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## Coherent $J/\psi$ photoproduction in ultra-peripheral collisions at STAR

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Ultra-peripheral nucleus-nucleus collisions (UPC) are mediated by strong electromagnetic fields, offering the opportunity to study photon-nucleus processes at RHIC. Coherent  $J/\psi$  photoproduction is of particular interest for its sensitivity to nuclear gluon distribution. The  $J/\psi$  mesons are heavy enough to be described by perturbative Quantum Chromodynamics (pQCD), where coherent cross section, at the first order, is proportional to the square of the nuclear gluon distribution. This makes coherent  $J/\psi$  cross section an ideal probe to phenomena of gluon saturation and nuclear gluon shadowing.

In this talk, we present a brief overview of the topic and preliminary results of exclusive coherent  $J/\psi$  photoproduction in Au+Au UPC at  $\sqrt{s_{NN}} = 200$  GeV at central rapidity  $|y| < 1$ , where the photoproduction was tagged at the trigger level by forward neutrons emitted as a result of electromagnetic excitation of the nuclei.

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