Year 3 Reconstruction and Calibration Status

David Hardtke

LBNL

1. What's new?
2. Status of Calibrations
3. Why we need ITTF

What’s new? Not much.

- d+Au run
  - $\langle N_{prim} \rangle \approx 60$, most probable $N_{prim} \approx 20$
  - Use pp vertex finder
    - CTB matching to remove pileup
    - Beamline added as track with high weight

Vertex Finding Efficiency

Hijng/ppLMV

Good Globals

Calibration Status for 03a

- Limited Calibrations (mostly TPC and FTPC + beamline). Some missing items:
    - Space charge distortions
    - Hit Errors (still using central Au+Au hit errors)
    - Detector Survey
    - dE/dx (update later)
- FTPC, EMC, SVT updates later

Why we need ITTF

STAR Reconstruction for sale: Reliable, rattles at high speeds, interior stinks.

Current Tracking vs. ITTF

- Role of SVT:
  - Current Tracker: Photon Converter
  - ITTF: High Precision Tracking Detector
- Experts:
  - Current Tracker: Retired (Literally or in practice)
  - ITTF: Available (for limited time). Will likely quit without collaboration commitment to ITTF.
- Upgradability and Maintainability:
  - Current Tracker: Are you kidding?
  - ITTF: Possible, but need more effort

Failure to adopt ITTF in next few months will adversely impact STAR physics capabilities for years to come

Short Summary

- d+Au required no changes to reconstruction code
- 03a production has limited calibrations for TPC and FTPC
  - Second production will include detailed corrections and other detectors (EMC and SVT)
- Failure to adopt ITTF now will impact long term STAR physics program (SVT will not be useful for physics)
  - Limit high p_T reach
  - Reduced multi-strange baryon reconstruction efficiency
  - APS vertex detector utility not clear