



Contribution ID: 255

Type: **Talk**

Quasinormal Modes of a Dispersive, Confined Gravity Simulator

Wednesday 25 June 2025 15:10 (15 minutes)

Gravity simulators enable the study of black-hole quasinormal modes (QNMs) in controlled experimental settings. However, realistic laboratory setups introduce two key effects absent in traditional gravitational QNM analyses: dispersion and spatial confinement. The former introduces Lorentz-breaking terms in the wave equation, as encountered in modified gravity theories, whereas the latter significantly alters the QNM spectrum, as widely explored in recent studies on spectral stability. The recent development of a rotating spacetime simulator in superfluid helium offers an ideal platform where these effects can be observed. In this talk, I show how ray tracing and spectral-stability techniques can be used to predict the resonances observed in finite-size, highly dispersive systems, providing new insights into laboratory-based black hole spectroscopy.

Author: SOLIDORO, Leonardo (University of Nottingham)

Presenter: SOLIDORO, Leonardo (University of Nottingham)

Session Classification: Wednesday Parallel Session C