Status report - Thursday

Timeline for Bachelor Studies

Maurice Donner David Schledewitz

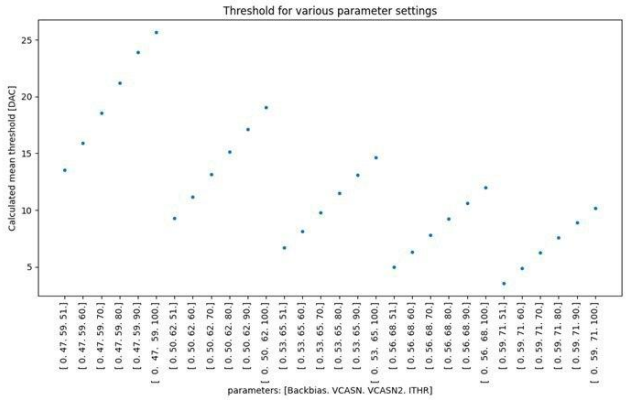
September 10th, 2020

March

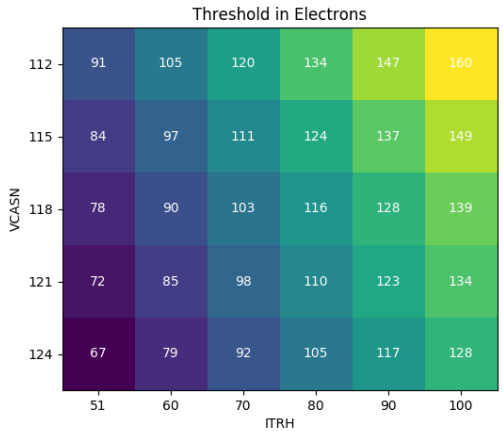
- Starting to work together with Bogdan and Pascal on the ALPIDE Telescope.
- Main Operation of the Telescope
- What is a Threshold Scan?

April

- Plotting first results of threshold scans

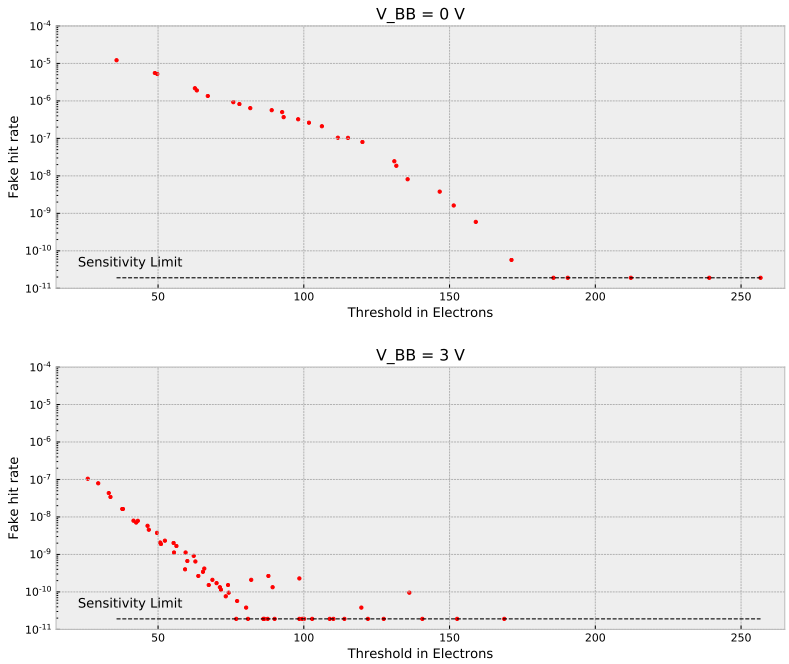


- Later that month: Automising the procedure and plotting the first Threshold "Heatmaps"



