

ROC study

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Pixel Offline meeting



Global Run 286520

LHC Fill 5575

InjectionScheme 100_200ns_702p_548Pb_81_389_54_20inj

Date: 2016-12-04

From 2016.12.04 21:17:47–
until 2016.12.05 05:03:05

All: *around 8 hours*

Number of events: 2.98M

Timing settings:

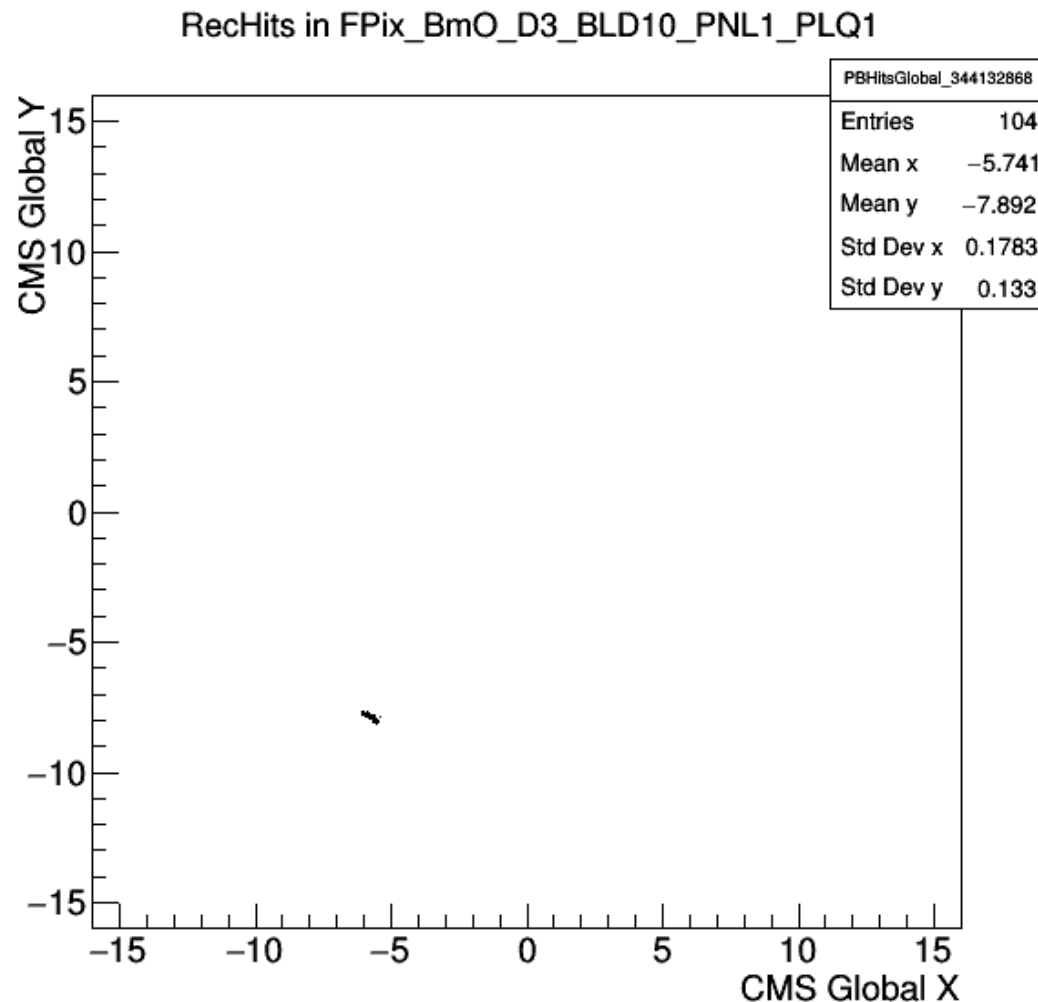
18 ns for BmO and 24 ns for BmI

<https://tvami.web.cern.ch/tvami/projects/PilotBlade/PerROCStudy>

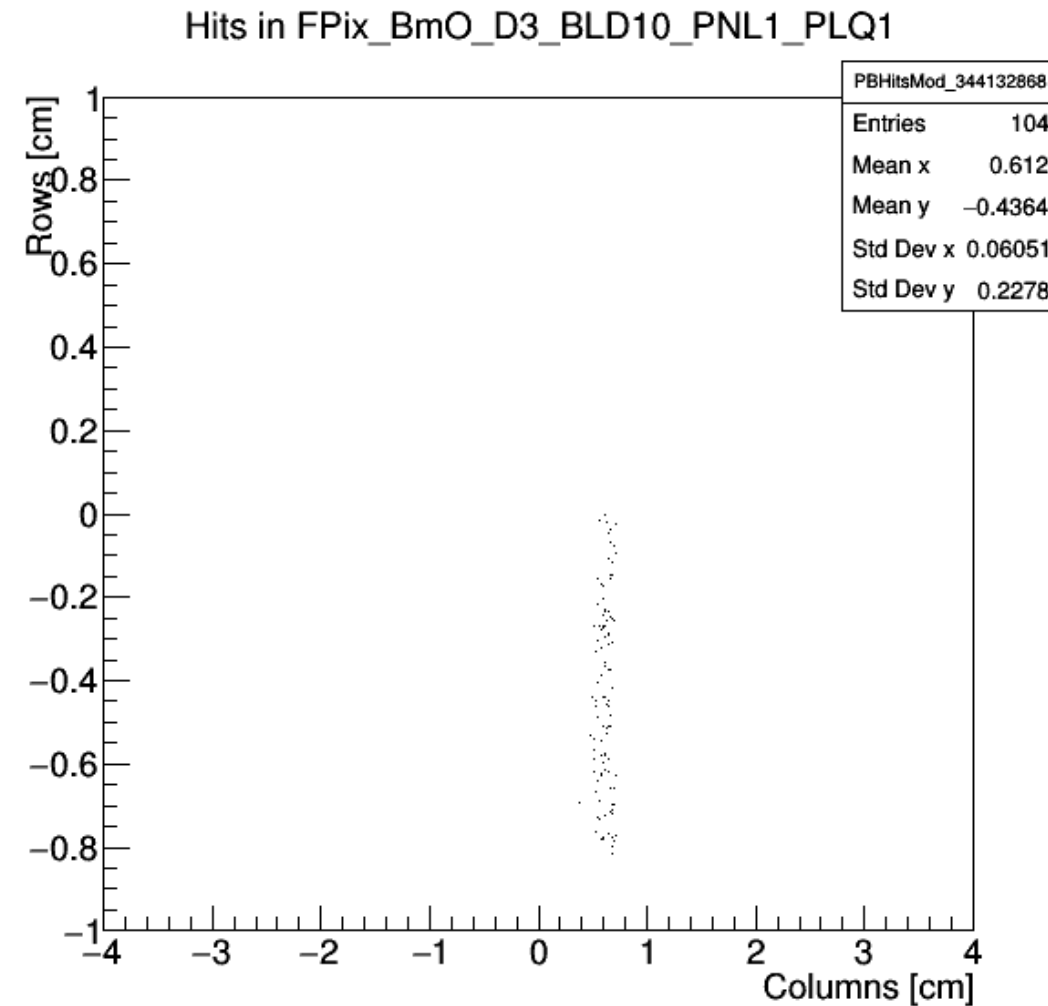
Position of the ROC

FPix_BmO_D3_BLD10_PNL1_ROC(a)

Global Position



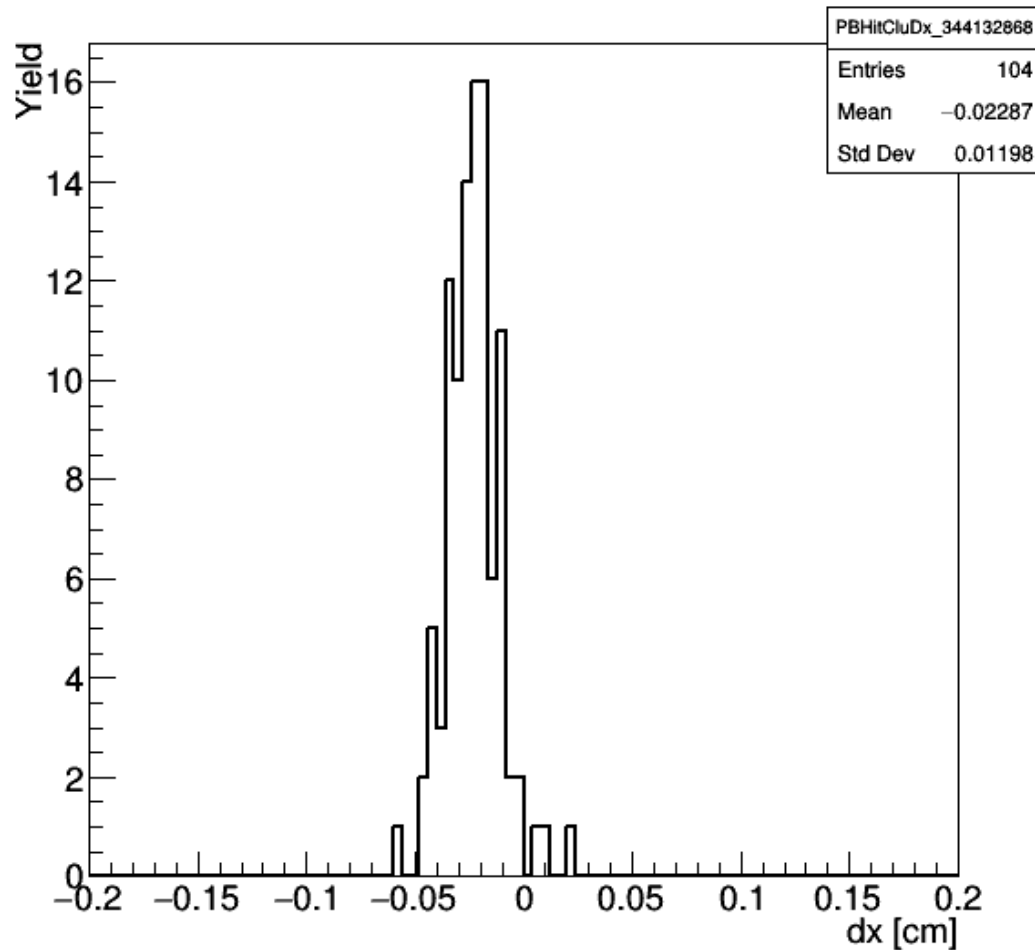
Local Position



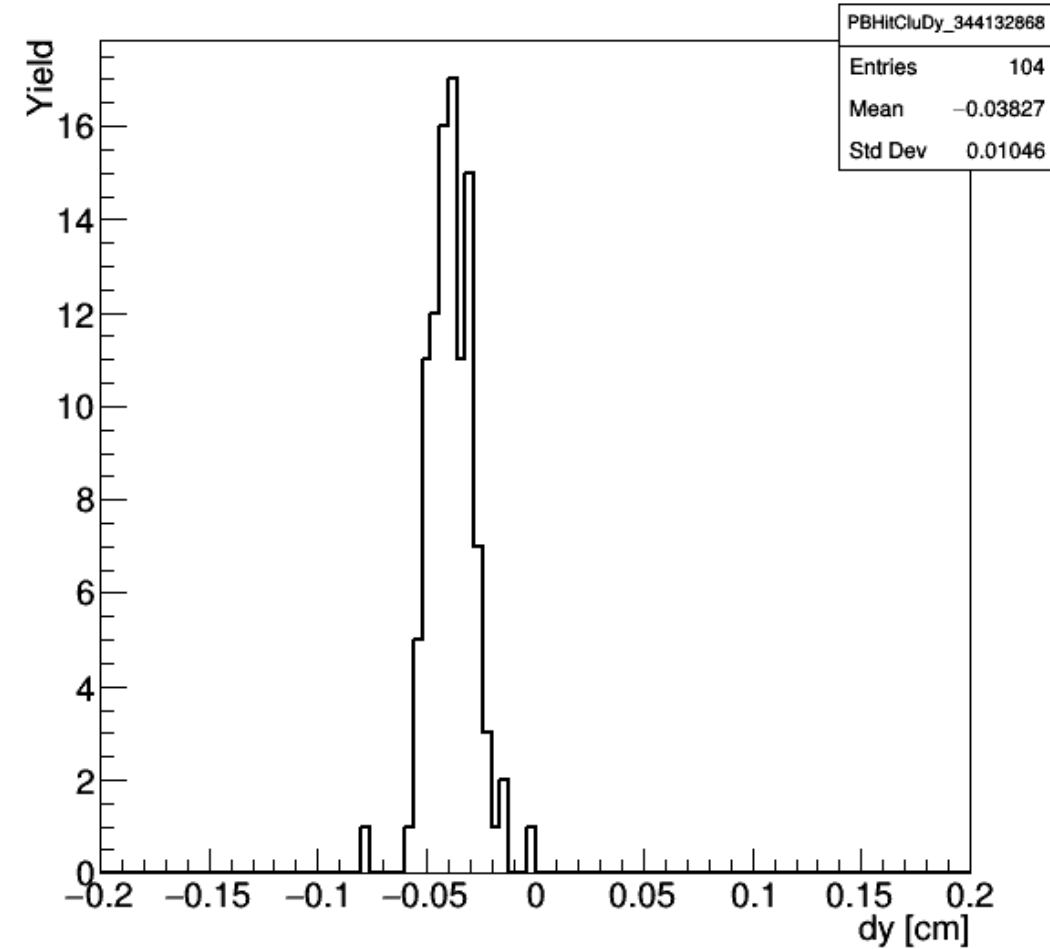
Residuals (Zoomed)

FPix_BmO_D3_BLD10_PNL1_ROC(a)

Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



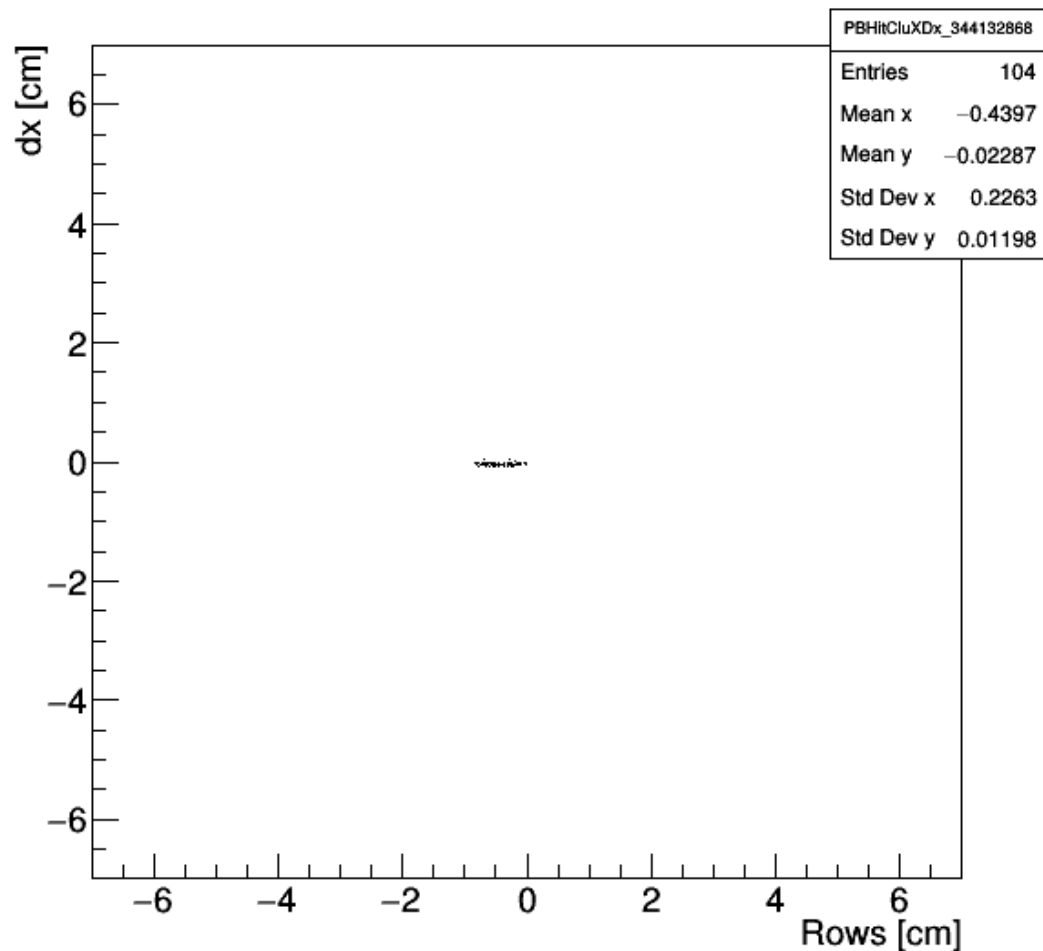
Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



Position vs Residuals

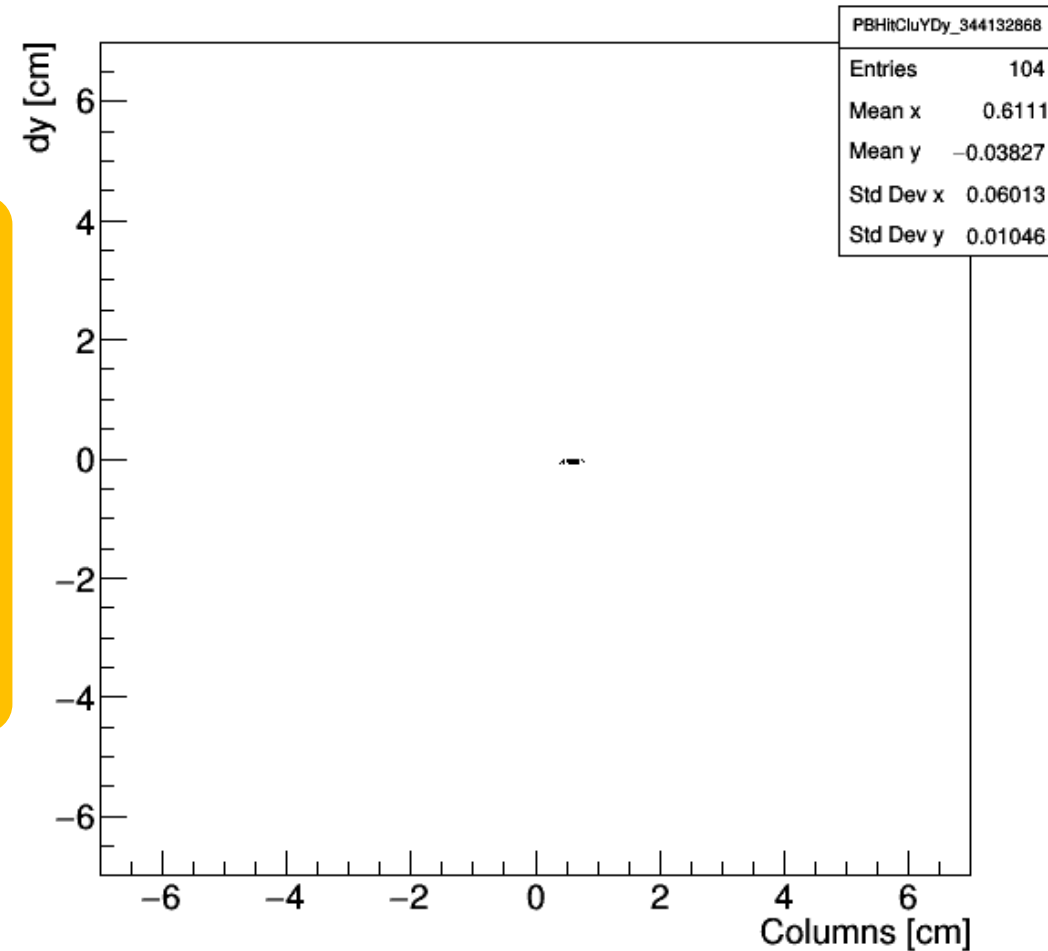
FPix_BmO_D3_BLD10_PNL1_ROC(a)

Inactive rechit position (x) and the x residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Azimuthal
direction

Inactive rechit position (y) and the y residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Radial direction

Efficiencies

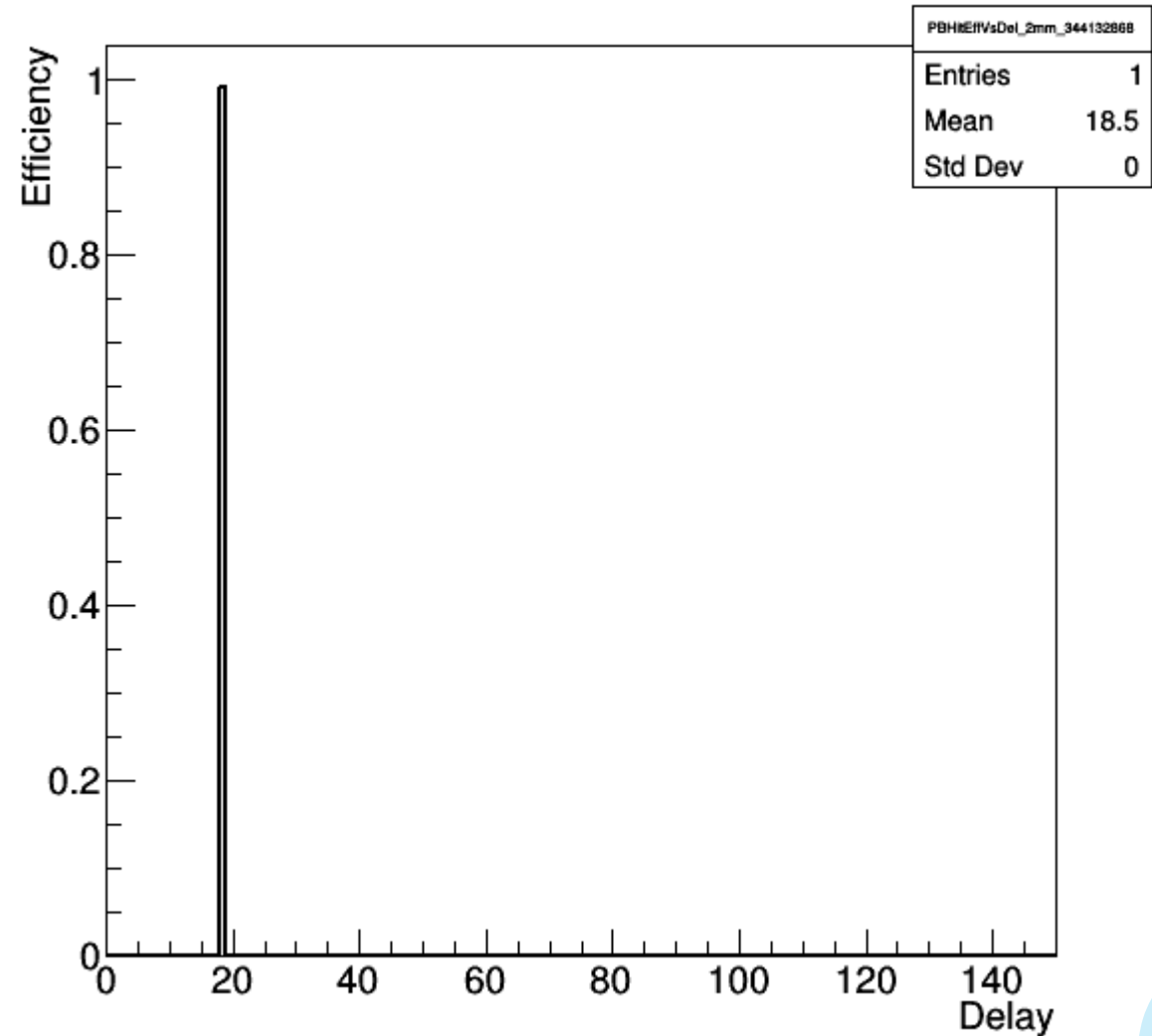
$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD10_PNL1_ROC(a)

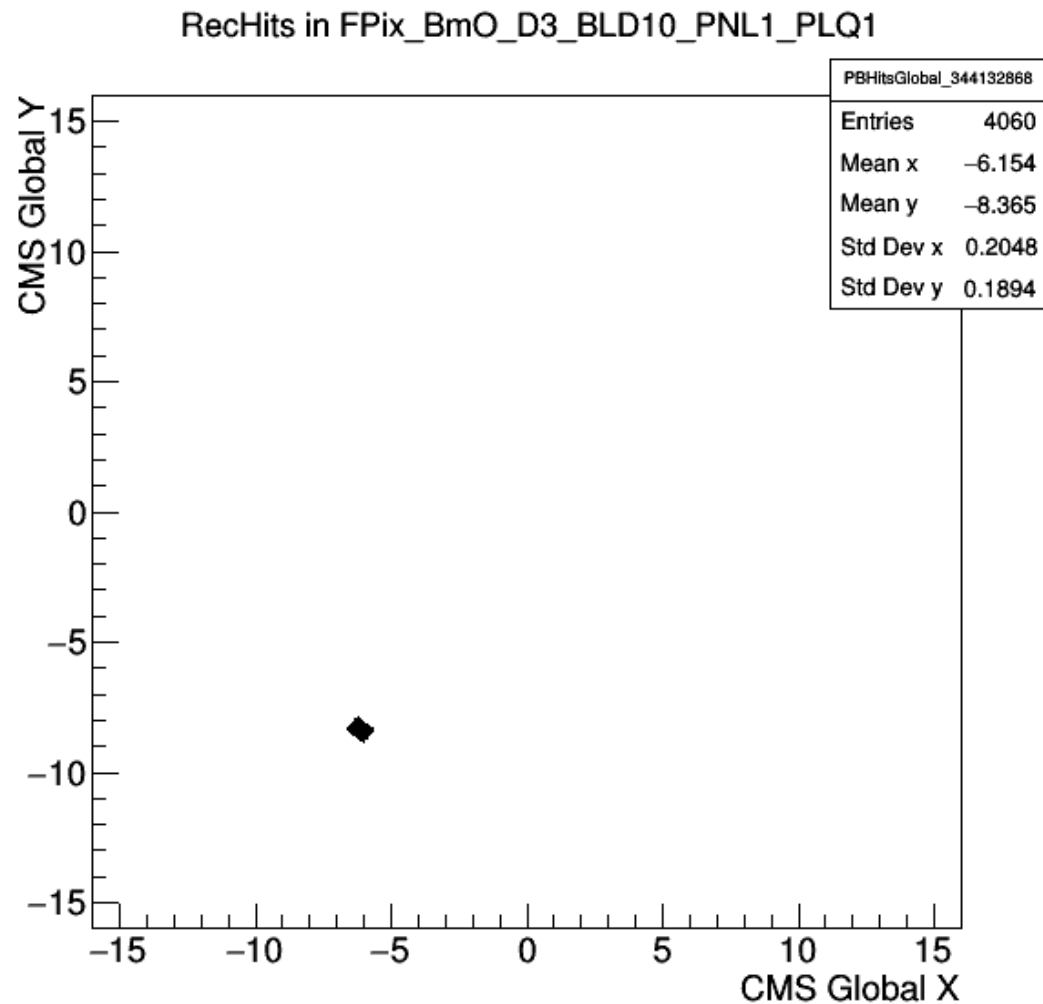
RecHit efficiency vs Delay in FPix_BmO_D3_BLD10_PNL1_PLQ1



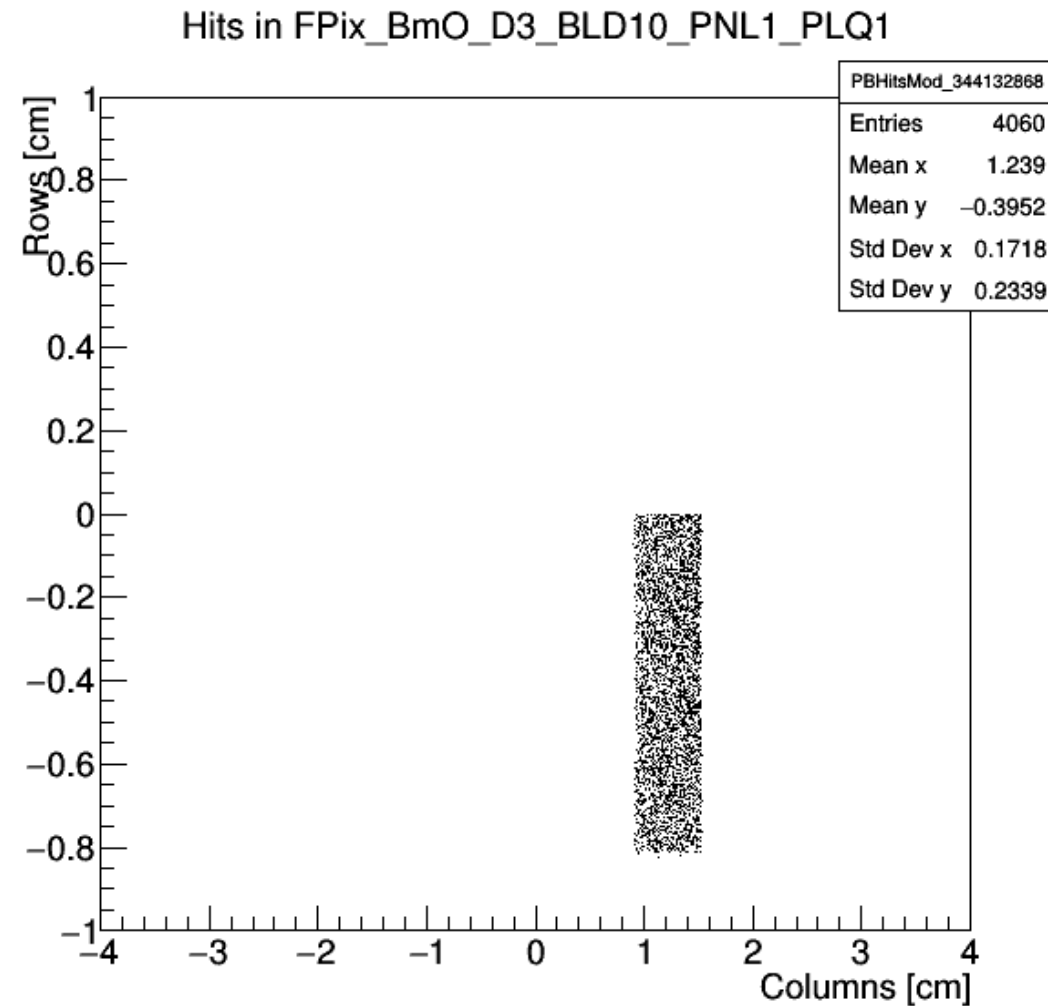
Position of the ROC

FPix_BmO_D3_BLD10_PNL1_ROC(b)

