A holographic constraint on scale separation & DGKT

Filippo Revello*[1]

[1]KULeuven – Belgium

Abstract

We propose a new consistency condition for the compatibility of a gravitational effective field theory in AdS with a dual holographic description in terms of a family of large-N CFTs. Using large-N factorization of correlation functions combined with a properly defined notion of single- and multi-particle operators, we argue that the cubic scalar bulk couplings for fields dual to operators with extremal arrangements of the conformal dimensions, i.e. $\Delta i = \Delta j + \Delta k$, should vanish. Finally, we apply this criterion to the 4d effective supergravity theory describing the DGKT AdS4 vacua in type IIA string theory.

*Speaker