

Cold Nuclear Matter Effects on J/ψ and Υ Productions at RHIC with the STAR Experiment

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Quarkonia are excellent probes for studying the properties of quark-gluon plasma formed in relativistic heavy-ion collisions at RHIC. In order to fully understand the observed suppression of quarkonium production in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV, it is essential to understand well the cold nuclear matter (CNM) effects on the quarkonium production. Collisions of p+Au at the same energy can be used to study the CNM effects since these effects are expected to be dominant in such systems.

In this talk, we will present measurements of inclusive J/ψ and Υ cross-sections in p+p collisions and their modification in p+Au collisions (the nuclear modification factor R_{pAu}) at $\sqrt{s_{NN}} = 200$ GeV. The results are extracted from data recorded by the STAR experiment in 2015 using the di-electron decay channel of the quarkonia. Comparisons are made to results from other experiments as well as to model calculations and physics implications will also be discussed.