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Search for a neutrino flux from the Fermi Bubbles with the ANTARES telescope

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The Fermi Bubbles are two giant lobes of γ-ray emission above and below the Galactic Center. Whereas the origin of the observed γ-ray flux remains obscure, the measurement of a neutrino flux from the Fermi Bubbles could distinguish between leptonic and hadronic emission scenarios.
Such a search for a neutrino signal from the Fermi Bubbles has been performed with the ANTARES neutrino telescope in the Mediterranean Sea using four years of data. The search has aimed for charged current muon neutrino interactions, which produce muons with long tracks in the detector and therefore have an angular resolution of well below one degree. Thanks to their vast extension the Fermi Bubbles are also an excellent target for shower-like neutrino interaction channels with limited angular resolution. The results obtained from the track analysis will be presented together with an outlook on the sensitivity that can be achieved with a combined analysis of track- and shower-like events using six years of ANTARES data.

Collaboration

ANTARES

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