



Contribution ID: 134

Type: **Parallel**

Parton Distribution Functions from Euclidean-Space Correlation Functions in Ioffe Time

Wednesday 19 June 2019 10:00 (20 minutes)

The hadronic matrix elements of bi-local operators at short Euclidean separations evaluated as a function of Ioffe time can be related to the convolution of the universal parton distribution functions (PDFs) and a short-distance kernel. In this talk, we describe the method, beginning with the needed renormalizations for the case of quark and antiquark fields separated by a Wilson line, and for the case of two gauge-invariant currents. We then proceed to discuss the techniques developed to address the “inverse problem” needed to obtain the PDFs from the hadronic matrix elements calculated on the lattice. Finally, we present our programme of calculations for the pion and for the nucleon, and possible extensions to explore the three-dimensional structure of hadrons.

Primary authors: EGERER, Colin (College of William and Mary); Dr JOO, Balint (Jefferson Lab); KARPIE, Joseph (College of William and Mary); Mr KHAN, Tanjib (William and Mary); ORGINOS, Kostas (William and Mary - Jlab); Dr QIU, Jianwei (Jefferson Lab); Prof. RADYUSHKIN, Anatoly (Old Dominion University); RICHARDS, David (Jefferson Lab); SUFIAN, Raza (University of Kentucky); Dr WINTER, Frank (Jefferson Lab); ZAFEIROPOULOS, Savvas

Presenter: RICHARDS, David (Jefferson Lab)

Session Classification: Hadron structure

Track Classification: Hadron structure