

On Towers and Scalars

Thursday, 27 June 2019 09:00 (30 minutes)

We study three topics concerning the role of scalars and the distance conjecture in the Swampland program. First we discuss a Scalar Weak Gravity Conjecture (SSWGC). Solutions for the corresponding extremal equation are compatible with towers of winding and momenta states becoming massless for large fields. We show that this SSWGc implies the refined dS conjecture under certain particular conditions. Second, we show how in CY compactifications in Type II string theory towers of particles, strings and domain walls become massless (tensionless) for large values of the Kähler and complex structure moduli. Third, we propose to use modular symmetries in the scalar moduli space of string compactifications in trying to test the validity of swampland ideas in theories with $N=0,1$ SUSY. Modular invariance requires potentials to be divergent for large values of the moduli, forbidding global symmetries to arise.

Presenter: IBANEZ , Luis (Universidad Autonoma de Madrid (ES))