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15 years of acoustic detection studies at INFN

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Since the early 2000s, thanks to national, regional and European projects, a number of abyssal detectors equipped with acoustic sensors have been installed and operated by INFN in two cabled submarine research infrastructures off Eastern Sicily. The INFN's interest in underwater acoustics arises from the need to develop an acoustic positioning system for the KN3NeT telescope and to study the possibility of neutrino acoustic detection.

The use of innovative technologies for data acquisition and transmission systems have enabled the first long-term studies on the deep marine environment of the Ionian Sea with a variety of lines of research. Data acquired through the INFN underwater infrastructures have allowed the continuous monitoring of the underwater acoustic noise and several studies on cetacean species present in the area and on seismic sources . An overview of the main activities of INFN on detection and localization of underwater acoustic sources will be presented.

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