Some Plots from RootFileProcessor (& GeometryChecker)

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Reconstruction and Making Plots

- I used MM standard(?) steering file (provided by Wenxin):

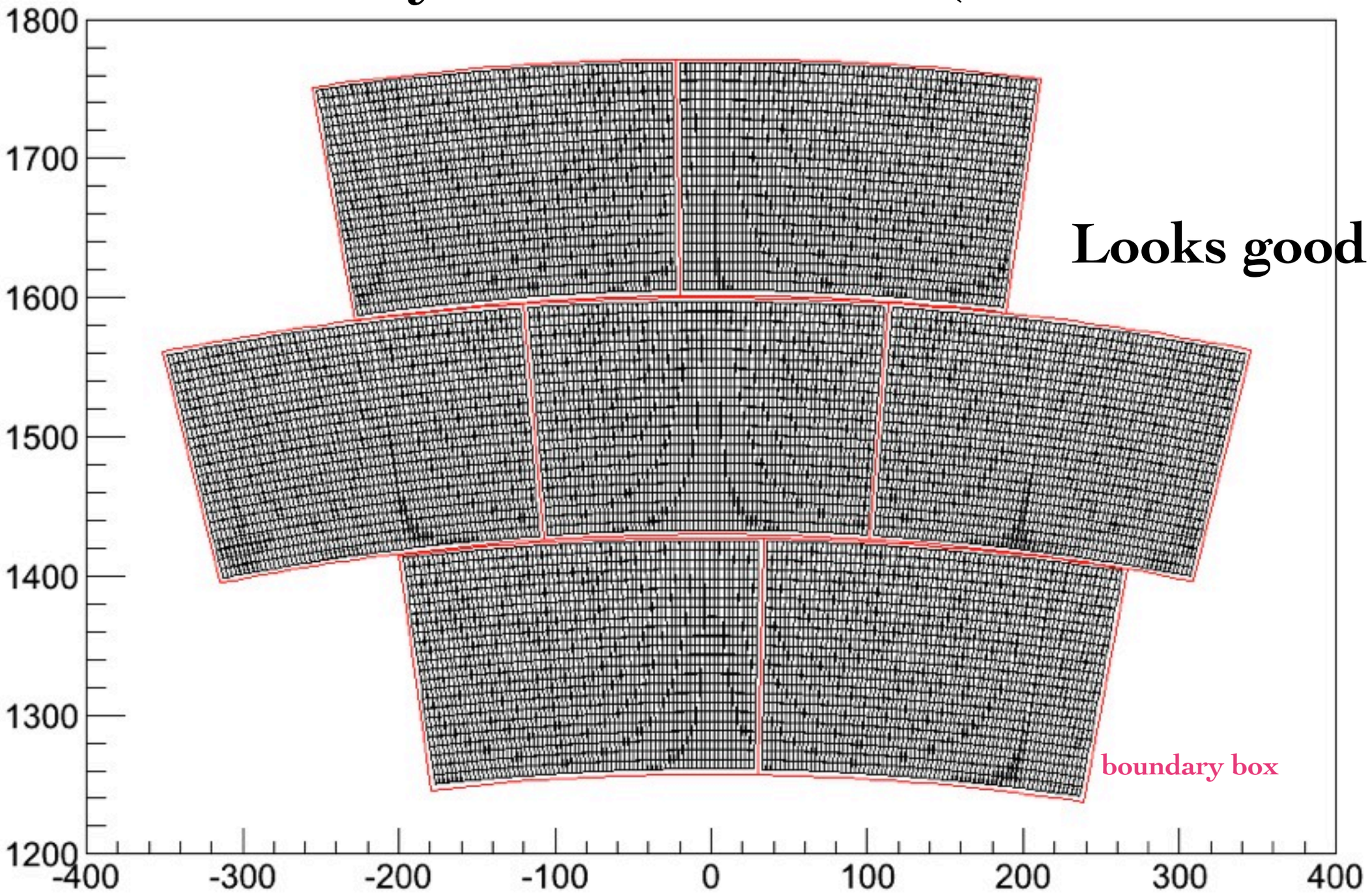
  - Peter's PulseFinderProcessor (use only peak adc as a pulse charge)
  - PRFBasedHitFinderProcessor (hit finder for MM)
  - BiasCorrectionProcessor
  - Peter's TrackMakingKalmanFilterProcessor (enable to use BiasCorrectionProcessr)

- For making plots, I used RootFileProcessor, which is also used in GEM analysis.