April

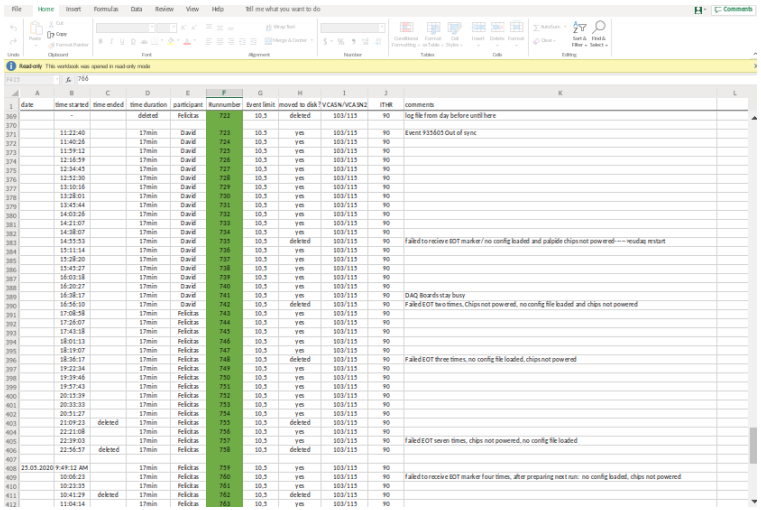
- Also finishing the First Google Document
- Looking at first Noiseoccupancy Scans



- Deciding to take Cosmic data due to the COVID-19 restrictions
- Finishing the second Google Document

May

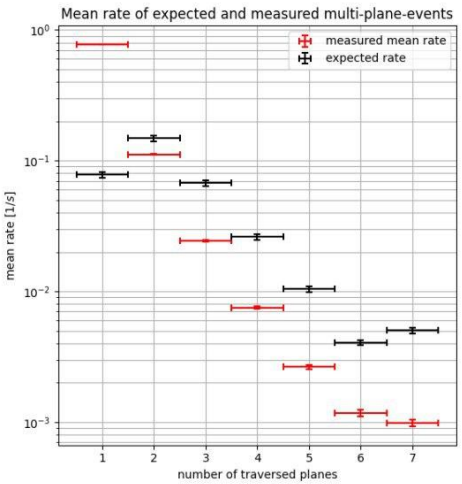
- Cosmics yield huge filesizes. Starting to work on a program that handles them...
- Meanwhile keep taking as much data as possible, and documenting the process in another Google Document

