

Testing eccentric corrections to the radiation-reaction force in the test-mass limit of effective-one-body models

A faithful analytical prescription for the dissipative effects of the dynamics evolution of generic black hole binaries is an essential component for forthcoming gravitational waves models.

Here, we test two resummations of an effective-one-body radiation-reaction force in the test-mass limit. We compare the fluxes connected to this force with the fluxes computed by numerically solving the Teukolsky equation.

We find the different post-Newtonian (PN) truncations of the radiation-reaction force show the expected scaling in the weak gravitational field regime and assess the reliability of the force in the mild-strong regimes.

Our analysis provides useful information for the development of spin-aligned eccentric models in the comparable-mass case.

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