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A data-driven test of a quantum-statistics PDF parametrisation.

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Parton Distributions Functions (PDFs) are a pivotal input in every theoretical prediction involving initial-state protons, from hadron collider to neutrino telescopes. These objects are usually determined through fits to experimental data, leaving a large degree of freedom in the choice of the best functional form to be used and in the starting energy reference scale.

In this talk we discuss the first fully data driven test of a PDF parametrisation inspired by fundamental distributions in quantum statistics [Franco Buccella et al J. Stat. Mech. (2019) 073302]. We will show the results of our fit to the PDFs using the HERA collider dataset with the `\texttt{xfitter}` collaboration framework and then compare the overall fit performance against the HERAPDF parametrization.

Declaration

I certify that I have checked that I am authorised to submit the abstract with the listed co-authors with their current affiliations

Change of Speaker

I understand that change of speaker is allowed provided that no participant gives more than one talk. Otherwise, we will ask the speaker to choose between one or the other abstract to be presented.

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