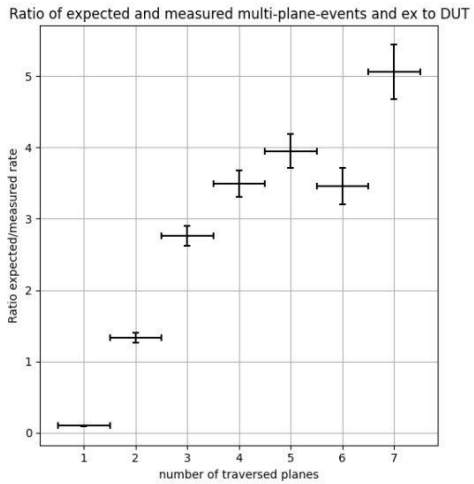


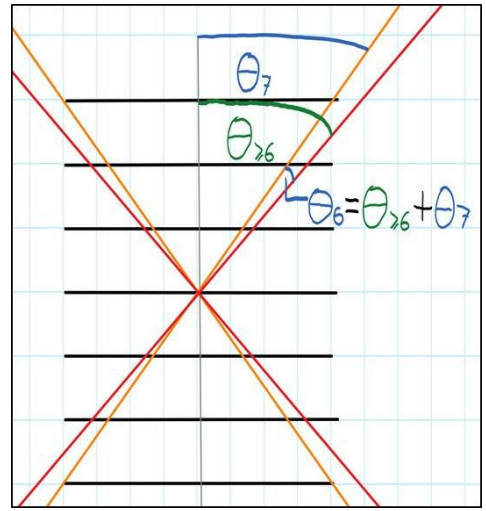
date	time started	time ended	time duration	participant	Runnumber	Event limit	moved to disk?	VCASN/VCA1N2	ITHR	comments
	-		deleted	Felicitas	722	10.5	deleted	103/115	90	log file from day before until here
	11:22:40		17min	David	723	10.5	yes	103/115	90	Event 935605 Out of sync
	11:40:28		17min	David	724	10.5	yes	103/115	90	
	11:59:12		17min	David	725	10.5	yes	103/115	90	
	12:16:39		17min	David	726	10.5	yes	103/115	90	
	12:34:45		17min	David	727	10.5	yes	103/115	90	
	12:52:30		17min	David	728	10.5	yes	103/115	90	
	13:10:16		17min	David	729	10.5	yes	103/115	90	
	13:28:01		17min	David	730	10.5	yes	103/115	90	
	13:45:44		17min	David	731	10.5	yes	103/115	90	
	14:03:26		17min	David	732	10.5	yes	103/115	90	
	14:21:07		17min	David	733	10.5	yes	103/115	90	
	14:38:07		17min	David	734	10.5	yes	103/115	90	
	14:55:53		17min	David	735	10.5	deleted	103/115	90	Failed to recieve EOT marker / no config loaded and pulpdle chips not powered ---> reudaq restart
	15:11:14		17min	David	736	10.5	yes	103/115	90	
	15:28:20		17min	David	737	10.5	yes	103/115	90	
	15:45:27		17min	David	738	10.5	yes	103/115	90	
	16:03:18		17min	David	739	10.5	yes	103/115	90	
	16:20:27		17min	David	740	10.5	yes	103/115	90	
	16:38:17		17min	David	741	10.5	yes	103/115	90	DAQ Boards stay busy
	16:56:10		17min	David	742	10.5	deleted	103/115	90	Failed EOT two times, Chips not powered, no config file loaded and chips not powered
	17:08:58		17min	Felicitas	743	10.5	yes	103/115	90	
	17:26:07		17min	Felicitas	744	10.5	yes	103/115	90	
	17:43:18		17min	Felicitas	745	10.5	yes	103/115	90	
	18:01:13		17min	Felicitas	746	10.5	yes	103/115	90	
	18:19:07		17min	Felicitas	747	10.5	yes	103/115	90	
	18:36:17		17min	Felicitas	748	10.5	deleted	103/115	90	Failed EOT three times, no config file loaded, chips not powered
	19:22:34		17min	Felicitas	749	10.5	yes	103/115	90	
	19:39:46		17min	Felicitas	750	10.5	yes	103/115	90	
	19:57:43		17min	Felicitas	751	10.5	yes	103/115	90	
	20:15:39		17min	Felicitas	752	10.5	yes	103/115	90	
	20:33:33		17min	Felicitas	753	10.5	yes	103/115	90	
	20:51:27		17min	Felicitas	754	10.5	yes	103/115	90	
	21:09:23	deleted	17min	Felicitas	755	10.5	deleted	103/115	90	
	22:21:08		17min	Felicitas	756	10.5	yes	103/115	90	
	22:39:03		17min	Felicitas	757	10.5	yes	103/115	90	Failed EOT seven times, chips not powered, no config file loaded
	22:56:57	deleted	17min	Felicitas	758	10.5	deleted	103/115	90	
25.05.2020	9:49:12 AM		17min	Felicitas	759	10.5	yes	103/115	90	
	10:06:23		17min	Felicitas	760	10.5	yes	103/115	90	Failed to receive EOT marker four times, after preparing next run: no config loaded, chips not powered
	10:23:35		17min	Felicitas	761	10.5	yes	103/115	90	
	10:41:29	deleted	17min	Felicitas	762	10.5	deleted	103/115	90	
	11:04:14		17min	Felicitas	763	10.5	yes	103/115	90	

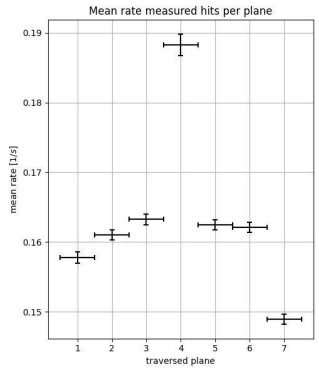
May

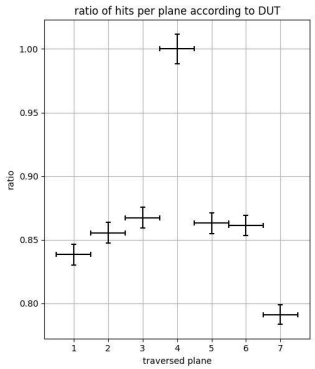
- Looking especially at Muon rates, chip effectiveness and making first calculations about angular distributions





