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Measurements of quarkonium production in heavy-ion collisions at the STAR experiment

Thursday 13 June 2019 14:00 (20 minutes)

Quarkonium states produced in heavy-ion collisions serve as essential probes when studying the Quark-Gluon Plasma (QGP). In particular, suppression of quarkonium production in the QGP medium due to the color screening effect has been proposed as a direct signature of the QGP formation. However, there are also other phenomena, such as cold nuclear matter effects and regeneration, which can also modify the quarkonium yields measured in heavy-ion collisions. All of these effects need to be carefully taken into account when interpreting the observed suppression.

STAR is one of the running heavy-ion experiments in the world and it provides a large acceptance coverage to study quarkonium states at mid-rapidity. In this presentation, we will present the latest results of quarkonium measurements from the STAR experiment including the production cross sections of J/ψ and Υ mesons in $\sqrt{s}$ = 200 GeV and 500 GeV p+p collisions, J/ψ polarization in $\sqrt{s}$ = 200 GeV p+p collisions, and nuclear modification factors of J/ψ and Υ mesons in $\sqrt{s_{NN}}$ = 200 GeV p+Au and Au+Au collisions.

Collaboration name

STAR Collaboration

Track

Heavy Flavour

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