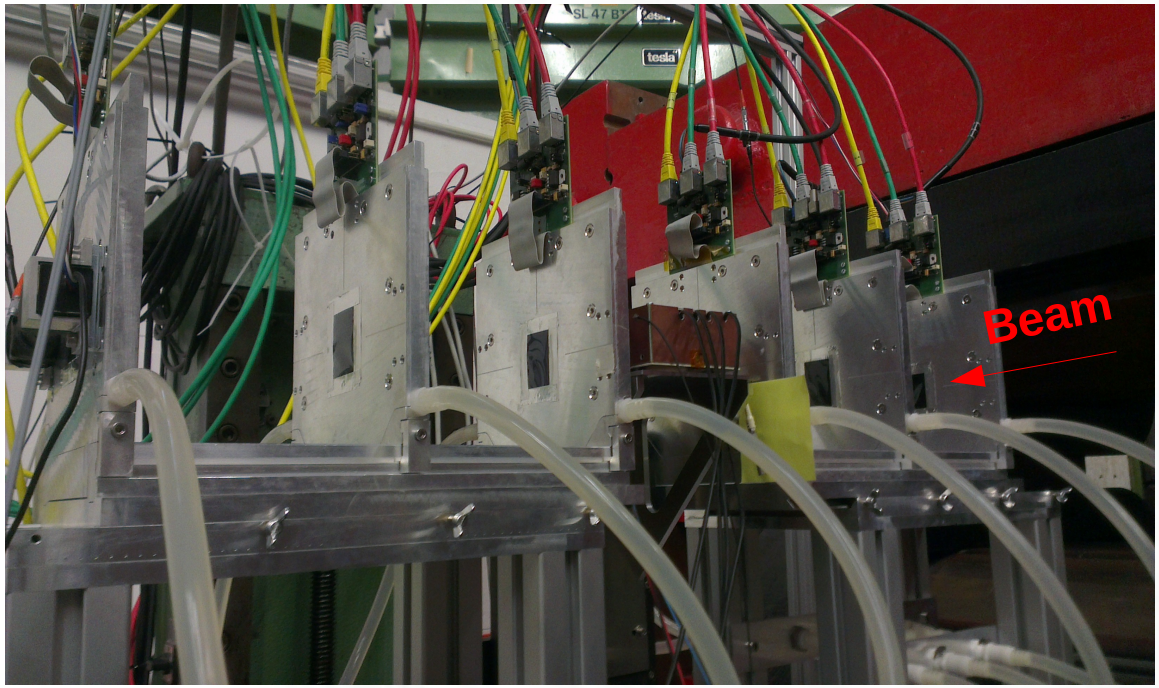
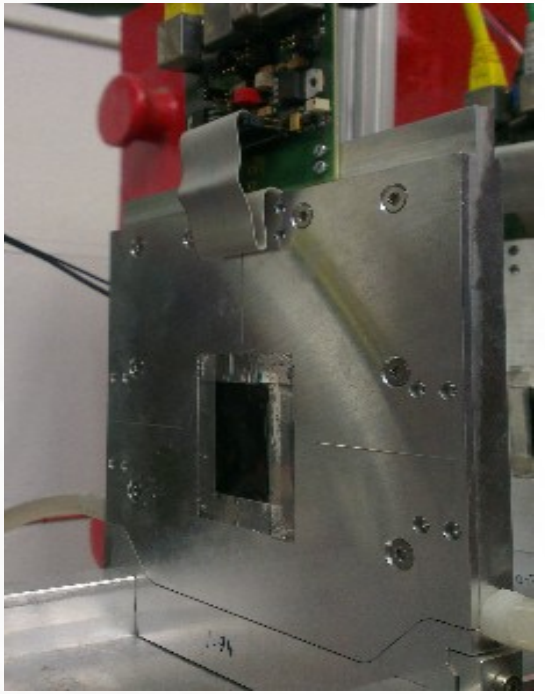
Current status of Test Beam data analysis

Olena Karacheban, CMS weekly meeting,
27 Jan. 2014, DESY-Zeuthen

EUDET Telescope -

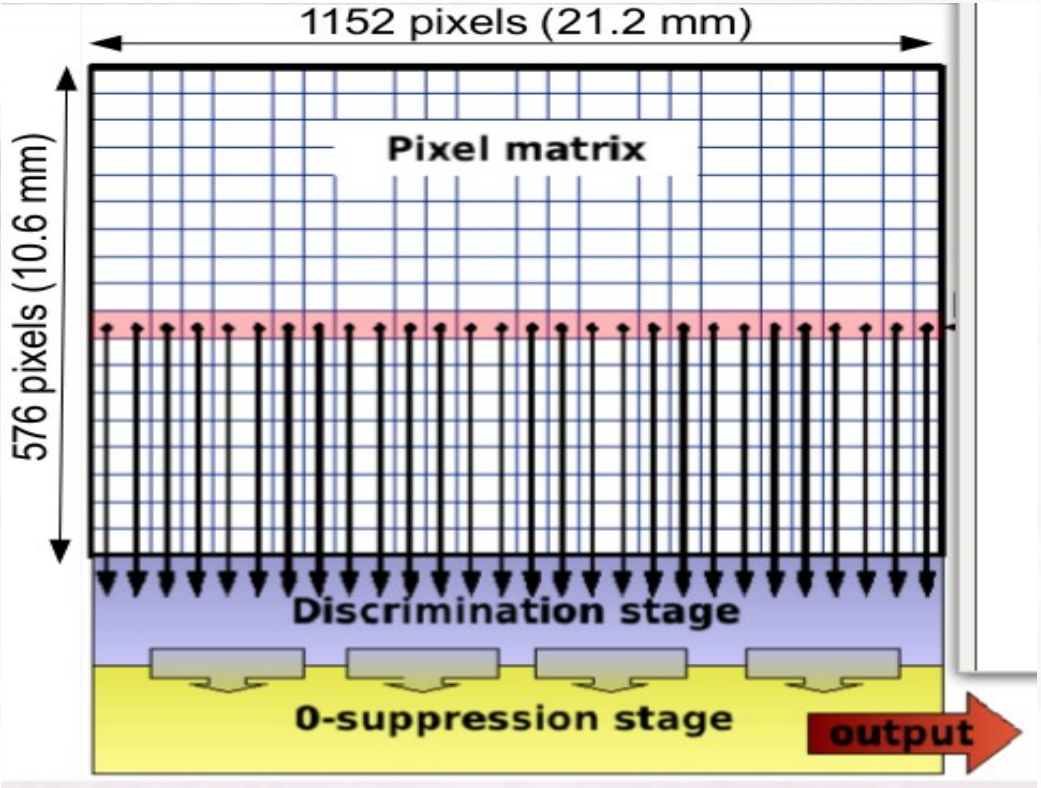
tracking device designed for detector prototypes characterisation at the test beam.