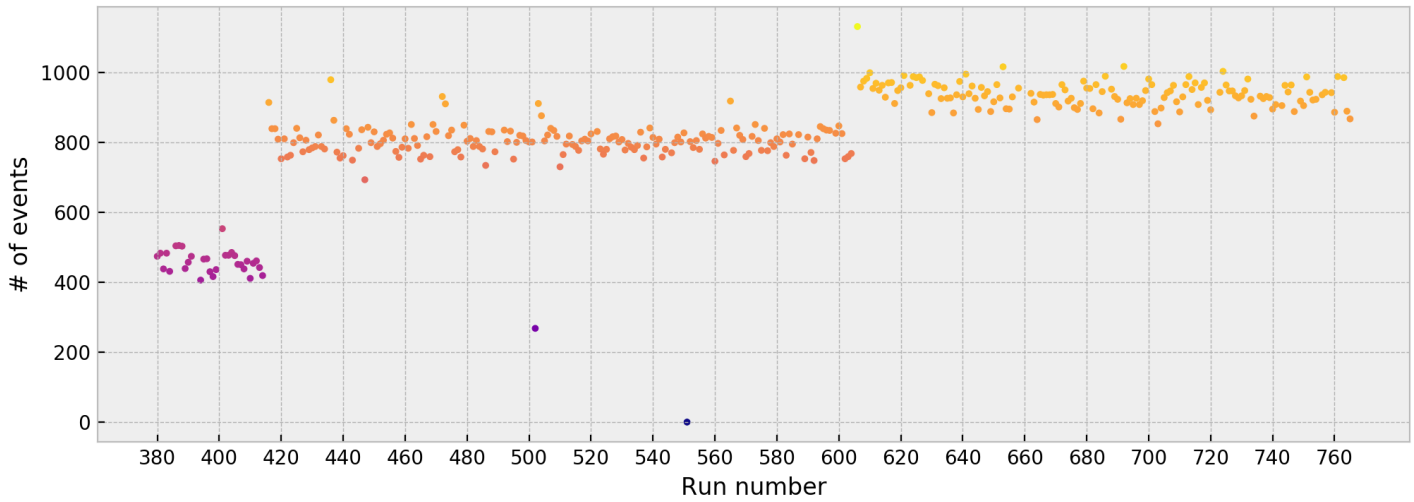






June

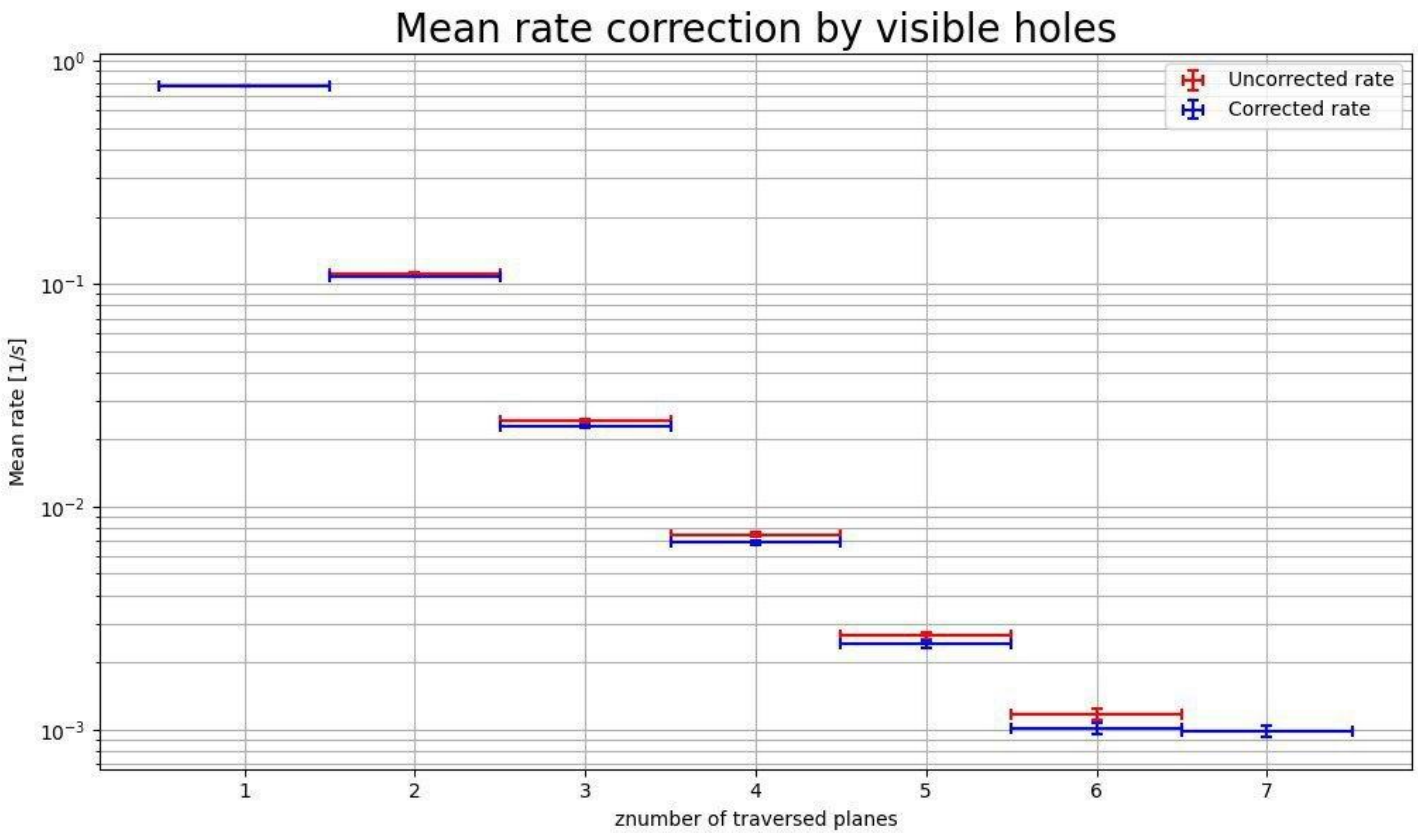
- Finishing the compression program, and taking first looks at the cosmic data as a whole



- Starting to work on a tracking algorithm, since the **data per run** is too small for corryvreckan to calculate any tracks

