Contribution ID: **881**   Type: **Poster**

Track Reconstruction with the sPHENIX Experiment

Friday 8 April 2022 14:00 (4 minutes)

The sPHENIX detector at Brookhaven National Laboratory's Relativistic Heavy Ion Collider (RHIC) has a broad experimental QCD physics program that is highlighted by jets, their substructure, and open and closed heavy flavor production. To measure these observables, the sPHENIX tracking system is composed of a monolithic active pixel sensor based vertex detector (MVTX), a silicon strip detector called the intermediate tracker (INTT), and a compact, continuous readout time projection chamber (TPC). Measuring these observables requires precise and efficient track reconstruction in these detectors. This presents challenges due to the large track density environment present in central heavy ion collisions, the high luminosity environment that RHIC will provide, and the streaming readout model that sPHENIX will collect data with. In this poster, we discuss the physics performance of the current track reconstruction. This includes the implementation of TPC distortion corrections into the workflow; details of the distortion calibrations are discussed in a separate poster. Future track reconstruction plans as the experiment approaches first data taking in 2023 will also be discussed.

Primary author: OSBORN, Joe (Oak Ridge National Laboratory)

Presenter: OSBORN, Joe (Oak Ridge National Laboratory)

Session Classification: Poster Session 3 T15_2

Track Classification: Future facilities and new instrumentation