

Abstract Submitted
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Parameter Estimation of Binary Neutron Stars using an Effective One Body Model including Tidal Interaction¹ MONICA RIZZO, RICHARD O'SHAUGHNESSY, Rochester Institute of Technology, SEBASTIANO BERNUZZI, Parma University, BENJAMIN LACKEY, Syracuse University — Ground gravitational wave detectors, built to detect perturbations in spacetime, can pick up signals produced by inspiraling binary neutron stars, the remnants of the core collapse of massive stars. A new EOB model (Bernuzzi et al 2015) simulates the inspiral and merger of binary neutron star systems, including how they are deformed due to tides. We used a Bayesian parameter estimation algorithm to infer how well a plausible gravitational wave detection would allow us to constrain this tidal deformability. We then compared our results to prior investigations (Wade et al 2014) which employed a post-Newtonian-based approximation for the inspiral.

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