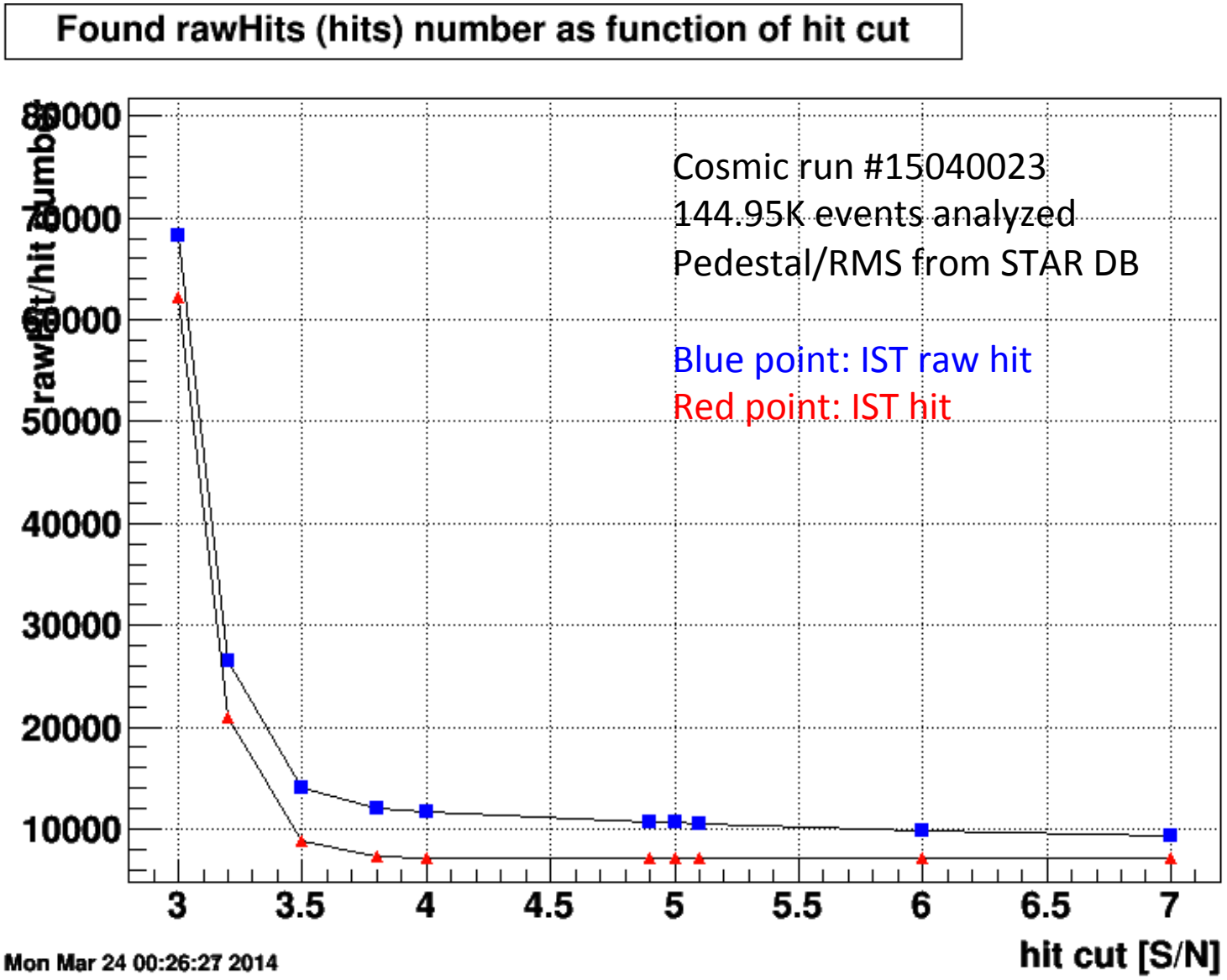
