



ARNOLD SOMMERFELD
CENTER FOR THEORETICAL PHYSICS



Sommerfeld Theory Colloquium

Wednesday, 9th June 2021

at 16.15 h

Prof. Mairi Sakellariadou

(King's College, London)

**Hunting for the stochastic gravitational-wave background:
Implications for astrophysics, high energy physics, and theories
of gravity**

I will first define the stochastic gravitational-wave background (SGWB) and highlight the method we are using to detect it in the presence of correlated magnetic noise. I will then discuss astrophysical (compact binary coalescences) and cosmological (cosmic strings, first-order phase transitions) sources and report on the current constraints imposed from a non-detection during the last observing run of the LIGO/Virgo/KAGRA collaboration. I will also address the question of a simultaneous estimation of astrophysical and cosmological SGWB. Then I will present a search for circularly polarised SGWB and its relation to early universe cosmology. Finally, I will discuss how the SGWB can provide tests for gravity theories, including quantum gravity proposals.

via ZOOM

Dieter Lüst and Daniele Oriti