

Statistical properties of flux variations in blazar light curves at GeV and TeV energies

Friday 16 July 2021 19:18 (12 minutes)

Despite numerous detections of individual flares, the cause of the rapid variability observed from blazars remains uncertain. Using Bayesian blocks and the HOP algorithm, we characterize all significant flux variations in a set of light curves and determine the statistical properties of the rise and decay behavior in order to constrain the physical mechanisms driving blazar variability. Long-term gamma-ray light curves of TeV-bright blazars observed with the First G-APD Cherenkov Telescope (FACT) are compared to those of GeV-bright blazars observed with the Fermi Gamma-ray Space Telescope (Fermi-LAT). Furthermore, we test for time-reversal invariance which is expected if the light curves can be described by a stochastic model such as the Ornstein-Uhlenbeck process.

Keywords

AGN; blazars; variability

Collaboration

other (fill field below)

other Collaboration

FACT

Subcategory

Experimental Results

Primary authors: WAGNER, Sarah (University of Würzburg); DORNER, Daniela (Universität Würzburg); Prof. MANNHEIM, Karl (Universität Würzburg)

Presenter: WAGNER, Sarah (University of Würzburg)

Session Classification: Discussion

Track Classification: Scientific Field: GAI | Gamma Ray Indirect