

# Multi-wavelength and neutrino emission from blazar PKS 1502+106

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In July of 2019, the IceCube experiment detected a high-energy neutrino from the direction of the powerful quasar PKS 1502+106. I discuss the results of multi-wavelength and multi-messenger modeling of this source, using a fully self-consistent one-zone model that includes the contribution of radiation fields external to the jet. Three distinct activity states of the blazar can be identified: one quiescent state and two flaring states with hard and soft gamma-ray spectra. All three states can be described by the same leptohadronic model, which also predicts a substantial neutrino flux. These results are compatible with the detection of a neutrino during the quiescent state, based on event rate statistics. The soft X-ray spectra observed during bright flares strongly suggest a hadronic contribution, which can be interpreted as additional evidence for cosmic ray acceleration in the source independently of neutrino observations.

## Keywords

PKS 1502+106; blazars; AGN; IceCube; leptohadronic modeling

## Collaboration

## other Collaboration

## Subcategory

Theoretical Results

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