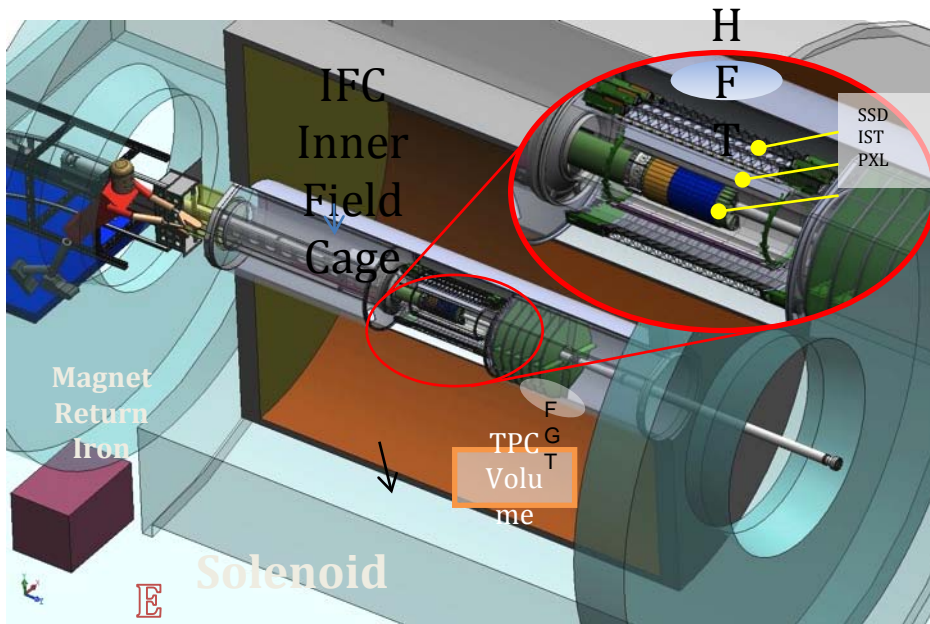

HFT Engineering update

Star HFT detector



Fully Installed in Run-14 there will be 10 sectors.

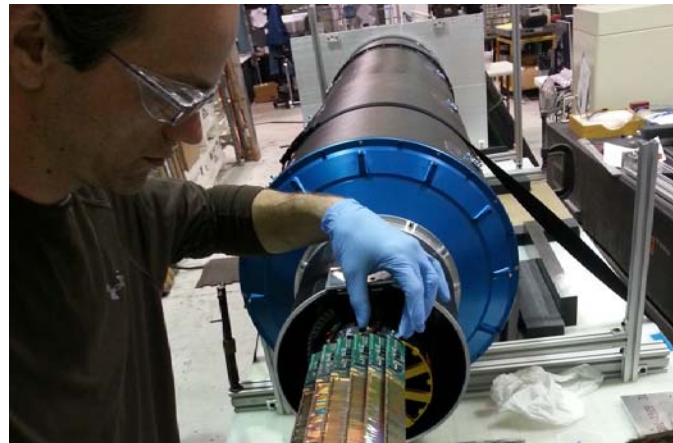
Each sector has inner layer at 2.5 cm and outer at 8cm.

There are 40 sensor per sector.

Each sensors has $\sim 1\text{M}$ 18×18 microns pixel with on-board discrimination and zero suppression

