

The detection of the Gravitational Waves:

a great discovery, 100 years after the prediction of Albert Einstein, and the dawn of a new astrophysics.

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The 11th of February 2016 the LIGO scientific collaboration and the Virgo collaboration announced the detection in the LIGO detectors of the gravitational wave signal emitted in the coalescence of two stellar mass black holes. This discovery is clearly a cornerstone of the modern physics: it is the first direct detection of a gravitational wave, predicted in the General Relativity theory of Albert Einstein, it is the first demonstration of the formation of black holes of stellar mass and of their coalescence and, finally, it is the dawn of a new sector of the astrophysics: the gravitational astronomy. The gravitational wave physics, the detection and the science potential will be illustrated in the seminar