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First Results of the Hadron Spectrum from Stabilised Wilson Fermions

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We present preliminary results of lattice QCD simulations with dynamical light and strange quarks, all flavors defined using Stabilised Wilson Fermions (SWF). The ensembles are tuned, see the preceding talk by A. Francis, at the flavor symmetric point $m_\pi = m_K = 412$ MeV and the physical point is reached keeping fixed the trace of the quark mass matrix. We show a first determination of the hadron spectrum at 3 different lattice spacings ($a = 0.064, 0.094, 0.12$ fm) and with pion masses ranging in $m_\pi \simeq 200 - 400$ MeV. This allows a first study of cutoff effects with this new lattice action and serves to check the quality of the action for precision measurements. We also investigate other quantities such as flowed gauge observables to study how the continuum limit is approached under basic conditions.

Our collaboration will share the gauge configurations following an open science philosophy so these results will also serve as benchmarks for future determinations.

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