TMDs: Towards a Synergy between Lattice QCD and Global Analysis

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Lattice QCD calculations of transverse momentum-dependent (TMD) observables

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The status of an ongoing program of evaluating TMD observables within Lattice QCD is reviewed. 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. A survey of the twist-2 TMD sector as well as selected twist-3 TMD results are presented, and advances in establishing control over systematic uncertainties are exhibited.

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