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Theory uncertainties from missing higher orders in PDF fits

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Almost all PDF fits so far take into account experimental uncertainties but not the uncertainties on theoretical predictions. Because theoretical predictions are typically computed at finite order in perturbation theory, they suffer from (often sizeable) uncertainties due to the missing higher orders. In a recent NNPDF study, theory uncertainties evaluated using scale variation have been included in a PDF fit for the first time. However, scale variation is not always a reliable tool for estimating the size of missing higher orders. I will consider a new approach for evaluating theory uncertainties that I have recently proposed, built upon the Cacciari-Houdeau model, which is more reliable than scale variation and has the great advantage of having a clear probabilistic meaning.

Submitted on behalf of a Collaboration?

No

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