

Opportunity Title: Rarefied Gas Dynamics for Spacecraft and Planetary

Applications

Opportunity Reference Code: 0339-NPP-NOV26-JPL-Interdisc

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0339-NPP-NOV26-JPL-Interdisc

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 11/1/2026 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.

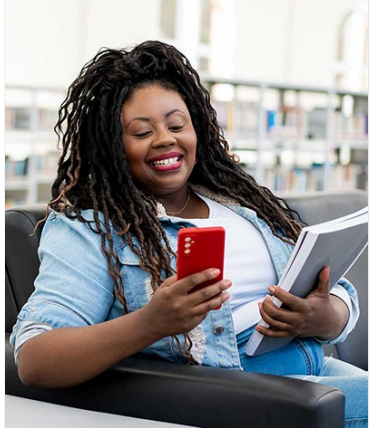
Description:

We are seeking a highly motivated postdoctoral researcher to develop and apply Direct Simulation Monte Carlo (DSMC) rarefied gas dynamics capabilities for spacecraft and planetary body applications at NASA's Jet Propulsion Laboratory (JPL).

Research Focus

The successful candidate will:

- **Analyze historical mission data** to validate and demonstrate modeling capabilities
- **Develop advanced DSMC modeling capabilities** for rarefied gas dynamics environments relevant to spacecraft operations and planetary atmospheres
- **Apply computational models to current JPL missions**, supporting mission design, operations, and data analysis
- **Collaborate with mission teams** across multiple JPL projects
- **Publish research findings** in peer-reviewed journals and present at scientific conferences



Whether you are just starting your career or already at a senior level, ORAU offers internships, fellowships, research opportunities, and contract positions that can provide you with invaluable experience. Download the ORAU Pathfinder mobile app and find the right opportunity to propel you along your career path!

Visit ORAU Pathfinder [↗](#)



Opportunity Title: Rarefied Gas Dynamics for Spacecraft and Planetary

Applications

Opportunity Reference Code: 0339-NPP-NOV26-JPL-Interdisc

Field of Science: Interdisciplinary/Other

Advisors:

Moogega Cooper

Moogega.Cooper@jpl.nasa.gov

(818) 205-5573

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

Qualifications Education

- Ph.D. in Aerospace Engineering, Mechanical Engineering, Physics, or related field.

Technical Skills (Required)

- **Demonstrated experience with computational fluid dynamics (CFD)**
- **Demonstrated experience with DSMC**
- Strong background in rarefied gas dynamics and kinetic theory
- Publications in rarefied gas dynamics or computational fluid dynamics
- Experience with high-performance computing environments

Preferred Qualifications

- Previous work on spacecraft or planetary atmosphere modeling
- Experience with mission data analysis
- Knowledge of NASA mission environments and constraints
- Familiarity with the following tools: STAR-CCM+, COMSOL, or similar software.
- Knowledge in SPARTA (Stochastic PARallel Rarefied-gas Time-accurate Analyzer) and DAC (DSMC Analysis Code), or similar tools.

Point of Contact [Mikeala](#)

Eligibility • **Citizenship:** LPR or U.S. Citizen

Requirements • **Degree:** Doctoral Degree.