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Reduced Model for Gravitational Wave Sources LORENA MAGANA ZERTUCHE, JAMES CLARK, DEIRDRE SHOEMAKER, Center for Relativistic Astrophysics, Georgia Institute of Technology — Principal Component Analysis (PCA) is a promising and efficient method to distill the essence of the waveforms in a way that explores the capabilities to mine information for LIGO. This tool acts on collections of numerical relativity waveforms to find bulk features such as the energy and momentum radiated and also other black hole parameters like spin, mass, eccentricity, and sky location. These features may provide the “smoking gun” of mergers for gravitational wave burst detection. Here, we explore the use of PCA as an efficient means to characterize the numerical relativity waveforms and identify certain phenomenological features.

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