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Computing inspirals and waveforms using the self-force

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In this talk I will review methods and results for computing inspirals and their associated waveforms in the small mass-ratio regime. To leading-order in the orbital phase evolution of the binary adiabatic flux balance techniques can be used. If we desire to track the orbital phase to better than one radian we must include post-adiabatic terms in the inspiral model. These post-adiabatic terms include first-order (in the mass ratio) conservative effects, second-order fluxes and effects from the spin of the secondary. I will discuss geodesic self-force and self-consistent models for incorporating these effects. After reviewing the progress that has been made I will conclude with a discussion of on-going efforts and future directions.

Primary author(s) : Dr. WARBURTON, Niels (University College Dublin)

Presenter(s) : Dr. WARBURTON, Niels (University College Dublin)