A domain wall bound on anti-de Sitter vacua

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Abstract

I will consider anti-de Sitter flux vacua interpolated by flux-changing domain walls. Demanding that the tension of such a domain wall be above the ultraviolet cutoff of the effective description, we have derived an upper bound on the anti-de Sitter radius, which we termed domain wall bound. It translates into a lower bound on the gravitino mass, thus realizing the gravitino conjecture and the anti-de Sitter distance conjecture of the swampland program. I will present tests of the domain wall bound on several examples with a candidate hierarchy of scales: classical flux vacua, racetrack models, LVS and KKLT-like anti-de Sitter vacua. The classical flux vacua and LVS are found to be compatible with the bound. For racetrack and KKLT-like anti-de Sitter vacua, the bound poses a non-trivial constraint on achieving large hierarchies of scales.

Keywords: domain walls, supergravity, string pheno, entropy

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