

Abstract Submitted
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Photon-Rich, Relativistic Magnetofluids and Gamma-Ray Bursts

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We describe how a relativistic magnetofluid containing a warm (1-10 keV) blackbody gas may be emitted from some peculiar types of core-collapse supernovae, examine the damping mechanism of the magnetohydrodynamic turbulence that is excited in the expanding fluid (and how this damping differs from what has been postulated for non-relativistic magnetofluids), explain how electron- positron pair creation in the surrounding medium controls the deceleration of the relativistically boosted fluid and regulates the optical depth to electron scattering through it, and summarize the implications of these various pieces of physics for the emission mechanism of gamma-ray bursts.

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