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Advanced Virgo Plus: future perspectives

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While completing the commissioning phase to prepare the Virgo interferometer for the next joint Observation Run (O4), the Virgo collaboration is also finalizing the design of the next upgrades to the detector to be employed in the following Observation Run (O5). The major upgrade will concern decreasing the thermal noise limit, which will imply using very large test masses and increased laser beam size. But this will not be the only upgrade to be implemented in the break between the O4 and O5 observation runs to increase the Virgo detector strain sensitivity.

The talk will cover the challenges linked to this upgrade and implications on the detector's reach and observational potential, and will give some glimpses on the potential longer term perspectives of the Virgo interferometer.

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