- Run : 2060, 2061, 2062, 2063, 2065, 2067, 2068, 2069, 2070

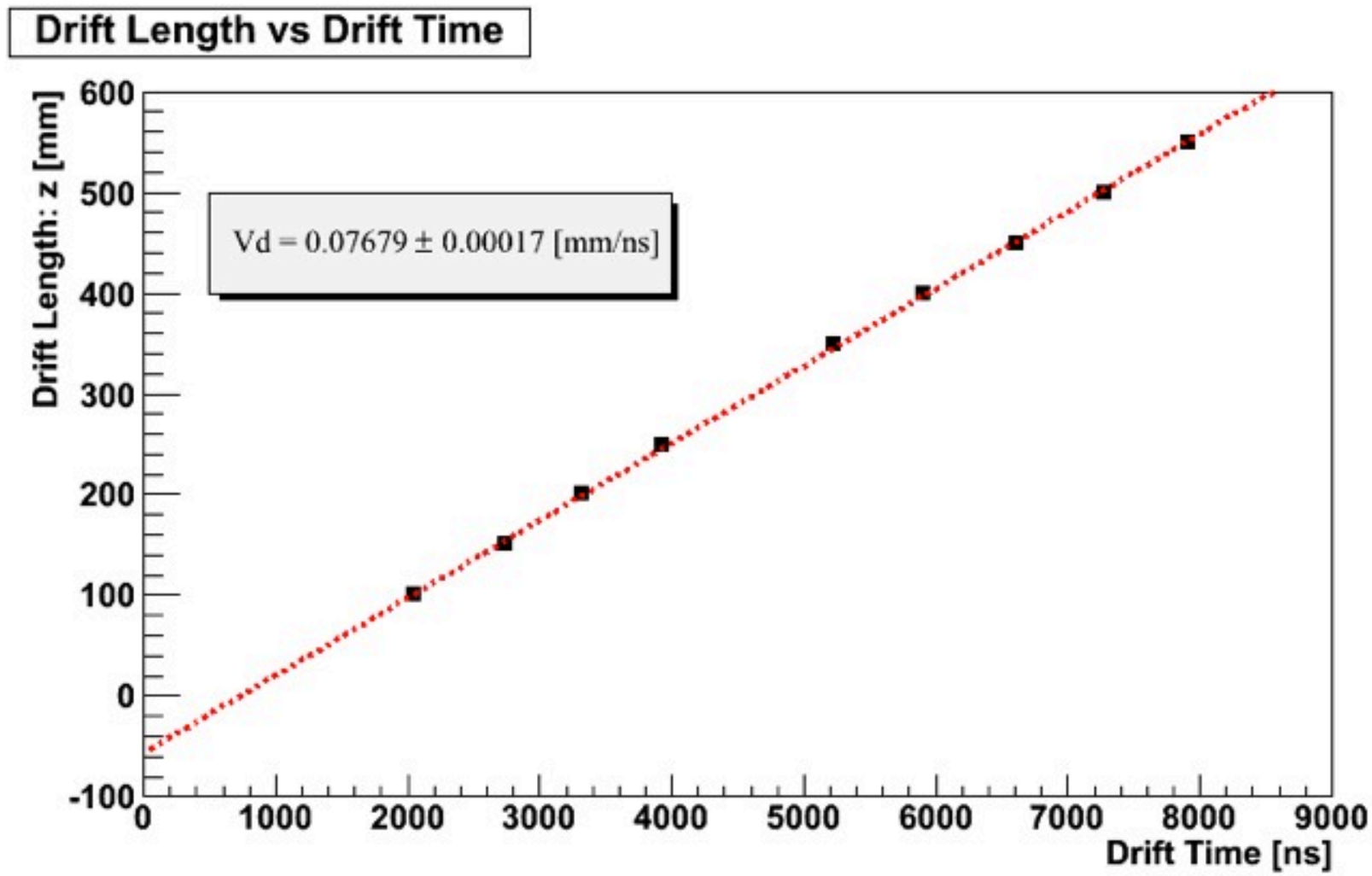
Drawing geometry from Gear File

Used PadGeometryChecker Processor (which is modified)



