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Centrality dependence of bottom and charm production at PHENIX

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Bottom and charm production is a powerful tool to investigate the properties of quark gluon plasma created in high energy heavy ion collisions. Heavy flavor production is calculable by perturbative QCD because of their large mass.

Once produced, they traverse the QGP and suffer the hot medium effects such as energy losses. The collisional and radiative mechanisms play an important role of the energy losses for low and high p_T , respectively. Therefore, it is crucial to measure the medium modifications of bottom and charm production with broad p_T ranges.

PHENIX experiment at RHIC studied the heavy flavor production in Au+Au collisions using the measurement of single electrons from the heavy flavor decays. The Silicon vertex detector, VTX, provides the precise tracking capability, enabling the separation of electrons from the bottom and charm decays by measuring the distance of the closest approach to the collision vertex. Recently, we updated the $p + p$ baseline measurement of bottom and charm productions with high statistics.

In this presentation, we will present the centrality dependence of bottom and charm production with the new $p + p$ baseline and discuss their modifications.

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