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Self Organizing Maps Parameterization of Parton Distribution Functions

Tuesday 1 September 2015 18:00 (30 minutes)

I will discuss the application of an alternative type of neural network, the Self-Organizing Maps (SOMs), to extract parton distribution functions from various hard scattering processes. SOMs provide a complementary algorithm to NNPDFs yielding a parametrization that is free from the bias implicit in choosing specific analytic forms. At the same time it enables us to extrapolate to kinematical regions where data are not available. I will show in particular the extraction using SOMs of the ratio d/u in the x=1 limit, including the treatment of nuclear effects.

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