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PHENIX measurement of the collision system and multiplicity dependence of heavy quarkonia production

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The system size and multiplicity dependence of heavy quarkonia production in heavy ion collisions can be used to disentangle the effects of hot and cold nuclear matter on quarkonia production. In particular, color screening and recombination, which modify the yields of charmonia in the quark gluon plasma, can be studied in large systems. We present PHENIX results on J/ψ production in U+U collisions. The yield is compared to that in Au+Au collisions as a function of centrality. In peripheral to midcentral collisions the ratio scales as $N_{\rm coll}$, but in central collisions it scales as $N^2_{\rm coll}$. This is consistent with a picture where, for more central collisions, the coalescence mechanism for the production of the J/ψ becomes dominant over the decrease in yield due to the increased energy density.

On behalf of collaboration:

PHENIX

Author: FRAWLEY, Anthony (Florda State University)

Presenter: FRAWLEY, Anthony (Florda State University)

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