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## Gravitational waves searches in O3 Advanced LIGO and Advanced Virgo data

*Wednesday 28 July 2021 16:45 (20 minutes)*

Third Observation (O3) run of Advanced LIGO and Advanced Virgo started in April 2019 and ended in March 2020; reaching sensitivities significantly better than those in the previous observing run. During this period, 56 gravitational-wave candidates were publicly released within hours of detection.

This talk will overview the published science results achieved during the O3 run, focusing on the catalog of the gravitational waves signal due to compact binary coalescences (GWTC-2) and on the main outcomes of follow-up investigations, e.g. tests of general relativity. Among gravitational waves signals reported in GWTC-2, a few have been associated to exceptional scientific case such as binary system with significantly asymmetric mass ratios (GW190412), or intermediate-mass black holes (GW190521), these will be discussed.

### Collaboration / Activity

LVC collaboration

### First author

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