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FACT - Multi-wavelength and Multi-messenger Studies with the FACT Telescope

The First G-APD Cherenkov Telescope (FACT) is located at an altitude of 2200 meters a.s.l. on the island of La Palma. It was built to monitor bright blazars in the TeV energy range. In addition, FACT carries out follow-up observations of multi-wavelength and multi-messenger alerts. Its camera, which is based on silicon-based photosensors, allows observations during strong moonlight. The operation is automatic and remote, enabling a response to alerts within seconds to minutes. Since observations began in October 2011, 15.000 hours worth of data have been collected, of which about 25 hours were taken during automatic follow-up observations of transient alerts since May 2019.

In total, FACT followed more than 65 multi-wavelength and multi-messenger

alerts, mostly triggered by blazar flares, gamma ray bursts, and high-energy neutrino events. Based on these follow-up observations, multi-band spectral energy distributions, light curves and correlations with multi-wavelength and multi-messenger data are studied. The data provide constraints for emission models and for the attenuation of gamma rays by photon-photon pair production in the low-energy extragalactic background radiation. The poster summarises the multi-wavelength and multi-messenger program of FACT from more than ten years of observations.

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