

Abstract Submitted
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Neutron Star Measurements in Third Generation Gravitational Wave Observatories¹ ISABELLA MOLINA, JOCELYN READ, ERIC FLYNN, ERICK LEON, California State University, Fullerton — Gravitational waves were detected from a binary neutron star merger giving us more insight into neutron stars. Future detectors are being investigated that will be better equipped to make these detections and help us learn more about the neutron stars themselves. Proposals for future gravitational-wave detectors were analyzed to determine their capabilities in detecting binary neutron-star mergers and measuring their properties. This research compares the future detectors A+, A++, Cosmic Explorer1 and 2 Wide and Narrow, Einstein Telescopes B and D, Vrt, and Voyager to the current Advanced LIGO. The inspiral analysis aimed to determine the optimal frequency range for the detectors to observe the inspiral of two neutron stars. The post merger analysis used several equations of state and determined the frequency range that gave the clearest SNR and best results for making analysis on the EOS's. SNR values indicate whether the post merger is distinguishable after the inspiral. This analysis will determine which detector configurations are best for measuring properties of neutron stars.

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