

UPC 2023: International workshop on the physics of Ultra Peripheral Collisions

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Photoproduction measurements in UPC at STAR

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Exclusive vector meson photoproduction in ultra-peripheral collisions (UPC) is a unique tool to study quantum chromodynamics in nucleus-nucleus collisions. In a UPC, photon induced interaction takes place on one of the nuclei, while the other is the source of virtual photon. Neutrons may be emitted from the target nucleus and eventually detected in a very forward calorimeter. Here we report on cross section measurements of J/ψ and $\psi(2S)$ photoproduction in UPC at STAR experiment in Au-Au collisions at $\sqrt{s_{NN}} = 200$ GeV. The cross sections are evaluated as a function of meson rapidity, square of its transverse momentum and photon-nucleus center-of-mass energy for the case of very forward neutron detection.

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