

High- p_T physics in the inaugural sPHENIX physics Run-24

Thursday 9 January 2025 11:30 (30 minutes)

The new sPHENIX experiment at the Relativistic Heavy Ion Collider (RHIC) has recently finished in its inaugural physics run with proton-proton and gold-gold collisions in 2024. sPHENIX is a large acceptance and high rate experiment, equipped with hermetic electromagnetic and hadronic calorimeter systems, the latter of which is unique at RHIC. The calorimeters, along with an efficient trigger system and high-efficiency and resolution tracking systems, enable qualitatively new measurements of jet, isolated photon, and jet (sub-)structure at RHIC. This talk provides an overview of the performance of the calorimeter system, the reconstruction and calibration of high- p_T objects, and the progress towards first measurements of jet and photon physics with the sPHENIX detector. Lastly, we present highlights of the envisioned physics program enabled by this dataset at sPHENIX and outline a path for future measurements leading to the completion of the RHIC science mission.

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Session Classification: Morning Session