

Opportunity Title: Heliophysics Science: Magnetofluid and Kinetic Modeling of Magnetic Reconnection

Opportunity Reference Code: 0047-NPP-NOV23-GSFC-HelioSci

Organization: National Aeronautics and Space Administration (NASA)

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Application Deadline: 11/1/2023 6:00:59 PM Eastern Time Zone

Description: Magnetic reconnection constitutes the most important transport mechanism in collisionless plasmas, such as what is commonly found in space and astrophysical plasmas. In the magnetosphere of the Earth, magnetic reconnection provides the most important coupling mechanism between the solar wind and the Earth's internal magnetic field, providing the energy loading responsible for magnetospheric substorms. Magnetic reconnection is also found in the magnetotail, where magnetic reconnection causes plasmoid formation (the appearance of fast flows) and creates new field-aligned current systems. We use analytical and numerical techniques to study the reconnection process. The large-scale aspects of magnetic reconnection are investigated with analytical and magnetohydrodynamic methods, while the local structure of the dissipation region and remote signatures of the reconnection process are analyzed within kinetic models.

Location:

Goddard Space Flight Center
Greenbelt, Maryland

Field of Science: Heliophysics Science

Advisors:

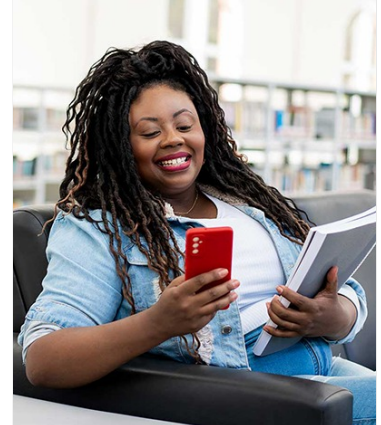
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Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found at: <https://www.nasa.gov/oiir/export-control>.

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);
- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status



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Eligibility Requirements • **Degree:** Doctoral Degree.