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## Determination of the TMD gluon density in a proton using recent LHC data

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Unintegrated (or transverse momentum dependent, TMD) parton distributions in a proton are important in high energy physics. Using the latest LHC data on the hadron production in pp collisions, we determine the parameters of the initial TMD gluon density, derived in the framework of quark-gluon string model at the low scale  $\mu_0 \sim 1 - 2$  GeV and refine its large-x behaviour using data on the  $t\bar{t}$  production at  $\sqrt{s} = 13$  TeV. Then, by using the Catani-Ciafaloni-Fiorani-Marchesini (CCFM) evolution equation, we extend the obtained TMD gluon density to the whole kinematical region. We apply the proposed TMD gluon density to the inclusive Higgs production in different decay modes, t-channel single top production at the LHC and to the proton structure functions  $F_2^c(x, Q^2)$  and  $F_2^b(x, Q^2)$  in a wide region of  $x$  and  $Q^2$ . A good agreement with the latest LHC and HERA data is achieved.

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