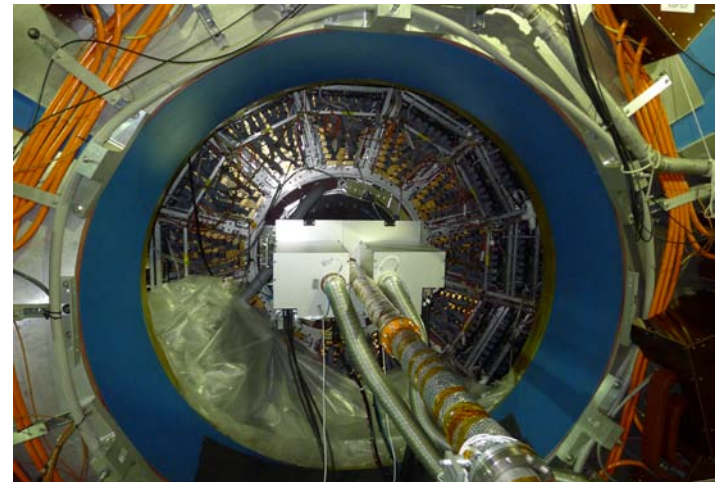
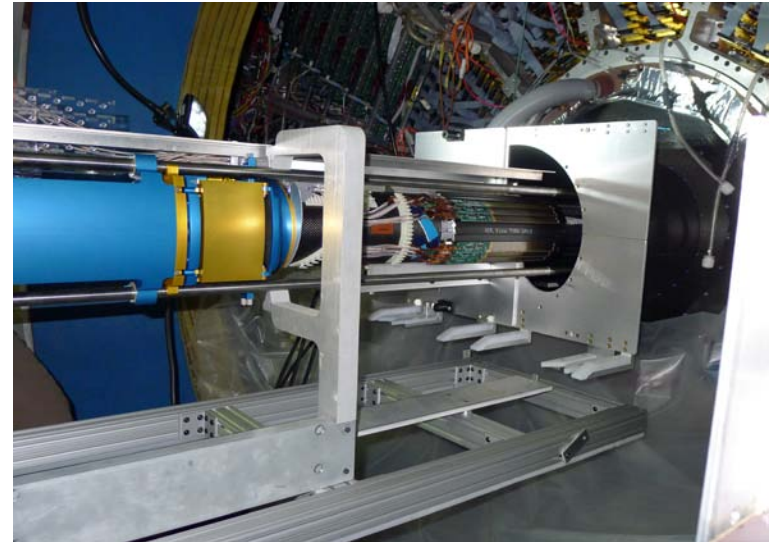
Engineering run detector has 3 sectors.

- Fabricated
- Assembled and tested at LBNL
- Shipped to BNL
- The PXL detector was assembled and tested in the STAR assembly area.



