Curious properties of the vacuum energy in non-supersymmetric corners of the String Landscape

Miguel Montero*[1]

[1]IFT UAM/CSIC – Spain

Abstract

We focus on two unexpected properties of the vacuum energy in very different corners of the String Landscape. First, I will show the existence of universal tachyons in scale-separated, non-supersymmetric AdS vacua. This is a consequence of the curious fact that the supergravity one-loop vacuum energy satisfies a differential equation in moduli space. I will then move to the one-loop vacuum energy in string theory, showing how to construct large families of non-supersymmetric asymmetric orbifold models where the string theory one-loop vacuum energy vanishes. These curious cancellations arise because the model sees a shadow of the broken supersymmetry.

*Speaker