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Imprint of the Kozai-Lidov Mechanism on the Gravitational Waveform ROHIT CHANDRAMOULI, NICOLAS YUNES, University of Illinois at Urbana-Champaign — Gravitational waves emitted by an inner binary in a hierarchical triple are interesting astrophysical candidates for future detectors like LISA. In the presence of the third body, the inner binary can undergo oscillations in eccentricity due to the Kozai-Lidov (KL) mechanism, which is one of the astrophysical channels for the formation of eccentric binaries. In this talk, I will present our efforts towards an analytic calculation of the effect of KL oscillations on the gravitational waveform. The separability of timescales of the system implies that multiple-scale analysis can be used to combine the effects of both radiation reaction and KL oscillations. The imprint on the waveform, due to this combined evolution, can then be analytically computed in the stationary phase approximation. I will also discuss our analysis of the parameters of the hierarchical triple which can produce a detectable (by LISA) imprint of KL oscillations on the waveform.

Rohit Chandramouli
University of Illinois at Urbana-Champaign

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