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Searches for gravitational wave bursts with LIGO

Laser Interferometer Gravitational Wave Observatory (LIGO) consists of three detectors, located in Hanford, Washington and Livingston, Louisiana, which are designed to search for gravitational waves from astrophysical sources. In November 2005, LIGO started collecting coincident data at design sensitivity. One of the data analysis efforts is aimed at searching for short-duration transient signals with unmodeled waveforms, known as bursts. Examples of burst sources include core-collapse supernova, binary black hole mergers, and cosmic string cusps. Two types of burst searches are currently being conducted within the LIGO Scientific Collaboration. In an untriggered approach, we perform an all-sky search from all possible sources. In a triggered approach, we look for signals from known transient electromagnetic sources such as gamma-ray bursts or soft gamma-ray repeaters. Recent results from these types of searches for gravitational wave bursts will be presented.

collaboration :

LIGO Scientific Collaboration

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