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**Here, we provide interesting plots to share with the group**

## **First observation of correlation between DUT and telescope hits**

In run "/29\_07/run\_000016\_2907\_1950.ali" (from DUT) and "Run1062" (from telescope), correlation between hits as been observed.

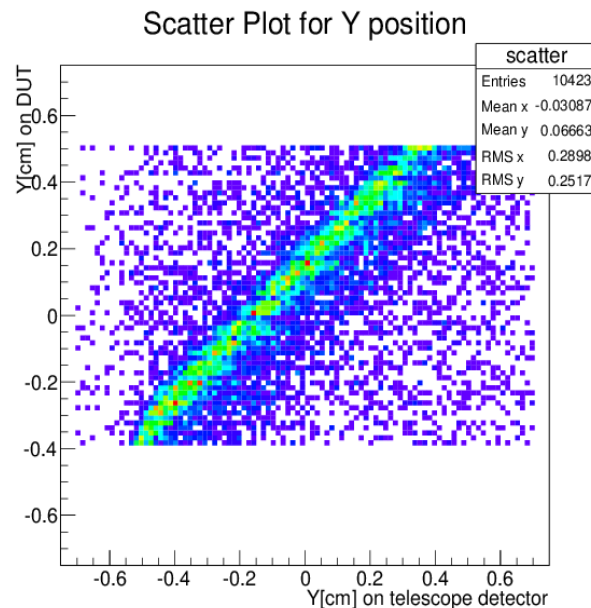


Figure 1: The plot shows the y-position of the hit in the DUT(UT) versus the y-position of the hit in the last telescope plane (the one closest to the DUT)

## **ADC distributions and cluster charge**

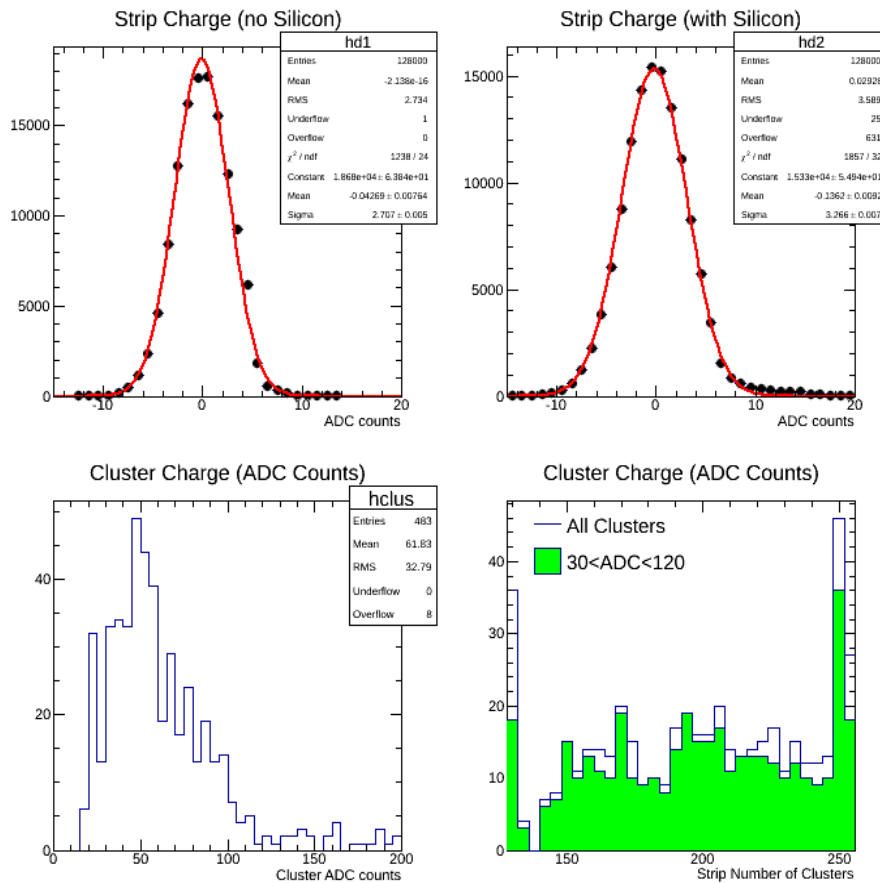


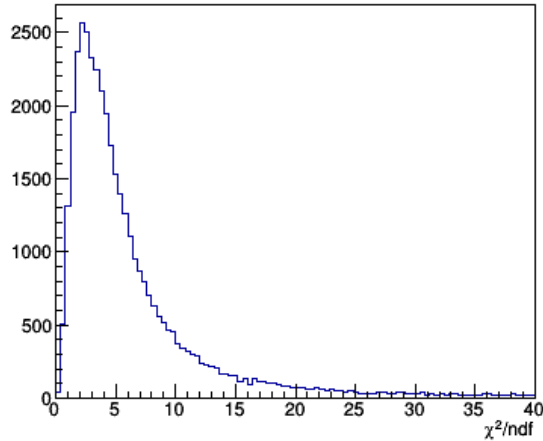
Figure 2: Plots from the same run given above (from 1000 triggers). There is **NO CUT on the TDC time** from the Alibava, and there is **NO requirement that the hit be matched to a track from the telescope**. (Top left) Strip ADC distribution of Beetle chip 1, which is not connected to any silicon. (Top right) Strip ADC distribution of Beetle chip 2, which is connected to the biased silicon during normal data taking. Pedestal, common mode, and other coherent noise effects have been subtracted. (Bottom left) ADC distribution of all found clusters. (Bottom right) Strip number of all clusters, and clusters that have between 30 and 120 ADC counts. From the calibration signal, the gain is about 300 e- per ADC. There may be some indication that I am not getting rid of some coherent noise near the end of the chips? (Needs some study)