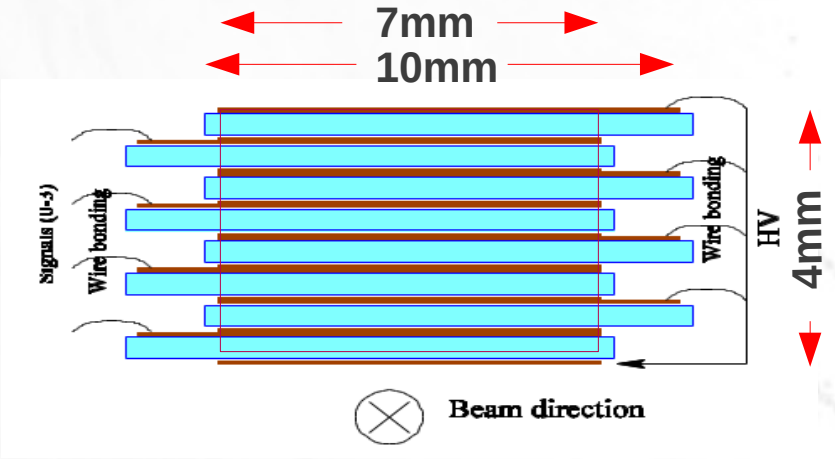
- Active area of the telescope - six Mimosa26 pixel sensors.
- Six measurement points per track.
- Geometry can be changed by user.

Mimosa26 Sensors (21.2mmx10.6mm)



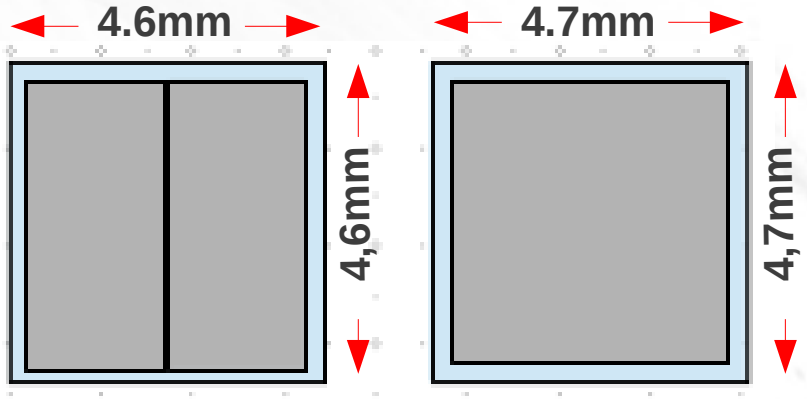
- Pixel size 18.4 um
- MAX Track pointing resolution ~2 µm.

Sapphire detector (DUT)



Diamond detectors

sCVD 23851343 ***SC 1756***

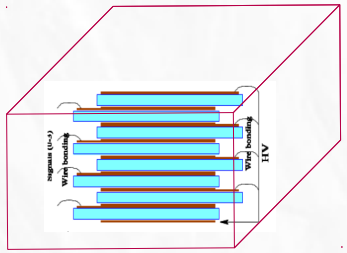


TB geometry

Second arm

Firs arm

Box parameters?



