



Contribution ID: 60

Type: **not specified**

TeV Gamma-Ray Afterglow in Shallow Decay Phases of GRBs

Tuesday, September 12, 2023 5:15 PM (15 minutes)

In gamma-ray bursts, X-ray afterglows frequently show a shallow decaying emission in their first few thousand seconds. Possible models for the shallow decay phase are continuous energy injection, late catch-up of lately launched ejecta, the evolution of microscopic parameters, thin wind profile of the circumstellar medium, and so on. Depending on the models, the TeV emission of the early afterglow will show different behaviors. We show model calculations of multi-wavelength lightcurves based on our time-dependent simulation code. The detection of early TeV afterglows will provide a clue to distinguishing the models of the shallow decay phase.

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Session Classification: GRA: Gamma Ray Astronomy

Track Classification: Gamma Ray Astronomy