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Kaon Distribution Amplitude from Lattice QCD and the Flavor SU(3) Symmetry

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We present the first lattice-QCD calculation of the kaon distribution amplitude using the large-momentum effective theory (LaMET) approach. The momentum-smearing technique has been implemented to improve signals at large meson momenta. We subtract the power divergence due to Wilson line to high precision using multiple lattice spacings. The kaon structure clearly shows an asymmetry of the distribution amplitude around $x = 1/2$, a clear sign of its skewness. We also study the leading SU(3) flavor symmetry breaking relations for the pion, kaon and eta meson distribution amplitudes, and the results are consistent with the prediction from chiral perturbation theory.

Primary author: Mr ZHANG, Rui (Institute of Theoretical Physics, Chinese Academy of Sciences)

Co-authors: Prof. SCHÄFER, Andreas (Universität Regensburg); Prof. LIN, Huey-Wen (MSU); Dr ZHANG, Jianhui (University of Regensburg); Prof. CHEN, Jiunn-Wei (National Taiwan University); Prof. JIN, Luchang (University of Connecticut); Dr SUN, Peng (MSU); Dr YANG, Yi-bo (Michigan state university); Dr ZHAO, Yong (Massachusetts Institute of Technology)

Presenter: Mr ZHANG, Rui (Institute of Theoretical Physics, Chinese Academy of Sciences)

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