EFTs with symmetric moduli spaces: the landscape and the swampland

Mariana Grana*[1]

[1]Institut de Physique Théorique - UMR CNRS 3681 – Université Paris-Saclay, Centre National de la Recherche Scientifique, Direction de Recherche Fondamentale (CEA) – France

Abstract

We will show that effective theories with symmetric moduli spaces satisfy the Swampland Distance Conjecture, namely for any infinite distance limit there is a tower of states becoming exponentially light. The mass decay rates of the states are entirely encoded in the Weyl polytope of the representation under which they transform. Imposing these rates to be those of either tensionless strings or Kaluza-Klein towers reduces the set of possible theories to a finite list. As will be explained in more detail in Veronica Collazuol's parallel talk, many of these are in the string theory landscape, while a handful of them seem impossible to get from M or string theory.

*Speaker