

SSD offline reconstruction chain

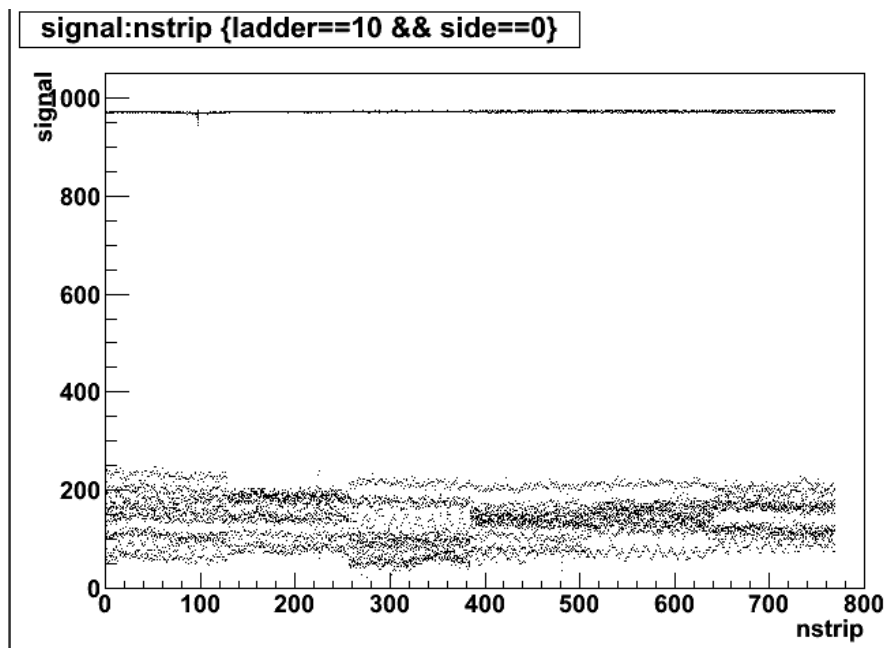
1

- New DAQ maker working (this weekend)
- It fills a list of fired strip with its id and adc value (the id encodes the wafer, ladder, side)
- Next step was to look at the offline reconstruction
- A small change in the code : name in the SSD data stream
- The SSD reconstruction works as follow :
 - Scan list of strips (per wafer)
 - Built cluster of strips :
 - Central strip found with signal/noise > 5
 - Neighboring strips found and added if id is consecutive to the central strip and signal/noise > 3)
 - Match clusters on P and N side according geometrical criteria (stereoangle)
- File : st_cosmic_15025008_raw_2000001.daq , 1 event
- Disclaimer : cosmic run so it's not a real data run ; almost all strips are fired with signal value \sim pedestal ; the offline code treats this value as "real" signal
- The purpose here is to test the offline chain

