



Contribution ID: 84

Type: **Oral presentation**

Advanced Virgo + status

Thursday, 15 September 2022 12:30 (15 minutes)

The gravitational wave detector Advanced Virgo+ is currently in the commissioning phase in view of the fourth Observing Run (O4).

The major upgrades with respect to the Advanced Virgo configuration is the implementation of an additional recycling cavity, the Signal Recycling cavity at the output of the interferometer (SRC), to broad the sensitivity band and the Frequency Dependent Squeezing (FDS) to reduce quantum noise at all frequencies.

The main difference of the Advanced Virgo + detector with respect to the LIGO detectors is the presence of marginally stable recycling cavities, with respect to the stable recycling cavities present in the LIGO detectors, which increases the difficulties in controlling the interferometer in presence of defects (both thermal and cold defects).

This work will focus on the interferometer commissioning, highlighting the control challenges to maintain the detector in the working point which maximizes the sensitivity and the duty cycle for scientific data taking.

Primary author: MANTOVANI, Maddalena (EGO)

Presenter: MANTOVANI, Maddalena (EGO)

Session Classification: Multimessenger and Gravitational Waves