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Nucleosynthesis in neutron star mergers.

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Neutron star mergers constitute an important target for gravitational wave interferometers. Differently to black hole mergers they are expected to produce electromagnetic radiation. Such emission provides complementary information about the dynamics of the system to gravitational waves. An important source of electromagnetic emission is the radioactive decay of freshly synthesized heavy nuclei, the so
called kilonova electromagnetic transient. This emission was detected for the first time in the gravitational wave event GW170817 confirming that the r-process nucleosynthesis takes places in the ejecta of neutron star mergers. It provides an unique opportunity to learn about the “in situ” operation of the r-process.

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