

Márton Tápai

University of Szeged

Gravitational waveforms for black hole binaries with unequal masses

Authors: Márton Tápai, László Árpád Gergely, Zoltán Keresztes

We derived a post-Newtonian (PN) inspiral only gravitational waveform for unequal mass, spinning black hole binaries. Towards the end of the inspiral the larger spin dominates over the orbital angular momentum (while the smaller spin is negligible), hence the name Spin-Dominated Waveforms (SDW). Such systems are common sources for future gravitational wave detectors and during the inspiral the largest amplitude waves are emitted exactly in its last part. The SDW waveforms emerge as a double expansion in the PN parameter and the ratio of the orbital angular momentum to the dominant spin.