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## VIRGO and the gravitational interferometry

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The Advanced Virgo detector is a long scale enhanced Michelson interferometer placed in Italy, close to Pisa, with the aim of detecting gravitational waves from astronomical sources.

The Advanced Virgo interferometer has detected, together with the LIGO interferometers located in USA, an impressive collection of gravitational waves emissions in the last observation runs O2 and O3. During the last observation run (O3), which lasted about one year of data taking from April 2019 to March 2020, were detected about 80 events of gravitational wave emissions.

After that the detector has been upgraded toward the Advanced Virgo + configuration, in order to enhance the sensitivity, and it is currently in the commissioning phase.

In this work, after an introduction on gravitational wave detection, will focus on the status of the Advanced Virgo + detector and the future upgrades which will further enhance the sensitivity toward unprecedented limits.

### Summary

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