Global Position



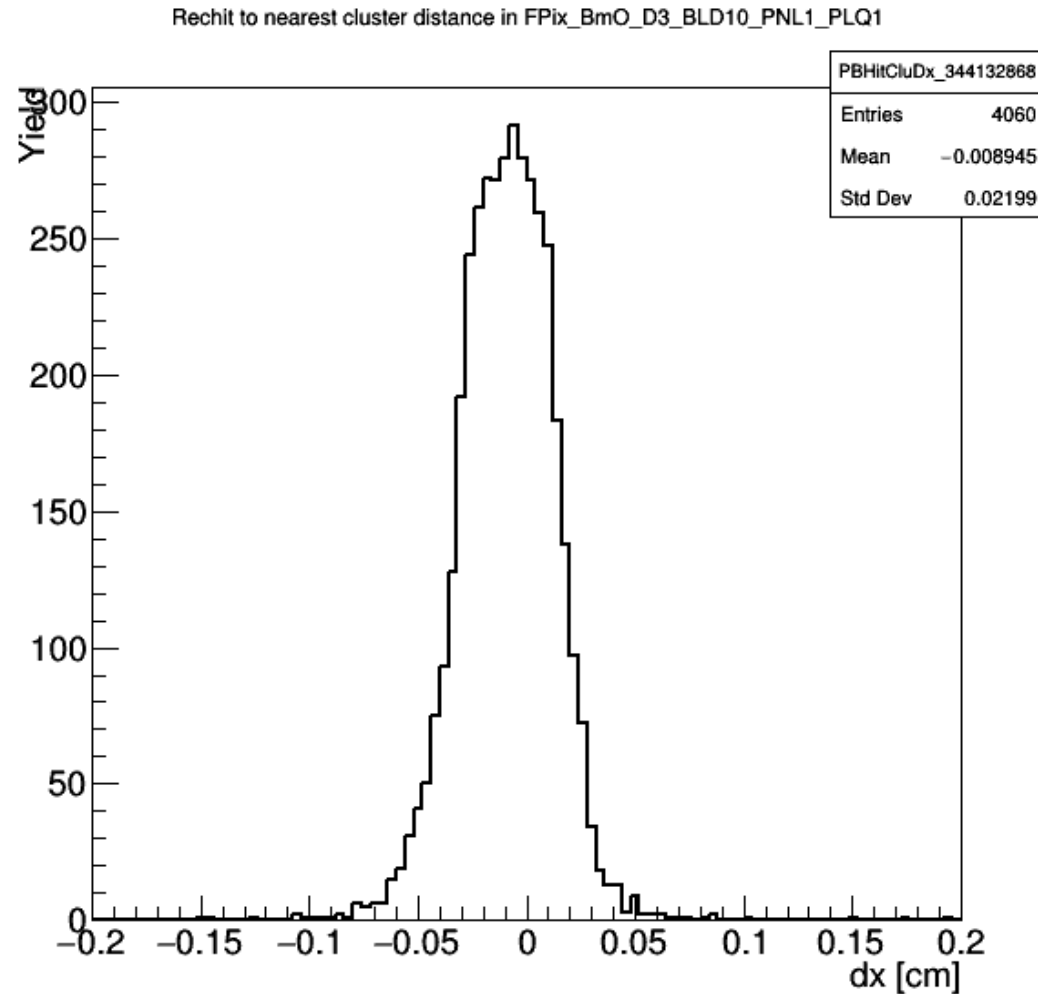
Local Position



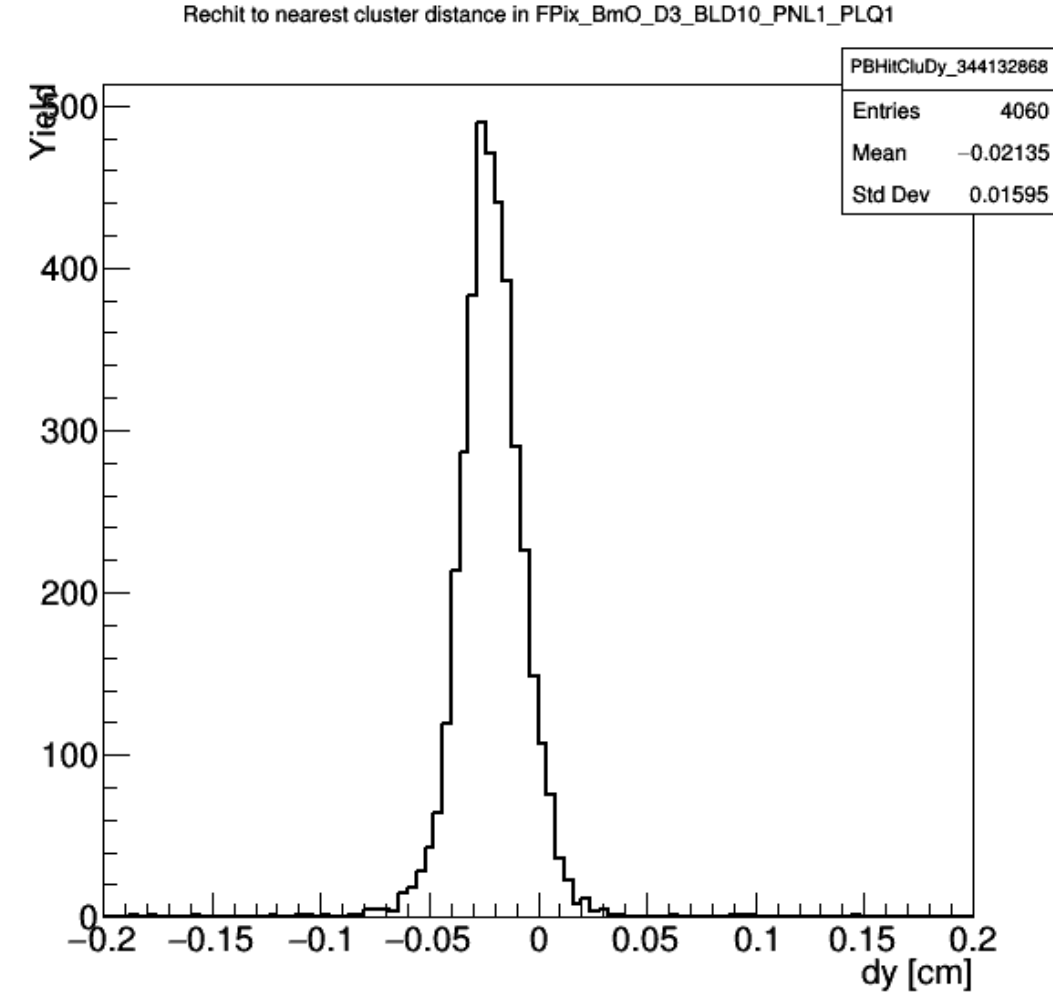
Residuals (Zoomed)

FPix_BmO_D3_BLD10_PNL1_ROC(b)

Azimuthal
direction



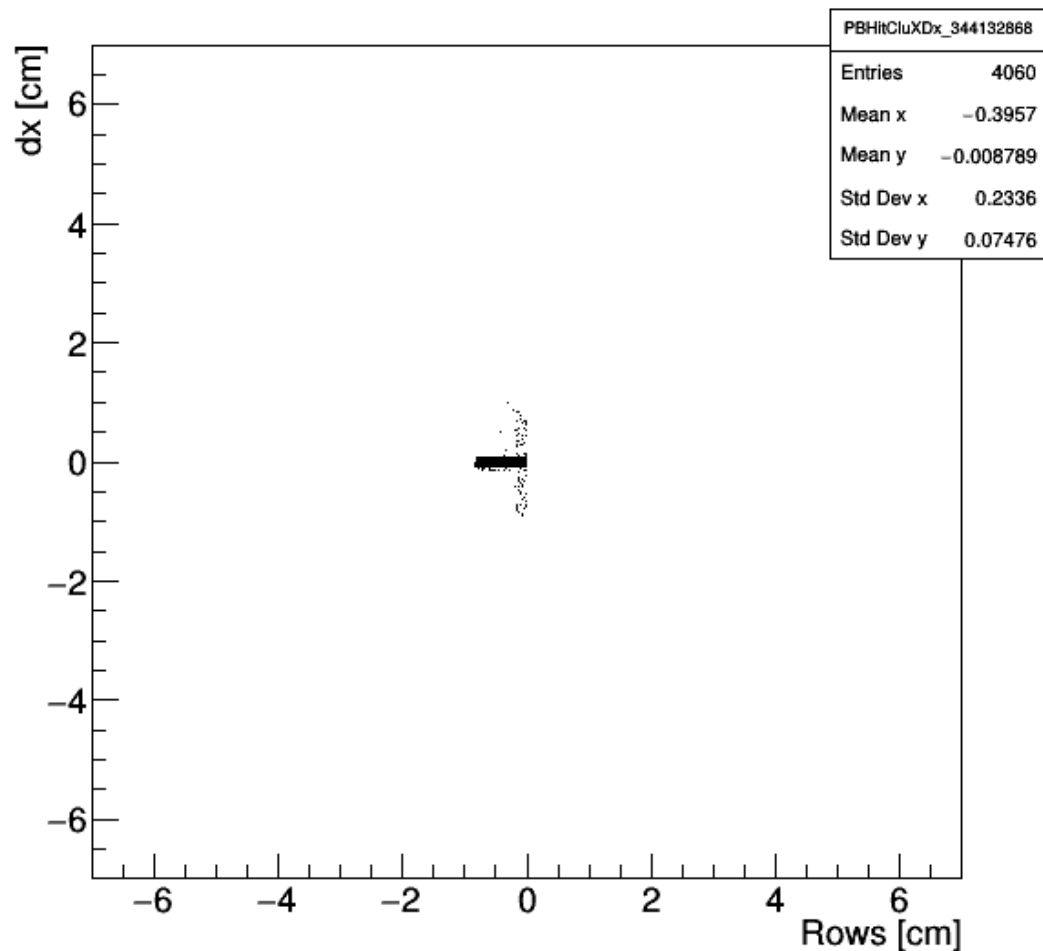
Radial direction



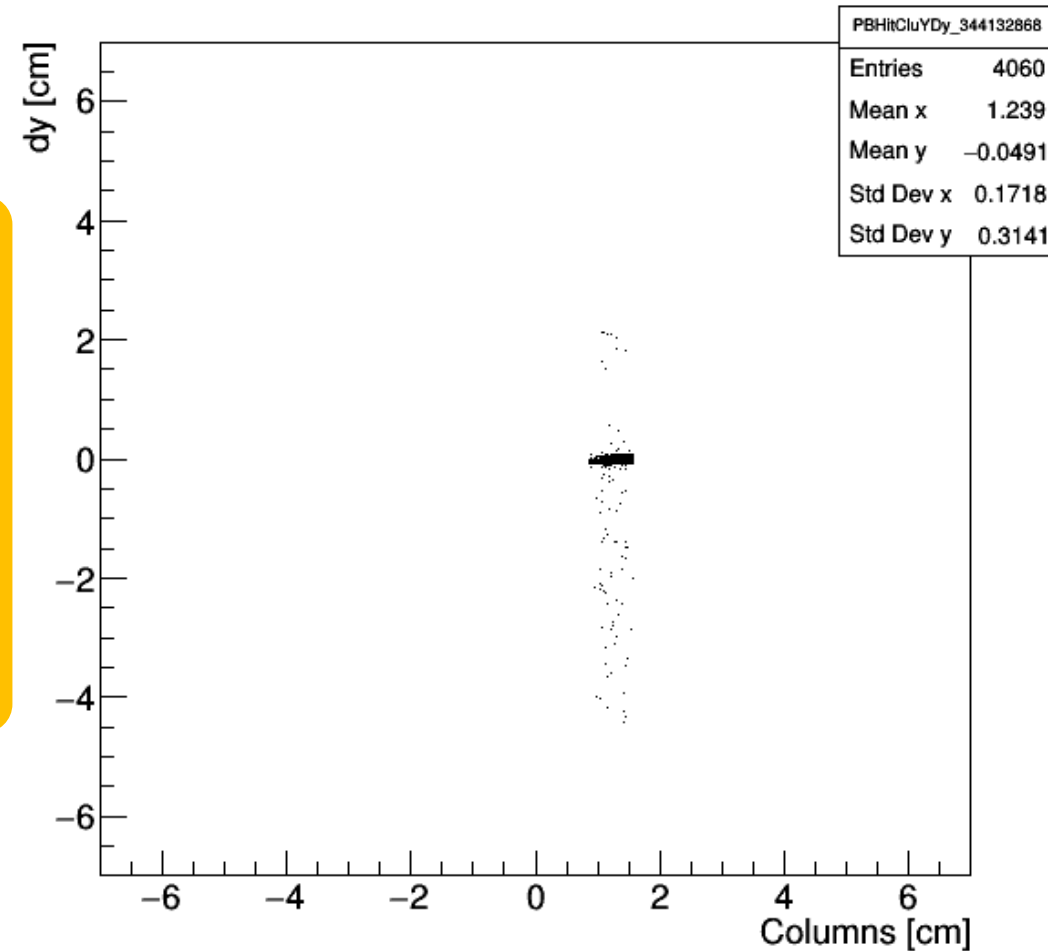
Position vs Residuals

FPix_BmO_D3_BLD10_PNL1_ROC(b)

Inactive rechit position (x) and the x residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Inactive rechit position (y) and the y residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Efficiencies

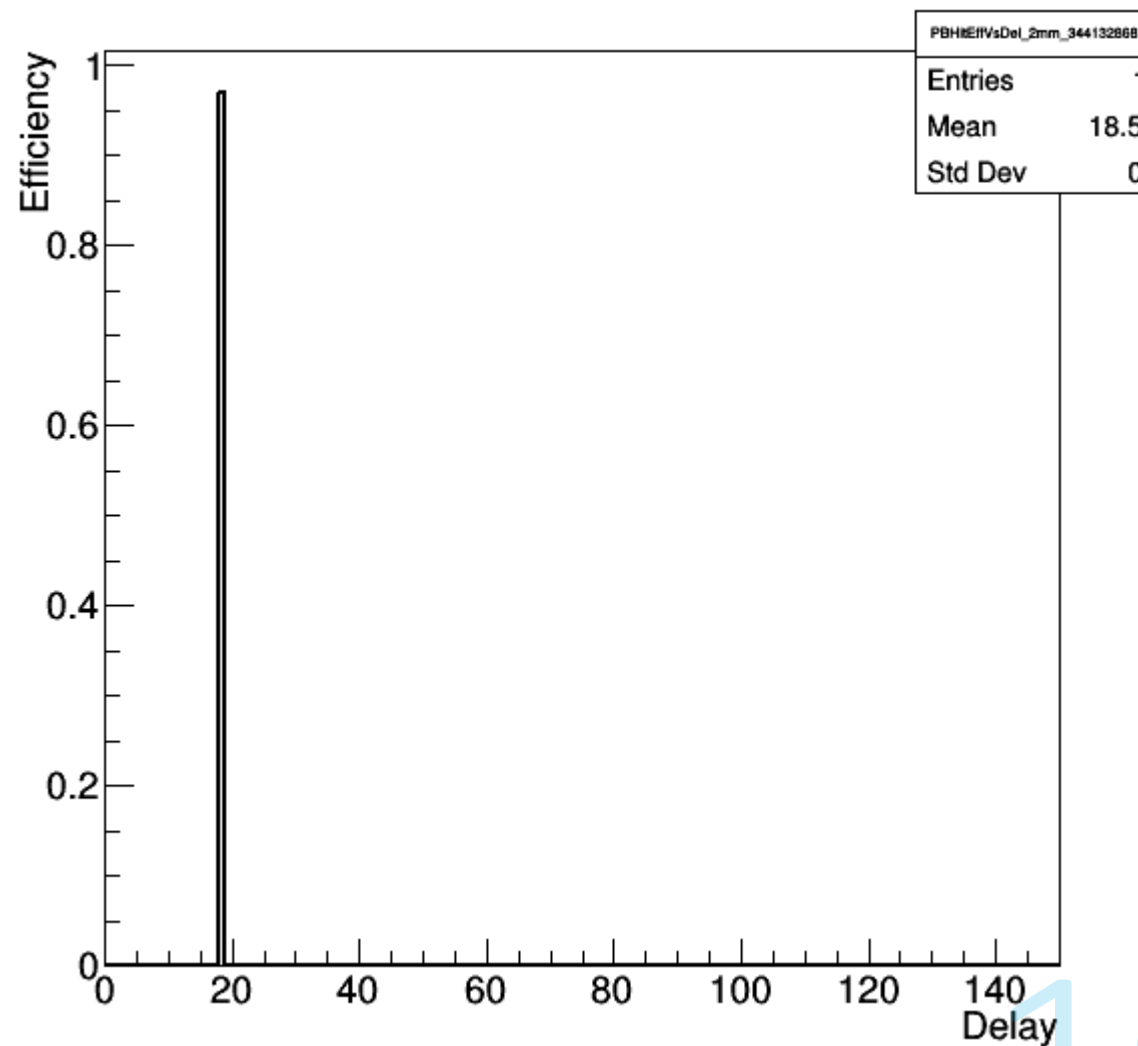
$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD10_PNL1_ROC(b)

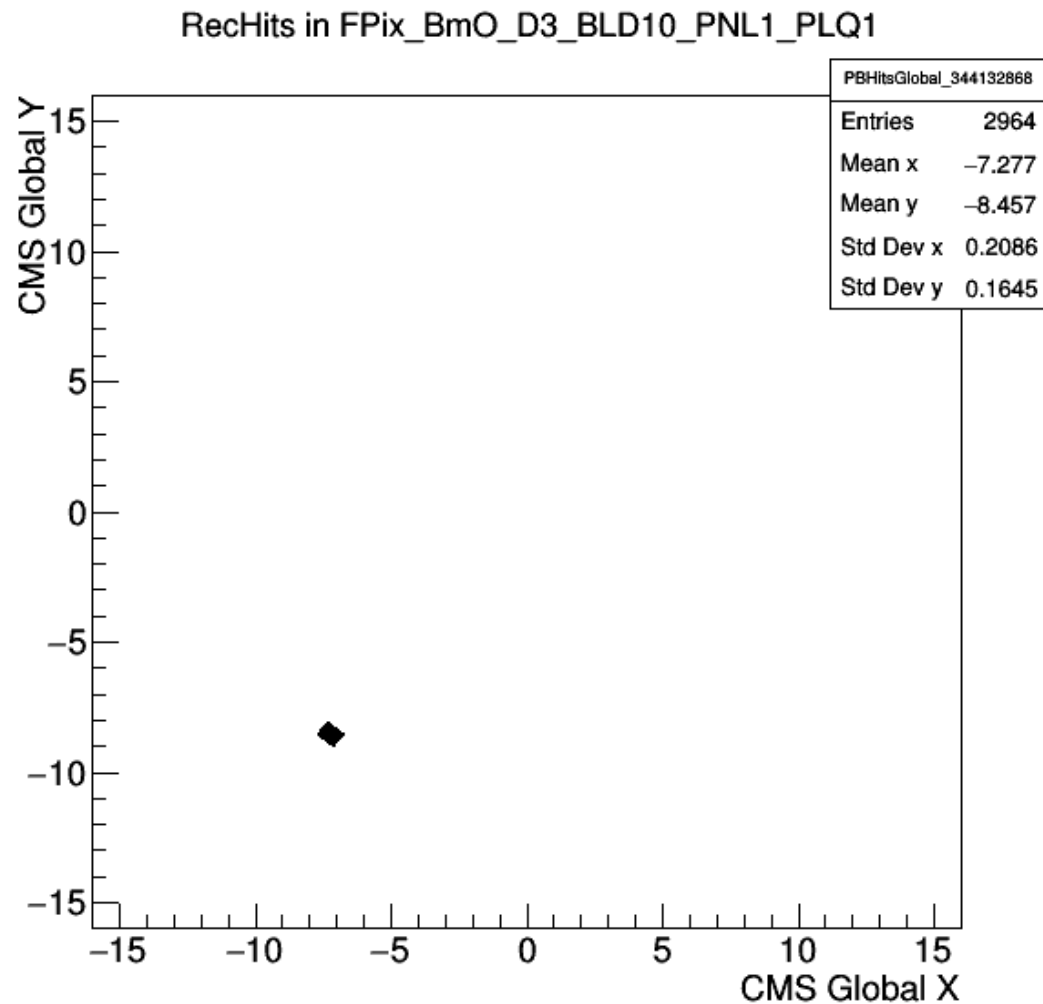
RecHit efficiency vs Delay in FPix_BmO_D3_BLD10_PNL1_PLQ1



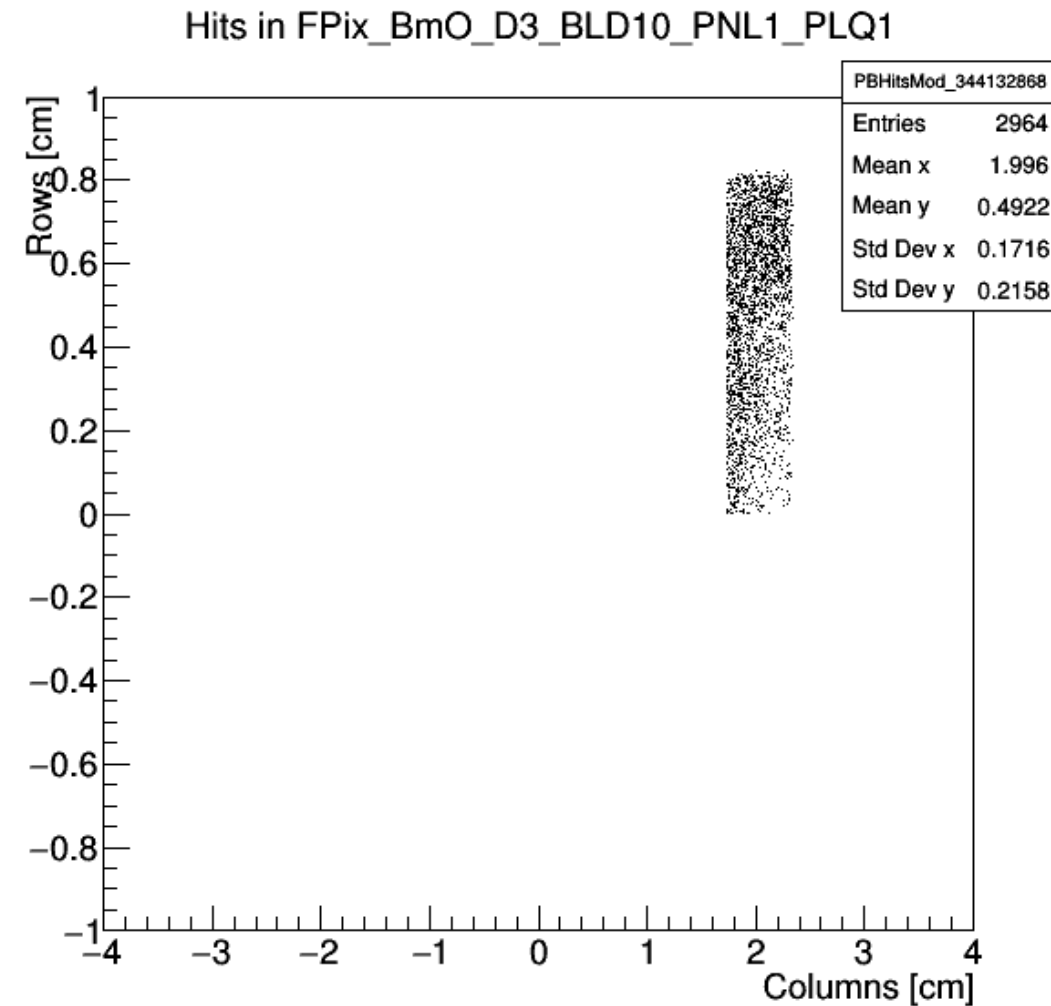
Position of the ROC

FPix_BmO_D3_BLD10_PNL1_ROC(c)

Global Position



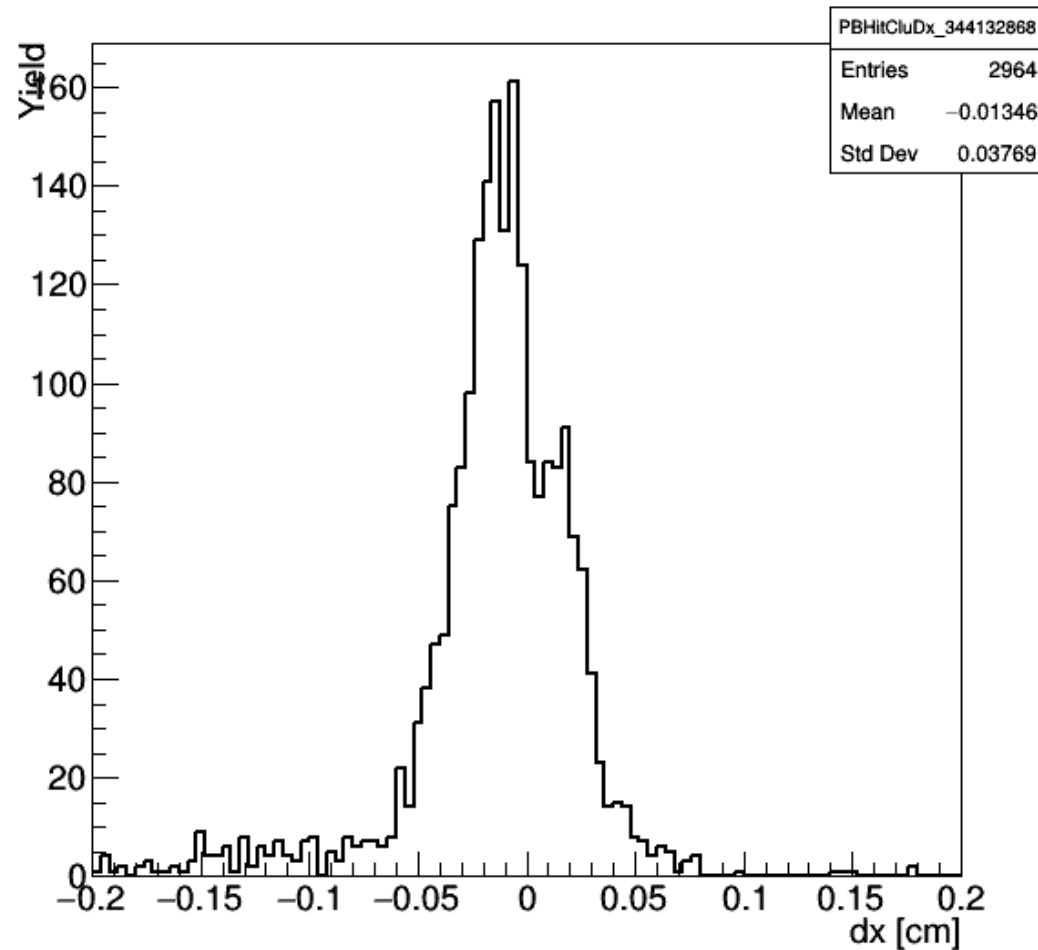
Local Position



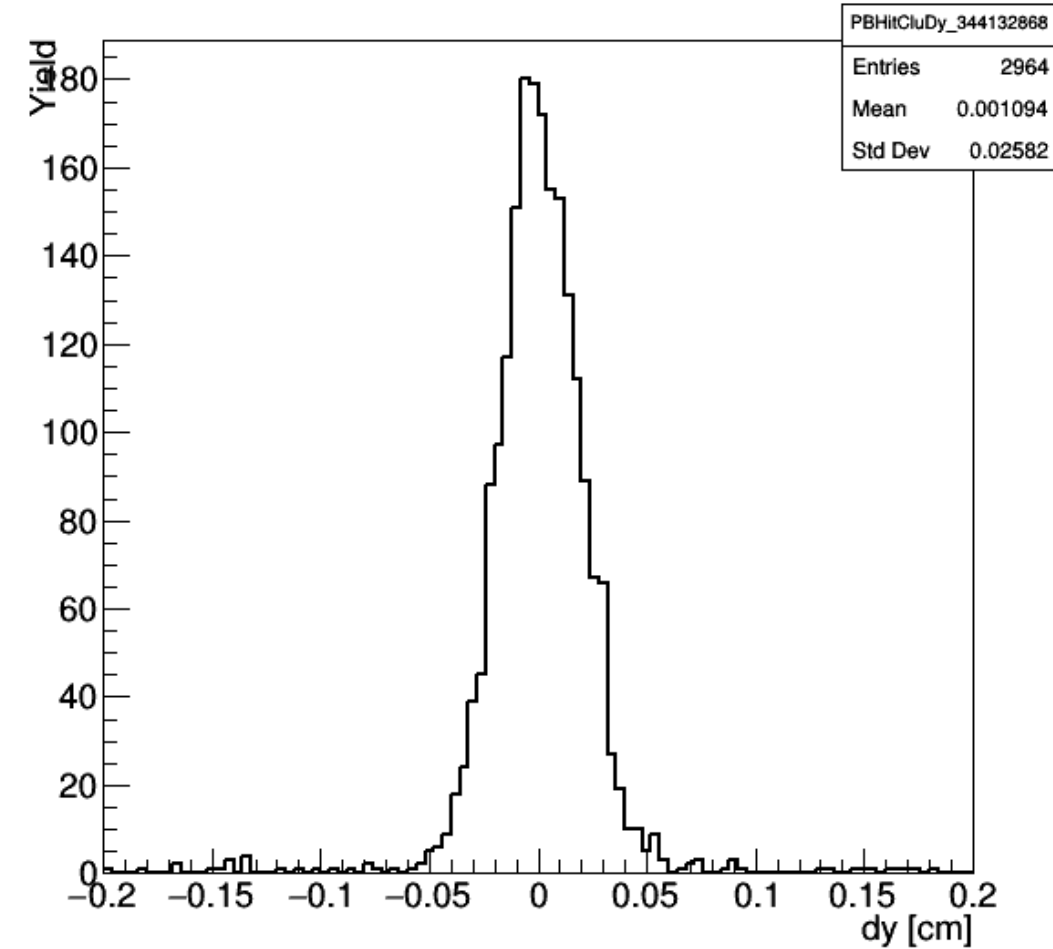
Residuals (Zoomed)

