

ProtoDUNE data for the MasterClass (Update)

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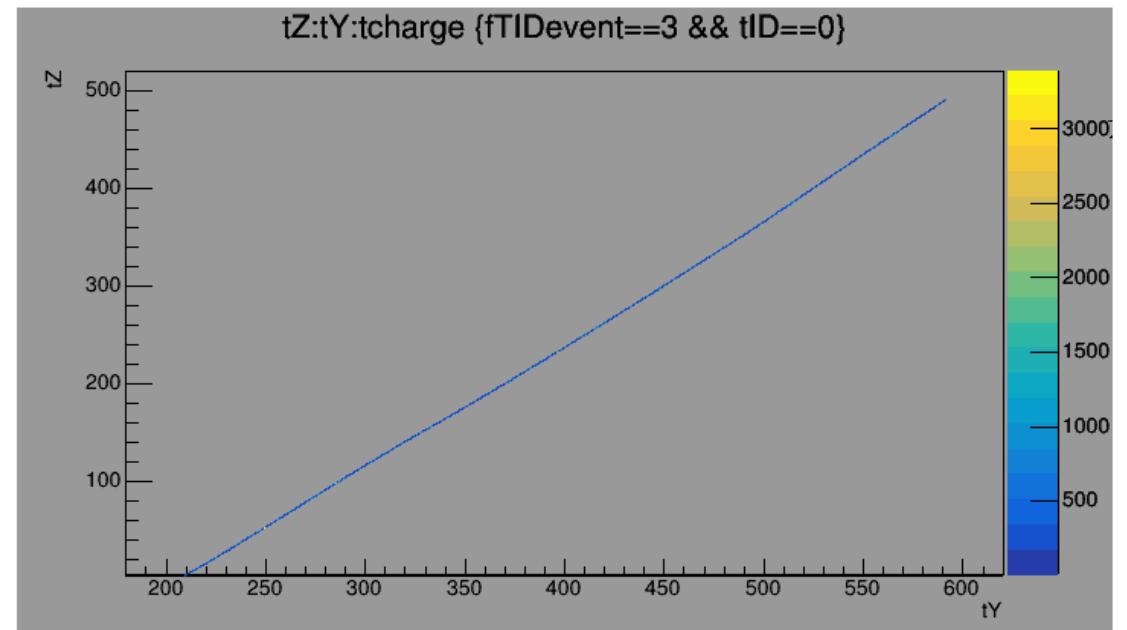
