Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Characterizing gravitational wave signals from core-collapse supernovae[1] NOAH WOLFE, SANJANA CURTIS, SOMDUTTA GHOSH, North Carolina State University, KEVIN EBINGER, GSI Helmholtzzentrum fuer Schwerionenforschung, CARLA FROHLICH, North Carolina State University — Core-collapse supernovae (CCSNe) are the explosive deaths of massive stars, and multi-messenger events which produce signals including gravitational waves, neutrinos, isotope abundances, and light in a multitude of wavelengths. With the next-generation of gravitational wave telescopes (Advanced LIGO/VIRGO), it may soon become possible to detect gravitational waves originating from CCSNe. Here, we compute the gravitational wave eigenfrequencies for a set of CCSNe models based on the PUSH method. The models span a range of progenitor zero-age main sequence masses and two different nuclear equations of state (DD2 and SFHo). We will discuss the influence of the progenitor properties and the equation of state on the gravitational wave signal.

[1]This work was supported in part by the United States Department of Energy, Office of Science, Office of Nuclear Physics, NCSU Physics Department, and Park Scholarships at NC State.

Noah Wolfe
North Carolina State University

Date submitted: 30 Jun 2019 Electronic form version 1.4