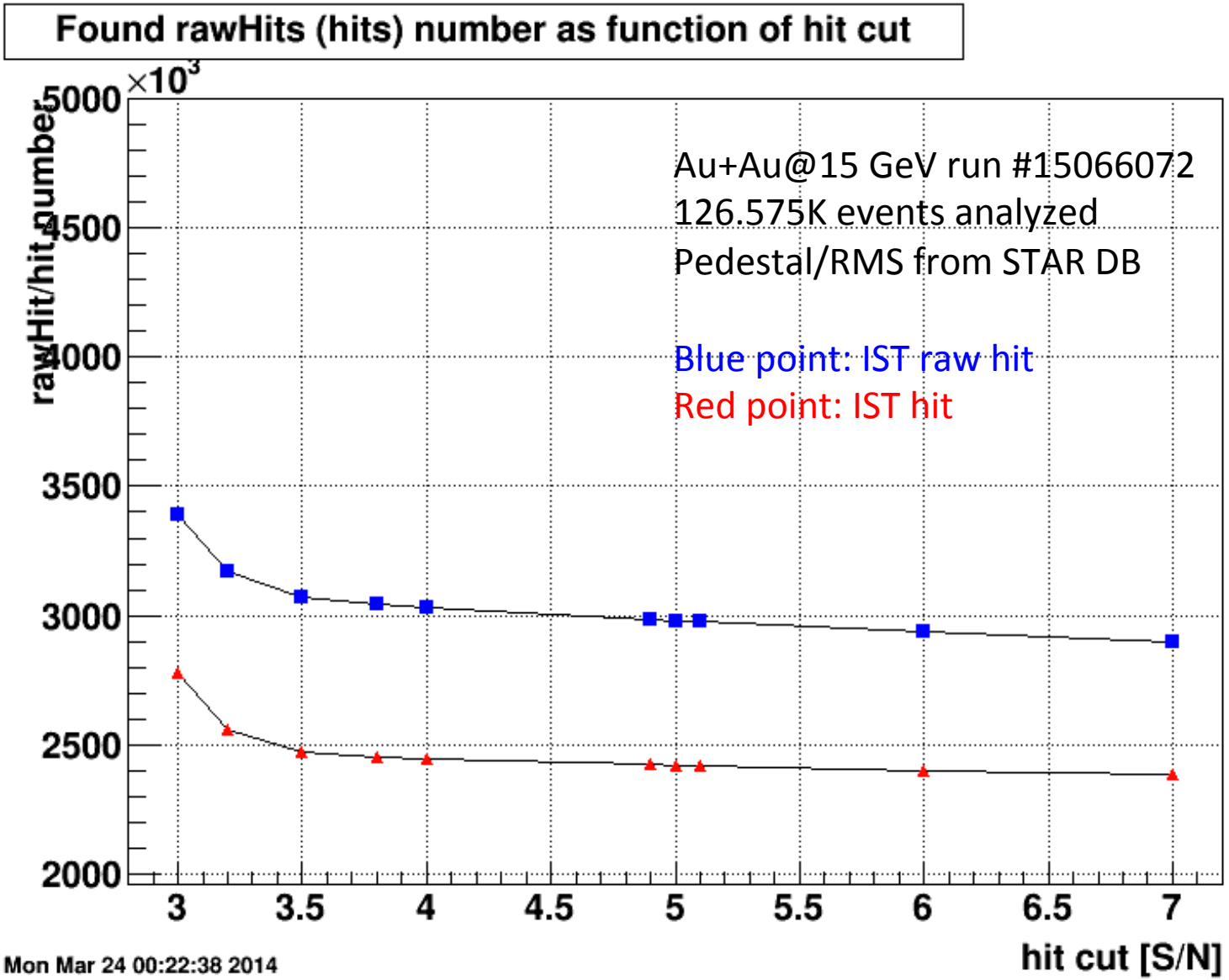
IST Data Check and Alignment Study