## Correlations between Kepler tracks and Alibava hits

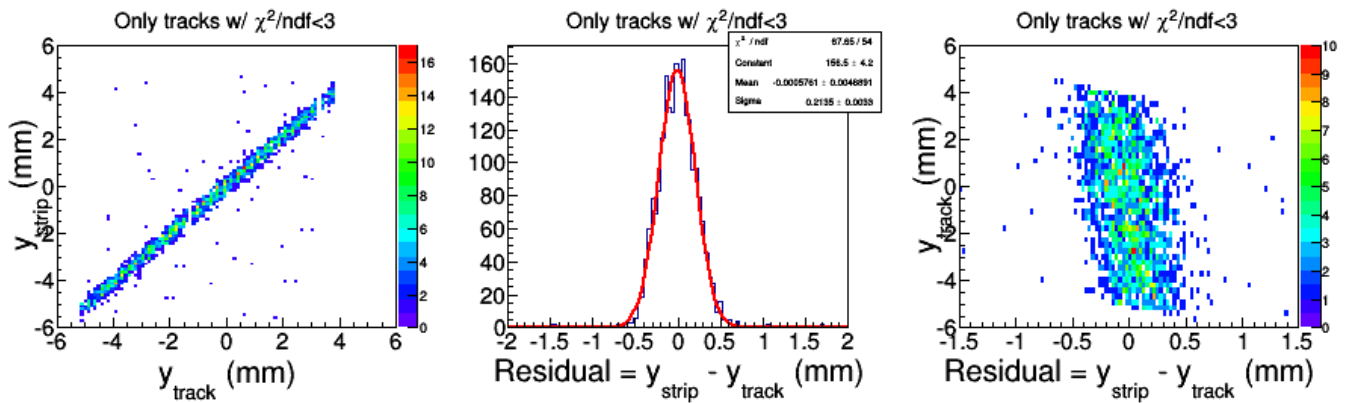
In parallel w/ Marco's SBT work, these use "out of the box" reconstructed tracks produced from via Kepler and tries to correlate then with hits from Alibava.

- ◆ The  $\chi^2/\text{ndf}$  distribution of the Kepler tracks:

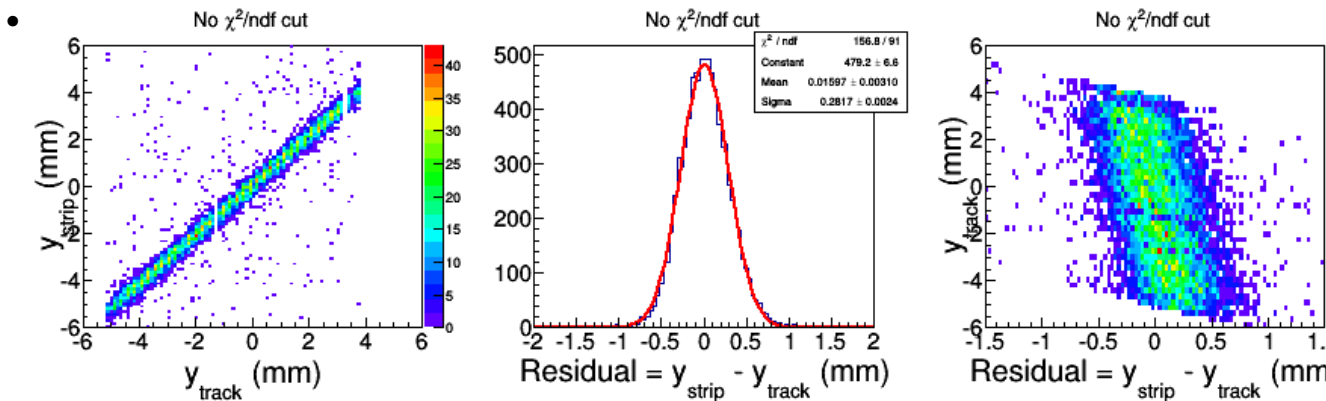
- ◆  $\chi^2/\text{ndf}$  for Tracks reconstructed by Kepler



- Some scatter plots between the Kepler tracks and the Alibava hits. We require all Alibava hits to have ADC > 50, and a chi2/ndf < 3 on the tracks. Roughly estimate of the resolution from a fit to the residuals is **210  $\mu\text{m}$** -ish. Further polishing of the alignment etc. shown to improve this.



- Similar plots as above. We require all Alibava hits to have ADC > 20, and remove the chi2/ndf cut. Roughly estimate of the resolution from a fit to the residuals is 280  $\mu\text{m}$ -ish.



-- StevenBlusk - 02 Aug 2014

This topic: LHCb > PlotsFromJuly2014TestBeam  
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