

**Opportunity Title:** Observing sub-annual mechanics of Antarctic ice streams using short repeat time InSAR

**Opportunity Reference Code:** 0140-NPP-NOV23-JPL-EarthSci

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

**Reference Code** 0140-NPP-NOV23-JPL-EarthSci

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

**Description** Recent results using temporally dense SAR acquisitions from the Cosmo-SkyMed (CSK) constellation have demonstrated the ability to capture the three component surface velocity response of ice streams and ice shelves to forcing from ocean tides. Systematic mapping of this response has the potential to illuminate the basic mechanical characteristics of the streaming ice, the bed-ice interface, and the floating ice. The ice streams/shelves of the Antarctic Peninsula and the Filcher-Ronne system are ideal candidates for such a study given the very large tidal forcing active in these regions. We seek a postdoctoral scholar who will work to combine dense CSK observations (InSAR and speckle tracking) with other available geodetic imaging data to develop comprehensive time series of deformation and to integrate these observations with mechanical models of ice streams and ice shelves. This activity requires a strong interest in furthering both geodetic and glaciology science.

Candidates should have a recent PhD in single processing with preference given to candidates specializing in the analysis of Interferometric Synthetic Aperture data. Knowledge of glaciological principles is highly desired. All candidates should have a strong background in scientific computing (Matlab, Python or equivalent) and remote sensing principles. The selected candidate will work collaboratively with JPL researchers and Caltech faculty to improve the retrieval of 3-D displacement fields from Cosmo-SkyMed InSAR data, develop methods to synthesize displacement fields from multiple sensor platforms, and to connect tidal perturbations of displacement rates to the mechanical characteristics of ice streams and ice shelves. Postdoctoral Scholar positions are awarded for a minimum of one-year period and may be renewed up to a maximum of three years.

**Location:**

Jet Propulsion Laboratory  
Pasadena, California

**Field of Science:**Earth Science

**Advisors:**

Alex Gardner  
Alex.S.Gardner@jpl.nasa.gov  
818-354-3477

**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.