FPix_BmO_D3_BLD10_PNL1_ROC(c)

Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



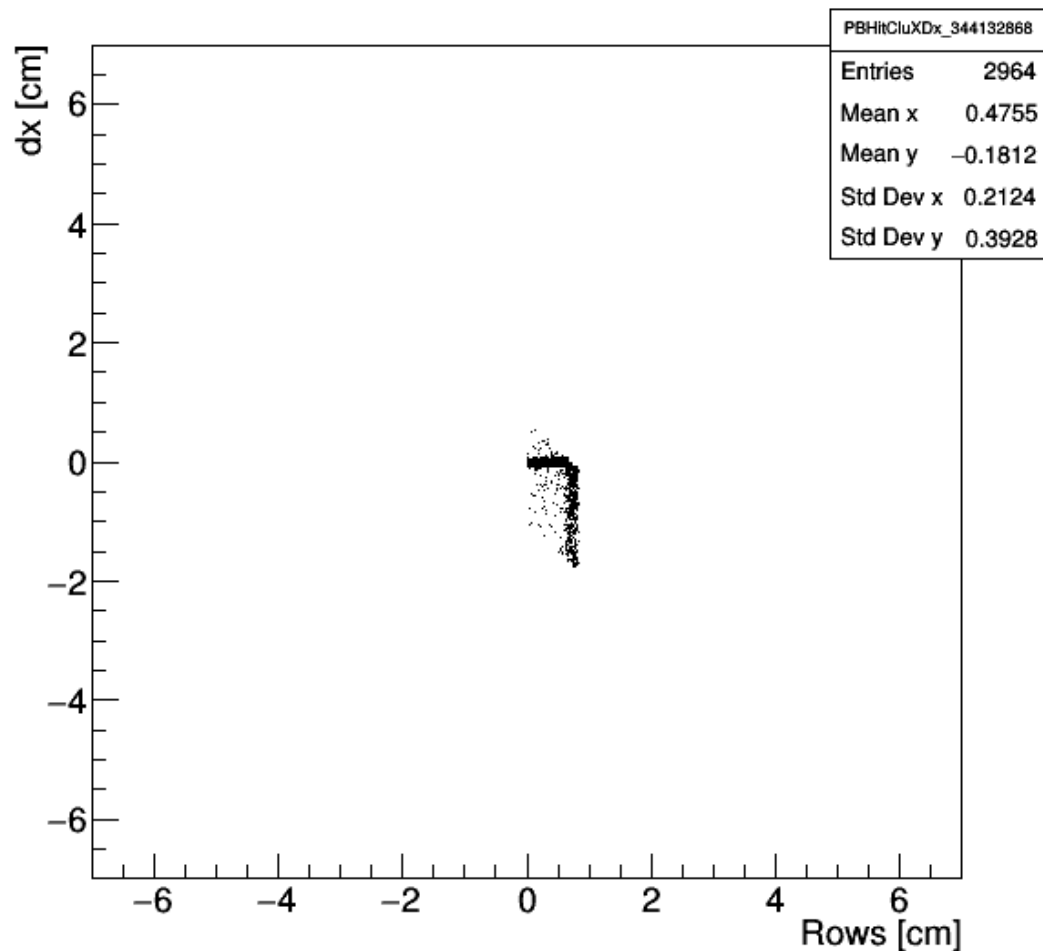
Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



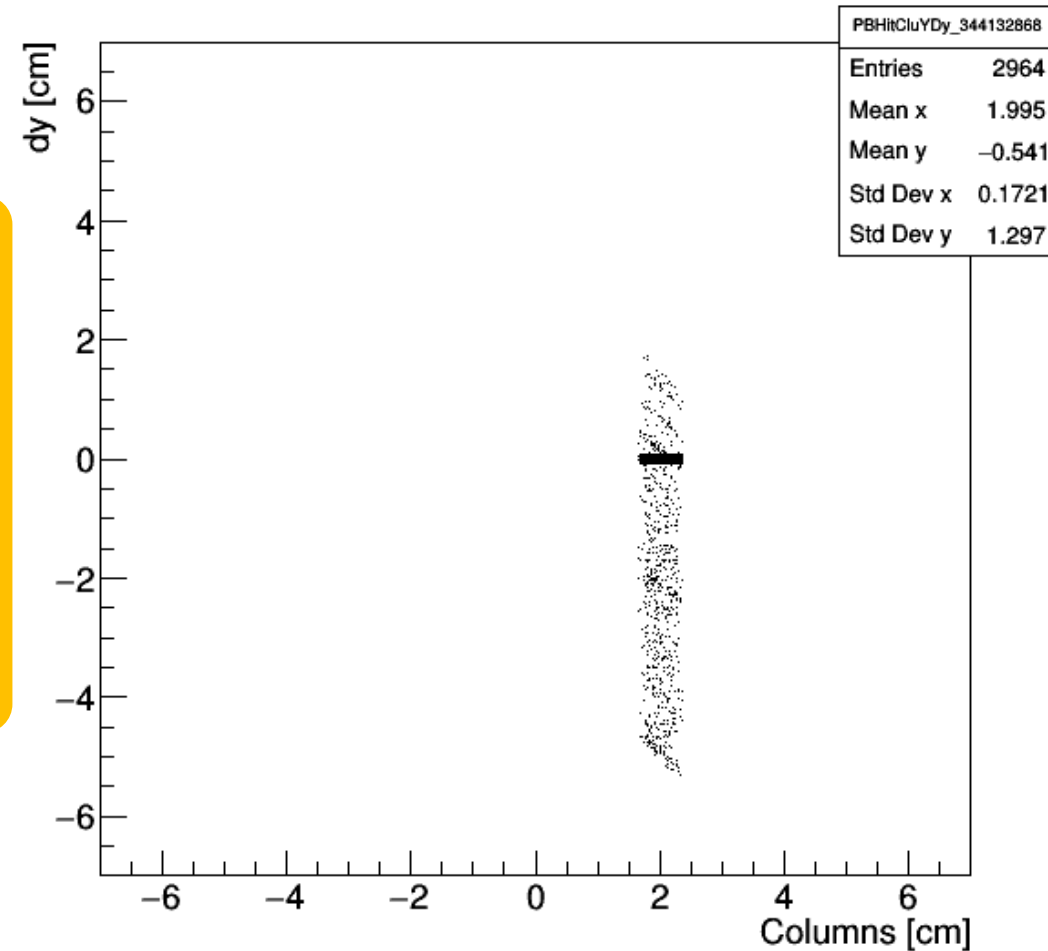
Position vs Residuals

FPix_BmO_D3_BLD10_PNL1_ROC(c)

Inactive rechit position (x) and the x residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Inactive rechit position (y) and the y residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Efficiencies

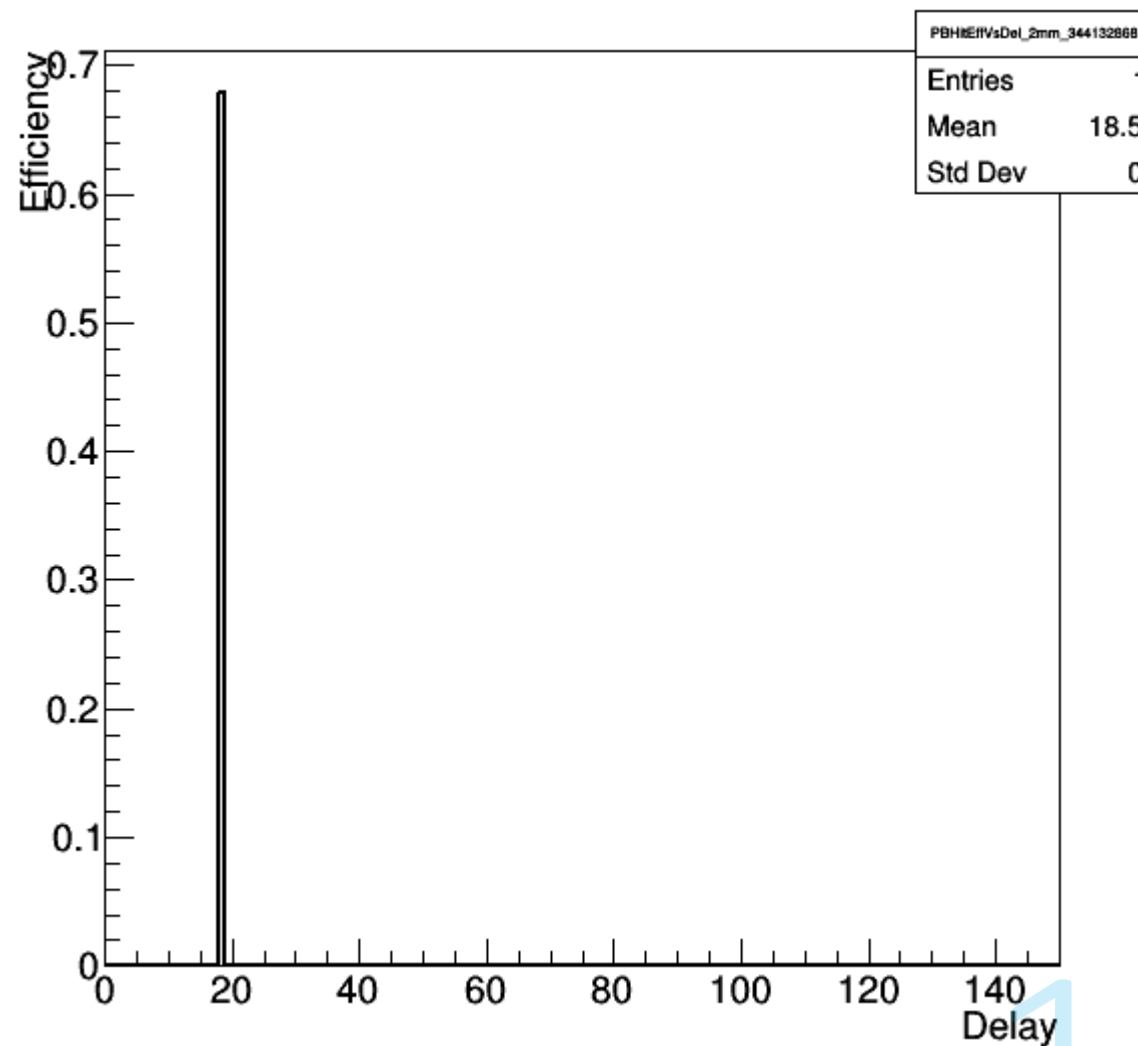
$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD10_PNL1_ROC(c)

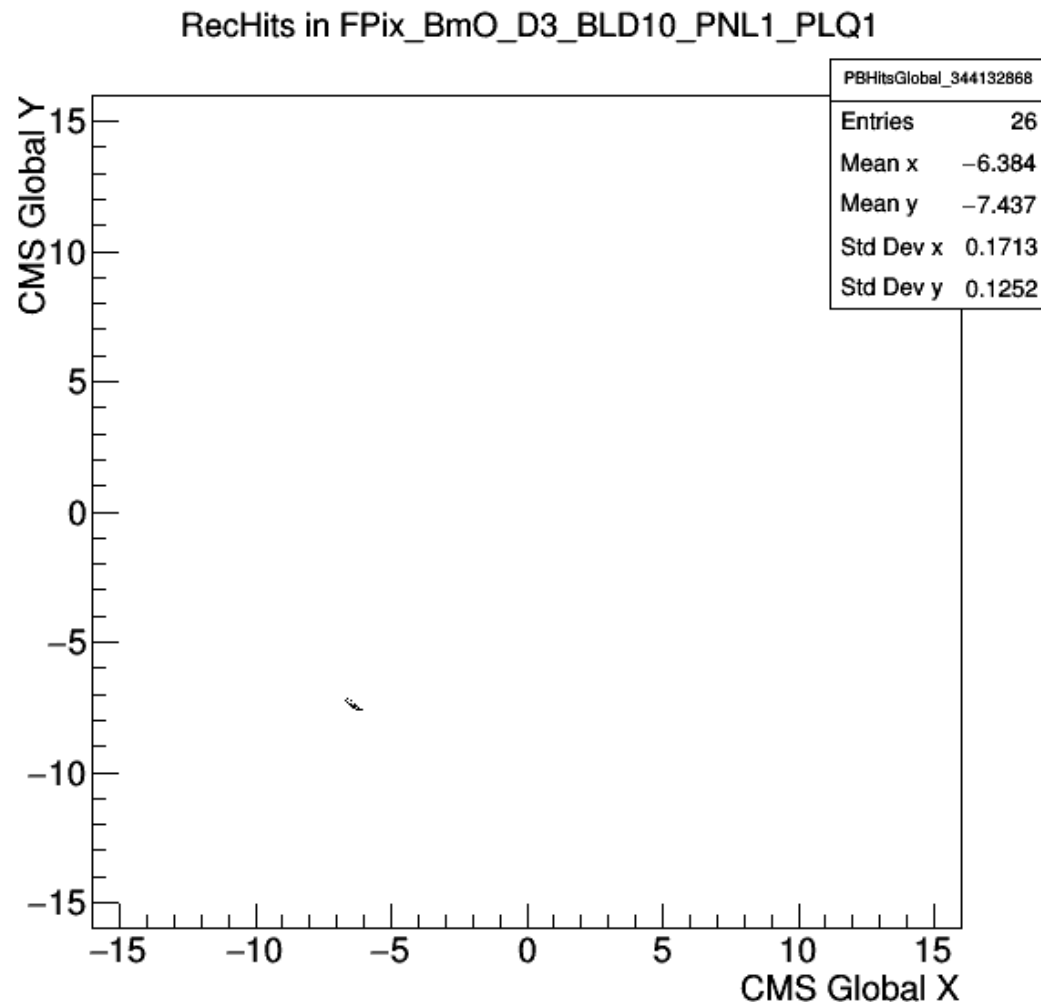
RecHit efficiency vs Delay in FPix_BmO_D3_BLD10_PNL1_PLQ1



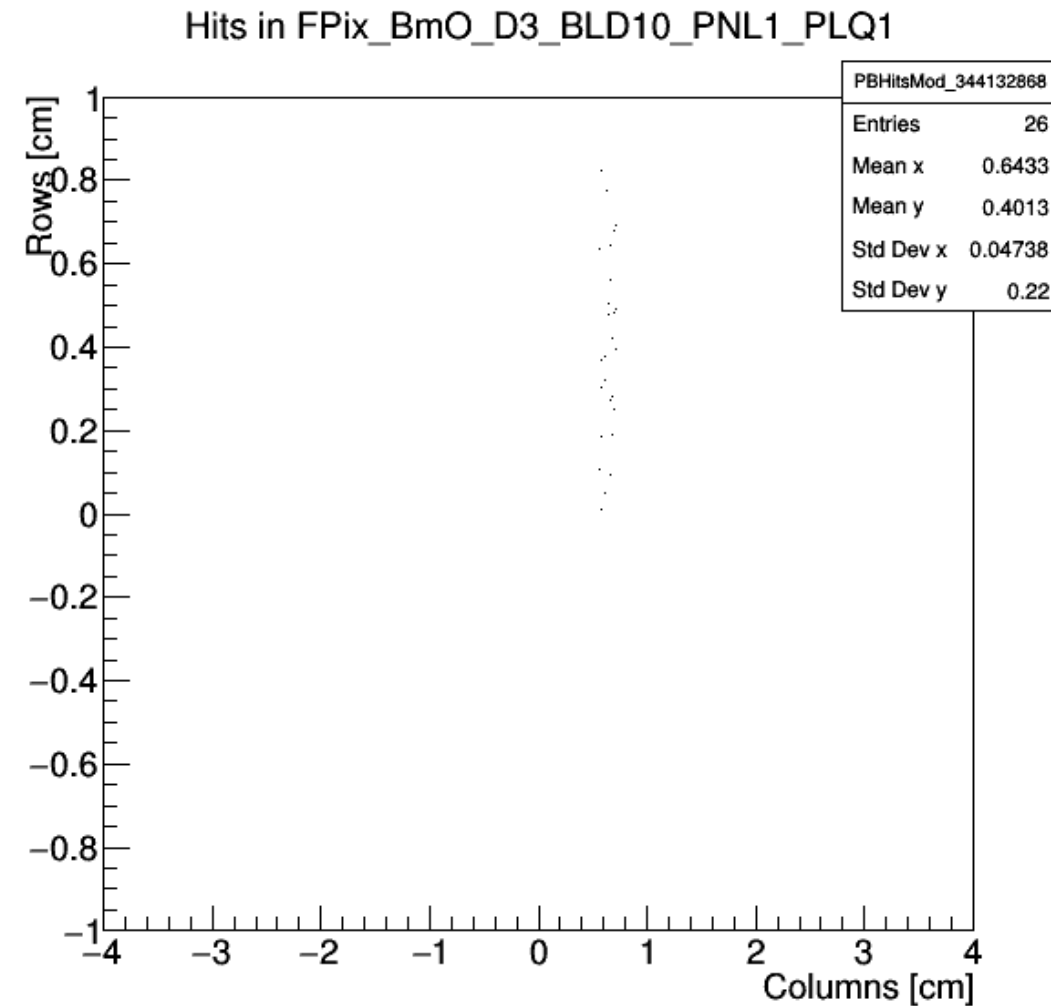
Position of the ROC

FPix_BmO_D3_BLD10_PNL1_ROC(d)

Global Position



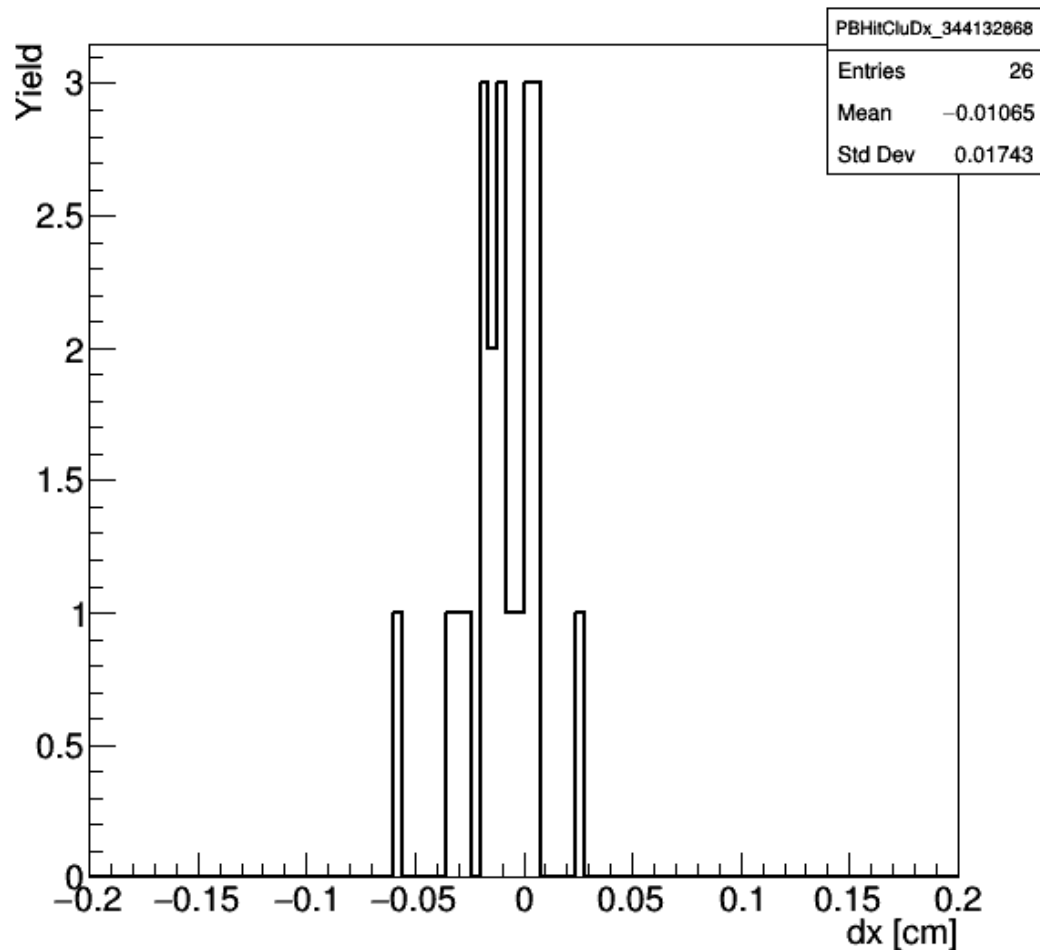
Local Position



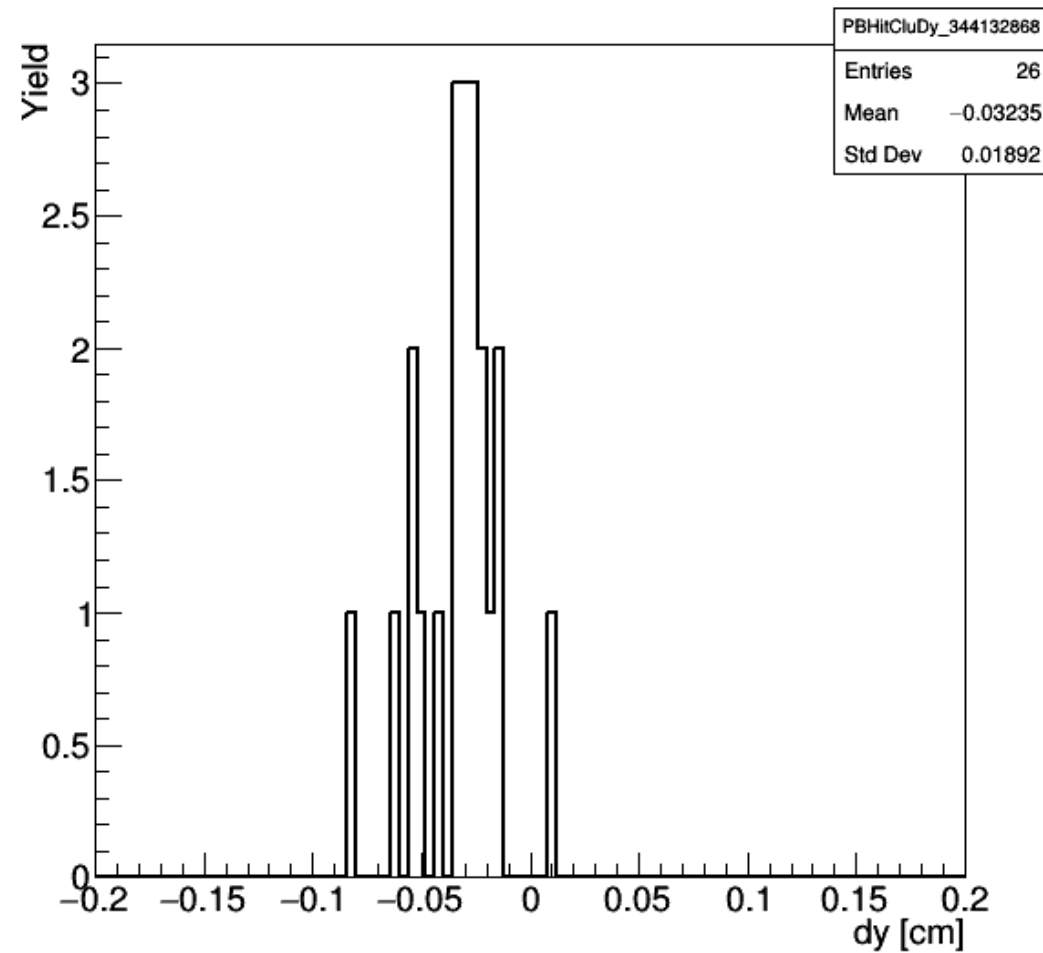
Residuals (Zoomed)

FPix_BmO_D3_BLD10_PNL1_ROC(d)

Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



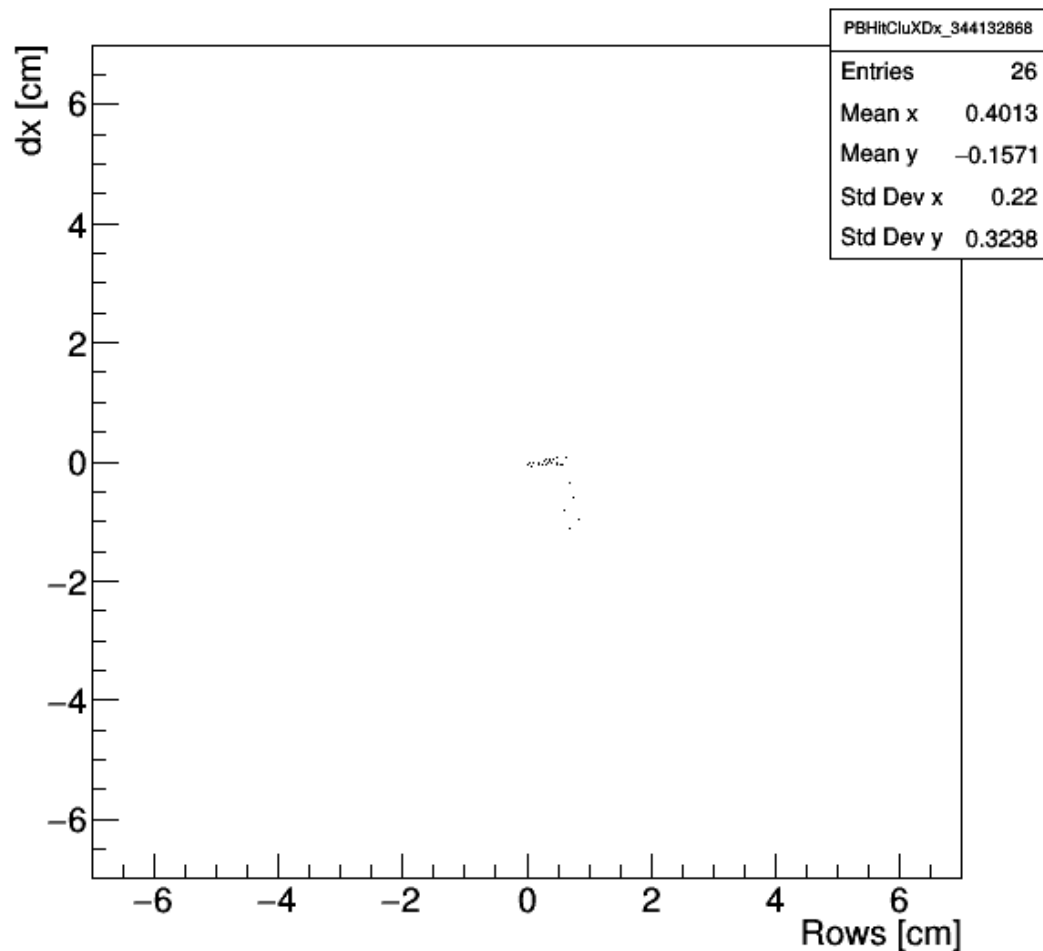
Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



