

Automated masking

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The current procedure for automated masking is as follows:

- Initially, columns with at least a single bad pixel are completely eliminated. The criteria for a bad pixel is set to cases where the rate of fire per event is more than 0.1%.

- After eliminating bad columns the data is searched for bad rows. Since all bad pixels were eliminated after the first step, to search for bad rows the data is projected on the Y axis and any row with more than 10 times the average (# entries divided by 1000) is eliminated.

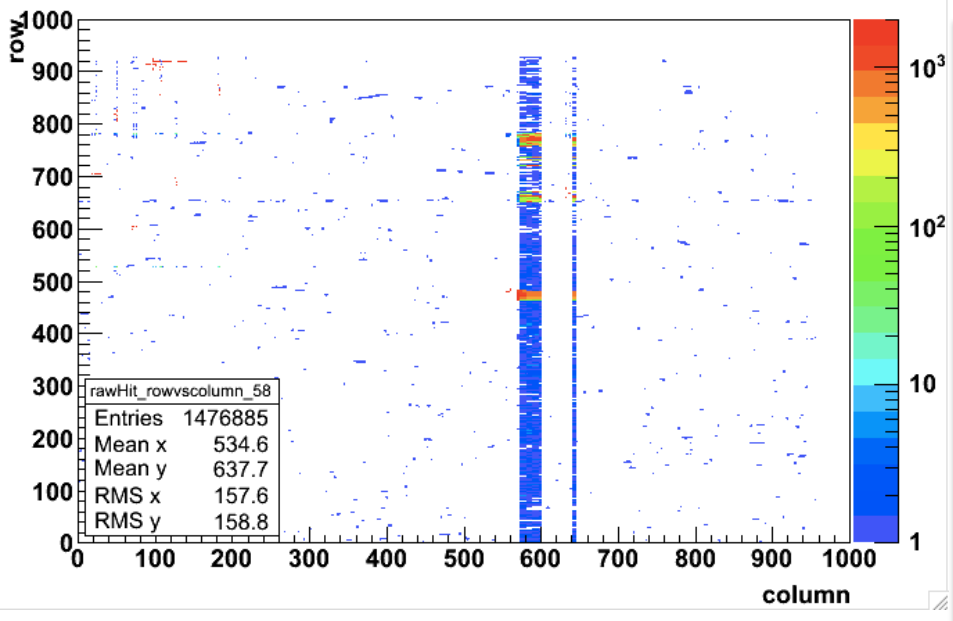
The list of flagged columns/rows were output to “.txt” files following the convention:

Sector/Ladder/Sensor/Column/Row/Cut

The following histograms show sample results for a subset of pp500 low luminosity run 14150049:

`/star/institutions/lbl_prod/hft/Run13/production/output/150/14150049/st_pxl_14150049_raw_0780001_0/`

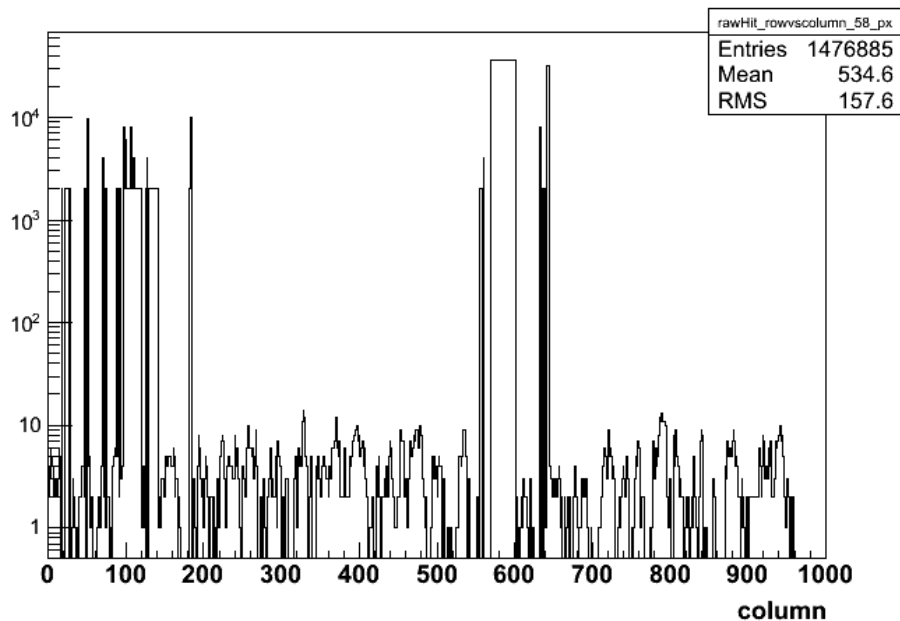
rawHit column vs. row: Sector 2 Ladder 2 Sensor 9



