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Studying heavy flavor production via unlike-sign and like-sign dimuon mass spectra in p+p collisions at $\sqrt{s_{NN}}$ = 200 GeV in the PHENIX Experiment

The dimuon mass spectrum, unlike-sign as well as like-sign, is a unique probe to directly access the different stages of a heavy-ion collision. The unlike-sign intermediate ($1 < m_{\mu^+\mu^-} < 3$ GeV/c^2) and high ($4 < m_{\mu^+\mu^-} < 8$ GeV/c^2) mass regions are dominated by semi-leptonic decays of open charm and bottom, and therefore provide information about the heavy flavor dynamics. The like-sign dimuon mass spectrum in the high mass region mostly comprise of bottom decays coming from B^0 oscillations, which provides a strong constraint to the bottom cross-section. This poster will present the current status of the analysis of open heavy flavor ($c\bar{c}$ and $b\bar{b}$) using the high statistics 2015 p+p data collected with the PHENIX detector in the rapidity range 1.2 < |y| < 2.2 at $\sqrt{s_{NN}}$ = 200 GeV. In this poster, we present the status of the analysis to determine $c\bar{c}$ and $b\bar{b}$ separated yields by exploiting a double-differential fit done simultaneously in mass and p_T , for both unlike and like sign mass spectra, and with $\sigma_{c\bar{c}}$ and $\sigma_{b\bar{b}}$ as free parameters.

Preferred Track

Open Heavy Flavors

Collaboration

PHENIX

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