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**Nuclear and neutrino physics of the r-process**

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The production of the elements heavier than iron in the universe has long been associated with neutron-capture processes. The most neutron-rich isotopes are created by rapid (r ) neutron-capture nucleosynthesis in extreme astrophysical environments. Specifics of these environments and the location of the astrophysical sites in which the r process occurs have remained open problems. It has been reported that observations of the gravitational wave event GW170817 and its electromagnetic counterpart suggest that neutron star mergers are a site of r-process nucleosynthesis. Still many questions remain, such as the nature of the astrophysical conditions within the merger responsible for element synthesis and whether mergers can account for all galactic r-process production. If we hope to fully understand the connection between this discovery and the origin of r-process elements, uncertainties in neutrino and nuclear astrophysics must be reduced. I will highlight the role played by neutrinos and nuclear masses.