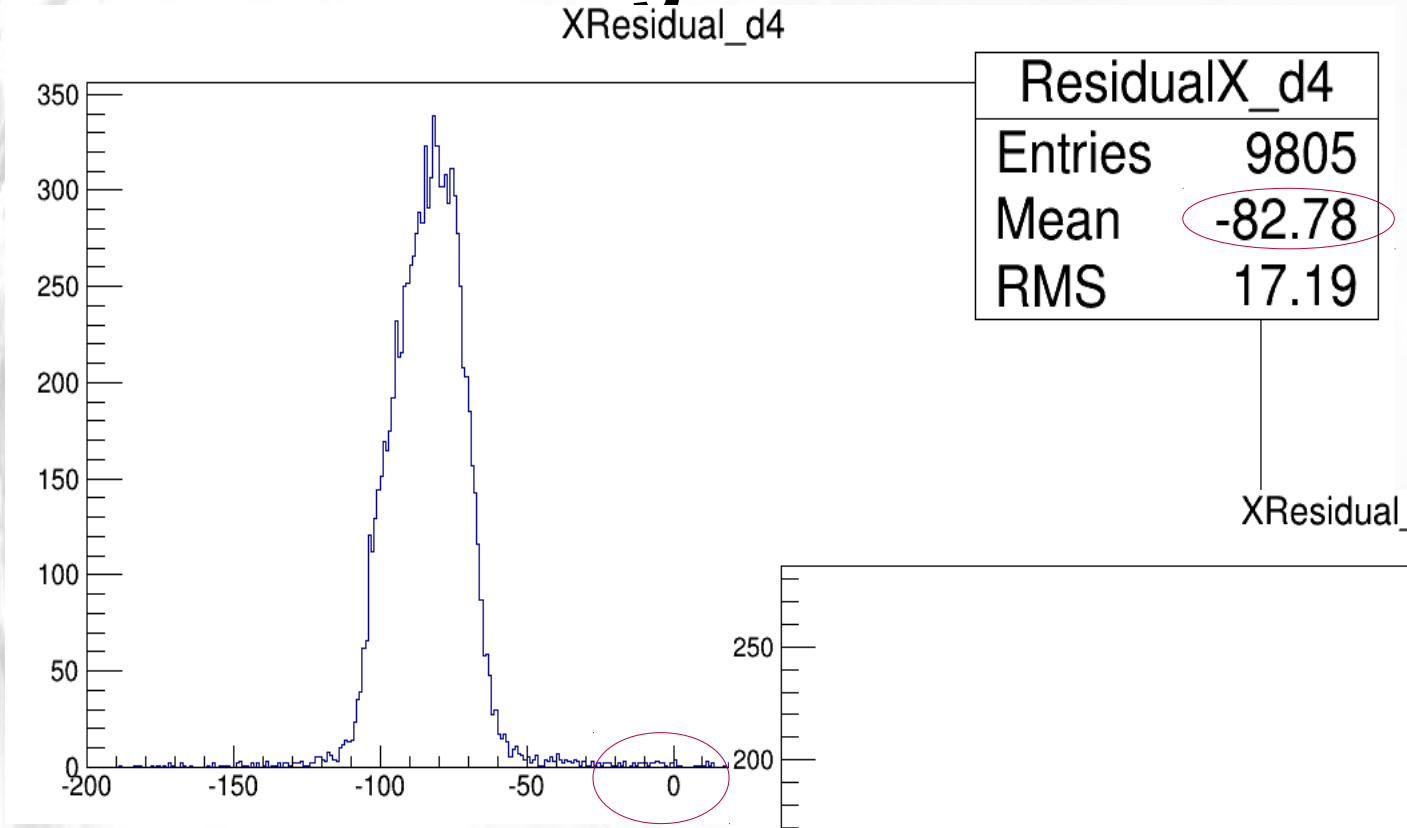
Beam

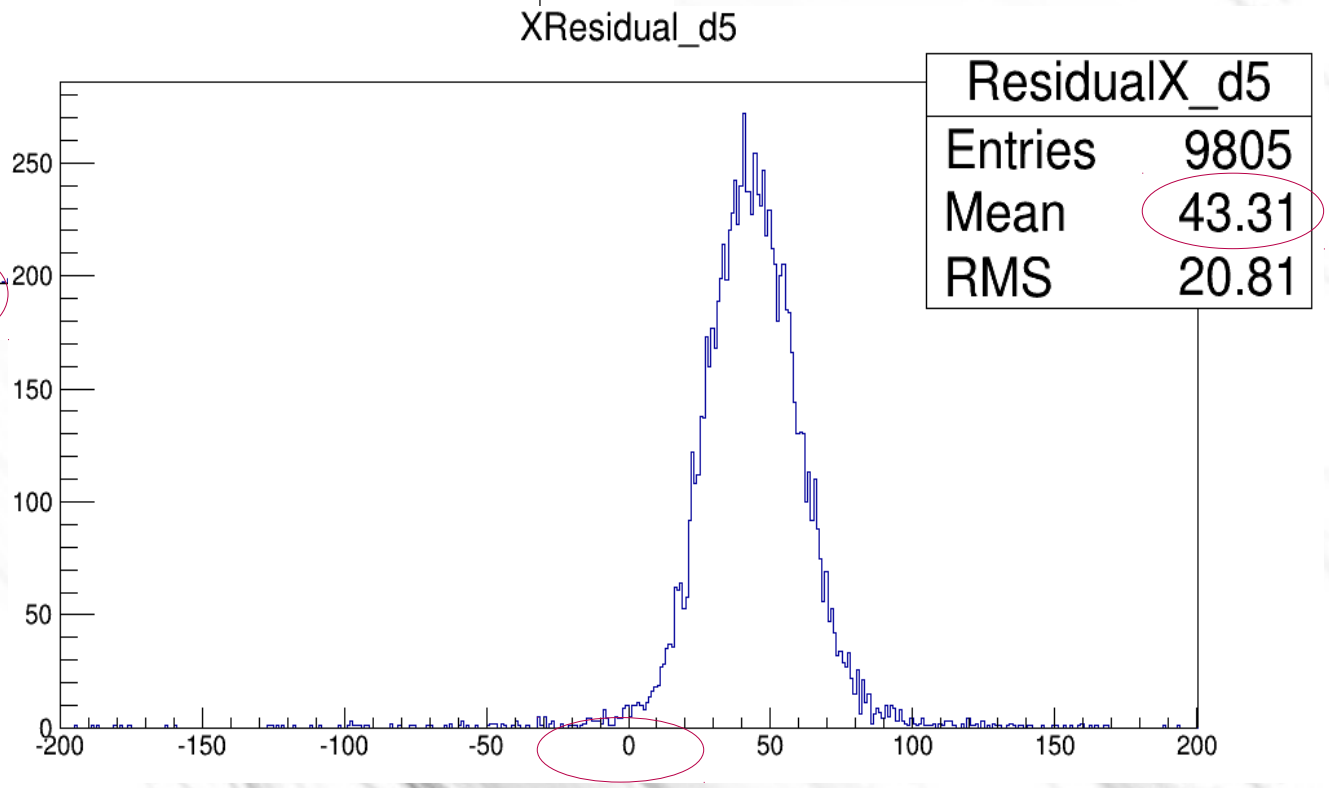
ADC output
in .root format

Telescope output in
.raw format

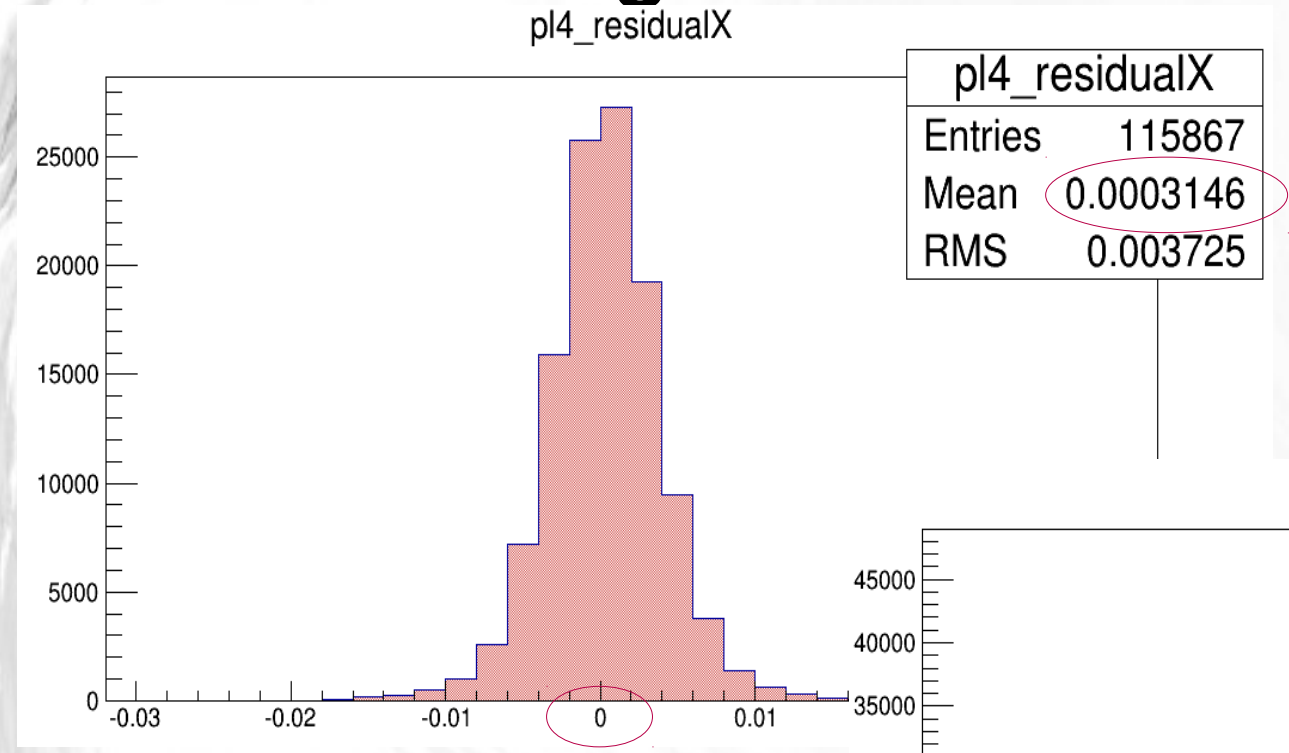
Tracks in .root file after EUTelescope
analysis chain

