



Project Title:

Magnetic Reconnection And Explosive Magnetic Energy Release in Nature

Project Reference Code:

UAH-Che

Host Facility:

The University of Alabama in Huntsville

Host Facility Location:

301 Sparkman Dr.
Huntsville, AL 35899
<https://www.uah.edu/>

Project Description:

Besides gravity, magnetic field is one of the main free energy sources stored in stars, pulsars, black holes, and other astrophysical objects. The magnetic energy is released through magnetic reconnection, resulting in violent explosive events, such as solar and stellar flares, flares in black hole accretion disks, and gamma-ray bursts. During these explosive processes, a large amount of charged particles are accelerated to GeV (10^9 eV) even up to PeV (10^{15} eV), and escape from their hosts and propagate in space. This project aims to help the students to understand the basic idea of how magnetic reconnection converts magnetic energy into the kinetic energy of particles.

Disciplines:

Space Plasma and Simulations

Is U.S. citizenship required to participate in this project?

No

Internship Location and COVID-19 related Backup Plan

The internship location is the University of Alabama in Huntsville. Due to the COVID-19 pandemic, we are preparing multiple options to ensure that the internship will take place. We are looking at least at an in-person, hybrid, and fully virtual option. For any in-person component we will ensure that there is adequate physical spacing between workspaces, following all university cleaning protocols.

Name(s) of Mentor(s) and contact information:

Haihong Che (hc0043@uah.edu)

Internship Coordinator/ HR manager:

Dana Waller (dsw0012@uah.edu)

The name and contact information of personnel at the host facility is provided for further assistance with questions regarding the host facility or the project.

Interns will not enter into an employee/employer relationship with the host facility. No commitment with regard to later employment is implied or should be inferred.