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Search for point-like neutrino sources over the Southern Sky with the ANTARES and IceCube neutrino telescopes

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A search for cosmic neutrino point-like sources using the ANTARES and IceCube neutrino telescopes over the Southern Hemisphere is presented. The ANTARES data was collected between January 2007 and December 2012, whereas the IceCube data ranges from April 2008 to May 2011. Clusters of muon neutrinos over the diffusely distributed background have been looked for by means of an unbinned maximum likelihood maximisation. This method is used to search for an excess of events over the whole Southern Hemisphere assuming an E-2 source spectrum. A search over a pre-selected list of candidate sources has also been carried out for different source assumptions: spectral indices of 2.0 and 2.5, and energy cutoffs of 1 PeV, 300 TeV and 100 TeV. No significant excess over the expected background has been found, and upper limits for the candidate sources are presented compared to the individual experiments.

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