

Abstract Submitted
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Binary neutron star mergers as engines of short gamma-ray bursts: delayed vs. prompt collapse MILTON RUIZ, University of Illinois at Urbana-Champaign, VASILEIOS PASCHALIDIS, Princeton University, STUART SHAPIRO, University of Illinois at Urbana-Champaign — Inspiralling and merging binary neutron stars (NSNSs) are not only promising sources of detectable gravitational waves, but they are also possible progenitors of short gamma-ray bursts. We have recently performed magnetohydrodynamic simulations in full general relativity which show that a jet is launched from the poles of the spinning black hole formed following magnetized NSNS mergers. For the cases we explored the black hole-disk remnant arises from the “delayed” collapse of a hypermassive NSNS that forms following an equal-mass merger. Now we have varied both the initial NS compaction and binary mass ratio to explore the formation of jets for cases in which the merger leads to “prompt” collapse.

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