Yaping Wang (UIC)

rawHits/Hits found as function of hit cut (non-ZS)



rawHits/Hits found as function of hit cut (non-ZS)



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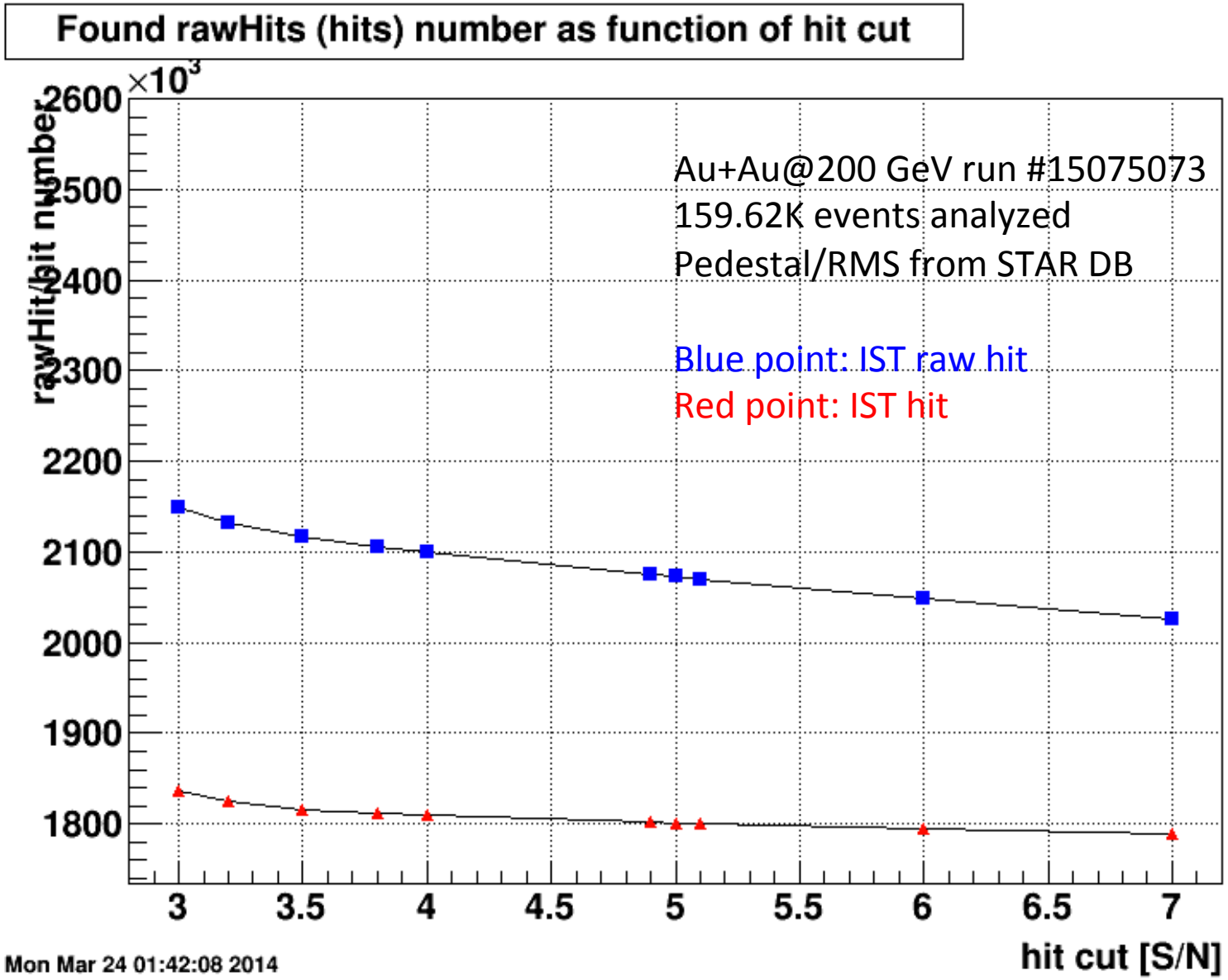
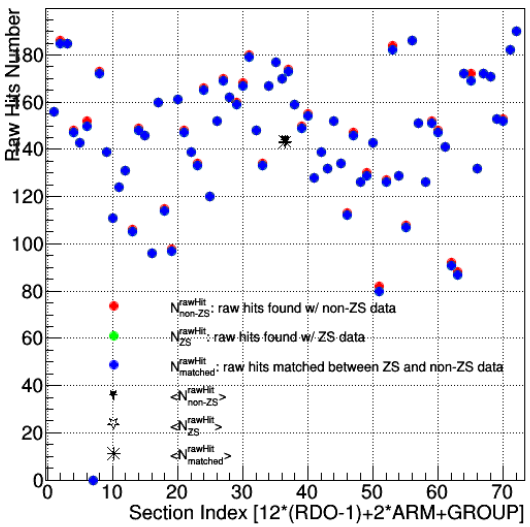
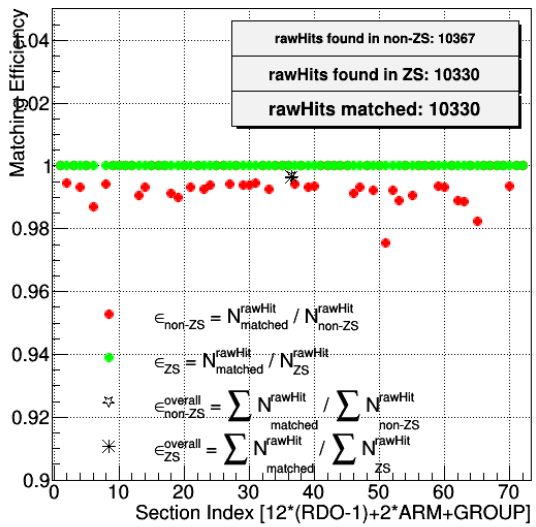
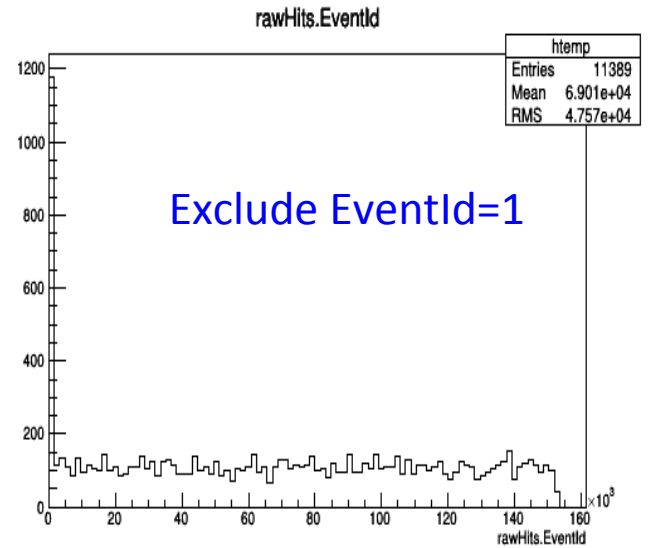


