

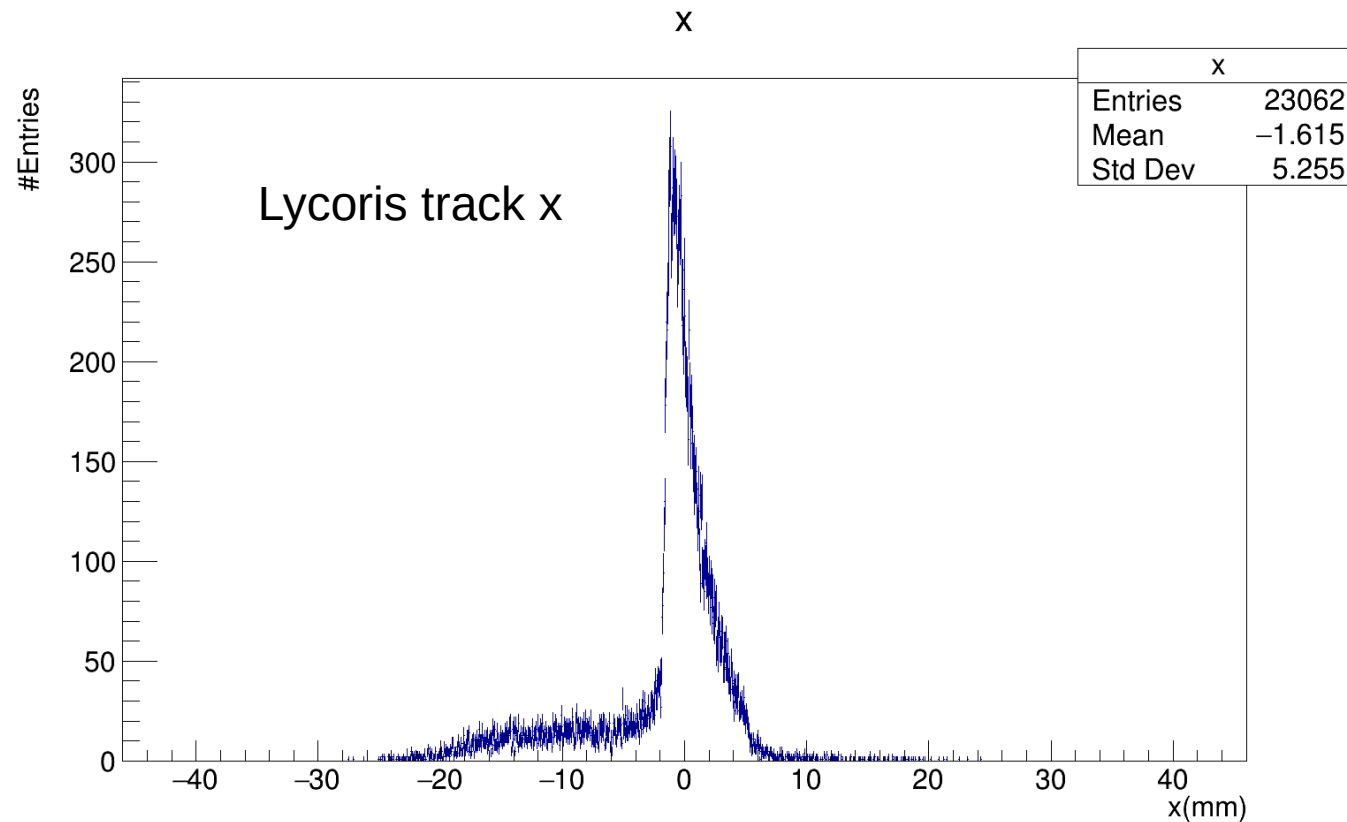
Testbeam, what has changed

- All cassette boards used had both dampened clock and trigger lines
- All sensors were glued into frames instead of held via rubber bands
- Two cassettes were placed within Azalea instead of one
- Performed measurements at different settings based on results gotten in the E-Lab



