

Ringdown beyond Kerr

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The final phase of gravitational radiation from black hole binaries is the ringdown of the merged black holes, which occurs at a characteristic set of frequencies. Measurements of the ringdown spectrum can provide especially clean tests of the nature of the final black hole, potentially revealing violations of the famous “no-hair” theorem. The large number of gravitational wave observations that will be made in the coming years together with recent advances in the analysis of ringdown indicate that precision tests will be possible in the near future. Going beyond null tests, however, requires predictions of the ringdown spectrum in theories beyond GR and in spacetimes beyond Kerr. In this talk I will outline a flexible approach for calculating the ringdown spectrum of spinning black holes in theories where deviations from GR are small, and discuss future prospects for precision ringdown tests.

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