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Hard particle spectra from parallel shocks due to turbulence transmission

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Abstract content

If taken into account, the transmission of the particle-scattering turbulence –in addition to just the particles– through the shock front can change the effective compression ratio felt by the accelerating particles significantly from the compression of the underlying plasma. This can lead to significantly harder energy spectra than what are traditionally predicted assuming frozen-in turbulence. I consider the applicability and limitations of turbulence transmission scenario in parallel shock waves of different thickness, its consequences in AGN and microquasar environments, and discuss the possible effects to the spectrum of the accelerated particles.

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 251-254

Primary author(s) : Dr. TAMMI, Joni (University College Dublin)

Presenter(s) : Dr. TAMMI, Joni (University College Dublin)

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