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## **x-dependence reconstruction of pion and kaon PDFs from Mellin moments**

*Wednesday, 28 July 2021 21:00 (15 minutes)*

We present a calculation of the connected-diagram contributions to the first three non-trivial Mellin moments for the pion and kaon extracted directly in lattice QCD using local operators with up to 3 covariant derivatives. We reconstruct the  $x$ -dependence of the pion and kaon PDFs via fits to our results. We find that the reconstruction is feasible and that our lattice data favor a large  $x$ -dependence that falls as  $(1-x)^2$  for both the pion and kaon PDFs. We integrate the reconstructed PDFs to extract the higher moments with  $4 \leq n \leq 6$ . Finally, we compare the pion and kaon PDFs, as well as the ratios of their moments, to address the effect of SU(3) flavor symmetry breaking. We use one ensemble of gauge configurations with two degenerate light, a strange and a charm quark ( $N_f = 2 + 1 + 1$ ) of maximally twisted mass fermions with clover improvement. The ensemble reproduces a pion mass  $\sim 260$  MeV, and a kaon mass  $\sim 530$  MeV.

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