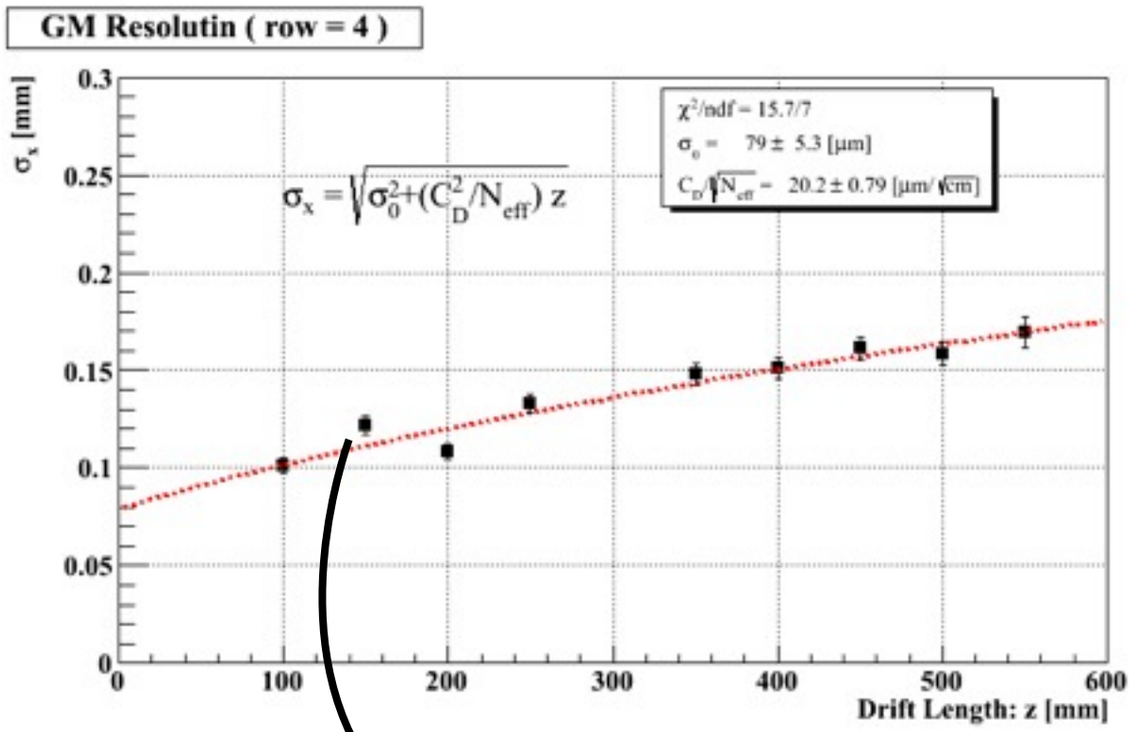
Drift Velocity

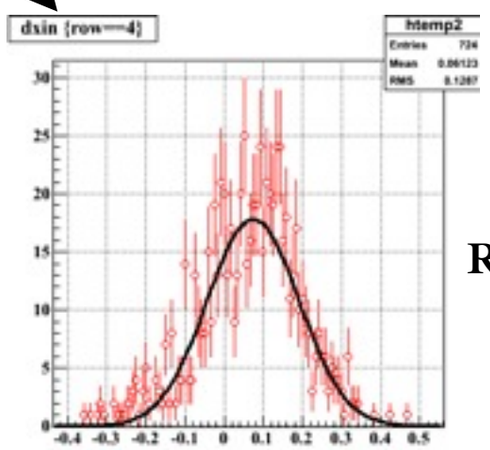
- Used only track associated pulses



Point Resolution

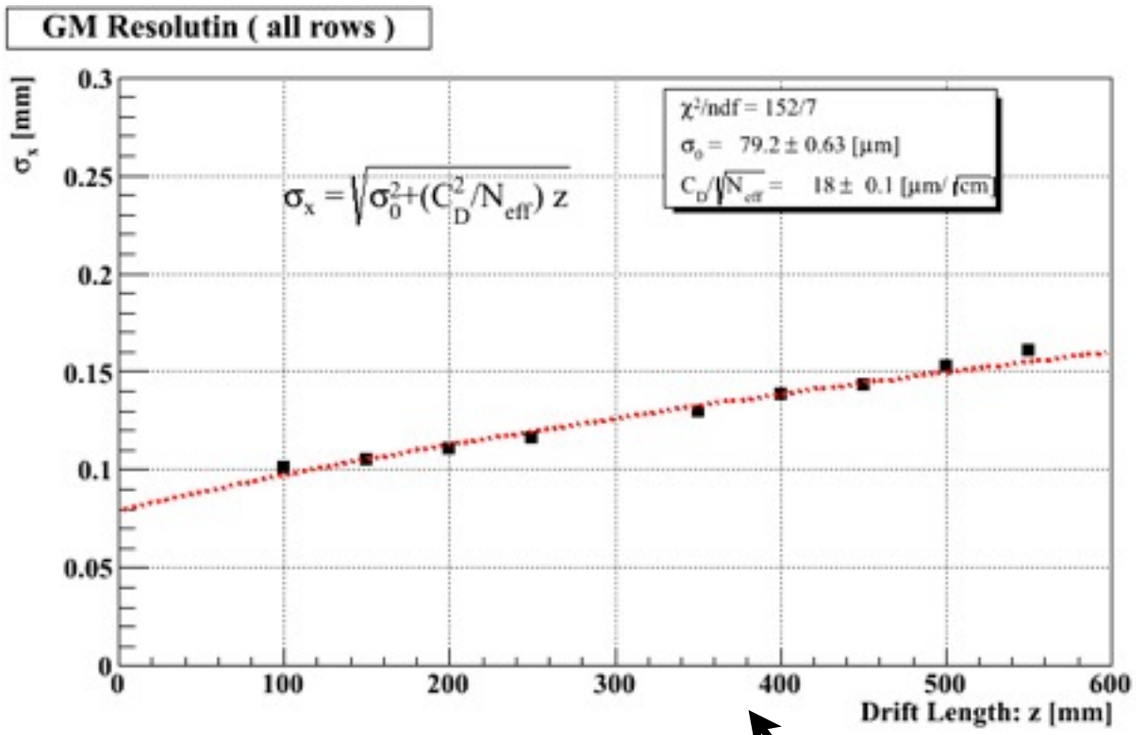
