

GWADW2022 - Approaching the low-frequency design sensitivity of ground-based detectors

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Fast Scattering transient noise at LIGO Livingston

During the third Observing run, Fast Scattering was the most frequent source of transient noise at LIGO Livingston. The noise shows up as arches in time-frequency plane, usually separated by 0.25 sec (4 Hz) or 0.5 sec (2 Hz) from each other. This noise has been found to be correlated with elevated levels of ground motion in the anthropogenic and microseismic band. Depending on the amount of relative motion in these two bands, 2 Hz or 4 Hz fast scatter shows up. To localize the potential coupling to the detector, we examined the correlation between ground motion at End and Corner stations with the noise in DARM.

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