

GW transient un-modeled searches and characterization of the waveform signal using cWB algorithm

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Searches for generic transient gravitational waves target the widest possible range of different astrophysical sources (including merging compact binary systems, core-collapse supernovae, magnetars and possibly as-yet-unknown systems); to fulfill this target, the searches algorithm employ minimal assumptions on the signal morphology. I will introduce the open source Coherent Wave Burst (cWB) algorithm, that is used for the burst all-sky analysis in the LIGO Virgo collaboration.

The detection and reconstruction of the transient gravitational not based on prior models allow to catch unexpected characteristics of the signal, and can complement the analyses based on parametrized models. I will overview the un-modeled methods developed in the framework of the cWB pipeline to characterized the features of the gravitational waves signals.