

Search for time and space correlations between ANTARES data and IceCube high energy neutrino events

We present a search for ANTARES neutrino events in spatial and temporal coincidence with IceCube High-Energy Starting Events (HESE) reconstructed as track events and Extremely High-Energy (EHE) through-going muon neutrinos. This analysis uses a maximum likelihood ratio approach. All ANTARES neutrino flavors yielding track or cascade events are considered. Each IceCube event direction is treated as potential transient neutrino source direction while the neutrino burst duration and the number of ANTARES signal events are obtained as those maximising the likelihood. No significant time correlation are detected for flare durations between 0.1 and 120 days and upper limits on the neutrino fluence are provided.

This study provides an effective way to acquire information on the possible origin of the IceCube astrophysical signal from transient sources.

Authorship annotation

for the ANTARES collaboration

Session and Location

Wednesday Session, Poster Wall #195 (Ballroom)

Poster included in proceedings:

yes

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Track Classification: Poster (participating in poster prize competition)