

Abstract Submitted
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Measuring neutron star tidal Love numbers with gravitational wave detectors TANJA HINDERER, Cornell University, EANNA FLANAGAN — Coalescing binary neutron stars are one of the most important sources for gravitational wave detectors such as LIGO. The possibility of extracting information about the nuclear equation of state from the early, low frequency part of the signal is investigated. In this regime, the influence of the tidal effects on the waveform's phase depends only on one parameter, the tidal Love number of the star, even for fully relativistic stars. We compute relativistic Love numbers for a range of equations of state. We also calculate how accurately this internal structure constant could be measured with LIGO.

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