



Contribution ID: 696

Type: **Oral contribution**

## Revisiting the starburst galaxy NGC 253 with H.E.S.S.

*Thursday 30 July 2015 11:00 (15 minutes)*

NGC 253 is one of only two starburst galaxies that is found to emit  $\gamma$ -ray emission from hundreds of MeV to multiple TeV energies. An accurate measurement of the GeV and TeV spectra is crucial to determine the underlying particle accelerators, to probe the dominant emission loss mechanism(s) and to probe the importance of cosmic-ray interaction and transport. The precision of the measurement of the  $\gamma$ -ray emission of the starburst galaxy NGC 253 published in 2012 by H.E.S.S. was dominated by the large associated systematic uncertainties.

With the improved understanding of the response of the H.E.S.S. experiment, we present an evaluation of systematic uncertainties of the measurement. We show that they are of the same order of magnitude as the statistical uncertainties. The spectral analysis is discussed for H.E.S.S. separately as well as in combination with the Fermi-LAT measurement. No significant deviation from a single power law is observed. The obtained flux parameters are found to be consistent with the previous measurement within systematic uncertainties. However a  $\sim 35\%$  enhanced flux is now observed. The results of the combined spectral fit strengthen the conclusions presented in Abramowski et al. (2012).

### Collaboration

H.E.S.S.

### Registration number following "ICRC2015-I"

569

**Authors:** HOISCHEN, Clemens (University of Potsdam); Prof. VÖLK, Heinrich J. (MPI-K); OHM, Stefan (DESY)

**Presenter:** HOISCHEN, Clemens (University of Potsdam)

**Session Classification:** Parallel GA01 EGAL

**Track Classification:** GA-EX