Status & Future of fSTAR Detectors' DAQ and Trigger

Tonko Ljubicic, BNL

Status of the Ongoing pp510 Run

- FST
  - we moved to 2 DAQ PCs (each with 3 fiber receivers) at the start of the run
- STGC
  - occasionally a FEB needs power-cycling
    - CAUTION message to the DAQ Log prompts the Shifcrew to perform a manual power-cycle
  - firmware running stably but…
    - would be really good to see tracking results to be sure all is well…
- DEP
  - occasional SEUs, handled by real-time software
    - including power-cycling
  - 1 DEP board has slightly flaky readout (S10-2) which causes auto-recoveries every few runs
- Shutdown plans
  - nothing much so far…

Upcoming AuAu200 run

- data volume per collision will dramatically increase from pp500
  - reconstruction issues for STGC and FST?
- trigger rate including TPC is expected to increase to 5+ kHz
  - possible throughput issues on the fibers to the DAQ PCs?
  - throughput issues from the DAQ PCs to the EVBs?
    - even after various data suppression schemes
  - computing power problems for the data suppression algorithms?
  - FST, STGC deadtime issues if running without TPC?
- FCS triggering
  - will the VHDL algorithms need changing?

Conclusion

- a “do nothing” approach, naively assuming readout rates of 5+ kHz in AuAu200 won’t work
- we should start thinking about the intended use of the Forward Detectors in AuAu200
  - and FCS triggering as well
  - …and we also need to plan for the BUR