



Contribution ID: 741

Type: Poster

sPHENIX measurement of long-range two-particle correlations in high-multiplicity p+p collisions

There is considerable evidence suggesting the existence of QGP droplets even in small collision systems, such as p+p and p+A collisions. Measurements of long-range correlations are important to evaluate the interplay between the role of initial and final state effects. The sPHENIX experiment at RHIC began operations in 2023 and took p+p collision data over a period of five months in 2024. In this poster, we will present the status of measurements of long-range two-particle correlations for different charged particle multiplicities in p+p collisions at $\sqrt{s} = 200$ GeV. This measurement utilizes tracks reconstructed by Monolithic Active Pixel Vertex Detector (MVTX) and Intermediate silicon tracker (INTT) at central rapidity and the sPHENIX Event Plane Detector (sEPD). The correlation of the sEPDs at backward and forward rapidity allows for unprecedented $\Delta\eta$ ranges to be explored (up to $\Delta\eta \sim 9.8$).

Category

Experiment

Collaboration (if applicable)

sPHENIX Collaboration

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Session Classification: Poster session 1

Track Classification: Correlations & fluctuations