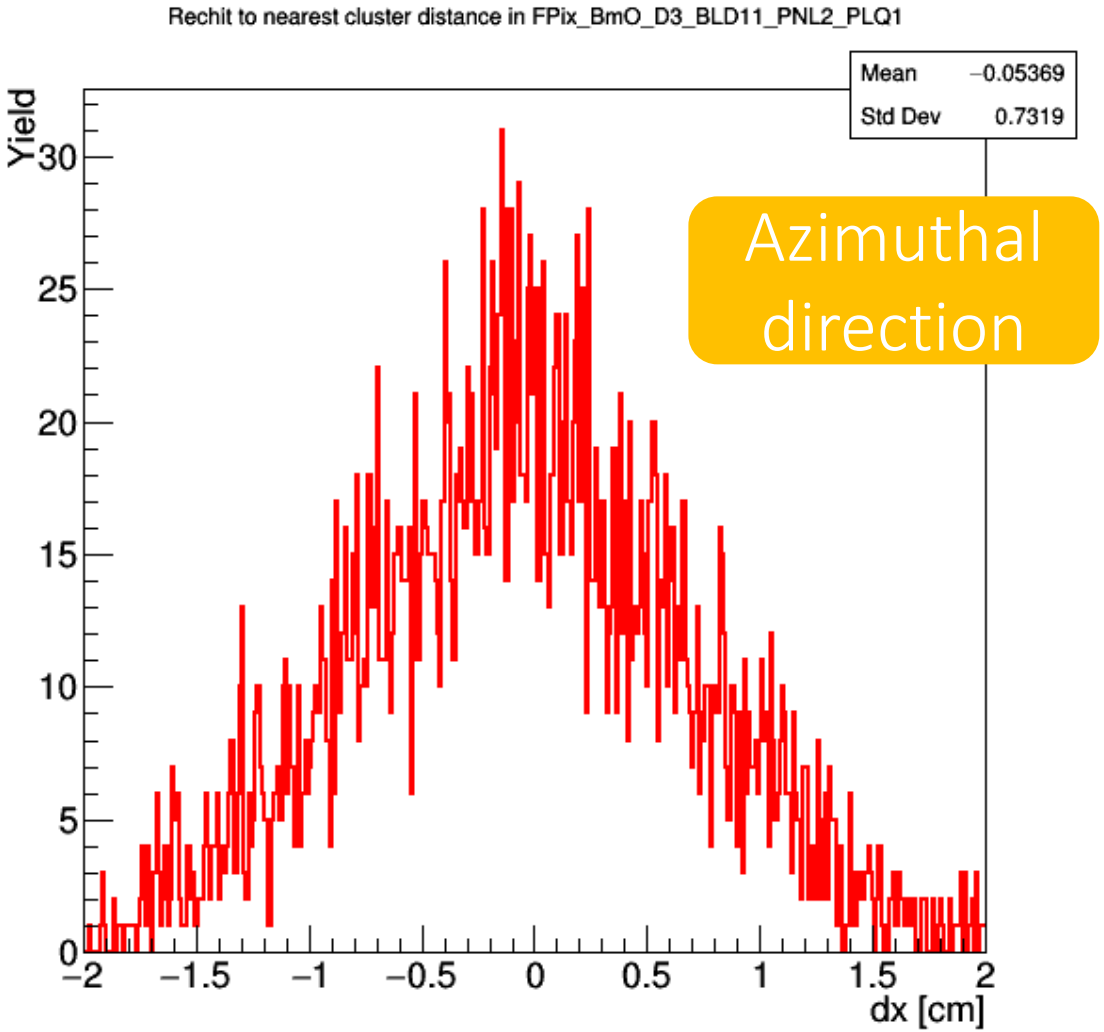


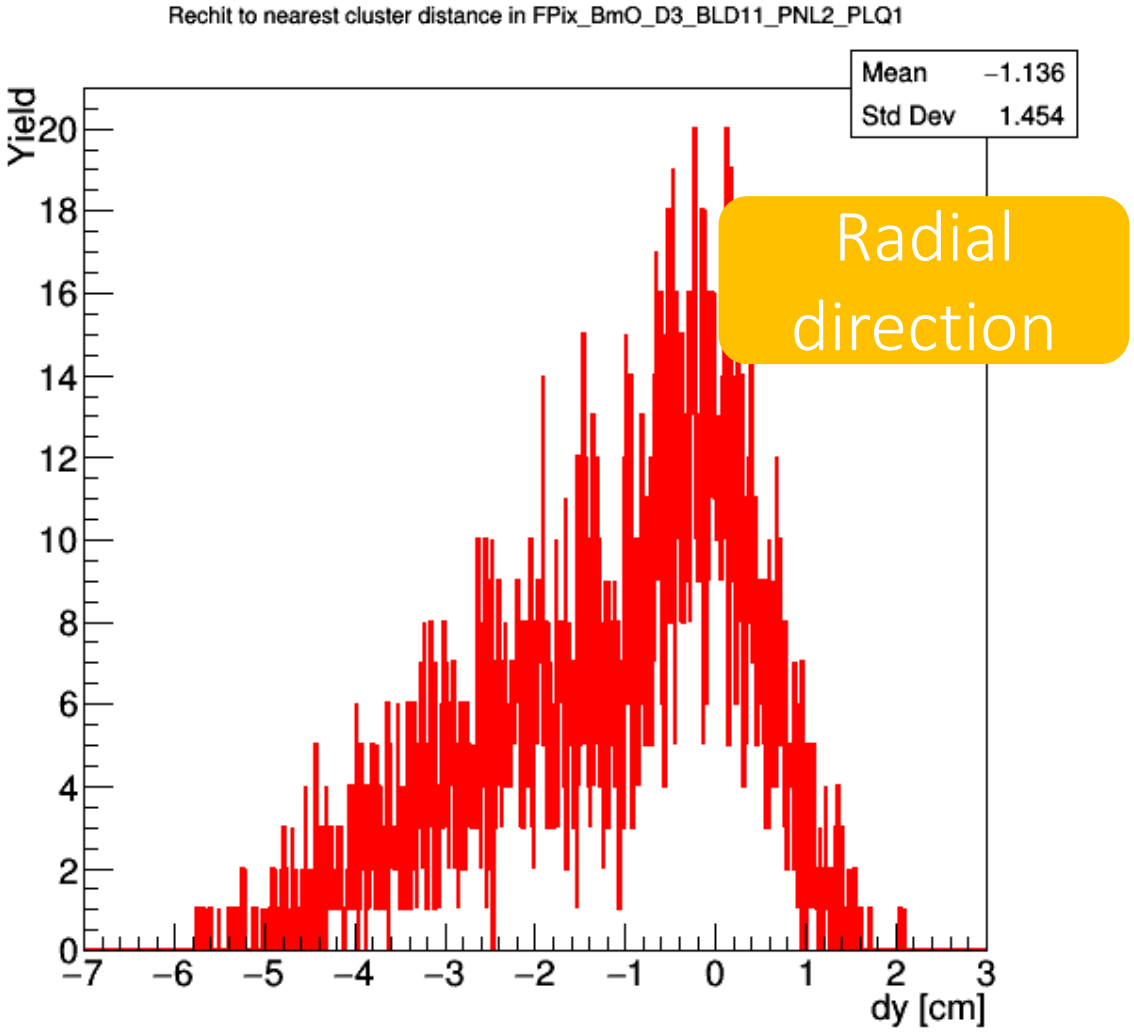
Residuals


Rechit to nearest cluster distance in FPix_BmI_D3_BLD3_PNL2_PLQ1
Mean −0.04957
Std Dev 0.6447
Yield
dx [cm]
Azimuthal direction

