Opportunity Title: Develop a Coherent and Unified Land Surface Temperature and Emissivity Product
Opportunity Reference Code: 0107-NPP-MAR23-JPL-EarthSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0107-NPP-MAR23-JPL-EarthSci

Application Deadline 3/1/2023 6:00:00 PM Eastern Time Zone

Description NASA has identified a major need to develop long-term, consistent, and calibrated data and products that are valid across multiple missions and satellite sensors. We are undertaking a
study to merge the Land Surface Temperature (LST) and Emissivity observations from multiple satellite platforms to develop a unified LST and Emissivity Earth System Data Record (ESDR) that addresses known discrepancies and inconsistencies and includes a complete set of uncertainty statistics valid across multiple missions.

The successful candidate will assist with the following activities: (1) Producing a unified low earth observation (LEO) LST-ESDR at 1 km spatial resolution that will be averaged to produce a daily, 8-day and monthly product. The unified LEO 1 km LST-ESDR will begin in the year 2000 and be available as a global product. For North and South America only we will extend the unified LEO LST-ESDR to high temporal resolution by normalizing it with geosynchronous (GEO) observations to produce a unified GEO LST-ESDR at 5 km spatial resolution. The unified GEO LST-ESDR will be averaged to hourly for N. America and 3-hourly for S. America. (2) Generate a unified land surface emissivity (LSE) product by combining the standard University of Wisconsin 5 km emissivity product (UWIREMIS) with the ASTER Global Emissivity Map (GEM) product. We will merge the ASTER-GEM and UWIREMIS products to generate a unified LEO LSE-ESDR at 5 km spatial resolution. The unified LST-and LSE-ESDR products will benefit numerous applications and the utility of the new unified products will be evaluated in an evapotranspiration model and an improved atmospheric retrieval scheme as part of this study.

Location:
Jet Propulsion Laboratory
Pasadena, California

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:

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- 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.