



LNGS SEMINARS

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Probing Fundamental Physics with Gravitational Waves

Abstract

The recent detections of Gravitational Waves (GWs) by the LIGO/Virgo Collaborations open a new window to explore the fundamental laws of the Universe.

In this talk, I illustrate how GWs are relevant for our understanding of both gravity and particle physics. On one side, I show how the waveforms observed by LIGO/Virgo allow us to test General Relativity and to put constraints on modified theories of gravity, in particular on the scale of a hypothetical noncommutative space-time.

On the other side, I describe how the potential detection of GWs produced from first-order phase transitions in the early universe is able to provide valuable information for physics beyond the Standard Model.

February 21, 2018 - 2:30 pm
LNGS - "B. Pontecorvo" room