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Radiation from internal shocks in magnetized flows

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Abstract content

We consider the internal shock formation in magnetized outflows and we examine the plastic collision between such relativistic blobs taking into account a possible dissipation of magnetic flux. We find that after the collision a large amount of energy is released in thermal form and consequently we assume that this is transferred into protons which obtain a relativistic Maxwellian distribution. The relativistic thermal proton plasma is dense enough to suffer substantial energy losses through proton-proton interactions and thus to transfer its initial energy into photons, electron-positron pairs and neutrinos. We estimate the radiated spectrum by following the evolution of protons, electrons and photons as they interact with each other and with the magnetic field as well.

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. 3 (OG part 2), pages 1179-1182

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