



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Modelling of Marine Atmospheric Composition,
Faculty of Environment



Salary: Grade 7 (£41,064 – £48,822 p.a. depending on experience)

Reporting to: Professor Stephen Arnold

Reference: ENVEE1872

Fixed term for up to 24 months to complete specific time limited work

Location: University of Leeds (with scope for hybrid working)

We are open to discussing flexible working arrangements

Overview of the Role

We seek to appoint a research fellow in Modelling of Marine Atmospheric Composition within the Institute for Climate and Atmospheric Science at the University of Leeds. The successful candidate will lead global atmospheric chemistry and Earth system modelling analysis to knowledge of global-scale impacts of natural volatile organic compound (VOC) emissions from the oceans. The work is funded under the UKRI COCO-VOC (*Closing the budget in marine atmospheric Oxidative Capacity through the quantification of Oceanic VOC emissions*) Large Grant project, involving 5 UK organisations, and a number of overseas partners. The project aims to quantify the impacts of reactive carbon emissions from the global oceans on the climate system, through improving understanding of VOC and OH cycling in the background atmosphere, and constraining the sensitivities of VOCs, aerosol, and the global atmospheric oxidative capacity to changes in anthropogenic and natural emissions. You will collaborate extensively with UK and international partners from across the project.

In this role, you will develop and implement new model schemes, and design, run and analyse Earth system model simulations to quantify the role of sea-air exchange of reactive VOCs in modifying atmospheric oxidation chemistry and aerosol. You will quantify impacts of these VOC emissions on oxidative capacity, methane lifetime, and cloud condensation nuclei abundances, to estimate their role in the global climate system, and implications for anthropogenic radiative forcing. You will collaborate closely with partners from across the COCO-VOC project, using field measurements to constrain a sea-air transfer parameterisation, and to evaluate the Earth system model. You will have the opportunity to work with a wide range of research groups, and to take a leading and active role in national and international project meetings.

You will have a PhD in atmospheric science or climate science, expertise in atmospheric chemistry, and experience of running and analysing numerical models on high performance computing platforms. You will have a proven ability to tackle complex science problems using a combination of models and observations, and an enthusiasm to work closely with national and international collaborators across the varied disciplines of field measurements, laboratory measurements, and modelling.



Main duties and responsibilities

- Developing model parameterisations for marine VOC emission from bulk seawater and ocean sea surface micro-layer, working closely with collaborators from UK partner Universities;
- Designing and executing global Earth system model simulations to understand oxidant and aerosol impacts from marine emissions;
- Analysing atmospheric chemical and climate response to ocean emissions;
- Leading evaluation of global model output using field measurements and remote sensing data;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Evaluating methods and techniques used and results obtained by COCO-VOC collaborators and relating these appropriately to your own work;
- Playing an active role in national and international project meetings, including organisation of workshops and conference sessions;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

Qualifications and skills

Essential

- A PhD or near completion (i.e. the initial thesis needs to have been handed in at the point of application) in atmospheric science or a closely allied discipline;
- A strong background in atmospheric chemistry;



- Experience in running and analysing atmospheric composition output from atmospheric chemical transport models or Earth system models;
- Experience in working with high performance computing (HPC) systems;
- Proficiency in the use of Python, IDL or Matlab for analysis and plotting of geospatial datasets;
- Good time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close support;
- A proven track record of preparing results for publication in high impact factor peer-reviewed journals;
- Excellent written and verbal communication skills, including presentation skills;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development;
- Experience in working atmospheric field measurements, remote sensing or satellite data products, and comparing these with model output;
- Knowledge of VOC emission schemes and their inclusion in models.

Please note that this post may be suitable for sponsorship under the Skilled Worker visa route but first-time applicants might need to qualify for salary concessions. For more information please visit: www.gov.uk/skilled-worker-visa.

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information please visit: <https://www.gov.uk/global-talent>

Additional information

Please note: If you are not a British or Irish citizen, from 1 January 2021 you will require permission to work in the UK. This will normally be in the form of a visa but, if you are an EEA/Swiss citizen and resident in the UK before 31 December 2020, this may be your passport or status under the EU Settlement Scheme.

Please note that this post may be suitable for sponsorship under the Skilled Worker visa route but first-time applicants might need to qualify for salary concessions. For more information please visit: www.gov.uk/skilled-worker-visa

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information please visit: <https://www.gov.uk/global-talent>



Find out more about the [Faculty of Environment](#).

Find out more about our [School](#).

Find out more about our [Research and associated facilities](#).

Find out more about [Equality in the Faculty](#).

Our University

As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Environment we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.

The Faculty of Environment has received a prestigious Athena SWAN silver award from [Advance HE](#), the national body that promotes equality in the higher education sector. This award represents the combined efforts of all schools in the Faculty and shows the positive actions we have taken to ensure that our policies, processes and ethos all promote an equal and inclusive environment for work and study.

Working at Leeds

We are a campus based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.

Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at hr@leeds.ac.uk



Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position, however, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be, in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records information](#).