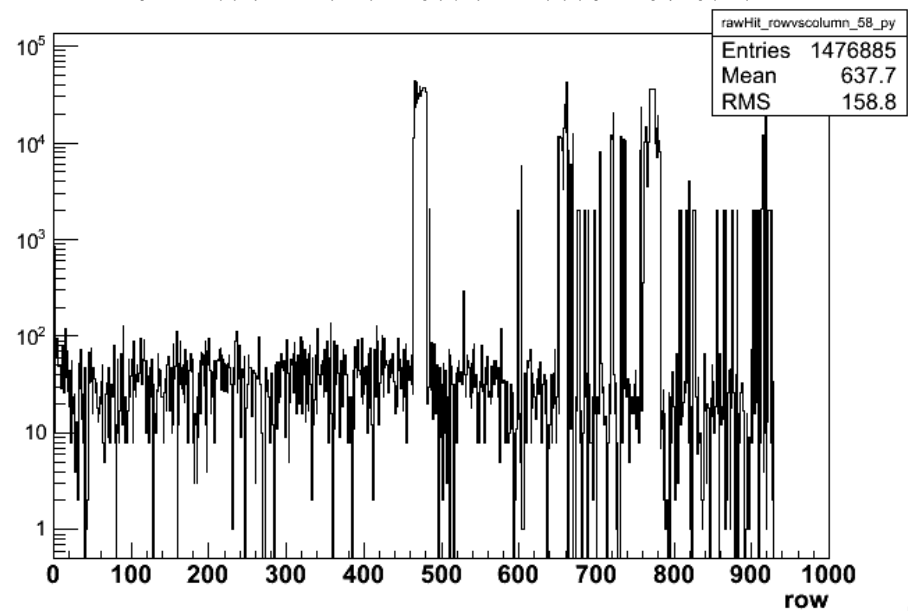
Original Sensor Data

Sector 2 Ladder 2 Sensor 9

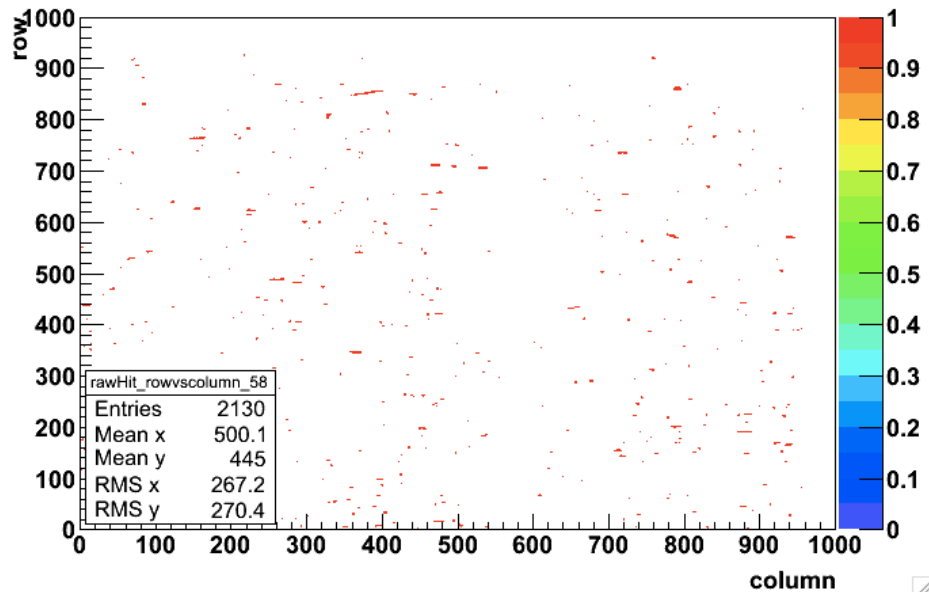
rawHit column vs. row: Sector 2 Ladder 2 Sensor 9



