TOF hit matching

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TOF Point Matching

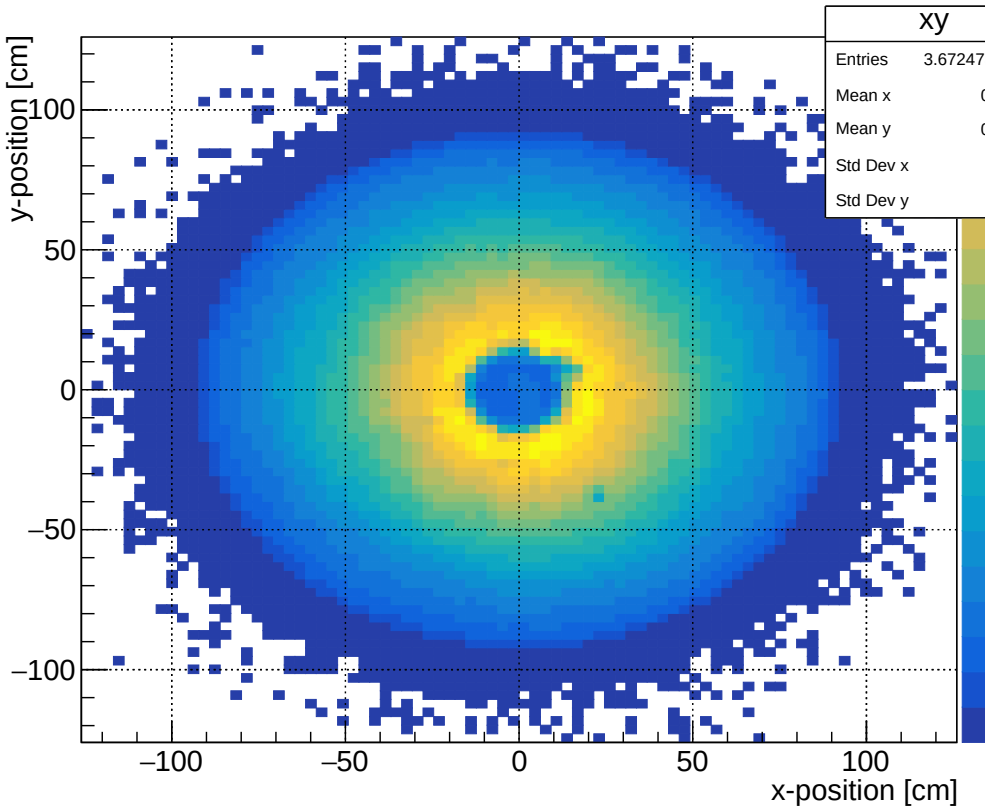
Look at charged tracks hitting TOF plane and find closest matching TOF point. (use tree from plugin TOF_Eff)

- Good tracks with hits in the last 3 planes of CDC4
- At TOF plane set grid 3cm by 3cm in x and y
- Find smalles distance between Track and TOF point
- Efficiency = $\frac{TracksWithMatchingTofPoint}{TracksInBin}$