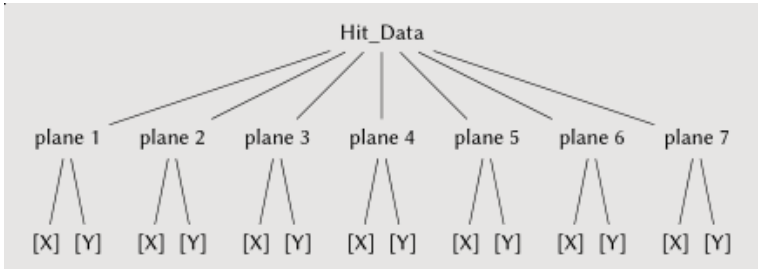
June

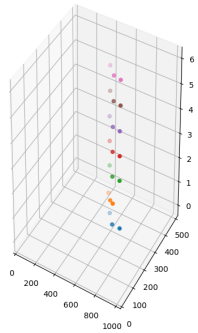
- Corrected Muonrate by masking for consecutive events



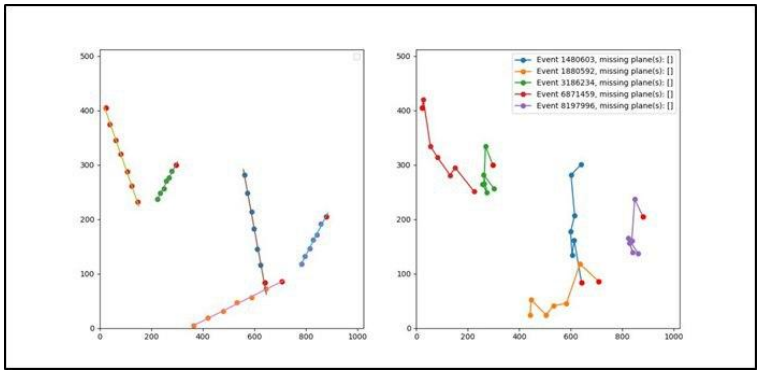
July

- Finishing Event organization and first align attempts (First with Testbeam Data)



