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Markov Chain Monte Carlo technics applied to Parton Distribution Functions determination: proof of concept

Thursday 31 August 2017 17:00 (30 minutes)

Abstract:

We have developed a new procedure to determine Parton Distribution Functions (PDFs) and their uncertainties, based on Markov Chain Monte Carlo methods. We will show in this talk how we can replace the standard χ^2 minimization by procedures grounded on Statistical Methods, and on Bayesian inference in particular, thus offering additional insight into the rich field of PDFs. The formulation of PDFs determination in terms of Bayesian inference, the Monte Carlo algorithm we have implemented in the xFitter code, and the first results we have obtained will be presented.

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