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Lattice calculation of F_K/F_π from a mixed domain-wall on HISQ action. N. B. MILLER, H. MONGE-CAMACHO, U. of North Carolina at Chapel Hill, C. C. CHANG, B. HÖRZ, Lawrence Berkeley National Laboratory, E. RINALDI, Brookhaven National Laboratory, D. HOWARTH, Boston University, E. BERKOWITZ, U. of Maryland, D. A. BRANTLEY, A. S. GAMBHIR, Lawrence Livermore National Laboratory, C. KÖRBER, U. of California at Berkeley, C. MONAHAN, William & Mary, C. BOUCHARD, U. of Glasgow, M. A. CLARK, NVIDIA Corp., B. JOÓ, Jefferson Lab, A. NICHOLSON, U. of North Carolina at Chapel Hill, K. ORGINOS, William & Mary, P. VRANAS, A. WALKER-LOUD, Lawrence Livermore National Laboratory, CALLAT COLLABORATION — I will present a lattice calculation of the ratio of the leptonic decay constants F_K/F_π as performed by the CalLat collaboration. Per Marciano, F_K/F_π can be related to the CKM matrix element $|V_{us}|$, therefore allowing us to probe the flavor-changing nature of the weak interaction and more generally providing constraints on the Standard Model. Further, F_K/F_π serves as a gold-plated quantity in LQCD, providing a means to benchmark competing lattice techniques and actions. In our work, we employ a mixed-action with twisted-mass fermions in the sea and domain-mall fermions in the valence sector. We include five pion masses, ranging from 130 MeV to 350 MeV; four lattice spacings, ranging from 0.06 fm to 0.15 fm; and multiple lattice volumes. The extrapolation to the physical point is performed using MA EFT and SU(2) χPT to NNLO at 2-loops, with errors estimated for statistics, the chiral & continuum extrapolations, FV, and model selection.

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