THE QUANTUM SPACETIME SEMINAR SERIES

Department of Theoretical Physics

Swampland Conditions from CFT
(Zoom Seminar)

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Date: September 13, 2021

Time: 9.30 am IST

Zoom link shall be shared separately

There are effective field theories that cannot be embedded in any UV complete theory. I will discuss precise bounds on the IR coupling constants of higher derivative interactions from UV consistency. In particular, I will explain how to systematically derive constraints on higher derivative coupling of scalar effective field theories, with and without dynamical gravity, in anti-de Sitter spacetime with large radius by only requiring that the dual CFT obeys the well-established conformal bootstrap axioms. Hence, this set-up avoids many of the loopholes of flat space S-matrix based arguments that lead to similar bounds. As an application, I will use this framework to impose constraints on the low energy effective action associated with unitary RG flows in 4d with a broken global U(1) symmetry in the UV.

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