

Abstract Submitted
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Quarkonium production in heavy ion collisions measured by the PHENIX detector at RHIC CESAR L. DA SILVA, Iowa State University, PHENIX COLLABORATION — Quarkonium ($c\bar{c}$ and $b\bar{b}$) production and its nuclear modification factors in heavy ion collisions offer an opportunity to gauge cold nuclear matter properties such as parton distribution modifications and $Q\bar{Q}$ breakup in the hadronic matter. Furthermore, the quarkonium can be dissociated due to the color screening in quark-gluon plasma. Consequently, the observation of its suppression can be used as a phase transition thermometer. Finally, the quark charm coalescence is likely to enhance the charmonium abundance in deconfined matter. The PHENIX Experiment at RHIC collected large data sets with $p+p$, $d+Au$ and heavy ion collisions that were used to measure quarkonium production at $\sqrt{S_{NN}}=200$ GeV in different rapidity ranges. This presentation will summarize the up to date quarkonium measurements in $d+Au$ and $Au+Au$ collisions obtained by PHENIX and their interpretation in view of the topics described above.

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