

Search for correlations between high-energy gamma rays and neutrinos with the HAWC and ANTARES detectors

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ANTARES is an underwater neutrino detector in the Mediterranean Sea. Its location, reconstruction accuracy for all-flavor neutrino interactions, and low energy threshold, make it the most sensitive neutrino observatory for searches below 100 TeV over large parts of the sky. The HAWC experiment is a water Cherenkov gamma-ray detector located in Mexico. Thanks to its large field of view it is an excellent instrument to observe the very-high energy gamma-ray sky and perform high-sensitivity surveys of the Galactic Plane.

The 10-year ANTARES data set and 3-year HAWC point source surveys are used to search for all-flavor neutrino emission in correlation with the highly-significant observations by HAWC in the gamma-ray sky by means of a maximum-likelihood template search. No significant observation for a correlation has been identified and upper limits on the neutrino flux from the HAWC observations have been set.

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