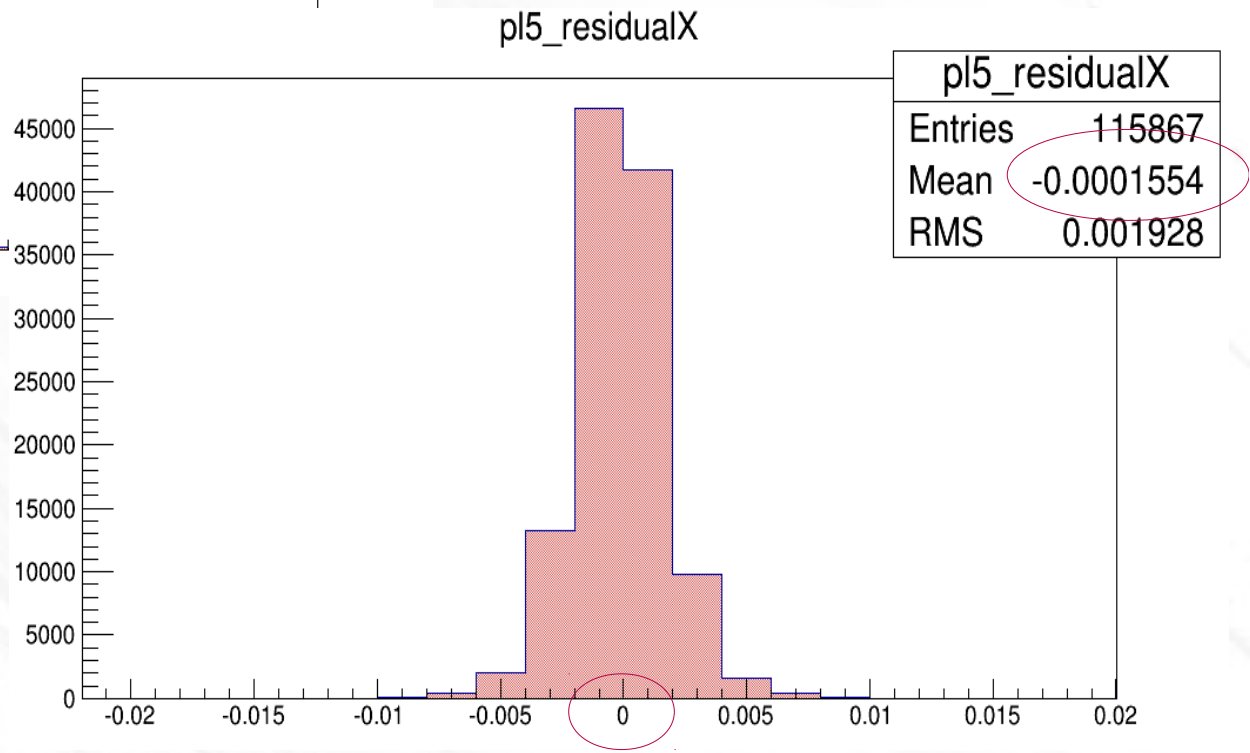
Residual before alignment for one of alignment runs - #472.



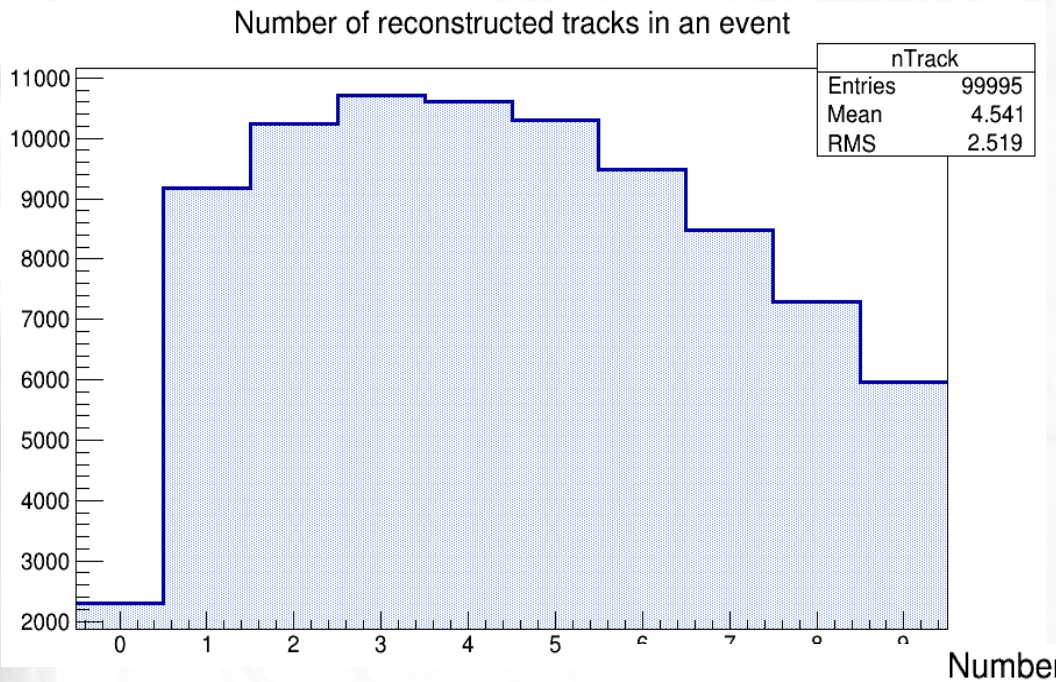


Residual after alignment for one of alignment runs - #472.



