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Studying the AGN Radio and Neutrino correlation

Neutrinos travel nearly unattenuated over cosmological distances making them an excellent messenger to study high-energy processes occurring in the universe. IceCube, the world's largest and most sensitive astrophysical neutrino detector, reported a high-energy neutrino event on 22 September 2017 which was found to be coincident with a flaring blazar, TXS 0506+056. This first multi-messenger observation hinted at blazars being sources of observed astrophysical neutrinos and raised a need for extensive correlation studies to properly understand which blazars are neutrino sources. Here, we present a correlation analysis between 15GHz radio observations of active galactic nuclei reported in the MOJAVE XV catalog and IceCube detector data. We also discuss the implications of this analysis on the future of understanding the sources of astrophysical neutrinos using multi-messenger studies.

Mini-abstract

Stacking analysis of 10 years of IceCube data in the direction of AGN reported in MOJAVE XV catalog.

Experiment/Collaboration

IceCube Collaboration

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