UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Climate Modelling of Future Low-carbon Aircraft, Faculty of Environment



Salary: Grade 7 (£33,797 – £40,322 p.a.)

Please note, an offer will not be made above £35,845 p.a. due to funding restrictions

Reference: ENVEE1493

Fixed-term until 31 October 2024 – due to external funding

We will consider job share / flexible working arrangements

Research Fellow in Climate modelling of Future Low-carbon Aircraft, Towards Zero-Carbon Aviation (TOZCA)
School of Earth and Environment, Faculty of Environment

Are you an ambitious researcher looking for your next challenge? Do you have a background in atmospheric science? Do you want to further your career in one of the world's leading climate-research groups?

You will join a team of climate and atmospheric scientists at the University of Leeds to work on an EPSRC funded project (Towards Zero-Carbon Aviation - TOZCA). You will work with Dr Alex Rap and Prof Piers Forster to investigate non-CO_2 climate impacts of aviation and develop a contrail cirrus parameterisation in the UK Earth System Model (UKESM). The work will also involve developing improved analytic response functions with respect to aviation emissions within the Finite amplitude Impulse Response (FaIR) emission based climate model.

TOZCA is a collaborative project involving research groups at the University of Leeds (in the School of Earth and Environment and in the Institute for Transport Studies), University College London, University of Southampton, and Massachusetts Institute of Technology. The overarching aim of the project is to develop a comprehensive tool suite to simulate the most cost-effective transition towards a net zero-carbon aviation system by 2050 and the sustainability of the system until a later 2070 date. Within TOZCA you will collaborate closely with all research teams involved, but you will primarily work on the work package investigating the global climate impact of aviation.

You will have, or be close to obtaining, a PhD in the field of Atmospheric Science (or a closely related field) and have extensive experience of using climate models. You will have knowledge of radiative forcing and will have had experience communicating your science to policy makers. Experience of developing model parameterisations and of using simple climate models are desirable. You will have evidence of a strong commitment to publishing scientific results at an international level and also of writing for boarder audiences.



What does the role entail?

As a Research Fellow, your main duties will include:

- Working with and in support of Dr Alex Rap and Professor Piers Forster to ensure the objectives and deliverables of the TOZCA project are successfully met;
- Developing contrail cirrus parameterisations for standard and hydrogen fuel aircraft, and incorporating them into the UK Earth System Model;
- Performing climate model simulations, quantifying the effective radiative forcings of aviation emissions;
- Developing analytic response functions within the Leeds emission-based climate model FaIR;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Generating and pursuing original research ideas in the appropriate subject area;
- Contributing to the training of both undergraduate and postgraduate students, where appropriate, including assisting with the supervision of projects in areas relevant to the project;
- Developing research objectives and contributing to the direction of the research project in close collaboration with the other project partners;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- 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 research culture of the Priestley Centre and School, where appropriate;
- Assisting with policy and public engagement efforts throughout 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.





What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or near completion - i.e. thesis needs to have been handed in at the point of application) in Atmospheric Science or a closely related discipline;
- Experience of using global climate models (preferably the UK Met Office Unified Model);
- A strong background in scientific programming (e.g. Python, Fortran);
- Excellent knowledge of atmospheric and climate modelling;
- Proven ability to write for expert and non-expert audiences;
- 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 peer-reviewed publications in leading international 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.

You may also have:

- Experience of developing parameterisations for global atmospheric models;
- Experience of pursuing external funding to support research.

How to apply

You can apply for this role online; more guidance can be found on our How to Apply information page. Applications should be submitted by **23.59** (UK time) on the advertised closing date.



Contact information

To explore the post further or for any queries you may have, please contact:

Dr Alex Rap, Lecturer in Atmospheric Science
Email: a.rap@leeds.ac.uk

Professor Piers Forster, Professor of Climate Physics
Email: p.m.forster@leeds.ac.uk

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.

Find out more about the School of Earth and Environment

Find out more about the Faculty of Environment

Find out more about our Research and associated facilities.

Find out more about equality in the Faculty.

A diverse workforce
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
Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our Working at Leeds information page.

Candidates with disabilities





Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at disclosure@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 page.

