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Smearing and Unsmearing KKLT AdS Vacua Part II

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In the framework of generalized complex geometry, we solve the supersymmetry equations for type IIB AdS4 vacua with gaugino condensates on smeared D7-branes. We show that supersymmetry requires a (conformal) Calabi-Yau manifold and imaginary self-dual three-form fluxes with an additional (0,3) component. The latter is proportional to the cosmological constant, whose magnitude is determined by the expectation value of the gaugino condensate and the stabilized volume of the cycle wrapped by the branes. This confirms, qualitatively and quantitatively, the results obtained using effective field theory. As for the localized solution, it requires going beyond SU(3)-structure internal manifolds. Nevertheless, we show that the action can be evaluated on-shell without relying on the details of such complicated configuration. We find that no "perfect square" structure occurs, and the result is divergent. We compute the four-fermion contributions, including a counterterm, needed to cancel these divergences.

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