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Study of the Variable VHE emission from Markarian 501 with the MAGIC Telescope

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Abstract content

The blazar Markarian 501 (Mrk 501) was observed at energies above 100 GeV with the MAGIC Telescope from May through July 2005. The high sensitivity of the instrument enabled the determination of the flux and spectrum of the source on a night-by-night basis. Throughout our observational campaign, the flux from Mrk 501 was found to vary by an order of magnitude, and to be correlated with spectral changes. Intra-night flux variability with flux-doubling times down to 2 minutes was also observed. The strength of variability increased with the energy of the gamma-ray photons. The energy spectra were found to harden significantly with increasing flux, and a spectral peak clearly showed up during very active states. The position of the spectral peak seems to be correlated with the source luminosity. In the conference, the details of this unprecedented spectral and temporal analysis of Mkn501 observations in the very high energy range will be reported, and the implications of these results will be discussed.

If this papers is presented for a collaboration, please specify the collaboration

MAGIC collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 3 (OG part 2), pages 1057-1060

Primary author(s) : Dr. PANEQUE, David (Max-Planck-Institut für Physik, München, Germany)

Co-author(s) : Dr. BEDNAREK, Wlodek (Division of Experimental Physics, University of Lodz, Poland); Ms. FAGIOLINI, Martina (Dipartimento di Fisica, Università di Siena and INFN sez. di Pisa, Italy); Dr. PICCIOLI, Alessio (Dipartimento di Fisica, Università di Siena and INFN sez. di Pisa, Italy); Dr. STAMERRA, Antonio (Dipartimento di Fisica, Università di Siena and INFN sez. di Pisa, Italy); Dr. TAVECCHIO, Fabrizio (INAF/Osservatorio Astronomico di Brera, Merate, Italy); Dr. WAGNER, Robert (Max-Planck-Institut für Physik, München, Germany); Dr. COARASA, Antonio (Max-Planck-Institut für Physik, München, Germany); PERSIC, Massimo (Dipartimento di Fisica

dell'Università di Udine and INFN sez. di Trieste, Italy); Ms. ALIU, Ester (Institut de Física d'Altes Energies, Barcelona)

Presenter(s) : Dr. STAMERRA, Antonio (Dipartimento di Fisica, Università di Siena and INFN sez. di Pisa, Italy)

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