

Abstract Submitted
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High-energy neutrino emission from blazar flares FOTEINI OIKONOMOU, European Southern Observatory / Technical University of Munich — Blazar flares are periods of enhanced high-energy neutrino production according to many theoretical models. Additionally, from an experimental point of view, searches for neutrino emission in temporal coincidence with brief electromagnetic flux enhancements allow increased sensitivity due to being nearly background-free. An interesting indication of neutrino emission during a blazar flare came with the detection of the high-energy neutrino IC170922A in the direction of the blazar TXS 0506+056 during a gamma-ray flare in 2017, which was the first association of a high-energy neutrino with an astrophysical source inconsistent with arising by chance at the 3 sigma level. Motivated by the above considerations, we have calculated the expected high-energy neutrino emission from recently observed, multi-wavelength, blazar flares in the field of view of IceCube. In this talk, I will present the results of our study and describe how the neutrino signal depends on source properties (including the source luminosity, doppler factor, magnetic field strength, presence of external photon fields, and unknown baryon content of the blazar jet) within a standard lepto-hadronic framework. I will also discuss the sensitivity of future neutrino observations to the physical conditions in blazar jets.

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