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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 pT 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, 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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