

Quantum Technologies within INFN: status and perspectives



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Quantum noise reduction in the interferometric gravitational wave detector Virgo

The methods currently used and the results achieved in Virgo for the reduction of the quantum shot noise through the use of frequency-independent squeezed light sources will be reviewed. In the second part of the presentation it will be described the ongoing R&D activity aimed for the realization of a frequency dependent squeezed light source for Advanced Virgo Plus. The use of this source should allow, starting from the next scientific run, to obtain a reduction of the detector quantum noise on the whole detection band.

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