

**Opportunity Title:** The Atmospheric Infrared Sounder (AIRS): Greenhouse gas radiative forcing and water vapor feedback

**Opportunity Reference Code:** 0212-NPP-NOV23-JPL-EarthSci

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

**Reference Code** 0212-NPP-NOV23-JPL-EarthSci

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

**Description** In this research opportunity, the scholar will use satellite observations of the top-of-atmosphere infrared spectrum from the Atmospheric Infrared Sounder (AIRS) instrument to study changes in the outgoing longwave radiation. Radiative forcing and feedbacks arising from greenhouse gas changes will be analyzed. AIRS data provides an opportunity to study local radiative forcing changes. An example: the Arctic is releasing greenhouse gases because of permafrost melt. The response to radiative forcing is magnified by the water vapor feedback. The scholar will spectrally decompose the observed water vapor feedback. The greenhouse gas radiative forcing and water vapor feedback derived from AIRS will be compared to CMIP6 model estimates, as consistent with the Obs4MIPs program (Teixeira et al., 2014).

Reference: Teixeira, Joao, et al. "Satellite observations for CMIP5: The genesis of Obs4MIPs." Bulletin of the American Meteorological Society 95.9 (2014): 1329-1334.

**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:

- 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.



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