Contribution ID: **8** Type: **Long talk (20 mins)**

Zero-damped Modes and Nearly Extremal Horizons

Thursday, 15 December 2022 17:20 (30 minutes)

Quasinormal modes are the gravitational wave analogue to the overtones heard after striking a bell. They dominate the signal observed during the ringdown phase after a dynamical event and are characterised by complex frequencies, which encode oscillation and exponential decay in time. As horizons become extremal, various computations (both analytic and numerical) have shown that in many cases, there exists a sequence of frequencies which become purely oscillatory in the limit and which cluster on a line in the complex plane. These are zero-damped modes and are conjectured to exist generically for nearly extremal horizons. In this talk, we shall discuss results that can be obtained toward resolving this question; for example, one can show that these modes do arise for the conformal Klein-Gordon equation on a class of spherically symmetric black hole spacetimes.

Type of presentation

20 minute talk

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Black holes

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Session Classification: Full Length Talks