

## **Gravitational wave bursts: Detection with minimal assumptions**

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Discovery of gravitational waves by LIGO opens a new window on Universe. Together with Virgo and Kagra observatories LIGO forms a world-wide network of gravitational wave detectors. Combined with other astronomical instruments it enables multi-messenger observations of astrophysical events dramatically expanding our means to study cosmos. Anticipated and possibly entirely new gravitational-wave sources are likely to be discovered – we should be ready for unexpected. In the talk I describe the detection of transient (burst) signals with poorly known or uncertain models by the global network of gravitational wave detectors. I'll talk about the time-frequency analysis for signal detection, robust methods for source localization, reconstructions of the signal waveforms and polarizations, and discuss astrophysical implications of the burst analysis.