

# 4 PIECES OF NEW PHYSICS



UNIVERSITÀ  
DI PARMA

DEPARTMENT OF MATHEMATICAL,  
PHYSICAL AND COMPUTER SCIENCES

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6



## GRAVITATIONAL WAVE PHYSICS: A BIASED ROADMAP

**GERMANO NARDINI - ITP, BERN**

The recent gravitational wave detection performed by LIGO and VIRGO began a new era in astronomy, cosmology and fundamental physics. Thanks to the current and forthcoming network of gravitational wave detectors, we are going to observe for the first time a plethora of phenomena that have never been measured before. In this talk we will try to forecast the kind of observations that the scientific community will perform in the next two decades. Particular emphasis will be devoted to some unprecedented methods allowing to test the Hubble law and the particle content of the Universe. The whole discussion will be based on the present understanding of gravitational wave physics; nevertheless the forthcoming data will likely highlight anomalies that only the future generation of physicists will be able to interpret correctly.

**10:30 - AULA MAXWELL**

**SEMINARS OPEN TO EVERYBODY**