Position vs Residuals

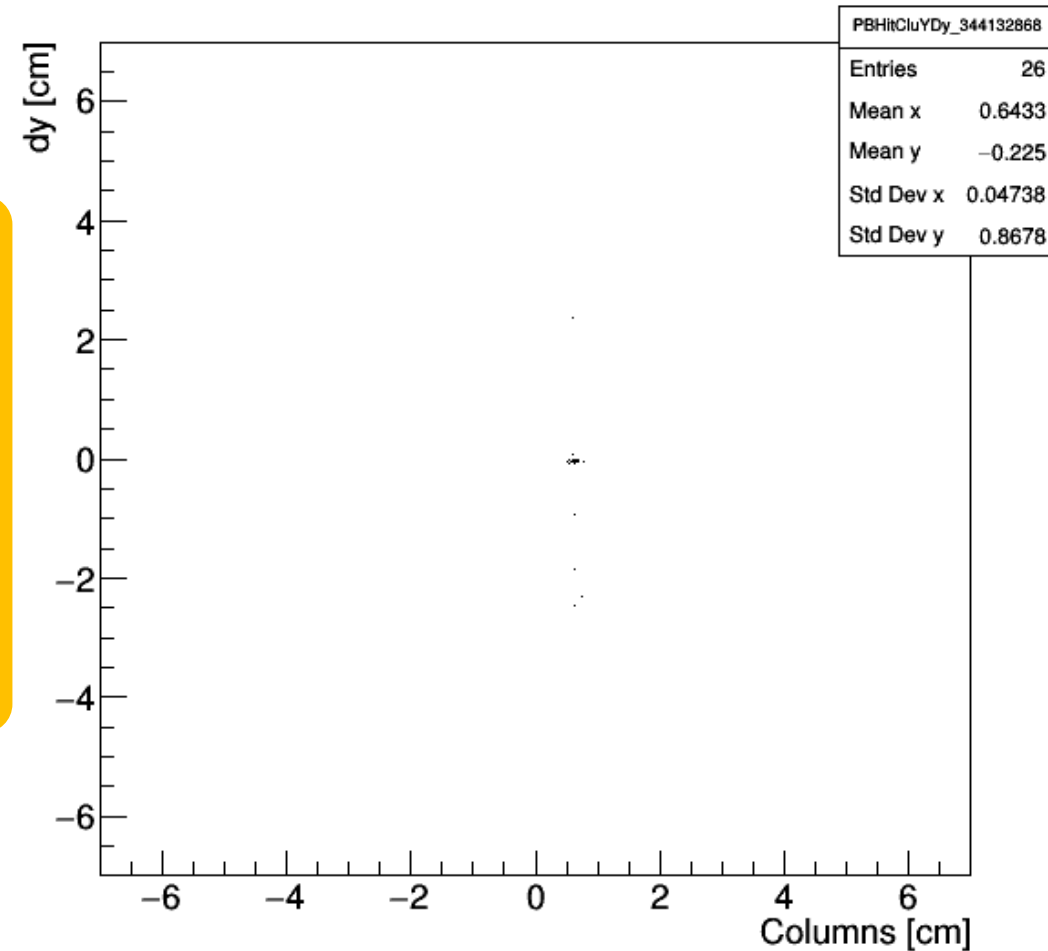
FPix_BmO_D3_BLD10_PNL1_ROC(d)

Inactive rechit position (x) and the x residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Azimuthal
direction

Inactive rechit position (y) and the y residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Radial direction

Efficiencies

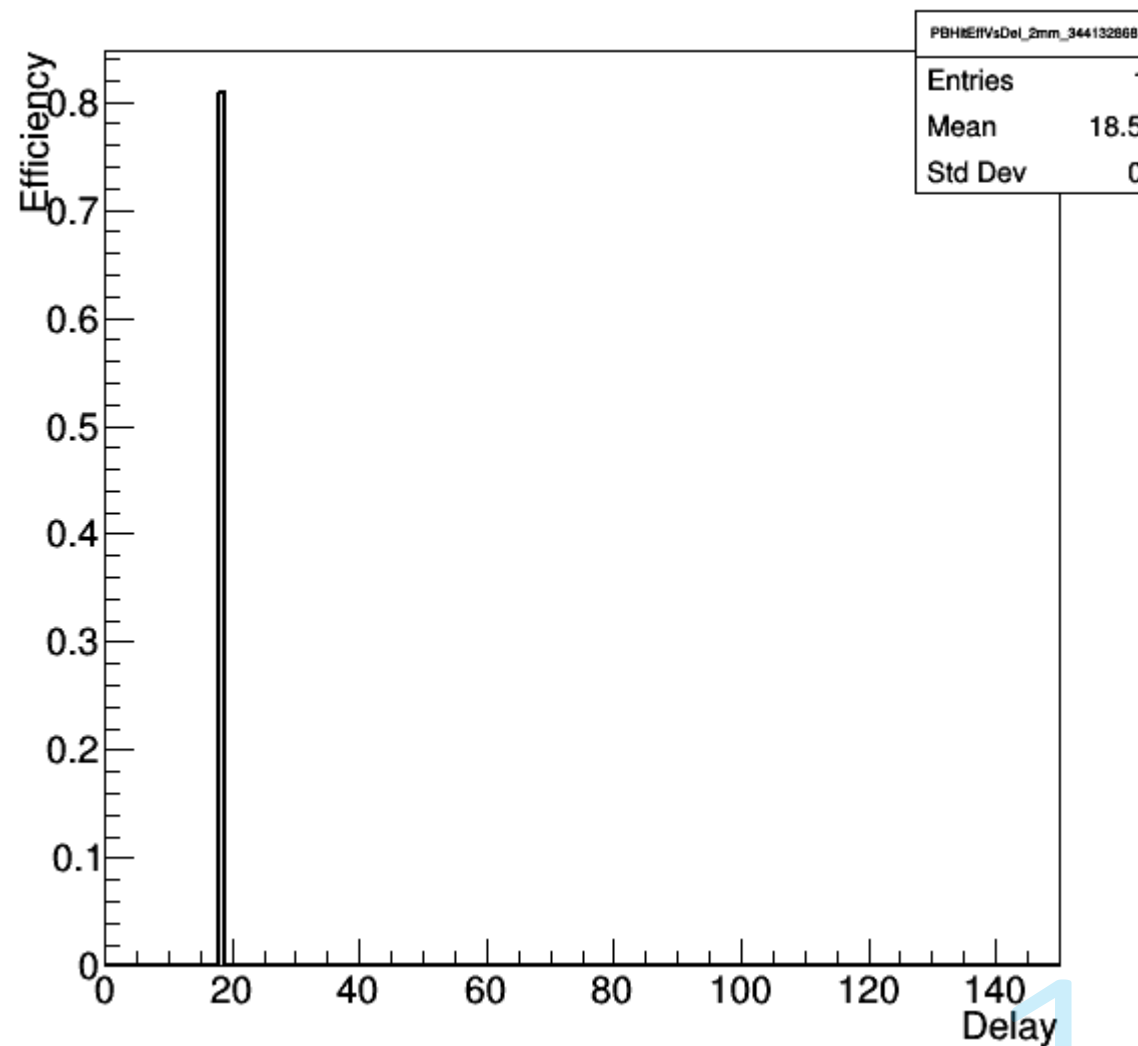
$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD10_PNL1_ROC(d)

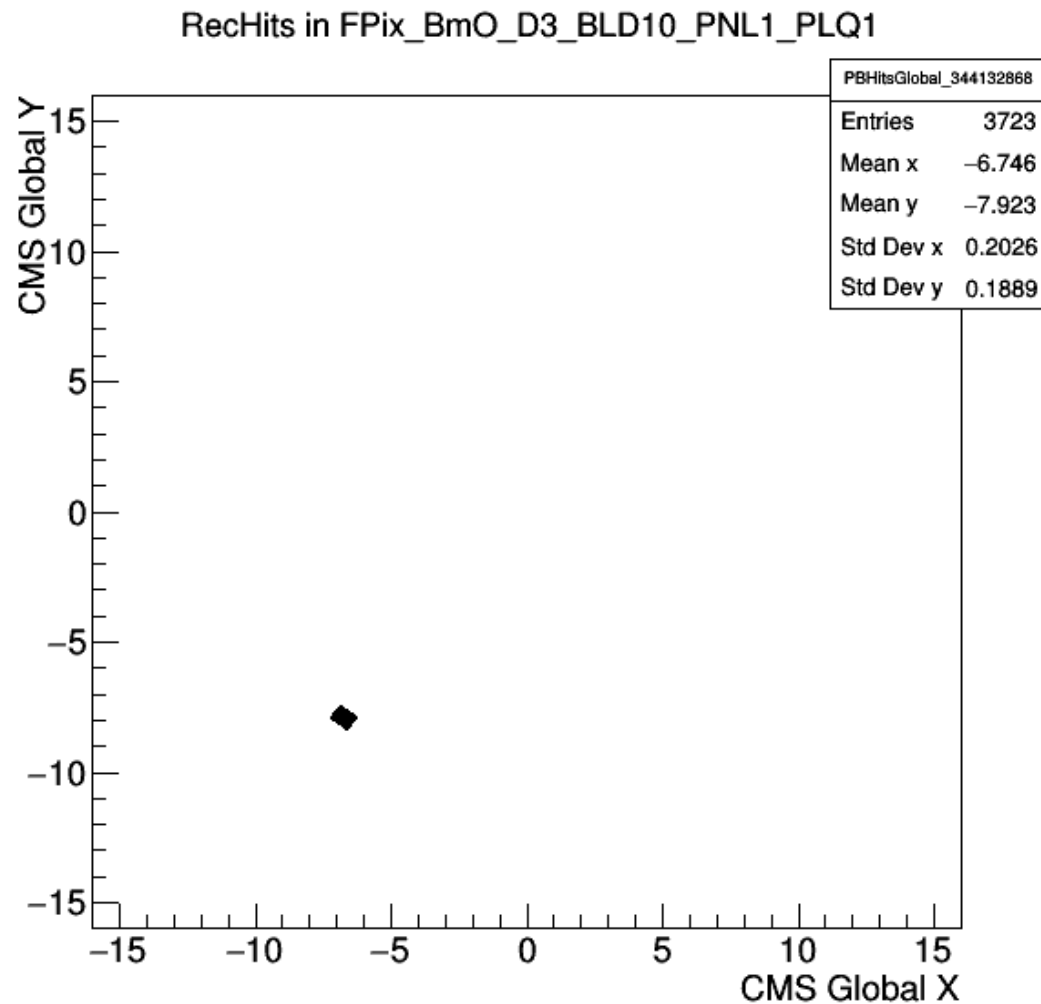
RecHit efficiency vs Delay in FPix_BmO_D3_BLD10_PNL1_PLQ1



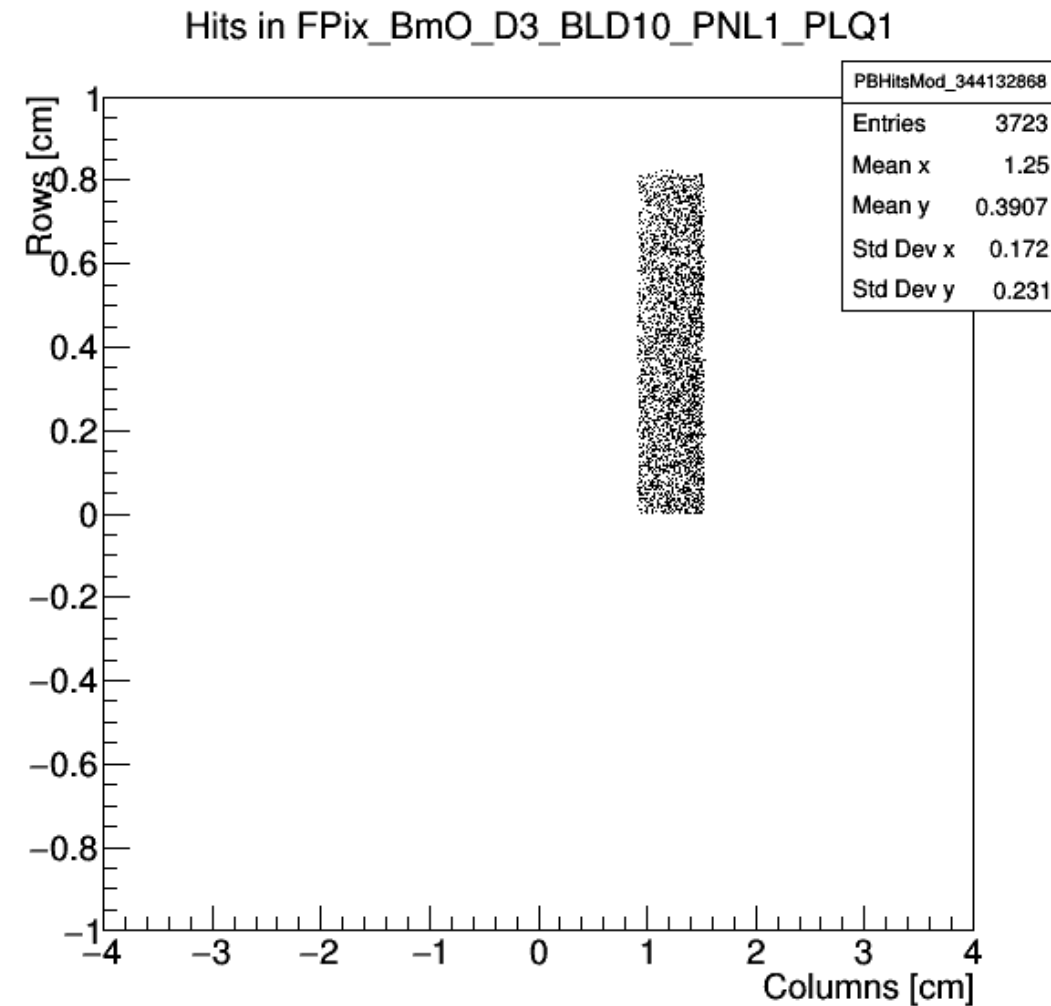
Position of the ROC

FPix_BmO_D3_BLD10_PNL1_ROC(e)

Global Position



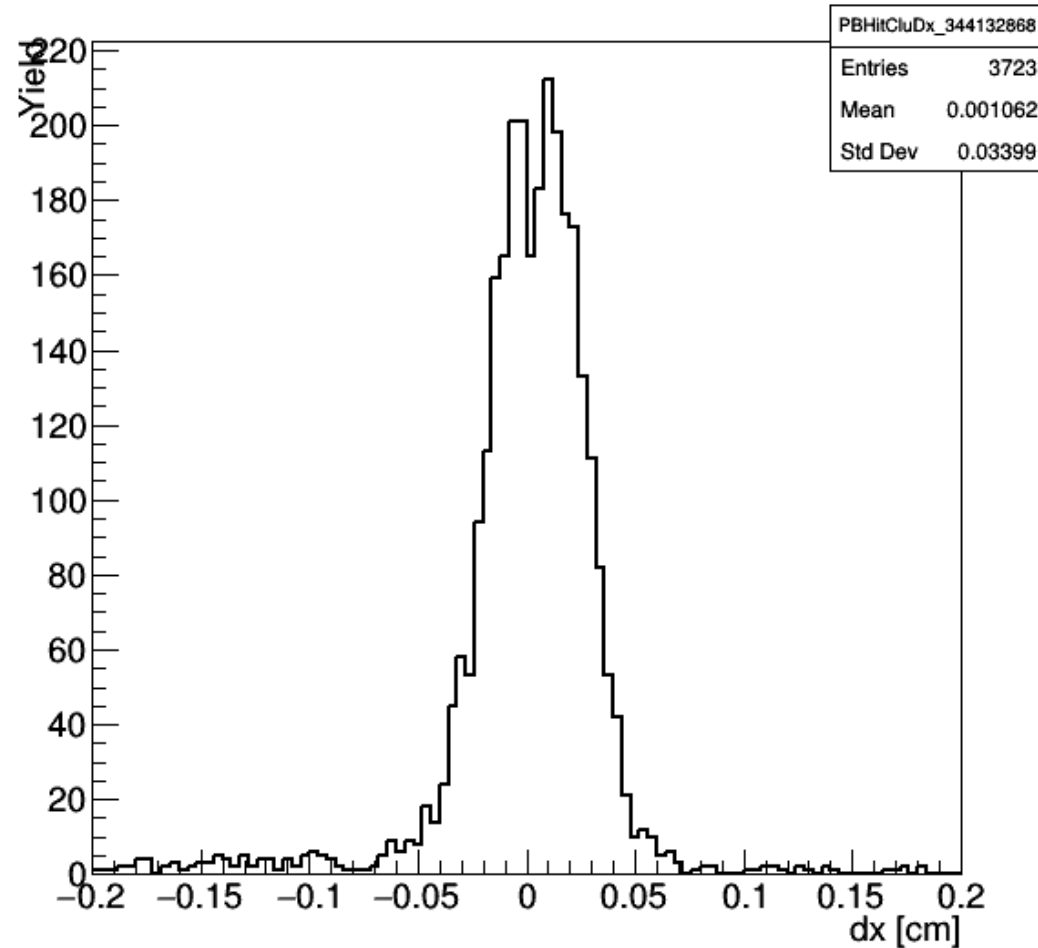
Local Position



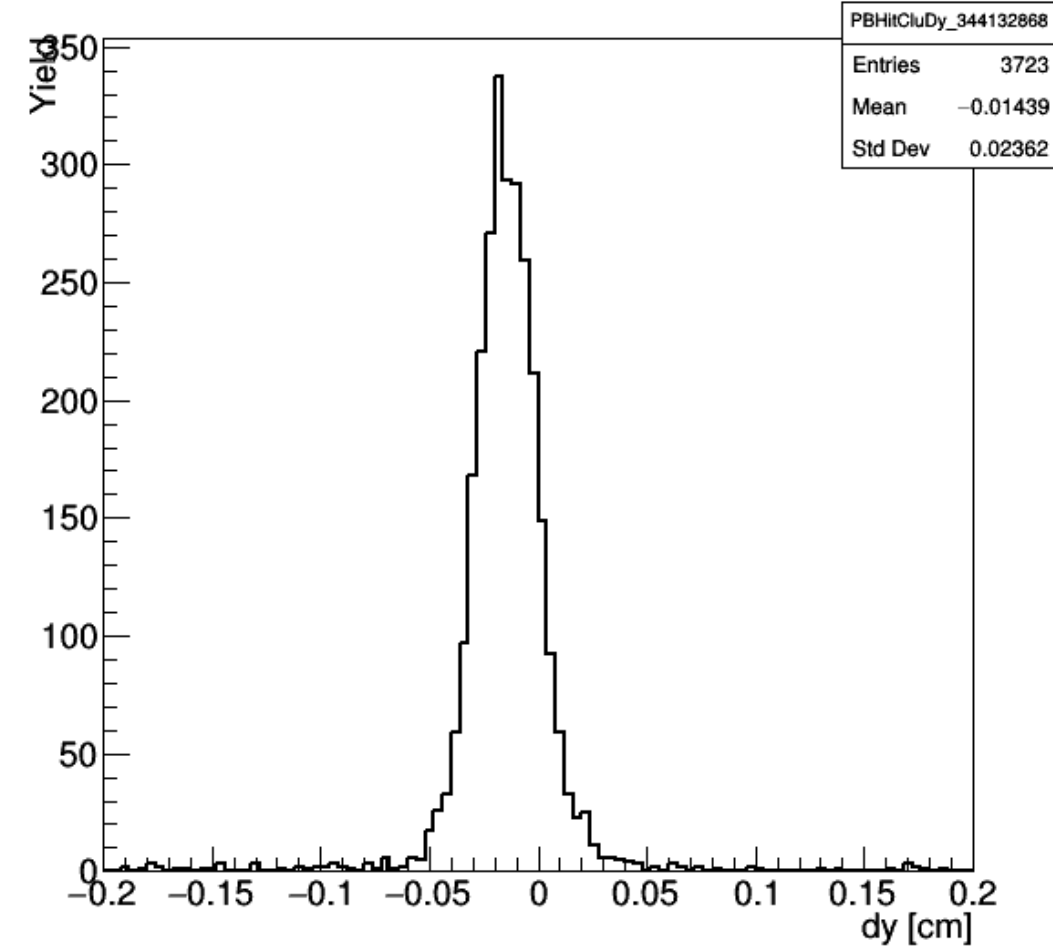
Residuals (Zoomed)

FPix_BmO_D3_BLD10_PNL1_ROC(e)

Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



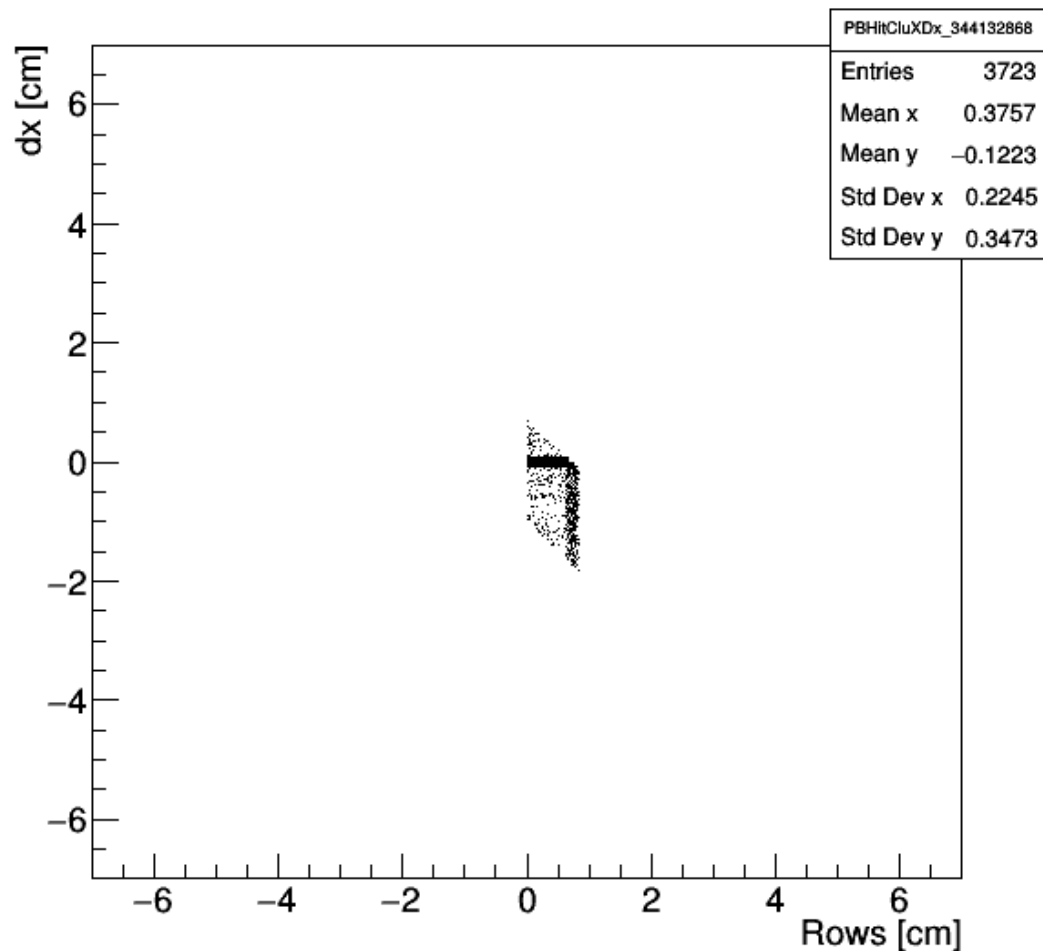
Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



Position vs Residuals

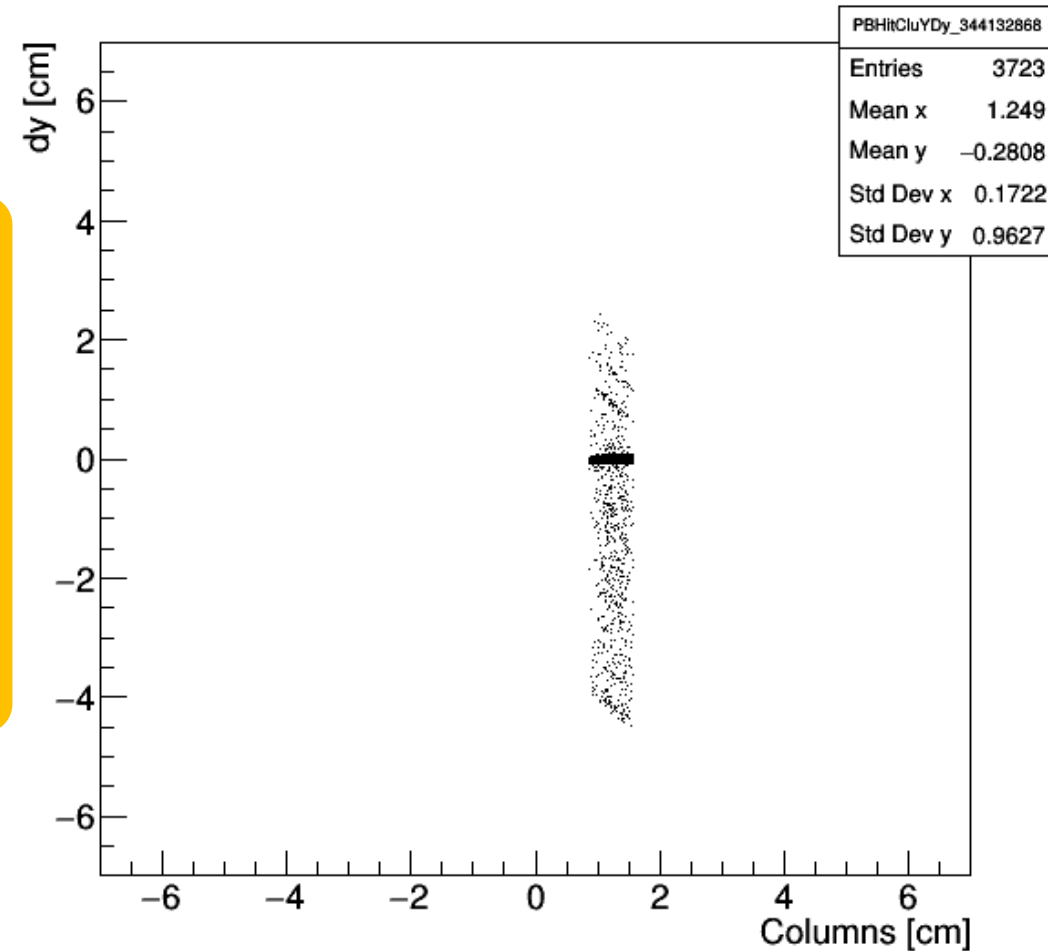
FPix_BmO_D3_BLD10_PNL1_ROC(e)

Inactive rechit position (x) and the x residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Azimuthal
direction

Inactive rechit position (y) and the y residual FPix_BmO_D3_BLD10_PNL1_PLQ1



Radial direction

Efficiencies

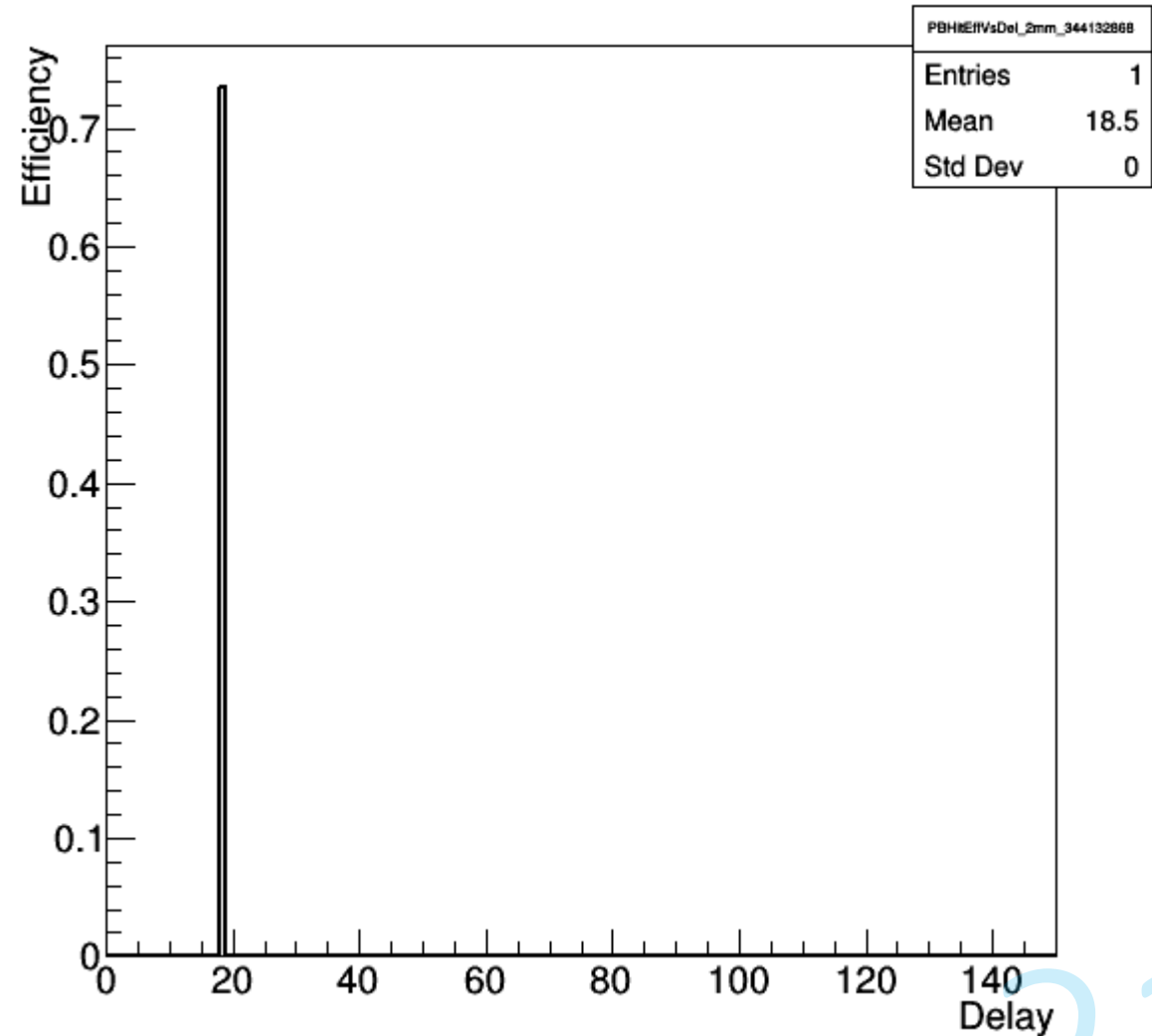
$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD10_PNL1_ROC(e)

