



# Sommerfeld Theory Colloquium

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From Quantum Scattering Amplitudes to Gravitational Wave Observables

Gravitational waves open a new window into our universe. In this colloquium we discuss particle theorists perspective on calculations directly relevant for gravitational-wave emission from compact objects, which is rooted in quantum field theory and builds on the idea that gravitational interactions are mediated by spin-2 particles. After reviewing some of the remarkable advances in our understanding of scattering amplitudes and in our ability to evaluate them, we show how these ideas produce state of the art results in weak-field fully-relativistic calculations for gravitational wave observables, including for the astrophysical binary black hole inspiral problem.

Wednesday, 23 October 2024, 16:15h, Room A348, Theresienstr. 37/III

Prof. D. Lüst and Dr. Michael Haack