Used the bias-corrected data
Used only row 4





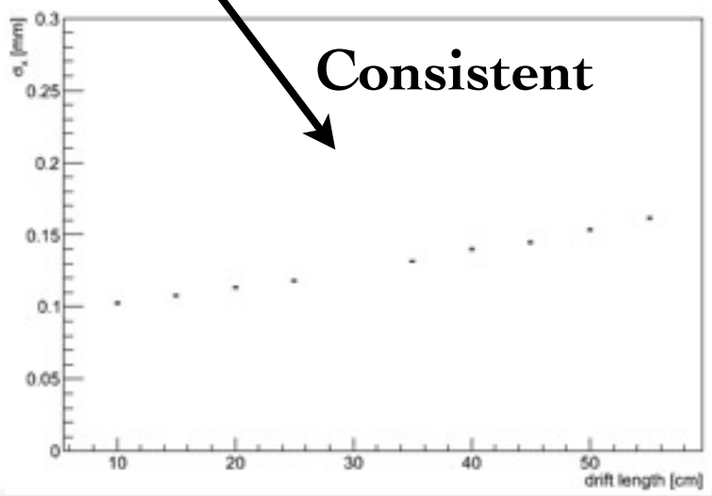
Residual

Combined all rows



Consistent with the results from TrackMakingKalmanProcessor +Resolution.C provided by Wenxin.

