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NNPDF: Neural Networks for precision PDF determinations

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Parton Distribution Functions (PDFs) are a crucial ingredient for accurate and reliable theoretical predictions for precision phenomenology at the LHC.

The NNPDF approach to the extraction of Parton Distribution Functions relies on Monte Carlo techniques and Artificial Neural Networks to provide an unbiased determination of parton densities with a reliable determination of their uncertainties.

I will discuss the NNPDF methodology in general, the latest NNPDF global fit (NNPDF3.1) and then present ideas to improve the training methodology used in the NNPDF fits.

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