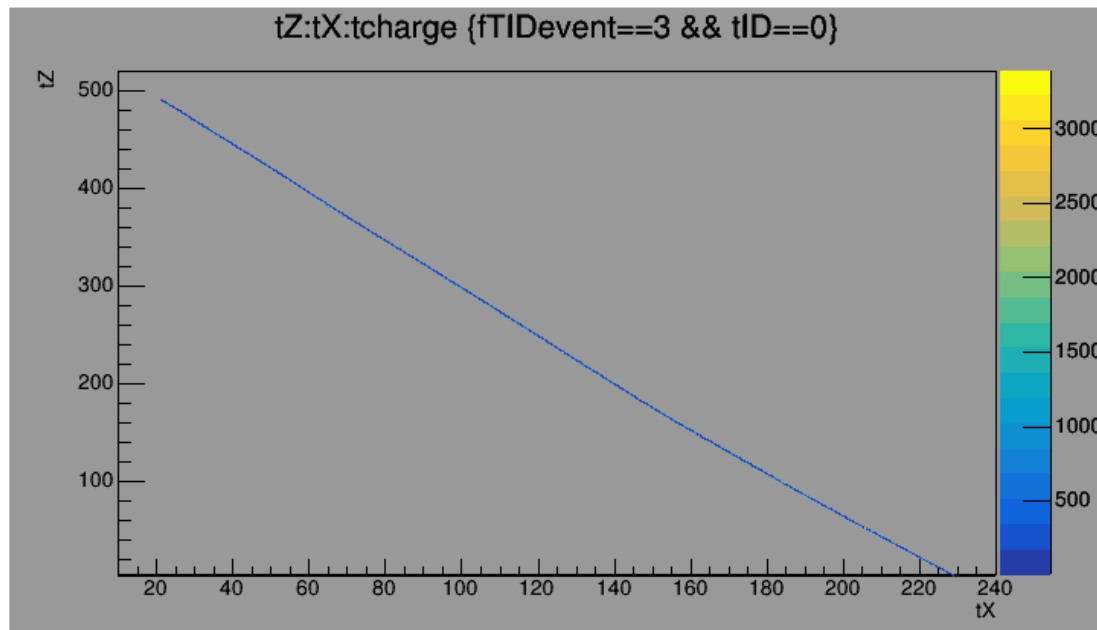
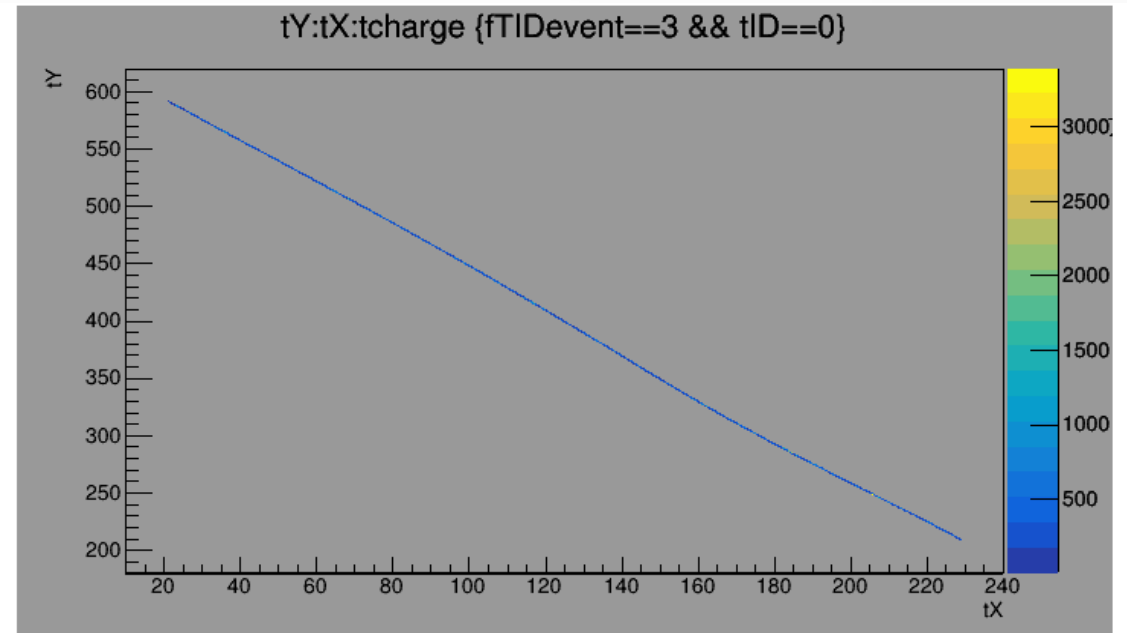
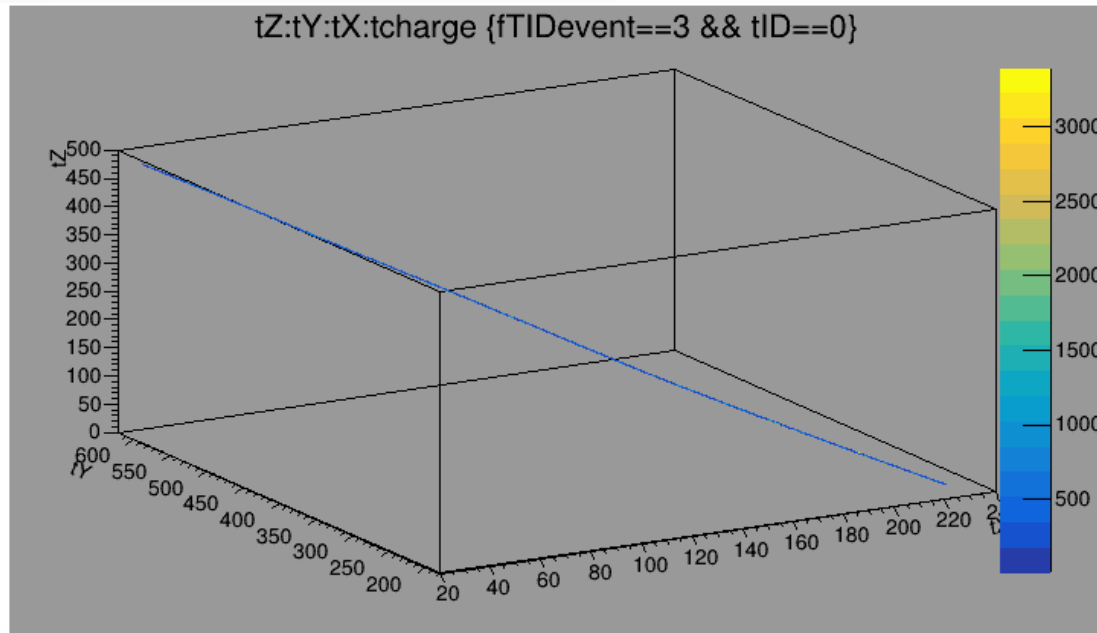
Goal

