Testbeam telescope tracks reconstruction

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CMS weekly meeting

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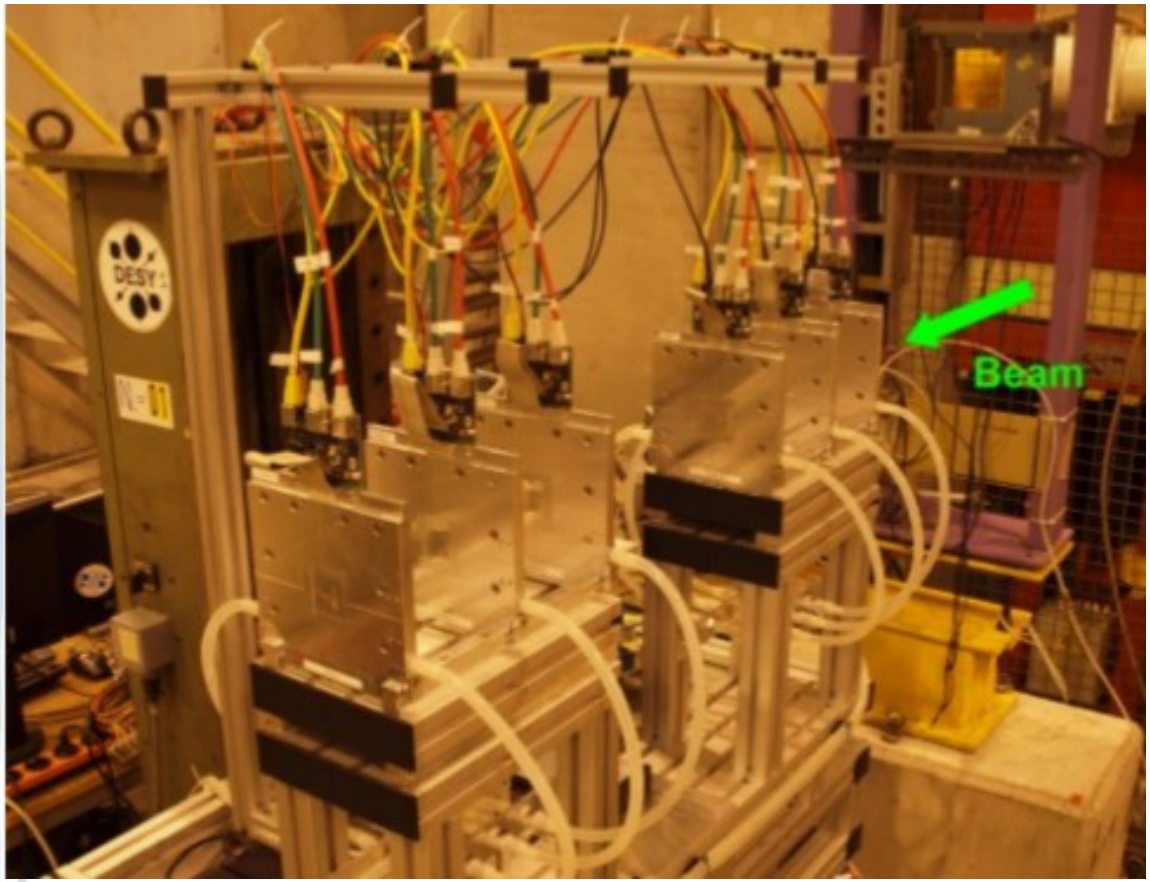
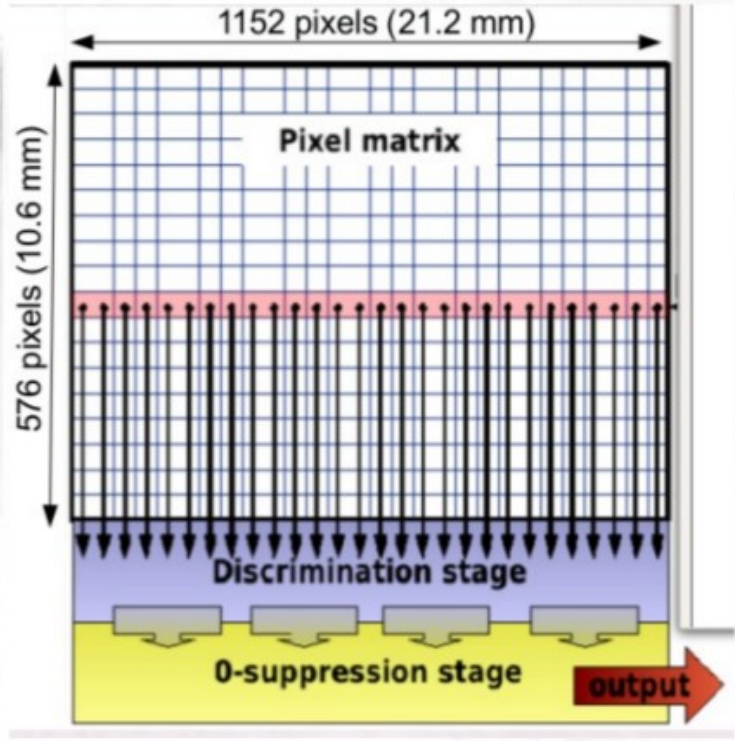
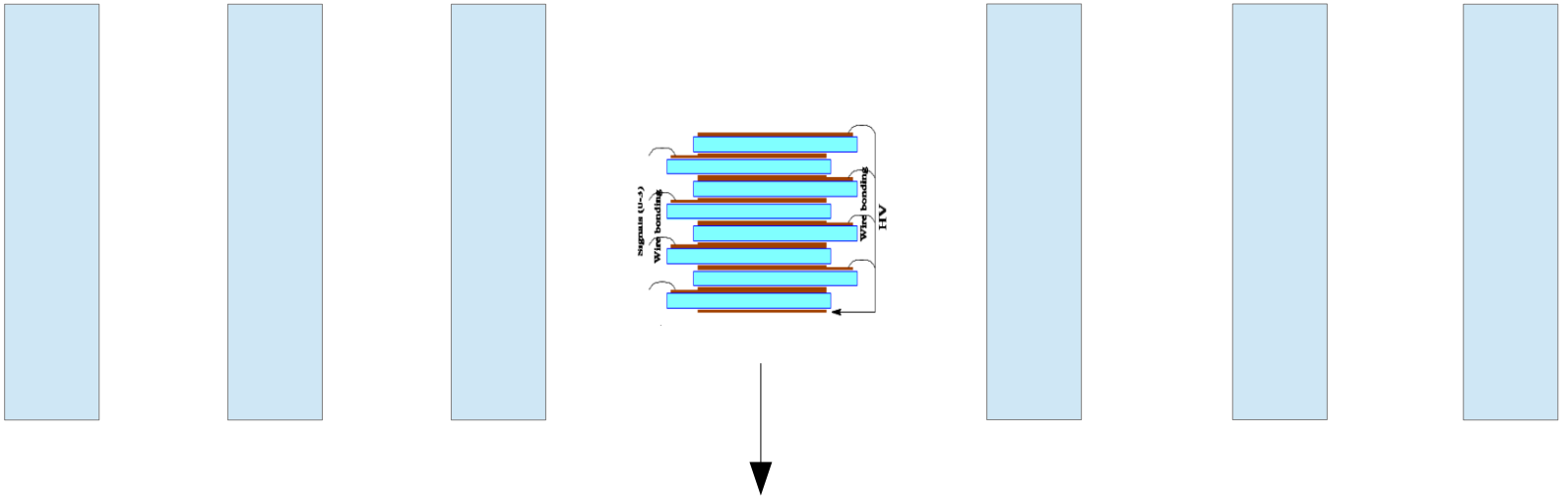
EUTelescope based on Mimosa26

