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A deconvolution technique for VHE gamma-ray astronomy and its application to the morphological study of RXJ1713.7-3946 from the H.E.S.S. observations

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Abstract content

Deconvolution algorithms have been used successfully for optimization/restoration/deblurring of astronomical images in a variety of wavelengths, especially in the optical band (e.g., for HST). We present here an iterative Richardson-Lucy type method designed for treatment of images obtained with the High Energy Stereoscopy System (H.E.S.S.) array of ground-based gamma-ray telescopes. Its application to extended source images, with sufficient signal, yields refined details relevant for the study of correlations with other wavelengths.

In this paper, this algorithm is presented, applied to the supernova remnant shell of RXJ1713.7-3946 and then interpreted in terms either of hadronic or leptonic origin of the observed VHE gamma-ray emission.

If this paper is presented for a collaboration, please specify the 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. 2 (OG part 1), pages 727-730

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