30th International Cosmic Ray Conference

Contribution ID : **1305** Type : **Oral**

Observation of orbital modulation of the VHE emission from the binary system LS 5039 with HESS

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Abstract content

The binary system LS 5039 was serendipously with the High Energy Stereoscopic system (H.E.S.S.) during the scan of the inner galactic plane in 2004. Deeper observations were carried out in 2005, and brought clear evidence for TeV emission perodicity. This is the highest energy periodic source known so far. The observed flux modulation is attributed to a modulated absorption of the VHE gamma-ray emission of the compact object through pair creation on the stellar photosphere. Spectral modulation is also observed in this system; this might have several origins such as modulation of particle acceleration or reprocessing of high energy photons towards lower energy through cascading. We will present detailed studies of the source variability (flux and spectral shape), the timescales compared to other wavelengths, and briefly review the implications for existing emission models.

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

H.E.S.S.

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. 2 (OG part 1), pages 859-862

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