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Collins-Soper kernel and soft function from lattice QCD

Wednesday, August 10, 2022 3:20 PM (20 minutes)

In this talk I will show our calculations of Collins-Soper kernel and soft function on a newly generated 2+1 flavor clover fermion CLS ensemble of size 48^4 with $a = 0.098$ fm. The light sea quark mass corresponds to a pion mass of 333 MeV for this ensemble and the valence quark mass to 662 MeV. We measure the large-momentum-transfer meson form factors and its transverse-momentum-dependent wave functions at momenta up to $P^z = 12 \frac{2\pi}{L}$. The Collins-Soper kernel and soft function are extracted from them using next-to-leading-order factorization based on large-momentum effective theory. Our results are in good agreement with literature.

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