

High-energy neutrinos from FRII-type galaxies induced by gamma-ray interactions with the gas and dust at the source

Abstract content

Nowadays, there is a increasing number of neutrino telescopes dedicated to open and explore this astronomical window. Recently, the ICECUBE observatory detected several extraterrestrial PeV neutrino events whose origin is unknown. Active Galactic Nuclei with gamma ray emission are found among the probable candidates of these events. In this work, a particle physics mechanism for the production of high-energy neutrinos in AGN's is explored. In this process, neutrinos are produced by the interactions of gamma radiation of the AGN with the gas and dust at the source and its surroundings. Limits on the diffuse neutrino flux from AGN's arising from the above mechanism will be presented. It will be shown that the neutrino flux arising from this channel is too small in order to be detected by the modern neutrino telescopes and can not be the source of the PeV neutrino events detected recently by ICECUBE.

Summary

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