

Looking for a repeating flaring pattern in Markarian 421, from X-ray to gamma ray

Markarian 421 is the brightest high-frequency-peaked BL Lac (HBL) observed in X-rays and gamma rays. Its radio jet, observed at a resolution below milliarcsecond with the VLBA, shows four stationary components. Interpreting these components as four stationary shocks, a distinct variability pattern is expected to be observed each time a strong perturbation propagates through the jet. Such a repeating pattern has previously been noticed in X-rays with a significance above 3 standard deviations. Preliminary results of a similar study applied to gamma-ray data will be shown, combining long-term very-high-energy datasets from VERITAS and FACT; results from Fermi-LAT observations and a 2020 radio VLBA campaign will also be presented. Finally, some of the implications of successive shocks in our current view of AGN jets emission and particle acceleration will be discussed.

Primary authors: HERVET, Olivier (UCSC); VERITAS COLLABORATION

Presenter: HERVET, Olivier (UCSC)

Session Classification: Contributed posters