The Unbearable Lightness of moduli in flux vacua

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Abstract

There are good reasons to believe that moduli stabilization never leads to a situation in which all fields are stabilized at high scale. This has significant consequences for phenomenology but also for the consistency of flux vacua. First, I will explain the consequences of "Lightness" for black hole physics, where black holes can push stabilized fields far away from their cosmological minimum. Second, I discuss consistency. Simply demanding that tensions of domain walls that separate flux quanta are above the EFT cut-off predicts an inconsistency of vacua based on parametrically small superpotentials. In essence it predicts that unbearably light fields have been ignored casting doubt on the arguments for consistency of such vacua. Everything I will discuss is taking place in AdS space and the hope is that the logic extends to vacua with dark energy.

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