



GRAVITY: CHALLENGES BEYOND GENERAL RELATIVITY

Contribution ID: 20

Type: **not specified**

Ringdowns for black holes with scalar hair: the large mass case

Wednesday, 22 May 2024 16:45 (5 minutes)

Deviations from General Relativity can be probed with black hole spectroscopy, as the quasi-normal mode (QNM) frequency spectrum of a black hole with additional 'hair' is expected to differ from that of a Kerr black hole. We construct an effective field theory scheme for QNMs to capture deviations from Kerr for black holes in theories with a coupling between a shift-symmetric scalar and the Gauss-Bonnet invariant. I will explain how our analysis, which is particularly suited for black holes in the LISA range, places limits on the prospects of detecting evidence of scalar hair in ringdown signals.

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Session Classification: Gongshow