



Contribution ID: 298

Type: **Poster contribution**

FACT – Calibration of Imaging Atmospheric Cerenkov Telescopes with Muon Rings

Saturday 1 August 2015 15:30 (1 hour)

The First G-APD Cherenkov Telescope (FACT) is an Imaging Air Cherenkov Telescope (IACT) located on the Canary Island of La Palma.

Its target is to provide long term monitoring of stellar objects like Active Galactic Nuclei.

FACT is the first IACT to use Silicon Photomultipliers instead of conventional PMTs.

Therefore studying the detector properties is especially important.

An event class that can offer valuable insight in the detector are Muon rings.

These images are created by single muons that hit the mirror of the telescope.

Because their unique shape one can use shape recognition techniques like the Hough transform to identify these events.

The well-known properties of muon rings and their small photon arrival time distribution allow to estimate the time resolution, photon detection efficiency and point spread functions of the telescope.

In this contribution the methods used to extract the muons will be presented.

Also the first results including the time resolution of FACT and the calibration of the Monte-Carlo simulations are shown.

Collaboration

FACT

Registration number following "ICRC2015-I"

190

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Session Classification: Poster 2 GA

Track Classification: GA-EX