

Multiwavelength study of blazars

We make use of a supervised machine-learning algorithm based on Logistic Regression (LR) to select TeV blazar candidates from the 4FGL-DR2/4LAC-DR2, 3FHL, 3HSP, and 2BIGB catalogs. LR constructs a hyperplane based on a selection of optimal parameters, named features, and hyperparameters whose values control the learning process and determine the values of features that a learning algorithm ends up learning, to discriminate TeV blazars from non-TeV blazars. The second work is about SED. Major Atmospheric Gamma Imaging Cherenkov Telescopes (MAGIC) published a dataset collected through an extensive multi-wavelength campaign organised between 2016 December and 2017 June for Mrk 421. A VHE flare observed on MJD 57788 (2017 February 4). In this work we used one-zone SSC model, two-zone model and Spine/Layer model to discuss the origin of this VHE flare. The results show that this γ -ray flare can be reproduced by seed photons (produced from the layer/spine) being IC scattered by the nonthermal electrons within the spine/layer.

Primary authors: Mr CHEN, Guohai (Guangzhou University); Mr ZENG, Xiangtao (Guangzhou University); Dr ZHU, Jingtian (Guangzhou University); Prof. PEI, zhiyuan (Guangzhou University)

Co-author: FAN, Junhui (Guangzhou University)

Presenter: Mr ZENG, Xiangtao (Guangzhou University)