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Microscopic description of brane gauginos

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Different aspects of explicit dS proposals in string theory have recently come under intense scrutiny. One key ingredient is D7-brane gaugino condensation, which can be straightforwardly treated using effective 4d supergravity. However, it is also desirable to derive the relevant scalar potential directly from a 10d Lagrangian which captures the interactions among the various localized sources and the background fields. While progress in this endeavour has recently been made, issues related to divergences and non-localities related to the quartic gaugino coupling have remained problematic in the available proposals. I will discuss an explicitly local and finite D7-brane quartic gaugino term which reproduces the relevant part of the 4d supergravity action upon dimensional reduction. This is both a step towards a more complete understanding of 10d type-IIB supergravity as well as specifically towards better control of dS constructions in string theory involving gaugino condensation.

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