- Getting some display sample of cosmic run from ProtoDUNE data
- We expect to plot some cosmic tracks that the students will be able to see on the website

Status

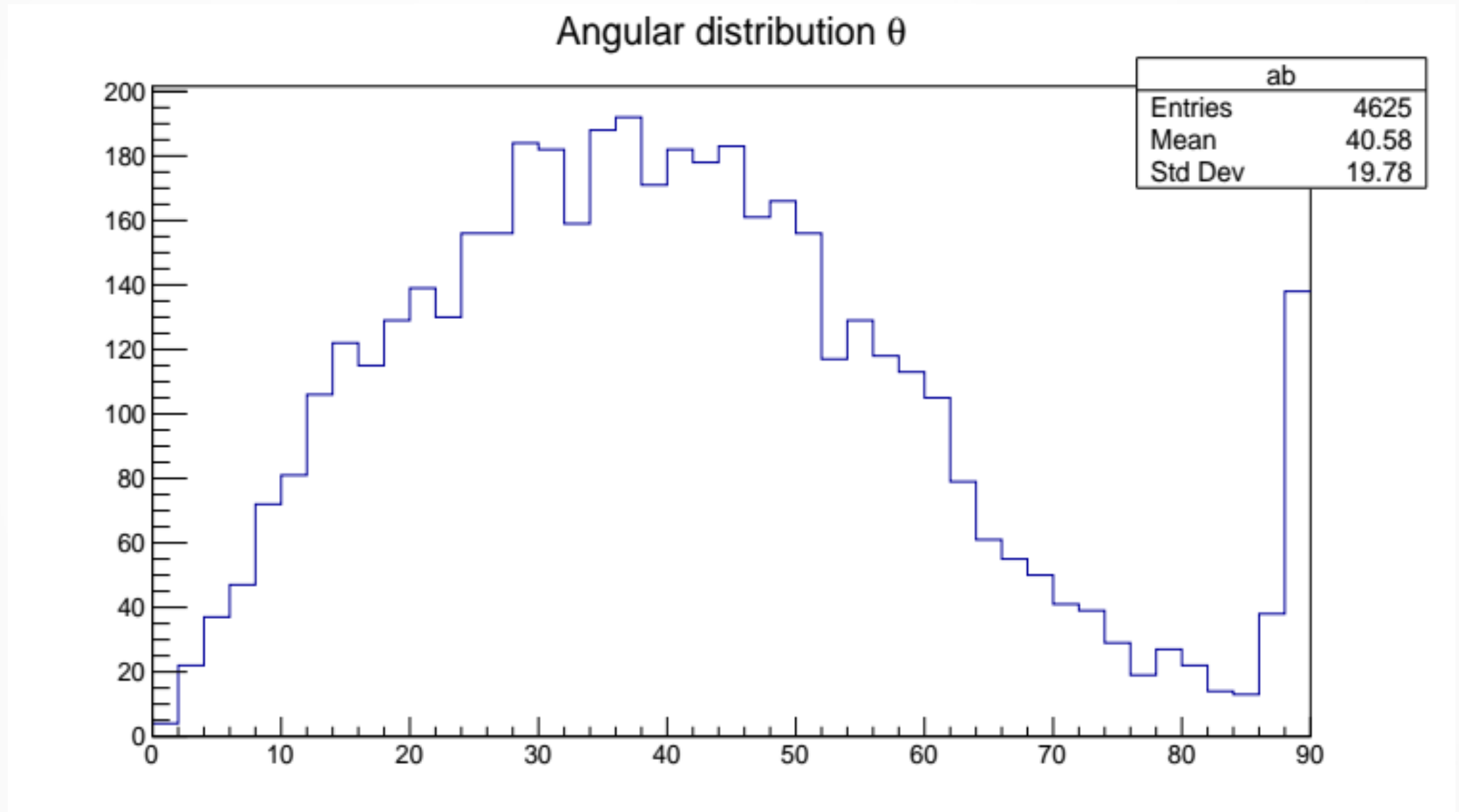
- Reconstruction of all events from a raw cosmic run data of ProtoDUNE
- We process more cosmic data
- Apply some cuts on the X, Y, Z and the length of the tracks

