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Measurements of Upsilon Production and Nuclear Modification Factor at STAR

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Thermal suppression of quarkonium production in heavy-ion collisions, due to Debye screening of the quark-antiquark potential, has been proposed as a clear signature of quark-gluon plasma (QGP) formation. At RHIC energies, the \$Upsilon mesons is a clean probe of the early system thanks to negligible levels of enhancement from b-bbar recombination and non-thermal suppression from co-mover absorption. We report on our measurement of the\Upsilon \to e^+ e^- cross section for $Au + Au$ collisions at\sqrt{S_{NN}}\$=200 GeV. We compute a Nuclear Modification Factor by comparing these results to newly analyzed p+p collisions from 2009 (21 pb^-1 compared to 7.9 pb^-1 in 2006). In order to have a complete assessment of both hot and cold nuclear matter effects on Upsilon production we also report on results from d+Au collisions.

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