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Accurate modeling of inspiral-merger-ringdown waveforms from non-precessing, spinning black-hole binaries ANDREA TARACCHINI, YI PAN, ALESSANDRA BUONANNO, University of Maryland, ENRICO BARAUSSE, Institut d'Astrophysique de Paris/CNRS, MICHAEL BOYLE, Cornell University, TONY CHU, CITA - University of Toronto, GEOFFREY LOVELACE, Cornell University, HARALD PFEIFFER, CITA - University of Toronto, MARK SCHEEL, Caltech, NRAR COLLABORATION — Accurate analytical modeling of the gravitational-wave signal emitted by the coalescence of compact binaries is needed for the detection of these events with Advanced LIGO. I will present an effective one body (EOB) model which can generate time-domain inspiral-merger-ringdown waveforms for non-precessing spinning black-hole binaries with any mass ratio and individual black-hole spins in the range [-1,0.7]. This model was calibrated to five nonspinning and two mildly spinning numerical-relativity waveforms computed by the Spectral Einstein Code (SpEC) code, and incorporates results from extreme-mass-ratio simulations based on the Teukolsky equation. As a way of testing the proposed model, I will show comparisons with several numerical-relativity waveforms produced by the NRAR collaboration, which were not used in the calibration.

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