

Abstract Submitted  
for the FWS21 Meeting of  
The American Physical Society

**G-Mode Oscillations of Finite Temperature Neutron Stars<sup>1</sup>**

NICHOLAS LOZANO, PRASHANTH JAIKUMAR, California State University, Long Beach — Neutron star merger events provide a unique opportunity to study the properties of matter at high density and temperature. We study a diagnostic of the composition of high-density matter, namely, g-mode oscillations, which are driven by buoyancy forces. These oscillations can be excited by tidal forces and couple to gravitational waves. Prior work has calculated these oscillations for cold neutron star matter, while we present the extension to high temperatures by employing a parameterized model proposed by Raithel, Ozel, and Psaltis (Raithel et.al, ApJ 785, 12 (2019)). A third-generation gravitational wave detector should be capable of detecting such oscillations from a merger event and provide valuable information on the composition of neutron star interiors.

<sup>1</sup>This research is supported by U.S. NSF Grant No. PHY- 1913693

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Date submitted: 17 Sep 2021

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