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Determination of the pseudoscalar decay constant from $SU(2)$ with two fundamental flavors

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The $SU(2)$ gauge group with two fundamental flavors is a candidate for a composite Higgs extension of the Standard Model. Central to Higgs phenomenology is a non-perturbative determination of observables of the theory, such as the decay constant of the pseudo-Nambu-Goldstone Bosons. We present preliminary results for the continuum limit of the pseudoscalar decay constant using a mixed-action setup, with non-perturbatively improved stabilized Wilson Fermions on the sea, and maximally twisted valence quarks. Pivotal to this study is the recent porting of our simulation suite HiRep to GPU architecture.

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