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Progress on holographic vacuum misalignment

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We present a bottom-up holographic model that contains the dual description of a strongly coupled field theory. The spontaneous breaking of an approximate global symmetry in the theory produces the SO(5)/SO(4) coset relevant to minimal composite-Higgs models.

Some boundary-localised terms are introduced in the dual gravity for consistency and production of the desired properties of the model. Via vacuum misalignment, the interplay of bulk and boundary-localised couplings leads to the breaking of the SO(5) symmetry to its SO(4) or SO(3) subgroup. In the dual field theory, the model contains a SO(4) gauge symmetry, which is spontaneously broken into its SO(3) subgroup. We investigate the consequences of the higgsing phenomenon by analysing the spectrum of fluctuations within the model, interpreted in terms of four-dimensional field theory, across selected parameter configurations. The talk is based on arXiv:2405.08714.

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