

# **Increasing horizons, shrinking limits**

or

## **a personal outlook on modern gravity wave searches**

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### **Abstract**

Undoubtedly, some of the most thought-provoking physics of this century will be closely tied to results from the Laser Interferometer Gravitational Wave Observatory (LIGO). Accordingly, the long-term ambition of gravitational wave searches reaches well beyond the first direct detection of gravitational waves; they promise the dawn of a new field, the gravity wave astronomy. LIGO, already the most sensitive gravity wave detector around the globe, is routinely running for extended periods of time and its reach is sharply increasing with each consecutive science run.

I will describe the analysis approaches we pursue to derive more and more stringent bounds. I will emphasize the merits of coincident observation of gravity waves and more “traditional” cosmic events such as supernovae, GRBs or neutrino bursts. I will discuss the need for experimental mitigation of exotic but potentially limiting noise sources, like gravity gradient noise. The talk will also highlight the role of the GRID within LIGO, an essential tool for joint data analysis for the worldwide system of gravity wave detectors.

LIGO’s unequalled reach promises scientific results for the near future.

See you at the talk!

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<sup>2</sup> Detailed information about the Laser Interferometer Gravitational Wave Observatory (LIGO) is available at <http://www.ligo.caltech.edu>.

<sup>3</sup> Detailed information about the LIGO Scientific Collaboration (LSC) is available at <http://www.ligo.org>.