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Theory of nonlinear particle acceleration at shocks and self-generation of the magnetic field

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Abstract content

We present some recent developments in the theory of particle acceleration at shock fronts in the presence of dynamical reaction of the accelerated particles and self-generation of magnetic field due to streaming instability. The spectra of accelerated particles, the velocity, magnetic field and temperature profiles can be calculated in this approach anywhere in the precursor and in the downstream region. The implications for the origin of cosmic rays and for the phenomenology of supernova remnants will be discussed.

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 231-234

Primary author(s) : Dr. BLASI, Pasquale (INAF/Osservatorio Astrofisico di Arcetri & INFN L'Aquila); Dr. AMATO, Elena (INAF/Osservatorio Astrofisico di Arcetri & INFN L'Aquila)

Presenter(s) : Dr. BLASI, Pasquale (INAF/Osservatorio Astrofisico di Arcetri & INFN L'Aquila)

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