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# Consequences of a hot thermal electron distribution in GRB afterglows

*Friday, 9 July 2021 08:50 (20 minutes)*

The broadband afterglows of gamma-ray bursts provide a wealth of information vital for interpreting these extremely energetic events: the progenitor systems, the hydrodynamics of the GRB, the microphysics of relativistic shocks, and more. A proper understanding of afterglows may even allow GRBs to extend the cosmic distance ladder. However, our interpretation of afterglows is shaped by the models we apply to the observations. The traditional theory of afterglows is based on a pure power law of electrons, but there should also be a hot, thermal population of electrons that don't enter the shock acceleration process. In this talk I will outline the theoretical justification for thermal electrons, and discuss some of their observational consequences: TeV emission, light curves, and decay indices used for closure relations.

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