Contribution ID: **829** Type: **Poster**

"Star coverage", a simple tool to schedule an observation when FOV rotation matters

Friday 16 July 2021 19:18 (12 minutes)

During a tracking observation, every telescope with an alt-azimuthal mount shows a rotation in the field of view (FoV) due to the diurnal motion of the Earth. The angular extension of the rotation depends mainly on the time-length of the observation, but also on the latitude and the telescope's pointing direction, as it is determined by the evolution of the parallactic angle of the target.
In many cases, the rotation of the FoV can be exploited to assess some optomechanical properties of the telescope, e.g. the alignment of the optical elements or the motors' precision during the tracking. As a consequence, it could happen that a proper simulation of the FoV rotation, considering the observable range of the telescope, is crucial to program an observation aiming at the calibration of the whole system.
We present a tool to simulate the apparent rotation of the FoV, calculating the actual "star coverage"exploitable for scientific goals. Given the FoV and the pointing direction, the software calculates the angular extension of the rotation, considering only the stars observable by the telescope below the magnitude limit. This tool will be adopted to schedule the pointing calibration runs of the innovative ASTRI-Horn Cherenkov telescope, developed by INAF for gamma-ray ground-based astronomy, but with the potentiality to produce sky images as an ancillary output, using the so-called Variance method. By exploiting the FoV rotation with the Variance method, the critical assessment of the camera axis can be successfully performed.

Keywords

FoV rotation; simulation; stars; variance; calibration; observation; schedule;

Collaboration

other (fill field below)

other Collaboration

ASTRI

Subcategory

Experimental Methods & Instrumentation

Primary author: IOVENITTI, Simone (Università degli Studi di Milano / INAF)

Co-author: Dr SIRONI, Giorgia (INAF - Osservatorio Astronomico di Brera)

Presenter: IOVENITTI, Simone (Università degli Studi di Milano / INAF)

Session Classification: Discussion

Track Classification: Scientific Field: GAI | Gamma Ray Indirect