

XLII Panda Collaboration Meeting, 10-14th September 2012

Pixel Analysis Status

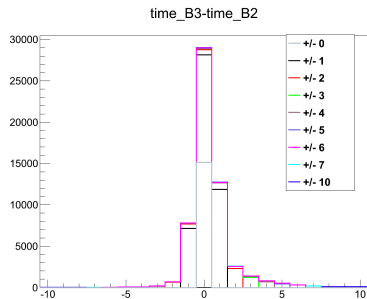
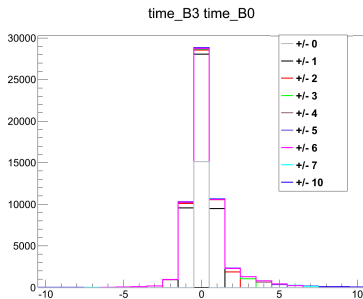
Laura Zotti



Università degli Studi di Torino & INFN-Torino

Overview

- Julich Beam Test - Efficiency Studies
- Julich Beam Test - Cluster Size Studies
- Preliminary from CERN



Open Issue

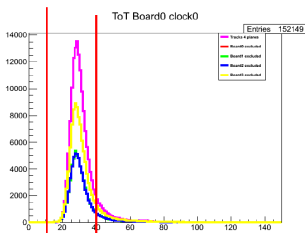
There are tracks counted more than once but can be easily identified.

Hit pixel can belong to different tracks if you consider a larger clock range.

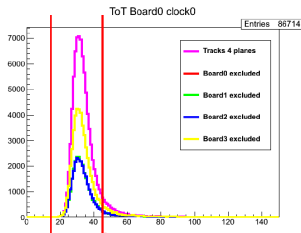
Procedure

- # Timestamp $\in$ 4 boards + # Timestamp $\in$ 3 boards
- Cut Tracks $\in$ at the 2 large columns of the board 3
- Cut the 4 boards tracks: tracks with 1 hit pixel
- Tot Cut

Run173 Threshold=690mV



Run191 Threshold=695mV

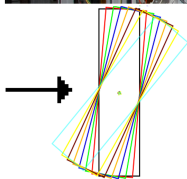
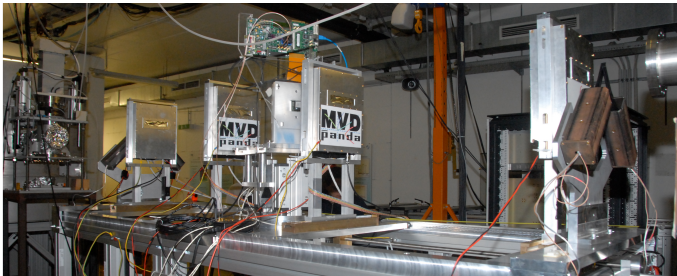


	run173 HV=20V 690mV		run180 HV=20V 692mV		run186 HV=20 693mV	
CLOCK RANGE	η	err η	η	err η	η	err η
0	0.6561	0.0019	0.6596	0.0016	0.6801	0.0019
	0.7097	0.0033	0.7232	0.0028	0.7354	0.0033
	0.7174	0.0040	0.7237	0.0034	0.7346	0.0041
	0.4322	0.0033	0.4402	0.0028	0.4505	0.0034
1	0.8788	0.0010	0.8783	0.0009	0.8826	0.0010
	0.9578	0.0011	0.9595	0.0009	0.9624	0.0011
	0.9558	0.0013	0.9558	0.0012	0.9597	0.0013
	0.6093	0.0024	0.6121	0.0021	0.6099	0.0025
2	0.8967	0.0010	0.8909	0.0008	0.8943	0.0010
	0.9733	0.0009	0.9726	0.0008	0.9751	0.0009
	0.9722	0.0011	0.9700	0.0010	0.9721	0.0012
	0.6282	0.0024	0.6279	0.0021	0.6285	0.0026
	run191 HV=20V 695mV		run193 HV=15V 695mV			
	η	err η	η	err η		
0	0.6916	0.0025	0.6491	0.0021	$\frac{(x_0 * z_0 + x_1 * z_1 + x_2 * z_2)}{\sqrt{(x_0^2 + x_1^2 + x_2^2) * (z_0^2 + z_1^2 + z_2^2)}}$	
	0.7403	0.0043	0.7116	0.0037		
	0.7482	0.0052	0.7007	0.0046		
	0.4566	0.0044	0.4247	0.0037		
1	0.8848	0.0014	0.8751	0.0011	Coordinate Cut ...in progress	
	0.9674	0.0013	0.9583	0.0012		
	0.9659	0.0016	0.9566	0.0015		
	0.6172	0.0034	0.6013	0.0027		
2	0.8940	0.0014	0.8883	0.0011		
	0.9778	0.0012	0.9744	0.0010		
	0.9769	0.0014	0.9734	0.0012		
	0.6339	0.0034	0.6211	0.0027		

$$\frac{(x_0 * z_0 + x_1 * z_1 + x_2 * z_2)}{\sqrt{(x_0^2 + x_1^2 + x_2^2) * (z_0^2 + z_1^2 + z_2^2)}}$$

