

Post-Doctoral fellowship position at Laboratoire de l'Atmosphère et des Cyclones (LACy) University of La Reunion, Saint-Denis, France

We invite you to apply for a 3-year post-Doctoral fellowship position on exploring the evolution of aerosol properties along their transport through ground-based and satellite observations in the Southern Hemisphere.

Job description

Atmospheric aerosols interact with solar radiation and the life cycle of clouds, inducing radiative forcing that impacts climate on a global scale. To date, there are still many unknowns about the effect of atmospheric aerosols on the radiative balance of the coupled Earth/atmosphere system at regional scale, especially in the southern hemisphere where water covers 81% of the surface and where atmospheric observatories are more seldom (w.r.t. the northern hemisphere). In this sense, the site of LACy/OPAR (Laboratoire de l'Atmosphère et des Cyclones / Observatoire de Physique de l'Atmosphère de la Réunion) is unique and ideally located in the South West of the Indian Ocean (SWIO).

The objective of this post-Doc project is a characterization of the evolution of aerosols properties in the troposphere in the Southern Hemisphere. This work should help to answer the following scientific questions:

- How do evolve the aerosol properties (size distribution, shape, absorption and scattering properties, hygroscopicity, and vertical distributions of these parameters) along their transport in the troposphere of the Southern Hemisphere ?
- What are the processes (mixture, growth, sedimentation, interaction with clouds and rainfall) governing this evolution ?

The work will be divided into 3 distinct parts:

- Retrieval of aerosol characteristics at their emission using available databases, in situ and remote sensing (ground-based and spaceborne) observations
- Retrieval of aerosol characteristics along their transport using in situ and remote sensing (ground-based and spaceborne) observations
- Meso-scale simulations of plume ageing case studies.

The thesis is funded by the European project REALISTIC (centre of Excellence in Aerosol remote sensing technology and Science in The Indian Ocean, GA 101086690) of the Horizon Europe program (<https://lacy.univ-reunion.fr/activites/programmes-de-recherche/realistic>). It will be supervised by Michaël Sicard (ERA Chair of REALISTIC) and Nelson Bègue (researcher at LACy).

Qualifications

Qualifications We Require

- PhD in Atmospheric or Climate Sciences, or in a related field
- Proven research experience, as evidenced by strong record of research publications and presentations
- Experience in scientific use and interpretation of aerosol observations, especially remote sensing
- Proficiency in research English (oral and written)
- Practical experience of programming language such as Matlab, Python, etc.
- Autonomous and independent work
- Able to work in small teams
- Short and concise reports

Qualifications We Desire

Expertise/knowledge in the simulation and analysis of one or more of the following:

- Biomass burning plume aerosol ageing
- Volcanic plume aerosol ageing

Additionally, the following are highly desired:

- Proven ability to advance the state-of-the-art in climate science-related subject areas and/or related fields of study as is evidenced by original high-impact publications or a high h-index / other citation analysis
- Ability to conduct self-directed research
- Ability to work in multi-disciplinary research environments on problems comprising diverse application domains
- Excellent written and oral communication and interpersonal skills
- Ability to travel for business and research purposes
- Intellectual rigor
- Self-criticism of his/her results
- Strong taste for thinking and research
- Responsivity to react under strong time constraints

Conditions of employment

Post-Doctoral candidates will be offered a 3-year period of employment.

Salary and benefits are in accordance with the conditions of the REALISTIC project. The salary will be 2717 € gross per month – with a potential complement that is currently under negotiation with the University.

The recruitment of the candidate will strictly follow the European Charter for Researchers - The Code of Conduct for the Recruitment of Researchers (ISBN 92-894-9311-9). In particular the recruitment process and the contractual employment will be carried out taking into account all aspects related to recognition of the profession, non-discrimination, research environment, working conditions, stability and permanence of employment, funding and salaries, gender balance, career development, access to mobility, and research training, intellectual property rights, co-authorship, supervision and teaching.

The University of La Reunion

The University of Reunion Island (Université de la Réunion) is a French university in the Academy of Réunion. It is the first and only European university in the Indian Ocean. Established in 1982, it has grown steadily over the years in terms of student population, geographical sites occupied, courses offered and partnerships forged with local, national and international institutions. The school's ambition is to be the reference university in Indianoecania.

The University is an equal opportunity employer and is committed to providing a workplace free from all forms of unlawful discrimination, harassment, bullying, vilification and victimisation. The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. The University values diversity because we recognise that the differences in our people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to our work environment.

Laboratoire de l'Atmosphère et des Cyclones (LACy)

The LACy is a joint research unit between CNRS, Meteo-France and University de La Réunion dedicated to the study of physical processes governing the tropical atmosphere. LACy has notably initiated the creation of the Mado atmospheric observatory, part of the Observatory of Atmospheric Physics of La Réunion (OPAR), which hosts various instruments for atmospheric measurements, including lidar systems, cloud radar, spectro-radiometers and in situ gas and aerosol measurements. The lab currently has 22 permanent staff (researchers, engineers, faculty members) and about 10 students.

REALISTIC

The candidate will join the REALISTIC team, composed of 3 researchers, 2 PhDs, 1 Research Engineer, and 1 Project Manager.

The overarching goal of REALISTIC is to develop a Centre of Excellence in aerosol remote sensing technology and science in the Indian Ocean, through the creation of a Chair, with La Réunion, a European Outermost region, as a strategic pivot point of the European Research Area. REALISTIC aims at attracting and maintaining a high-profile researcher (ERA Chair holder, Michaël Sicard) to lead a high-profile supporting team with excellent research and technical capabilities in the aerosol remote sensing domain. In particular, specific applications and research endeavours will be conducted in the area of quantifying the impact of wildfire and volcanic emissions on the tropical atmosphere composition and on the Earth-Atmosphere radiative balance. REALISTIC is designed to catalyse and maximise the impact of the ERA Chair in order to raise the research, technical and innovation excellence of the LACy, OPAR, the Observatory of the Universe Sciences of La Réunion (OSU-R), and the University of La Réunion (UR) to a level that makes them unique and essential references in the local R&I ecosystem, at the Indian Ocean-level as well as to the overall international community, and thus filling the R&I gap on atmospheric systems. REALISTIC will contribute to better integrate UR within the European Research Area, and better align with European standards and priorities.

Additional information

For additional information on the position and the application process, please contact Michaël Sicard (michael.sicard@univ-reunion.fr).

Application procedure

Are you interested in this vacancy? Please apply as soon as possible by sending your application to Michaël Sicard (michael.sicard@univ-reunion.fr) and Nelson Bègue (nelson.begue@univ-reunion.fr). The application should contain:

- Letter of motivation
- Detailed CV
- List of grades/transcripts (bachelor, master, PhD)
- Contact information of 2 references
- If already available: your PhD thesis.

Please note:

- Please do not contact us for unsolicited services.