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ANTARES highlights and recent multi-messenger studies.

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The ANTARES deep sea neutrino telescope, anchored on the seabed of the Mediterranean Sea, has been continuously taking data for more than ten years. Thanks to its excellent angular resolution in both the muon channel induced by muon neutrinos and the cascade channel induced by interactions of neutrinos of all flavours ANTARES has very large sensitivity for neutrino source searches in the Southern sky. Mild excess related to the all-flavour cosmic diffuse flux was seen with the latest 9-years data analysis, consistent with the IceCube discovery. The origin of the cosmic neutrinos observed by IceCube still remains unknown.

ANTARES is actively developing a wide multi-messenger program: latest experimental results from searches for neutrinos correlated with the recently discovered gravitational wave signals (including recent neutron star –neutron star merger GW170817) and Fast Radio Bursts will be reported.

Other physics topics are addressed by the ANTARES experiment as well, including setting constraints on dark matter from a search of neutrinos from potential dark matter annihilation in massive objects like the Sun, the Galactic Center, or the Earth core, and the search for magnetic monopoles.

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