Plots of some display



Plots after the cuts

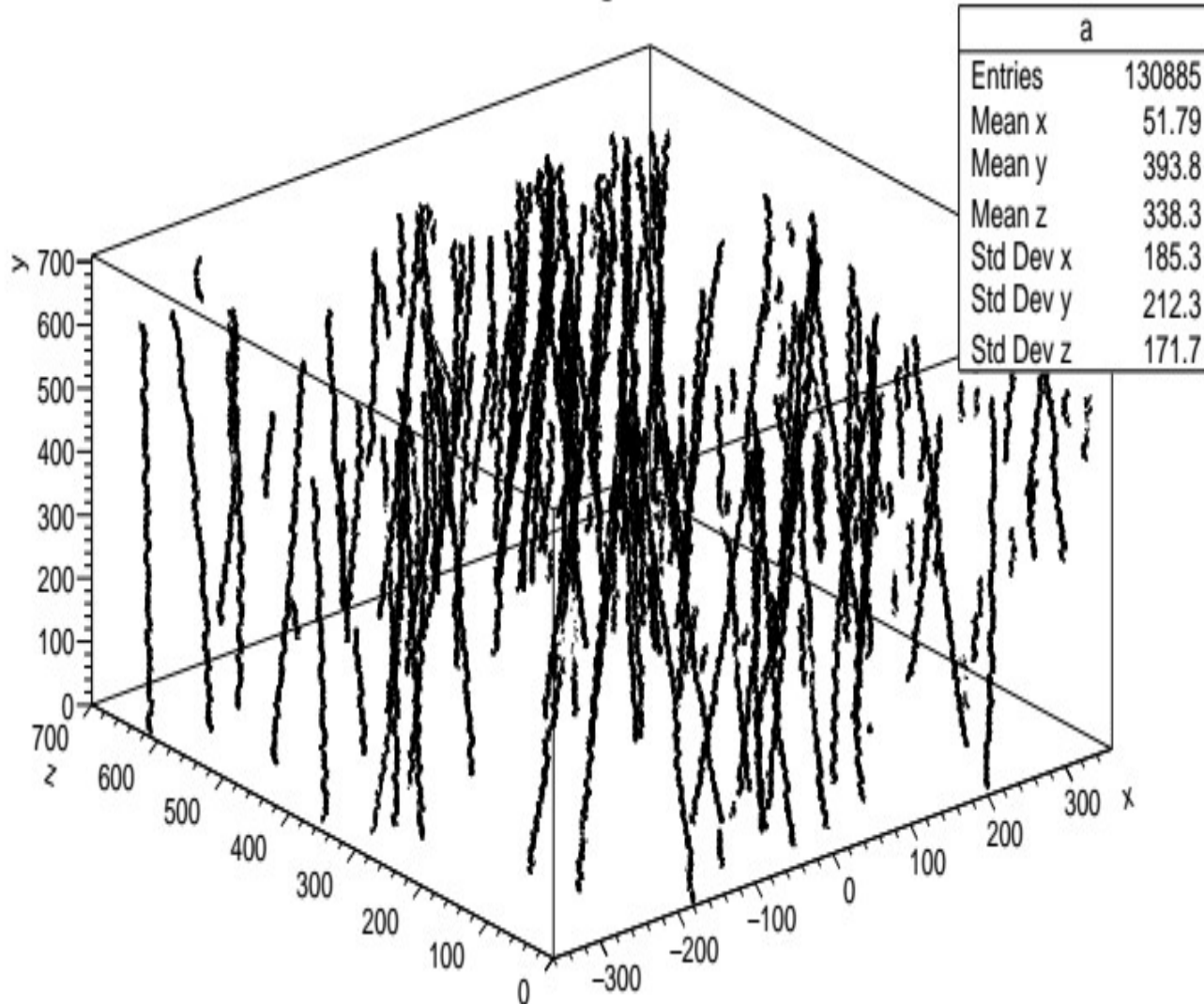
- Track angle based on the position of each point in the Track in XZ plane (with length greater than 30 and cut on X,Y,Z)



