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# J/Psi production in ultra-peripheral heavy-ion collisions at RHIC

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In recent years the STAR Collaboration collected a large sample of ultra-peripheral heavy-ion collisions. The photoproduction of J/$\psi$ vector mesons is sensitive to the gluon content of the target nucleon or nucleus. We will present results from a statistically large sample of J/$\psi$ production in Au+Au collisions. A significant result comes from the study of the $p_T$ distributions, which clearly show two components, from scattering off the entire Au nucleus or off individual nucleons inside the nucleus. From a smaller sample of J/$\psi$ production in p+Au collisions, with polarized protons, we will discuss the status of a first study of the asymmetry of J/$\psi$ production. A non-zero asymmetry would be the first measure of the generalized parton distribution, $E_g$, for gluons, which is connected with the orbital angular momentum of partons in the nucleon. The present study is a proof-of-principle, and we will discuss the possibilities with larger data samples from future polarized p+p and p+Au RHIC runs.

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