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Detectability of Numerical Relativity Waveforms for Black Hole Binaries with Rotating Spins and Templateless Analyses[1] DEIRDRE SHOEMAKER, Georgia Tech, LAURA CADONATI, SEBASTIAN FISCHETTI, UMass Amherst, JAMES HEALY, Penn State, SATYANARAYAN MOHAPTRA, UMass Amherst, DUSTIN BURNS, Georgia Tech — Recent years have seen tremendous progress in numerical relativity and an ever improving performance of ground-based interferometric gravitational wave detectors. The numerical relativity and gravitational wave data analysis communities are collaborating to ascertain the most useful role for NR waveforms in the detection and characterization of binary black hole coalescence. We explore the particular case of detectability with algorithms designed for unmodeled ("burst") waveforms for merging black hole binaries with rotating spins using NR waveforms. In this study, we present the detection systematics using waveforms produced by the MayaKranc code that are added to colored, Gaussian noise and analyzed with the Omega burst search algorithm (also used in LIGO-Virgo burst searches). Detection efficiency and parameter accuracy are systematically weighted against the rotation of one of the black-hole's spin axis as well as numerical details such as waveform accuracy, the number of gravitational wave cycles, the number of included modes and extraction radius.

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