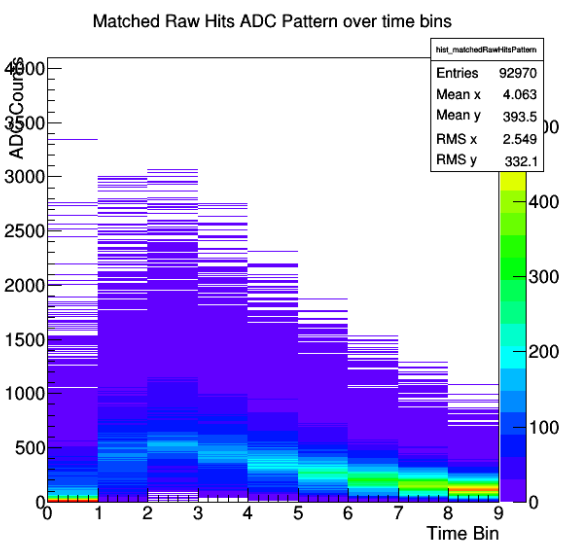
rawHit matching efficiency – cosmic run #15040023

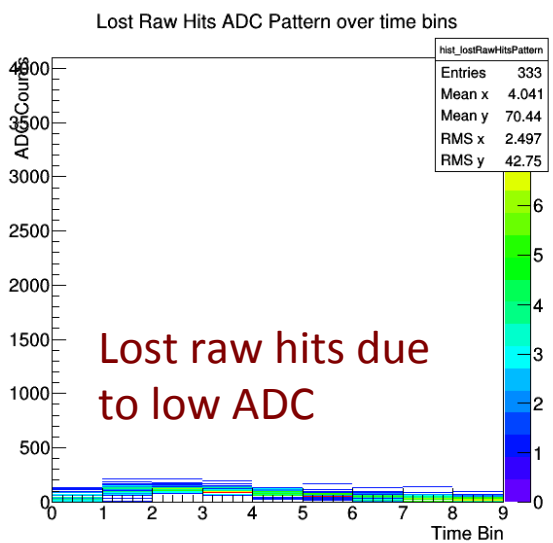


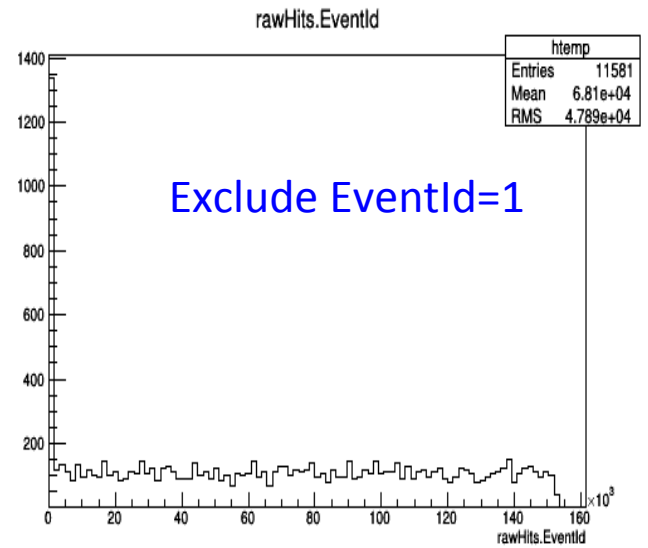




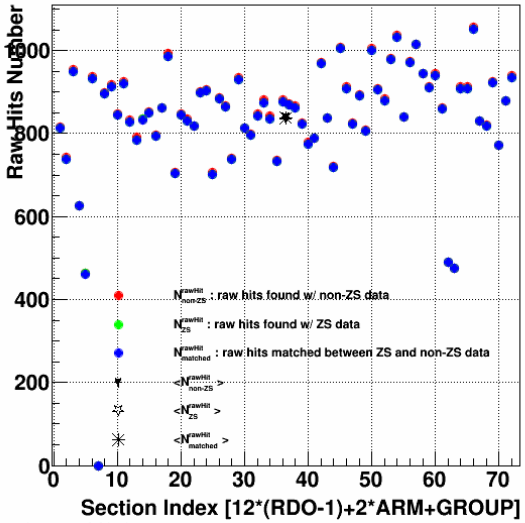
