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Simultaneous fit of PDFs and α_S at NNLO with CMS inclusive jet measurement — •Valentina Guglielmi, Katerina Lipka, and Simone Amoroso — Deutsches Elektronen-Synchrotron DESY, Notkestraße 85, D-22607 Hamburg

Jet production in proton-proton collisions is a powerful tool to constrain the strong coupling constant α_S, the parton distribution functions (PDFs) and to spot the hits for new physics. In this contribution, we present preliminary results of a simultaneous determination of α_S and PDFs at NNLO in QCD using the publicly available inclusive jet measurements at 7, 8 and 13 TeV by the CMS collaboration together with the HERA2 inclusive DIS data. The jet cross sections at different centers-of-mass energies probe different momentum fraction x of the proton, carried by the partons. Furthermore, a novel technique is presented to consider the missing higher order uncertainties in the goodness-of-fit estimate.

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