A frequency-domain approach to LISA binary black hole waveforms[1] JOHN BAKER, NASA-Goddard Space Flight Center, SYLVAIN MARSAT, PHILIP GRAFF, University of Maryland College Park — We report on a recent effort to speed up the generation of gravitational wave signals from binary black holes in the context of space-based LISA-type detectors. Recently, reduced order models have been developed that allow for a fast and accurate generation of inspiral-merger-ringdown waveforms, directly in the Fourier domain. Contrarily to ground-based detectors, the response of LISA-type detectors is time-dependent, which introduces additional complexity in Fourier domain. We present a semi-analytical procedure to evaluate this Fourier-domain response, and present some preliminary applications. We comment on the expected increase in performance.

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