

The NNPDF4.0 global analysis and related studies

Tuesday 3 May 2022 09:20 (20 minutes)

In this talk we present the NNPDF4.0 global analysis. As compared to its predecessor, NNPDF3.1, the new NNPDF4.0 fit includes 44 new datasets, mostly from the LHC, benefits from a novel machine learning methodology based on hyperparameter optimisation and stochastic gradient descent, is based on state-of-the-art NNLO QCD calculations, and accounts for NLO electroweak corrections and nuclear uncertainties. We demonstrate the robustness of our results with respect to a number of dataset, theory, and methodological variations. We compare NNPDF4.0 with other recent PDF fits and explore its implications for LHC phenomenology. We also discuss the main capabilities of the open-source NNPDF fitting framework. We also present results of ongoing studies based on NNPDF4.0, in particular an updated determination of the strong coupling constant and of methodological improvements

PD The speaker will be indicated at a later date

Submitted on behalf of a Collaboration?

Yes

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