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Neutron star mergers: neutrino emission and nucleosynthesis

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Neutron-star binary mergers are interesting for several reasons: they are proposed as the progenitors of short gamma-ray bursts, they have been speculated to be a site for the synthesis of heavy elements, and they emit gravitational waves possibly detectable at terrestrial facilities. Our current understanding of the merger evolution and the production of new elements is linked to details of nuclear physics and gravity. In particular, a key ingredient is the neutrino emission which is subjected to a strong gravitational field and influences the matter neutron-richness. In this talk, I shall discuss some aspects of the binary system evolution and the impact of neutrinos on the synthesis of elements.

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