

# **REALISTIC (GA Nº 101086690)**

Deliverable N°: D2.1

# Title: Report defining the profiles of each member of the team and posting of job opportunities

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	The Indian oCean
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Project coordinator	Valentin Duflot
EC project officer	David Monteiro
Project website	https://lacv.univ-reunion.fr/activites/programmes-de-recherche/realistic
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Affiliation: Université de la Réunion

#### Project abstract:

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) 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 Laboratory of Atmosphere and Cyclones (LACy), the Observatory of Atmospheric Physics of La Réunion (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.

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# 1. Report defining the profiles of each member of the team

The REALISTIC team is composed of the ERA Chair holder (Michaël Sicard), 2 researchers of LACy (the Project Coordinator, Valentin Duflot, and Nelson Bègue), 1 Project Manager, 1 Research Engineer, 1 Post-doctoral fellow, and 2 PhDs.

We define the profile of each member of the team, except the ERA Chair holder and the 2 LACy researchers by providing the job announcements in Section 1 here below. The ERA Chair holder and Project Coordinator role are described in the Grant Agreement.

The PhD1 and Project Manager job announcements have already been published and the personnel have been hired. The other members of the team (PhD2, Post-doc and Research Engineer) will be hired later on. Consequently, the corresponding job announcements have not yet been published and could evolve along the project depending on the tasks achieved.

Section 2 gives details on the job announcements and timing, as well as on the people hired.

We have added a third section with annexes. In these annexes, we have uploaded the updated job descriptions of the positions with a history of change and given information about the newly recruited PhD student.

We confirm that so far, none of the selected candidates have had previous contractual links with the UR.

#### 1.1 PhD#1 (Published on May 5th, 2023)

# PhD Position at Laboratoire de l'Atmosphère et des Cyclones (LACy) University of La Reunion, Saint-Denis, France

We invite you to apply for a PhD position on exploring aerosol properties and transport through ground- based and satellite observations in the South West Indian Ocean.

#### 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 thesis project is a characterization of aerosols in the troposphere of La Reunion: origin and sources, aerosol load, size distribution, shape, and vertical distributions of these parameters. This work should help to answer the following scientific questions:

What are the contributions of the different sources to the aerosol load in La Reunion and in the SWIO? What is the share of Asian pollution? What is the share of aerosols from biomass burning origin?

How to explain the inter-annual variability of the aerosol load in La Reunion and in the SWIO?

What are the optical and physical characteristics of the aerosols in La Reunion and in the SWIO? What is the vertical distribution of these properties?

The thesis will be divided into 3 distinct parts:

- Characterization of the vertical distributions of the optical and physical aerosol properties
- Development of climatologies of these parameters; trend studies
- Comparison with CALIPSO and EarthCARE satellite data, and extension of the study to the SWIO.
   Particular interest will be focused on aerosols from biomass burning origin.

The thesis is funded by the European project REALISTIC (centre of Excellence in AerosoL remote rensling 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 Valentin Duflot (PI of REALISTIC).









#### Requirements

### Knowledge:

- Possess a scientific master's degree (or equivalent)
- Proficiency in research English (oral and written)
- Knowledge on atmospheric sciences, geophysics
- Previous professional experience in one of these fields would be a plus

#### Expertise:

- Practical experience of programming language such as Matlab, Python, etc.
- Autonomous and independent work
- Able to work in small teams
- Short and concise reports

#### Know-how:

- Intellectual rigor
- Self-criticism of his/her results
- Strong taste for thinking and research
- Responsivity to react under strong time constraints
- Oral and writing ease
- Sense of initiative

#### **Conditions of employment**

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 2500 € gross per month. As a PhD candidate you will be enrolled in the University of La Reunion Graduate School. The University of La Reunion Graduate School provides an inspiring research environment with an excellent team of supervisors, academic staff and a mentor. The Doctoral Education Programme is aimed at developing your transferable, discipline-related and research skills.

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 precruitment 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 Indianoceania.

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 victimization. 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 victimization. The University values diversity because it recognizes that the differences in people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to its 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 Maido 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, among others. The lab currently has 22 permanent staff (researchers,









engineers, faculty members) and about 10 students.

#### **Additional information**

For additional information on the position and the application process, please contact Michael Sicard (michael.sicard@univ-reunion.fr) and Valentin Duflot (valentin.duflot@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 Valentin Duflot (valentin.duflot@univ-reunion.fr). The application should contain:

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

#### Please note:

Please do not contact us for unsolicited services.









