ICRC2015

ICRC
The Astroparticle Physics Conference
34th International Cosmic Ray Conference
July 30 - August 6, 2015
The Hague, The Netherlands

Contribution ID: **252** Type: **Poster contribution**

The Instrument Response Function Format for the Cherenkov Telescope Array

Saturday, 1 August 2015 15:30 (1 hour)

The Cherenkov Telescope Array (CTA) is a future ground-based observatory (with two locations, in the northern and southern hemispheres) that will be used in the study of the very-high-energy gamma-ray sky. CTA observations will be proposed by external users or initiated by the observatory, with the resulting measurements being processed by the CTA observatory and the reduced data made accessible to the corresponding proposer. Instrument Response Functions (IRFs) will also be provided to convert the quantities measured by the array(s) into relevant science products (i.e. spectra, sky maps, light curves).

As the response of the telescopes depend on many correlated observational and physical quantities (e.g. gamma-ray arrival direction, energy, telescope orientation, background light, weather conditions etc.) the CTA IRFs could grow into increasingly larger and larger file sizes, which can become unwieldy or impractical for use in specific observation cases. To this end, a customised IRF format (complying with the FITS standard) is under development to reduce the IRF file sizes into more manageable levels.

This proposed format is attractive due to its ability to store multiple parameters (in chosen ranges) relating to instrument performance in both binned and parameterized formats, for various array and observing conditions. Details of the format, preliminary design and testing of the prototype will be provided below.

Collaboration

CTA

Registration number following ”ICRC2015-I/”

269

Primary author: Dr WARD, John E (IFAE)

Co-author: Dr RICO, Javier (IFAE)

Presenter: Dr WARD, John E (IFAE)

Session Classification: Poster 2 GA

Track Classification: GA-IN