



Department of Physics and Astronomy

FALL 2022 Colloquium Series

“Modeling the Afterglow and Prompt Emission of Neutron Star Mergers”

Hannah Redhead

Sac State Physics Major, Senior Project Talk

Advisor: Rodolfo Barniol Duran

The detection of GRB 170817 has offered a unique insight into the physics of binary neutron star mergers, the production of short gamma-ray bursts (GRBs) jets, and their interaction with external media to produce an afterglow. Using a publicly available model of afterglow light curves, named `afterglow.py`, we will implement Monte-Carlo simulations to generate the afterglow modeling parameters. These parameters will then be used to predict afterglow light curves of similar events at arbitrary observing angles. These predictions will guide our interpretation of future multi-messenger observations of these events.

Thursday, December 8, 2022

4:00 - 5:20PM

MND1015

Open & Free to all students, faculty and public