

**Opportunity Title:** Tsunami Source Inversion with Geospatial Measurements

**Opportunity Reference Code:** 0124-NPP-NOV23-JPL-EarthSci

**Organization** National Aeronautics and Space Administration (NASA)

**Reference Code** 0124-NPP-NOV23-JPL-EarthSci

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

**Description** The research will focus on studying major earthquake processes using geospatial measurements, such as high-rate GPS data, seismographs, and GRACE measurements. Modeling earthquake fault parameters for tsunami early detections is the key part of the project. Processing real-time data streams, analyzing historical data sets, and model results are necessary. However, the specific scientific focus of these activities will depend on the qualifications and interests of the incumbent. Applicants should have a recent Ph.D. in geophysics, geodesy, applied mathematics, computational fluid dynamics, or a related field. Skills in Unix/Linux, Matlab and parallel computing are essential. Prior experience with earthquake source inversion models is preferred. Demonstrated proficiency in written and spoken English is also required.

Related publications:

1. Liu, Z., S. Owen, A. Moore (2014), Rapid estimate and modeling of permanent coseismic displacements for large earthquakes using high-rate Global Positioning System data, *Seism. Res. Lett.*, 85(2), doi: 10.1785/0220130174.
2. Xu, Z. and Y. T. Song (2013): Combining the all-source Green's functions and the GPS-derived source for fast tsunami prediction – illustrated by the March 2011 Japan tsunami, *J. Atmos. Oceanic Tech.*, <http://dx.doi.org/10.1175/JTECH-D-12-00201.1>.
3. Song, Y. T., I. Fukumori, C. K. Shum, and Y. Yi (2012): Merging tsunamis of the 2011 Tohoku-Oki earthquake detected over the open ocean, *Geophys. Res. Lett.*, doi:10.1029/2011GL050767. (Nature Highlights on March 8, 2012.)
4. Song, Y. T. (2007): Detecting tsunami genesis and scales directly from coastal GPS stations, *Geophys. Res. Lett.*, 34, L19602, doi:10.1029/2007GL031681.

**Location:**

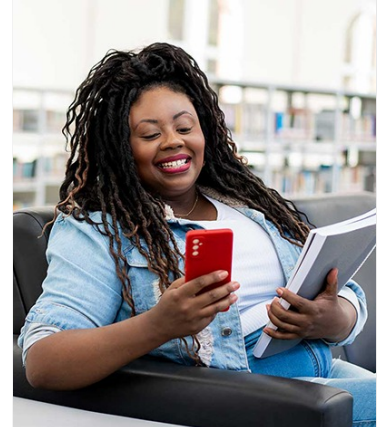
Jet Propulsion Laboratory  
Pasadena, California

**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>.

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.