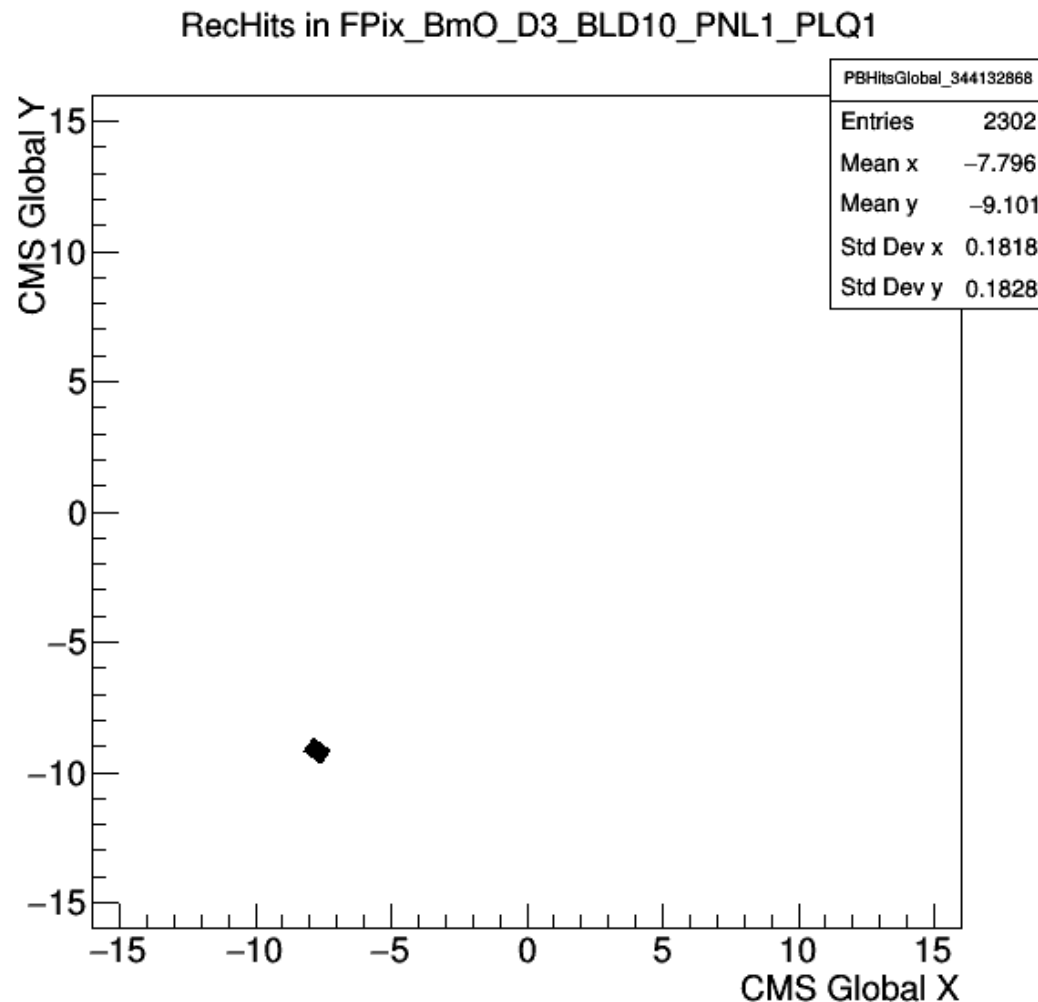
RecHit efficiency vs Delay in FPix_BmO_D3_BLD10_PNL1_PLQ1



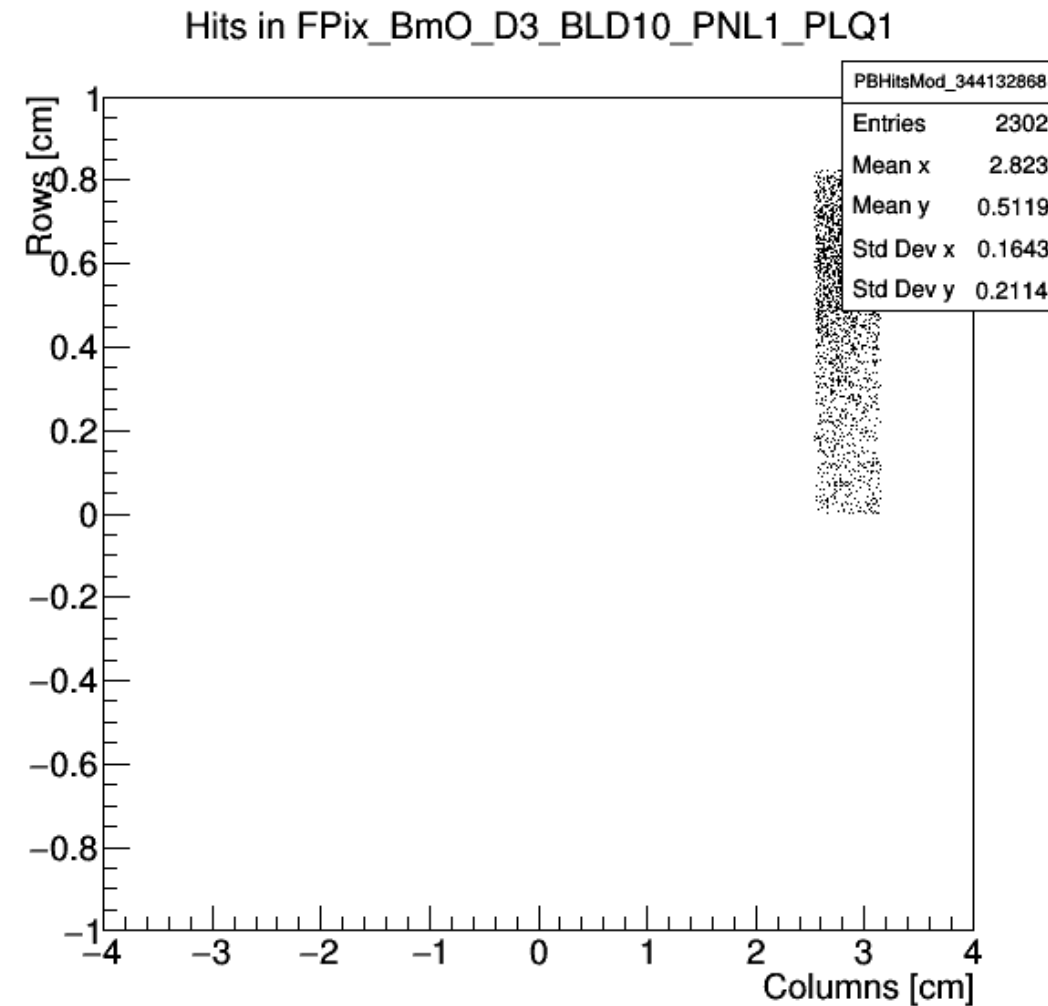
Position of the ROC

FPix_BmO_D3_BLD10_PNL1_ROC(f)

Global Position



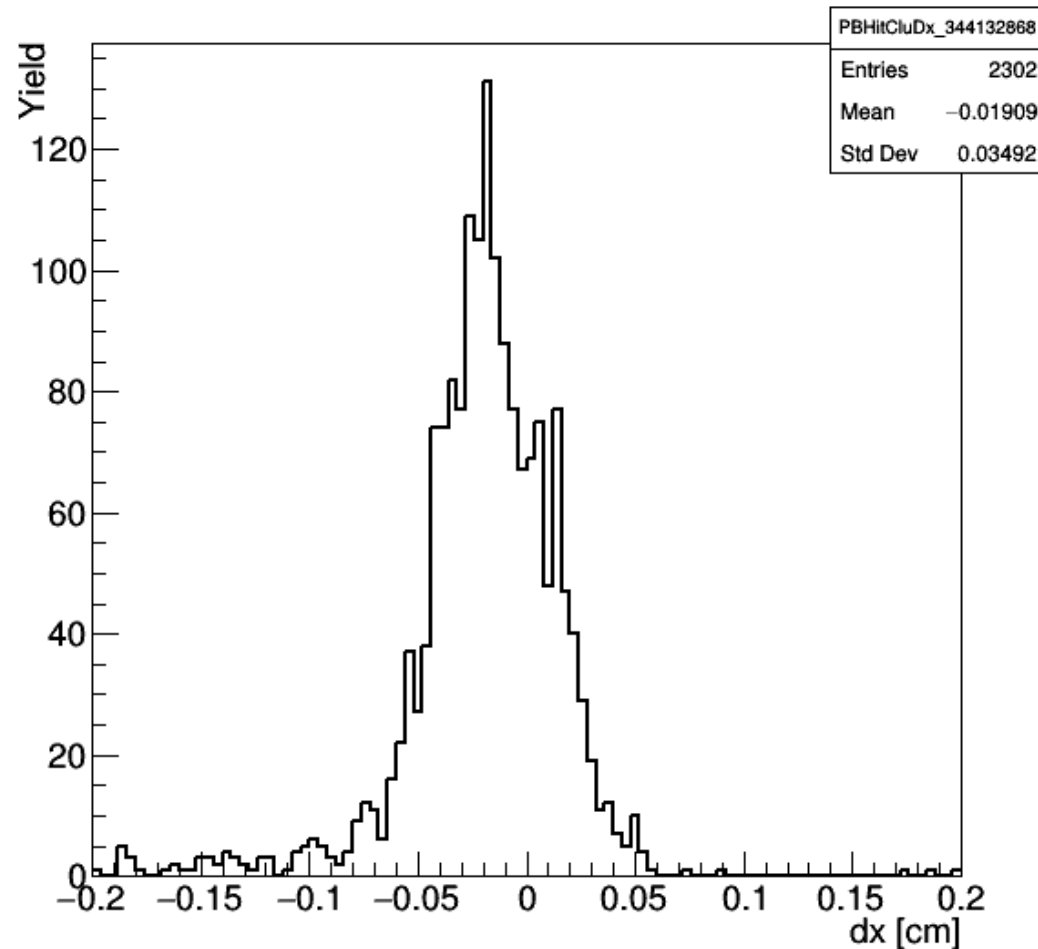
Local Position



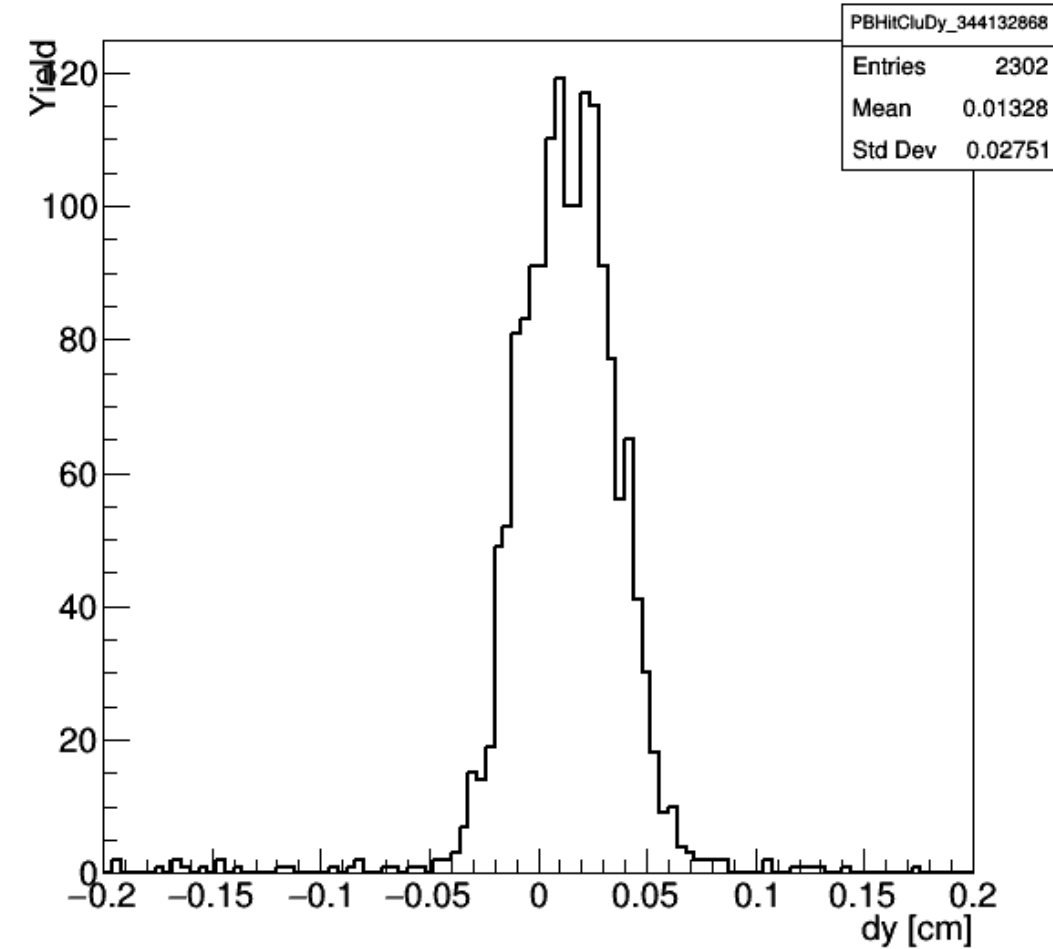
Residuals (Zoomed)

FPix_BmO_D3_BLD10_PNL1_ROC(f)

Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



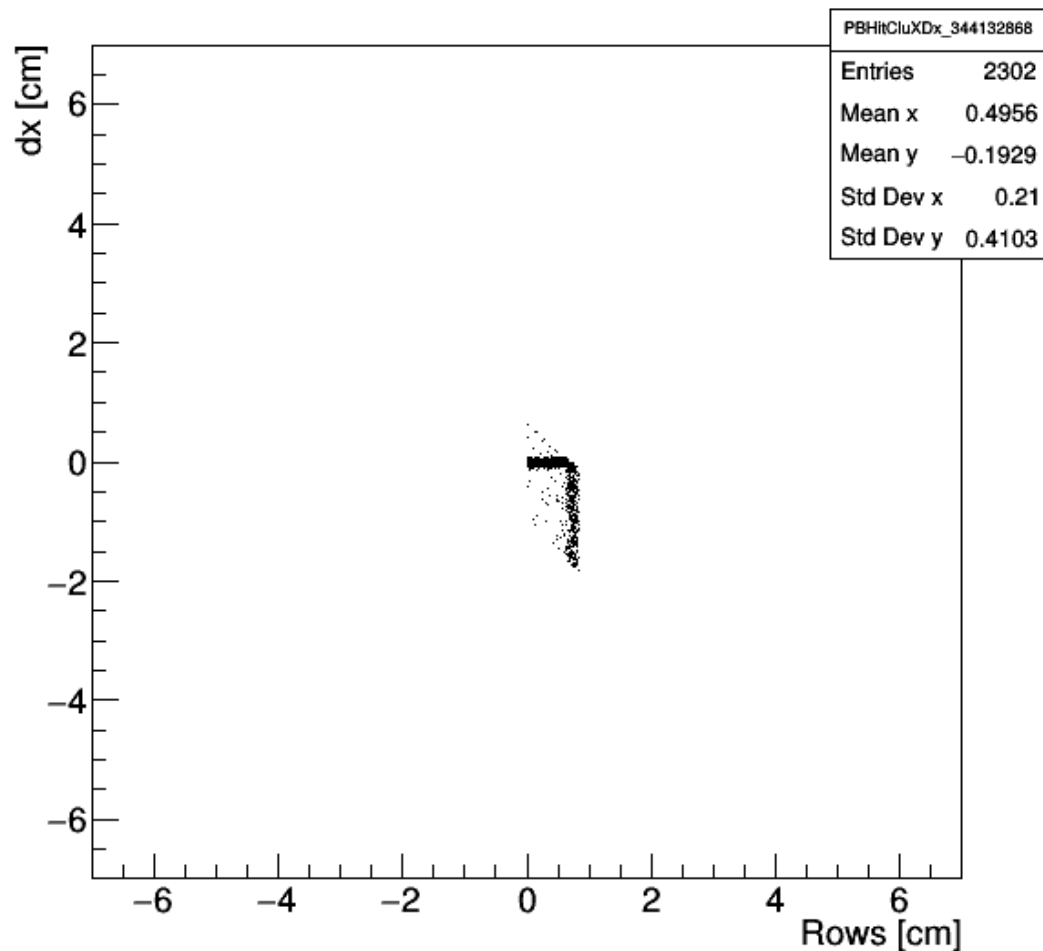
Rehit to nearest cluster distance in FPix_BmO_D3_BLD10_PNL1_PLQ1



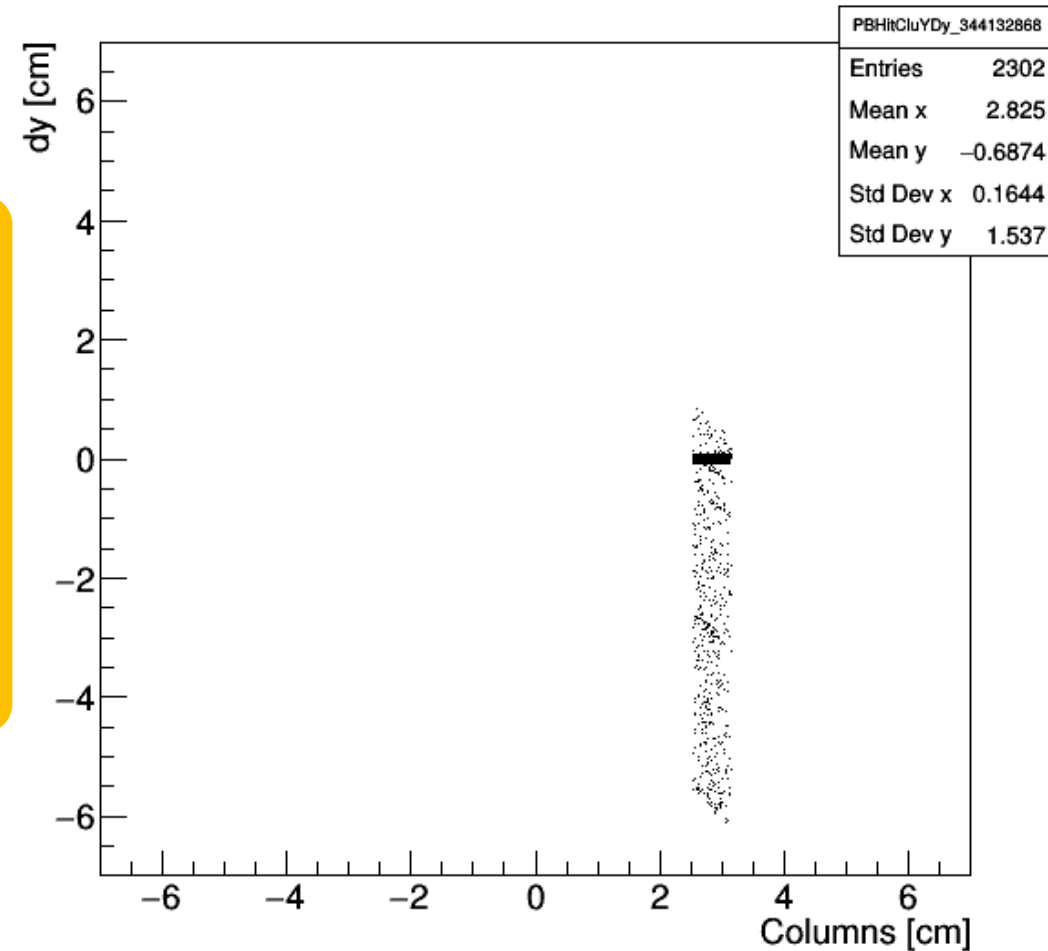
Position vs Residuals

$FPix_BmO_D3_BLD10_PNL1_ROC(f)$

Inactive rechit position (x) and the x residual $FPix_BmO_D3_BLD10_PNL1_PLQ1$



Inactive rechit position (y) and the y residual $FPix_BmO_D3_BLD10_PNL1_PLQ1$



Efficiencies

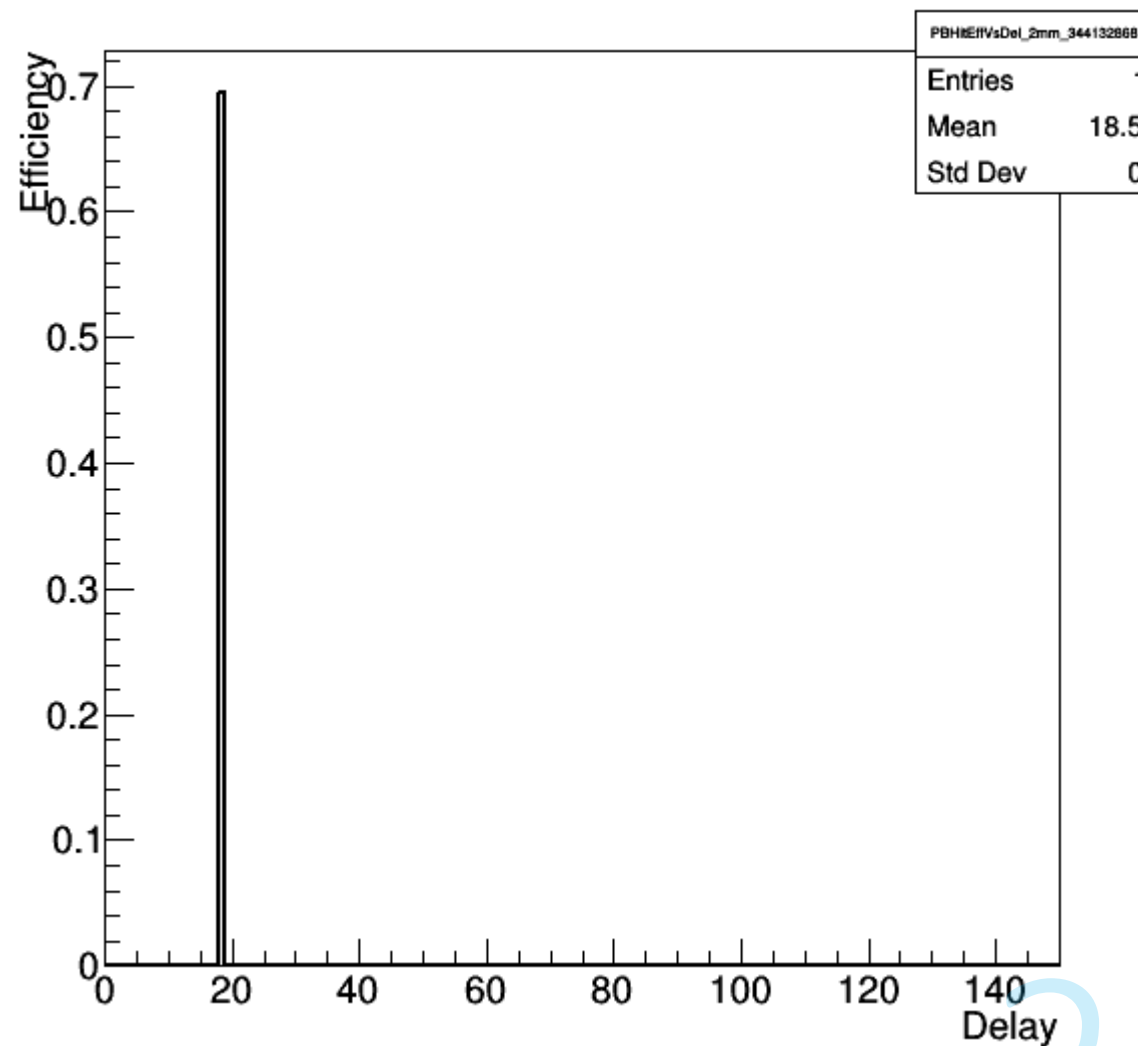
$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD10_PNL1_ROC(f)

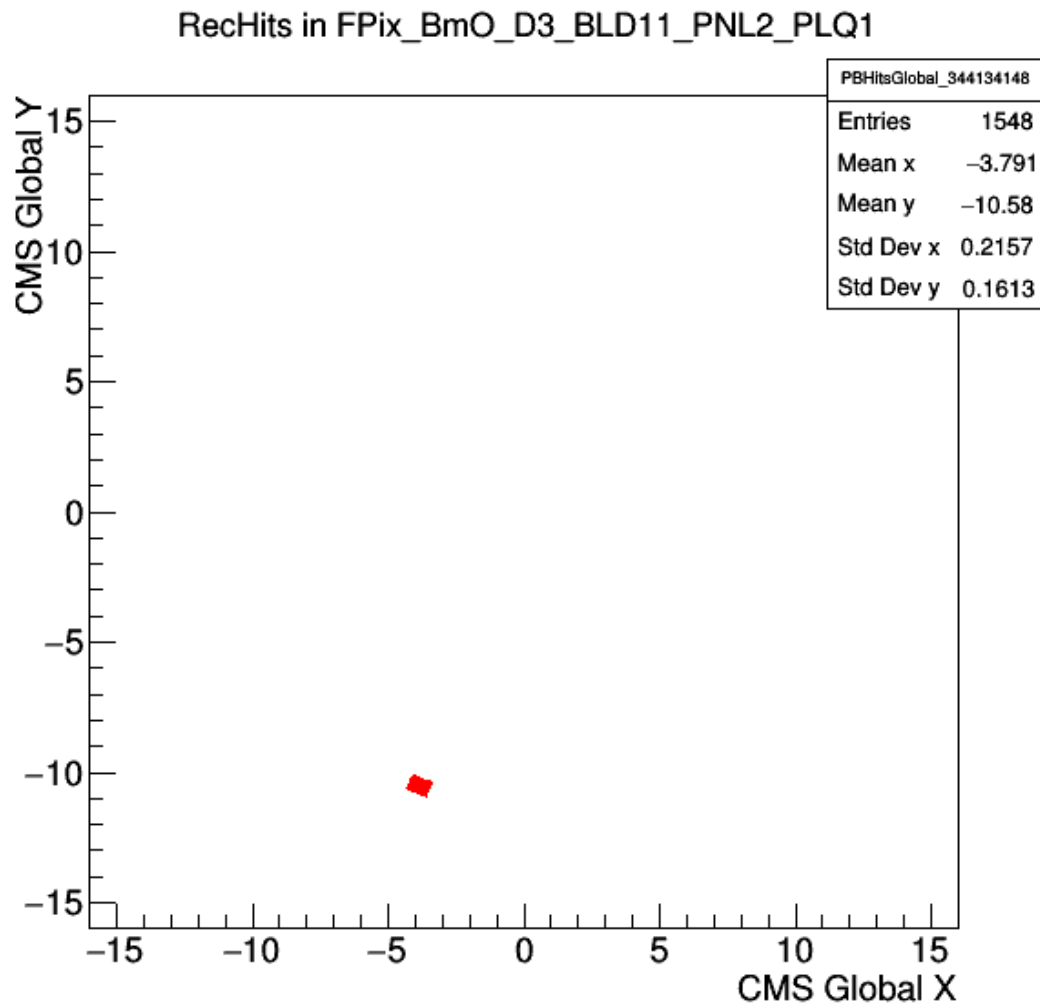
RecHit efficiency vs Delay in FPix_BmO_D3_BLD10_PNL1_PLQ1



