Contribution ID: **55** Type: **Poster**

Multi-wavelength study of blazars at redshift z>˜1 observed by H.E.S.S.

Tuesday 11 October 2022 10:31 (1 minute)

We present the results of the multiwavelength study of several blazars at redshift z >˜1 that have been observed by the High Energy Stereoscopic System (H.E.S.S.) since 2016 in target-of-opportunity observations, triggered by gamma-ray flaring states detected by the Fermi Large Area Telescope (LAT). We collect data from the Fermi-LAT, SWIFT and H.E.S.S. telescopes and model the broadband spectral energy distributions with both leptonic and hadronic models. The main goals of the project are to identify potential new very-high-energy g-ray blazars belonging to the low-synchrotron-peaked class of blazars and to constrain the evolution of the Extragalactic Background Light (EBL) at redshifts beyond z ˜ 1. A detailed analysis, including multi-wavelength modelling, is presented for the flat-spectrum radio quasar CTA102 (z = 1.032). The source was not detected by H.E.S.S., providing upper limits at > 200 GeV g-rays. We used single-zone, steady-state leptonic and hadronic models to fit the SED of CTA102 and find that they provide acceptable fits. In both cases, the intrinsic spectrum (before EBL absorption) naturally cuts off at a few GeV, where EBL absorption is still negligible. Therefore, the H.E.S.S. upper limits for CTA102 do not allow us to draw conclusions concerning the EBL at redshift z ˜ 1.
Keywords: Galaxies: active, radiation mechanism: non-thermal- relativistic process,
jets: quasars.

Track

AGN

Author: CHIBUEZE, Ogochukwu (NORTH WEST UNIVERSITY, POTCHEFSTROOM, SOUTH AFRICA)

Co-authors: Prof. BOTTCHER, Markus (NORTH WEST UNIVERSITY, POTCHEFSTROOM, SOUTH AFRICA); Dr ZYWUCKA, Natalia

Presenter: CHIBUEZE, Ogochukwu (NORTH WEST UNIVERSITY, POTCHEFSTROOM, SOUTH AFRICA)

Session Classification: Poster session