

Sequestered String Models imply Split Supersymmetry

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Sequestering is a promising mechanism in 4D string models to reconcile high scale inflation with low-energy supersymmetry. In this scenario the MSSM lives on branes at singularities and it is sequestered from the sources of supersymmetry breaking in the bulk. The soft-terms are suppressed with respect to the gravitino mass so that all moduli are heavy enough to avoid any cosmological moduli problem. In this talk, we focus on stability bounds and flavour constraints on sequestered string models, finding that they can be satisfied if the soft-terms give rise to a mass spectrum typical of split supersymmetry with TeV-scale gauginos and sfermions around 10^7 GeV. When instead scalar and gaugino masses are of the same order of magnitude, large flavour changing neutral currents can be avoided only by pushing the soft-terms above 10^6 GeV. However this scenario is in tension with stability bounds due to the presence of charge and colour breaking vacua which could be populated in the early universe, and the possible emergence of directions along which the potential is unbounded from below. Reference: 2309.05752 [hep-th]

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