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Unbiased Monitoring of Active Galactic Nuclei in Gamma Rays

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To understand extremely variable sources like Active Galactic Nuclei, unbiased monitoring is of great importance. Often multi-wavelength observations are triggered by flaring activities of the sources which biases the overall data sample towards higher fluxes. Studying flux correlations between different wavelengths or flux distributions, an unbiased data sample is crucial. In the GeV energy range, Fermi-LAT is continuously monitoring the MeV-GeV-sky with a large field of view. At TeV energies, different monitoring programs are available. While for large imaging air Cherenkov telescopes the time dedicated to monitoring is limited, FACT and HAWC dedicate their observation time to unbiased monitoring.

Observing a small sample of bright blazars at TeV energies as much as possible, FACT has collected an unprecedented data sample of more than 14700 hours of physics data. For each of the bright, monitored sources, a total of 1900 hours to 3200 hours of physics data are available. Per night, the sources are observed between 40 minutes and 7 hours depending on their visibility. This provides the possibility to probe time scales from minutes to years. Comparing light curves, variability characteristics and flux distributions from Fermi-LAT and FACT allows for constraining the mechanisms responsible for the gamma-ray emission at GeV and TeV energies.

The presentation will summarize results from an unbiased data sample from more than eight years of monitoring.

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