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PDF constraints from dijet production at the LHC

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Jet production measurements have represented one of the cornerstones of global PDF analyses since the early days of the Tevatron. Here we critically revisit the impact of jet production measurements from the LHC at 7 and 8 TeV within a global PDF fit by exploiting recent progress in NNLO QCD calculations. For the first time, we demonstrate that dijet production measurements can be successfully included within a NNLO global PDF fit and quantify the information that they provide on the large- x gluon. We compare the PDF impact of inclusive jet measurements from those provided by the dijet data, and assess in both cases the perturbative convergence of the theoretical predictions and the role of the choice of renormalisation and factorisation scale. We also assess the stability of our results with the choice for the correlation model used to construct the experimental covariance matrices.

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