

Double prompt J/psi hadroproduction in the Parton Reggeization approach with high-energy resummation

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Abstract: We study double prompt J/ψ hadroproduction within the nonrelativistic-QCD factorization formalism adopting the parton Reggeization approach to treat initial-state radiation in a gauge invariant and infrared-safe way. We present first predictions for the cross section distributions in the transverse momenta of the subleading J/ψ meson and the J/ψ pair. Already at leading order in α_s , these predictions as well as those for the total cross-section and its distributions in the invariant mass $m_{\psi\psi}$ and the rapidity separation $|Y|$ of the J/ψ pair nicely agree with recent ATLAS and CMS measurements, except for the large $m_{\psi\psi}$ and large- $|Y|$ regions, where the predictions substantially undershoot the data. In the latter regions, BFKL resummation is shown to enhance the cross sections by up to a factor of two and so to improve the description of the data.

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