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





Our geometry



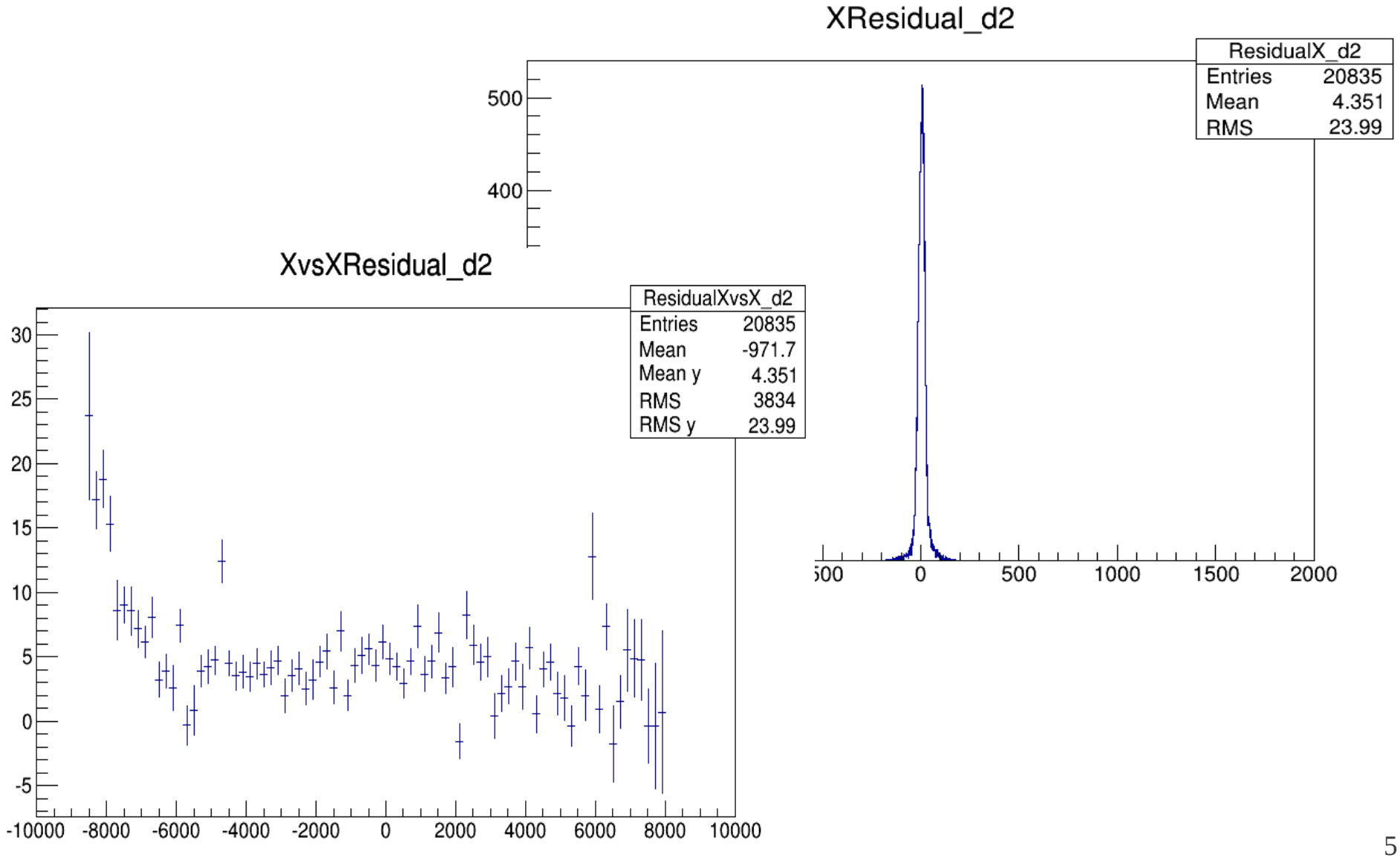
ADC output
In .root format

Telescope output in
.raw format

Analysis chain

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

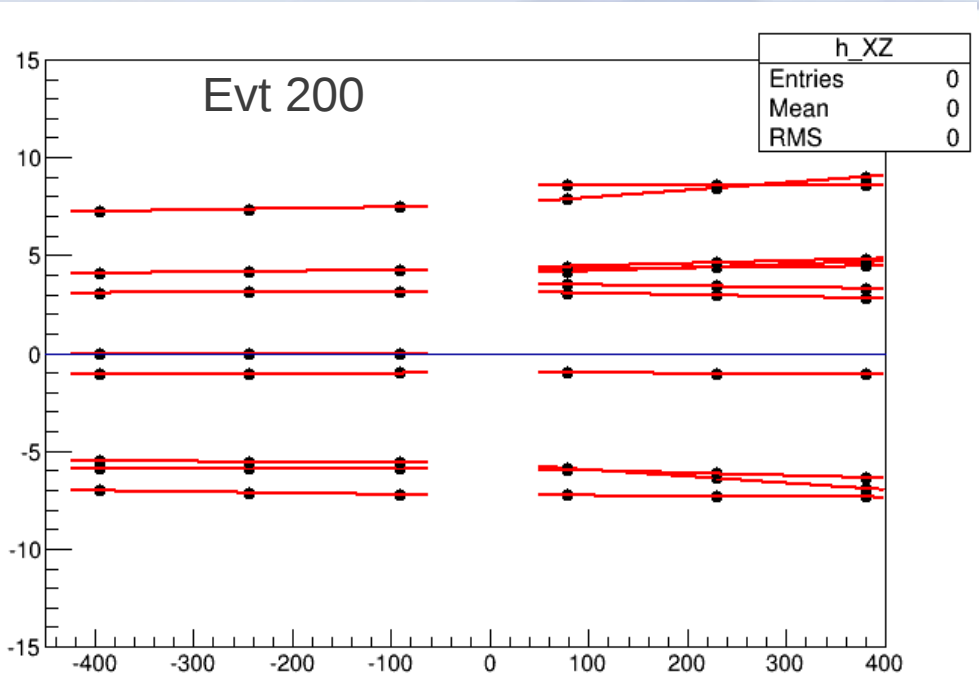
Alignment run - #288

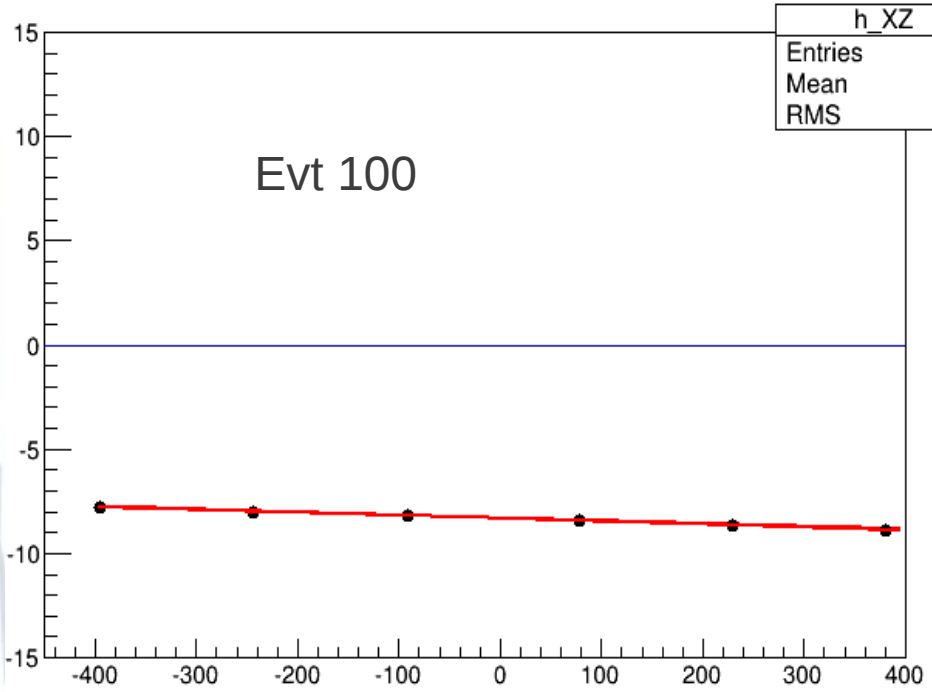


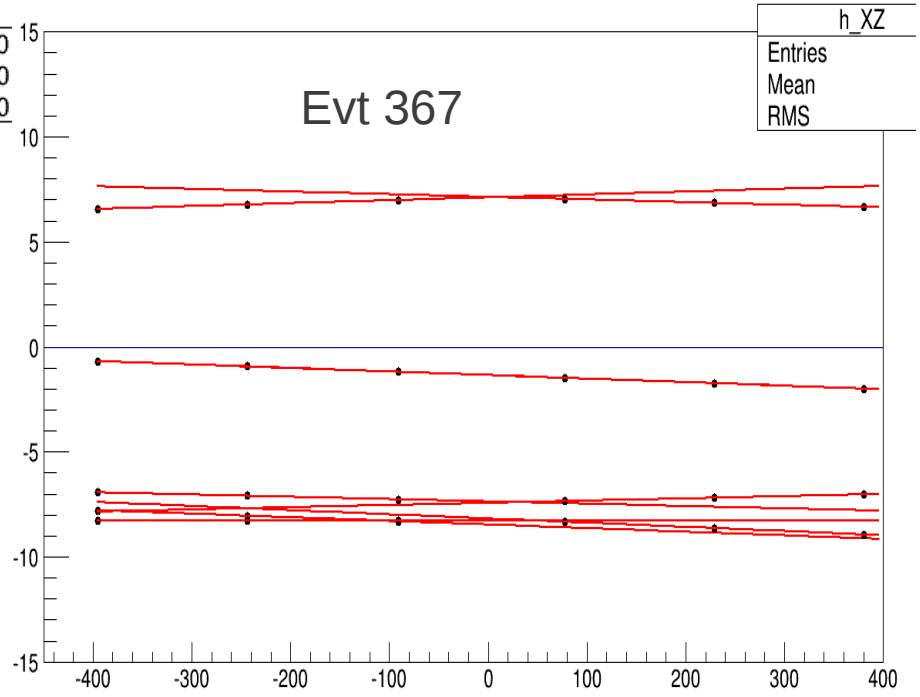
Questions were solved

