

Abstract Submitted  
for the SES16 Meeting of  
The American Physical Society

**Measurement of Quasi Normal Modes for a population of Binary Black Hole Mergers**<sup>1</sup> CARLOS FILIPE DA SILVA COSTA, SERGEY KLIMENKO, University of Florida, SHUBHANSHU TIWARI, University of Trento — 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.

<sup>1</sup>NSF grant PHY 1505308

Carlos Filipe Da Silva Costa  
University of Florida

Date submitted: 26 Sep 2016

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