

Prompt hadroproduction of pseudoscalar charmonia in the k_T factorization approach

Tuesday, November 26, 2019 11:30 AM (20 minutes)

We present our recent calculations on the production of pseudoscalar charmonia $\eta_c(1S)$ and $\eta_c(2S)$ in the k_T factorization approach. We discuss the regions of longitudinal and transverse momenta of gluons probed in the kinematics of the LHCb or ATLAS experiments.

The crucial ingredient is the off-shell matrix element, which in this case is related to a $g^*g^*\eta_c$ form factor. Its calculation proceeds analogously to the $\gamma^*\gamma^*\eta_c$ form factor obtained in terms of the light front wave function of the charmonium in [1].

We compare our results to recent LHCb data and discuss the sensitivity to the choice of the unintegrated gluon distribution.

[1] I.-Babiarz, V.-P.-Goncalves, R.-Pasechnik, W.-Schäfer and A.-Szczyrek, Phys. Rev. D 100 (2019) no.5, 054018

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