#### 1.2 Project Manager (Published on May 5th, 2023)



## **OPEN POSITION**

Position				
	Project Manager of the European project REALISTIC			
Affiliation				
Administrative:	LACy - UMR 8105 - Laboratoire de l'Atmosphère et des Cyclones			
Geographic:	Université de la Réunion - Campus Universitaire du Moufia			

# **Description**

#### **Principal activities:**

Under the authority of the Director of the Unit, the Project Manager of the European project REALISTIC (centRe of Excellence in AerosoL remote SensIng technology and Science in The Indian oCean) of the Horizon Europe program will work closely with the administrative/management pole of the Unit. He/she will be in charge, in close collaboration with the project coordinator and the recently recruited ERA Chair, of giving administrative/financial/legal support to the coordinator, and of all matters related with the communication with the European Commission (EC) and in particular with the Project Officer.

# This support includes:

- · preparation of key consortium documents and procedures,
- · support in the management of the Grant Agreement and the Consortium Agreement,
- control of the proper implementation of the project, by serving as an intermediary for all communications between the beneficiaries and the EC,
- the request and examination of all documents or information required by the EC,
- verification of their completeness and accuracy.
- organization of meetings/conferences and preparation of agendas, lists of participants, venues and minutes thereof
- preparation of templates for reports,
- the early reminder of the preparation of deliverables and reports as well as their sending to the EC,
- verification that all payments are made to the other beneficiary without undue delay and communication to the EC of the amounts paid.

The full time of the Project Manager will be related to the REALISTIC project and its ambitious objectives which could lead the Project Manager to participate in the preparation of new project proposals both nationally and internationally.

### Competences and skills









#### Knowledge:

- Very good knowledge of the European research system,
- Excellent skills of administrative and research English,
- · Knowledge of the institutional and partnership environment of the University of La Reunion,
- · Knowledge of atmospheric sciences would be a plus,
- Whenever possible, knowledge of the University's management software: SIFAC (if necessary, training offered internally).

#### Know-how:

- Short and concise reports,
- Organization of meetings and events of more or less large scale,
- · Management and maintenance of websites,
- Preparation of key consortium documents and procedures,
- · Support in the management of Grant Agreement and Consortium Agreement,
- Control of the proper implementation of the project,
- Proactive communication between beneficiaries and the EC,
- · Verification of the completeness and accuracy of all documents or information required by the EC,
- Verification of the good financial progress of the project and communication to the EC of the amounts paid.

### Your skills:

- Intellectual rigor
- Project coordination, management and monitoring skills
- Strong taste for reflection and research
- Responsivity to react quickly under strong time constraints
- Fluent in spoken and written English
- High level of initiative capable of working independently and within a team

Informal enquiries must first be made in confidence to Dr. Valentin Duflot (<a href="mailto:valentin.duflot@univ-reunion.fr">valentin.duflot@univ-reunion.fr</a>) and Dr. Michael Sicard (<a href="mailto:michael.sicard@univ-reunion.fr">michael.sicard@univ-reunion.fr</a>). It should include a detailed CV and at least one contact for references as well as a statement addressing your specific interest, motivation and qualifications for the position.

Applications must be submitted by email to the University of La Reunion and should include a detailed CV and a motivation letter.

Although a preferred start date is 1 July, 2023, the application will remain open until a suitable candidate has been found. The duration of the position is for 54 months (4.5 years).

We prefer to balance the number of employees (f/m/d). Therefore, we kindly ask female applicants to apply for this job.









#### 1.3 Post-doctoral fellow (OLD VERSION)

# 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 renslng 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 Valentin Duflot (PI of REALISTIC).

#### 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 3800 € gross per month.

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 precruitment 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 Indianoceania.

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 Maido 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 Michael Sicard (michael.sicard@univ-reunion.fr) and Valentin Duflot (valentin.duflot@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 Valentin Duflot (valentin.duflot@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.









1.4 PhD#2 (OLD VERSION)

# PhD Position at Laboratoire de l'Atmosphère et des Cyclones (LACy) University of La Reunion, Saint-Denis, France

We invite you to apply for a PhD position on exploring the climate-altering potential of biomass burning aerosols from wildfire origin on the regional climate in the South West Indian Ocean.