Matching efficiency ~ 99.64%

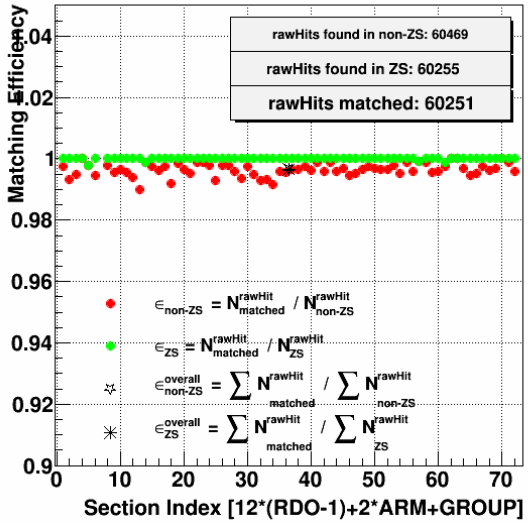


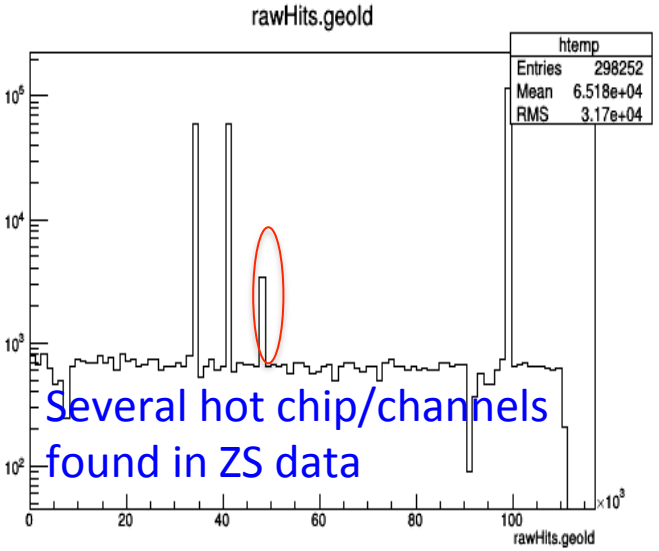




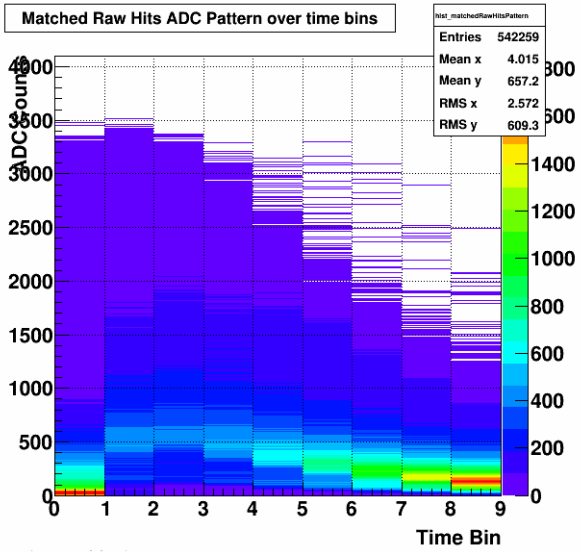
rawHit matching efficiency – Au+Au@15GeV run #15066072

