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An updated global QCD analysis of nuclear PDFs using neural networks

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Resolving the quark and gluon structure of nuclei has been a crucial aim of the QCD physics community since the discovery of the EMC effect. Such information is given by the nuclear parton distribution functions (nPDFs), which describe the collinear momentum substructure of nucleons bound within nuclei and are accessed via global QCD analyses of lepton-nucleus and hadron-nucleus measurements. In this talk, I present an updated global QCD analysis of nPDFs based on the NNPDF methodology. This analysis follows a previous study which implemented for the first time both a model-independent atomic mass dependence of the PDFs using neural networks, and a Monte Carlo technique for estimating PDF uncertainties. In particular, I will highlight the impact of vector boson and dijet production measurements from pPb collisions at the LHC as well as discuss potential constraints from the LHC and future DIS colliders such as the EIC and LHeC.

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