

Coherent photoproduction of J/ψ in nucleus-nucleus collisions in the color dipole approach

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We investigate the exclusive photoproduction of J/ψ -mesons in ultraperipheral heavy ion collisions in the color dipole approach.

We first test a number of dipole cross sections fitted to inclusive F_2 -data against the total cross section of exclusive J/ψ -production on the free nucleon.

We then use the color-dipole formulation of Glauber-Gribov theory to calculate the diffractive amplitude on the nuclear target.

The real part of the free nucleon amplitude is taken into account consistent with the rules of Glauber theory.

We compare our results to recent published and preliminary data on exclusive J/ψ production in ultraperipheral lead-lead collisions at $\sqrt{s_{NN}} = 2.76$ TeV and $\sqrt{s_{NN}} = 5.02$ TeV.

Especially at high γA energies there is room for additional shadowing corrections, corresponding to triple-Pomeron terms or shadowing from large mass diffraction.

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