rawHit column vs. row: Sector 2 Ladder 2 Sensor 9



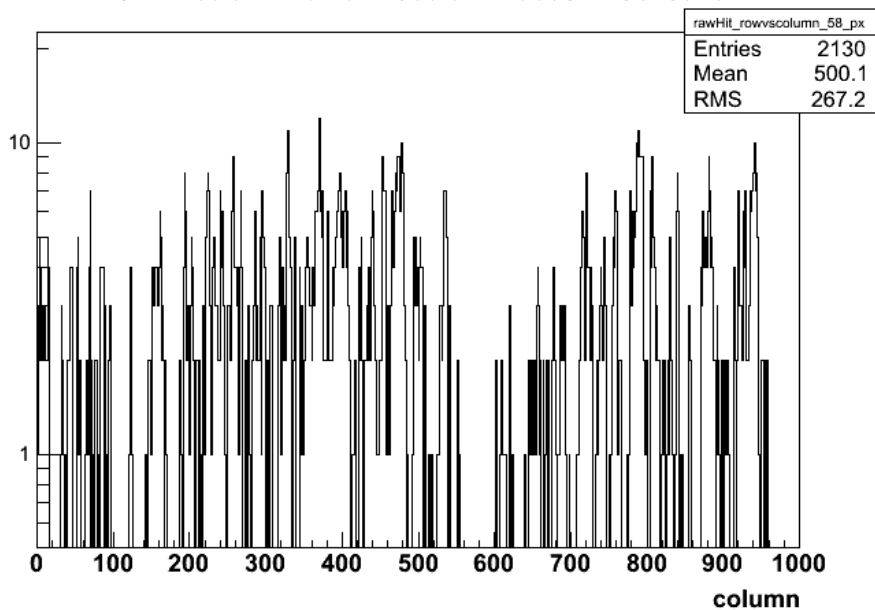
rawHit column vs. row: Sector 2 Ladder 2 Sensor 9



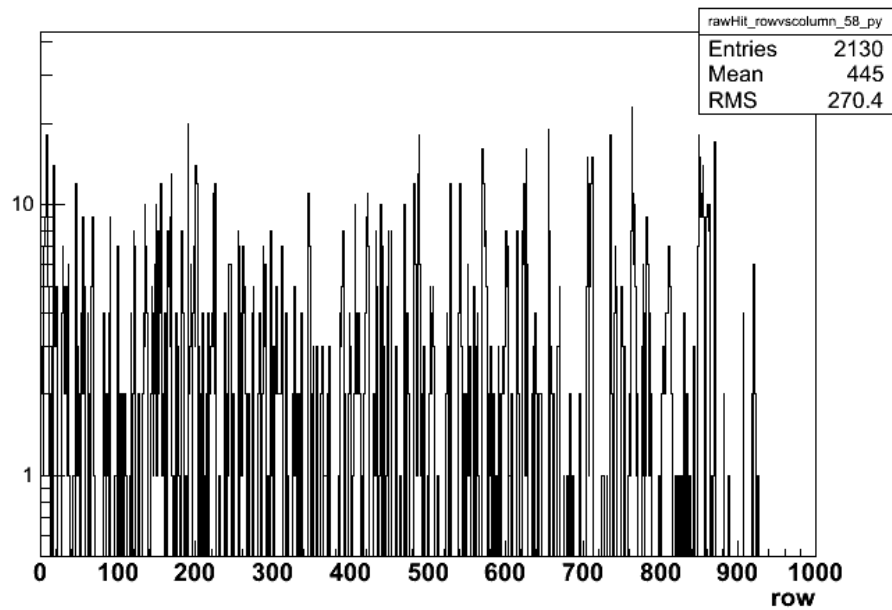
Masked Sensor Data

Sector 2 Ladder 2 Sensor 9

rawHit column vs. row: Sector 2 Ladder 2 Sensor 9



rawHit column vs. row: Sector 2 Ladder 2 Sensor 9



- There is a reduction factor of 693 in the number of entries for the chosen sector.
- Amilkar is running over the output “.txt” for several subsets of a same run to determine which rows/columns are persistently flagged.
- A database of flagged rows/columns will be built which Jonathan can read during the analysis of data.