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Background estimation due to correlated noise in H1 and H2 detectors using time reverse filtering method RAHUL BISWAS, University of Wisconsin Milwaukee, LIGO SCIENTIFIC COLLABORATION — The current network of earth-based detectors are looking for the first traces of gravitational waves. Coalescence of binary neutron stars, binary black holes and neutron star black hole binaries are potential sources of gravitational waves. The three LIGO detectors, 4km and 2km detectors in Hanford, WA and a 4km detector in Livingston, LA, have been collecting data and searching for traces of gravitational waves. The two Hanford detectors are collocated and share the same vacuum system, hence the noises in the detectors are correlated. Interpretation of the data from the Hanford detectors requires accurate knowledge of the background due to detector noise. Some searches ignore data when only H1 and H2 are operating, due to our inability to measure the impact of correlated noise on our background rates. A study has been done to better estimate the background in H1 and H2 searches for compact binaries. The method uses time-reversed filters to discover a multiplicative factor which can be used to correct background estimates from time slide investigations. Investigations of the method and potential issues with it will be discussed.

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