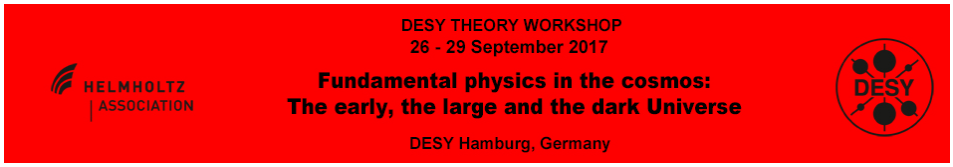

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Are tiny gauge couplings out of the Swampland?

Wednesday 27 September 2017 14:00 (20 minutes)

Consistency with quantum gravity and black hole physics puts significant constraints on low-energy effective field theories. In fact, most EFT's do not satisfy these criteria, and are said to be in the "Swampland". Most Swampland constraints remain conjectural, supported mainly by a plethora of stringy examples. In this talk I will discuss a rigorous example of a Swampland constraint, in the context of the AdS/CFT correspondence: A bound on the gauge coupling of any U(1) theory coupled to gravity in AdS space. This equivalent to a bound on the two-point coefficient of holographic large N theories. The same logic leads to a logarithmic bound involving the gauge coupling, the cutoff of the effective field theory, the AdS radius, and Planck's mass.

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