Confronting observations of VHE gamma-ray blazar flares with reconnection models

J. Jormanainen, T. Hovatta, E. Lindfors, I. Christie, M. Petropoulou, I. Liodakis

Executive summary

What is this contribution about?
In this contribution we have studied the possibility of using observations of very high energy gamma-ray flares from blazars to constrain the free parameters of relativistic reconnection models.

Why is it relevant / interesting?
Several simulations have been performed in the past to explain this extremely fast VHE variability but they have not been systematically compared with the observed data, which is what we attempt to do.

What have we done?
We first collected observed parameters from the literature to constrain the free simulation parameters to a realistic range and ran a set of simulations, which we compared with the observed data using various methods that try to evaluate the simulated vs observed flux amplitudes and time scales.

What is the result?
As a preliminary result we have found a range of simulation parameters that can produce light curves that resemble the observed data.