



UNIVERSITY OF LEEDS

## CANDIDATE BRIEF

Research Fellow in Modelling Aviation Climate Impacts, Faculty of Environment



**Salary: Grade 7 (£37,099 – £44,263 p.a. depending on experience)**

**Reporting to: Dr Alex Rap**

**Reference: ENVEE1751**

**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

**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 the Natural Environment Research Council (NERC) and Department for Transport (DfT) funded project Modelling Aviation Global climate Impacts from Contrails and Aerosols (MAGICA). You will work with Dr Alex Rap, Professor Dan Marsh, Dr Wuhu Feng, Professor Ben Murray, Professor Piers Forster and Dr Chris Smith to develop the Community Earth System Model (CESM) contrail cirrus scheme, perform climate simulations to quantify the aviation aerosol and contrail cirrus effective radiative forcings, and estimate aviation climate metrics using the Finite amplitude Impulse Response (FaIR) climate model emulator. You will also collaborate closely with the other researchers involved in the project (at Leeds and at University College London), as well as with our project partners: Airbus, Aviation Environment Federation, British Airways, International Air Transport Association, Jet2.com, Met Office, and Rolls-Royce.

MAGICA is a collaborative project involving research groups at the University of Leeds and University College London, funded through the NERC/DfT "Jet zero: Aviation's non-CO<sub>2</sub> impacts on the climate" programme. The overarching aim of MAGICA is to quantify the aviation aerosol-cloud interactions effect and provide robust contrail cirrus effective radiative forcing (ERF) estimates. By assessing these two key aviation ERF terms for current air traffic and fuels, but also for a series of future aviation scenarios, the project will directly guide future aviation technology solutions and policy.

You will have, or be close to obtaining, a PhD in the field of Atmospheric Science (or a closely related field). You will have knowledge of atmospheric and/or climate modelling and evidence of a strong commitment to publishing scientific results at an international level. Experience of modelling aviation climate impacts and developing climate model parameterisations are desirable.



## Main duties and responsibilities

- Working with and in support of Dr Alex Rap to ensure the objectives and deliverables of the MAGICA project are successfully met;
- Developing the Community Earth System Model (CESM) contrail cirrus parameterisation for Sustainable Aviation Fuel (SAF) and hydrogen aircraft;
- Performing CESM climate model simulations to quantify aviation aerosol and contrail cirrus effective radiative forcings;
- Estimating various aviation climate metrics using the Finite amplitude Impulse Response (FaIR) climate model emulator;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- 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;
- Excellent knowledge of atmospheric and/or climate modelling;



- Experience of authoring relevant peer-reviewed publications in high-impact journals;
- Experience of using global climate models (preferably the Community Earth System Model);
- A strong background in scientific programming (e.g. Python, Fortran);
- A proven ability to work well both individually and in a team;
- Good time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close support;
- Excellent written and verbal communication skills including presentation skills;
- A strong commitment to your own continuous professional development.

#### Desirable

- Experience of developing parameterisations for global atmospheric models;
- Experience of modelling aviation climate impacts.

### **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](http://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 the [School of Earth and Environment](#).

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

Find out more about Equality and Inclusion in the [faculty](#).



## **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.

## **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, people who belong to a minority ethnic community; people who identify as LGBT+; and disabled people. 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.

## **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](mailto: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 page.

