



Current status of Test Beam data analysis

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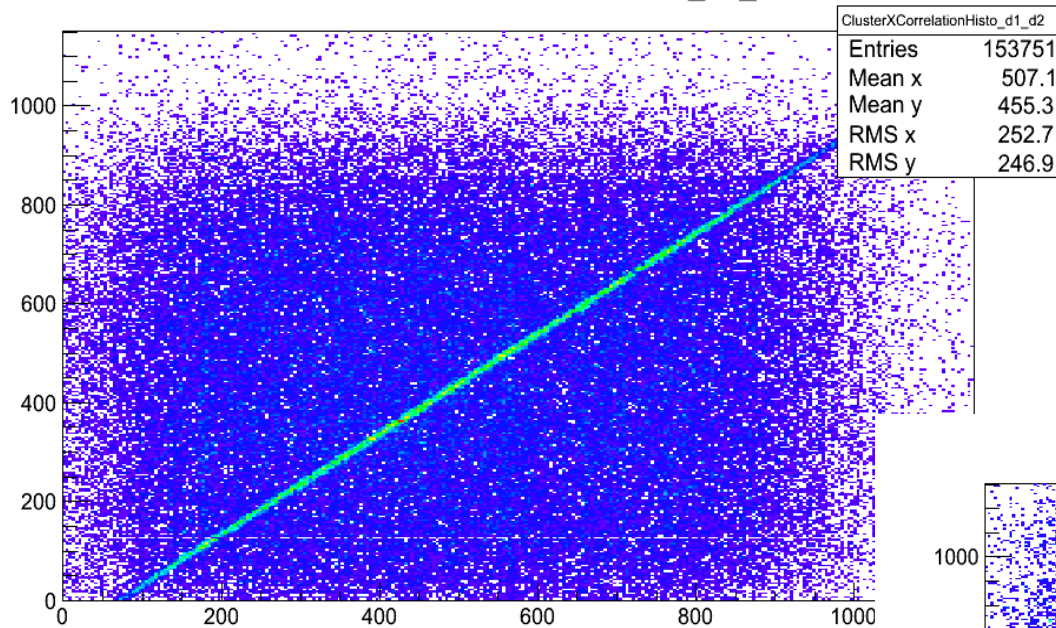
EUTelescope software

Offline analysis includes few steps:

- **converter** → format from raw to Lcio, create HopPixel;
- **clustering** → use HotPixel to create SensorOffset;
- **filter** → minimise clusters;
- **hitmaker** → use SensorOffset to do PreAlignment;
- **align** → precise alignment;
- **fitter** → build final tracks → DUT **analysis**.

Correlation between the number of hits in neighbouring telescope planes.

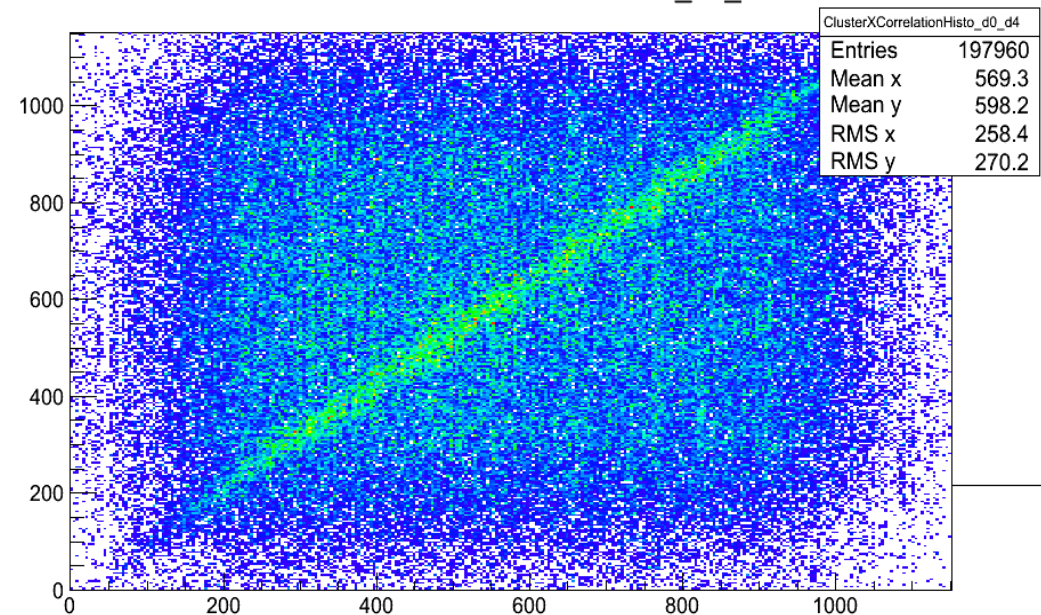
ClusterX/ClusterXCorrelationHisto_d1_d2



← One of the planes is shifted by over 100 pixels.

