Contribution ID: **11** Type: **not specified**

Black hole mergers and gravitational waves

Thursday, 22 December 2016 09:00 (2 hours)

The broad scope of these lectures is to introduce the basic elements which are necessary to understand the GW signals from a BH binary merger recently-observed by LIGO, and to provide the basis of some state-of-the-art applications in this rapidly-growing field.

Content
i) A GW physics primer.
ii) Introduction to the post-Newtonian formalism. The case of circular inspiral.
iii) Black-hole perturbations and quasinormal modes (QNMs)
iv) GWs from a radial plunge of a test particle into a black hole: QNM ringing
v) Black-hole spectroscopy: tests of gravity and of near-horizon physics
vi) Numerical Relativity and Effective-One-Body (EOB) approach

Presenters: PANI, Paolo (Rome Sapienza); BERNUZZI, Sebastiano (P)