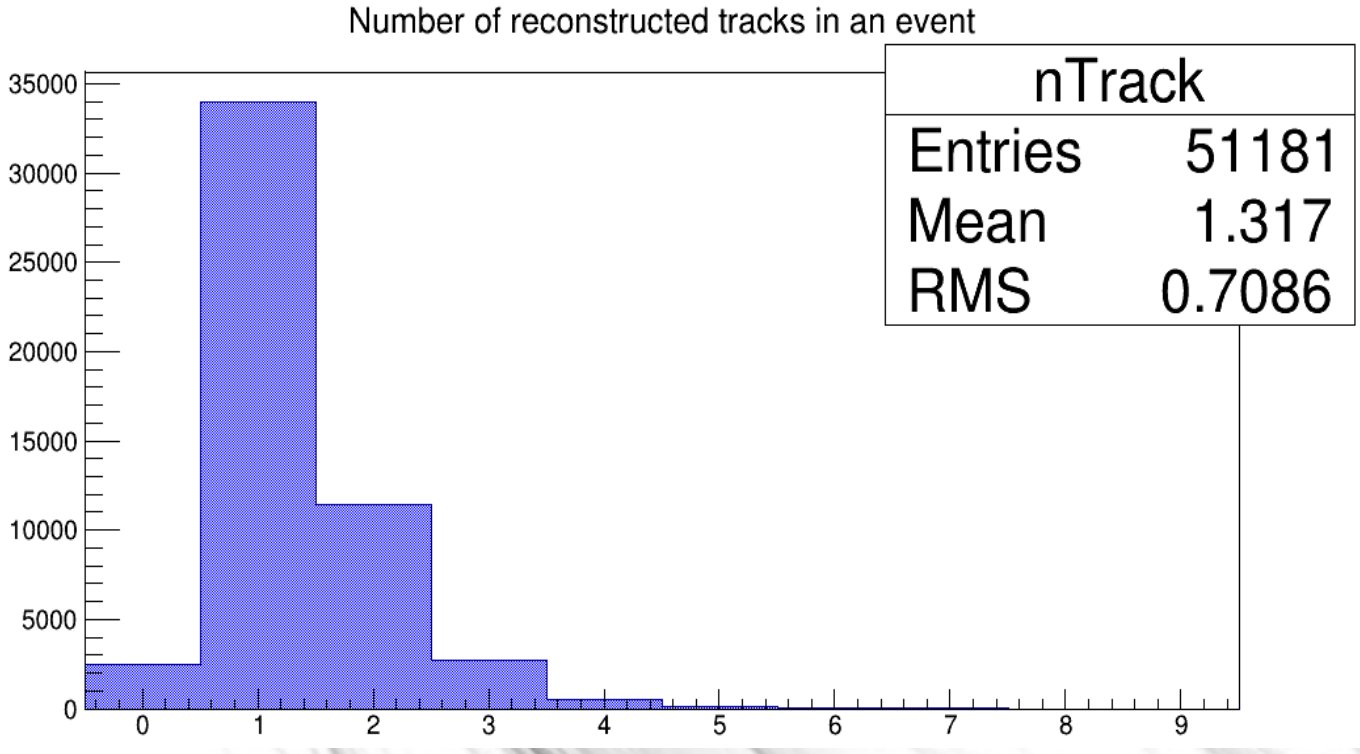


Fitted tracks for run #268, TB Aug



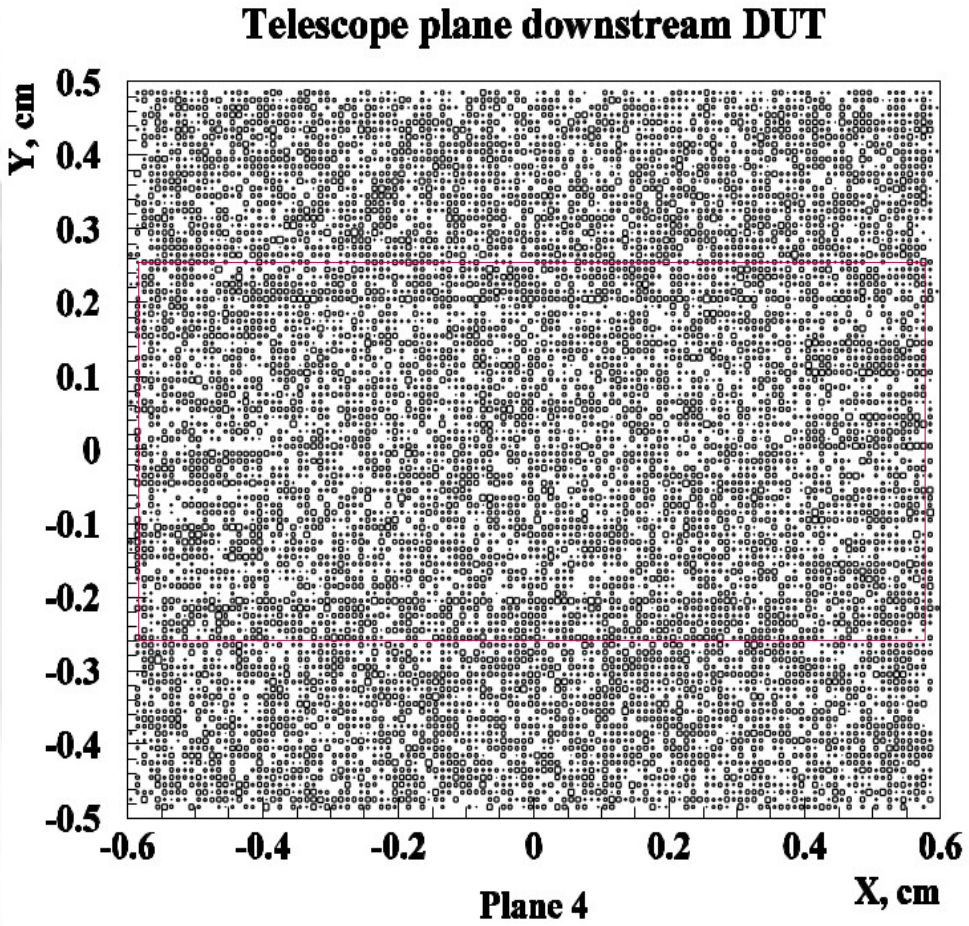
For next TB we should take care about track multiplicity per event immediately.