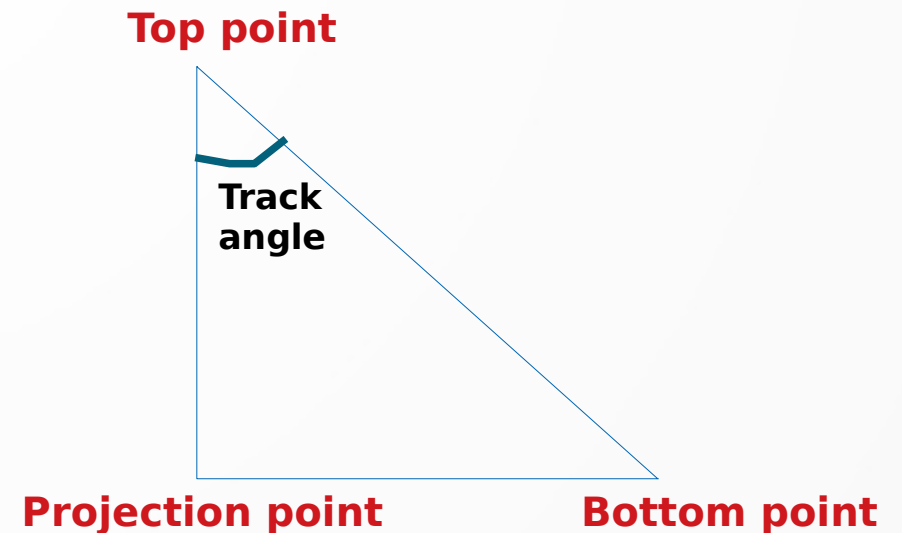
Plots after the cuts

- Different track angle of the cosemics inside the detector

Tracks with angle $0^\circ < \theta < 10^\circ$



