

Generalized Parton Distribution from Lattice QCD: New Developments

Thursday, May 25, 2023 11:00 AM (20 minutes)

Traditionally, lattice QCD computations of generalized parton distributions (GPDs) have been carried out in a symmetric frame, where the transferred momentum is symmetrically distributed between the incoming and outgoing hadrons. Such frames require a separate calculation for each value of the momentum transfer, increasing significantly the computational cost. I will present a newly developed Lorentz covariant framework for faster and more accurate lattice QCD calculations of GPDs exploiting asymmetric momentum transfer between the incoming and outgoing hadrons. By Taking advantage of this new framework, I will present recent lattice QCD results on some of the valance GPDs of proton. I will also present lattice QCD results for first few Mellin moments of these GPDs, obtained from the short-distance expansion of the lattice QCD matrix elements.

Primary author: MUKHERJEE, Swagato

Presenter: MUKHERJEE, Swagato

Session Classification: GPDs