DPF - PHENO 2024



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Revealing the fundamental character of the strong force: From PDFs to the underlying QCD.

Tuesday 14 May 2024 16:00 (15 minutes)

As we push to high precision measurements, the PDF uncertainty is often a limiting factor. To achieve improved precision, our goal is to not only 'fit'the PDFs, but to better understand the underlying process at the precision level. Toward this goal, we extend the QCD Parton Model analysis using a factorized nuclear structure model incorporating individual nucleons, and pairs of correlated nucleons. Our analysis simultaneously extracts the universal effective distribution of quarks and gluons inside correlated nucleon pairs, and the nucleus-specific fractions of such correlated pairs. These results fit data from lepton Deep-Inelastic Scattering, Drell-Yan processes, and high-mass boson production. This successful extraction of nuclear structure properties marks a significant advancement in our understanding of the fundamental structure of nuclei.

Mini Symposia (Invited Talks Only)

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