TB January
Run 188



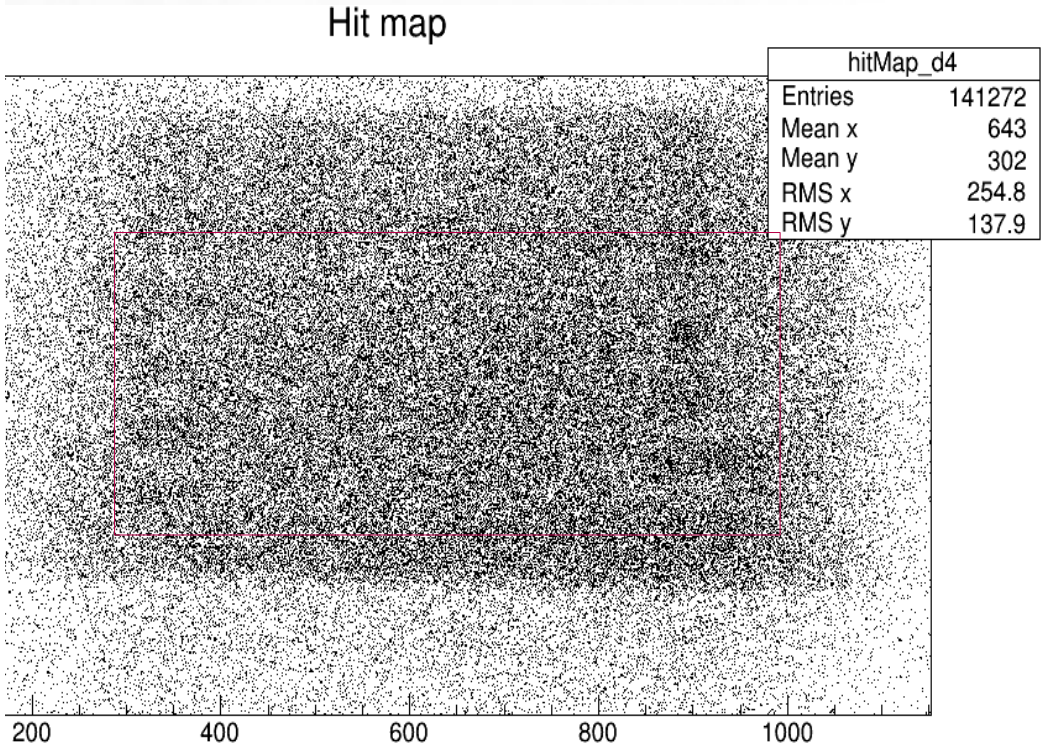
27 Jan. 2014

Expected and measured hit distribution at 4-th telescope plane



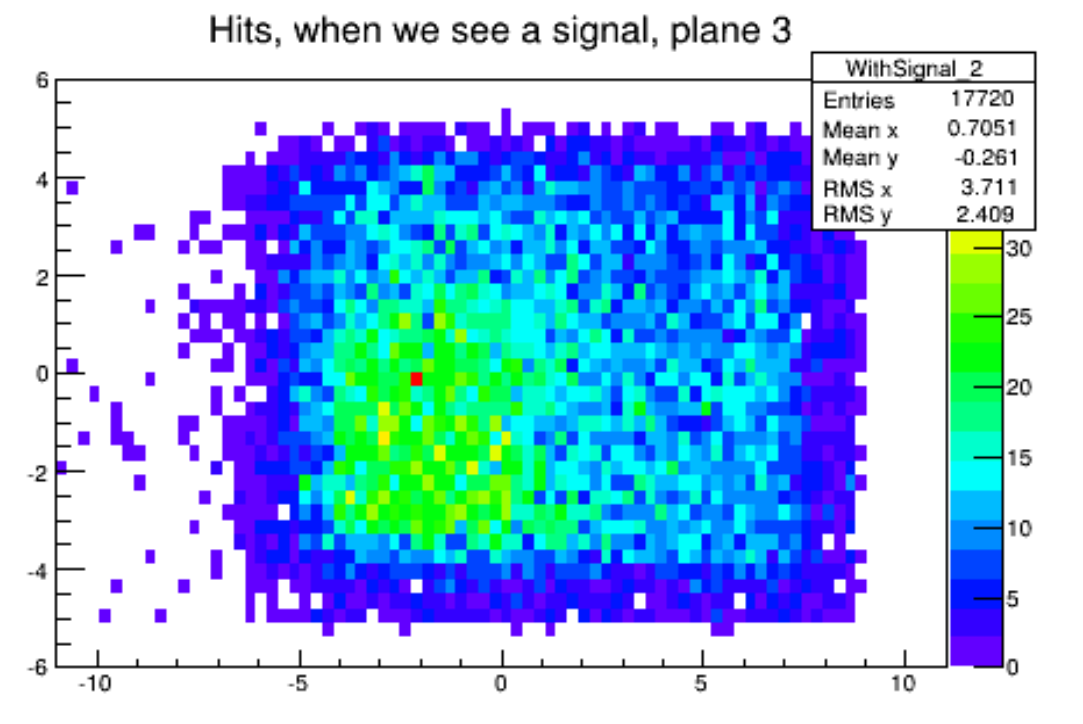
Monte Carlo GEANT3, 1 million events generated.

