

## **Finding the Best Fit Models of Afterglows of Gamma Ray Bursts**

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Gamma Ray Bursts (GRBs) are one of the strongest and brightest explosions in the universe. They produce an afterglow after the explosion, and there are two types of GRBs: short GRBs, where the afterglow lasts a couple of seconds, and long GRBs, where they last up to a couple of months. We are focusing on the afterglow of GRB130603B. This was a complex, well-observed afterglow with detections in X-ray, optical, and radio, and evidence for a jet break. This was observed using the Swift satellite. We are going to use the fit from GW170817, a structured jet, and apply the same assumption to GRB130603B. The program is going to do Monte Carlo iterations with a data set from GRB130603B to find the best fit line settling on values for the best fit parameters. Our goal is to see if all short GRBs can be fit with same structured jet, or, if not, what range of jet shapes and energies may be needed.