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## A Pedagogical Introduction of Bayesian Parameter Estimation Method and Its Application in Fitting the Prompt Lightcurves of Gamma-Ray Bursts

Bayesian parameter estimation has been widely used in scientific data processing or model fitting, especially in the field of astronomical research nowdays. There have benn several Python packages (e.g., emcee, PyMC3, etc.) available on PyPI. In this paper the statistics theory of Bayesian parameter estimation and the MCMC (Markov Chain Monte Carlo) sampling algorithm is displayed in a pedagogical way, aiming to help beginners understand and use these packages more directly. As a manner of verification, we programmed our own code of MCMC fitting, and compare the results with that based on the package emcee, it is found that the results are highly consistent with each other. And then we fitted the prompt lightcurves of 46 gamma-ray bursts (GRBs), which present single or multiple pulses. Each pulse is fitted by the fast-rising exponential-decay (FRED) profile. The statistical property of these pulses are analized and compared with previous works.

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