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Coherent Network Searches for Gravitational Waves associated with Gamma-Ray Bursts GARETH JONES, Cardiff University, LIGO SCIENTIFIC COLLABORATION, VIRGO COLLABORATION — Over 200 gamma-ray bursts (GRBs) were observed electromagnetically during the LIGO science run 5 / Virgo science run 1. Attempts to detect gravitational waves (GWs) associated with GRBs can take advantage of the known sky position and time of the GRB to increase the sensitivity of the search. Coherent analysis methods are particularly well-suited to such directional searches. They use the known sky position to construct linear combinations of the data that maximize or minimize the SNR of a GW signal with a given polarization. This allows for both high sensitivity to real GWs and powerful consistency tests for eliminating background noise, without a priori assumptions on the GW waveform. We discuss prospects for GRB-GW searches with data taken during the LIGO science run 5 / Virgo science run 1.

Prefer Oral Session
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