

Temporal resolution of transient sources with LST-1: application to HESS J0632+057(poster)

Tuesday, 26 October 2021 18:00 (10 minutes)

The Cherenkov Telescope Array (CTA) prototype Large-Sized Telescope (LST-1) was inaugurated in 2018 and, after its commissioning, it is progressively entering the scientific data taking phase. In this contribution, we present a dedicated study on the capability of LST-1 to probe the very high energy (VHE) emission from galactic transient sources. Making use of numerical simulations of the VHE flux profiles for selected cases, we constrain the minimum time required to obtain a significant detection of the source, requiring a test statistics $TS \geq 4$ for every flux point in the simulated source light curve. We apply our algorithm to the gamma-ray binary system HESS J0632+057. Our results suggest that the minimum time-bin in HESS J0632+057 obtained with the LST-1 would be a few minutes at the maximum flux phase (0.3-0.4 and 0.6-0.8), whereas at the minimum flux phase (0.4), it would be of a few hours. We briefly discuss the timing capabilities of LST-1 for galactic transient events.

Please choose the session this abstract belongs to

Galactic sources

Primary author: AGUASCA-CABOT, Arnau (Universitat de Barcelona)

Co-authors: RIBÓ, Marc (Universitat de Barcelona); BORDAS, Pol (Universitat de Barcelona)

Presenter: AGUASCA-CABOT, Arnau (Universitat de Barcelona)

Session Classification: Session 2