

x-dependence of transversity GPDs on the lattice

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In this talk we present results for isovector transversity generalized parton distributions (GPDs) of the proton obtained within lattice QCD. We employ the quasi-distribution formalism, which relies on computations of nonlocal matrix elements of boosted hadron states. Large momentum effective theory (LaMET) is then used to match quasi- to light-cone GPDs.

Results are obtained on an $N_f = 2 + 1 + 1$ ensemble of maximally twisted mass fermions, with pion mass $M_\pi = 260$ MeV and lattice spacing $a \simeq 0.093$ fm. The proton is boosted up to 1.67 GeV. Using this setup we disentangle the four transversity GPDs that exist for the proton ($H_T, E_T, \tilde{H}_T, \tilde{E}_T$) and extract the x -dependence of the GPDs at zero and nonzero skewness.

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