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Determination of the Collins-Soper Kernel from Lattice QCD

Wednesday 28 July 2021 07:00 (15 minutes)

We present lattice results for the non-perturbative Collins-Soper (CS) kernel, which describes the energy-dependence of transverse momentum-dependent parton distributions (TMDs). The CS kernel is extracted from the ratios of first Mellin moments of quasi-TMDs evaluated at different nucleon momenta. The analysis is done with dynamical $N_f = 2 + 1$ clover fermions for the CLS ensemble H101 ($a = 0.0854\,\mathrm{fm}$, $m_\pi = m_K = 422\,\mathrm{MeV}$). The computed CS kernel is in good agreement with experimental extractions and previous lattice studies.

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