

Nuclei in the Cosmos (NIC XVII)



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The r-process and neutrinos in neutron star mergers

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The merging of two neutron stars is a true multimessenger event that includes gravitational waves, an electromagnetic signal, and the emission of enormous numbers of neutrinos. In order to understand these signals we need a careful accounting of the microphysics that occurs during and after the merger. I will focus on the elements produced in these objects and the effect of two aspects of this microphysics; nuclear models/reactions and neutrino flavor transformation physics. In particular, I will discuss the importance of new developments in these areas to predictions of r-process observables and the astrophysical origin of the r-process.

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