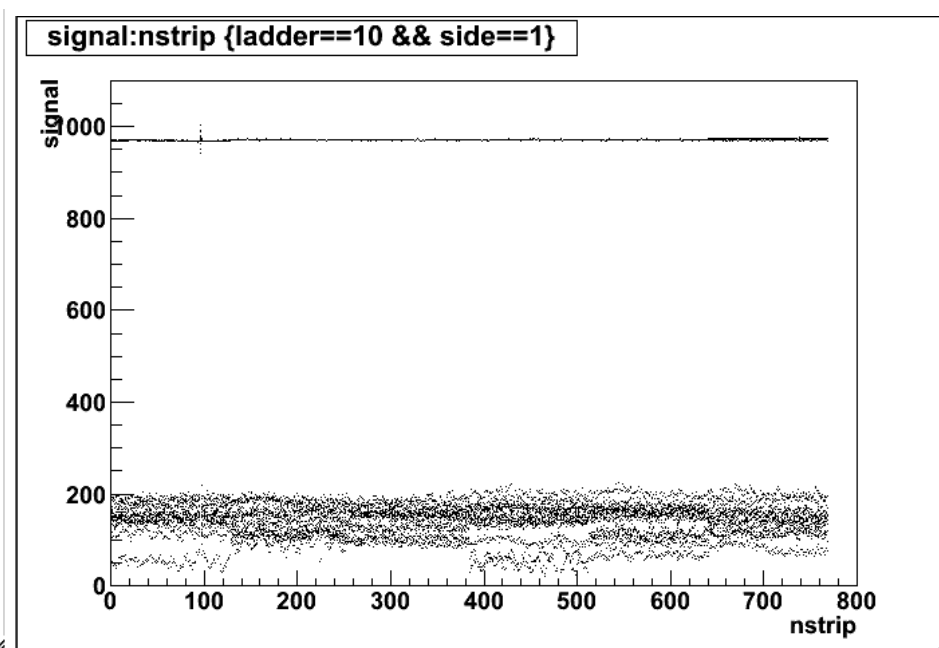
Strip level : adc vs. strip number

2

Side P



Side N

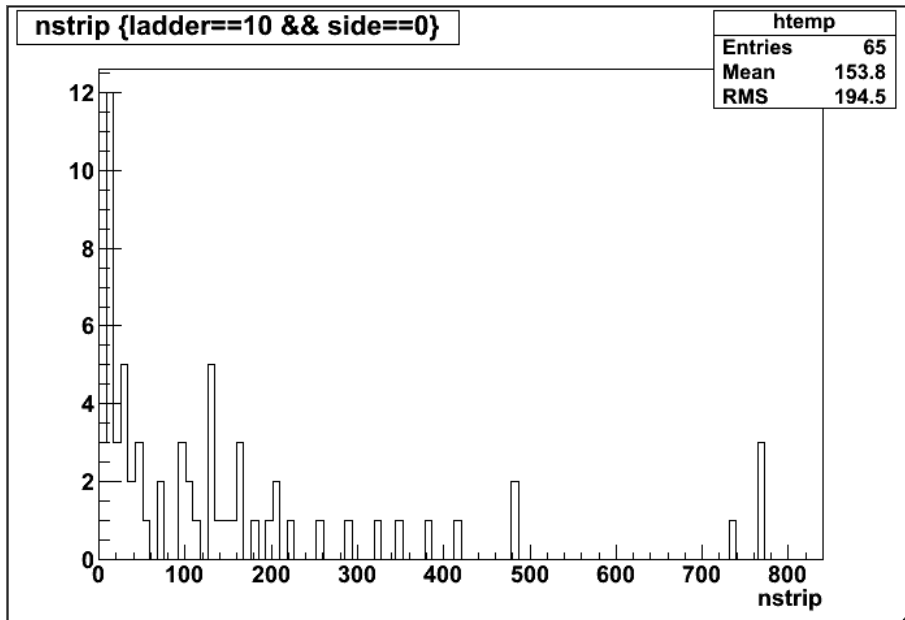


- ADC value for all strips in ladder 10
- Since all the strips have “signal” (in fact it’s mostly pedestal value), histograms show that all strips are fired

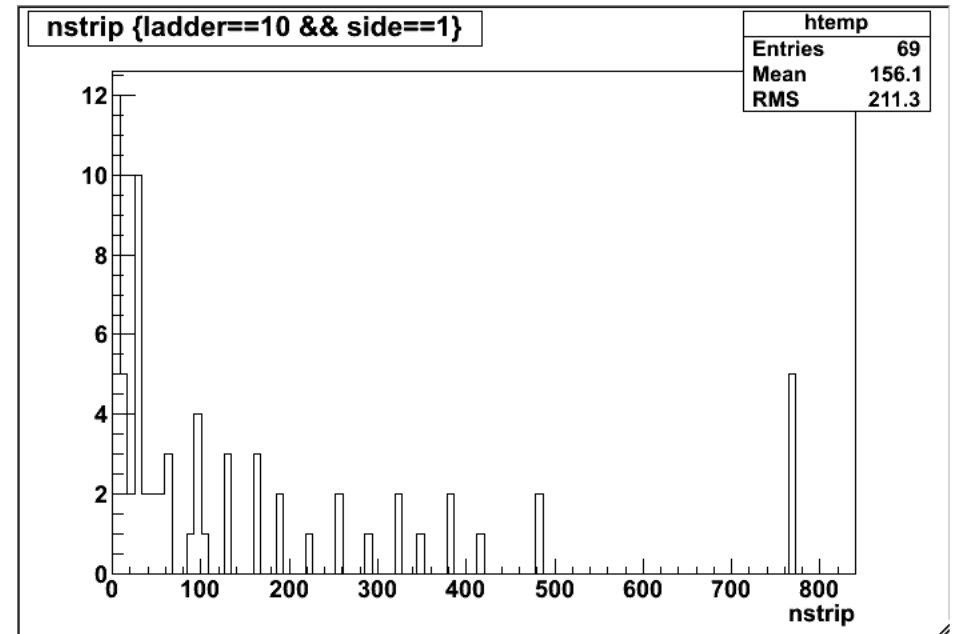
Cluster size (number of strips)

