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Navigating String Theory Field Space with Geometric Flows

Tuesday 8 July 2025 16:24 (17 minutes)

"A notion of distance on the moduli space of low-energy effective field theories is crucial for the Swampland program, and specifically for the Distance Conjecture. In this talk, I will show how geometric flow equations, and in particular generalizations of the Ricci flow, offer a different and elegant viewpoint in the more general case of a scalar field space with potential. After a brief introduction to Ricci flow and its generalization to backgrounds involving a NSNS two-form, I will review the known realization as a gradient flow of the string-effective action and the associated beta-functions, ultimately proposing a suitable notion of distance along the flow as well as a generalized Ricci flow Conjecture. I will discuss examples highlighting the new and intriguing implications as well as the connection to previous work on the role of (diverging) potentials.
This work is in collaboration with Saskia Demulder and Dieter Lüst."

Presenter: RAML, Thomas

Session Classification: Parallel Session 1