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Collins-Soper Kernel for TMD Evolution from Lattice QCD MICHAEL WAGMAN, Fermilab, PHIALA SHANAHAN, MIT, YONG ZHAO, Argonne — The Collins-Soper kernel relates transverse momentum-dependent parton distribution functions (TMDPDFs) at different energy scales. For small parton transverse momentum qT, this kernel is non-perturbative and can only be determined with controlled uncertainties through experiment or first-principles calculations. Results from the first exploratory determination of the Collins-Soper kernel using the lattice formulation of Quantum Chromodynamics are presented, in which the Nf=0 kernel is calculated for transverse momentum scales in the range 250 MeV; qT; 2 GeV. The remaining systematic uncertainties and preliminary unquenched lattice QCD results are discussed.

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