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Computing EM signatures from astrophysical compact binary mergers

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In the next few years the new generation of gravitational wave detectors will likely detect some of the most energetics events in the universe; the coalescence and merger of binary compact objects, which will help to test gravity in the strong field regime. If the magnetic field is sufficiently strong, the binary may produce a detectable electromagnetic burst, especially if it is in the form of a jet. The concurrent detection of EM and GW signals (and possibly neutrinos) will open the door to the so-called multimessenger astronomy, which can confirm the detection and give more insight into the physical processes involved. I will describe some of the numerical evolutions involving black holes and neutron stars binaries, focusing on the GW waveforms, the possible EM counterparts and its astrophysical implications.