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Type: **Poster**

Pion and kaon decay constants on CLS ensembles

Tuesday 4 November 2025 18:00 (1h 30m)

We present results on the pion and kaon decay constants determined on a set of over 50 coordinated lattice simulations (CLS) gauge ensembles with $N_f = 2 + 1$ sea quark flavours of non-perturbatively improved Wilson fermions. This is part of a project to explore the range of validity of SU(3) chiral perturbation theory (ChPT) in the meson sector and to determine its low energy constants (LECs). The ensembles span three trajectories of relevance to SU(2) and SU(3) ChPT in the quark mass plane: a line of almost constant strange quark mass, a line along which the trace of the mass matrix is kept constant and the flavour symmetric line of equal quark masses. The physical quark mass point is included in the set of ensembles, as are different volumes, further constraining the SU(3) ChPT LECs. The 6 distinct lattice spacings, ranging from about 0.1 fm to below 0.04 fm, allow for a controlled continuum limit extrapolation. We also investigate scale setting, using the pion decay constant as input.

Parallel Session (for talks only)

Quark and lepton flavor physics

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