

XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



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Solving the inverse problem for nucleon structure through machine learning

Tuesday, 24 March 2020 09:30 (20 minutes)

We present a new approach to performing Bayesian inference for QCD analysis of nucleon structure and hadronization, using machine learning to construct the inverse function mapping quantum correlation functions to observables. The new concept provides an alternative paradigm to the standard maximum likelihood or Bayesian posterior sampling methods. The effectiveness of the new technology is illustrated with application to the extraction of parton distribution functions from deep-inelastic scattering data, with results compared to recent global QCD analyses.

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