

Abstract Submitted
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Dynamical Tides of Spinning Neutron stars SIZHENG MA, HANG YU, YANBEI CHEN, Caltech — Tidal effects have important imprints on gravitational waves (GWs) emitted during the final stage of the coalescence of binaries that involve neutron stars (NSs). Dynamical tides can be significant when NS oscillations become resonant with orbital motion; understanding this process is important for accurately modeling GW emission from these binaries, and for extracting NS information from GW data. In this talk, I will present some analytic understandings on the excitation of dynamical tides in spinning NSs in coalescing binaries, including fundamental modes (f-modes) and Rossby modes (r-modes). In particular, I will show a new approximation that can lead to analytic expressions of tidal excitations to a high accuracy, and are valid in all regimes of the binary evolution: adiabatic, transition, and post-resonance. I will also show the significance of dynamical tides to learn more information about binaries with third-generation GW detectors.

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