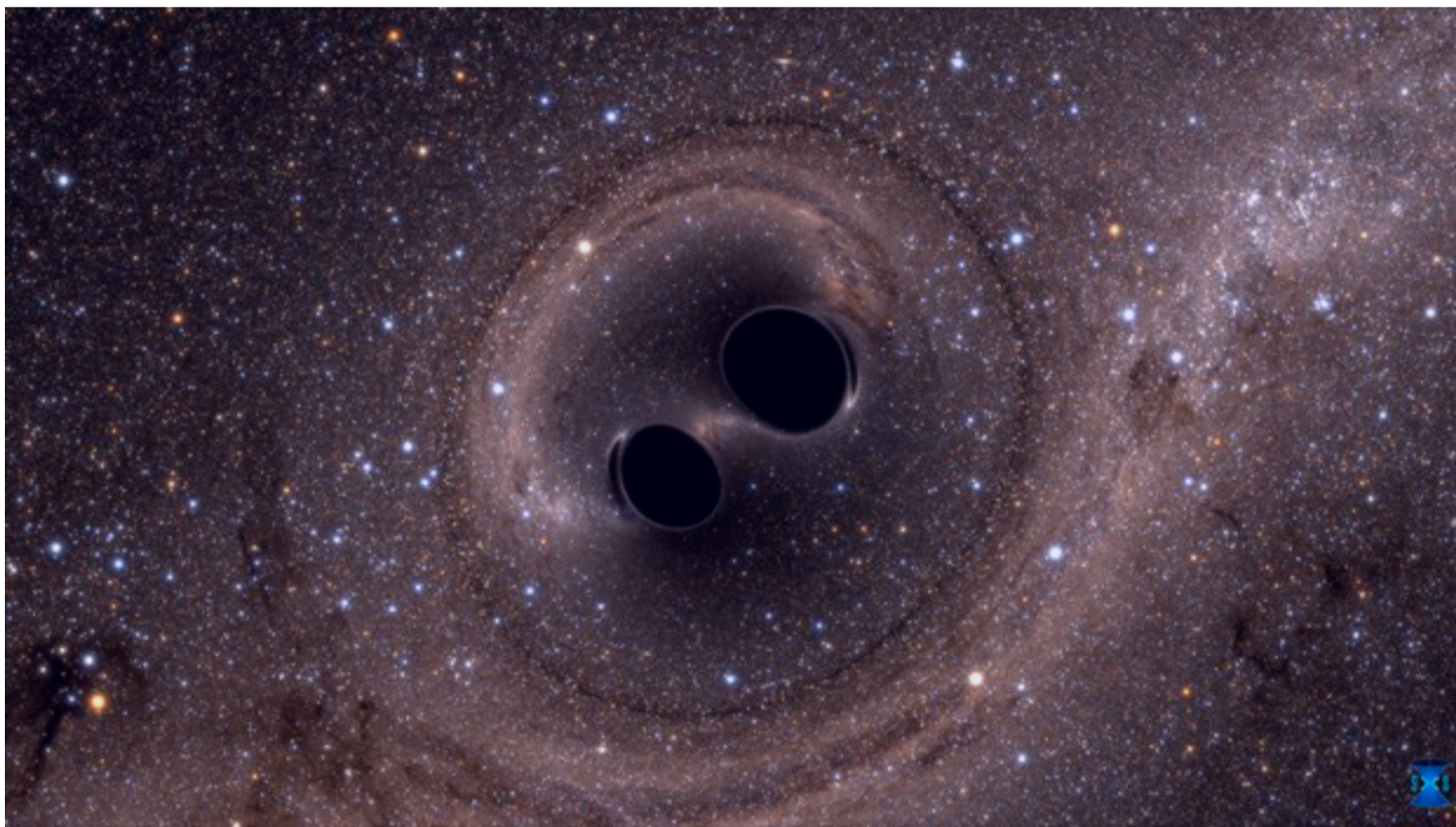


Observation of Gravitational Waves from a Binary Black Hole Merger

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Abstract: 100 years after the formulation of the theory of general relativity by Albert Einstein, gravitational waves have been observed on September 14, 2015 by the two detectors of the Laser Interferometer Gravitational-Wave Observatory, LIGO. This marked the birth of the era of gravitational-wave astronomy opening a new way to listen to the Universe. The detected signal provides the first observational evidence of the existence of "heavy" stellar-mass black holes, and that they inspiral and merge within the age of the Universe. Electromagnetic and high-energy-neutrino follow-up observations have been performed starting the new multi-messenger astronomy including gravitational waves. The colloquium will describe the discovery, its astrophysical implications and the multi-messenger follow-up campaign of GW150914.



Marica Branchesi is researcher at the University of Urbino "Carlo Bo". She took her Master and PhD degrees in astronomy at the University of Bologna ALMA Mater Studiorum working at the Institute of Radio Astronomy-INAf. She is the national coordinator of a project funded by a grant for excellent young researchers (FIRB) to study neutron stars and black-holes through gravitational waves and electromagnetic emission. She is member of the LIGO/VirgoCollaboration (LVC), where she is the co-chair of the "LVC EM Follow up Program" to reveal the electromagnetic counterpart of GW signals. Since one year she is the vice-president of the IAU commission of "Gravitational Wave astrophysics" of the International Astronomical Union.

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