

# Cold Nuclear Matter Effects on $J/\psi$ and $\Upsilon$ Productions at RHIC with the STAR Experiment

Ziyue Zhang  
*University of Illinois at Chicago*

(STAR Collaboration)

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 poster, we present measurements of inclusive  $J/\psi$  and  $\Upsilon$  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 are also discussed.