#### Job description

Scientific context. At the scale of the planet, the Indian Ocean region is a rather clean area, often assumed to have a quasi-pristine atmosphere during certain periods of the year (Duflot et al., 2011). In this region, Duflot et al. (2022) demonstrated that one aerosol type, namely biomass burning, was responsible for two thirds of the aerosol optical depth (AOD) variability, and that, over all aerosol classes, the AOD in Reunion Island in the South West Indian Ocean (SWIO) had an increasing trend of +0.02 per decade. The main aerosol type responsible of that increase is yet to be investigated. The SWIO is also a crossroad of biomass burning aerosol transport from African, South American and Australian wildfire origin (Bègue et al., 2021; Duflot et al., 2022). Recently, and probably linked to the expansion of global drylands under a warming climate, unprecedently strong extreme bushfires have occurred in the Southern hemisphere (Khaykin et al., 2020; Bègue et al., 2021).

<u>Objectives</u>. This thesis project pretends to explore the climate-altering potential of biomass burning aerosols from wildfire origin on the regional climate in the South West Indian Ocean. The smoke belt (South America, Africa and Australia) is the targeted emission source. The thesis should bring light to the following scientific questions:

- Is the aerosol impact on regional climate in the SWIO driven by biomass burning aerosols?
- How comparable is this impact w.r.t. GHG climate impact?
- What is the impact at the hemispheric scale?

Methodology. The thesis will be divided into 3 distinct parts where different methodologies will be applied:

- Mapping the occurrence, power, burnt matter, flaming phase, location and life time of all wildfires in the southern hemisphere reaching Reunion Island; classification; climatology; trends (if dataset is large enough).
- Mechanism analysis: injection scheme (Hysplit, FLEXPART); aerosol composition (pure black carbon (BC); BC cores coated in absorbing matter = brown carbon; BC cores coated in non-absorbing matter) and optical/radiative properties (in-situ and remote sensing at Maïdo); evolution during transport.
- Calculation of the radiative effect locally, and possibly at the scale of the SWIO. Effect of BB composition and transformation on its radiative effect.

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). It also operates all the instrumentation necessary, i.e. in-situ and remote sensing, to pursue the local observations described in the thesis project.

The thesis is funded by the European project REALISTIC (centre of Excellence in AerosoL remote rensIng 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 Valentin Duflot (PI of REALISTIC).

#### Requirements

#### Knowledge:

- Possess a scientific master's degree (or equivalent)
- Proficiency in research English (oral and written)
- Knowledge on atmospheric sciences, geophysics
- Previous professional experience in one of these fields would be a plus
- Knowledge and willingness to run a regional climate model would be a serious plus

#### Expertise:

• Practical experience of programming language such as Matlab, Python, etc.









- Autonomous and independent work
- · Able to work in small teams
- Short and concise reports

#### Know-how:

- Intellectual rigor
- Self-criticism of his/her results
- Strong taste for thinking and research
- Responsivity to react under strong time constraints
- Oral and writing ease
- Sense of initiative

#### **Conditions of employment**

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 2500 € gross per month. As a PhD candidate you will be enrolled in the University of La Reunion Graduate School. The University of La Reunion Graduate School provides an inspiring research environment with an excellent team of supervisors, academic staff and a mentor. The Doctoral Education Programme is aimed at developing your transferable, discipline-related and research skills.

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#### Laboratoire de l'Atmosphère et des Cyclones (LACy)

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#### REALISTIC

The candidate will join the REALISTIC team, composed of 3 researchers, 1 PhD, 1 Post-doctoral fellow, 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 Michael Sicard (michael.sicard@univ-reunion.fr) and Valentin Duflot (valentin.duflot@univ-reunion.fr).

#### **Application procedure**

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

#### Please note:

Please do not contact us for unsolicited services.









#### 1.5 RESEARCH ENGINEER (OLD VERSION)

# Research Engineer position at Laboratoire de l'Atmosphère et des Cyclones (LACy) University of La Reunion, Saint-Denis, France

We invite you to apply for a 2-year Research Engineer position on developing visualization tools for the various and numerous datasets generated by the Observatory of Atmospheric Physics of La Réunion (OPAR).