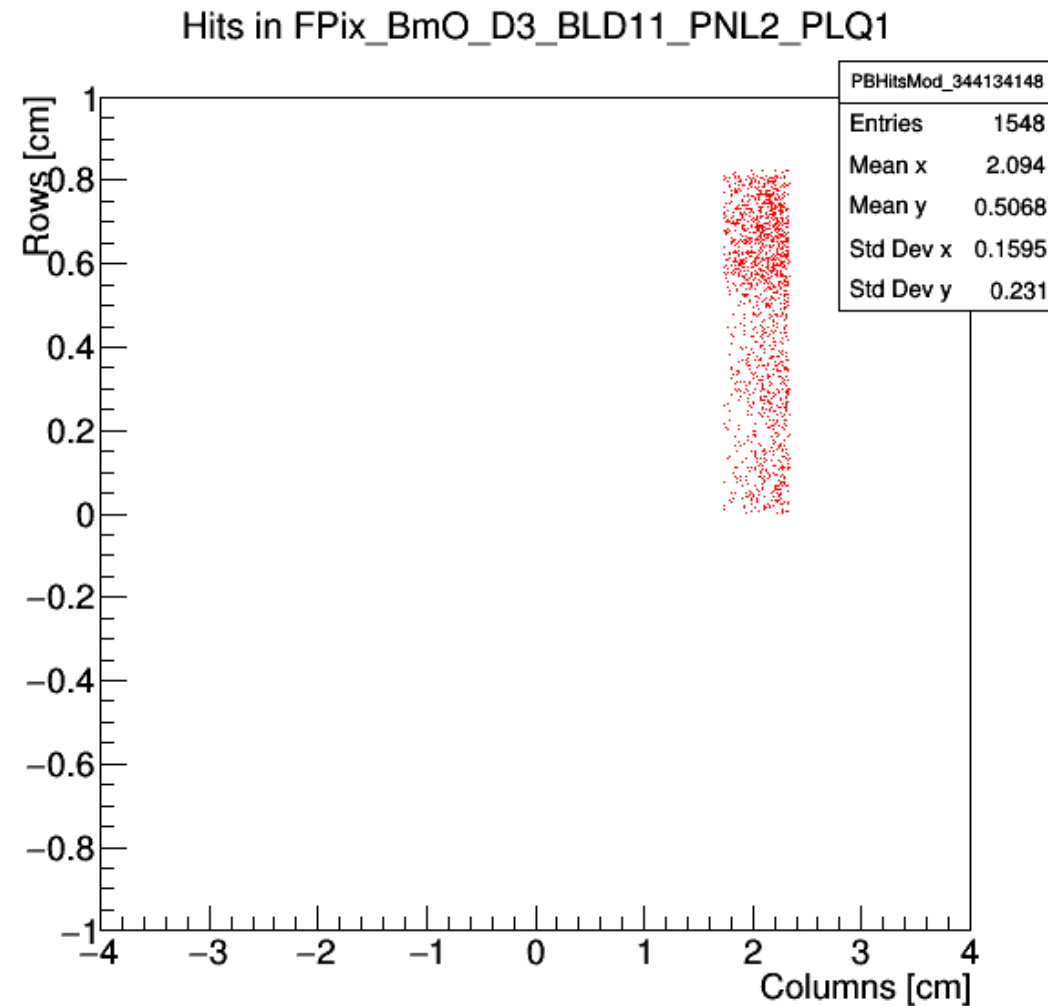
Position of the ROC

FPix_BmO_D3_BLD11_PNL2_ROC(a)

Global Position



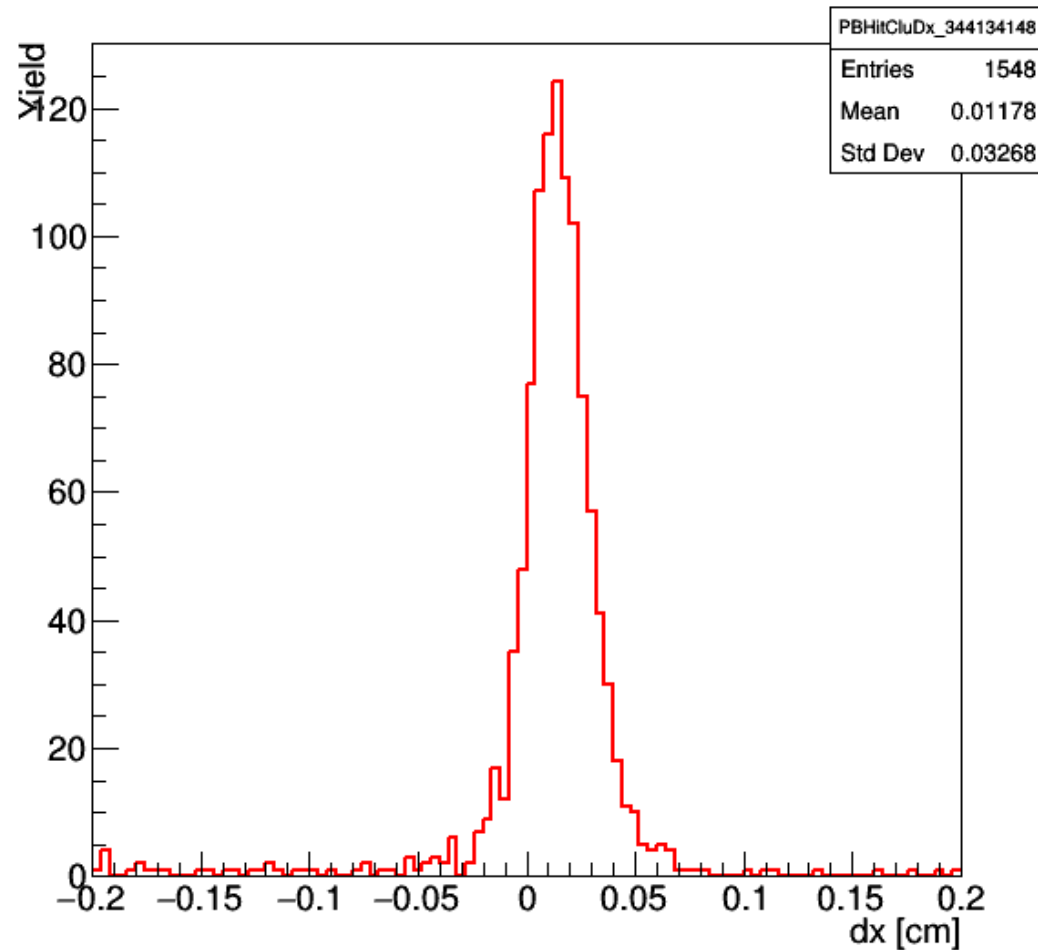
Local Position



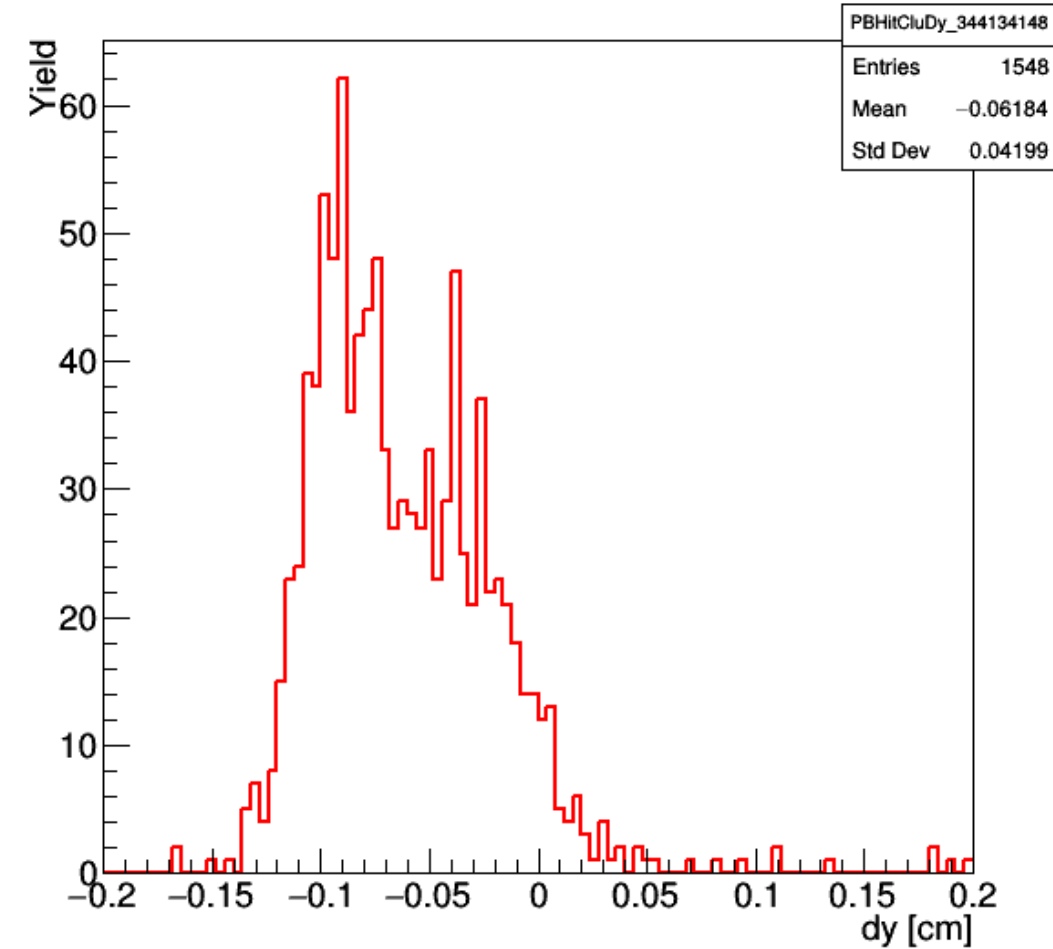
Residuals (Zoomed)

FPix_BmO_D3_BLD11_PNL2_ROC(a)

Rehit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1



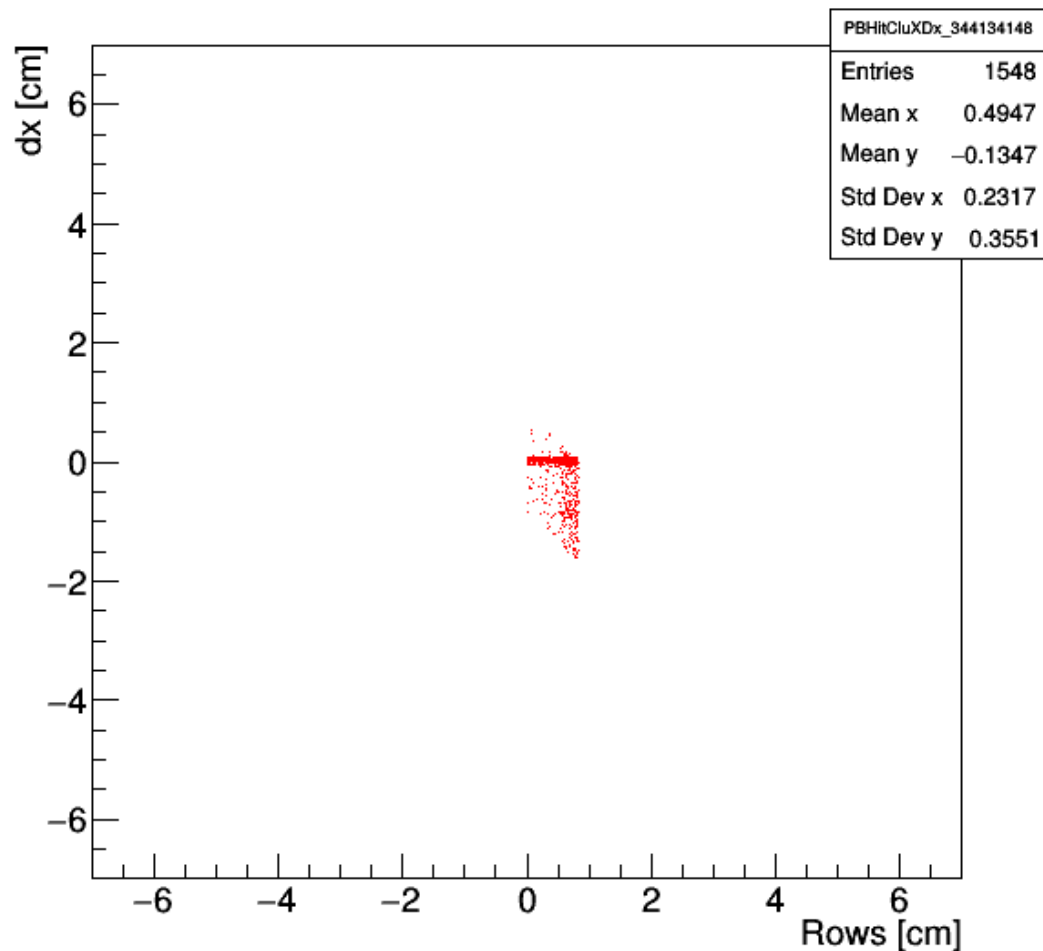
Rehit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1



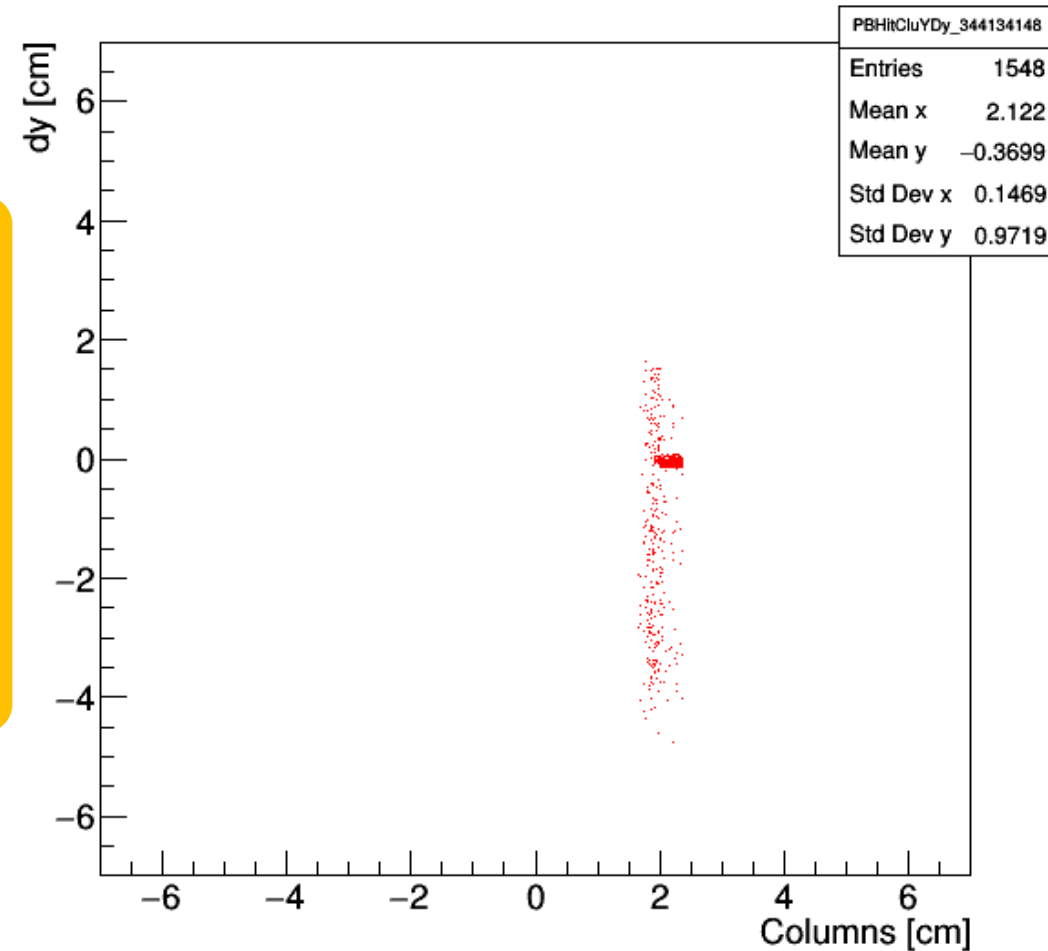
Position vs Residuals

FPix_BmO_D3_BLD11_PNL2_ROC(a)

Inactive rechit position (x) and the x residual FPix_BmO_D3_BLD11_PNL2_PLQ1



Inactive rechit position (y) and the y residual FPix_BmO_D3_BLD11_PNL2_PLQ1



Efficiencies

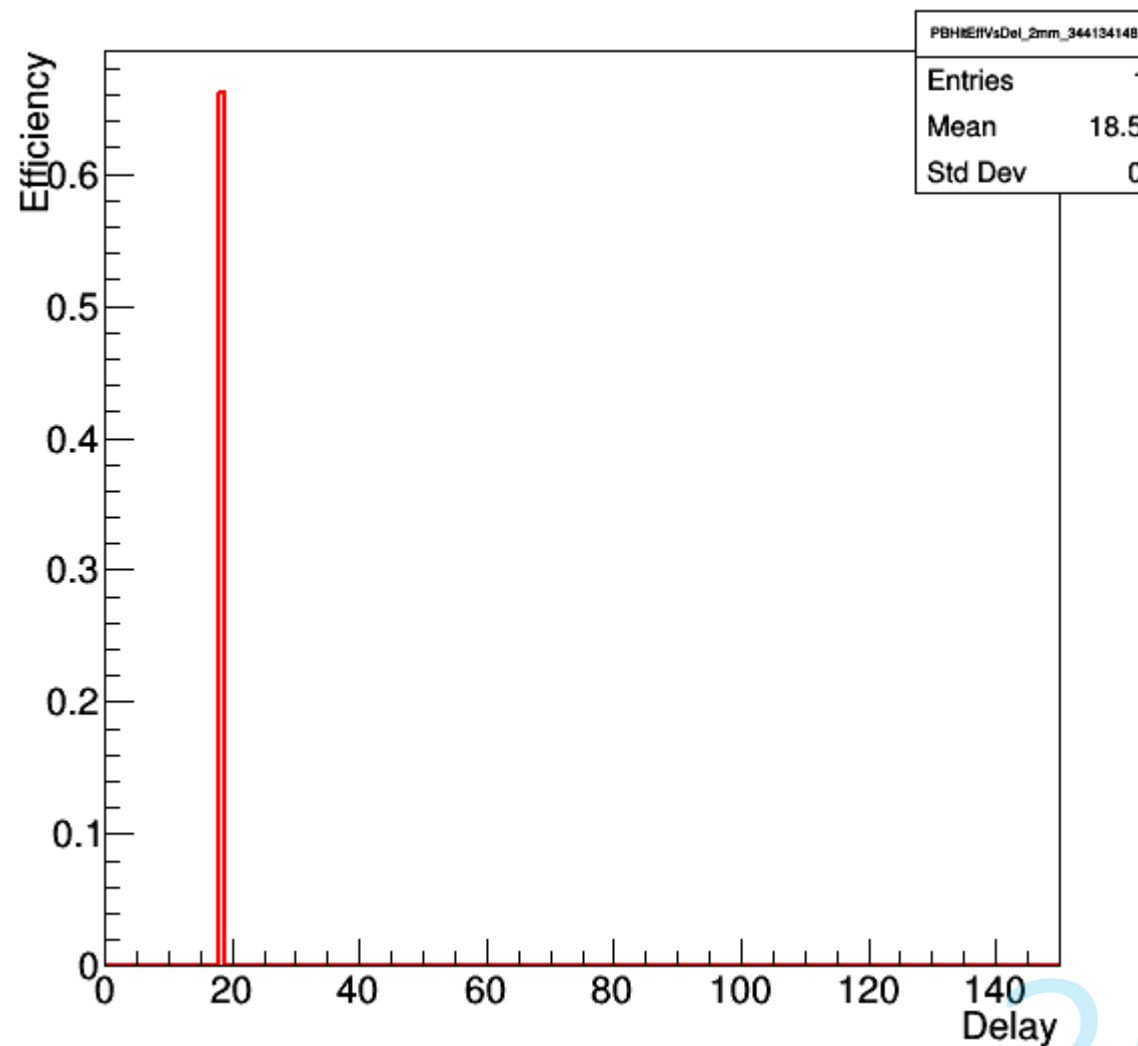
$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD11_PNL2_ROC(a)

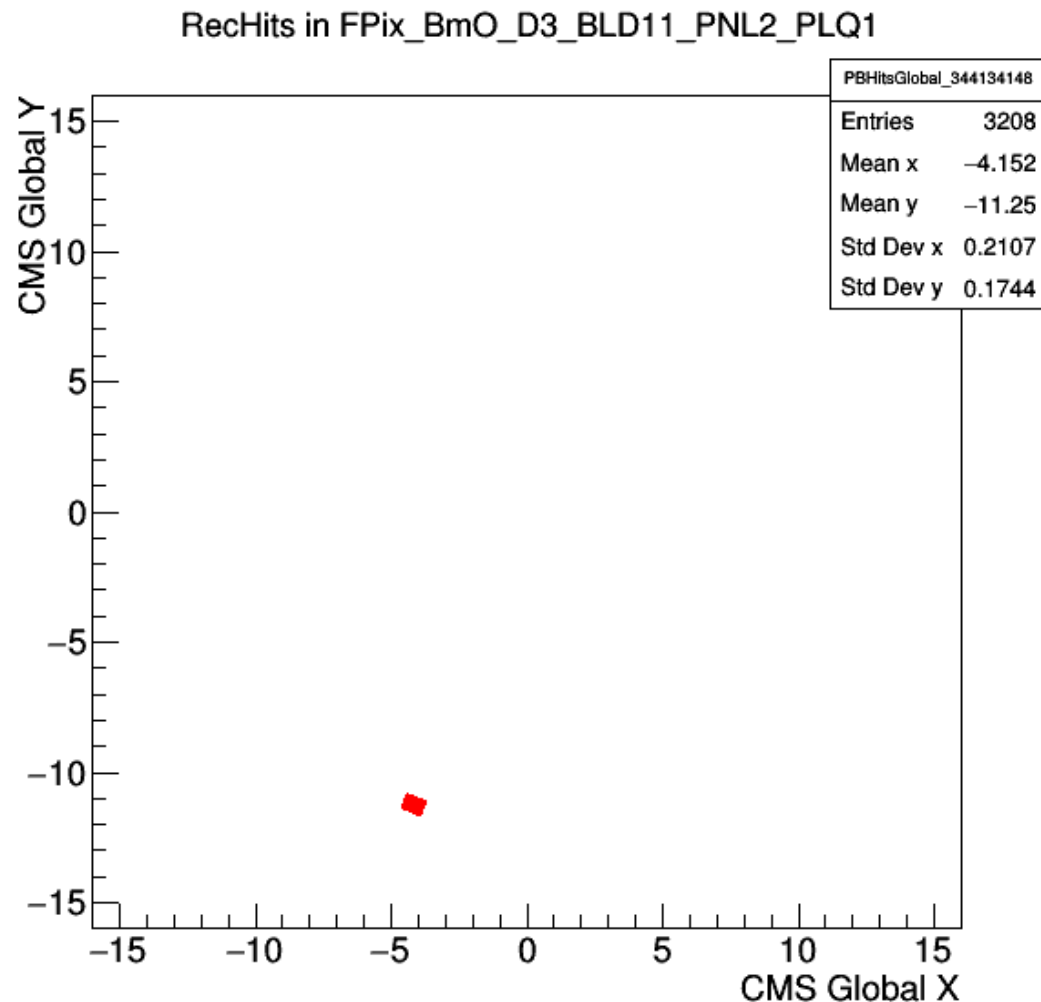
RecHit efficiency vs Delay in FPix_BmO_D3_BLD11_PNL2_PLQ1



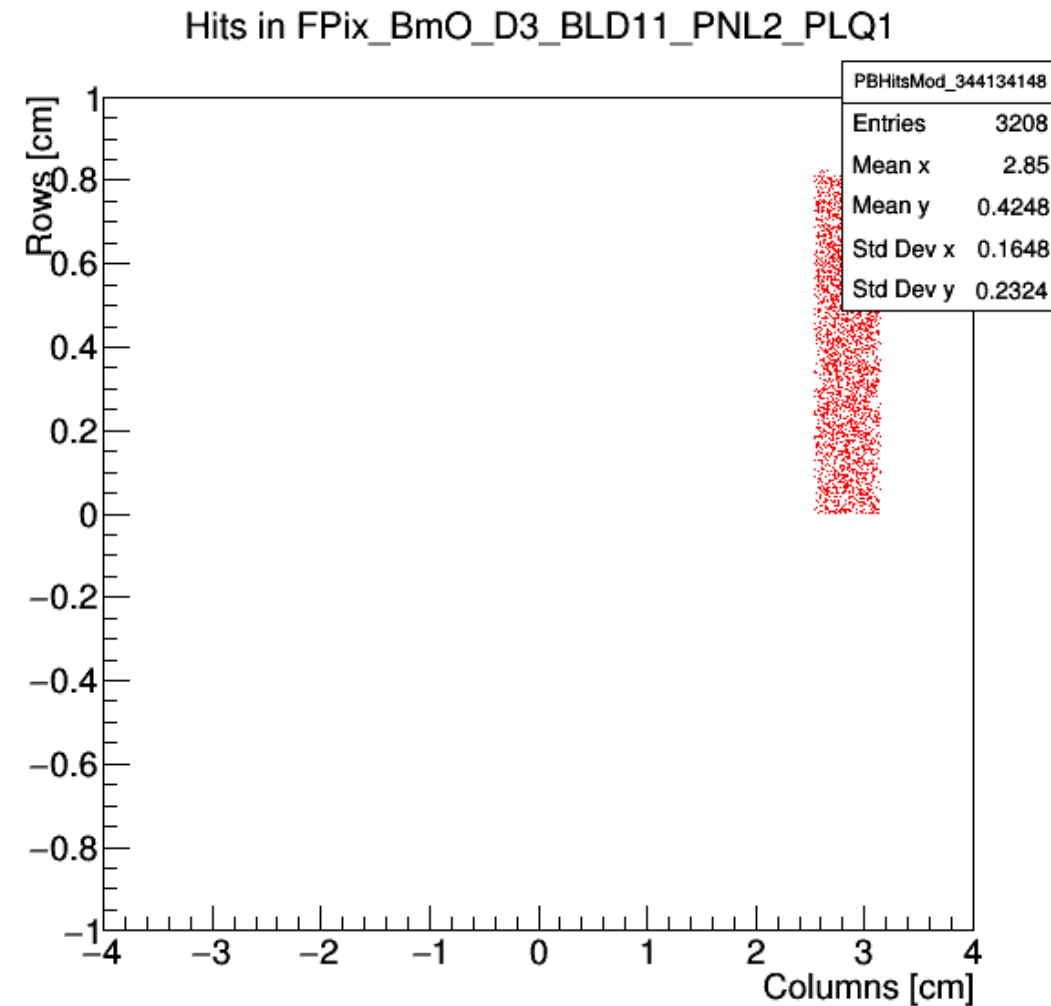
Position of the ROC

FPix_BmO_D3_BLD11_PNL2_ROC(b)