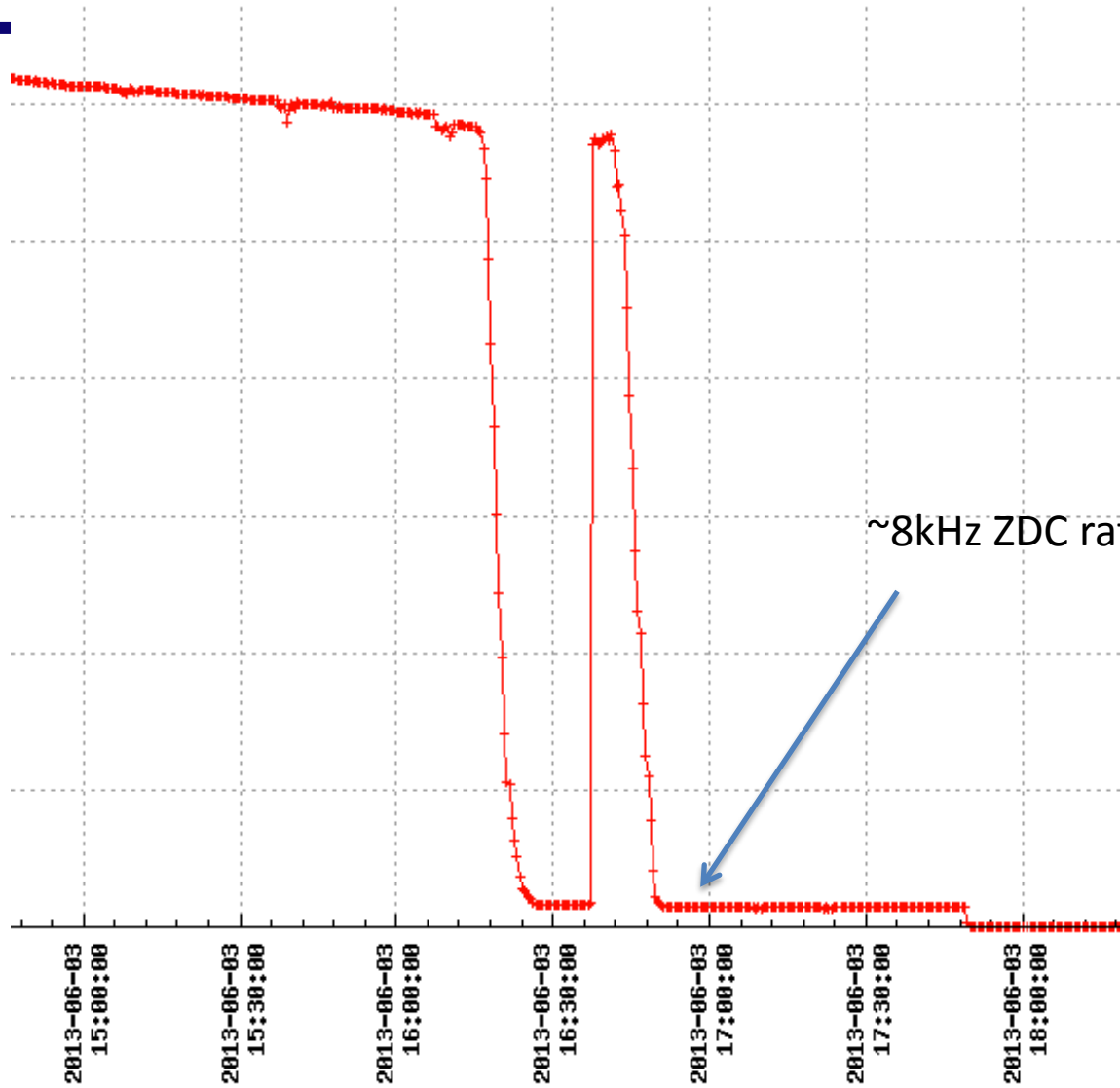


- PXL being pushed in and after installation in the east end of STAR



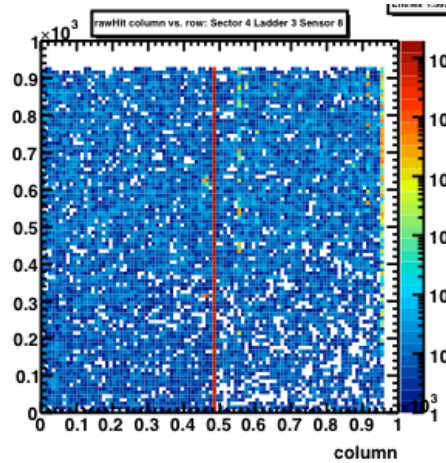
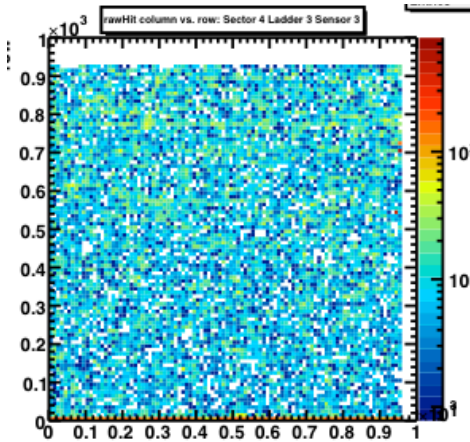
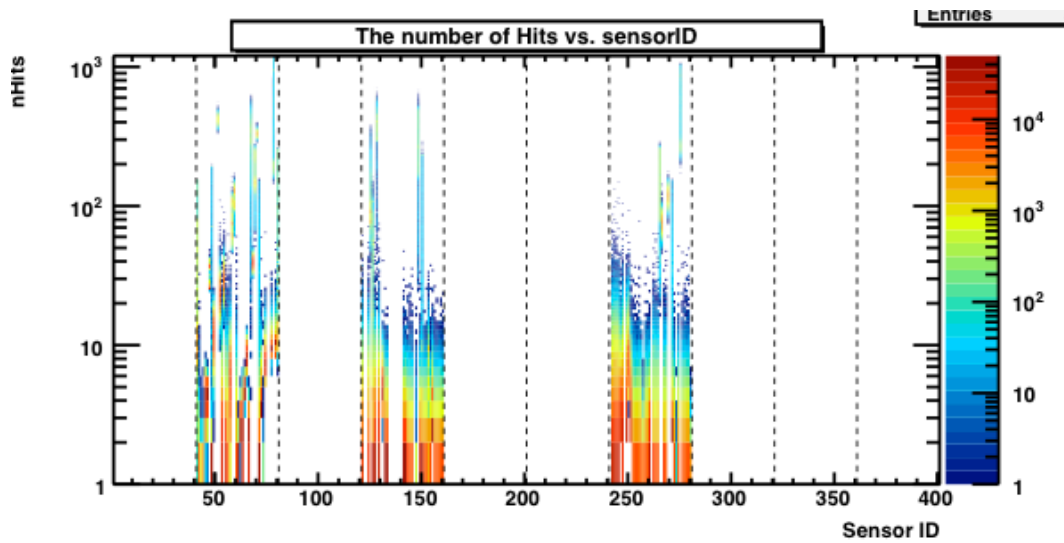
Engineering Plans

