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Supergravity, the super-Higgs effect and inflation

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Supergravity is a very well motivated theoretical paradigm, which, if it exists, must be broken at low energies. As such, understanding the origin of this symmetry breaking is key for making contact with known phenomenology. We detail a non-pertubative breaking mechanism for supergravity in the super-Higgs effect realised via gravitino condensation, which also provides a UV motivated, phenomenologically viable inflationary mechanism at no added cost. In practice this is achieved by direct computation of one loop corrections in relevant supergravity models, allowing the analytic form for the (quantum) condensate potential to be explicitly found. We present results consistent with known physics, and detail current research establishing contact between this scenario and the NMSSM.

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