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The Coalescence Rate of Binary Neutron Stars and Black Hole-Neutron Star Systems

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When two compact objects such as black holes, white dwarfs, and neutron stars orbit a common centre of gravity, they emit energy in the form of gravitational waves (GW). The emission of GW will result in the two objects coalescing. In this work, we present the empirical calculation of the coalescence rate of binary neutron stars. We have included new important results in our input physics in order to obtain more reliable estimates of the merging time-scales. We obtain the galactic rate using a sample of known binary neutron stars and black holes in our galaxy. The galactic rate is then extrapolated to the local universe.

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Yes

Level for award (Hons, MSc, PhD, N/A)?

MSc

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