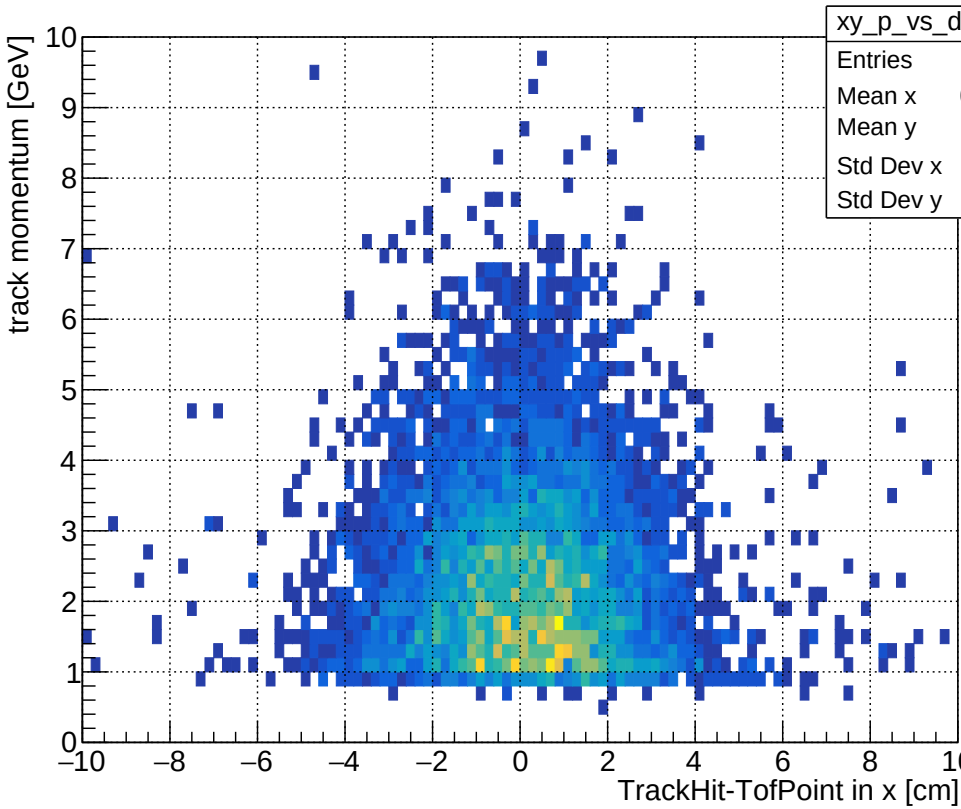
TOF plane

Track hit distribution at TOF plane and Matching Tof Point:

Hits in xy plane



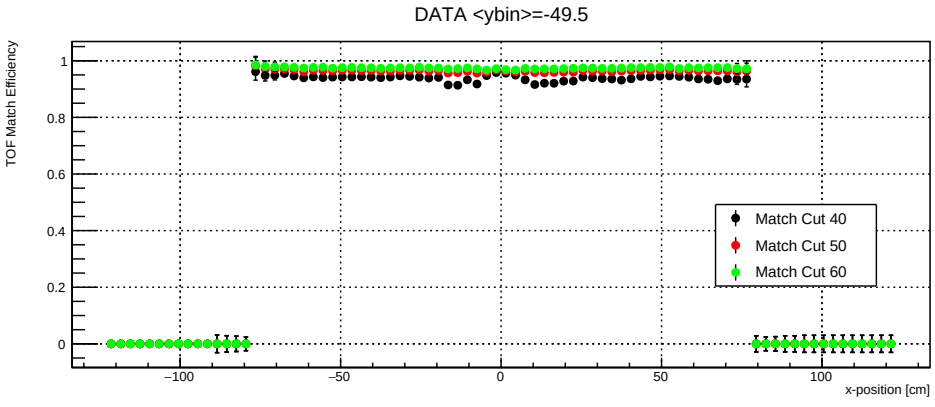
p vs dx bined-xy xbin21 ybin26

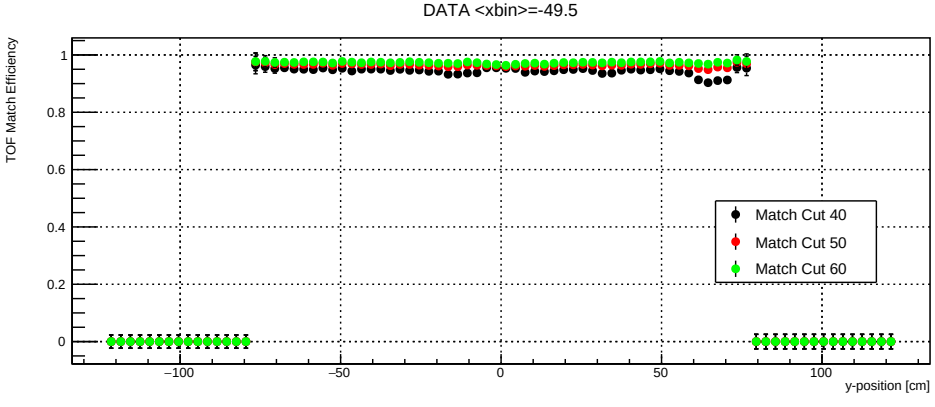


TOF Point Match Efficiency DATA

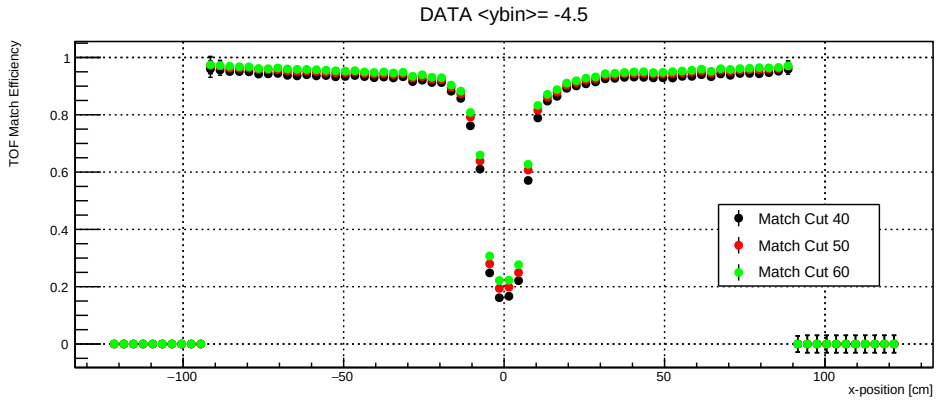
Match efficiency in x and y for REAL data:

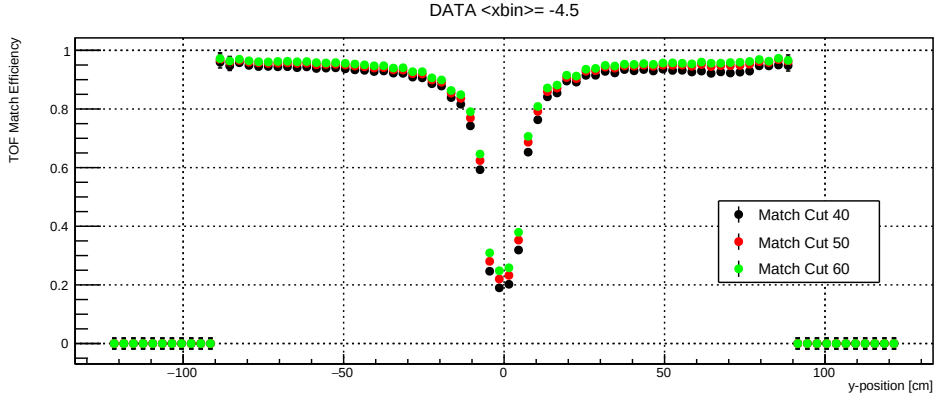
At 49.5cm from the beam:





At 4.5cm from the beam:

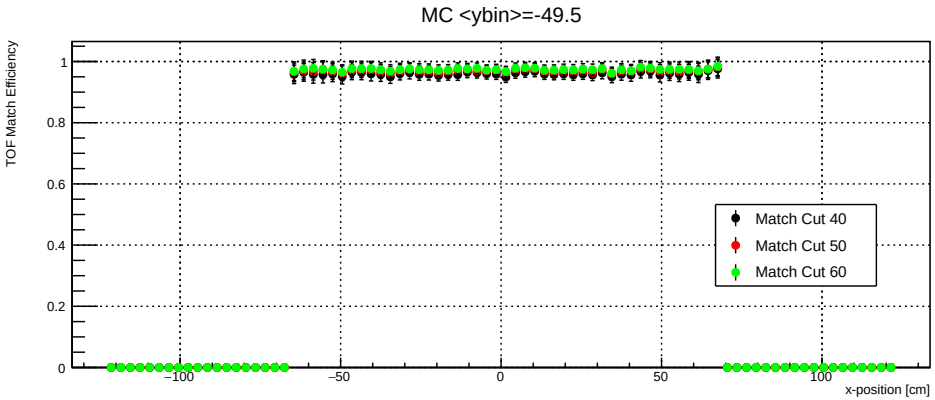


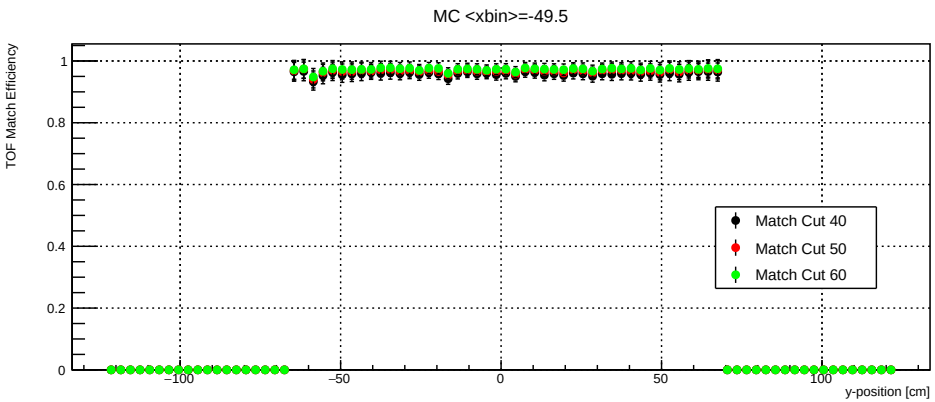


TOF Point Match Efficiency MC

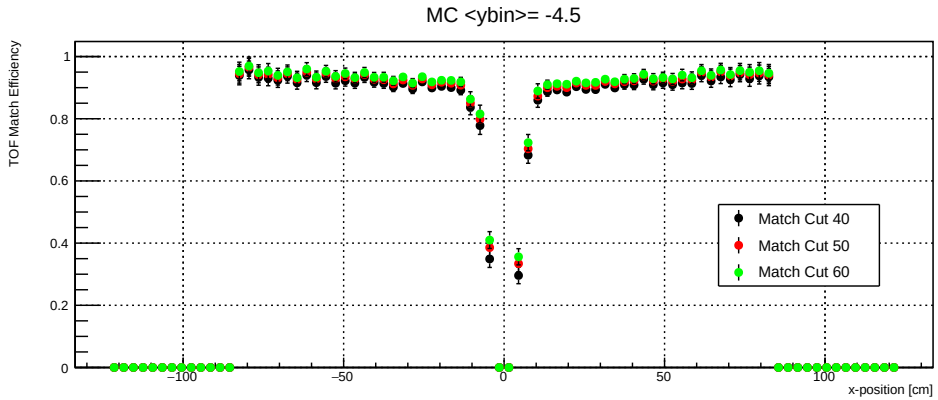
Match efficiency in x and y for MC data:

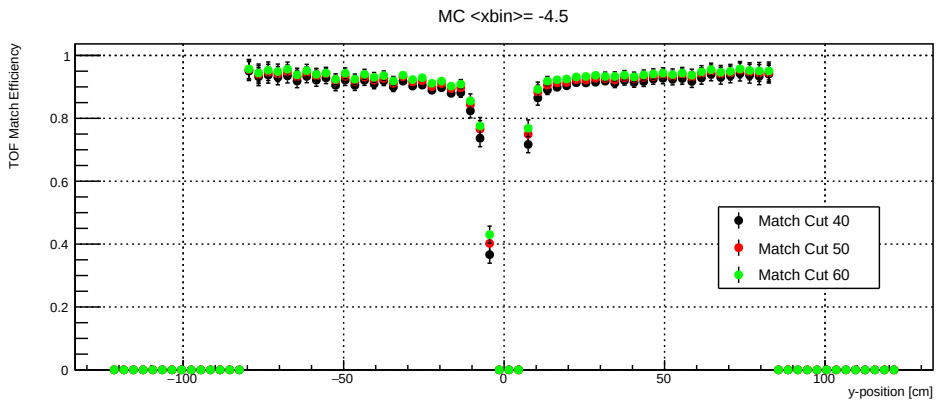
At 49.5cm from the beam:





At 4.5cm from the beam:

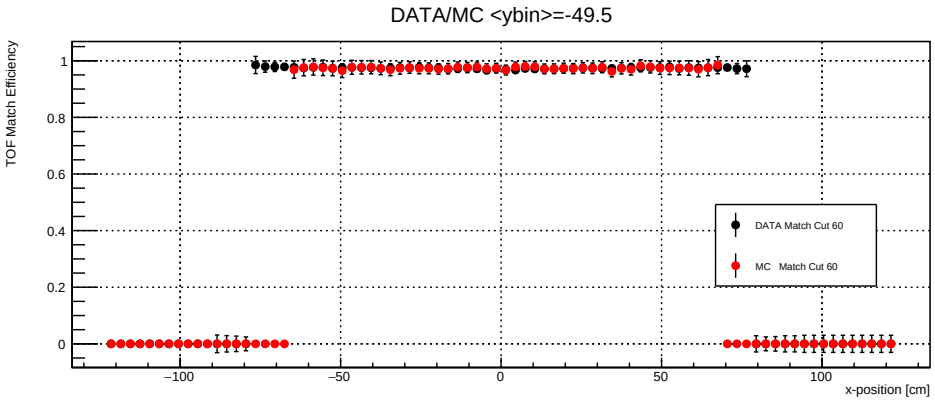


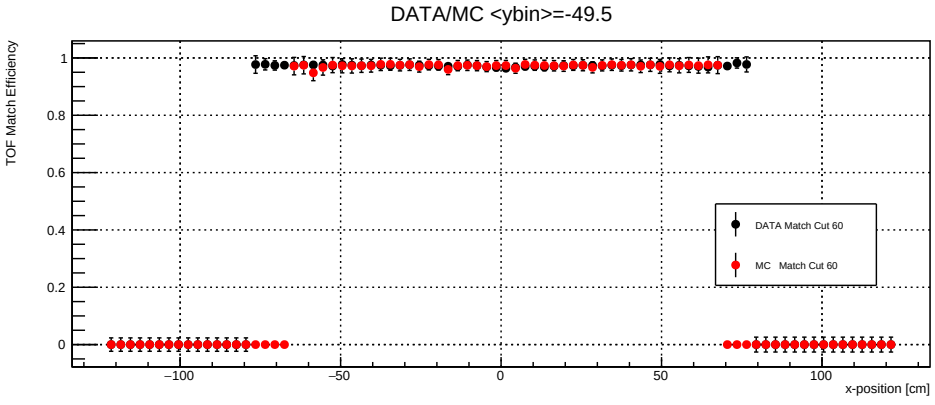


TOF Point Match Efficiency DATA/MC

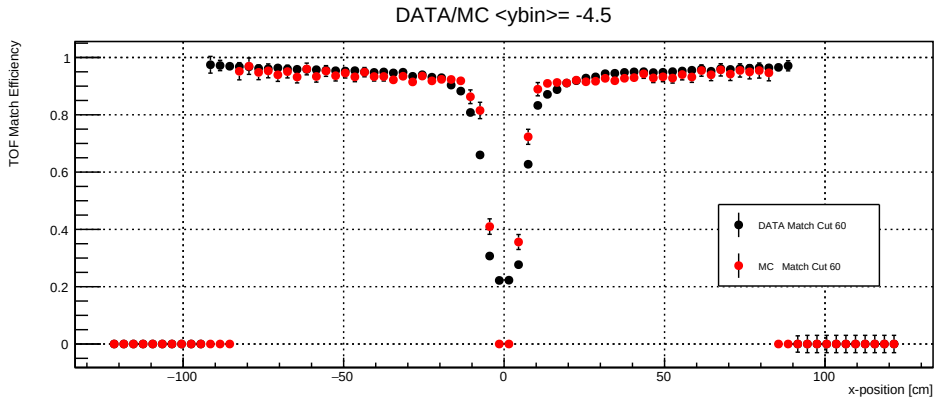
Comparison DATA/MC with ± 6 cm cut:

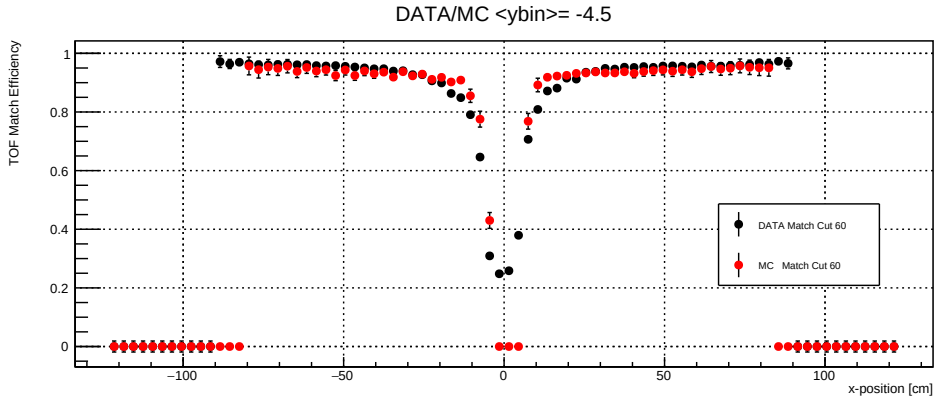
At 49.5cm from the beam:





At 4.5cm from the beam:

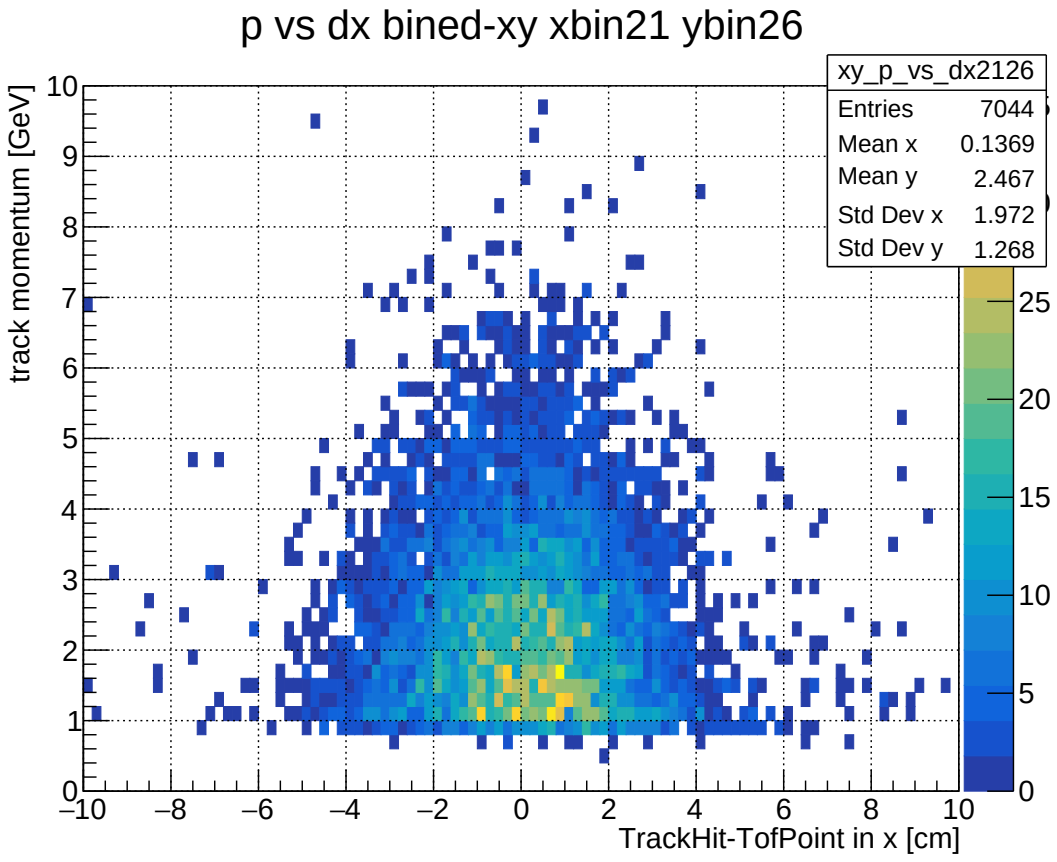




Now the problem/issue

Issues with certain xy-bins and Δx or Δy:

Remember bin x=21 y=26, All fine:

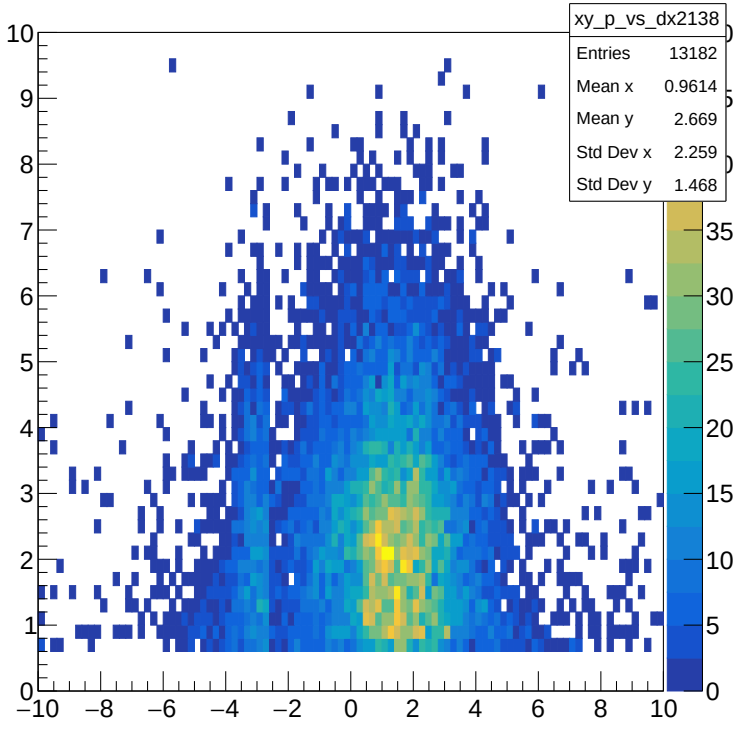


Now the problem/issue

Issues with certain xy-bins and Δx or Δy:

Now bin x=21 y=38, what??:

p vs dx bined-xy xbin21 ybin38



Now bin x=21 y=40, crap!:

p vs dx bined-xy xbin21 ybin40