

Abstract Submitted  
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**Sub-Grid Viscosity in Neutron Star Simulations with SpEC<sup>1</sup>**

ALEXANDER KNIGHT, University of New Hampshire — Viscosity in neutron star simulations is capable of approximately replicating the angular momentum transportation and heating produced by instabilities that are currently too costly to capture in simulations, yet affect the gravitational wave, matter outflows, neutrino emission, and remnant of neutron star binaries. In this talk, we will present an energy conserving addition to the large eddy viscosity formalism for subgrid modeling, as well as cost and behavior comparisons between the large eddy formalism and the Israel-Stewart formalism for a differentially rotating neutron star.

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