Coordinate
Cut
...in progress

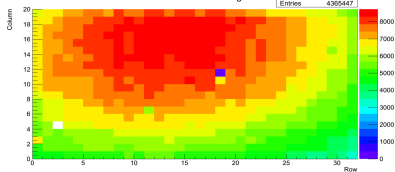
Setup - Measurements



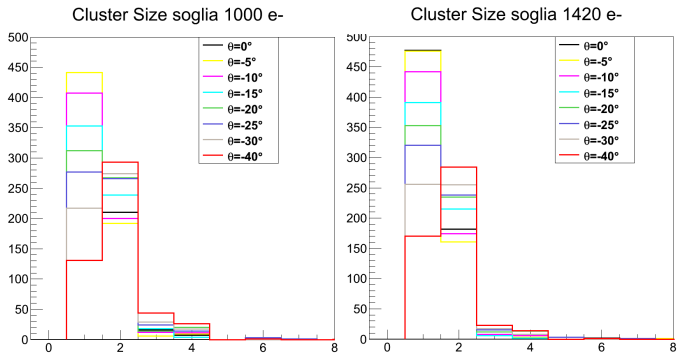
θ [deg]
5
10
15
20
25
30
40

Run 218 $\theta = -25$ deg

Entries 4365447

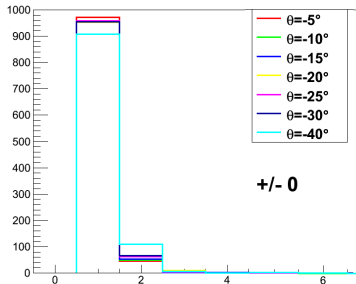


MC Result

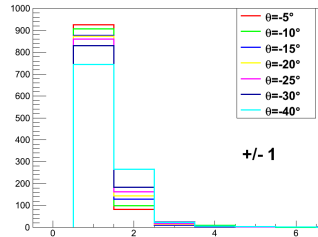


- 1) Is there a hit pixel with a timestamp 36 ± 4 in coincidence with the strip?
- 2) If yes look for pixel hit in the range $\pm \#$ clock

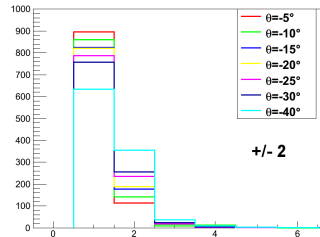
Cluster Size

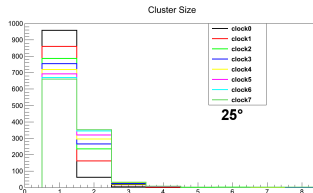
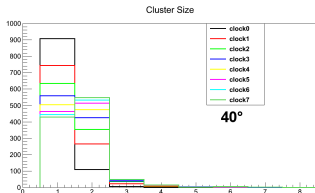
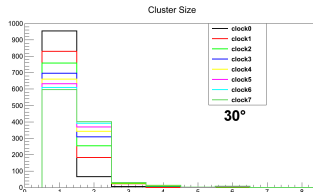
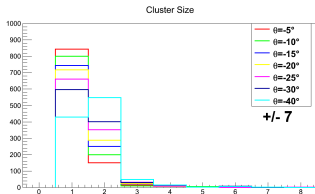


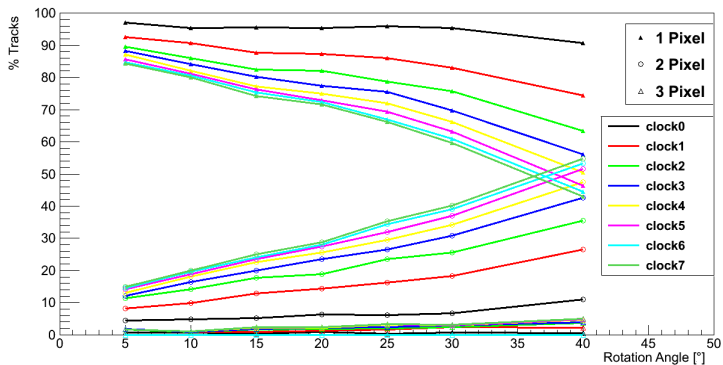
Cluster Size



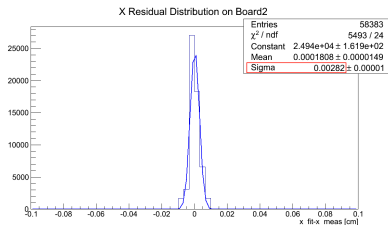
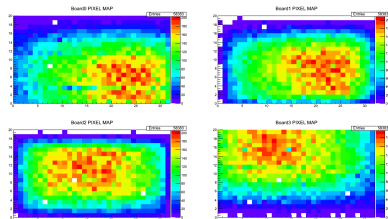
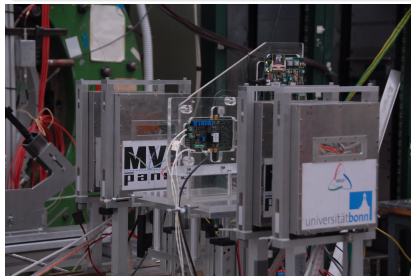
Cluster Size







Threshold Scan
HV Scan
2 Irradiated Boards
1 Rotated Board
150 MHz Clock



Thanks for the attention!!!