Global Position



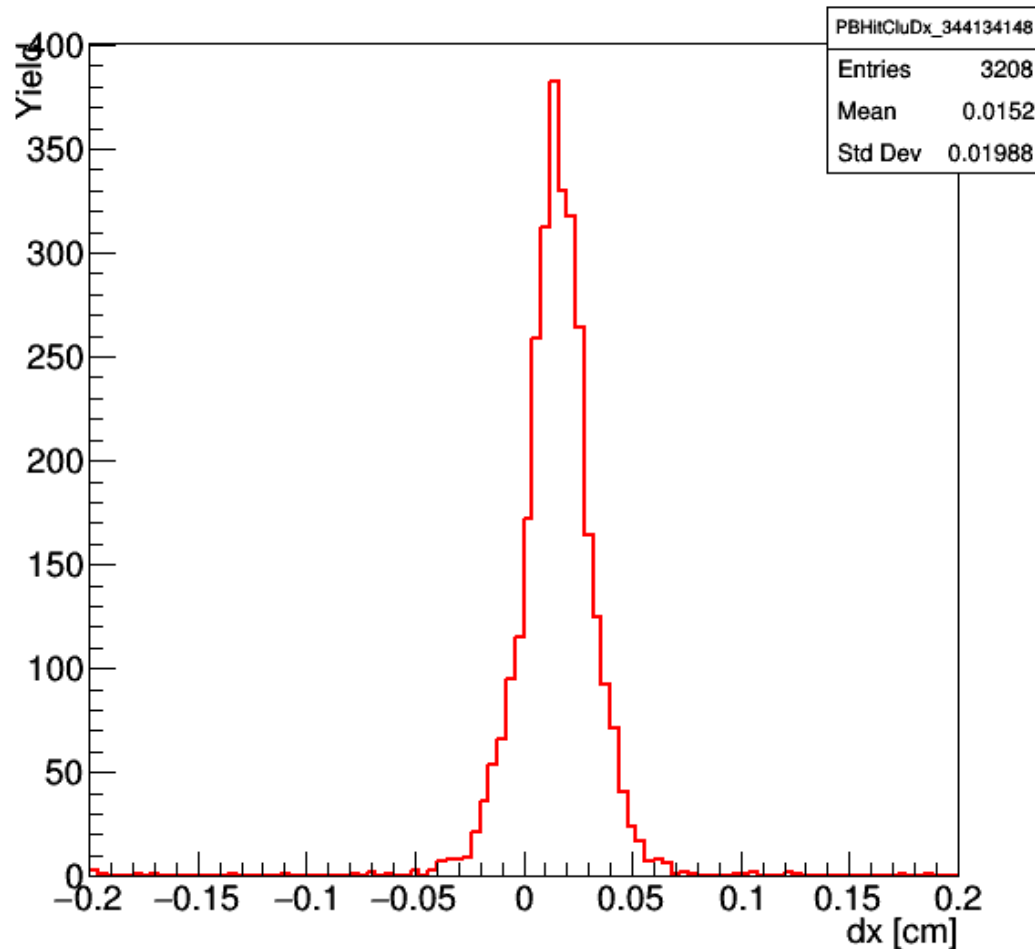
Local Position



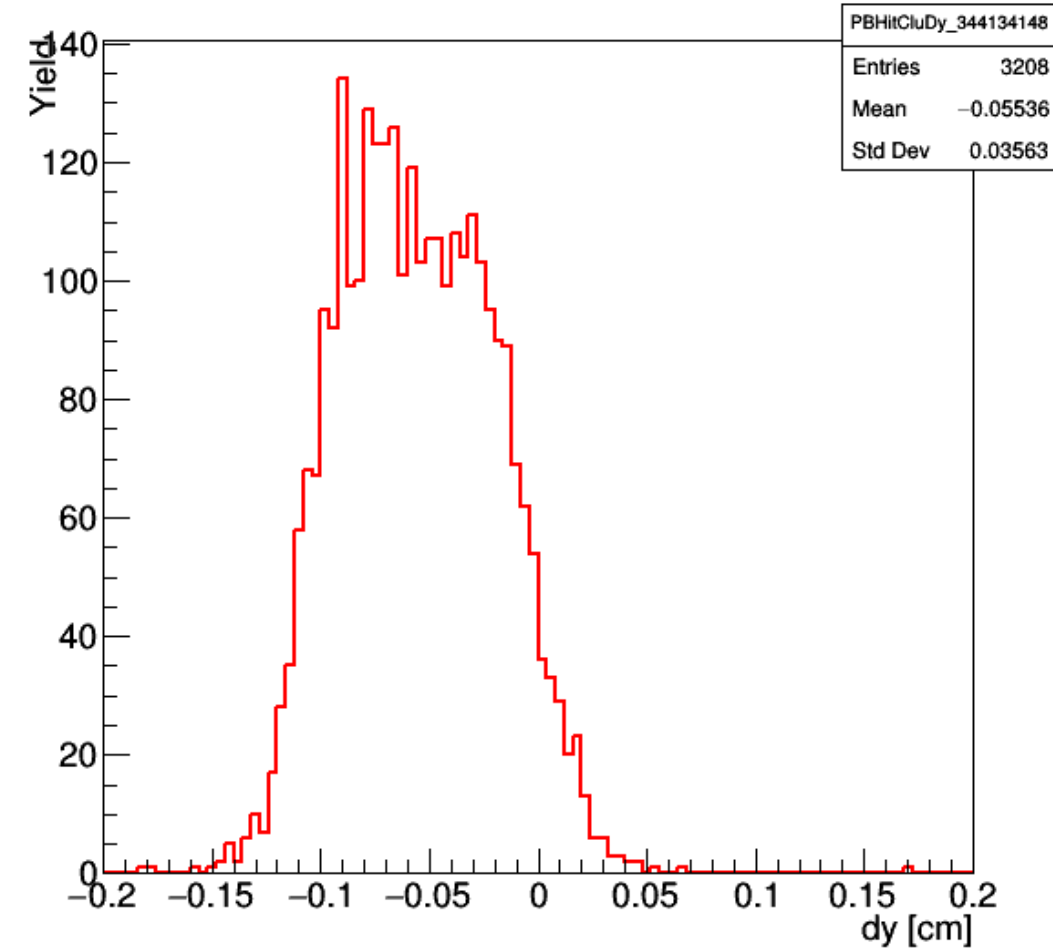
Residuals (Zoomed)

FPix_BmO_D3_BLD11_PNL2_ROC(b)

Rehit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1



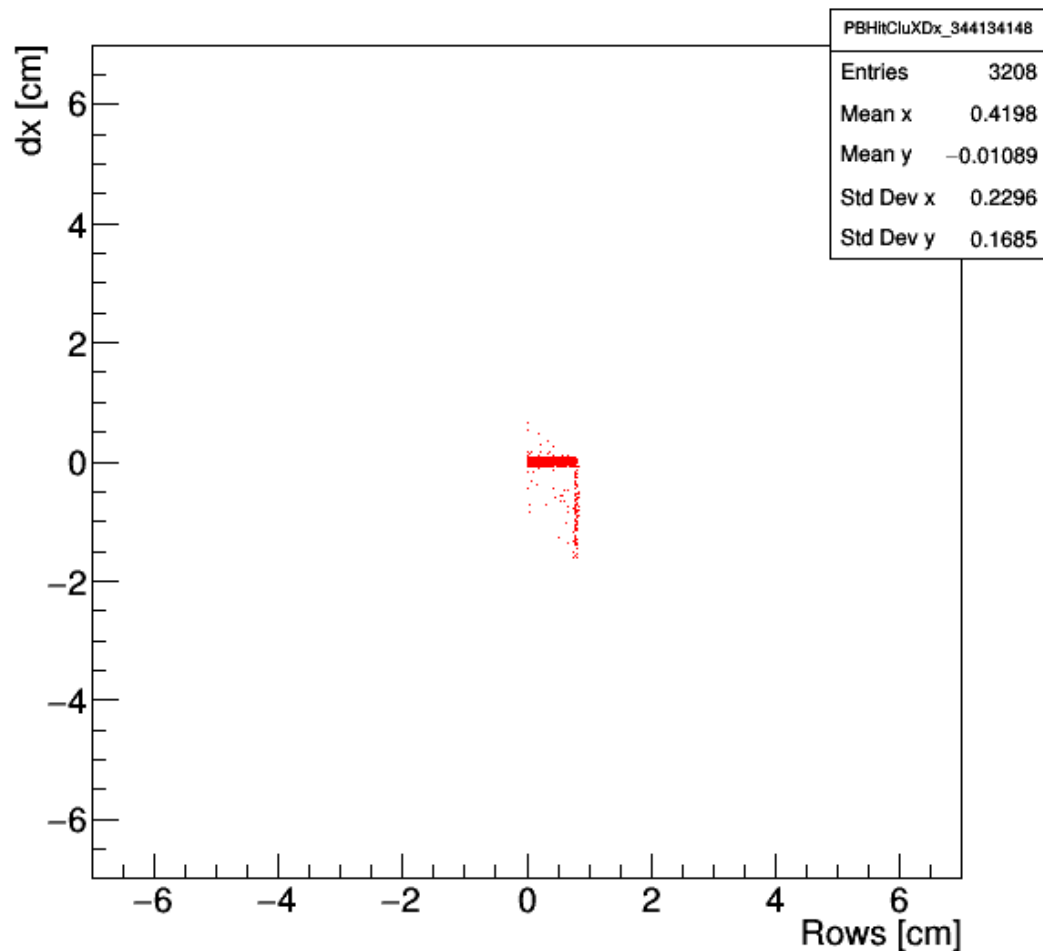
Rehit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1



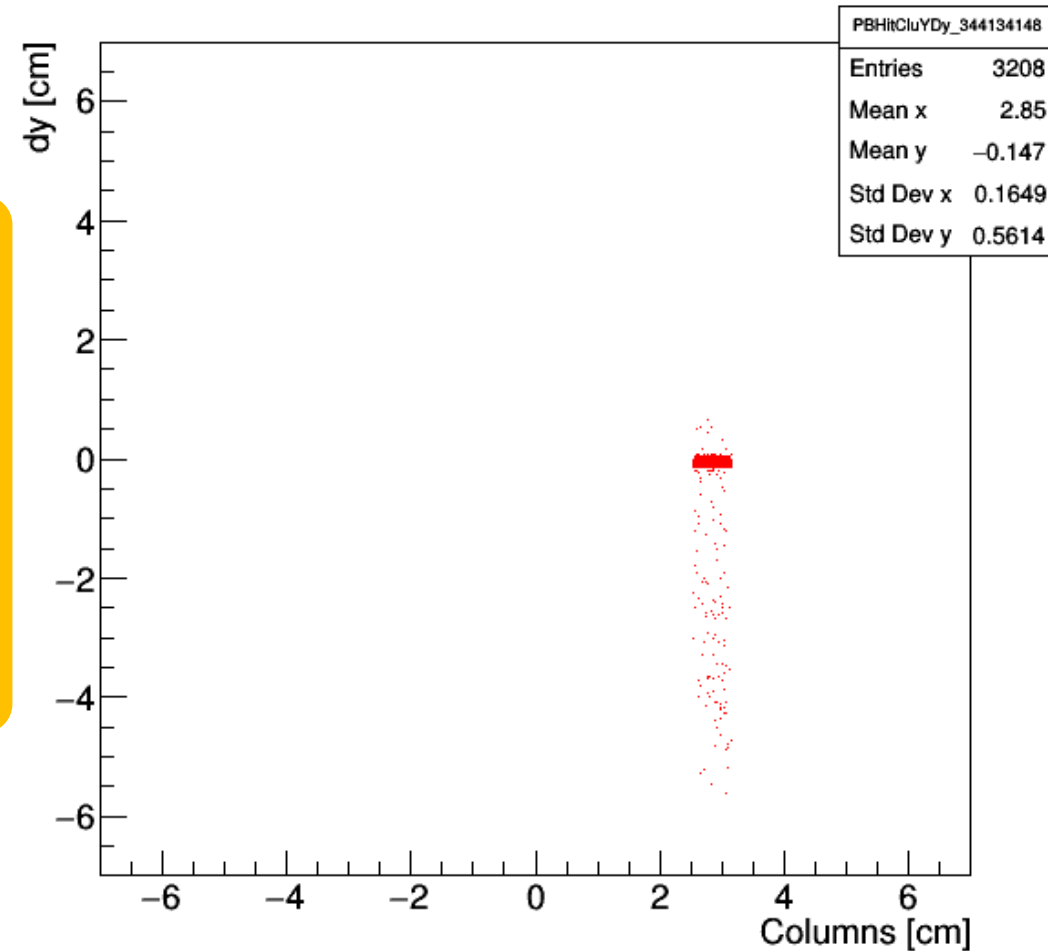
Position vs Residuals

FPix_BmO_D3_BLD11_PNL2_ROC(b)

Inactive rechit position (x) and the x residual FPix_BmO_D3_BLD11_PNL2_PLQ1



Inactive rechit position (y) and the y residual FPix_BmO_D3_BLD11_PNL2_PLQ1



Efficiencies

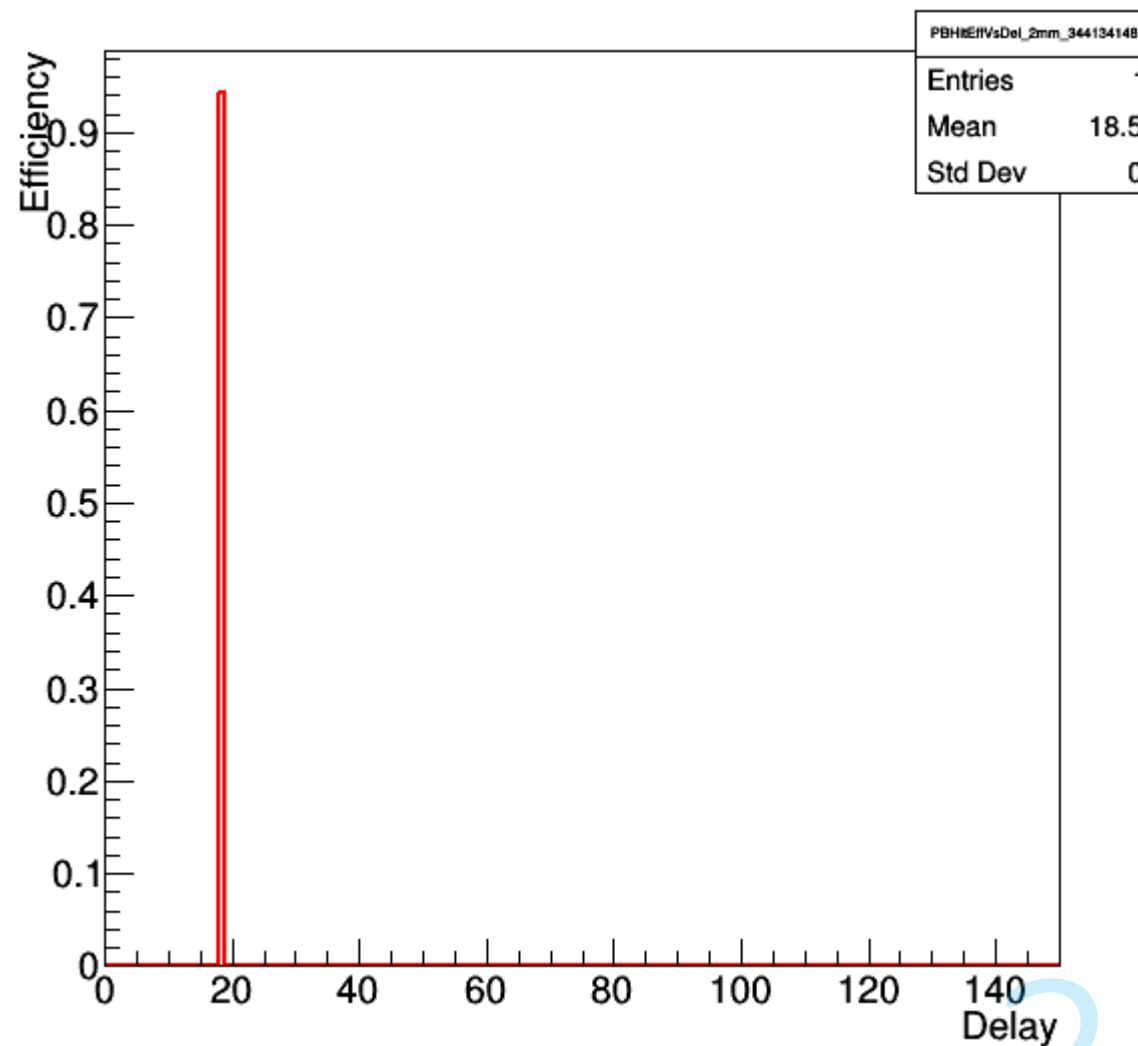
$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD11_PNL2_ROC(b)

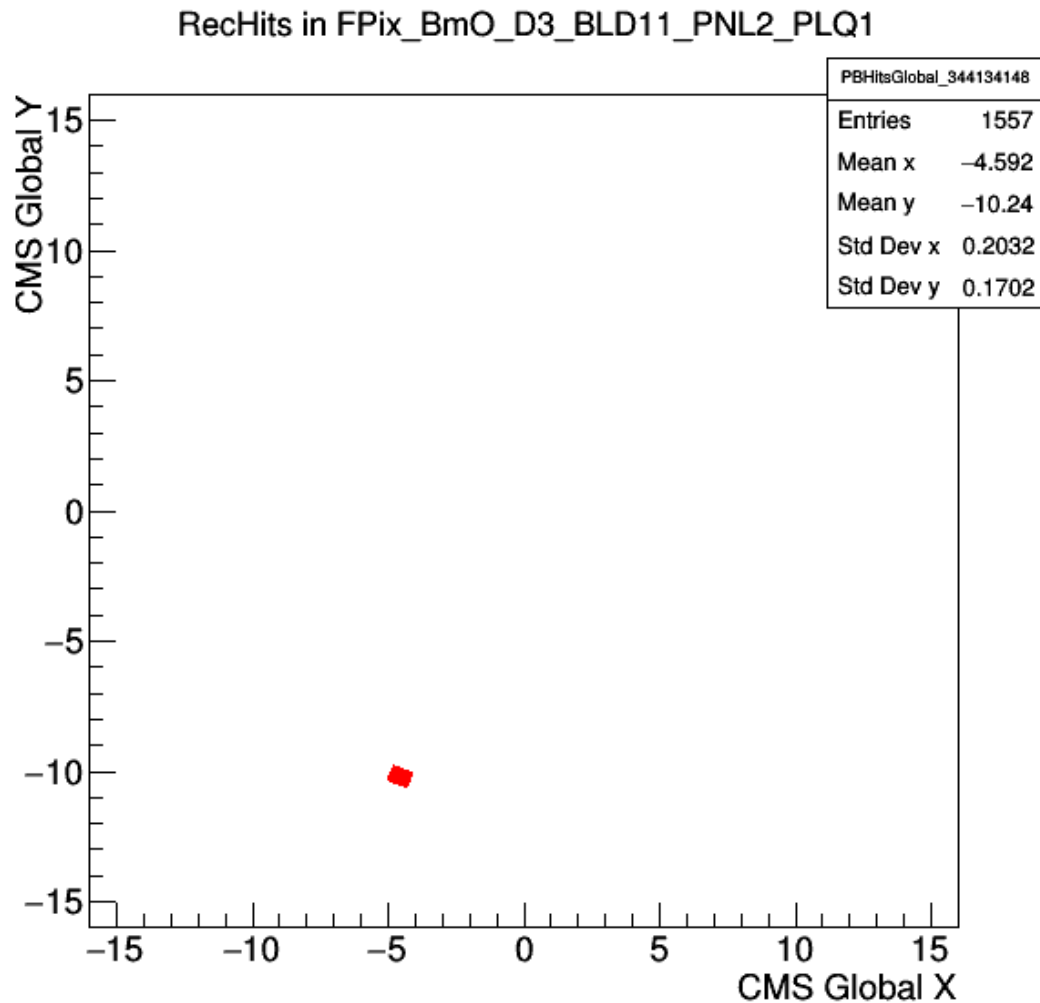
RecHit efficiency vs Delay in FPix_BmO_D3_BLD11_PNL2_PLQ1



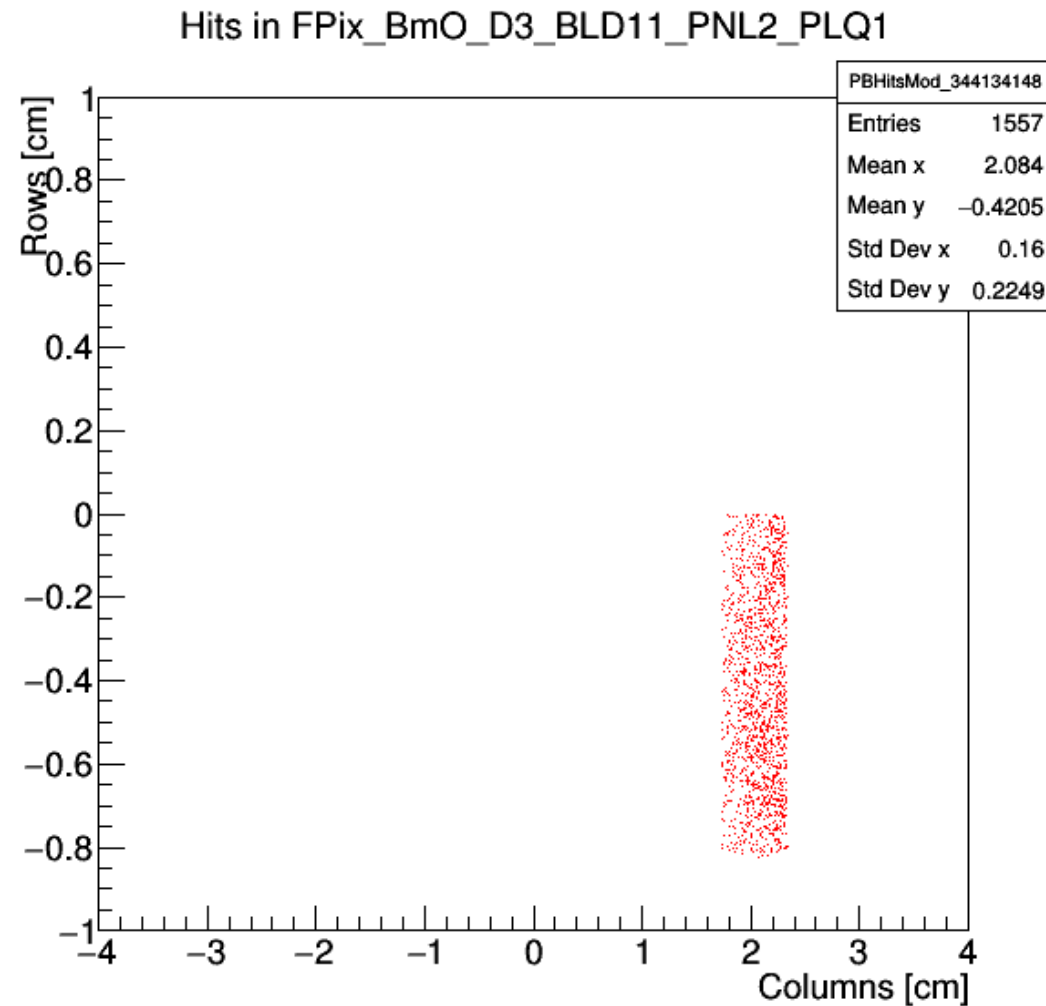
Position of the ROC

FPix_BmO_D3_BLD11_PNL2_ROC(c)

Global Position



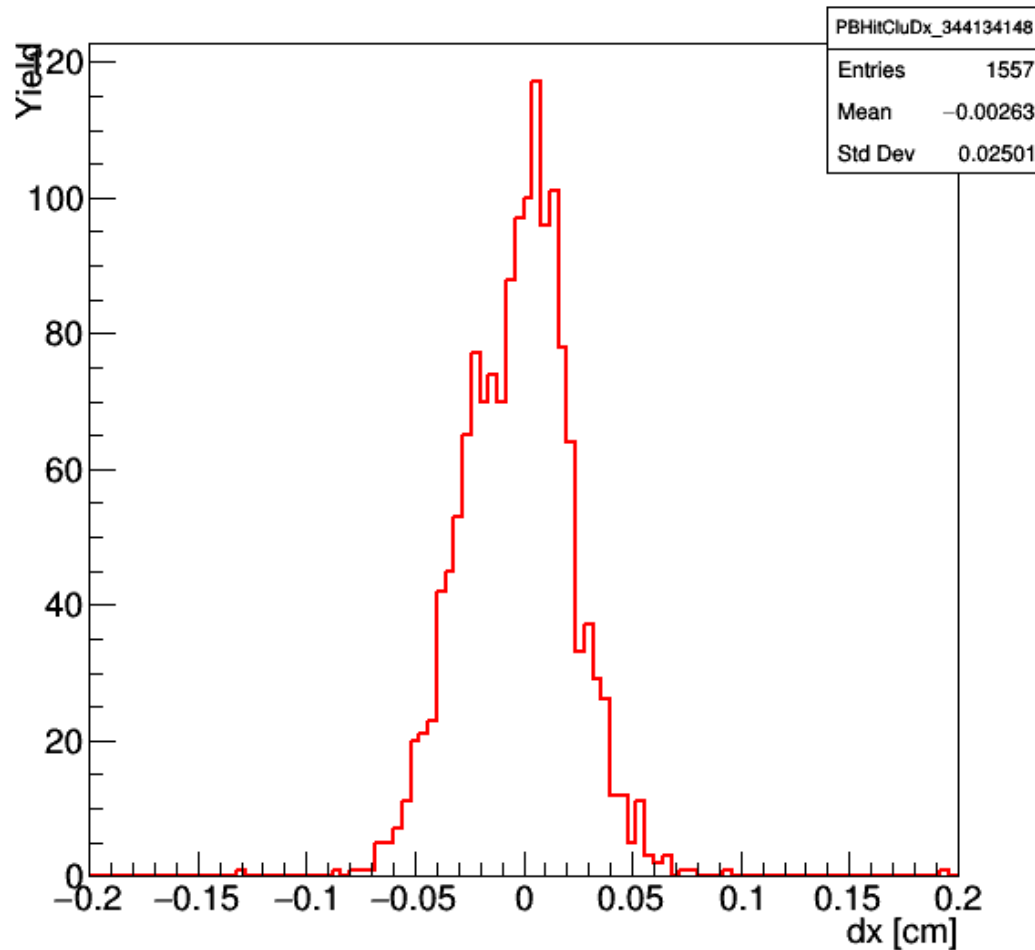
Local Position



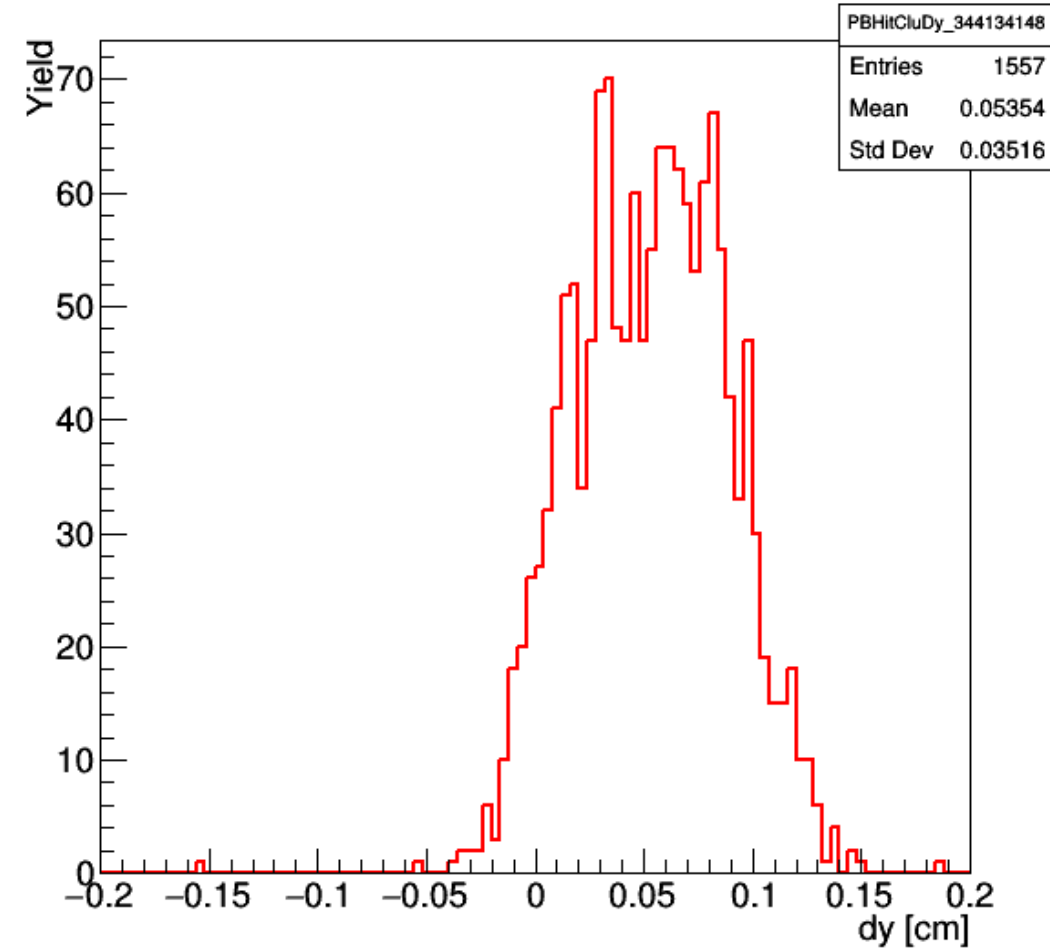
Residuals (Zoomed)

FPix_BmO_D3_BLD11_PNL2_ROC(c)

