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Quantum Optics and Magnetic Emission Studies: The GALILEO Role in the Einstein Telescope

The Einstein Telescope Infrastructure Consortium (ETIC), coordinated by INFN, has developed laboratories to support the future Einstein Telescope and to carry out site characterization at Sos-Enattos, in Sardinia (Italy). This poster presents the GALILEO project at INFN and the University of Genoa. The initiative includes a new quantum optics laboratory, equipped with two 1550 nm laser sources, dedicated to optical testing and characterization for quantum noise reduction. In parallel, within the GALILEO project we developed MANET, a facility designed to characterize magnetic emissions from critical components and to investigate shielding strategies for mitigating low-frequency magnetic noise. Fully designed and built in Genoa, MANET will be installed at the EGO–Virgo site in the first half of 2026.

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