

Relativistic Self-Similarity and Gamma Ray Bursts

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We discuss recent advances in understanding relativistic self-similar flows, and stress current challenges. We then discuss the phenomenological description of the afterglow of Gamma Ray Bursts as a relativistic blast wave and the relation to hydrodynamic self similar solution. We also discuss uncertainties in shock microphysics which limits our ability to interpret afterglow observations but could perhaps be probed in laboratory experiments.