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## **Tests of GR with Gravitational Wave Detections**

The first observations of gravitational waves (GWs) from the coalescence of a black-hole binary in 2015 and a neutron-star binary in 2017 inaugurated a new era in experimental gravity. In less than 5 years and with the continuous upgrades of our GW observatories, LIGO, Virgo and now KAGRA, the detection of GWs evolved from non-existent to a weekly business and has led to a plethora of results with implications for fundamental physics, astrophysics, nuclear physics and cosmology. I will give an overview of how the data from detected GW events have been used to probe the true nature of gravity and test general relativity (GR) to unprecedented levels. I will focus on an array of methods developed by the LIGO/Virgo/KAGRA collaboration exactly for this purpose and will give an update on their latest results from the first half of the third observing run, O3a.

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