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MAGNETIC FIELD IN SUPERNOVA REMNANT SN 1987A

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Abstract content

A nonlinear kinetic theory of cosmic-ray acceleration in supernova remnants is employed to investigate the properties of the remnant SN 1987A. It is shown that a large downstream magnetic field 10 mG is required to fit the existing observational data. Such a strong field, together with the strong shock modification due to CR back-reaction, provides the steep and concave radio-emission spectrum and considerable synchrotron cooling of high-energy electrons that diminish their X-ray synchrotron flux below the observed Chandra flux, which has to be considered as an upper limit for non-thermal X-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. 3 (OG part 2), pages 893-896

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