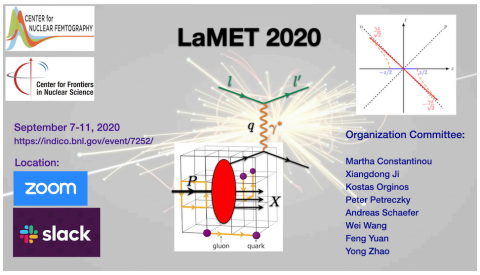

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Lattice QCD calculations of TMD soft function through large-momentum effective theory

Friday, 11 September 2020 10:00 (30 minutes)

The transverse-momentum-dependent (TMD) soft function is a key ingredient in QCD factorization of Drell-Yan and other processes with relatively small transverse momentum. We present a lattice QCD study of this function at moderately large rapidity on a 2+1 flavor CLS dynamic ensemble with $a = 0.098$ fm. We extract the rapidity-independent (or intrinsic) part of the soft function through a large-momentum-transfer pseudo-scalar meson form factor and its quasi-TMD wave function using leading-order factorization in large-momentum effective theory. We also investigate the rapidity-dependent part of the soft function—the Collins-Soper evolution kernel—based on the large-momentum evolution of the quasi-TMD wave function.

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