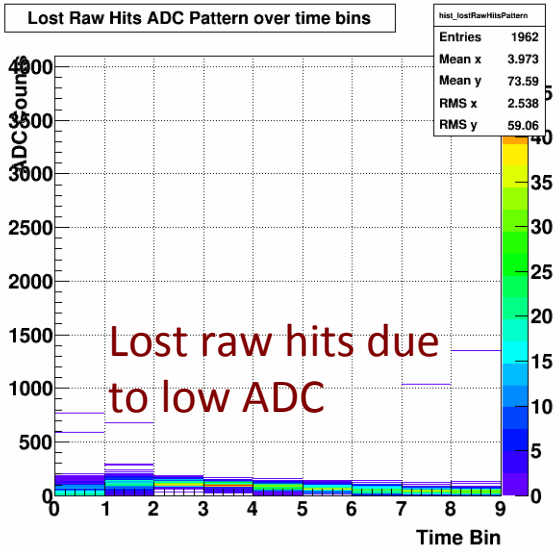


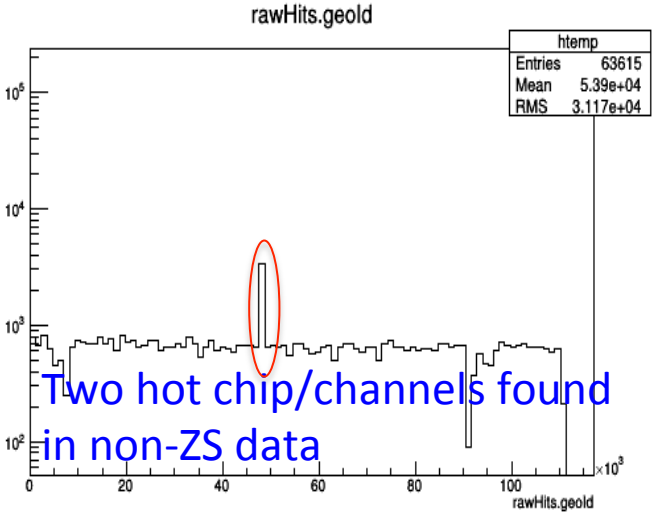




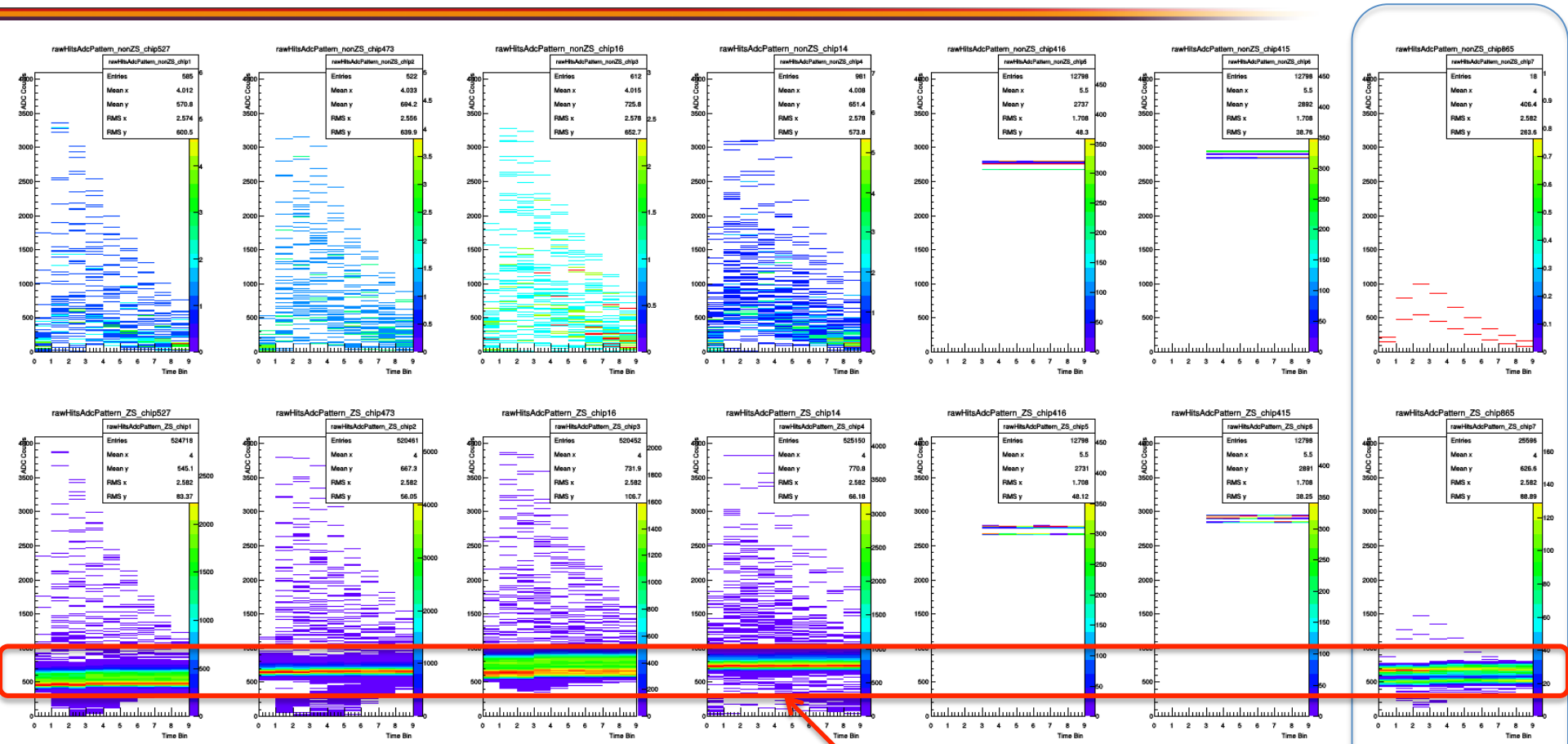
Matching efficiency ~ 99.65%







rawHit matching efficiency – Au+Au@15GeV run #15066072

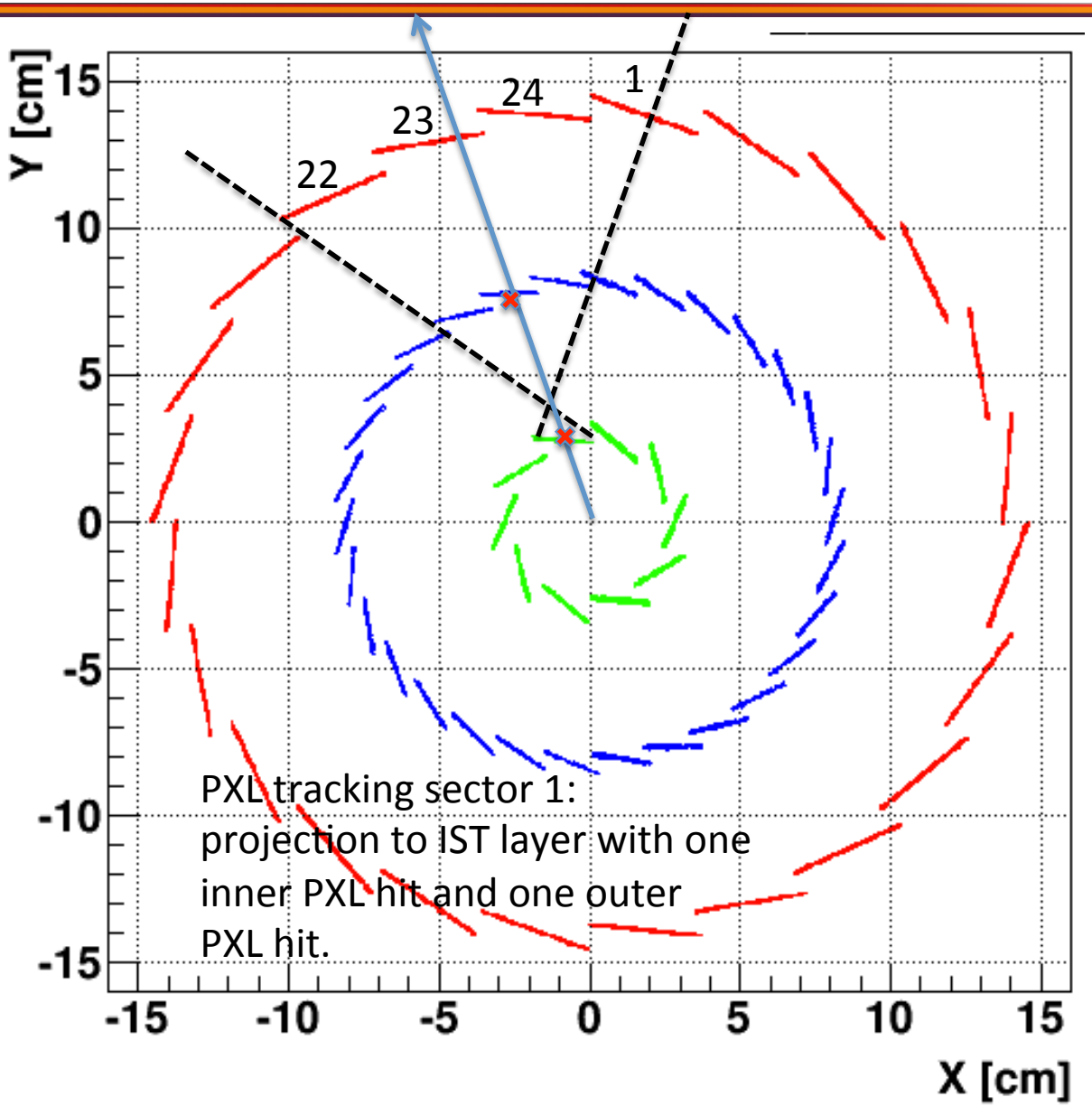


Top plots: from non-ZS data
Bottom plots: from ZS data

Seems pedestal not subtracted in ZS data!

