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J/psi production in U+U collisions at 193 GeV in the STAR experiment

Extensive studies of properties of quark-gluon plasma (QGP), the partonic matter created in heavy ion collisions, have been conducted at RHIC for over a decade. Suppression of quarkonia production in high energy nuclear collisions relative to proton-proton collisions, due to Debye screening of the quark-antiquark potential, has been predicted to be a sensitive indicator of the temperature of the created QGP. However, initial-state nuclear effects on the parton distributions (shadowing), production via recombination of quark-antiquark pairs in the QGP and dissociation in hadronic phase could also significantly alter the expected suppression picture. Systematic measurements of the quarkonia production for different colliding systems are required to understand the quarkonium interactions with the partonic medium, and then the QGP properties. To further study the pattern of quarkonia suppression we can utilize the collisions of non-spherical nuclei such as uranium.

In this poster, we will present the analysis status on J/ψ production, reconstructed at midrapidity via di-electron decay channel, in U+U collisions at $\sqrt{s_{NN}} = 193$ GeV in the STAR experiment.

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