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Neural Networks for Parameter Estimation of Orphan Afterglows in Rubin and Roman Data

The Rubin and Roman telescopes will come online soon and are expected to detect over 1000 “orphan afterglows” per year: broad-band long lasting emission from a gamma-ray burst (GRB), but without the GRB. Having a method to extract the physical parameters of these orphan afterglows will give us a better understanding of the progenitor systems. We start with a model that takes physical parameters of a GRB and computes the spectra and light curves. We will use this physical model to train a neural network to emulate these results in a fraction of the time. The reduced computational costs will allow us to solve the inverse problem: getting parameters from spectra or light curves.

Section

High Energy

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