

Abstract Submitted
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Hot Nuclear Correction to J/ψ suppression in dAu collision at 200GeV XIAOJIAN DU, RALF RAPP, Cyclotron Institute, Texas A&M University — The production of J/ψ mesons in high-energy collisions of heavy nuclei is believed to be a sensitive probe of the possible formation of a new state of matter in these collisions, the quark-gluon plasma (QGP). The Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Lab affords us with a lot of experimental information on J/ψ production in different collision systems. The dAu collisions usually provide us information on so-called cold nuclear matter effects. However, recently it has been conjectured that also in these small systems a hot thermal medium could form. In the present work we theoretically investigate whether such a hypothesis can be consistent with J/ψ and ψ' suppression data. To do so, we adapt our charmonium transport approach, developed for AuAu collisions, to the smaller dAu system. In this way we extend our cold matter theoretical result to include hot medium corrections, and compare the results to J/ψ and ψ' data from the PHENIX collaboration. We find indications that the data are better described when including hot nuclear matter effects. This has the potential to better quantify the relevant mechanisms in heavy systems, and thus provide deeper insights into the physics of the quark-gluon plasma.

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