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Detecting and charactezing black hole binary mergers without waveform templates MARGARET MILLHOUSE, NEIL CORNISH, Montana State University, TYSON LITTENBERG, Northwestern University — LIGO/Virgo searches for transient gravitational waves are conventionally divided into two classes - "un -modeled" burst searches and template based searches. But these are just two extremes in a continuum of possibilities that depend on the strength of our prior knowledge of the signals. The BayesWave algorithm is a flexible approach to gravitational wave data analysis that is able to span the full continuum of models. I will describe how a model of the time-frequency evolution of a binary system can be used as a parameterized signal prior that allows us to detect binary black hole mergers and extract physical properties such as the masses and spins without the need for waveform templates.

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