Laplacians, instantons, and moduli space geometry

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Abstract

In asymptotic limits of moduli spaces, I will argue that the lightest particle towers have masses that are eigenfunctions of the moduli-space laplacian. I will argue that these eigenvalues are discretized by the Emergent String Conjecture, are connected to taxonomy rules for instantons, control axion-tori decay rates, and constrain some of the components of the moduli-space Ricci-tensor. I will present various examples in theories ranging from 32 to 4 supercharges. Based on upcoming work with Christian Aoufia, Bernardo Fraiman, Sanjay Raman, and Alex Stewart.

Keywords: Moduli space, Swampland, Instantons, Axions

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