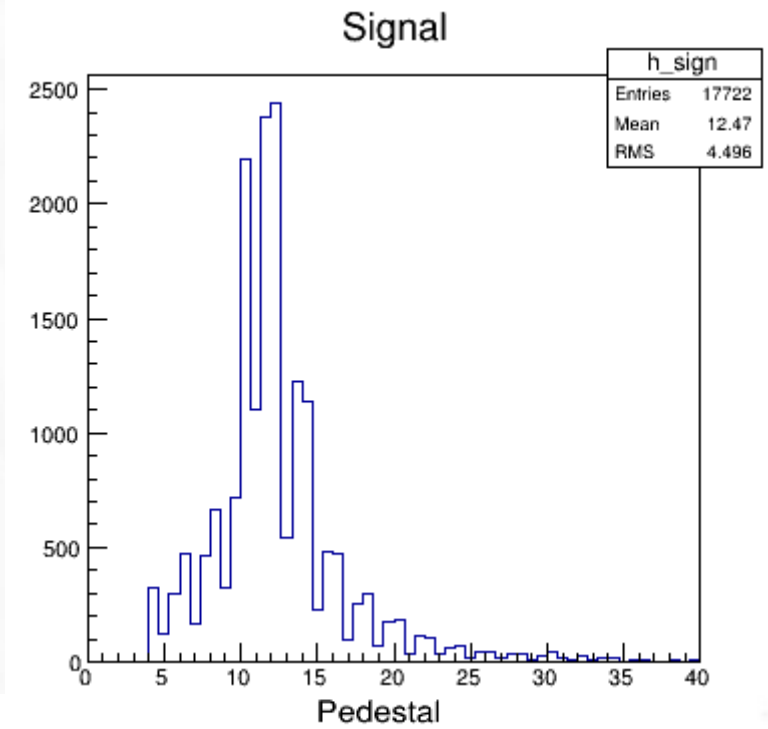
Run 770

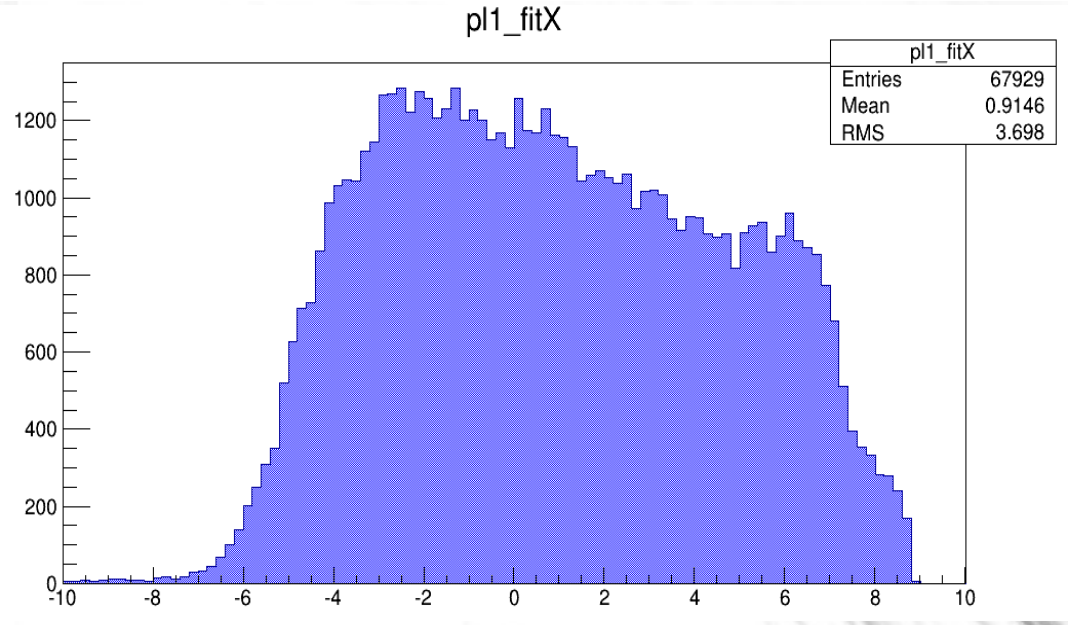


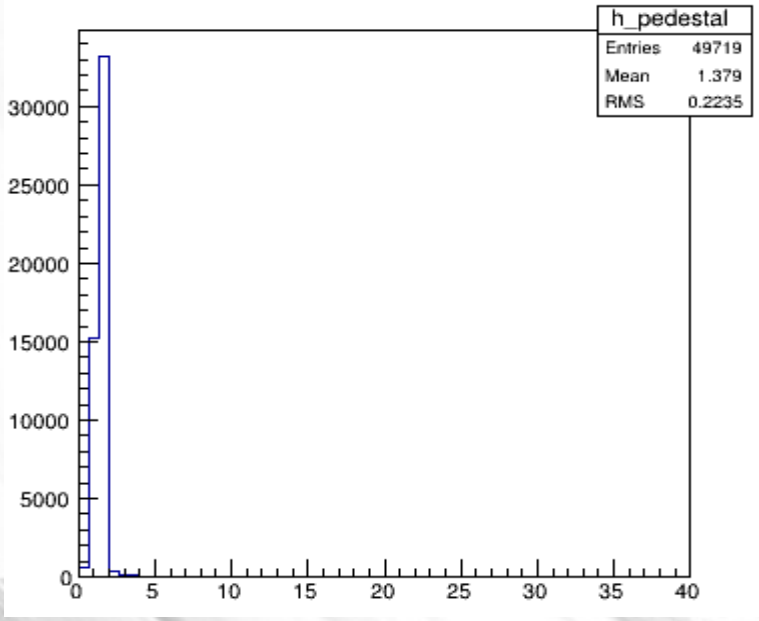
Hit map is given by EUTelescope software, run000770-clustering.root

Diamond position using all tracks from first Arm.