Bad individual channels

IST Alignment – Michael's method



Several cleanup cuts are identical to PXL study: https://drupal.star.bnl.gov/STAR/system/files/RelativeAlignmentUpdate_1903_2014.pdf

Main idea:

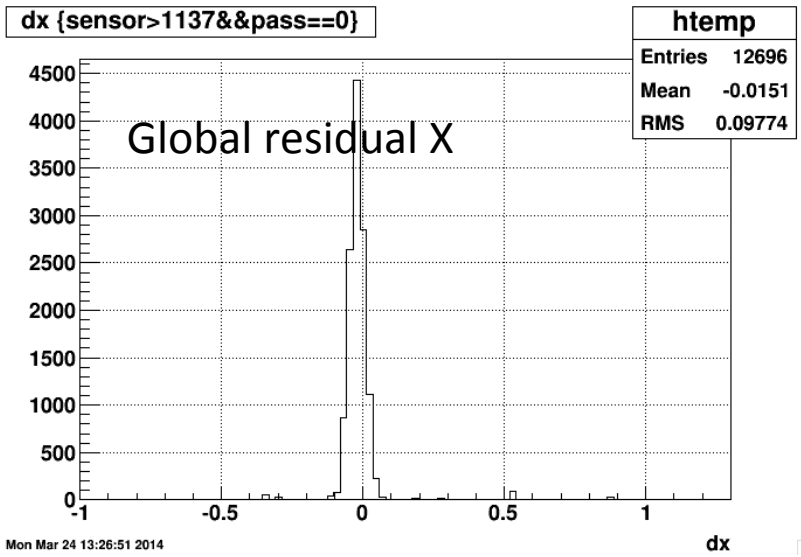
(1) Loading TPC tracks with more than 20 hits, used first hits from 2 different tracks to define a straight line (same as PXL -- Michael).

