

”Pulsar Wind” model of early GRB Afterglows

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We develop a model of early GRB X-ray afterglows are dominated by emission from the reverse shock propagating in highly relativistic, highly magnetized wind of a long-lasting central engine, similar to the Pulsar Wind Nebulae. The model reproduces high conversion efficiency of the wind power into radiation (fast cooling regime), afterglow plateaus, flares and abrupt intensity drops. The reverse shock emission in the X-rays and combined forwards and reverse shock emission in the optical explain many puzzling properties of early GRB afterglows.

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