

Abstract Submitted
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Optimizing the LIGO Gravitational Wave Search for Two Detector Systems DAVID STILES¹, BRENNAN HUGHEY, Embry Riddle Aeronautical University — The LIGO and Virgo collaborations operate a sensitive global network of gravitational wave interferometers. There are times however when at least one of the three detectors, Hanford, Livingston, or Virgo, are inoperational. We are interested in optimizing the LIGO gravitational wave search algorithm XPipeline to search for gravitational waves in coincidence with external signals, such as radio pulses from the Green Bank telescope, during these times. We therefore present a study that characterizes two interferometer combinations to determine which of five veto methods utilized by XPipeline is most sensitive to gravitational waves. This is done by determining the gravitational wave amplitudes required to reach 50% and 90% efficiency for several types of simulated waveforms.

¹This work was done with Dr. Brennan Hughey

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