Abstract Submitted
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Secular gravitational-wave phasing to 3PN order for low-eccentricity inspiraling binaries[1] BLAKE MOORE, MARC FAVATA, Montclair State University, K. G. ARUN, Chennai Mathematical Institute , CHANDRA MISHRA, International Centre for Theoretical Sciences — While gravitational waves cause binaries to circularize, several astrophysical scenarios suggest that some binaries will have non-negligible eccentricities when entering the LIGO frequency band. Time-domain waveforms for arbitrary eccentricity and to 3PN order are provided by the quasi-Keplerian formalism, but are computationally costly. Here we use a simplification of the quasi-Keplerian formalism to produce a fast, analytic waveform for the secular phasing of low-eccentricity binaries to 3PN order. We will discuss how this waveform is constructed, its domain of validity, and possible applications.

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