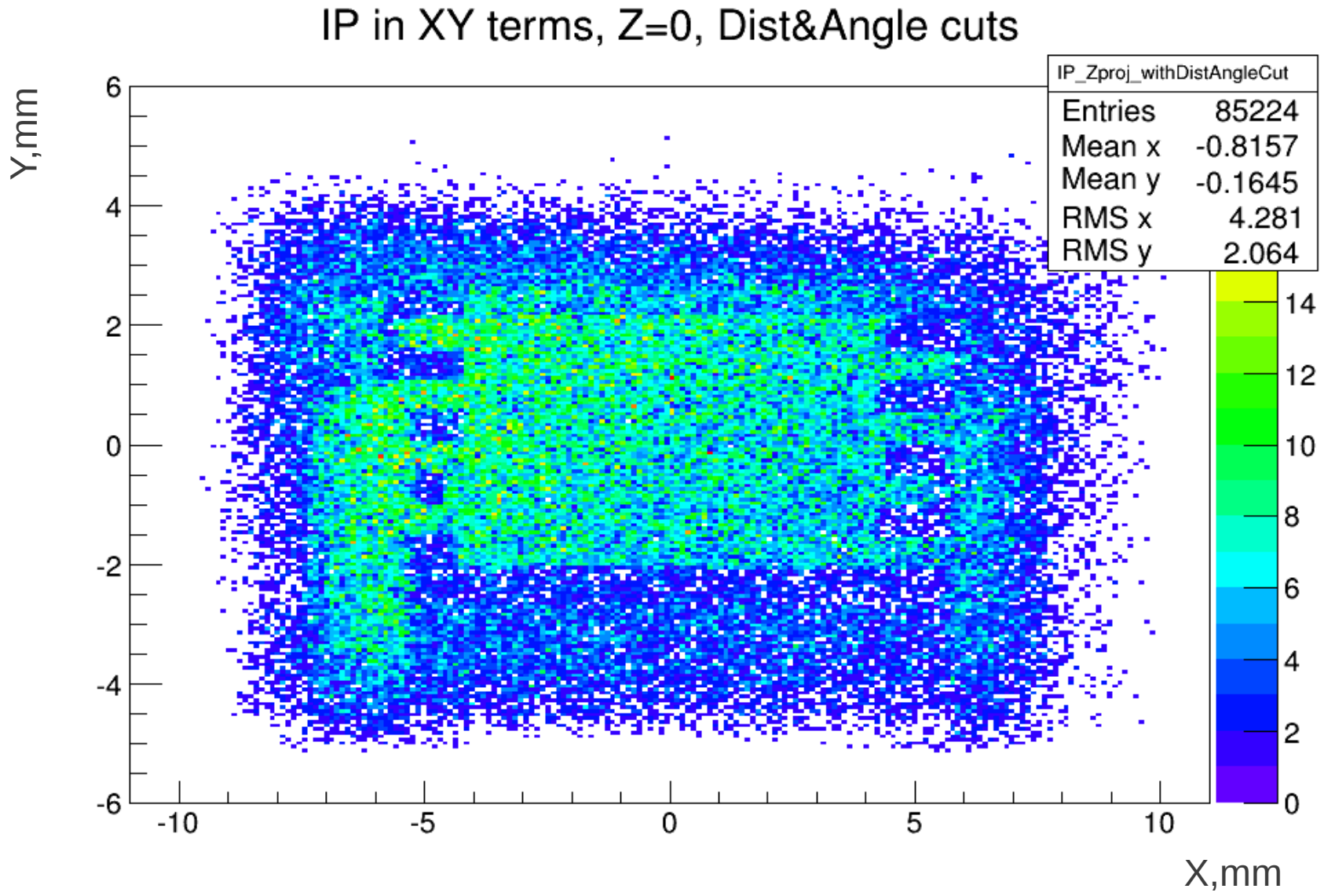




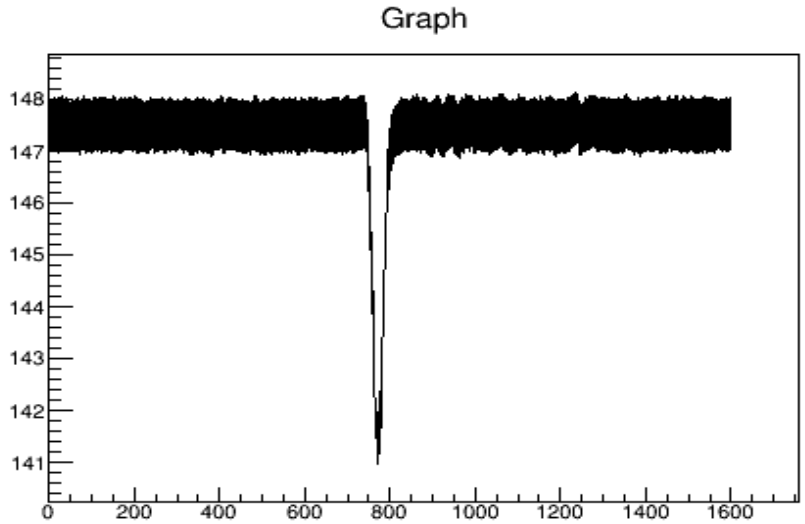


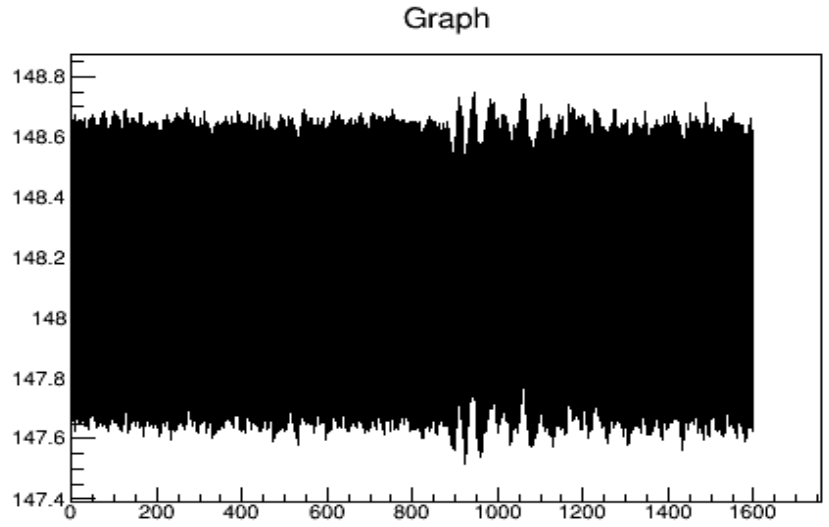


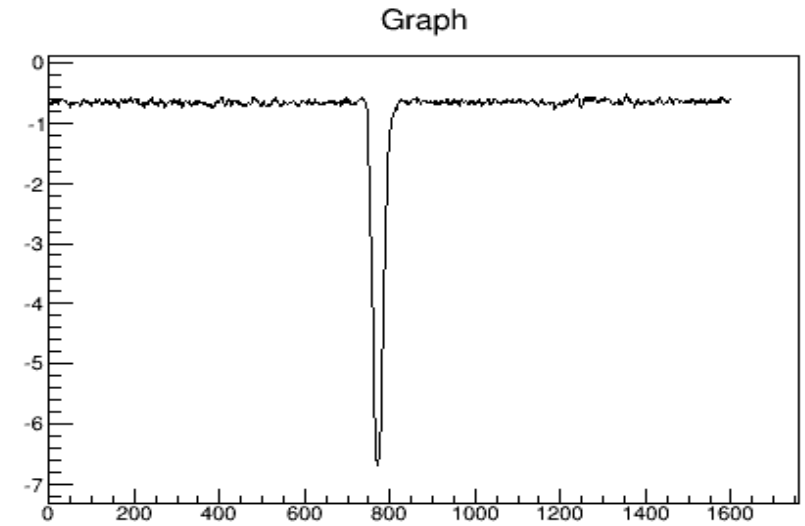
Intersection point (X,Y,0) for tracks with small distance & big angle for align run and run with DUT



first synchronization results, run188 - diamond







Thanks to Iramar, Konstantin, Maria and all TB participants!