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Gravitational wave asteroseismology in protoneutron stars

We examine the eigenfrequencies in gravitational waves from accreting protoneutron stars (PNSs) provided via core-collapse supernova. For this purpose, We adopt profiles of central objects obtained from the numerical simulations. Using a series of snapshots as a static configuration at each time step, we solve the eigenvalue problem to determine the specific frequencies of gravitational waves from the evolving PNSs with accretion by the relativistic Cowling approximation. In this talk, we discuss the protoneutron star properties by identifying the gravitational wave signal obtained by the numerical simulation with the eigenfrequencies of PNSs.

Primary author: SOTANI, Hajime (RIKEN)

Presenter: SOTANI, Hajime (RIKEN)