

XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects



Contribution ID: 448

Type: **Contributed Talk**

Testing large- x asymptotics in nucleon and pion PDFs

Wednesday, April 14, 2021 10:00 AM (18 minutes)

We discuss strategies for comparisons of nonperturbative and lattice QCD predictions for collinear PDFs at large partonic momentum fractions x with high-energy experiments. While nonperturbative approaches offer increasingly complete predictions about the nucleon and meson structure at energies below 1 GeV, experimental measurements at energies above 1 GeV rely on perturbative QCD factorization. Using the CT18 NNLO global analysis as an example, we point out comparison strategies that are more informative when bridging the low- and high-energy formalisms and controlling for systematic effects. We compare effective power laws of the $(1-x)$ dependence obtained from a global fit with predictions of quark counting rules. We also demonstrate that analytic predictions for functional forms for PDFs are not uniquely determined from the typical DIS and Drell-Yan data because of a mathematical property of mimicry of PDF parametrizations that we investigate using a representation based on Bézier curves.

Primary authors: COURTOY, Aurore (Instituto de Fisica, UNAM); NADOLSKY, Pavel (Southern Methodist University)

Presenter: COURTOY, Aurore (Instituto de Fisica, UNAM)

Session Classification: Structure function and parton densities

Track Classification: Structure Functions and Parton Densities