

WEEKLY ANALYSIS UPDATE

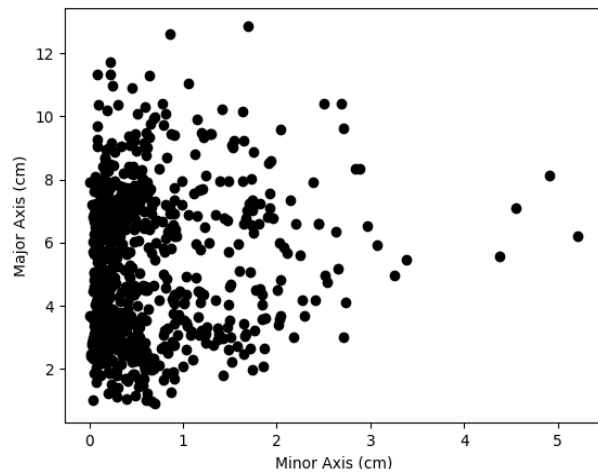
03 May 2024

Samikshya Kar

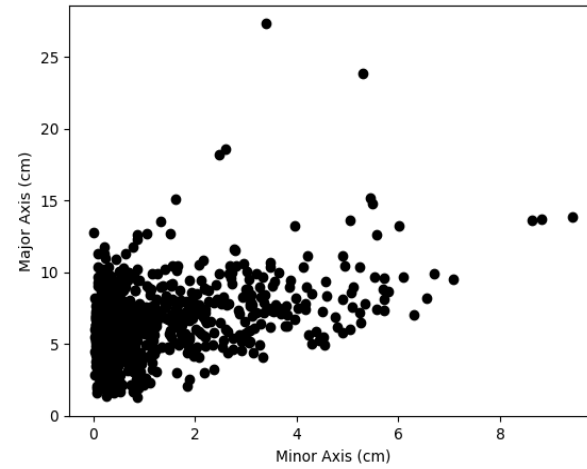
Outline

- Normalisation before Clustering and while slicing the 'channel' and 'time peaks' datasets into the clusters
- Values used for Normalisation:
 - Tick = $16e19$
 - Drift velocity = 150000 cm/s
 - CRP Channel space = 0.51 cm

