



Contribution ID: 94

Type: **not specified**

Parton distribution functions from Lattice QCD

Monday 26 August 2019 17:00 (30 minutes)

The light-cone definition of Parton Distribution Functions (PDFs) does not allow for a direct ab initio determination employing methods of Lattice QCD simulations that naturally take place in Euclidean spacetime. In this presentation we focus on pseudo-PDFs where the starting point is the equal time hadronic matrix element with the quark and anti-quark fields separated by a finite distance. We focus on Ioffe-time distributions, which are functions of the Ioffe-time v , and can be understood as the Fourier transforms of parton distribution functions with respect to the momentum fraction variable x . We present lattice results for the case of the nucleon and we also perform a comparison with the pertinent phenomenological determinations.

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Session Classification: Workshop on Lattice and Condensed Matter Physics