

# NewCompStar School 2016 - “Neutron stars: gravitational physics theory and observations”



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## Analytical Relativity Modelling of Coalescing Compact Binaries

*Wednesday, 7 September 2016 11:00 (1h 30m)*

In this lecture, I will give an introduction to the analytical approximation methods that are used to model the orbital dynamics and gravitational-wave emission of binary systems of compact objects (neutrons stars and black holes), namely the post-Newtonian approximation, black hole perturbation theory and the gravitational self-force formalism, and the effective one-body model. The key ideas underlying each approximation method will be illustrated in the simplest cases, while state of the art results and sub-leading physical effects (spins, tidal deformations) will be briefly reviewed.

### Summary

**Presenter:** Dr LE TIEC, A. (Observatoire de Paris)