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Monitoring TeV Gamma-ray Sources for Flaring States with HAWC

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The flux of many TeV gamma-ray emitters exhibits time variability. Detection of these flaring states across multiple wavelengths will lead to a better understanding of the acceleration processes occurring in the source. The High-Altitude Water Cherenkov (HAWC) Observatory is an extensive air-shower detector located near Pico de Orizaba in Mexico which is sensitive to TeV gamma rays. Designed as a survey instrument, the HAWC detector has a large field of view and nearly 100% uptime. This makes HAWC an ideal instrument to monitor sources for transient flaring states. We will present a method of monitoring sources using a Bayesian blocks algorithm to detect changes in the flux and report alerts in real time. We also discuss the sensitivity of the method using data from the construction phase of HAWC.

Primary author: Mr WISHER, Ian (University of Wisconsin - Madison)

Presenter: Mr WISHER, Ian (University of Wisconsin - Madison)

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