

Abstract Submitted
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Binary Black Holes from Globular Clusters in the Advanced LIGO Era CARL RODRIGUEZ, Northwestern Univ, SOURAV CHATTERJEE, FRED RASIO, Northwestern University — With Advanced LIGO now collecting data, the field of gravitational-wave astronomy is poised to open a new window into the universe; but to look through that window, we must be able to link gravitational-wave observations to detailed astrophysical models. We have generated a collection of globular cluster models with all the relevant physics, such as two-body relaxation, binary interactions, and stellar evolution. I will show how the global properties of a cluster determine the properties of its binary black hole population. I will also describe the masses, mass ratios, eccentricities, and cosmological merger rates for detectable binaries predicted by our models. Finally, I will show that, because binaries in clusters are formed dynamically, our results are insensitive to the assumptions and uncertainties associated with binary stellar evolution.

Carl Rodriguez
Northwestern Univ

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