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ANTARES & KM3NeT: the neutrino telescopes in the Mediterranean Sea

Thanks to their weakly-interacting nature, neutrinos traverse cosmic distances without being deflected. They can provide information about far astrophysical object as a complementary probe of the Universe with respect to other messengers such as multi-wavelength light, charged cosmic rays and gravitational waves. Here, an overview of the neutrino telescopes currently operating in the Mediterranean Sea will be provided. The ANTARES (Astronomy with a Neutrino Telescope and Abyss environmental RESearch) detector was the first neutrino telescopes operating in sea water since 2008 and many interesting results regarding astrophysical sources have been obtained with this telescope. In the last months, instrumented lines of the second future km3-scale telescope KM3NeT (Cubic Kilometre Neutrino Telescope) have been successfully deployed. It will be a multi-site detector, a site (KM3NeT-ARCA) will be focused on astrophysical studies and the other (KM3NeT-ORCA) will be dedicated to fundamental physics studies, like the neutrino mass hierarchy. Here, the first results and the expected performances of KM3NeT will be also described.

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