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Opportunity Title: Radiative Transfer and Climate Model
Opportunity Reference Code: 0012-NPP-MAR26-GISS-EarthSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0012-NPP-MAR26-GISS-EarthSci

How to Apply All applications must be submitted in Zintellect

Please visit the NASA Postdoctoral Program website for application instructions and requirements: How to Apply | NASA Postdoctoral Program (orau.org)

A complete application to the NASA Postdoctoral Program includes:

1. Research proposal
2. Three letters of recommendation
3. Official doctoral transcript documents

Application Deadline 3/1/2026 6:00:59 PM Eastern Time Zone

Description **About the NASA Postdoctoral Program**

The NASA Postdoctoral Program (NPP) offers unique research opportunities to highly-talented scientists to engage in ongoing NASA research projects at a NASA Center, NASA Headquarters, or at a NASA-affiliated research institute. These one- to three-year fellowships are competitive and are designed to advance NASA's missions in space science, Earth science, aeronautics, space operations, exploration systems, and astrobiology.

Description:

This opportunity is closed to applicants who are Senior Fellows (5-years or more past PhD).

The climate system can be considered in terms of the net imbalance between absorbed shortwave radiation and outgoing longwave radiation at the top of atmosphere. Increased knowledge of radiative transfer in the Earth's atmosphere, and therefore the energy imbalance, is needed for understanding the climate system. Climate models are important tools for improving our understanding and prediction of atmosphere, ocean, and climate behavior. We seek candidates with an interest in advancement of radiative transfer algorithms for NASA GISS's general circulation model (GCM) to study radiative interaction and feedbacks between various atmospheric constituents and the climate system. Potential specific topics include but not limited to the following:

- Developing the radiative kernel approach to study different feedbacks in the climate system.
- Investigating the coupling among clouds, sea ice and ocean in the polar climate system and the effect of ice-atmosphere feedbacks (e.g., ice albedo feedback and cloud feedback) on sea ice evolution.
- Developing radiative transfer algorithms to improve both the physical representation and speed of computation for GISS climate model,

particularly the treatment of cloud inhomogeneity in GCM grid scale (~200 Km) and the improvement of K-distribution parameterization for gaseous absorption.
- Developing fast spectral radiance simulation techniques and implementing the observational system simulation experiment (OSSE) based on GISS climate model, which will be applied to research on climate change detection and attribution.
- Evaluating climate modeling results through comparison with satellite measured/retrieved climate variables, especially the domain-averaged spectral and broadband radiation.
- Investigating radiative interaction and feedbacks between different atmospheric constituents and climate system.
- Parameterizing bio-heating processes in ocean and sea ice in the climate model to study biophysical forcing and interactions between radiation and variations in ocean biological and physical fields.

Applicants should have experience in mathematical/statistical methods, data analysis, and Fortran. Preference will be given to candidates already familiar with radiative transfer.

Applicants preferred area of study: Mathematics/Physics, Atmospheric or Climate Science

Location:
Goddard Institute for Space Studies
New York City, New York

Field of Science: Earth Science

Advisors:
Andrew A. Lacis
Andrew.A.Lacis@nasa.gov
212-678-5595

Gavin Schmidt
Gavin.A.Schmidt@nasa.gov
212-678-5627

Zhonghai Jin
Zhonghai.Jin@nasa.gov
212-678-5568

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

Questions about this opportunity? Please email npp@orau.org

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.