



ARNOLD SOMMERFELD
CENTER FOR THEORETICAL PHYSICS



Sommerfeld Theory Colloquium

Wednesday, 16th June 2021

at 16.15 h

Prof. Silke Weinfurtner

(The University of Nottingham)

Quantum Simulators for Fundamental Physics

The dynamics of the early universe and black holes are fundamental reflections of the interplay between general relativity and quantum fields. The essential physical processes occur in situations that are difficult to observe and impossible to experiment with: when gravitational interactions are strong, quantum effects are important, and theoretical predictions for these regimes are based on major extrapolations of laboratory-tested physics.

We will discuss the possibility to study these processes in experiments by employing analogue classical/quantum simulators. Their high degree of tunability, in terms of dynamics, effective geometry, and field theoretical description, allows one to emulate a wide range of elusive physical phenomena in a controlled laboratory setting. We will discuss recent developments in this area of research.

via ZOOM

Dieter Lüst and Daniele Oriti