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Investigating Off-shell Stability of String Vacua

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Abstract

It has been conjectured that the renormalization group (RG) flows of the nonlinear sigma model provide a qualitative understanding of many off-shell processes in string (field) theory. The conjecture implies that off-shell stability of string vacua may be related to stability under a suitable RG flow. Motivated by this, we prove a (linear) stability result for Euclidean anti-de Sitter space under the Ricci flow - which is the simplest sigma model RG flow. In the talk we will also discuss techniques from the Ricci flow program in math which could be used to investigate off-shell stability of string vacua.