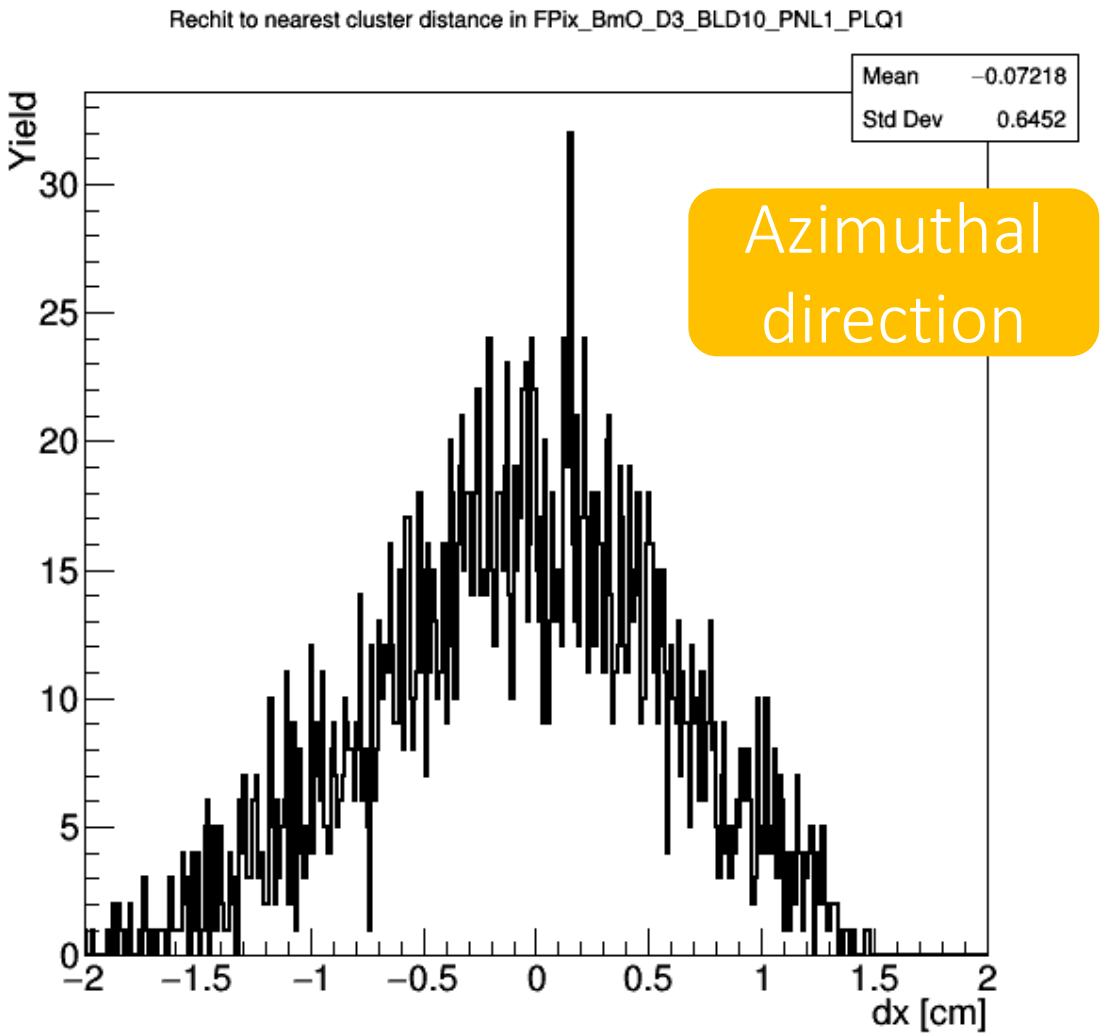

Rechit to nearest cluster distance in FPix_BmI_D3_BLD3_PNL2_PLQ1
Mean 0.1885
Std Dev 0.6682
Yield
dy [cm]
Radial direction