3

Side P



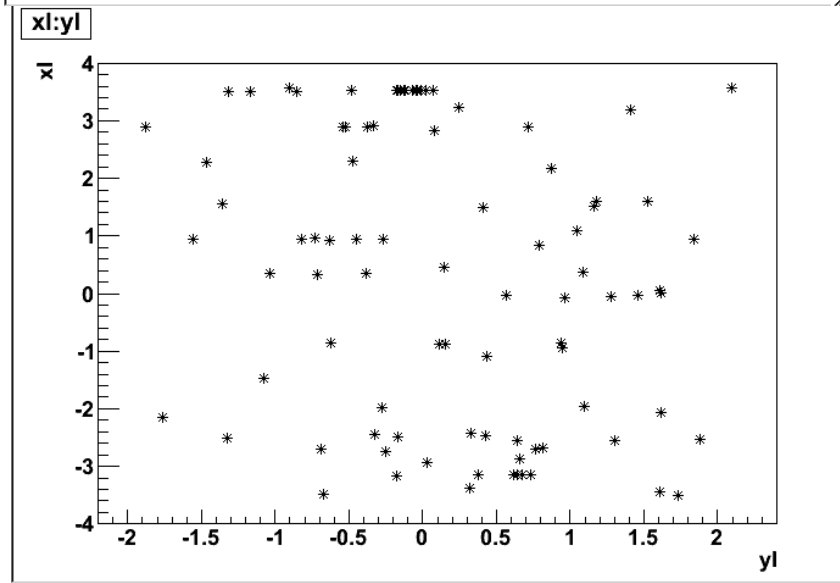
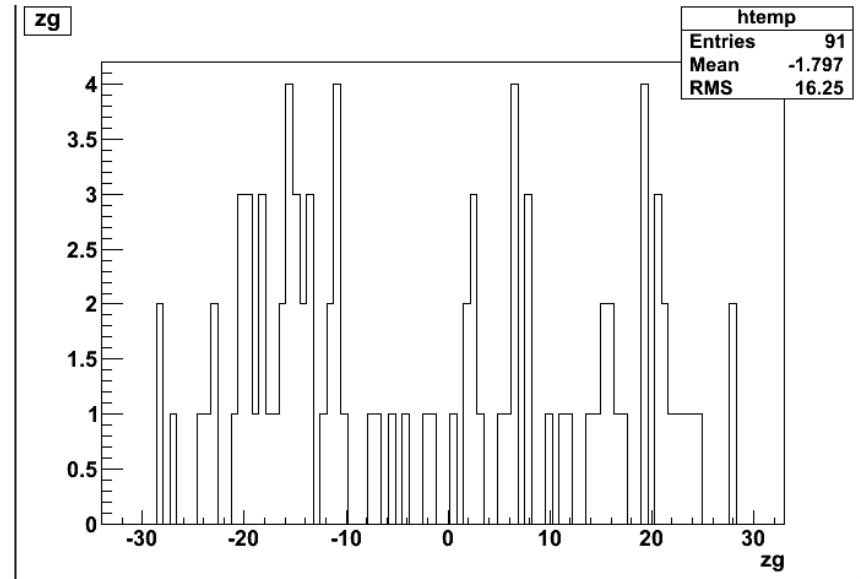
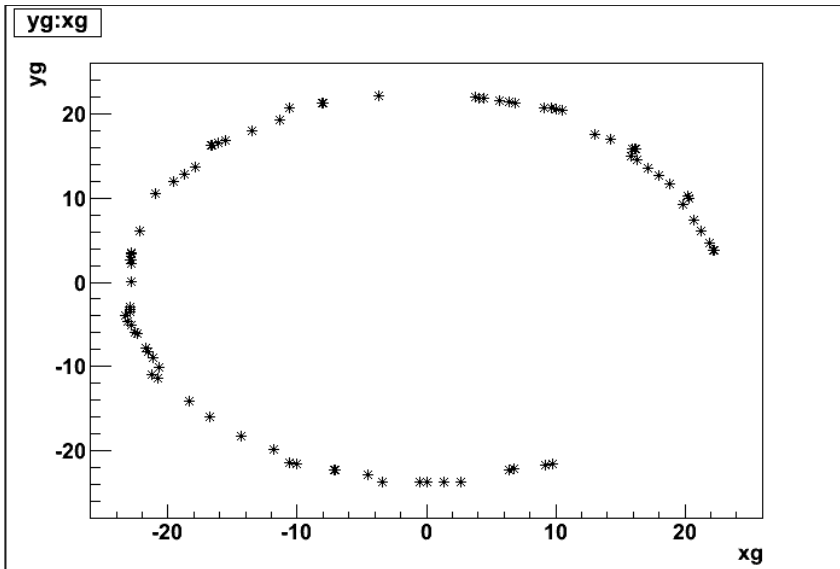
Side N



- there are clusters for which the size is the size of wafers (768 strips) : fake clusters of course if it satisfies conditions in slide 1

Hits level

4



- Left : global Y vs. X positions of reconstructed points
 - Bottom right corner is missing because it corresponds to ladders masked from run 7
- Right : global z distribution of reconstructed points
- Bottom left : local positions of reconstructed points (should be in the wafer dimension ✓)

comments

- Offline chain tested with new DAQ maker
 - ✓ Ran without crashes ,etc ...
- Some checks needed :
 - Databases :
 - Pedestal , noise
 - Ladder masks
 - Geometry tables :
 - the code here is still using the geometry from 2007
 - I will update with Amilkar's tables based on the recent survey.