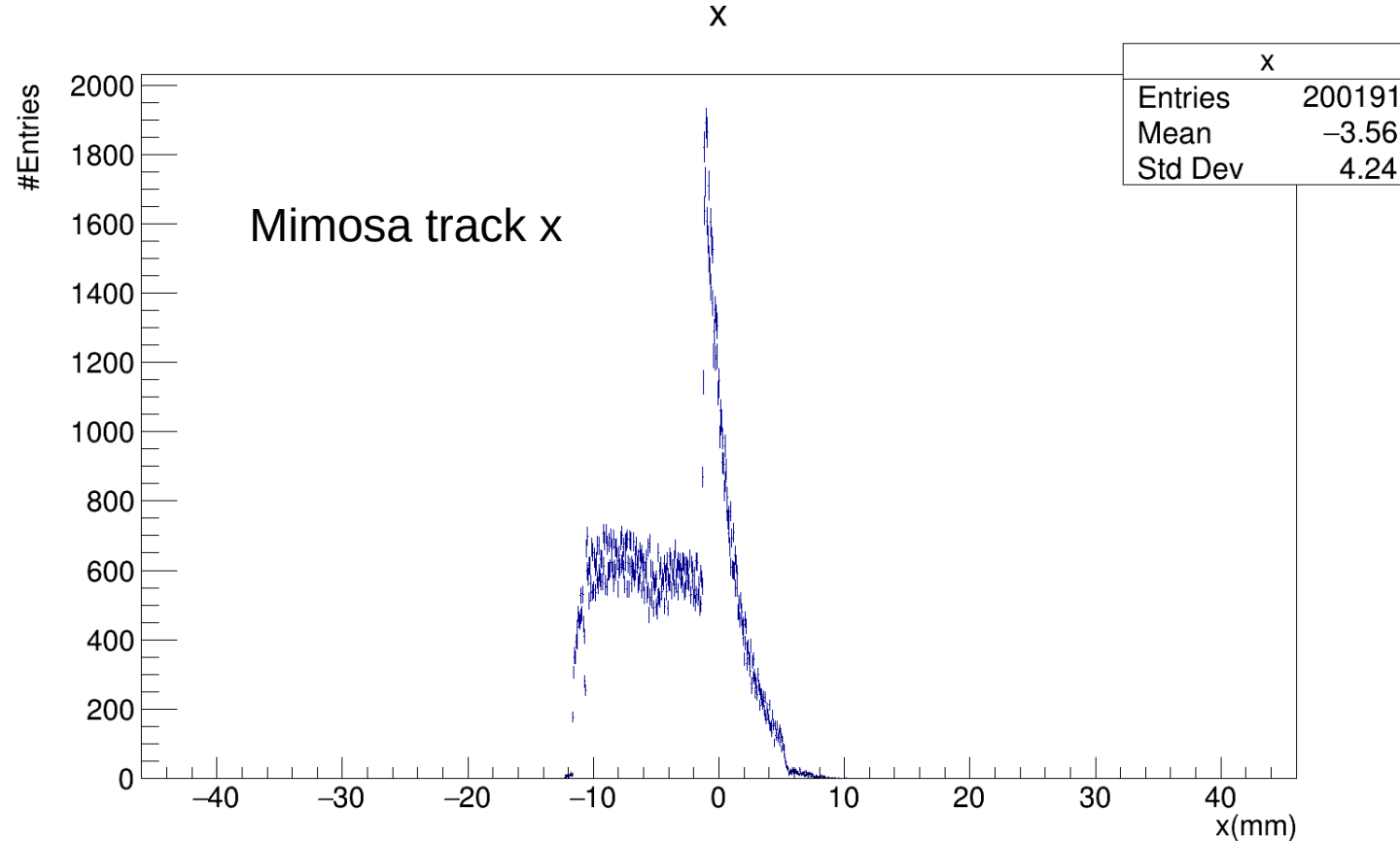
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