



UNIVERSITA' DEGLI STUDI DI PARMA

Dipartimento di Fisica e Scienza della Terra

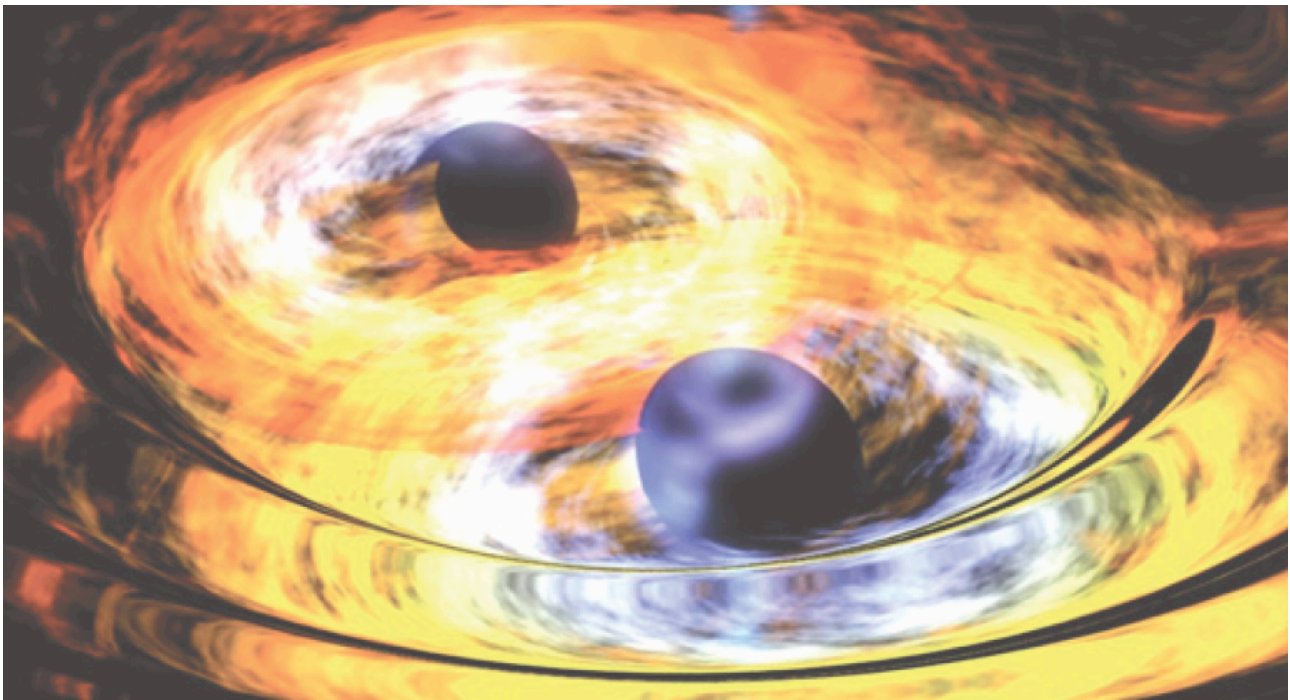
SEMINARIO DI DIPARTIMENTO

GW150914: LIGO's First Observation of Gravitational Waves from a Binary Black Hole Merger

Michele Vallisneri

Jet Propulsion Lab, California Institute of Technology, Pasadena

Abstract: On September 14, 2015, the two LIGO detectors simultaneously observed a transient gravitational-wave signal, which was named GW150914. The signal matched the waveform predicted by general relativity for the inspiral and merger of a pair of black holes and the ringdown of the merged remnant black hole. This was the first direct detection of gravitational waves and the first observation of a binary black hole merger. I describe the mechanics of the detection, its astrophysical implications, and the tests of general relativity that can be performed with the signal. I also discuss results from the entirety of Advanced LIGO's first observing run.



Giovedì 23 giugno – ore 16.30
Aula Newton – Plesso Fisico