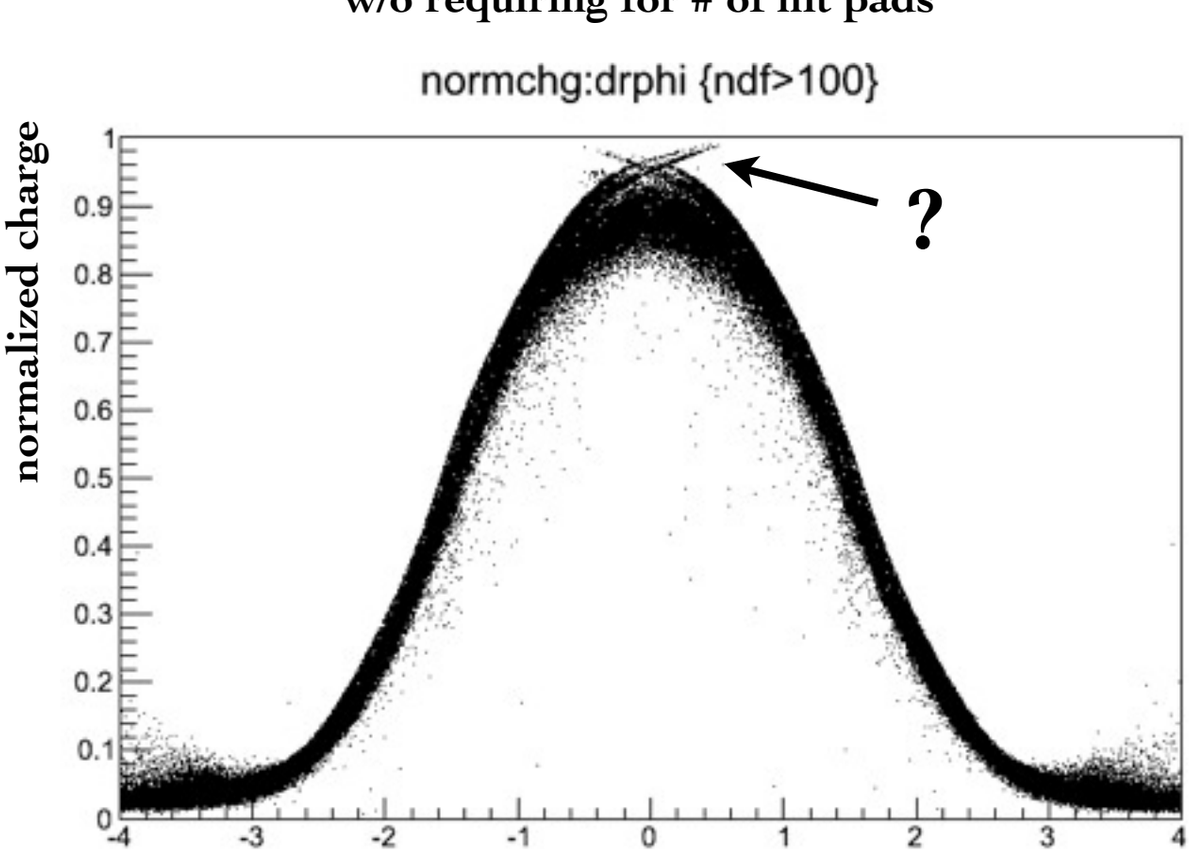
Consistent



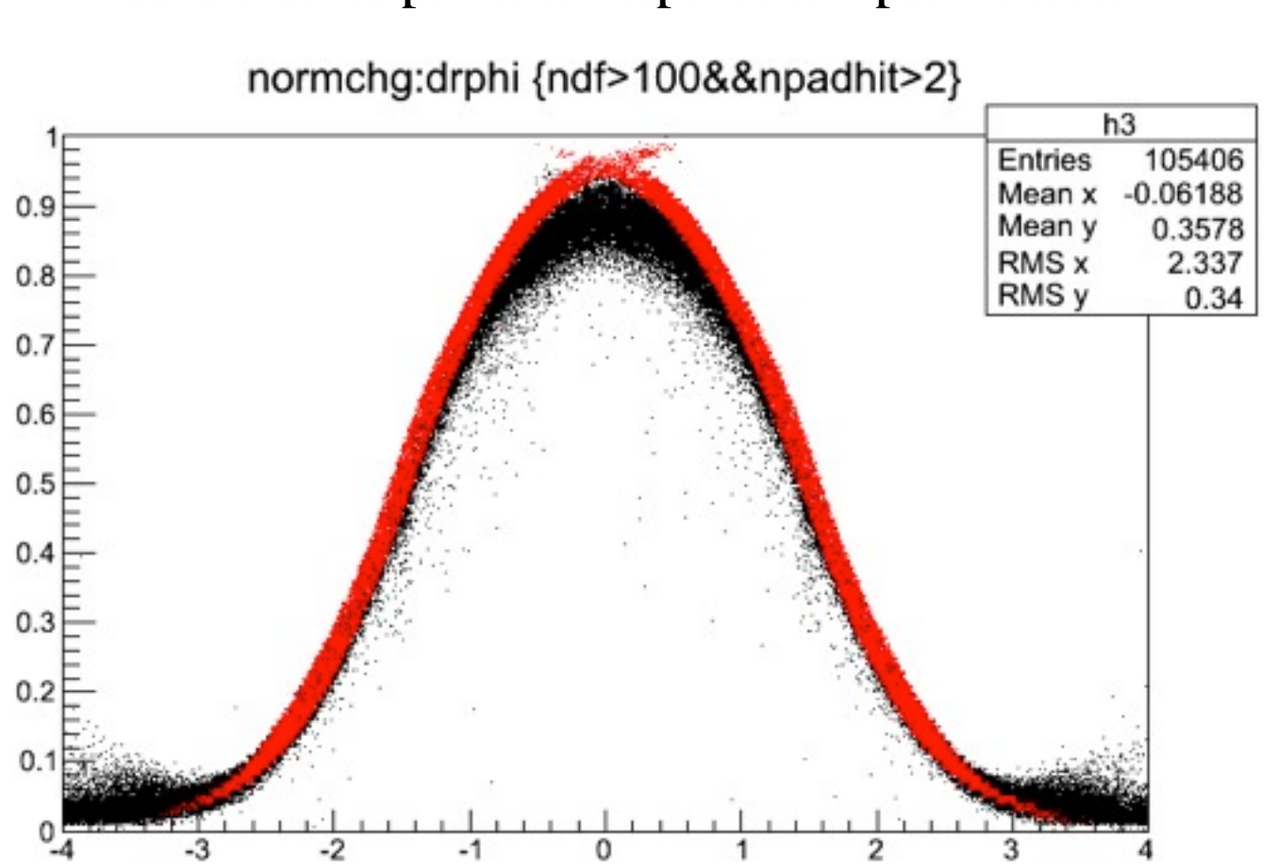
Pad Response

- Used only track associated hits
- All rows are combined

w/o requiring for # of hit pads



Found that red points corresponds to 2-pad hit cases

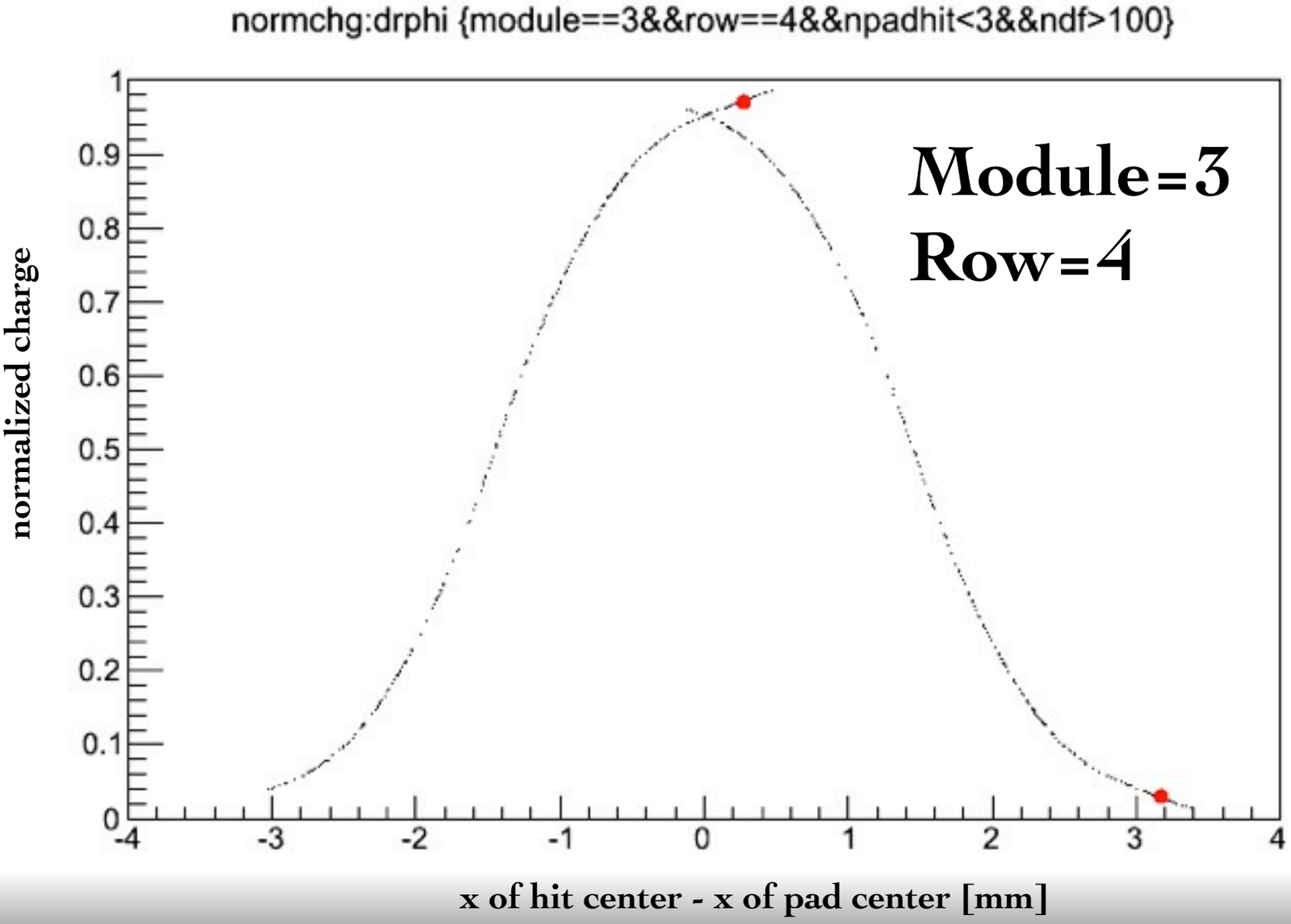


What I try to understand

Strange Behavior

In order to understand the detail, I checked PR at each row one by one.

I found that there are some strange behavior shown as red points in the figure.



The red points correspond to a hit in a event.
By definition, the weighted mean for these points should be zero, but it's not the case.

Possibilities :
- just bug in my code
- any problem in PRF fitting

(How many parameters do we need to fit for the PRF?
2-or3-pad hit may not provide enough information for the fitting.)

Others

One suggestion

For the convenience and common analysis codes as much as possible :

To create new TrackerHit collection, in which hits are already corrected, in the BiasCorrectionProcessor.

then I think
- we can use default TrackMakingKalmaFilterProcessor (and RootFileProcessor)
- it is easy for other groups to use BiasCorrectionProcessor
- convenient to compare the data before/after correction.

Summary & Plan

- I have learned how to analyze MM data.
(confirmed that the basic analysis had been prepared.)

- Now I am more interested in PRF fitting.

- I will continue MM analysis with Gilles in this week.