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Targeting the Conformal Window: Measuring the 0++ Scalar

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The light Higgs boson of the Standard Model could arise as the consequence of the weakly broken conformal symmetry in a strongly interacting gauge theory just below the conformal window. Here we present a novel idea to study the transition from conformal to confining behavior using an SU(3) gauge theory with four light and eight heavy flavors. This system interpolates between the 12 flavor conformal and the 4 flavor chirally broken theory as the mass of the heavy flavors are varied. We show first results on the determination of the isosinglet 0++ state as it interpolates between QCD-like and conformal behavior.

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