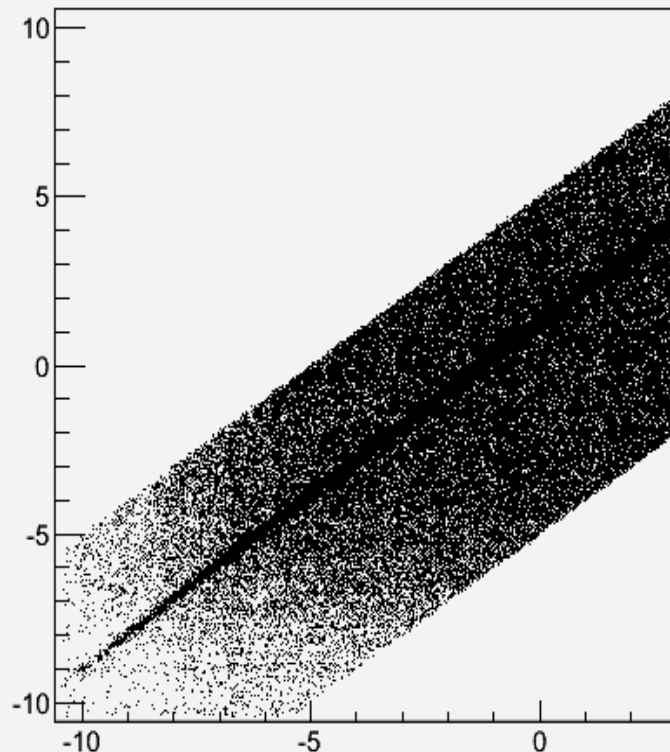
Correlation becomes wider →
for not neighborhood sensors.

