

Abstract Submitted
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Binary Neutron Star Mergers: Prospects for Multimessenger Observations DAVID NEILSEN, Brigham Young University, MATTHEW ANDERSON, Indiana University, LUIS LEHNER, Perimeter Institute for Theoretical Physics, STEVEN LIEBLING, CW Post Campus-Long Island University, CARLOS PALENZUELA, Universitat de les Illes Balears — Binary neutron star mergers are possible progenitors for short gamma-ray bursts. We evolve a binary system of two neutron stars using the fully relativistic Einstein equations from an initial quasi-circular orbit, through and past merger. We consider different finite-temperature, nuclear equations of state, which vary from soft to quite stiff, and allow for magnetization of the system and neutrino cooling via a leakage scheme. We focus on potential observables, other than gravitational waves, produced mainly by the hot, strongly magnetized matter resulting from the merger.

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