

Phenomenological and cosmological implications of hidden scale invariance

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I discuss a class of effective low-energy theories that incorporate nonlinearly realised scale invariance through the dilaton field. Radiatively stable mass hierarchies are realised in a natural (without fine-tuning) way in this class of models, with a generic prediction of a light dilaton field. The cosmological electroweak phase transition in this scenario is triggered by the QCD phase transition. This has significant implications for potential gravitational wave signals, solar masses black holes and generation of matter-antimatter asymmetry at the QCD scale.

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