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Search for an enhanced emission of neutrinos from the Southern Sky with the ANTARES telescope

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Compelling evidence of the existence of cosmic neutrinos has been reported by the IceCube collaboration. Some features of this signal could be explained by a Northern/Southern sky asymmetry of the flux. This possible asymmetry would be related to the presence of the bulk of our Galaxy in the Southern sky.

The ANTARES neutrino telescope, located in the Mediterranean Sea, consists of a three dimensional array of 885 10-inch photomultiplier tubes distributed along twelve vertical lines. Its effective area and its good exposure to the Southern Sky would allow to constrain an enhanced muon neutrino emission from extended sources.

A signal region around the largest accumulation of events from the IceCube HESE is defined; the background from atmospheric events is estimated looking at data from off-zones for which ANTARES has the same exposure as for the signal region. The ANTARES sensitivity to such a flux has been computed. The results of the analysis after unblinding will be presented.

Collaboration

ANTARES

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