

New Trends in High-Energy Physics



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Gravitational wave astronomy with Virgo and the GW detectors network

Thanks to the historical detection of gravitational wave radiation from binary black hole and binary neutron star systems, the Virgo and LIGO observatories have enabled a revolutionary new channel to observe the Universe. The handful of very first, sensational observations have already provided precious new information relevant to astronomy, astrophysics, cosmology and fundamental physics, marking the birth of gravitational-wave astronomy first, and multi-messenger astronomy shortly after.

I will describe the Virgo instrument and its place in the worldwide gravitational-wave detectors network; I will then review the observations made so far and the key scientific outcomes stemmed from them. An outlook on what the observation scenario will be in the near and medium term will conclude my talk.

Author: Mr GIACOMO, Ciani (University of Padova and INFN Padova)

Presenter: Mr GIACOMO, Ciani (University of Padova and INFN Padova)