Residuals

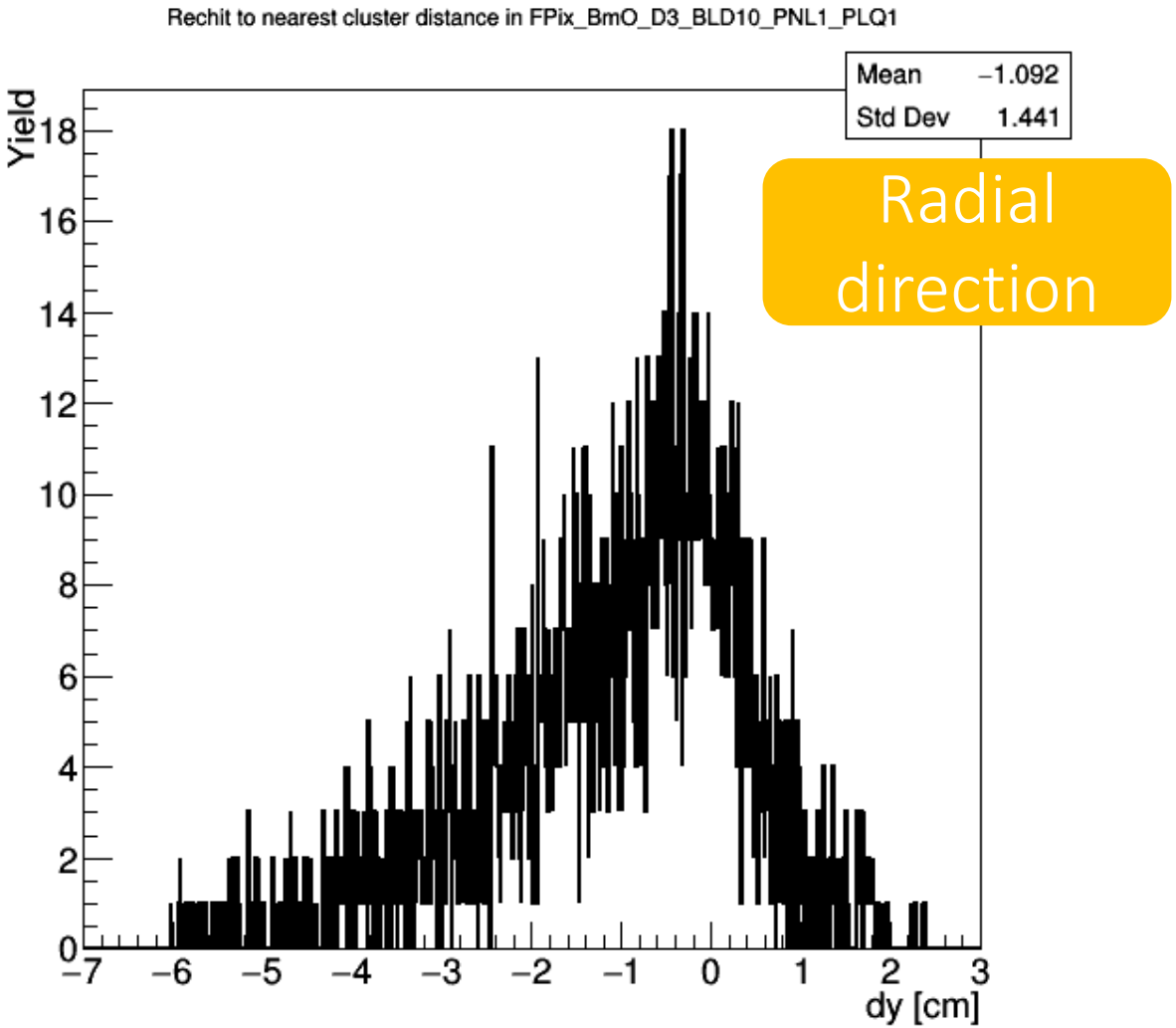

Rechit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1
Mean −0.05369
Std Dev 0.7319
Yield
dx [cm]
Azimuthal direction


Rechit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1
Mean −1.136
Std Dev 1.454
Yield
dy [cm]
Radial direction

Residuals



Azimuthal direction



Radial direction

Alignment

Alignment is done „by hand”

Using residuals we can improve it