- We want to apply same alignment for all runs.
- We do not need .lcio files, we want to go to .root format.
- We do not know how to describe detector, but do we need it?
- We want separate tracks from arms of telescope.
- We need algorithm for tracks crossing point search.

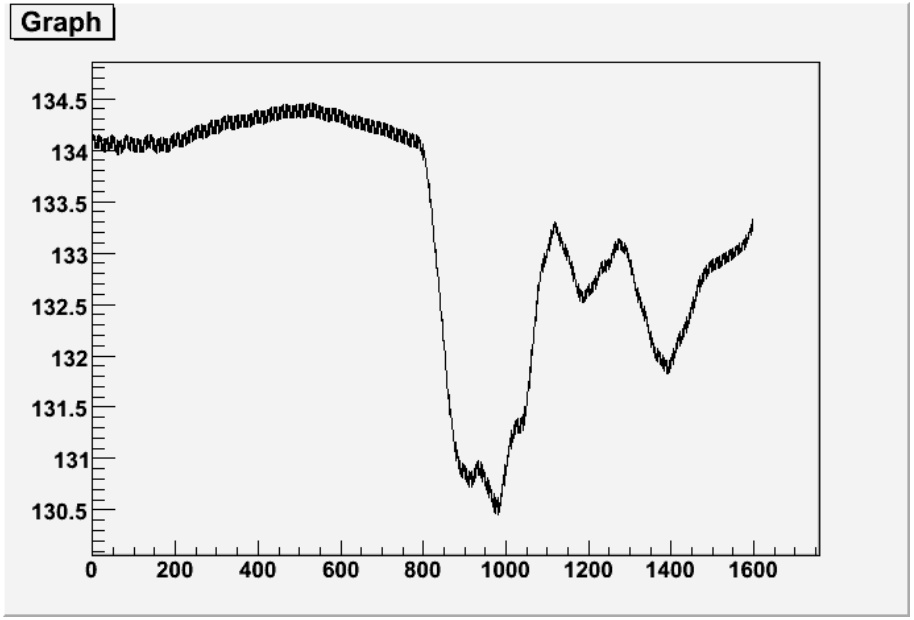
Fitted tracks for run #268







Synchronization program for telescope and ADC



- Ch0 – positive siglal
- Ch1 – negative signal
- In one event we can not see signal. Averaged signal we can see.
- Subtraction of base line will give "nice" signal shape.

Designs and plan

- We have alignment file
- We use one alignment file for all other files
- We have with coordinates after alignment
- Fitt hits in left and right arms

- I need to study full data file, programm for combination of the tracks, exclude combinatoric background, synchronization of ADS signal and track position.