Fully general-relativistic simulations of binary neutron-star mergers carried out with collaborative parallel codes

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I will present our results on three-dimensional general-relativistic simulations of binary neutron-star coalescence and merger, and of the subsequent formation and evolution of the merged object (black-hole) surrounded by a possibly massive self-gravitating disc, which may be the engine of short gamma-ray bursts. I will focus also on the numerically extracted gravitational radiation and on the comparison with the results of independent codes and analytic approximations.