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FACT - TeV Flare Alerts Triggering Multi-Wavelength Observations

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Active galactic nuclei show variability on time scales ranging from minutes to decades. The radiation from these extreme objects spans many orders of magnitude along the whole electromagnetic spectrum. It shows two peaks, where for the subgroup of blazars the first peak is in the radio to x-ray regime, while the second peak is in the gamma-ray regime. Due to the extreme variability and the wide spectral range, simultaneous multi-wavelength observations are vital to understand the underlying physics. Furthermore, long-term monitoring is crucial to obtain an unbiased data sample.

While for the measurements of the low-energy peak, many instruments are available, the data at TeV energies are sparse. The First G-APD Cherenkov Telescope (FACT) is a gamma-ray telescope dedicated to the long-term monitoring of bright TeV blazars. Operational since October 2011, it has collected more than three years of data from a dedicated sample of sources. The results of an automatic quick look analysis are publicly available on a website the same night. Based on this, other instruments are informed in case of a high flux state and target-of-opportunity observations are carried out. In the previous year, seven flare alerts have been sent to the community and several periods of strong variability have been observed for the blazars Mrk 421 and Mrk 501.

Collaboration

FACT

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