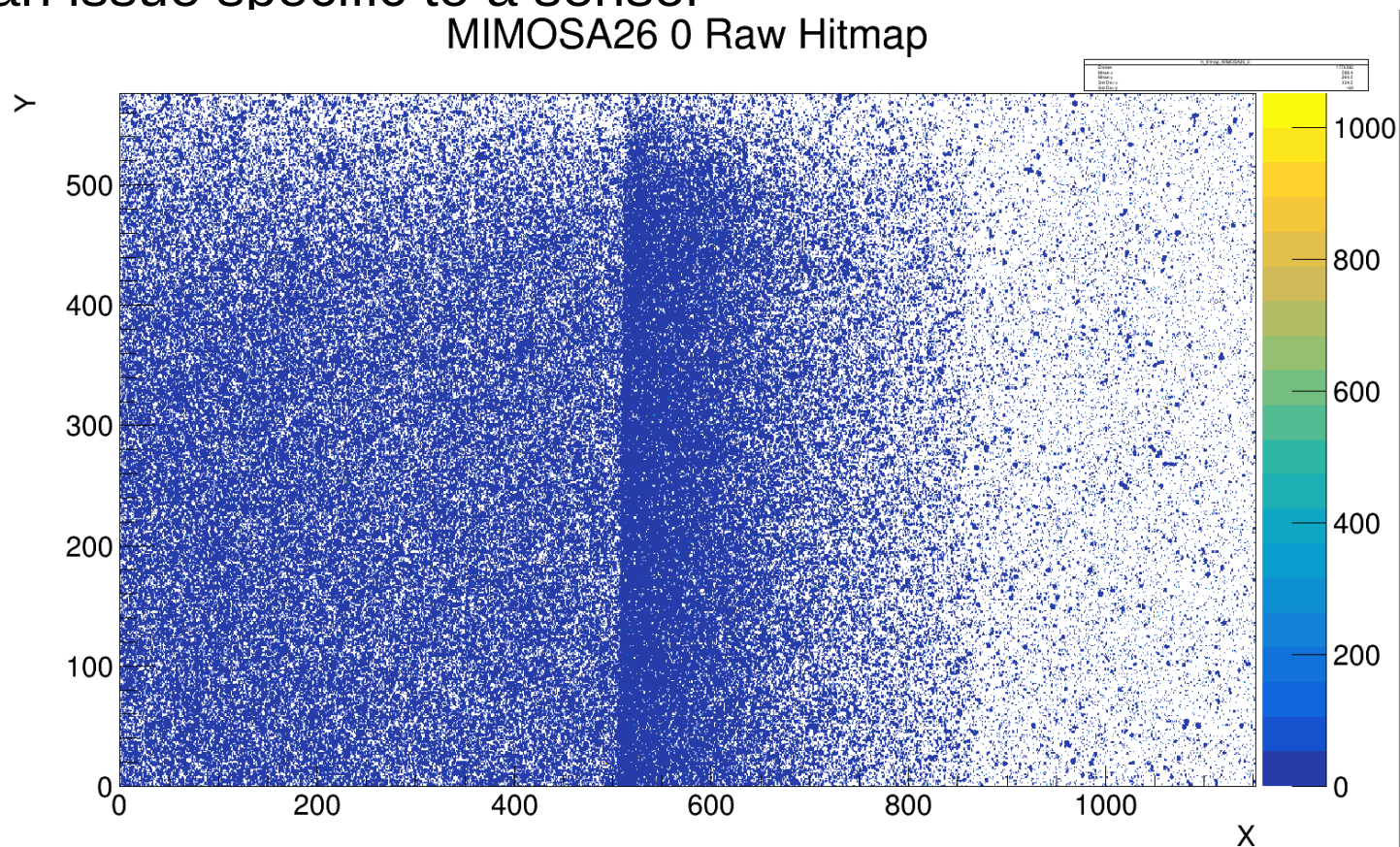


