Measurements of J/ψ photoproduction in ultra-peripheral collisions at RHIC

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Ultra-peripheral nucleus-nucleus and proton-nucleus collisions (UPC) are mediated by strong electromagnetic fields, offering the opportunity to study photon-nucleus and photon-proton processes at RHIC. In particular, coherent J/ψ photoproduction in photon-nucleus interactions is sensitive to nuclear effects on the gluon density, and exclusive J/ψ photoproduction in photon-proton collisions can probe the Generalized Parton Distributions in the case of polarized protons. The J/ψ is an ideal probe of the above phenomena thanks to its large mass, which allows the use of perturbative Quantum Chromodynamics.

In this talk we present a brief overview of the topic and results on vector meson photoproduction in Au+Au collisions at 200 GeV and results on J/ψ photoproduction in p+Au collisions at 200 GeV with a polarized proton beam.