## Gravitational physics and its mathematical analysis



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## Quasinormal modes on asymptotically flat spacetimes

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Quasinormal modes (QNMs) are damped oscillations that play an important role in the dynamics of perturbations of stationary black hole spacetimes. They are governed by frequencies that are characteristic to the black hole under consideration and are analogous to the characteristic overtones of a vibrating drumhead. Although extensively featured in the physics literature for over fifty years, a clear and broadly applicable mathematical definition of QNMs on asymptotically flat spacetimes has remained elusive. In this talk, I will present and motivate a new characterization of QNMs on asymptotically flat spacetimes and apply it to the setting of Kerr black holes. This talk is based on upcoming work in collaboration with C. Warnick.

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