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SkyNet: An open-source reaction network for r-process nucleosynthesis JONAS LIPPUNER, Los Alamos Natl Lab, LUKE ROBERTS, Michigan State University — SkyNet is a general-purpose, open-source nuclear reaction network that is being used for r-process nucleosynthesis calculations in various astrophysical scenarios such as neutron star mergers, accretion disk outflows, and magnetorotationally driven jets in core-collapse supernovae. Thanks to a Python interface, SkyNet is easy to use and flexible. SkyNet features an equation of state accounting for all nuclear species, self-heating capability, a general electron screening implementation, and the ability to dynamically switch between the full network evolution and evolving nuclear statistical equilibrium (NSE). In this talk, we present an overview of the capabilities of SkyNet, some code tests and comparisons to other reaction networks, and some example r-process calculations that were performed with SkyNet.

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