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Constructive summation of Quasi Normal Modes from a population of Binary Black Hole Mergers.

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In General Relativity, the Quasi Normal Modes (QNM) from a perturbed Kerr Black Hole (BH) are the superimposition of damped sinusoids. These modes are completely defined by the final black hole parameters, mass and spin.

For the current generation of the ground based detectors, the gravitational waves associated with the QNM are weak and hence the extraction of single QNMs is challenging. I will present a method for extraction of constructively summed

QNMs from multiple observations of BBH merger signals. We can constructively sum up the first leading mode ($lm=22$), and we are presently working to extend this method to the next leading modes, $lm=33$ and 44 .

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