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Searches for bursts of gravitational waves with LIGO, GEO and Virgo¹

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The LIGO, GEO and Virgo laser interferometers completed in October 2007 their most recent science runs (fifth science run, S5, for LIGO/GEO and first Virgo science run, VSR1). This presents the most sensitive and longest in duration coordinated observation by the global network of gravitational wave detectors. One of the astrophysical searches that we pursue using data from the laser interferometers targets sources of short-duration, arbitrary-shaped gravitational wave signals. Such signals, referred to as bursts, may accompany events like core-collapse supernovae, the merger phase of coalescing binary compact stars and gamma-ray bursts (GRBs). In this talk we will present the current status of the analysis of S5 and VSR1 data for such bursts of gravitational radiation. We will also discuss the advantages of the coordinated observations offered by the global network of detectors. We will finally highlight our first S5 result attained in a search for gravitational wave bursts in association with GRB070201 and discuss the prospects of ongoing burst searches.

¹This is presented on behalf of the LIGO Scientific Collaboration and the Virgo Collaboration.