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Probing neutrino yield from different gamma-ray burst populations using the entire ANTARES data set

While the evidence of high-energy neutrinos was established a decade ago and confirmed independently by the observation of an ultra-high-energy neutrino recently announced, the origin of these neutrinos is not yet fully identified. Gamma-ray bursts (GRBs) have long been one of the most promising candidate emitters of such neutrinos. Despite not having led to a significant detection in neutrinos so far, the observations were focusing on GRBs that were bright in gamma rays. Dividing the GRBs detected so far in various subpopulations based on their signal in gamma rays and searching for neutrinos from each of the subpopulations separately may lead to more relevant constraints of the sources. The ANTARES telescope offers a great opportunity to test this assumption because of the more than 15 years of data that were collected. In this contribution, we present the sensitivity to different subpopulations of GRBs and describe the various efforts that will lead to the first catalogue of neutrino constraints from GRBs.

Collaboration(s)

ANTARES

Authors: KOUCHNER, Antoine; W DE WASSEIGE, Gwen (UCLouvain); SCARNERA, Marco; LAMOUREUX, Mathieu (UCLouvain)

Presenter: SCARNERA, Marco

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