

**Opportunity Title:** Assimilation of Satellite Radiance Observations

**Opportunity Reference Code:** 0273-NPP-NOV23-GSFC-EarthSci

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

**Reference Code** 0273-NPP-NOV23-GSFC-EarthSci

**How to Apply** All applications must be submitted in [Zintellect](#)

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

**Description Description:**

The Goddard Earth Observing System (GEOS) global 4D hybrid Ensemble-Variational (EnVar) data assimilation system at Global Modeling and Data Assimilation Office (GMAO) has been supporting NASA research and Earth Science missions. Among the millions of observations assimilated at each analysis cycle in the GEOS system, satellite radiances play an important role in constraining atmospheric states and reducing model forecast errors. Traditionally only clear-sky radiances had been used in data assimilation systems due to limitations of model and radiative transfer models (RTM). However, the importance of including radiance data with fields of view (FOVs) affected by clouds and precipitation in a data assimilation system is obvious, as these data are usually associated with meteorologically important areas. With the advances of model microphysics and RTM, all-sky microwave radiance assimilation has been realized operationally in major NWP centers and GMAO, but all-sky infrared radiance assimilation is still in research stage. This NPP opportunity invites proposals that are focused on the usages of radiance observations to improve atmospheric states and model forecasts, especially, proposals with the following foci

- Exploration of methodology for all-sky geostationary or hyperspectral infrared radiance assimilation
- Enhancement of all-sky microwave radiance assimilation algorithm

are highly encouraged.

**Field of Science:** Earth Science

**Advisors:**

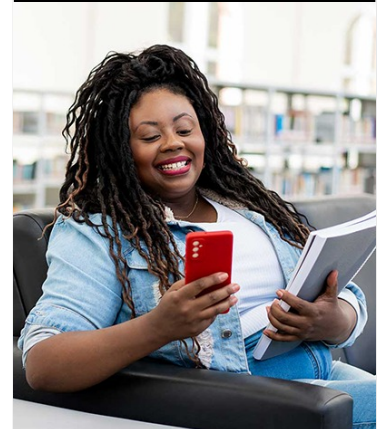
Zhu, Yanqui  
(301) 614-5844  
yanqiu.zhu@nasa.gov

**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);



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- 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.