Rehit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1



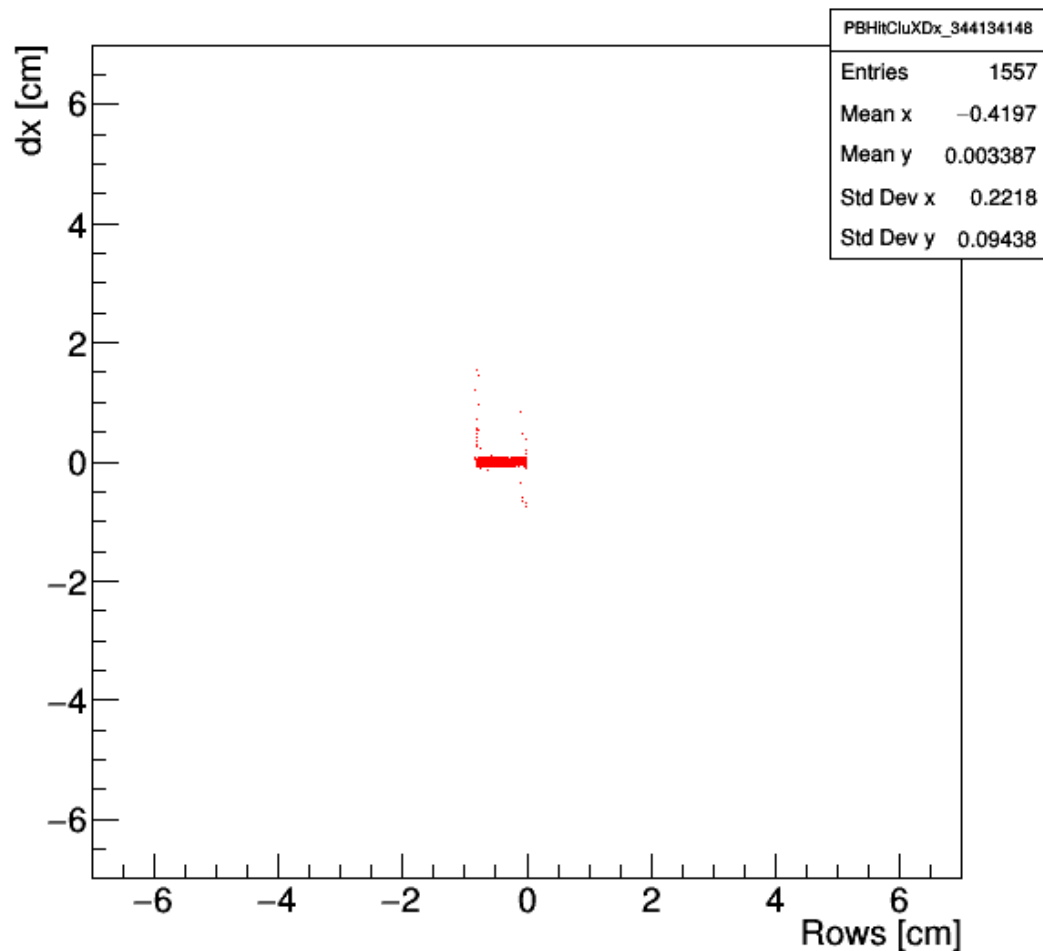
Rehit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1



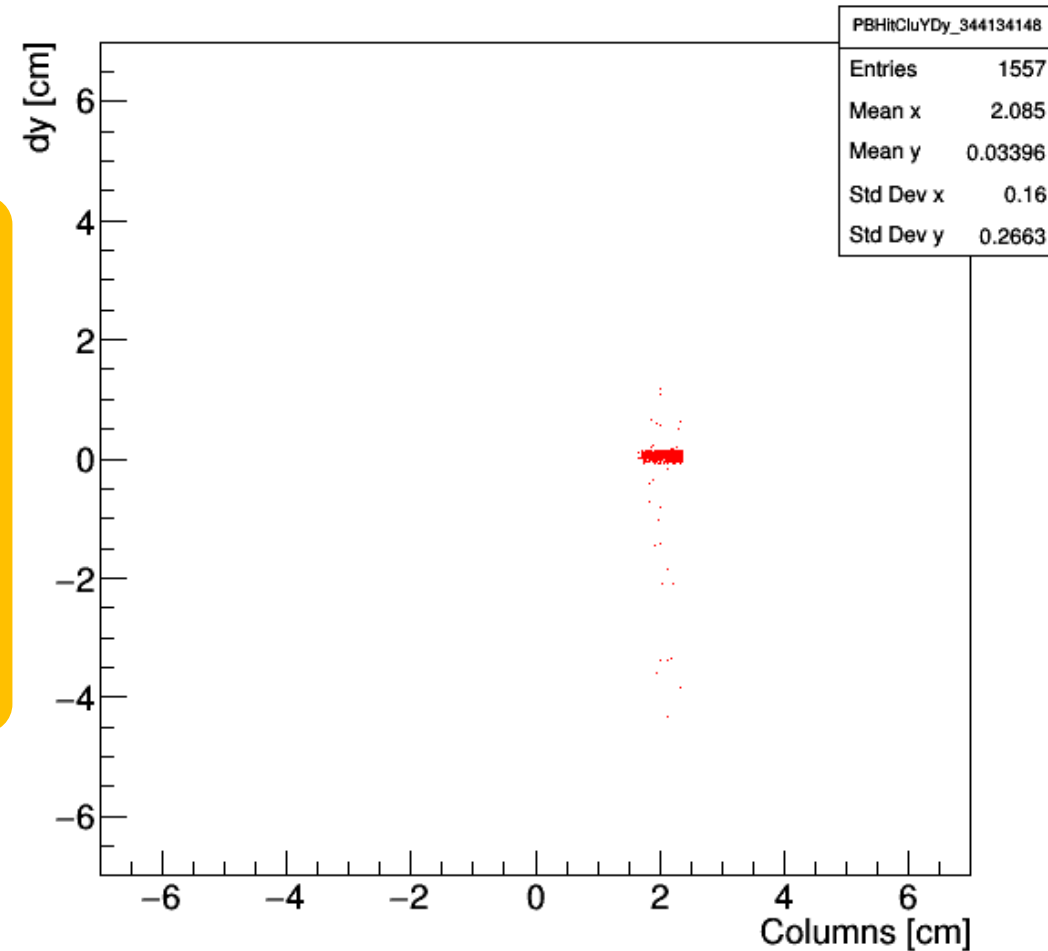
Position vs Residuals

FPix_BmO_D3_BLD11_PNL2_ROC(c)

Inactive rechit position (x) and the x residual FPix_BmO_D3_BLD11_PNL2_PLQ1



Inactive rechit position (y) and the y residual FPix_BmO_D3_BLD11_PNL2_PLQ1



Efficiencies

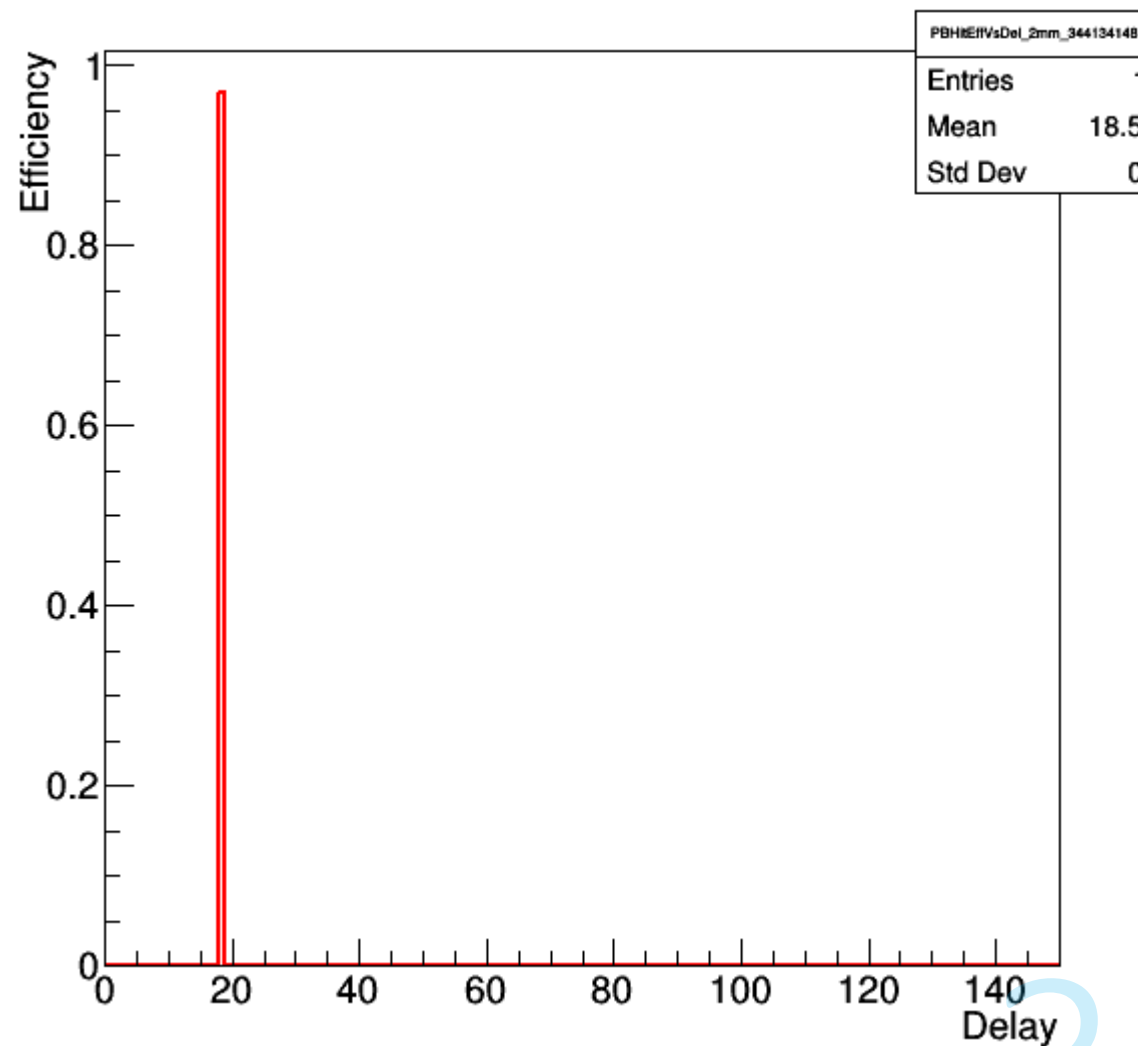
$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD11_PNL2_ROC(c)

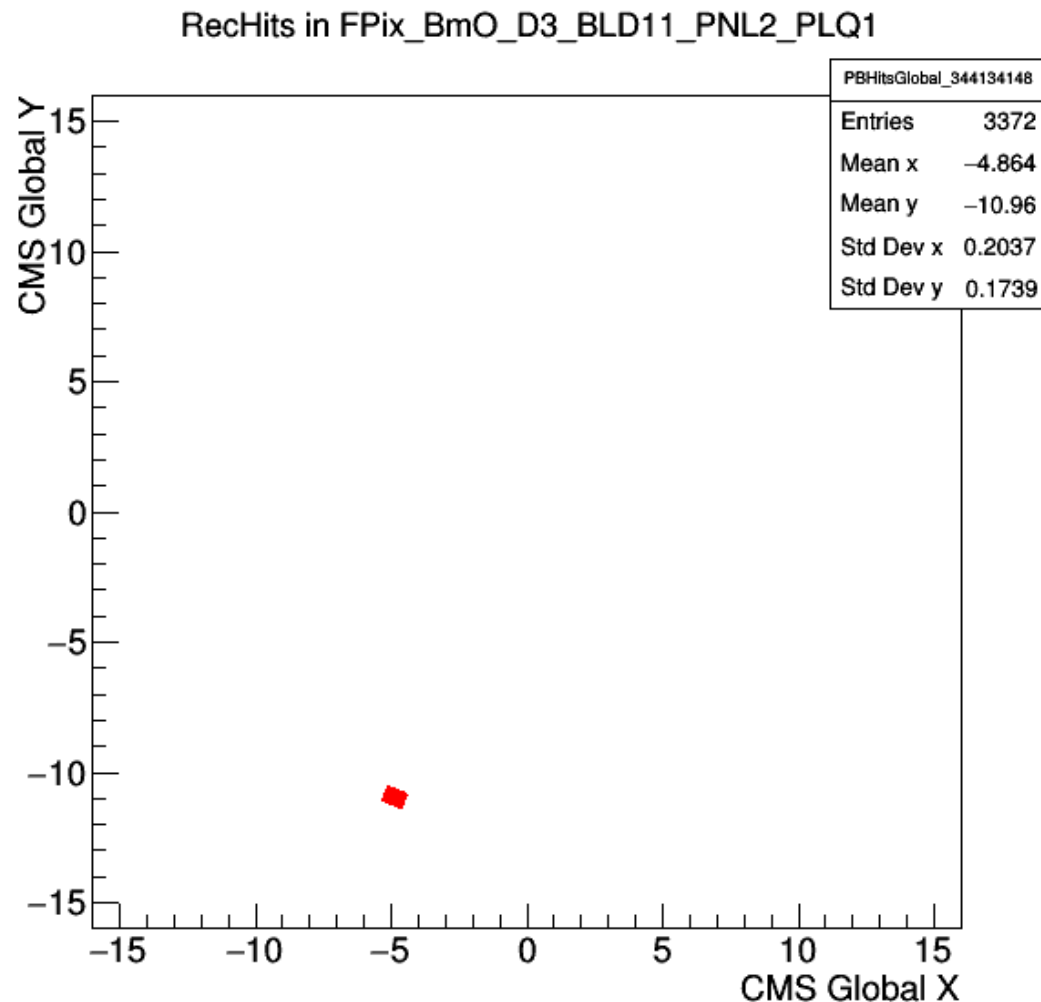
RecHit efficiency vs Delay in FPix_BmO_D3_BLD11_PNL2_PLQ1



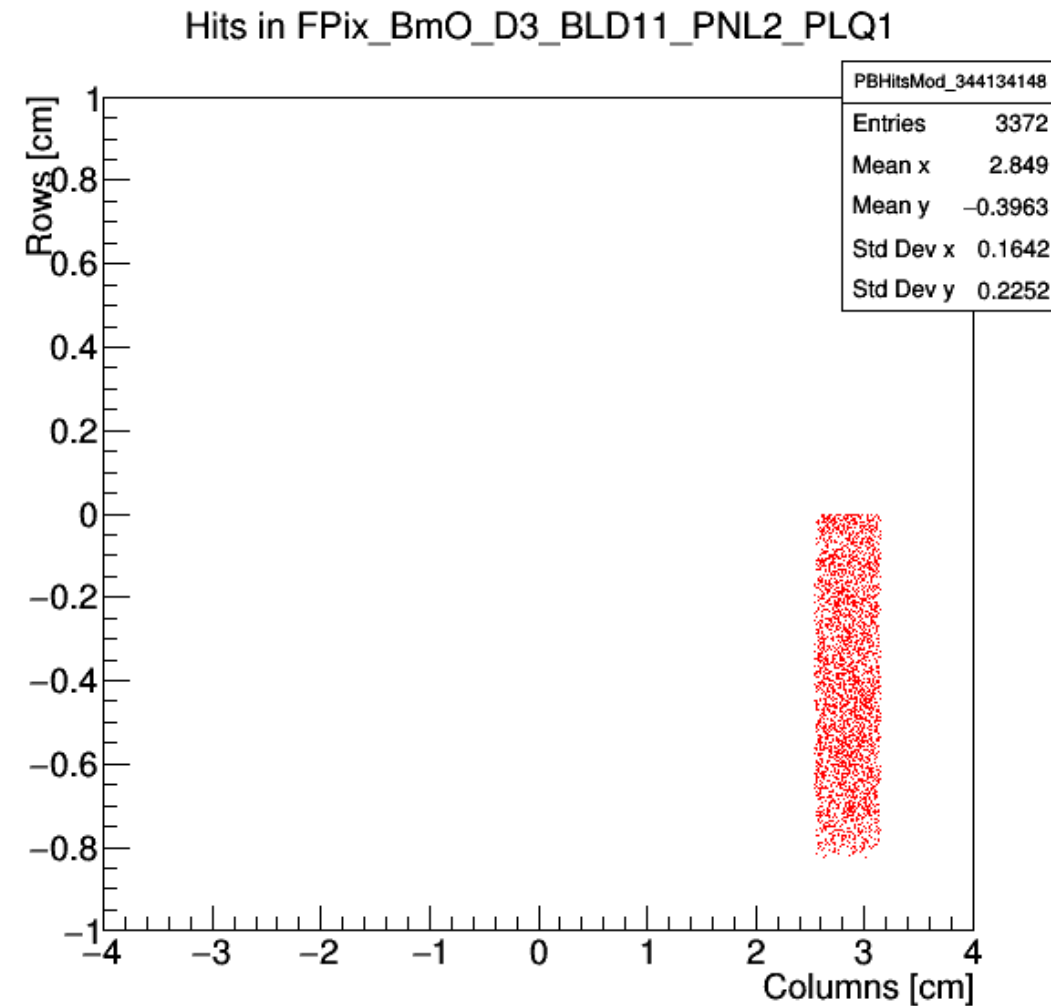
Position of the ROC

FPix_BmO_D3_BLD11_PNL2_ROC(d)

Global Position



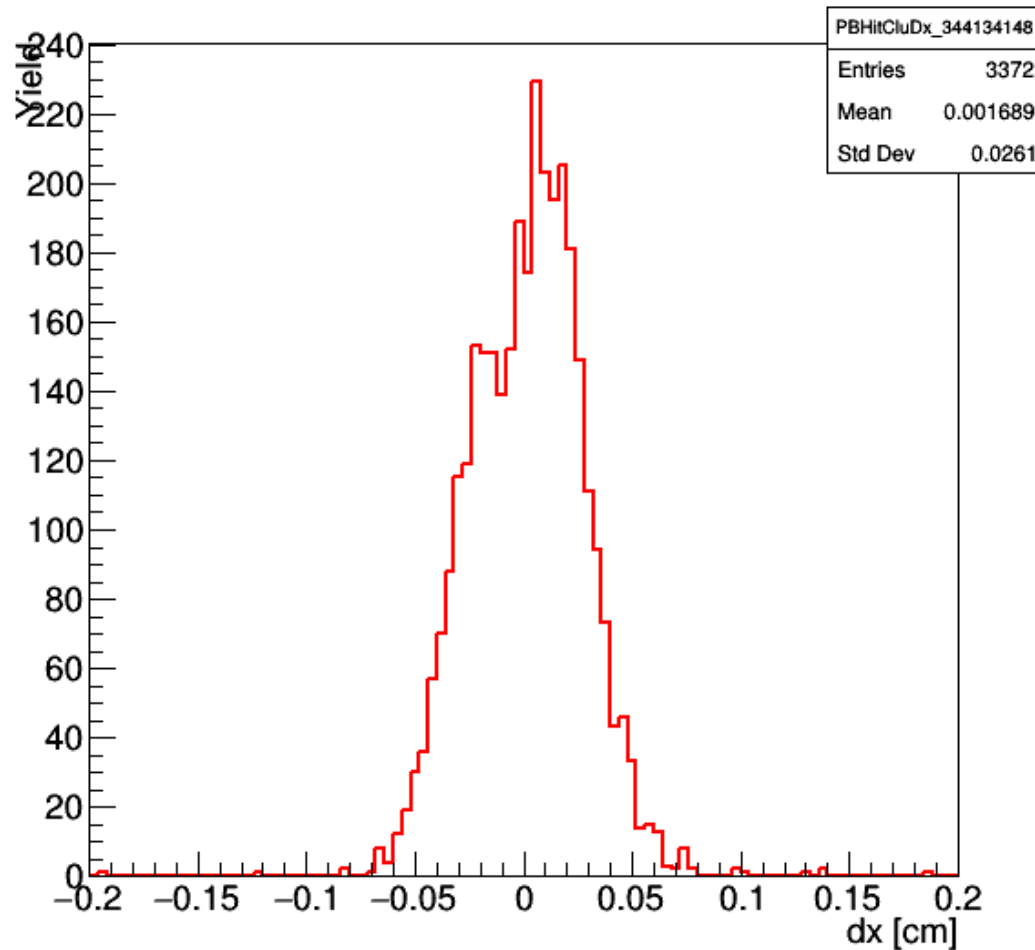
Local Position



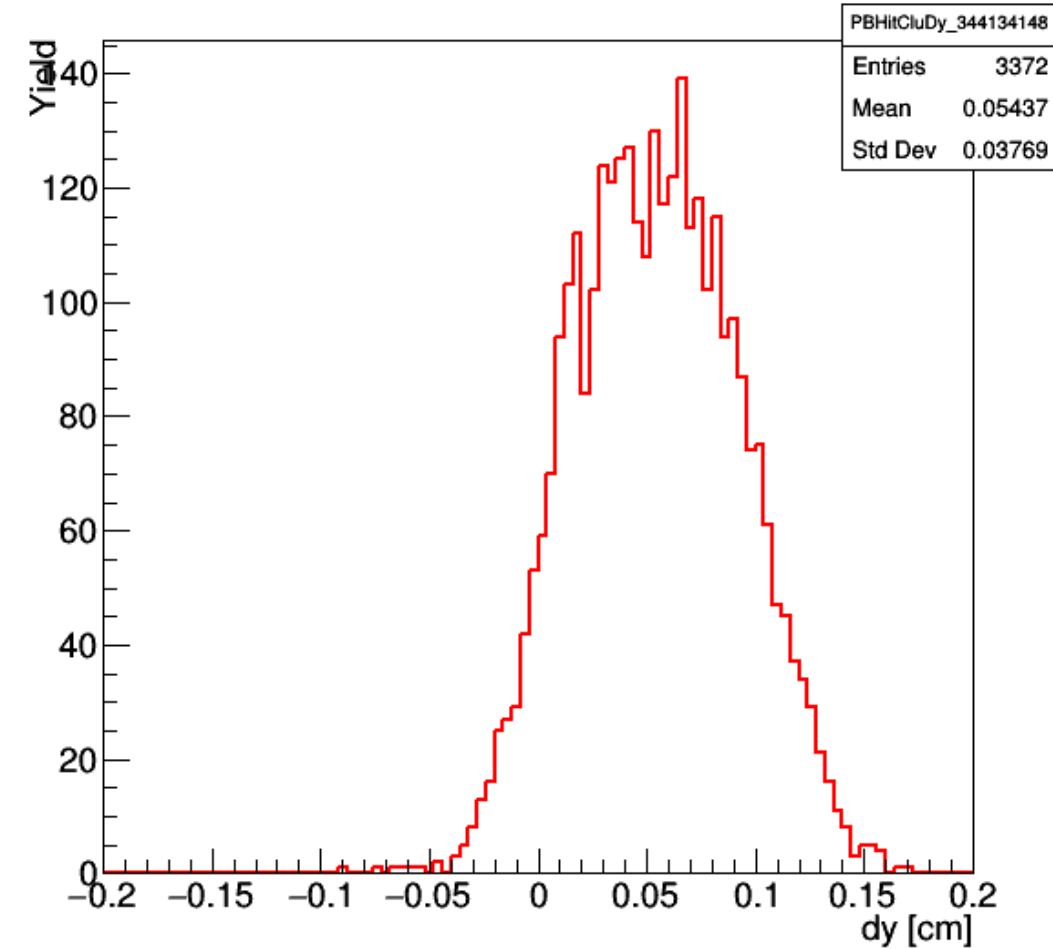
Residuals (Zoomed)

FPix_BmO_D3_BLD11_PNL2_ROC(d)

Rehit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1



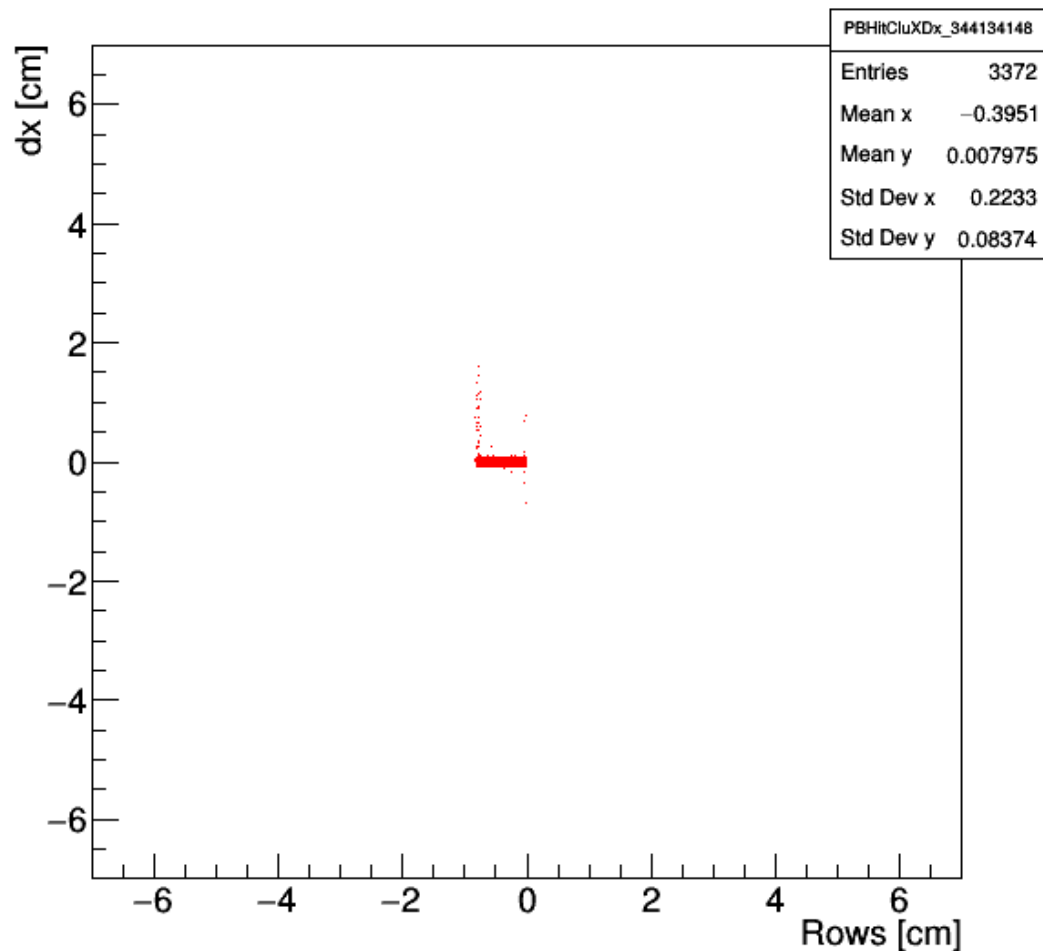
Rehit to nearest cluster distance in FPix_BmO_D3_BLD11_PNL2_PLQ1



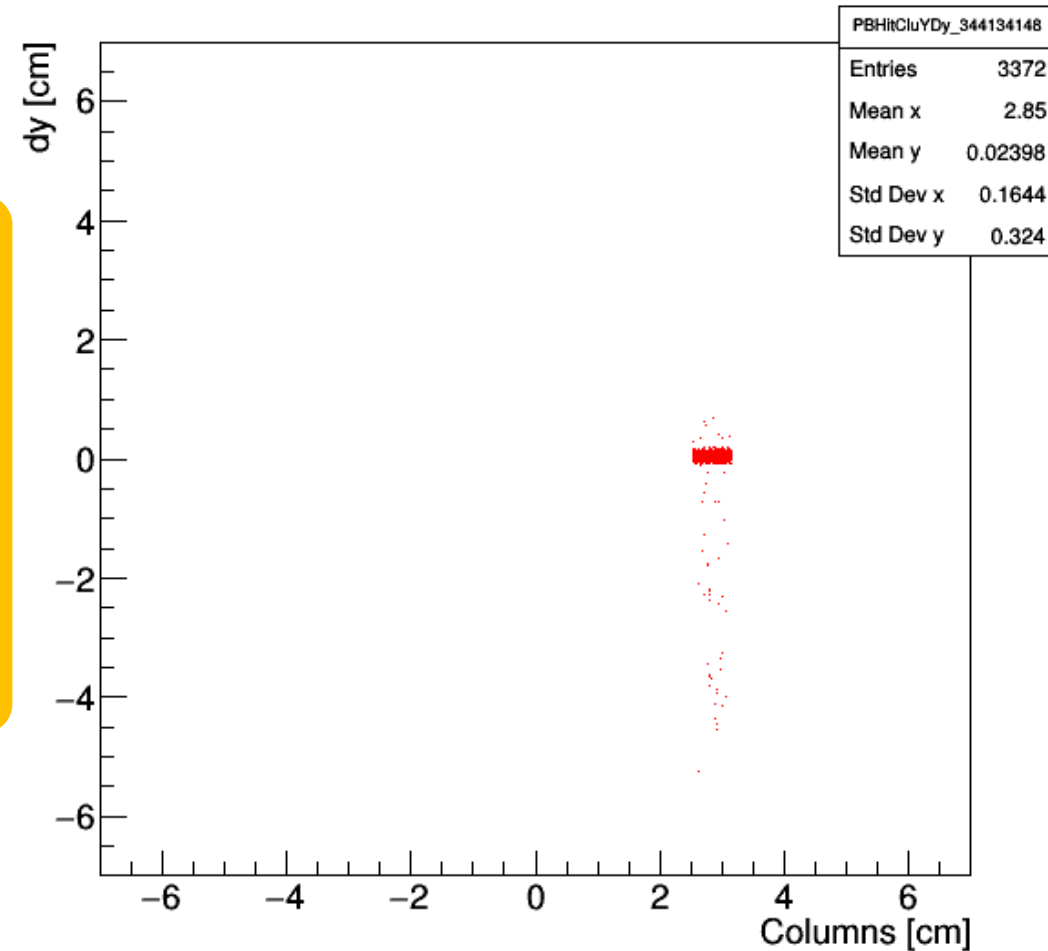
Position vs Residuals

FPix_BmO_D3_BLD11_PNL2_ROC(d)

Inactive rechit position (x) and the x residual FPix_BmO_D3_BLD11_PNL2_PLQ1



Inactive rechit position (y) and the y residual FPix_BmO_D3_BLD11_PNL2_PLQ1



Efficiencies

$$\text{Efficiency} := \frac{\text{\#Found clusters}}{\text{\#expected clusters}}$$

In 2mm range

18 ns for BmO

FPix_BmO_D3_BLD11_PNL2_ROC(d)

RecHit efficiency vs Delay in FPix_BmO_D3_BLD11_PNL2_PLQ1

