## Dimensional Reduction, Asymptotic Observables, and the Swampland

Thursday 15 July 2021 11:30 (30 minutes)

Dimensional reduction has proven to be a successful tool for sharpening Swampland conjectures. In this talk, we will see that dimensional reduction distinguishes a particular version of the de Sitter Conjecture, which holds that the strong energy condition must be satisfied in asymptotic regions of scalar field space. We will further connect this condition to older work on the difficulty of defining asymptotic observables in cosmological spacetimes. In the process, we will encounter a number of other swampland conjectures, such as the AdS Distance Conjecture, the Swampland Distance Conjecture, and the Weak Gravity Conjecture. This suggests that answers to fundamental questions about asymptotic observables in cosmology could help shed light on the Swampland program, and vice versa.

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