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Distribution Functions Using Continuum Schwinger Function Methods

Wednesday 28 May 2025 12:00 (45 minutes)

Understanding the internal structure of hadrons is a fundamental challenge in nonperturbative QCD, where the emergent phenomena of confinement and dynamical chiral symmetry breaking play central roles. In this talk, I present recent progress in the study of hadronic distribution functions using continuum Schwinger function methods formulated in Euclidean space. Focusing on the parton distribution functions (DFs) of the pion, kaon, radially excited pion, and the nucleon, I will discuss how key features of QCD dynamics are encoded in these observables. The talk will also highlight results for the pion Boer-Mulders function, providing insight into spin-momentum correlations and the transverse structure of the pion. Furthermore, I will present studies of the pion and kaon generalized parton distributions (GPDs), which offer a multidimensional view of hadronic structure. These continuum approaches yield results that complement lattice QCD and provide valuable benchmarks for ongoing and future experimental investigations into the rich structure of strongly interacting matter.

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