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Neutrino-driven wind from the aftermath of binary neutron star mergers

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Binary neutron star mergers are among the most extreme events happening in the Universe. These very powerful events are expected to release large amounts of energy in form of neutrinos, gravitational waves and electromagnetic radiation, together with the ejection of a small fraction of their original mass. In particular, they are expected to be sites for r-process nucleosynthesis, as well as very promising candidates to power short-hard gamma-ray bursts (GRBs) and/or the newly discovered macro/kilo-novae.
In this talk I will present results from 3D simulation of the aftermath of a binary neutron star merger. The (Newtonian) dynamics of the disk will be investigated, as well as the neutrino emission coming from the central object and the inner part of the accreting torus.
The neutrino emission is modeled by an advanced spectral leakage scheme. It includes a model for neutrino diffusion in the optically thick regime, and takes into account neutrino absorption in the optically thin regions of the disk.
Results regarding the production of a baryonic neutrino-driven wind will be discuss, with a special emphasis on its properties related with nucleosynthesis (electron fraction, entropy, velocity) and with the possibility to power a short GRB (wind geometry, baryonic pollution).

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