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Exploration of the phase structure of the $SU(N_c)$ lattice gauge theory with many Wilson fermions at strong coupling

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We explore aspects of the phase structure of $SU(2)$ and $SU(3)$ lattice gauge theories at strong coupling with many flavours N_f of Wilson fermions in the fundamental representation. The pseudoscalar meson mass and the quark mass as a function of hopping parameter are observed to deviate from the expected analytic dependence, at least for sufficiently large N_f . Implications of this effect and the phase structure about the existence or non-existence of Aoki phase are discussed, including the relevance to recent searches for the conformal window.

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talk

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