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Recent results from the ANTARES neutrino telescope

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Abstract content

The discovery of a cosmic neutrinos diffuse flux by IceCube together with the recent observation of gravitational waves have widened our spectrum of probes needed for multi-messenger astronomy. However, the origin of the faint flux of high-energy astrophysical neutrinos is still unknown. The ANTARES neutrino telescope is currently the detector with the largest sensitivity located in the Northern hemisphere, optimised to detect neutrinos in the TeV/PeV range. It is located in the Mediterranean Sea at a water depth of about 2500 m, 42 km from Toulon, France. The direct view of the Southern sky provides a complementary field of view to the IceCube observatory with good low-energy sensitivity. The excellent angular resolution for both track and cascade events allows for powerful all-flavour analyses. Recent results obtained with ANTARES data will be presented, focusing on the measurement of the diffuse flux and probing the IceCube high energy neutrino directions, as well as recent multi-messenger observations. The results and prospects of dark matter searches will be also shown and the measurement of neutrino oscillations together with constraints on the 3+1 sterile neutrino model will be discussed.

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