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MIMOSA26 0 Raw Hitmap

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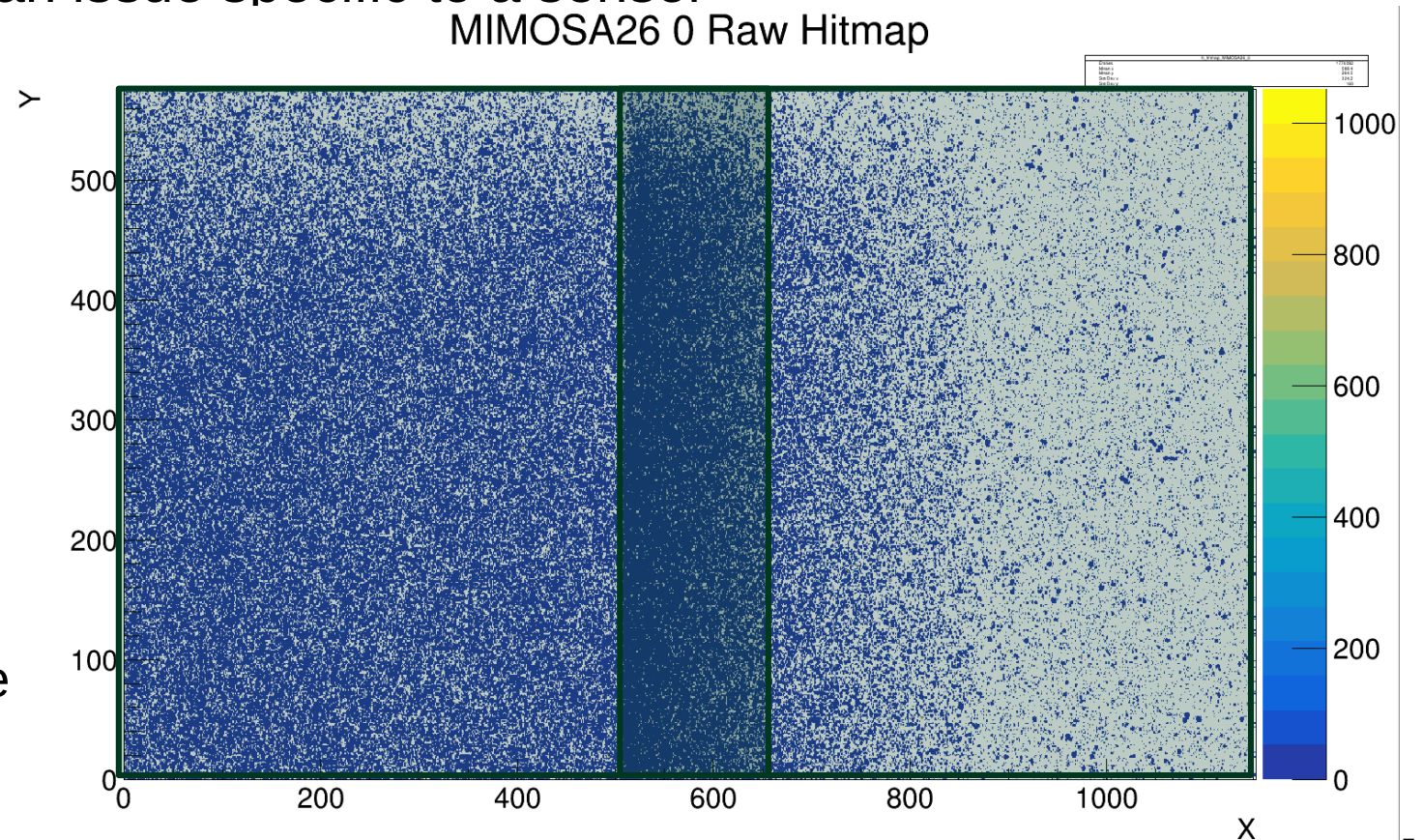
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The scintillators probably only have a small regional overlap with each other and the beam.

