

Phenomenology with trans-Planckian asymptotic safety

mercredi 5 juin 2024 09:30 (45 minutes)

I will discuss some of the phenomenological aspects of embedding the Standard Model and/or models of New Physics in the framework of trans-Planckian asymptotic safety. In this setting, the presence of an interactive UV fixed point in the renormalization group flow of the gauge and Yukawa couplings imposes boundary conditions at the Planck scale. In the case of New Physics models, the ensuing fixed-point analysis leads to specific predictions for the IR phenomenology. This heuristic approach relies on simplifying approximations, including the computation of renormalization group equations at 1-loop, an arbitrary definition of the position of the Planck scale, and instantaneous decoupling of gravity. I will discuss how robust the predictions from asymptotic safety are if the assumptions listed above are relaxed.

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