

Opportunity Title: Investigating the sensitivity of hydroclimate variability and drought to land surface processes using process-based models

Opportunity Reference Code: 0011-NPP-NOV23-GISS-EarthSci

Organization National Aeronautics and Space Administration (NASA)

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

Description Climate change is expected to amplify drought risk and hydroclimate variability for many regions. However, the state of the land surface (e.g., land use and land cover), and the associated processes (e.g., evapotranspiration, energy partitioning), represents a major source of uncertainty that limits progress and confidence in model projections. This research opportunity focuses on analyzing existing climate model simulations (e.g., in the CMIP5 archive) or conducting new simulations of the GISS coupled climate model (ModelE) to investigate the role of the land surface in hydroclimate dynamics. Potential topics include (but are not limited to) investigations of 1) the potential for land management (e.g., crop management, irrigation, soil carbon) to modulate regional hydroclimate in context with climate change, variability, and extremes; 2) the importance of various land surface processes and their interactions with natural climate variability and climate change for enhancing or ameliorating drought risk; 3) the role of hydroclimate variability and land surface interactions in past and future heat extremes; 4) the seasonal dynamics and potential predictability of drought between the cold and warm season.

Location:

Goddard Institute for Space Studies
New York City, New York

Field of Science:Earth Science

Advisors:

Benjamin I. Cook
benjamin.i.cook@nasa.gov
212-678-5669

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



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Eligibility Requirements • **Degree:** Doctoral Degree.