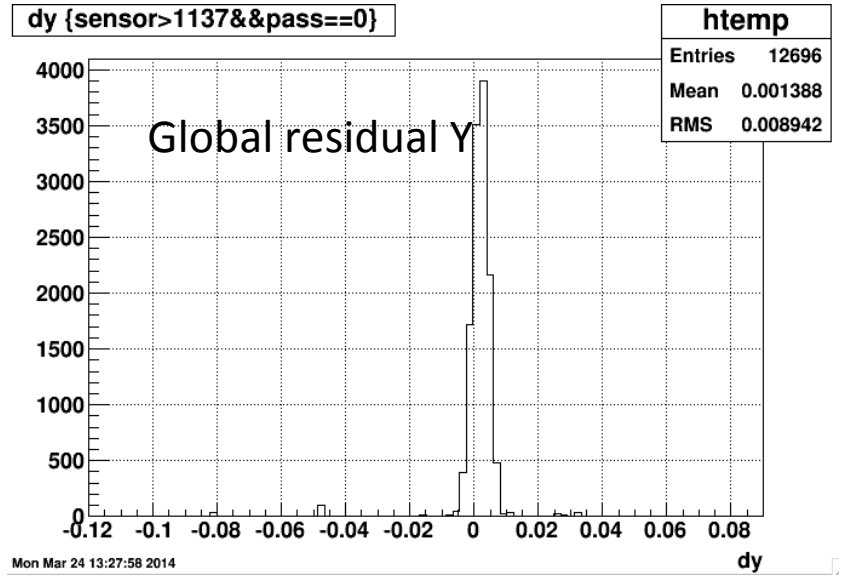
(2) Use 2 hits on different layers of a single sector of PXL to define straight track.

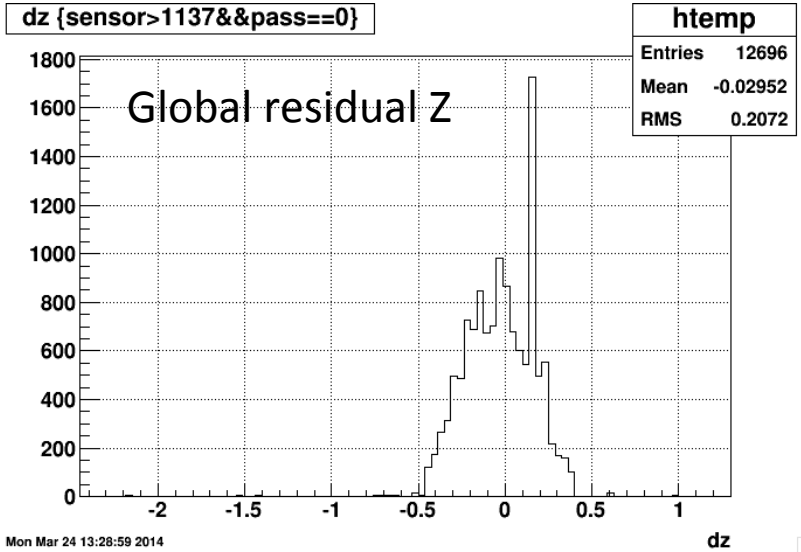
(3) Project to outer IST layer and accept hits with |du|, |dv|<0.5 cm (for testing)

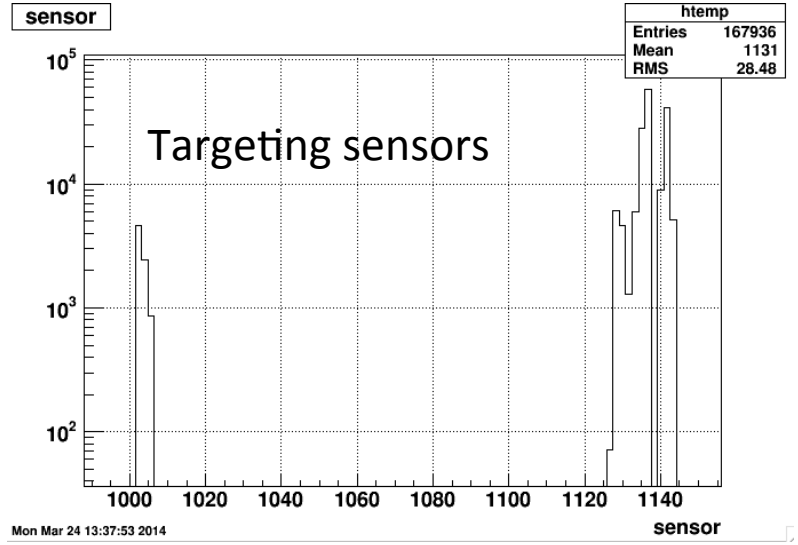
IST Alignment

Global residual X, Y and Z of ladder 24 (only one iteration)









IST Alignment – need help

1. Which version of PXL geometry tables I need to use for IST alignment study (combined Michael, Long and Alex?). Please above PXL alignment experts tell me what I need to put here and where I can find them? Many thanks.

2. IST global level geometry Db tables (Alex did global alignment study for IST?)

3. Currently, I am using the PXL survey Db tables (all levels) for code testing.