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## Postdoctoral Researcher Aviation Contrail Kinetic Modeling

**Location:** Livermore, CA (USA)

**Organization:** Physical and Life Sciences Directorate, Materials Science Division

**Application Website:** <https://www.llnl.gov/join-our-team/careers/find-your-job/all/contrail/3743990000828466>

### Job Description

We have an opening for a **Postdoctoral Researcher** to conduct research in the formation and destruction of water-ice particles in aviation contrails. You will actively participate in the research to develop kinetic models which simulate size and number distributions of water-ice particles stemming from the utilization of conventional and sustainable aviation fuels. This position is in the Reaction Dynamics group of the Materials Science Division.

### In this role you will

- Conduct research in the formation and destruction of water-ice particles in aviation contrails.
- Develop and validate a kinetic model for contrails that simulates size and number distributions of water-ice particles stemming from the utilization of conventional and sustainable aviation fuels.
- Identify sensitive chemistry and physics sub-models in simulations, collaborate with multidisciplinary team members to improve the overall performance of simulations.
- Contribute to and actively participate in the conception, design and execution of research to address defined problems.
- Pursue independent but complementary research interests and interact with a broad spectrum of scientists internally and externally to the Laboratory.
- Collaborate with scientists in a multidisciplinary team environment to accomplish research goals.
- Maintain and establish laboratory protocols.
- Document research; publish papers in peer-reviewed journals, and present results within the DOE community and at conferences.
- Perform other duties as assigned.

### Qualifications

- Work must be performed by a U.S. person (e.g., U.S. citizen or permanent resident and certain others). Also, assignments longer than 179 days require a federal background investigation.



- PhD in Chemical/Mechanical/Aerospace Engineering, Atmospheric Chemistry/Physics, or a related field.
- Knowledgeable of approaches used to simulate the evolution of size and number distributions for different mixture compositions and thermodynamic states.
- Knowledgeable of the concepts of microphysics, chemical kinetics, and thermodynamics.
- Ability to develop independent research projects through publication of peer-reviewed literature.
- Proficient verbal and written communication skills as reflected in effective presentations at seminars, meetings and/or teaching lectures.
- Initiative and interpersonal skills with desire and ability to work in a collaborative, multidisciplinary team environment.

### **Qualifications We Desire**

- Experience developing models which simulate the evolution of size and number distributions of particles such as water-ice and soot.
- Experience utilizing high performance computing resources, Linux operating systems, and general purpose programming languages such as Python.
- Experience using theoretical methods to calculate input parameters for particle models; examples of input parameters include reaction rate constants, thermophysical properties, and transport properties.

### **Additional Information**

All your information will be kept confidential according to EEO guidelines.

### **Position Information**

This is a Postdoctoral appointment with the possibility of extension to a maximum of three years. Eligible candidates are those who have been awarded a PhD at time of hire date.

### **Why Lawrence Livermore National Laboratory?**

- Included in 2022 Best Places to Work by Glassdoor!
- Work for a premier innovative national Laboratory
- Comprehensive [Benefits Package](#)
- Flexible schedules (\*depending on project needs)
- Collaborative, creative, inclusive, and fun team environment

Learn more about our company, selection process, position types and security clearances by visiting our [Career site](#).



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### **Security Clearance**

None required. However, this position involves U.S. Export Control; this work must be performed by a U.S. person (U.S. citizen, U.S. lawful permanent resident, U.S. national, or U.S. protected individual (e.g., refugee, asylee)).

If your assignment is longer than 179 days cumulatively within a calendar year, you must go through the Personal Identity Verification process. This process includes completing an online background investigation form and receiving approval of the background check. (This process does not apply to foreign nationals.)

For additional information, please see [DOE Order 472.2](#).

### **Pre-Employment Drug Test**

External applicant(s) selected for this position will be required to pass a post-offer, pre-employment drug test. This includes testing for use of marijuana as Federal Law applies to us as a Federal Contractor.

### **Equal Employment Opportunity**

LLNL is an equal opportunity employer that is committed to providing candidates and employees with a work environment free of discrimination and harassment. We value and hire a diverse workforce as it is a vital component of our culture and success. All qualified applicants will receive consideration for employment without regard to race, color, religion, marital status, national origin, ancestry, sex, sexual orientation, gender identity, disability, medical condition, pregnancy, protected veteran status, age, citizenship, or any other characteristic protected by applicable laws.

LLNL invites you to review the Equal Employment Opportunity posters which include [EEO is the Law](#) and [Pay Transparency Nondiscrimination Provision](#).

### **Reasonable Accommodation**

At LLNL, our goal is to create an accessible and inclusive experience for all candidates applying and interviewing at the Laboratory. If you need a reasonable accommodation during the application or the recruiting process, please submit a request via our [online form](#).

### **California Privacy Notice**

The California Consumer Privacy Act (CCPA) grants privacy rights to all California residents. The law also entitles job applicants, employees, and non-employee workers to be notified of what personal information LLNL collects and for what purpose. The Employee Privacy Notice can be accessed [here](#).