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ANTARES: 15 years of cosmic neutrino source searches

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ANTARES, an observatory for high-energy neutrinos located below the surface of the Mediterranean Sea, finished its observational mission in February 2022 after operating for 15 years. Positioned strategically in the Northern hemisphere and equipped with exceptional angular resolution, it was well-suited for its main goal: identifying the sources of cosmic neutrinos, particularly in surveying the southern celestial sphere for galactic neutrino objects.

Numerous searches aimed at identifying neutrino sources were performed using ANTARES data. This involved scrutinizing the sky for events consistent with the point-source hypothesis, without bias from electromagnetic observations, as well as targeting astrophysical catalogs provided by multi-messenger experiments. Additionally, ANTARES employed a stacking method, grouping similar astrophysical objects to establish constraints on neutrino emissions from various source classes. Moreover, to enhance discovery potential, joint analyses with IceCube were conducted.

These searches performed throughout ANTARES' entire lifespan have yielded noteworthy findings, which are summarised in this contribution.

Primary author: ILLUMINATI, Giulia

Presenter: ILLUMINATI, Giulia

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