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Neutrinos and their impact on the nucleosynthesis in binary neutron star mergers

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Recent measurements of gravitational waves and kilonova observations show that neutron star mergers are an important source of r-process elements. In fact, this astrophysical scenario is by now the first and only confirmed site of r-process element production. A reliable modelling of neutrino transport plays a key role in determining the ejecta composition and the resulting nucleosynthesis. In this talk, I will give an overview on neutron star mergers as sources of heavy elements and discuss different neutrino transport models and in specific, the newly presented leakage scheme ILEAS (Ardevol-Pulpillo et al. 2019) that is used in our neutron star merger simulations.

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