Opportunity Title: Applications of NISAR single and multi-frequency data to issues of societal importance
Opportunity Reference Code: 0265-NPP-NOV23-JPL-EarthSci

Organization	National Aeronautics and Space Administration (NASA)
Reference Code	0265-NPP-NOV23-JPL-EarthSci
How to Apply	All applications must be submitted in Zintellect
Application Deadline	11/1/2023 6:00:00 PM Eastern Time Zone
Description	**Description:**

Research opportunities exist within the applied Earth sciences and applications of Earth remote sensing to employ data from the upcoming NISAR mission (https://nisar.jpl.nasa.gov/) to develop and demonstrate methods and products that support social and environmental justice and resiliency to climate change. Recent years have seen an unprecedented expansion in the use of synthetic aperture radar (SAR) for a broad range of basic and applied science topics, in large part due to free and open access to data from the European Space Agency's Sentinel-1 missions. This will only increase in the next few years as the NASA/ISRO NISAR mission (https://nisar.jpl.nasa.gov) provides L-band global land observations augmented by S-band acquisitions over India's areas of interest. It is well-established that much of the SAR processing methods and derived products that have been developed for science are of direct use for operational agencies' monitoring needs, e.g., InSAR measurements of volcanic dome expansion, coseismic fault slip, and subsidence in urban settings. In recognition of the potential value of SAR-derived information to operational agencies and emergency responders, the NISAR Science Team held community-focused workshops that identified priorities, some of which will be met by the OPERA project (https://www.jpl.nasa.gov/go/opera). However, there remain many potential uses of SAR that have not been developed to an operational level or for which the value of SAR has not been recognized or exploited, including the use of multi-frequency SAR and data fusion with multispectral imagery and lidar surveys. This is true, for example, for observations of high societal value related to coastal land resiliency, ecosystem response and adaptation, and disaster management that can support accurate forecast modeling for climate change scenarios. The NASA Postdoctoral Fellowship offers a research opportunity in the investigation and advancement in the applications of SAR, particularly NISAR L-band and S-band data, alone or in combination with data from other sources. Projects can use other SAR data, including but not limited to NISAR-simulated data sets from the UAVSAR sensor (https://uavsar.jpl.nasa.gov/cgi-bin/data.pl), prior to release of NISAR science data. Fellows will present their work at meetings and through peer-reviewed publications so strong English-language skills are needed.

Field of Science:

- Earth 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

Eligibility Requirements

- **Degree:** Doctoral Degree.