Abstract Submitted
for the DNP15 Meeting of
The American Physical Society

Momentum spectra of bottomonium in heavy-ion collisions JORDAN FOX, XIAOJIAN DU, RALF RAPP, Texas A&M University — The early universe consisted of a dense nuclear medium that took a short time to expand and form hadrons; this medium is called the quark-gluon plasma (QGP). It is believed that a QGP can be created in URHICs, and that heavy quarks created early in the collision act as a probe of the QGP. We investigate models of producing bottomonium ($b\bar{b} \to Y$) states in URHICs at RHIC and LHC energies in order to describe the regeneration of bottomonia from the QGP as it depends on transverse momentum (p_T). To simulate the evolution of the bottomonium abundance in URHICs, we rely on the results of a kinetic rate equation approach, which describes the number of bottomonia N_Y as it approaches equilibrium. We first implement a blastwave model to estimate the p_T-spectra of locally thermalized Υ^{1S} and Υ^{2S} states, boosted by a flow field. However, since bottomonium is not fully thermalized in the QGP, we employ a quark coalescence model with realistic b-quark spectra in the calculation of its in-medium distributions. Finally, the total nuclear modification factor ($R_{AA}(p_T)$) is calculated accounting for the interplay of suppression and regeneration mechanisms of bottomonium in URHICs as compared to proton-proton collisions.

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Date submitted: 05 Aug 2015 Electronic form version 1.4