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Next-day data processing for the LST-1 and MAGIC Cherenkov Telescopes

The first CTAO Large-sized (LST-1) and MAGIC telescopes are two Imaging Cherenkov telescope (IACT) systems located at the Roque de los Muchachos Observatory on La Palma, Canary Islands. Rapid availability of quality data products to both collaborations is crucial for physics alerts, scheduling, and data quality assurance. Additionally, the large size of the raw data makes its transmission to offsite data centers within a short time window challenging.

Onsite analysis (OSA) pipelines have been operational for MAGIC (since 2012) and LST-1 (since 2021). Both pipelines automatically analyze data using a low level analysis chain. These data are the input for the daily checks performed on the data and the fast analysis activities. In the case of MAGIC, an automatic analysis chain also calculates the observed sources' detection significance, spectra, and light curves. These last steps of the analysis are also currently being included for LST-1.

The poster describes the programs´ logic, details their performances, and illustrates the lessons learned and perspectives for the future.

Collaboration(s)

LST and MAGIC Collaborations

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