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Unstable Domain Walls and Transitions in the Flux Landscape

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Domain walls which arise from the presence of a brane coupled to a modulus field is the setting relevant for studying flux-changing D5/NS5-branes in the type IIB flux Landscape which couple to the volume modulus. In this talk I will revisit known results on the subject and explain that if the modulus is only weakly stabilized, as is the case for scenarios à la KKLT or LVS, no Euclidean tunneling instanton can be found due to the too strong backreaction of the brane. As a result, the transitions populating such a de Sitter Landscape cannot be of standard Coleman–de Luccia type. Solving the cosmological constant problem in the usual dynamical way by populating a multiverse then either requires better scenarios or a deeper understanding of transitions of non-tunneling type. Back to a Lorentzian picture, this leads us to sketch a framework to describe a new type of dynamical transition that may rescue the population of the Landscape.

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