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NNPDF determination of polarized parton distributions of the nucleon at NLO

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We present a preliminary determination of a set of polarized parton distributions of the nucleon, at next-to-leading order, from a global set of deep-inelastic scattering data. The determination is based on the NNPDF methodology: a Monte Carlo sampling with neural networks used as unbiased interpolants. This method, which has already been applied to a determination of unpolarized parton distributions, is designed to provide a faithful and statistically sound representation of the uncertainty on parton distributions. We discuss the general NNPDF procedure to parton fitting, focusing on the algorithm used to determine the optimal fit. We also present a preliminary set of polarized PDFs, compared to other parton extractions recently obtained by other collaborations. In particular, we show that "traditional" fits tend to underestimate the PDF uncertainty, particularly for the gluon, which is basically unconstrained by inclusive DIS data.

Author: NOCERA, Emanuele Roberto (Universita degli Studi di Milano and INFN, Milano)

Presenter: NOCERA, Emanuele Roberto (Universita degli Studi di Milano and INFN, Milano)

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