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## Conformality in twelve-flavor QCD

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The spectrum of twelve-flavor QCD has been studied in details by the LatKMI collaboration. Here we present our updated results obtained with the HISQ action at two lattice spacings, several volumes and fermion masses. We emphasize the existence of a flavor-singlet scalar state parametrically light with respect to the rest of the spectrum, first reported in our paper [1]. This feature is expected to be present in theories near the conformal window, but the lattice calculation of such a light state is difficult and requires noise-reduction techniques with large statistics, in order to evaluate disconnected diagrams. Being able to provide a robust observed connection between a light flavor-singlet scalar and near-conformality is an important step towards observing a light composite Higgs boson in walking technicolor theories [2]. Updated spectrum in the other channels is also presented.

[1] LatKMI Collaboration, "Light composite scalar in twelve-flavor QCD on the lattice", PhysRevLett.111.162001

[2] LatKMI Collaboration, "Light composite scalar in eight-flavor QCD on the lattice", arxiv:1403.5000

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