

Non-susy moduli self-fixing

Thursday 10 July 2025 14:06 (17 minutes)

In 4D supersymmetric quantum gravity, moduli-dependent species scales imply a field-dependent cutoff. We show that in GKP-like no-scale vacua, this leads to one-loop, positive-definite potentials with Minkowski minima at “desert points” ($z_i \sim \mathcal{O}(1)$). The potential exhibits a dS maximum and asymptotic runaway, aligning with Swampland constraints. This mechanism may stabilize Kähler moduli without relying on non-perturbative effects. We illustrate it in a Type IIB $Z_2 \times Z_2$ orientifold, where modular invariance helps control corrections, and comment on its phenomenological embedding into intersecting D6-brane MSSM-like models.

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Session Classification: Parallel Session 1