

Contribution ID: 23

Type: **Oral**

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

Friday, May 16, 2025 5:45 PM (15 minutes)

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

Primary authors: KOON, Damien (Florida Institute of Technology); Dr WARREN, Donald (Florida Institute of Technology); POTHIWALA, Krupa (Florida Institute of Technology)

Presenters: KOON, Damien (Florida Institute of Technology); POTHIWALA, Krupa (Florida Institute of Technology)

Session Classification: High-energy astrophysics