

# A model-independent analysis of neutrino flares detected in IceCube from X-ray selected blazars

*Friday 16 July 2021 19:18 (12 minutes)*

Blazars are among the most powerful steady sources in the Universe. Multi-messenger searches for blazars have traditionally focused on their gamma-ray emission, which can be produced simultaneously with neutrinos in photohadronic interactions. However, X-ray data can be equally vital to constrain the SED of these sources, since the hadronically co-produced gamma-rays could get absorbed by the ambient photon fields and cascade down to X-ray energies before escaping. In this work, we present an untriggered, time-dependent analysis of neutrino flares from the direction of X-ray selected blazars using 10 years of IceCube data. A binomial test is performed on the population to reveal if a subcategory of sources has statistically significant emission. The sources are selected from RomaBZCat, and the p-values and best-fit flare parameters are obtained for each source using the method of unbinned likelihood maximisation.

## Keywords

AGN; Blazars; IceCube; X-rays from blazars; Neutrino flares; multi-messenger

## Collaboration

IceCube

## other Collaboration

## Subcategory

Experimental Results

**Primary authors:** SHARMA, Ankur (Uppsala University); Dr O'SULLIVAN, Erin (Uppsala University)

**Presenter:** SHARMA, Ankur (Uppsala University)

**Session Classification:** Discussion

**Track Classification:** Scientific Field: MM | Multi-Messenger