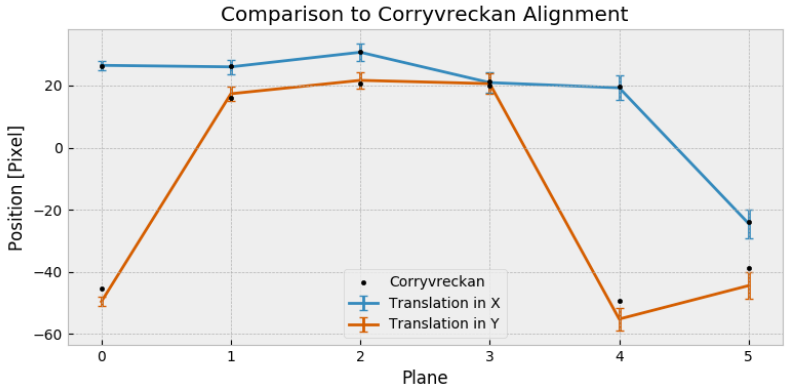


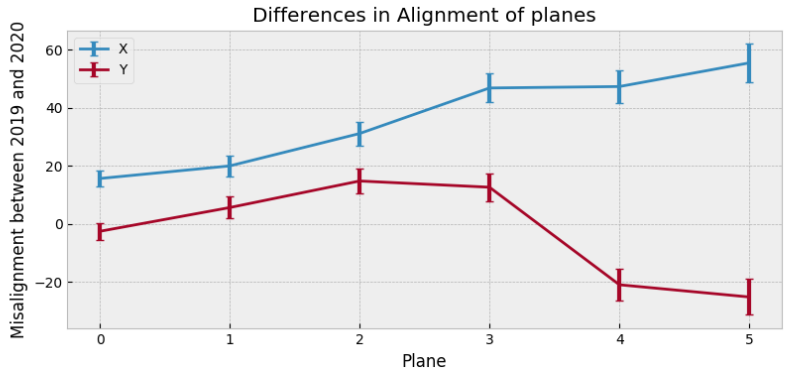
- Meanwhile visualizing the first Cosmics



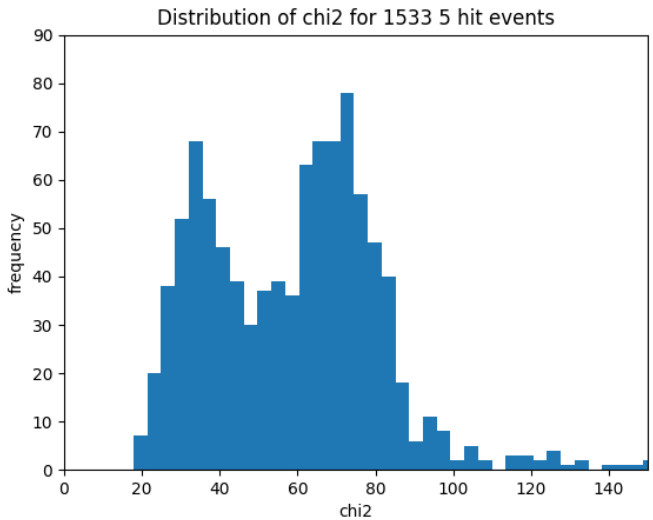
July

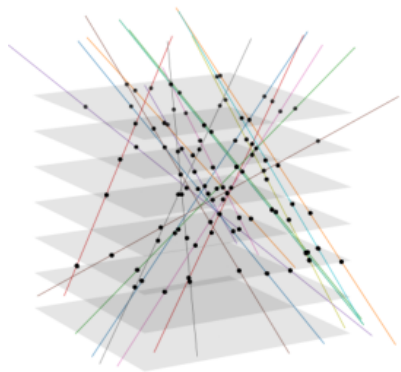
- Finished Tracking algorithm and comparing alignment to DESY-Testbeam Data





