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Techniques for high-frequency searches for Gravitational Waves associated with Gamma-ray Bursts DANIEL HOAK, University of Massachusetts, Amherst, LIGO SCIENTIFIC COLLABORATION, VIRGO COLLABORATION — In the next few years, the global network of advanced gravitational-wave detectors will begin observing the universe with unprecedented sensitivity. Some of the most promising sources of transient gravitational-wave (GW) signals are the central engines of gamma-ray bursts (GRBs), which are expected to emit GWs across a wide frequency band. In this talk, I will describe the methods of a search for high-frequency (>1kHz) GWs in data from the LIGO and Virgo experiments, associated with GRBs detected by the Fermi Gamma-ray Burst Monitor (GBM). I will discuss the challenges for GW searches that arise from the GBM sky localization, and techniques to make these searches computationally feasible. I will also describe the ability of GRB-triggered GW searches to refine the localization a detectable GW signal within the Fermi-GBM error region.

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