

Neutrinos in neutron star mergers

Wednesday, 1 June 2016 17:10 (20 minutes)

Summary

Binary neutron star mergers are expected to copiously emit neutrinos of all flavor, with luminosities in excess of 10^{53} erg/s. In addition to efficiently releasing gravitational and internal energy, neutrinos are expected to influence the dynamics of the merger remnant, for example triggering the formation of a neutrino-driven wind from the disk accreting on the central object. Together with the dynamic and evaporation ejecta, this wind is expected to have a proper signature in terms of nucleosynthesis outcome and electromagnetic counterpart. Moreover, the annihilation of neutrino- antineutrino pairs above the remnant can deposit an amount of energy comparable to the one required to trigger a short gamma-ray burst.

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Session Classification: Astro + Cosmo I-II