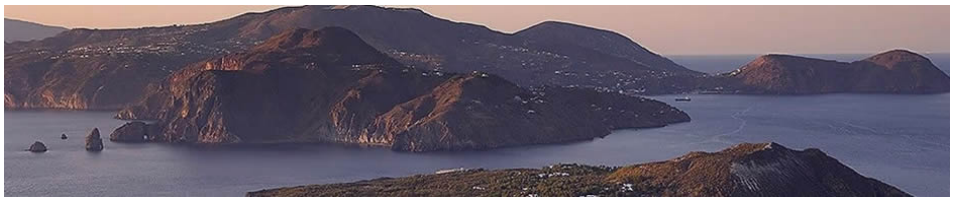

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ANTARES and KM3NeT experiments: status and future developments

The ANTARES detector, located 40 km off the French coast, with an instrumented volume of more than 0.01 cubic kilometres, is the largest neutrino telescope in the Northern Hemisphere and the first one to be operated in the deep sea. It has been taking data continuously since 2007. The primary goal of such a telescope is to search for astrophysical neutrinos in the TeV-PeV range. The latest results from ANTARES will be presented, including a search for the diffuse cosmic neutrino flux as well as more specific searches for astrophysical sources such as Active Galactic Nuclei or Galactic sources.

The next-generation neutrino telescope in the Mediterranean, KM3NeT/ARCA, is currently under construction 80 km offshore Capo Passero, Sicily (Italy). It will consist of an instrumented volume several hundred times larger than ANTARES.

The second branch of KM3NeT, ORCA, to be deployed not far from the ANTARES site, aims instead to address the long-standing unsolved question of whether the neutrino mass ordering is normal or inverted by measuring matter oscillation effects with atmospheric neutrinos.

ARCA and ORCA exploit the same technological solutions, based on a pioneering design of a multi-PMT optical module. The construction of the two detectors has started. First results from both experiments, as well as the potential for their respective scientific goals, will be illustrated.

Primary author: CIRCELLA, Marco (INFN Bari, Italy)

Presenter: CIRCELLA, Marco (INFN Bari, Italy)