

Coherent diffractive production of J/ψ in gamma-nucleus collisions

Friday 19 July 2024 15:00 (15 minutes)

We investigate the exclusive photoproduction of J/ψ mesons in ultraperipheral heavy-ion collisions in the color dipole approach. We use the color dipole formulation of Glauber-Gribov theory to calculate the diffractive amplitude on the nuclear target. We discuss the role of $c\bar{c}g$ -Fock states, which can be understood in terms of the shadowing of the nuclear gluon distribution. We compare the results of our calculations to recent data on the photoproduction of J/ψ by the ALICE, LHCb and CMS collaborations. In particular the $\gamma A \rightarrow J/\psi A$ cross section and the putative gluon shadowing ratio $R(x)$ are improved at small x high energies after including the $c\bar{c}g$ state.

Alternate track

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