

On moduli spaces in quantum gravity

Abstract

A quantum field theory including gravity must be seen as an Effective Field Theory (EFT) valid only up to some energy scale. The Swampland Program aims to characterize those EFTs that are compatible with quantum gravity, in terms of pure EFT criteria. At the heart of the program lies the Swampland Distance Conjecture, that sets intrinsic bounds on the moduli spaces of such EFTs. In this talk we will discuss recent progress in understanding and providing evidence for this conjecture. This relies both on the structure of the moduli spaces of Calabi-Yau metrics along asymptotic limits, and on the characterization of such limits in terms of EFT objects.