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Measurement of the Υ production in heavy-ion collisions at $\sqrt{s_{NN}} = 200$ GeV with the STAR detector

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Quarkonia play a unique role in probing the properties of the quark-gluon plasma (QGP). The dissociation of quarkonia due to the color screening was proposed as a direct signature of the QGP formation. On top of that, different states of quarkonium are expected to dissociate at different temperatures depending on their binding energies. Therefore, measurement of the expected sequential suppression for the three Υ states in heavy-ion collisions can be used to study the modification of the QCD force in the medium and the QGP's thermodynamic properties.

This poster presents the Υ measurements in Au+Au and isobar (Ru+Ru and Zr+Zr) collisions at $\sqrt{s_{NN}} = 200$ GeV with the STAR experiment at RHIC. The nuclear modification factors are presented as functions of centrality and transverse momentum. In addition, these results are compared to those at the LHC and theoretical calculations. The physics implications are discussed as well.

Category

Experiment

Collaboration (if applicable)

STAR Collaboration

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