- Found out, that transporting the telescope changes the alignment by up to 1.7mm.
- Looking at χ^2 and identifying further alignment issues

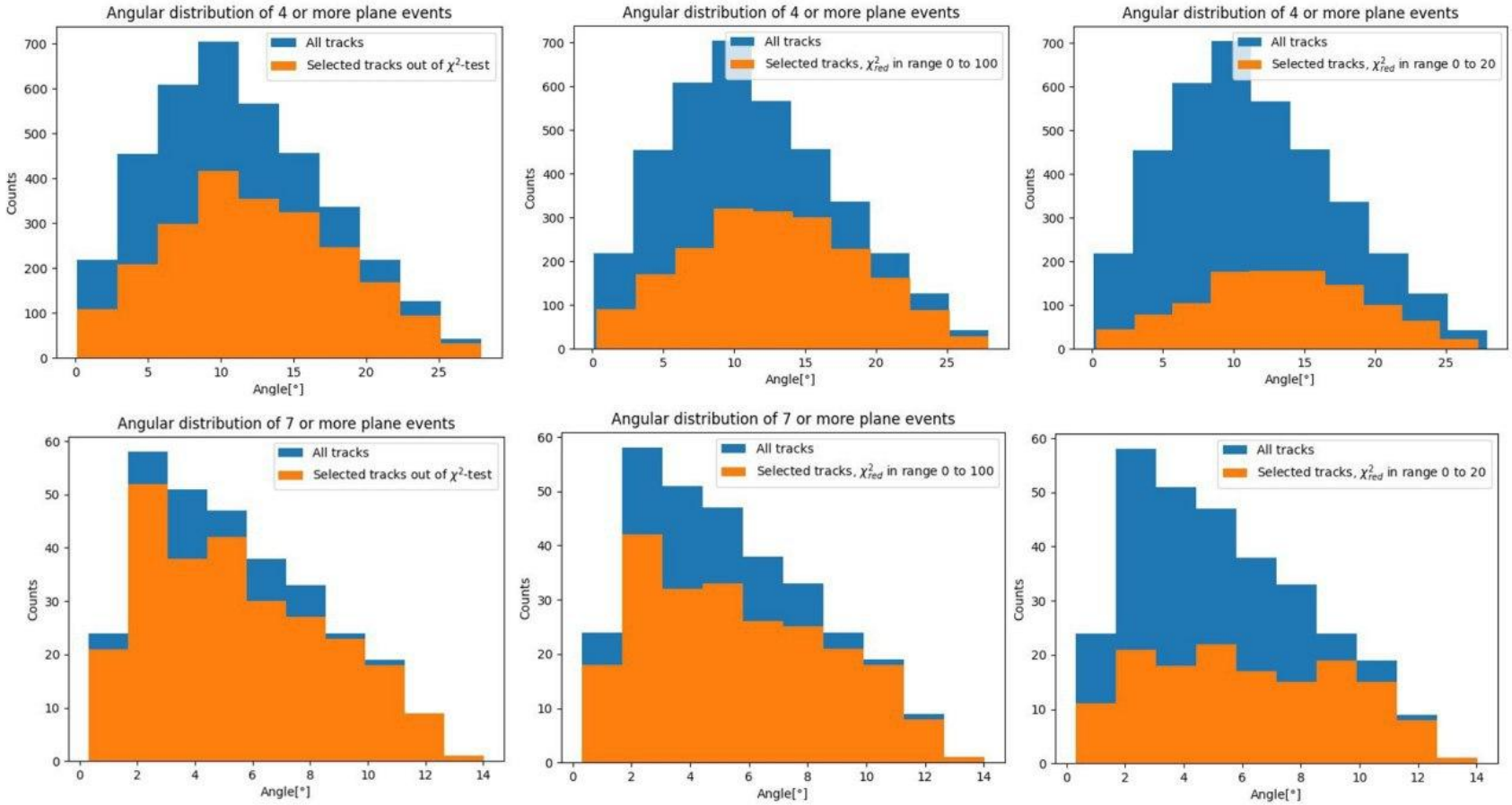




Only little hits on Plane 0 and 1

August

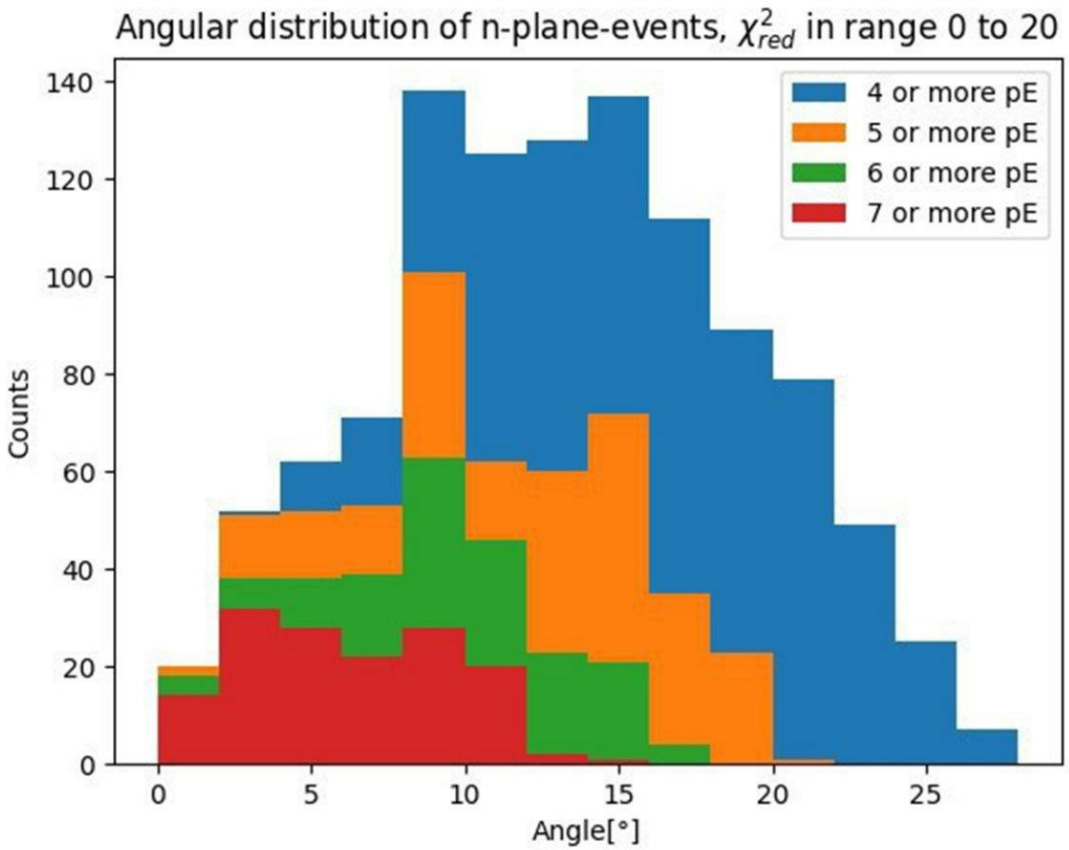
- **Testbeam time‼ :D**
- Plotting angular distribution for different chi2.



- Why doesn't this Distribution agree with the model?

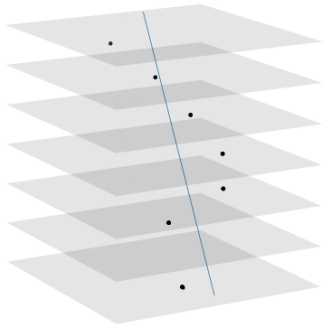
August

- **Testbeam time‼ :D**
- Plotting angular distribution for different chi2.

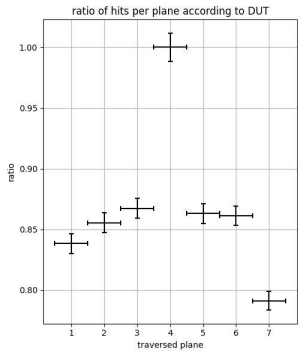


- Why doesn't this Distribution agree with the model?

Open Questions



- Where do these weird patterns come from?
- How to align with angular data (currently investigated)
- Why do some of the planes have a **much** lower rate than the DUT?



- Why is the angular distribution so different from the model?