- Integrated with the STAR DAQ and Trigger system. Several issues were identified and fixed. Runs smoothly now
- Most commissioning data are taken with the low-luminosity at STAR. De-steer beam to $\sim 1\text{-}2\%$ to reduce pile-up in TPC and PXL
- Exploring many configurations/ settings to optimize response and identifying problems

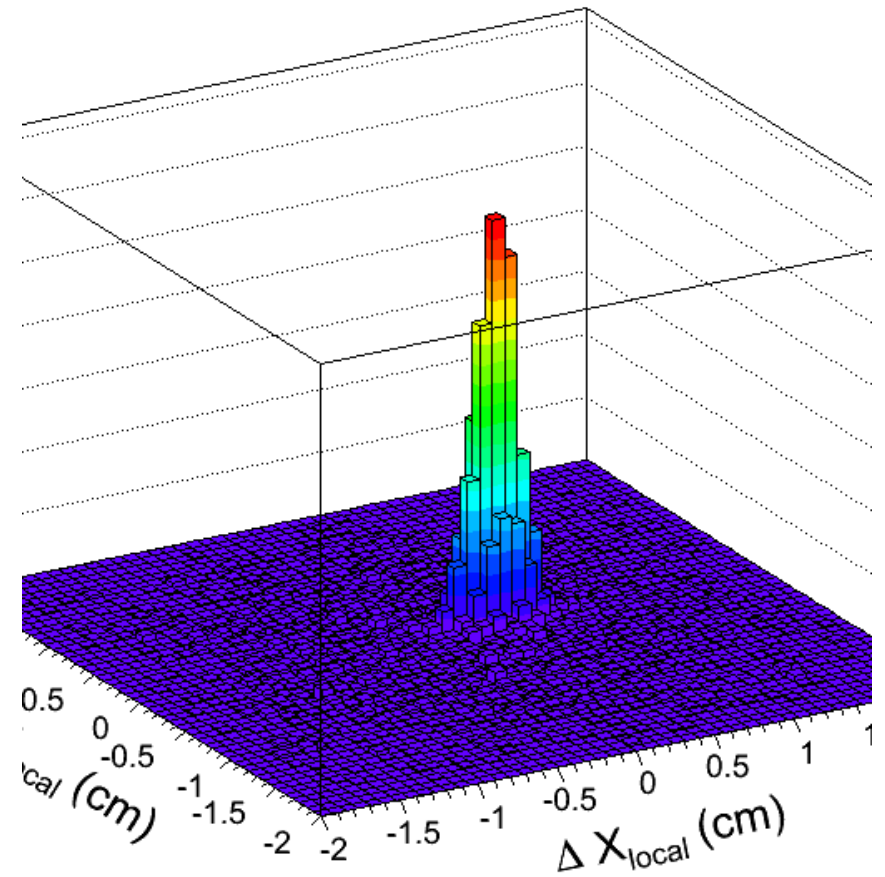


~8kHz ZDC rate – 2% of full lumi

Example of QA plots



First tracking results shows matching of TPC tracks to hits on sensors with residual in order of the expected TPC resolutions on the sensors ($\sim 1\text{-}2$ mm)



Plans for remaining 5 days

- Take a large data set of tracking data. ~ 6-10M events at end of fills.
- Systematic studies of various configuration
- Adding into regular STAR production at full luminosity to explore Latch-up events and recovery procedures. We have seen this as well as some effect of Radiation damage.
- The engineering run has been tremendously valuable and allow to identify problems, and will make next years startup smoother.