

# Intranight variability of VHE gamma-ray emission during the outburst of PKS 1510-089 in May 2016

*Wednesday, August 29, 2018 4:45 PM (0:15)*

## Abstract content

PKS 1510-089 is one of only a handful of flat spectrum radio quasars detected in very high energy (VHE,  $E > 100$  GeV) gamma rays. Since the first detection in 2009, despite showing strong variability in the optical and GeV range, no VHE gamma-ray variability could be claimed until a moderate 5-fold increase of the VHE gamma-ray flux was observed in 2015. In May 2016, a major VHE gamma-ray flare was observed from PKS 1510-089 by the H.E.S.S. and MAGIC telescopes. Within  $\sim 5$ h of observations the VHE gamma-ray flux changed by an order of magnitude showing short-term variability features for the first time. Despite a soft intrinsic spectrum and strong absorption in the extragalactic background light, the high flux of the source allowed us to measure the gamma-ray spectrum up to the energy of 0.7 TeV. We will report on the results of those observations as well as of the supporting observations performed in the optical and GeV range. We will also discuss possible explanations for the observed emission.

**Primary author(s) :** Dr. SITAREK, Julian (University of Lodz)

**Co-author(s) :** ZACHARIAS, Michael (North-West University: Potchefstroom, South Africa); DOMINIS PRESTER, Dijana (University of Rijeka); Mr. JANKOWSKY, Felix (Landessternwarte Heidelberg); LINDFORS, Elina (University of TURku); MOHAMED, Mahmoud (University of Heidelberg); SANCHEZ, David (LAPP); TERZIĆ, Tomislav (University of Rijeka)

**Presenter(s) :** Dr. SITAREK, Julian (University of Lodz)

**Session Classification :** Extragalactic Science

**Track Classification :** Extragalactic