#### Job description

The Observatory of Atmospheric Physics of La Réunion (OPAR) is a unique observation site through the quality of its infrastructure and instruments, and through its location in an area sparsely documented where physico-chemical processes take place that are essential for the understanding of the climate and improvement in its modelling. OPAR hosts 51 instruments (in situ, passive and active remote sensing) operated routinely and feeding national and international databases linked to national and international networks (WMO/GAW, AERONET, TCCON, WWLLN) and European Research Infrastructures (ACTRIS and ICOS).

The objective of this Research Engineer position is to design and develop data visualizations and dashboards for researchers using data sets from various sources. This includes:

- Develop following the client's development standards and best-in-class solutions
- Build high-performance, scalable and maintainable user interfaces using the latest web data visualization tools
- Play both sides of the house and act as an analyst and as engineer when defining solutions to user problems and prioritize for optimal outcomes
- Need to be able to speak to the researchers in their jargon and translate to Data Services solutions
- Early-stage troubleshooting
- Application access

The position is funded by the European project REALISTIC (centre of Excellence in AerosoL remote rensling 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 Valentin Duflot (PI of REALISTIC).

#### Qualifications

Qualifications We Require

- Bachelor's in Computer Science or related fields or equivalent experience
- 2 + years as a developer (Python, PowerBI, etc.)
- Proficiency in English (oral and written)
- Autonomous and independent work
- Able to work in small teams
- Short and concise reports

#### Qualifications We Desire

- Experience working for a university
- Experience providing scientific data for researchers
- Basic knowledge in Atmospheric Science









Additionally, the following are highly desired:

- Excellent written and oral communication and interpersonal skills
- Intellectual rigor
- Responsivity to react under strong time constraints

#### **Conditions of employment**

Research Engineer candidates will be offered a 2-year period of employment.

Salary and benefits are in accordance with the conditions of the REALISTIC project. The salary will be 5200 € gross per month.

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 Indianoceania.

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 Maido 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 post-doctoral fellow 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 Michael Sicard (michael.sicard@univ-reunion.fr) and Valentin Duflot (valentin.duflot@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 Valentin Duflot (valentin.duflot@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.

# 2. Posting of Job opportunities

Job opportunities for the Project Manager and the PhD1 have been published and the people have been hired: PhD1 is Dominique Gantois (starting 17th of August, 2023) and Project Manager is Camille Bonnet (starting 19<sup>th</sup> of September, 2023).

The other members of the team (PhD2, Post-doctoral fellow and Research Engineer) will be hired later on following this schedule (which could be revised along the project based on achievements and opportunities):

- PhD2: November 2024

Post-doctoral fellow: December 2024.

Research Engineer: January 2025









# 3. RECRUITMENT PROCESS OF PhD#1 AND PROJECT MANAGER

#### 3.1 P<sub>H</sub>D#1

The following channel has been used to distribute the job offer: ACTRIS network. We received only one application, therefore one person has been auditioned. The audition took place on June 15th of 2023. The recruitment panel was composed of: Valentin Duflot, Constantino Muñoz and Michaël Sicard.

The selected candidate, Dominique Gantois, was approved by Alain Bastide, representative of the doctorate school on June 16th of 2023. Dominique Gantois began his full-time contract on August 17th of 2023.

#### 3.2 PROJECT MANAGER

The following channel has been used to distribute the job offer: ACTRIS network, ATMO-ACCESS network, LinkedIn, direct emails to key persons identified. We received ten applications, and made a pre-selection of 5 of them to be auditioned. The audition took place on July 7th of 2023. The recruitment panel was composed of: Jean-Pierre Cammas, Valentin Duflot, Juan Mora-Rey and Aurélia Potiez.

The first candidate selected has ultimately refused the job offer because she found another position more in line with her expectations". The second selected candidate, Camille Bonnet, began her contract on September 19th of 2023.

Job position	Diffusion channel	Number of candidates	Date of audition	Recruitment panel	Results	Contract starting date
PhD#1	ACTRIS network	1	15/06/2023	Valentin DUFLOT Constantino MUÑOZ Michaël SICARD	1. Dominique GANTOIS	17/08/2023
Project Manager	ACTRIS network, ATMO-ACCESS, LinkedIn, direct emails to key persons identified	10	07/07/2023	Jean-Pierre CAMMAS Valentin DUFLOT Juan MORA-REY Aurélia POTIEZ	1. Caroline HOOGENDOORN 2. Camille BONNET	19/09/2023









# 4. Annexes / History of Change

Since the first submission of the deliverable in July 2023 some job descriptions have been modified. Please find here below the new job descriptions as they have been published, with a highlight in blue when modifications have occurred and an update on the recruitment of REALISTIC's second PhD student.

