

# An alternative method to monitor the telescope pointing: application to LST-1

Presentation of this poster

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Use stars in the camera FoV as a monitoring source

- Alternative method that does not require further hardware modifications or specific observations: we can apply to archival data and to real-time observations
- Can have **several applications, both online and offline**: measure and monitor
  - pointing accuracy and pointing systematics
  - optical properties: PSF and mirror alignment
- Now studying its application as a high-frequency monitoring of the pointing systematics, by using properly cleaned Cherenkov events
- Tool potentially applyable to other types of telescopes within the CTA, even when they are not equipped with specific devices to monitor the pointing accuracy.



*Fig 1:* Image obtained during LST-1 data taking before and after cleaning the events from the Cherenkov showers (left and right panel respectively). On the cleaned image, the position of the stars in the field of view as obtained by stars catalogs at the time of observations are reported.

### Luca Foffano

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### **Pointing direction reconstruction**



The vertical camera displacement in the camera frame as measured as a function of time over two data runs taken on 28/02/2020. Its dependence on the zenith angle of the observation – reported with the color scale – is due to the contribution of the weight of the camera to its position with respect to the optical axis of the telescope, and it is in agreement with the results obtained with other methods. Statistical errors are included, systematic errors under study.

### Luca Foffano

of the star