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Hard exclusive J/\Psi photoproduction off a proton

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We study the photoproduction of J/\Psi mesons off a proton in the kinematical regime of large energies and scattering angles within the framework of perturbative QCD. The heavy charm-quark mass is providing the relevant hard scale in the process. In particular, it is the so-called hard scattering approach which is taken as theoretical basis for our investigations. There the hadrons are replaced by their valence Fock states during the hard scattering and the large transfered momentum is redistributed by additionally attaching hard gluons to these valence quarks. We can show that in our perturbative treatment not the graphs where the photon directly fluctuates into the c \bar{c} pair give the dominant contribution in the investigated kinematical regime, but the graphs where the photon first couples to the valence quarks of the proton. We also give explicite predictions for \gamma p -> J/\Psi p cross sections, which are compared to experimental data where possible.

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