

Global QCD Analysis of Pion Parton Distributions Including Lattice QCD Data

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For the first time, we perform a fit of pion parton distribution functions (PDFs) to reduced pseudo Ioffe time distributions and current-current correlator “good lattice cross sections” generated from lattice QCD simultaneously with experimental data. We make use of the factorization formulas convoluting the matching coefficients with the valence quark distribution to fit to real components of the lattice QCD data. We discuss the impacts of each of the lattice QCD datasets on the central values and uncertainties of the various JAM PDF sets, as well as quantify the systematic effects associated with the lattice.

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