



Contribution ID: 1183

Type: **Poster contribution**

Statistical biases of spectral analysis with the ON-OFF likelihood statistic

Tuesday, 4 August 2015 16:00 (1 hour)

Spectral extraction in the VHE range is usually performed using the ON-OFF likelihood statistics which is based on the profile likelihood technique. The latter is known to lead to inconsistent estimators in some situations. We present here a systematic MC study of the distribution of fitted spectral parameters for typical observations with the HESS observatory and show that, in some conditions, spectral extraction yields inconsistent estimators. We discuss some techniques to alleviate this effect and the impact on the search for spectral cutoffs in the very low statistic regime.

Collaboration

H.E.S.S.

Registration number following "ICRC2015-I"

842

Primary author: Mrs JOUVIN, Lea (APC)**Co-authors:** Mr LEMIERE, Anne (APC); Mr VAN ELDIK, Christopher (ECAP); Mr OYA, Igor (Humboldt-Universität); Mr TERRIER, Regis (APC); OHM, Stefan (Desy)**Presenter:** Mrs JOUVIN, Lea (APC)**Session Classification:** Poster 3 GA**Track Classification:** GA-EX