

Interacting ultraviolet completions of four-dimensional gauge-Yukawa theories

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We investigate a class of strictly four-dimensional, renormalisable gauge-Yukawa theories with all possible dimension 3 and 4 operators which exhibit Asymptotic Safety - their UV behaviour is controlled by an interacting, ultraviolet fixed point. The conformal window introduced by this fixed point is studied in a systematic expansion, provided by the Veneziano limit. Constraints from the strong coupling limit, fixed point mergers and vacuum instability are formulated. We will show that the conformal window lies within a perturbative regime.

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