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Measurements of charm, bottom, and Drell-Yan via dimuons in p+p and p+Au collisions at $\sqrt{s_{NN}} = 200$ GeV with PHENIX at RHIC

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Dilepton spectra are a classic probe to study ultra-relativistic heavy ion collisions. At RHIC energies, the dimuon continuum is dominated by correlated pairs from charm and bottom semi-leptonic decays and the Drell-Yan process. No Drell-Yan measurement had been made at $\sqrt{s_{NN}} = 200$ GeV to date. A precise measurement of the Drell-Yan cross-section can provide constraints to PDFs. The dimuon spectra also contain information on heavy flavor angular correlations, which can constrain the relative contributions from different heavy flavor production mechanisms. Studying heavy flavor correlations in p+Au collisions may provide further insight to understanding cold nuclear matter effects.

In this talk, we report measurements of $\mu\mu$ pairs from charm, bottom, and Drell-Yan in p+p and p+Au collisions at $\sqrt{s_{NN}} = 200$ GeV. A further shape analysis is applied to the heavy flavor pair correlations to extract the ratios of leading and next-to-leading order contributions.

Content type

Experiment

Collaboration

PHENIX

Centralised submission by Collaboration

Presenter name already specified

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