Opportunity Title: California fault processes constrained by InSAR and GPS observations
Opportunity Reference Code: 0136-NPP-NOV23-JPL-EarthSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0136-NPP-NOV23-JPL-EarthSci

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

Description Throughout the plate boundary zone, earthquakes respond to each other, transient stresses modulate earthquake occurrence, and tectonic and non-tectonic (e.g., anthropogenic) processes can interact to produce non-steady-state behaviors in the fault and lithosphere system. Spaceborne surface deformation measurements are the primary observations to constrain these complex interactions. Data acquisitions from multiple satellite SAR sensors (e.g, ERS, Envisat, ALOS-1/2, Radarsat, TerrarSAR-X, Cosmo-SkyMed, Sentinel-1A/B etc.) and airborne SAR (e.g. NASA UAVSAR) now allow us to image time-variable deformation with fine spatial resolution over a range of different time scales. A postdoc is sought to relate the spatiotemporal variation of surface deformation from a comprehensive analysis of satellite and airborne interferometric synthetic aperture radar (InSAR) and GPS to infer the slip and mechanical variations of faults, earthquake and anthropogenic sources, landslide processes, and the mechanics and rheology of the lithosphere along the plate boundary zone in California. The candidate will combine improved spatiotemporal deformation maps derived from satellite and airborne InSAR and GPS time series with advanced numerical modeling techniques to better constrain fault slip/locking, source parameters of solid-Earth dynamic events, local stress/strain changes due to tectonic and non-tectonic perturbations, and to constrain models of lithosphere rheology with the ultimate goal of an improved understanding of lithospheric processes and earthquake-cycle dynamics.

Location:
Jet Propulsion Laboratory
Pasadena, California

Field of Science: Earth Science

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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.

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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.