

Probing X-ray bright blazars as sources of high-energy astrophysical neutrinos with IceCube

Friday 17 June 2022 09:30 (15 minutes)

X-ray emission from blazars can be a useful tool to constrain their neutrino flux, assuming hadronic gamma-rays cascade down due to absorption inside source and secondary pair production. This approach was useful in disfavoring a single zone model for high-energy neutrino emission from the blazar TXS 0506+056, and more recently in the case of FSRQ PKS 1502+106 to hint at the presence of a hadronic component during its quiescent and flaring states. In this work, we test the neutrino emission potential of 1000 (soft) X-ray bright blazars by performing an untriggered search for neutrino flares from their direction in 10 years of IceCube data. We stack all flares from a source location to boost the significance of time-dependent emission, and perform population tests for FSRQs and BL Lacs in our catalog using the binomial test statistic.

Authors: SHARMA, Ankur; O'SULLIVAN, Erin

Presenter: SHARMA, Ankur

Session Classification: Sektionen för elementarpartikel och astropartikelfysik

Track Classification: Parallel session: partikelsektionen