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**Searching for Eccentric Binary Black Holes with BayesWave** BELINDA CHEESEBORO, SEAN MCWILLIAMS, PAUL BAKER, AMBER LENON, West Virginia Univ, LIGO COLLABORATION — With the detection of gravitational waves from binary black holes (BBH) and binary neutron star (BNS) mergers, we are motivated to improve our sensitivity to gravitational waves from highly eccentric binary black holes (eBBH) sources. We present a method for detecting these sources and possible implementation into BayesWave, an existing algorithm for unmodeled burst searches. From our previous study we used BayesWave to analyze highly eBBH sources, and we found that it was not effectively detecting disconnected bursts in the early part of the waveform. Therefore, we propose a change to the original BayeWave analysis that will help it to connect these disconnected bursts by using the time and frequency information of one burst to get the same for another. We will discuss how this method will work and how it will be implemented into the BayesWave algorithm.

Belinda Cheeseboro  
West Virginia Univ

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