LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

ARNOLD SOMMERFELD CENTER FOR THEORETICAL PHYSICS

Sommerfeld Theory Colloquium

Wednesday, 11th November 2020
at **17.15 h**

Prof. Timo Weigand
(Universität Hamburg)

Conjectures on Quantum Gravity and their Realisation in String Theory

A central question in fundamental physics is when an effective field theory can be consistently coupled to gravity at high energies. Over the years, various necessary conditions for this to be possible have been conjectured. String theory is a proposed framework for a quantum gravity theory and hence allows us to quantitatively test and further develop such ideas. In this colloquium I will discuss this with special emphasis on the so-called Weak Gravity Conjecture and the Swampland Distance Conjecture, or its refinement dubbed Emergent String Conjecture. Among other connections to mathematics, we will see how these proposed general principles naturally follow from the geometry of string compactifications near the boundary of moduli space and are deeply routed in string dualities. This includes situations with a minimal amount of supersymmetry in four dimensions.

For ZOOM access information, please contact Michael Haack: michael.haack@lmu.de

Prof. Dieter Lüst