

L'astrophysique des ondes gravitationnelles / Astrophysics with gravitational waves

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Since the first detection of a binary black hole merger almost 10 years ago, gravitational-wave astronomy has evolved into a flourishing field, contributing significantly to astrophysics, cosmology, and fundamental physics. Hundreds of compact binary mergers have been detected so far by the LIGO-Virgo-Kagra Collaboration, including the multimessenger event GW170817, several mixed neutron star - black hole binaries, and numerous black hole binaries. Additionally, a tentative detection of the gravitational-wave stochastic background was reported by several Pulsar Timing Array networks. In this talk I will discuss the gravitational-wave detections made so far and their impact on our understanding of the formation and evolution of compact binaries, as well as the exciting prospects for future observations and the potential for further discoveries in multi-messenger astronomy.