

Abstract Submitted
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Dealing with Instrumental Lines in Searches for Continuous Gravitational Waves in LIGO Data ORION SAUTER, Univ of Michigan - Ann Arbor, LIGO-VIRGO COLLABORATION — Although the first observing run of Advanced LIGO (O1) gave us two definitive detections of gravitational waves from binary black hole mergers, searches for a continuous-wave (CW) source are computationally very demanding and still ongoing. CW sources are expected to be much weaker, requiring integration of the signal for several months. PowerFlux is one analysis pipeline designed for such searches; in following up outliers, the program uses a loosely coherent algorithm to improve the signal-to-noise ratio and to separate astrophysical signals from instrumental artifacts. Unfortunately, the O1 data has many sharp spectral artifacts (lines) that create spurious outliers in the low-frequency region, 20-135 Hz. The effects of these lines on the PowerFlux analysis will be discussed, along with methods used to mitigate those effects, including a line-cleaning process. Prospects for contending with instrumental line effects in the second observing run (O2) will also be presented.

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