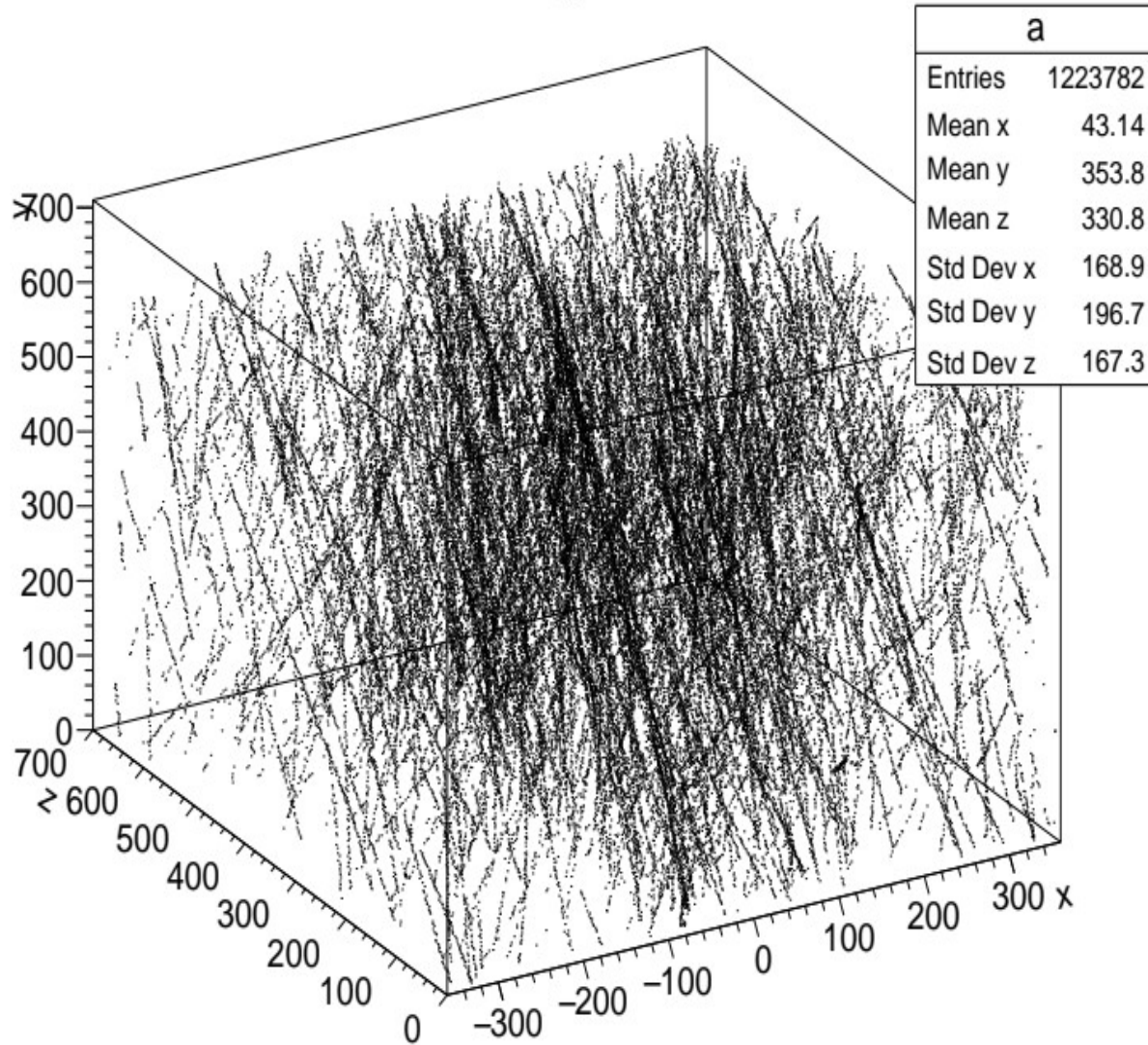
- To get the angle we did a projection of one extremity of track
- Calculate the distance between the points
- And with the 3 points we got the angle