ClusterX/ClusterXCorrelationHisto_d0_d4



Our file for alignment - run288

HitX/HitXCorrelationHisto_d0_d1

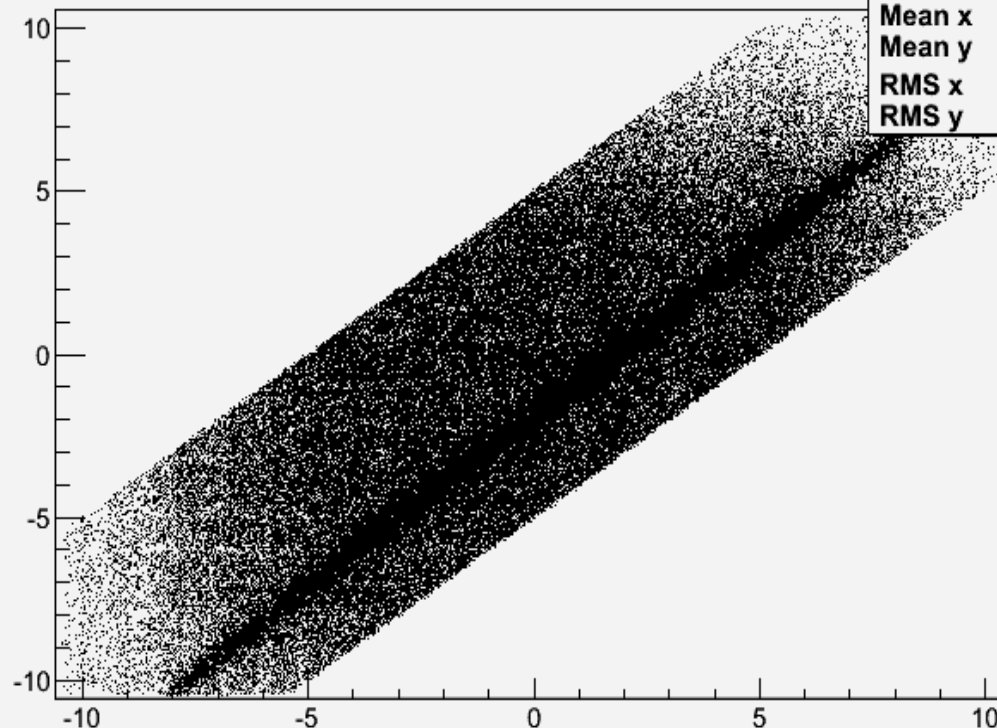


HitXCorrelationHisto_d0_d1

Entries	159127
Mean x	0.5131
Mean y	0.8831
RMS x	4.062
RMS y	4.1

Correlation plots after
Hitmaker step

HitX/HitXCorrelationHisto_d0_d3

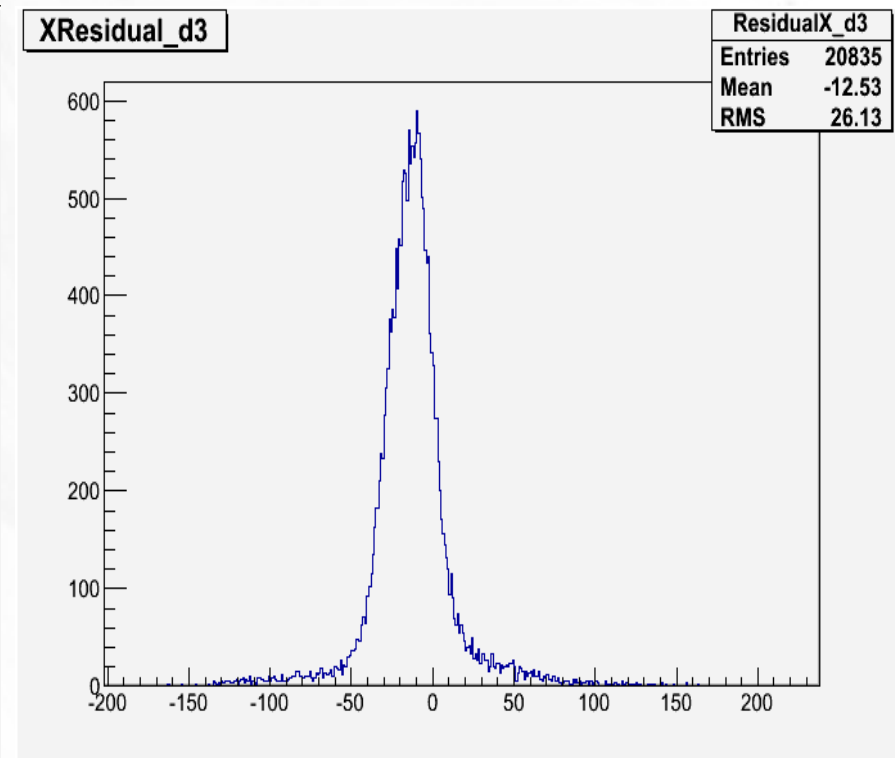
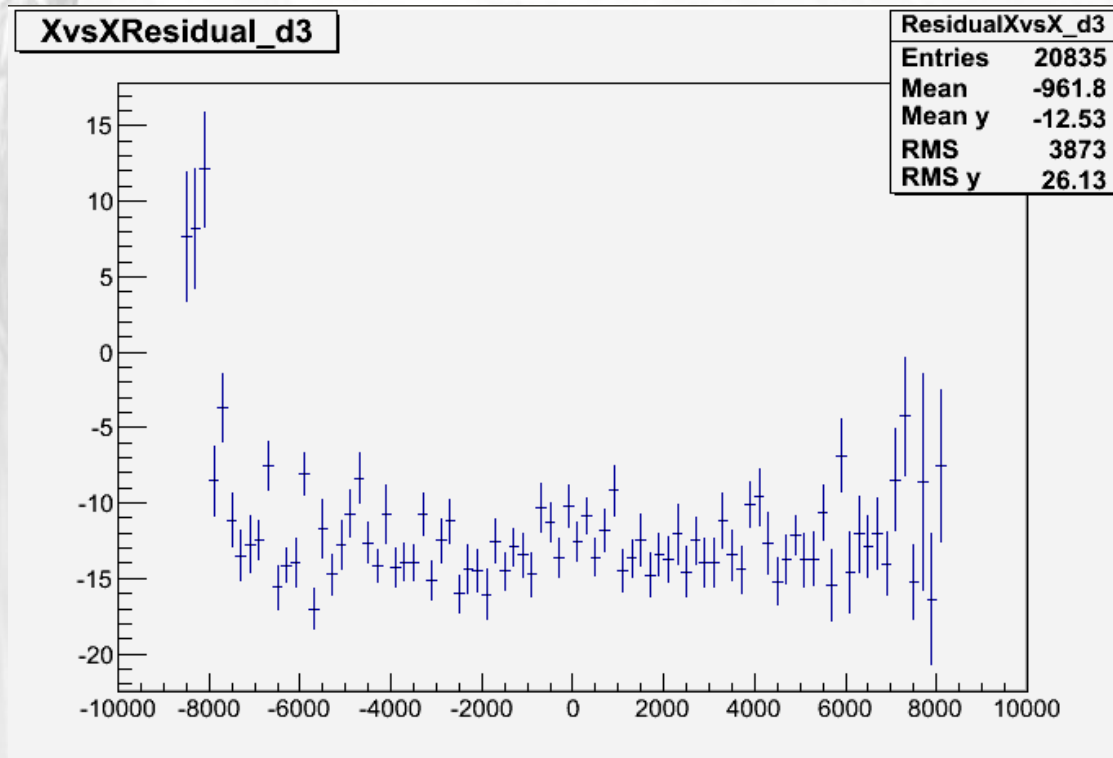


HitXCorrelationHisto_d0_d3

Entries	144710
Mean x	-0.3001
Mean y	-0.8211
RMS x	4.044
RMS y	4.135

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Residual for 3rd sensor



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Plans

- In the first approach alignment file is done.
- For all runs with detector we need to stop on EUTelescope soft hitmaker step and apply the same for all runs alignment. For this we need our Marlin processor.
- We need DUT description example.
- Our own fitter program and synchronisation program should be written.