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Computational Resources for Including Nuclear Physics in Astrophysical Simulations EVAN O'CONNOR, CHRISTIAN D. OTT, TAPIR, Caltech — Simulations of core-collapse supernovae have long included detailed nuclear physics such as finite-temperature equations of state (EOS) and neutrino interactions. Computational simulations of relativistic astrophysical systems such as Black Hole (BH) - Neutron Star (NS) binaries and NS-NS binaries are also beginning to include these nuclear physics inputs. We present a set of open-source, computational tools to aid in the incorporation of nuclear physics into simulations. At stellarcollapse.org, we provide EOS tables and the associated drivers needed to quickly, smoothly, and efficiently integrate all publicly available finite-temperature EOS tables into astrophysical simulations. We also have recently begun compiling, and present here, an open-source library of neutrino interactions relevant for computational simulations of relativistic astrophysical systems. The ultimate goal of NuLib is to provide a computationally efficient and complete resource of neutrino interactions for physics benchmarking and code validation. NuLib will also provide a venue for nuclear theorists to make available to the computational community new or improved neutrino interactions.

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