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The Ins and Outs of Casimir energies on Riemann-flat manifolds

Thursday 10 July 2025 13:30 (17 minutes)

We have used Casimir energies and Riemann-flat manifolds (RFM) to construct an explicit dS5 maximum in M-theory. In this talk I will outline how we did it–in particular, I will present the fully explicit formula we obtain for the Casimir stress-energy in a general RFM, including its higher-dimensional profile; explain how the Casimir energy localizes in particular loci of the RFM, which we call "Casimir branes"; and discuss the exact cancellation between the tension of Casimir branes that sometimes happens due to a spacetime analog of worldsheet Atkin-Lehner symmetry. Throughout the talk I will use our explicit dS5 M-theory maximum as an illustration.

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