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Quark transverse dynamics and orbital angular momentum in the nucleon from Lattice QCD¹ MICHAEL ENGELHARDT, New Mexico State University

An ongoing program of evaluating transverse momentum-dependent parton distributions (TMDs) within Lattice QCD is reviewed, summarizing recent progress with respect to several challenges faced by such calculations. These lattice calculations are based on a definition of TMDs through hadronic matrix elements of quark bilocal operators containing staple-shaped gauge connections. A parametrization of the matrix elements in terms of invariant amplitudes serves to cast them in the Lorentz frame preferred for a lattice calculation. Results presented include data on the naively T-odd Sivers and Boer-Mulders effects, as well orbital angular momentum extracted from generalized TMDs.

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