



PHYSICS AND ASTRONOMY SEMINAR

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Running Couplings with a Vanishing Scale Anomaly

Abstract

Running couplings can be understood as arising from the spontaneous breaking of an exact scale invariance in appropriate effective theories with no dilatation anomaly. Any ordinary quantum field theory, even if it has massive fields, can be embedded into a theory with spontaneously broken exact scale invariance in such a way that the ordinary running is recovered in the appropriate limit, as long as the potential has a flat direction. These scale-invariant theories, however, do not necessarily solve the cosmological constant or naturalness problems, which become manifest in the need to fine-tune dimensionless parameters.

Thursday, September 19, 2013
2:30 p.m.