



DIPARTIMENTO DI FISICA E ASTRONOMIA
"Galileo Galilei" – DFA

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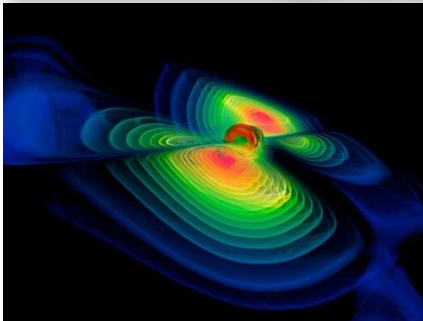
UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Giovedì 24 ottobre 2019
Ore 15:00 - Aula "A. Rostagni"

Prof. Eugenio Coccia

Gran Sasso Science Institute, INFN e Università di Roma "Tor Vergata"

Exploring the Universe with gravitational waves



Gravitational waves were predicted 100 years ago by Einstein as ripples in spacetime caused by the acceleration of masses.

After more than 50 years of experimental efforts, the detectors of the LIGO-Virgo Collaboration have observed in the last years several gravita-

tional-wave signals, opening an entirely new way of experiencing the universe. The study of gravitational waves will give unique information on the existence and nature of dark compact objects, like black holes and neutron stars, and on gravitational physics at extreme conditions. Also, the study of primordial gravitational waves would uniquely allow the investigation of processes in the very early universe.

This research motivates about one thousand scientists all over the world, realizing large laser interferometers and using advanced technologies and data analysis algorithms.

The status of the field will be reviewed, at the light of the direct detection of gravitational waves and the observation of binary black holes and neutron stars mergers.



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Progetto
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