

# Gravitational Waves: a novel powerful tool to test fundamental theories

*Wednesday, 12 June 2019 09:45 (45 minutes)*

The recent discoveries of gravitational waves (GWs) from the LIGO and Virgo interferometers opened a new era in GWs as well as multi-messenger astronomy, and offered new ways to test gravitational theories beyond Einstein's theory of General Relativity. Very recently it has been also shown how nonperturbative quantum gravity (QG) can affect the GW luminosity distance associated with the long distance propagation of GWs, hence proposing a new test of QG theories through LIGO and LISA detection of merging events.

**Presenter:** SAKELLARIADOU, Mairi