4.1 Post-Doctoral fellow (New version - Published on June 10th, 2024)

# 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 rensing technology and Science in The Indian oCean, GA 101086690) of the Horizon Europe program (<a href="https://lacy.univreunion.fr/activites/programmes-de-recherche/realistic">https://lacy.univreunion.fr/activites/programmes-de-recherche/realistic</a>). 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 Indianoceania.

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 Maido 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, Michael 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 Michael 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.beque@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.









#### 4.2 PhD#2 (New version - Published on February 1st, 2024).

This section concerns the recruitment of the second PhD student.

The following channels have been used to distribute the job offer: ACTRIS network, ATMO-ACCESS, LinkedIn, direct emails to key persons. We received 22 applications. The auditions took place on June 18th of 2024. The recruitment panel was composed of: Nelson Bègue, Constantino Muñoz and Michaël Sicard.

The selected candidate, Niels Groenen, was approved by Alain Bastide, representative of the doctorate school on June 27th of 2024. It is expected that Niels Groenen begins his full-time contract on November 01st of 2024.

Job position	Diffusion channel	Number of candidates	Date of audition	Recruitment panel	Results	Contract expected starting date
PhD#2	ACTRIS network, ATMO-ACCESS, LinkedIn, direct emails to key persons identified	22	18/06/2024	Nelson BEGUE Constantino MUÑOZ Michaël SICARD	1. Niels GROENEN	01/11/2024

# PhD Position at Laboratoire de l'Atmosphère et des Cyclones (LACy) University of La Reunion, Saint-Denis, France

We invite you to apply for a PhD position on exploring the climate-altering potential of biomass burning aerosols from wildfire origin on the regional climate in the South West Indian Ocean.

## Job description

Scientific context. At the scale of the planet, the Indian Ocean region is a rather clean area, often assumed to have a quasi-pristine atmosphere during certain periods of the year (Duflot et al., 2011). In this region, Duflot et al. (2022) demonstrated that one aerosol type, namely biomass burning, was responsible for two thirds of the aerosol optical depth (AOD) variability, and that, over all aerosol classes, the AOD in Reunion Island in the South West Indian Ocean (SWIO) had an increasing trend of +0.02 per decade. The main aerosol type responsible of that increase is yet to be investigated. The SWIO is also a crossroad of biomass burning aerosol transport from African, South American and Australian wildfire origin (Bègue et al., 2023; Duflot et al., 2022). Recently, and probably linked to the expansion of global drylands under a warming climate, unprecedently strong extreme bushfires have occurred in the Southern hemisphere (Khaykin et al., 2020; Bègue et al., 2021, 2023).

<u>Objectives</u>. This thesis project pretends to explore the climate-altering potential of biomass burning aerosols from wildfire origin on the regional climate in the South West Indian Ocean. The smoke belt (South America, Africa and Australia) is the targeted emission source. The thesis should bring light to the following scientific questions:

- Is the aerosol impact on regional climate in the SWIO driven by biomass burning aerosols?
- How comparable is this impact w.r.t. GHG climate impact?
- What is the impact at the regional scale?

Methodology. The thesis will be divided into 3 distinct parts where different methodologies will be applied:

 Mapping the occurrence, power, burnt matter, flaming phase, location and life time of all wildfires in the southern hemisphere reaching Reunion Island; classification; climatology; trends (if dataset is large enough).









- Mechanism analysis: injection schemes (Hysplit) vs. injection heights (FLEXPART); aerosol composition (pure black carbon (BC); BC cores coated in absorbing matter = brown carbon; BC cores coated in non-absorbing matter) and optical/radiative properties (in-situ and remote sensing at Maïdo); evolution during transport.
- Calculation of the radiative effect locally, and possibly at the scale of the SWIO. Effect of BB composition and transformation on its radiative effect.

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). It also operates all the instrumentation necessary, i.e. in-situ and remote sensing, to pursue the local observations described in the thesis project.

