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Data Reconstruction for the sPHENIX experiment

Friday, 8 July 2022 11:30 (15 minutes)

The sPHENIX detector is a next generation experiment being constructed at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory. Starting next year it will collect high statistics data sets from ultra relativistic Au+Au, p+p and p+Au collisions. The readout is a combination of triggered readout for calorimeters and streaming readout for the silicon pixel/strip detectors and the time projection chamber (TPC). sPHENIX does not employ higher level triggers only a small subset of events is build online for monitoring purposes which makes it unique among NP/HEP experiments. Events are assembled from multiple input streams as part of a multi pass reconstruction which includes calibration and space charge distortion corrections for the TPC data. This reconstruction will run near realtime within a fixed latency of when the data was taken. To meet its physics requirements sPHENIX has developed state of the art reconstruction software based on the "A Common Tracking Software" (ACTS) package which was adapted to reconstruct the TPC data. The raw data will be processed at the Tier 0 for the RHIC experiments - the Scientific Data Computing Center (SDCC) at BNL. The Production and Distributed Analysis (PanDA) system was chosen as workload management system to handle the complexities of our workflow.

In this talk the details of the data processing for the sPHENIX experiment will be described.

In-person participation

No

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