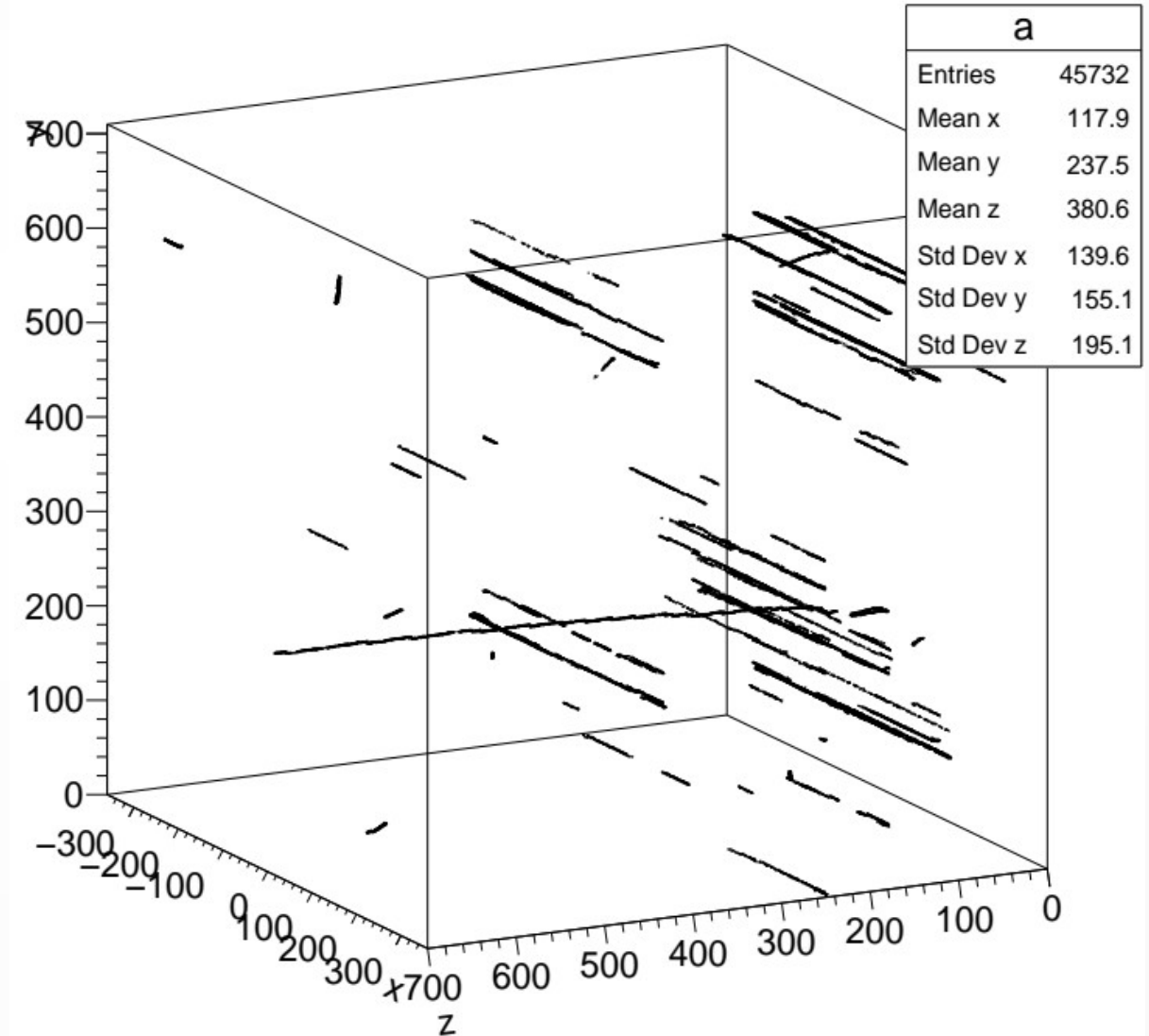
Plots after the cuts

- Different track angle of the cosmons inside the detector

Tracks with angle $30^\circ < \theta < 50^\circ$



Tracks with angle $86^\circ < \theta < 90^\circ$



Next steps

- Get some beam data
- Thinking about other idea of plots for the masterclass