Abstract Submitted
for the SES21 Meeting of
The American Physical Society

Characterizing the efficacy of methods to subtract terrestrial transient noise near gravitational wave events and the effects on parameter estimation[1] JOSHUA BRANDT, SUDARSHAN GHONGE, JOHN SULLIVAN, NADIA QUTOB, Georgia Institute of Technology, KATERINA CHATZIOANNOU, JAMES CLARK, California Institute of Technology, TYSON LITTENBERG, National Aeronautics and Space Administration, MARGARET MILLHOUSE, University of Melbourne, NEIL CORNISH, Montana State University, LAURA CADONATI, Georgia Institute of Technology, LIGO SCIENTIFIC COLLABORATION COLLABORATION — Gravitational wave signals received by the Laser Interferometer Gravitational Wave Observatory (LIGO) from binary black hole coalescences can overlap in time with non-gaussian transient instrumental noise, also known as a glitch. Glitches introduce errors in the analysis of a signal since the parameters of the astrophysical system (mass, spin, location, etc.) are inferred by comparing gravitational waveforms with the data. By adding known simulated signals into data containing glitches from both the LIGO Livingston and Hanford detectors, we study how different classes of glitches affect parameter estimation. In extension, we use BayesWave (software that models a glitch and a signal as a separate sum of wavelets) to explore how one of our most promising methods of glitch-subtraction improves the analysis.

[1]National Science Foundation Grants PHY-0757058, PHY-0823459, PHY-1809572, 2030508, 1836650, and 1148698

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Date submitted: 22 Sep 2021 Electronic form version 1.4