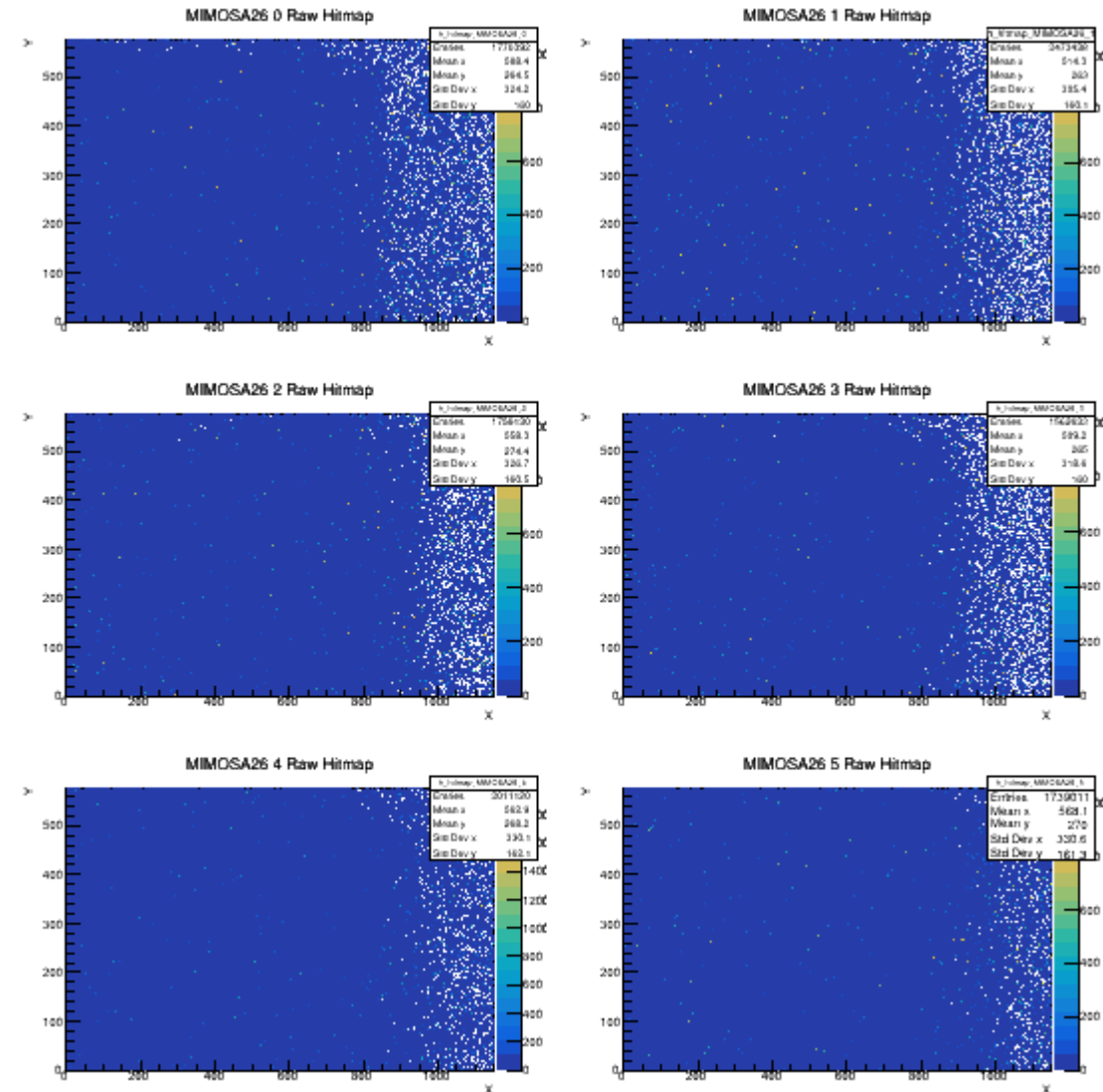
As only 2 scintillators were available the triggers to the right are probably where the particle hit that one scintillator and the other triggered on noise