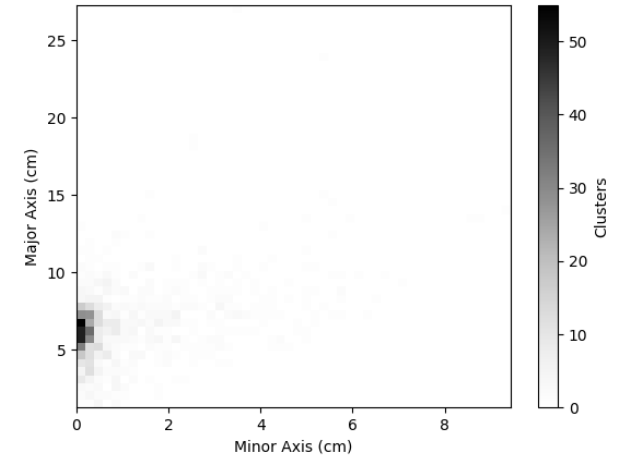
For a Single Time-Fragment



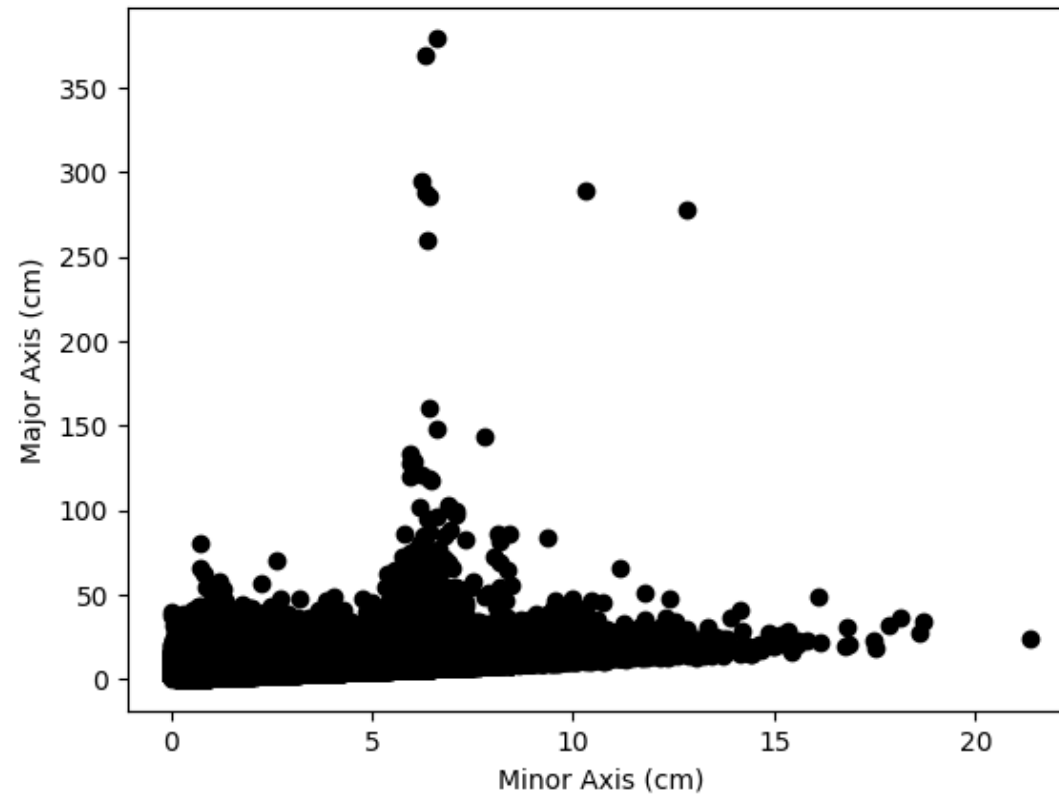
Before Normalisation



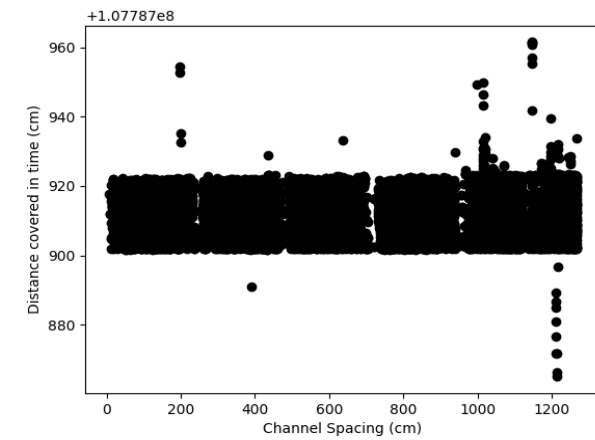
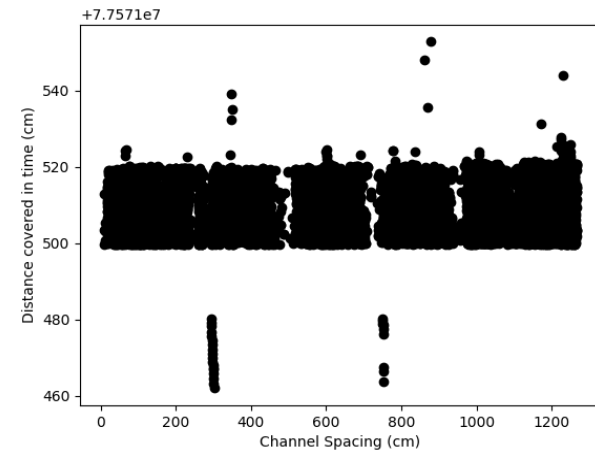
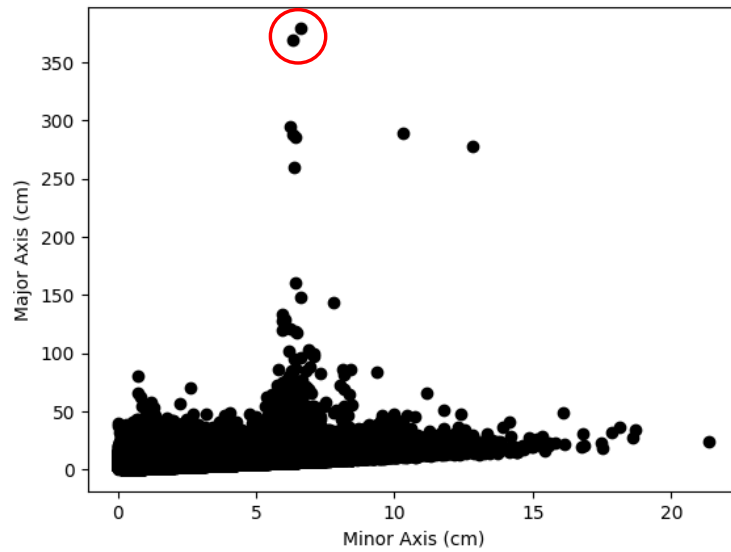
After Normalisation



For the Entire Data-file



A selected value of Major Axis



Further Tasks

- Repeating the analysis on a Trigger Record files using justintime
- Selection of Clusters with a high 'major axis' value (>100 cm)
 - Plot TPs from this sample and compare with distributions from full sample
 - Run TPG algorithm on raw ADC data (get input from Ivana?)

THANK YOU!

Outline

- Dennis's `Cluster_Finder` using DBSCAN to perform Clustering on Trigger Primitives
- Clustering parameter: Channel number and Time peak of the TPs
- Normalisation of the two parameters:
 - Channel range: 0 - 3071
 - Time range: $\sim 10^{18}$
- Visualisation of the minor axes (depicts channel number) and major axes (depicts time peak)

STEPS :

- Read the fragment using `trgtools.TPReader`
- Perform the clustering using `cluster_finder.db_cluster_tps`
- Creating an array that contains the clusters as its elements with the clusters in array formats having the TP indices within them using `cluster_finder.create_clusters_array`
- Getting the corresponding time peak and channel number values for each clustered TP using the `cluster_finder.make_ak_slicer`
- Making a similar array as the third step for Channel and Time peak and plotting them