

First Lattice QCD Study of Proton Twist-3 GPDs

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Calculating the x -dependence of PDFs and GPDs from lattice QCD has become feasible in the last few years due to novel approaches. In the work presented, we employ the quasi-distributions method, which relies on matrix elements of non-local operators, matched to the light-cone distributions using Large Momentum Effective Theory (LaMET). We focus on results for the first-ever lattice QCD calculation of twist-3 GPDs. The calculation is performed using one ensemble of two degenerate light, a strange and a charm quark ($N_f=2+1+1$) of maximally twisted mass fermions with a clover term leading to a pion mass of 260 MeV.

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