MIMOSA26 0 Raw Hitmap



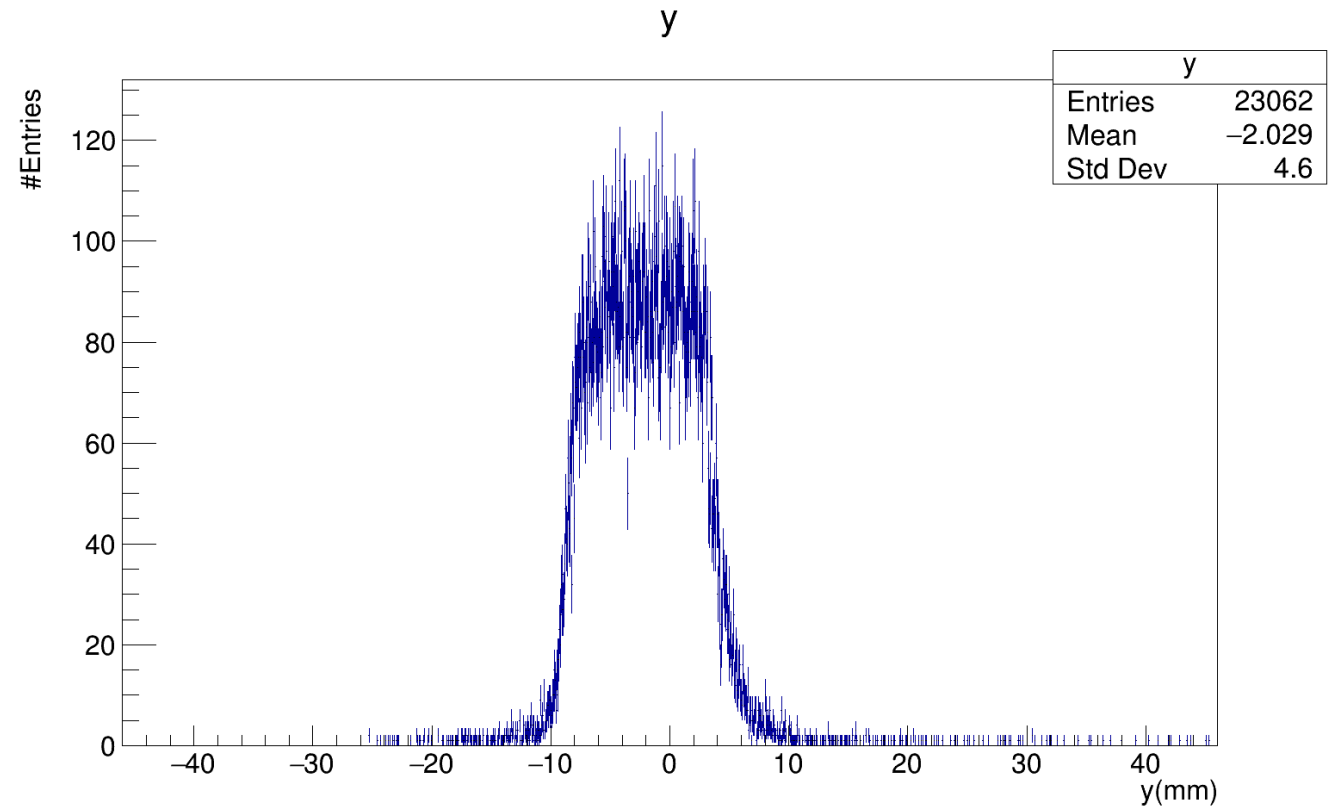
Why we did not notice

- The measurements were performed by me alone right before corona shutdown. (no second pair of eyes to verify)
- In addition when looking at the online event monitor for all hit maps it looks perfectly normal. Yes the beam appears to not be completely covering the mimosa but that is in principle not a huge issue
- Only when zooming at one specific distribution does the error become apparent as shown in the previous slide



Why we did not notice continued

- Mostly the focus of the system was in the y position and y resolution.
- We are less sensitive to x and did not really care too much about it (also an error such as this would not appear in residuals etc.)
- Mimosa is mostly used to verify the system we never really checked the raw hit distributions before especially because we did find track
- In y the entire distributions looks perfectly normal



What to do

- **The open question is do I go into the testbeam again? Yes or No?**
 - Next open beam time is the 3rd of August
- The data is heavily biased because of the triggering and while I have an explanation for the x distribution it is not something I would like to have in there
- While Mengqing will not be present. Lennart Huth, a colleague with extensive knowledge in silicon, said he would be willing to help me for that week.
- In principle the most time would be moving the system to the beam and setting it up which can be done in a day if no major issues appear
- In principle the x positions are not that important and I have an explanation for the excess
- The central noise is not understood and could reappear in this new set of data ignoring any other potential issues that could appear.
- I need to finish my PhD by October this year not that this would not be possible when doing the testbeam but it will take some more time away from writing.