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

#### Requirements

#### Knowledge:

- Possess a scientific master's degree (or equivalent)
- Proficiency in research English (oral and written)
- Knowledge on atmospheric sciences, geophysics
- Previous professional experience in one of these fields would be a plus
- Knowledge and willingness to run a regional climate model would be a serious plus

#### Expertise:

- Practical experience of programming language such as Matlab, Python, etc.
- Autonomous and independent work
- Able to work in small teams
- Short and concise reports

#### Know-how:

- Intellectual rigor
- Self-criticism of his/her results
- Strong taste for thinking and research
- Responsivity to react under strong time constraints
- Oral and writing ease
- Sense of initiative

# **Conditions of employment**

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 1787 € gross per month – with a potential monthly complement that is currently under negotiation with the University. As a PhD candidate you will be enrolled in the University of La Reunion Graduate School. The University of La Reunion Graduate School provides an inspiring research environment with an excellent team of supervisors, academic staff and mentor. The Doctoral Education Programme is aimed at developing your transferable, discipline-related and research skills.

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 precruitment 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 the Indian ocean.

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 victimization. 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 victimization. The University values diversity because it recognizes that the differences in people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to its work environment.

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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 Maido 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, among others. 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, 1 PhD, 1 Post-doctoral fellow, 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 Michael Sicard (michael.sicard@univ-reunion.fr) and Nelson Bègue (nelson.begue@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 and master)
- Contact information of 2 references
- If already available: your master thesis.

#### Please note:

• Please do not contact us for unsolicited services.









4.3 RESEARCH ENGINEER (New Version - February 2024 - To be published)

# Research Engineer position at Laboratoire de l'Atmosphère et des Cyclones (LACy) University of La Reunion, Saint-Denis, France

We invite you to apply for a 2-year Research Engineer position on developing visualization tools for the various and numerous datasets generated by the Observatory of Atmospheric Physics of La Réunion (OPAR) and satellite data.

#### Job description

The Observatory of Atmospheric Physics of La Réunion (OPAR) is a unique observation site through the quality of its infrastructure and instruments, and through its location in an area sparsely documented where physico-chemical processes take place that are essential for the understanding of the climate and improvement in its modelling. OPAR hosts 51 instruments (in situ, passive and active remote sensing) operated routinely and feeding national and international databases linked to national and international networks (WMO/GAW, AERONET, TCCON, WWLLN) and European Research Infrastructures (ACTRIS and ICOS). OPAR is operated by the Observatoire des Sciences de l'Univers de la Réunion (OSU-R).

The objective of this Research Engineer position is to design and develop data visualizations and dashboards for researchers using data sets from various sources. This includes:

- Develop following OSU-R and AERIS development standards and best-in-class solutions
- Build high-performance, scalable and maintainable user interfaces using the latest web data visualization tools
- Play both sides of the house and act as an analyst and as engineer when defining solutions to user problems and prioritize for optimal outcomes
- Need to be able to speak to the researchers in their jargon and translate to Data Services solutions
- Early-stage troubleshooting
- Application access

The position is funded by the European project REALISTIC (centre of Excellence in AerosoL remote rensing technology and Science in The Indian oCean, GA 101086690) of the Horizon Europe program (<a href="https://lacy.univ-reunion.fr/activites/programmes-de-recherche/realistic">https://lacy.univ-reunion.fr/activites/programmes-de-recherche/realistic</a>). It will be supervised by Michaël Sicard (ERA Chair of REALISTIC) and Guillaume Payen (Engineer at OSU-R).

#### Qualifications

Qualifications we require:

- Bachelor's in Computer Science or related fields or equivalent experience
- 2+ years as a developer (Python, PowerBI, etc.)
- Proficiency in English (oral and written)
- Autonomous and independent work
- Able to work in small teams
- Short and concise reports

# Qualifications we desire :

- Experience working for a university
- Experience providing scientific data for researchers
- Basic knowledge in Atmospheric Science

Additionally, the following are highly desired:

- Excellent written and oral communication and interpersonal skills
- Intellectual rigor









• Responsivity to react under strong time constraints

#### **Conditions of employment**

Research Engineer candidates will be offered a 2-year period of employment.

Salary and benefits are in accordance with the conditions of the REALISTIC project. The salary will be 3748 € gross per month – with a potential monthly 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 the Indian Ocean region.

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)

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#### **REALISTIC**

The candidate will join the REALISTIC team, composed of 3 researchers, 2 PhDs, 1 post-doctoral fellow 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) and Guillaume Payen (Guillaume.payen@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 Guillaume Payen (Guillaume.payen@univ-reunion.fr). The application should contain:

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

#### Please note:

Please do not contact us for unsolicited services.





