

# The Impact of GR Hydrodynamics in CCSN Simulations

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Numerical simulations of core collapse supernovae (CCSNe) must balance numerical accuracy with computational cost in order to produce numerous, high-fidelity simulations. The FLASH code architecture leverages advanced neutrino treatments and a general relativistic effective potential (GREP) to efficiently simulate CCSNe. These explosive, high energy events are prolific sources of gravitational waves (GWs) and would be detectable with current age GW detectors, in the case of a Galactic event. While the GREP has the advantage of speed, it has been shown to misrepresent certain aspects of the GW signal from CCSNe. Here will be a review of current GW studies using FLASH and an outline to integrate GR hydrodynamics into its framework.

## Keywords

Core-Collapse Supernovae

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