

Abstract Submitted  
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**An all-sky search for continuous gravitational waves from neutron stars in binary systems using the TwoSpect algorithm** EVAN GOETZ, KEITH RILES, University of Michigan — A search for continuous gravitational waves (GWs) from unknown pulsars in binary systems is notorious for its computational challenge. Data analysis techniques for GWs from unknown isolated sources have been in use for a number of years, while all-sky analysis techniques for sources in binaries have only recently begun development. We present a hierarchical binary search method called TwoSpect, which exploits the periodic orbital modulations of the source waves by searching for patterns in doubly-Fourier-transformed data. We will describe recent developments of the TwoSpect search pipeline, including its mitigation of detector noise variations and corrections for Doppler frequency modulation caused by changing detector velocity. Sensitivity estimates based on simulations will be presented.

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