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Collins-Soper kernel from transverse momentum-dependent wave functions in LaMET

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In this work we present the transversity $b_\perp$-dependence Collins-Soper kernel extracted from pion transverse momentum dependent wave functions in the framework of large momentum effective theory from lattice QCD. We use clover fermion action with $2+1+1$ flavors of highly improved staggered quarks (HISQ), generated by MILC Collaboration. A single ensemble is used, with lattice spacing $a = 0.12$fm and volume as $L^3 \times T = 48^3 \times 64$. The results are presented based on pion mass $M_\pi = 670$MeV, and three hadron momenta as $P^z = 2\pi/L \times \{8, 10, 12\} = \{1.72, 2.15, 2.58\}$GeV. The result of Collins-Soper kernel is determined of joint fit through momentum pairs.

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