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Interpretation for Gamma-Ray Afterglows in GRB 221009A and GRB 240529A

Friday, 21 March 2025 18:00 (20 minutes)

“We present simulation results for the multiwavelength afterglow lightcurves in GRB 221009A and GRB 240529A

based our time-dependent numerical codes.

The famous BOAT GRB, GRB 221009A, has been interpreted by a very narrow jet and an additional jet component.

The required opening angle to reproduce the very early break in the TeV lightcurve is extremely small.

Here, we present an alternative model with a highly magnetized ejecta and a broken power-law CSM density profile.

Our model succeeds in reproducing the lightcurves with a reasonable jet opening angle.

GRB 240529A show a shallow decay X-ray lightcurve in spite of its large gamma-ray luminosity, which is an exceptional behavior. This GRB afterglow accompanies GeV emission.

We also provide our model fitting for this GRB.”

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