

# Prompt hadroproduction of pseudoscalar charmonia in the $k_T$ factorization approach

*Tuesday, 26 November 2019 11:30 (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.-Szczurek, Phys. Rev. D 100 (2019) no.5, 054018

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