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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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