

Abstract Submitted
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Measurement of Quasi Normal Modes for a population of Binary Black Hole Mergers¹ CARLOS FILIPE DA SILVA COSTA, SERGEY KLIMENKO, Univ of Florida - Gainesville, SHUBHANSHU TIWARI, Gran Sasso Science Institute (INFN) — Perturbed solutions of the Kerr Black Hole (BH) are superimposition of damped sinusoids, named Quasi Normal Modes (QNM). These modes are completely defined by the final black hole parameters, mass and spin. Numerical simulations support that Binary BHs (BBH), after merging, produce a final BH emitting gravitational waves as described by the QNMs. This signal is very weak and hence the extraction of a QNM is quite challenging for the current generation of the ground based detectors. I will present a method for extraction of superimposed QNMs from future multiple observations of BBH merger signals in the advanced interferometers. We show that we can coherently sum up QNMs from the different signals and measure QNM parameters to prove the Kerr nature of a detected BHs population.

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