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NON-THERMAL EMISSION FROM KEPLER SNR

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Abstract content

Nonlinear kinetic theory of cosmic ray acceleration in supernova remnants is used to investigate the properties of Kepler's SNR and, in particular, to predict the gamma-ray spectrum expected from this SNR. Observations of the non-thermal radio and X-ray emission spectra as well as theoretical constraints for the total supernova explosion energy are used to constrain the astronomical and particle acceleration parameters of the system. Under the assumption that Kepler's SN is a type Ia SN we determine for any given explosion energy and source distance the mass density of the ambient interstellar medium from a fit to the observed SNR size and expansion speed. This makes it possible to make predictions for the expected gamma-ray flux. Kepler's SNR represents a very promising target for instruments like HESS, CANGAROO and GLAST.

If this papers 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 555-558

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