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Particle acceleration by multiple parallel shocks

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Abstract content

We present both numerical and semi-analytical results on test-particle acceleration in multiple parallel shocks. We apply a kinetic Monte Carlo code and an eigenfunction expansion method to calculate the distribution functions for electron populations accelerated in subsequent parallel shocks with thickness varying from infinitely thin steps to broader modified structures, for shock speeds ranging from non- to ultra-relativistic. We examine the levels of particle anisotropy at the shocks and produce sample synchrotron spectra. We discuss the implications for AGN and microquasar jets.

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 247-250

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