

## Tidal effect on scalar cloud: numerical simulations

Axion and axion-like particle are the candidates of the dark matter. Due to the super-radiant instability, these fields are amplified, and can localize around Kerr BH, as axion clouds. Since the axion clouds emit gravitational waves, it is important to analyze several properties of the axion cloud around BHs. Here, we study the axion cloud around binary BH (BBH). The axion cloud around a BH of BBH feels a tidal force due to the companion BH, and the force changes the time evolution of the cloud. Here, using numerical simulation, we discuss the time evolution of the axion cloud under the tidal force.

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