

A bunch of news

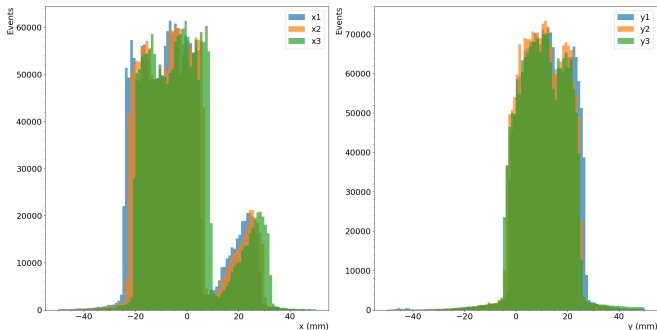
28/06/24

Track reconstruction

Discussion with Iouri regarding its track reconstruction:

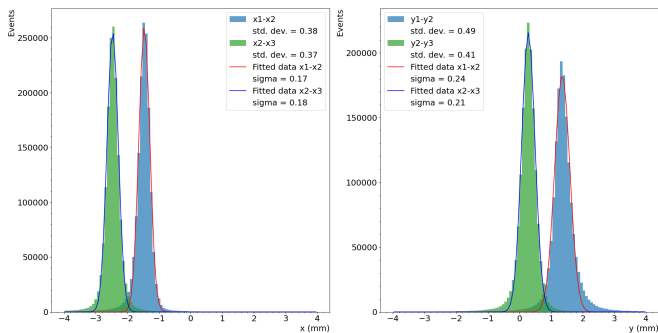
- Alignment of the chambers
- Cuts on $x_i - x_j$ and $y_i - y_j$

Example: Position (x and y) distribution of all hits from run 42 [pions, troll1, 3x3 scintillator trigger] :



Track reconstruction

Run 42 [pions, troll1, 3x3 scintillator trigger] :

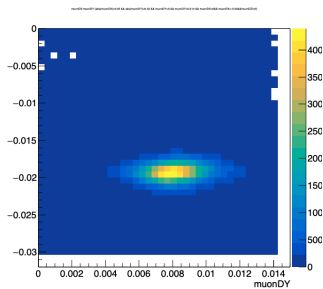


- Differences are not gaussian
- Std. dev. in the range 350-500 μm

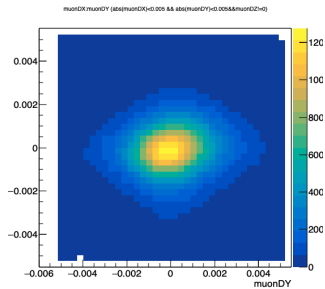
Simple computation of the arithmetic mean :

$\langle x1-x2 \rangle$	$\langle x2-x3 \rangle$	$\langle y1-y2 \rangle$	$\langle y2-y3 \rangle$
-1.47979 mm	-2.44111 mm	1.36492 mm	0.260712 mm

Track reconstruction



Before the DWC alignment



After the DWC alignment

- Beam is within ± 5 mrad

Some others plots

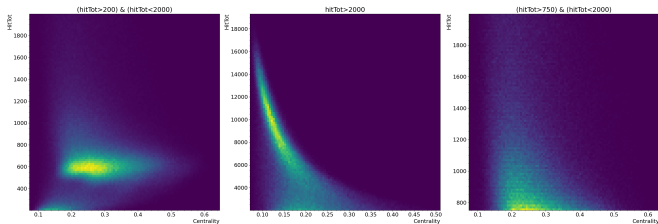
Words of cautions :

- ▶ Very preliminary
- ▶ Dark noise is NOT taken into account
- ▶ Run 42 used : pions run, 2M events, troll1 filled with water, 3x3 scintillator trigger
- ▶ 3x3 trigger not correctly placed

Some others plots

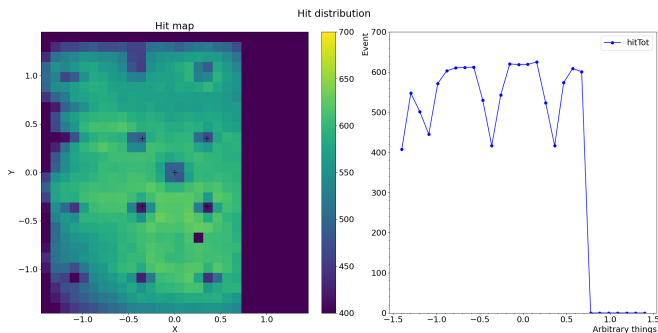
- ▶ Pion plagued with showers
- ▶ Try to define a variable : Centrality

$$\text{Centrality} = \frac{\max_j(\text{Hit}[j])}{\sum_{16} \text{Hit}[j]} \quad (1)$$



Some others plots

- Cut : $(\text{eventType}[i]==4) \ \& \ (\text{mVmax}>\text{hitTot}[i]>0) \ \& \ (\text{muonDX}[i]<0.005) \ \& \ (\text{muonDY}[i]<0.005)$



Some others plots

- Cut : $(\text{eventType}[i]==4) \ \& \ (\text{mVmax}>\text{hitTot}[i]>0) \ \& \ (\text{muonDX}[i]<0.005) \ \& \ (\text{muonDY}[i]<0.005)$

