The Beginning and Ends of Double White Dwarfs



Contribution ID: 26

Type: not specified

Double white dwarf merger remnants as low frequency gravitational wave sources

Friday, 5 July 2019 12:10 (20 minutes)

We propose a new category of low frequency gravitational wave sources related to mergers of double white dwarfs. A remnant just after a merger is a rapidly and differentially rotating objects, which may develop non-axisymmetric instability of hydrodynamical origin. If the remnant is susceptible to the so-called 'low T/W' instability, m=2 (bar) or m=1 (spiral) density pattern may develop (here m is the azimuthal quantum number of perturbation) and the mass quadrupole may oscillate with a typical frequency of O[0.1-1] Hz. We discuss the detectability of newly-born remnants by the planned spaceborne gravitational wave observatories targeting intermediate frequency range such as DECIGO, Big Bang Observer, and TianQin.

Primary author: Dr YOSHIDA, Shin (The University of Tokyo)Presenter: Dr YOSHIDA, Shin (The University of Tokyo)Session Classification: Mergers