Gravitational Geometry and Dynamics Group Seminar

Wed. 07th June '23 Online at 11h00

Quasinormal modes and quasibound states of Kerr-like black holes

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Zoom meeting ID 962 2413 8340

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Astrophysical black holes are consistent with the Kerr metric, but current observations do not rule out small deviations from it. In this work we use the continued fraction method to determine the eigenfrequencies associated with a Kerr-like black hole. In addition to its mass M and its specific angular momentum a, the black hole depends on a third parameter \eta, called the deformation parameter. We investigate how the deformation parameter affects the quasinormal modes and the quasibound states of a massive scalar field around the black hole. In particular, we compute the time scales associated with the superradiant instabilities of the scalar field in such a spacetime.

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