MAFIA - the seminar you can't refuse

(In)stability of quasinormal frequencies of black holes

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Trojanova 13, 12000 Praha

Abstract: A perturbed black hole rings down by producing radiation at certain fixed (complex) frequencies - the quasinormal frequencies. These frequencies can be identified with the spectrum of a non-self adjoint operator derived from the evolution equation of the particular field of interest. Thanks to accurate measurements of gravitational waves, the quasinormal spectrum of a black hole is increasingly an observable quantity. A natural question is whether the quasinormal spectrum is stable to small perturbations of the underlying black hole spacetime. I will explain how this question is closely connected to the non-standard nature of the underlying spectral problem, and present explicit results that shed light on the problem.