Contribution ID: **16** Type: **Oral report**

A real-time monitor on extragalatic tranisents with the LHAASO-WCDA

With high duty cycle and wide aperture, the Large High Altitude Air Shower Observatory - Water Cherenkov Detector Array (LHAASO-WCDA) can conduct an unbiased gamma-ray sky survey in the energy range from a few hundred GeV to 100 TeV. The sensitivity of WCDA is as high as a few percent of Crab units, which allows us to monitor the VHE variability of blazars. The LHAASO Collaboration has developed an online monitoring program to monitor the extragalactic VHE flare in the WCDA’s field of view. Once a flare exceeding the threshold is detected, an alert will be sent to other instruments automatically, and a follow-up multiwavelength observation could be carried out. After the entire system was set up by the end of 2023, a number of flares from the direction of active galactic nucleus source 1ES 1959+650 and IC 310 have been detected. These events have also attracted widespread attention and subsequent observations within the community. In this talk, I will introduce the system operation, including candidate sources, the methods, and current status of the monitor, as well as some astrophysical implications.

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Track Classification: 中微子物理、粒子天体物理与宇宙学