

Diffuse and point source search with KM3NeT/ARCA and ANTARES neutrino telescopes

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In recent years, the multi-messenger approach in Astrophysics has become a real game changer for better understanding the still unclear phenomena in our universe.

Neutrino telescopes can play a key role by highlighting the hadronic component of such phenomena, testing the known γ -ray sources.

In this contribution, we report the combined analyses of the data collected by two neutrino telescopes located at abyssal sites in the Mediterranean Sea. The ANTARES detector operated for more than 15 years off the coast of Toulon (France). KM3NeT/ARCA is one of two detectors of the next-generation KM3NeT observatory. It is optimized for astrophysical neutrinos of energy > 1 TeV and is currently collecting data, although still under construction off Portopalo di Capo Passero (Italy).

The candidate list of about one hundred point-like and extended sources is tested for the neutrino emission. This list includes bright γ -ray emitters, galactic γ -ray sources with hints of a hadronic component (TeVcat), extragalactic AGN with high intensity flux observed in radio (VLBI), and the most significant candidate sources investigated by IceCube.

The data samples of the two experiments have also been combined in the search for a diffuse emission of cosmic neutrinos.

Poster prize

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