



Contribution ID: 19

Type: not specified

Extraction of Next-to-Next-to-Leading-Order PDFs from Lattice QCD Calculations

Tuesday 8 September 2020 11:32 (12 minutes)

Quark correlation functions in position space are calculable in lattice QCD and factorizable into parton distribution functions with matching coefficients perturbatively calculable to all orders in QCD, which provides a way to extract PDFs from lattice QCD calculation. We present for the first time complete next-to-next-to-leading-order calculation of valence-quark matching coefficients. We find that theoretical uncertainties are improving with higher order contributions. Our method of calculations can be readily generalized to evaluate sea-quark matching coefficients and gluon correlation functions, putting the program to extract partonic structure of hadrons from lattice QCD calculations to be comparable with that from experimental measurements.

Author: Mr LI, Zheng-Yang (Peking University)

Co-authors: MA, Yan-Qing (Peking University); QIU, Jianwei (Jefferson Lab)

Presenter: Mr LI, Zheng-Yang (Peking University)

Session Classification: Session II