

Searches for point-like sources of cosmic neutrinos with 13 years of ANTARES data

Monday 19 July 2021 19:18 (12 minutes)

The main goal of the ANTARES neutrino telescope is the identification of neutrinos from astrophysical sources. Thanks to its location in the Northern hemisphere, ANTARES can rely on an advantageous view of the Southern Sky, in particular for neutrino energies below 100 TeV. This feature, combined with a very good angular resolution for high-quality selected events, makes the telescope an excellent tool to test for the presence of point-like sources, especially of Galactic origin. In ANTARES, track-like events (mainly resulting from ν_μ charged current – CC – interactions) are reconstructed with a median angular resolution of 0.4° while for shower-like events (mainly coming from ν_e CC and all-flavour neutral current – NC – interactions) a median angular resolution of 3° is achieved. The ANTARES Collaboration published the result of the search for cosmic point-like neutrino sources using track-like and shower-like events collected during nine years of data taking [Phys. Rev. D96 (2017) 082001]. In this contribution, the update to this analysis using a total of 13 years of data recorded between early 2007 and early 2020 (3845 days of livetime) is presented. Moreover, the results of the dedicated searches for neutrino candidates from the tidal disruption events AT2019dsg and AT2019fdr, recently indicated as the most likely counterparts of two high-energy IceCube neutrinos, IC191001A and IC200530A, are reported.

Keywords

ANTARES; neutrino, point-like sources

Collaboration

Antares

other Collaboration

Subcategory

Experimental Results

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Session Classification: Discussion

Track Classification: Scientific Field: NU | Neutrinos & Muons