



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Understanding Earth's Energy Imbalance, Faculty of Environment



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

Reporting to: Dr. Timothy Andrews

Reference: ENVEE1879

Fixed term for 6 months (or up to 12 months part time) to complete specific time limited work

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

We are open to discussing flexible working arrangements

Research Fellow in Understanding Earth's Energy Imbalance, Faculty of Environment

Overview of the Role

Are you an ambitious researcher looking for your next challenge? Do you have an established background in atmospheric or climate science with an interest in physical climate change and the Earth's energy budget?

The Earth's Energy Imbalance (EEI) is a fundamental measure of ongoing anthropogenic climate change. Since the early 2000s, satellite observations have revealed a robust increase in the Earth's heating rate, with an EEI trend of around 0.5 W m^{-2} per decade. While some increase is expected from anthropogenic forcing such as increases in greenhouse gases, and the climate system's response to it, the magnitude and variability of this trend remains difficult to understand and for climate models to reproduce.

In this role you will participate in a new international climate model intercomparison project, [CERESMIP](#), by performing targeted climate model simulations in order to compare simulated and satellited observed ([CERES](#)) energy fluxes and assess our understanding of the radiative forcing and climate feedback processes driving the observed EEI increase.

You will run climate model experiments with HadGEM3-GC5c, compare forcing and feedback outputs against observed trends, and work closely with the Met Office Hadley Centre and other international colleagues / modelling centres. You will contribute to peer-reviewed publications documenting the results in time for consideration for IPCC AR7.

You will have, or be close to obtaining, a PhD in the field of Atmospheric or Climate Science, or a related discipline, and have experience of running global climate models on high performance computing platforms and analysing their output. You will have evidence of a strong commitment to publishing scientific results at an international level.



Main duties and responsibilities

- Setting up and performing HadGEM3-GC5c simulations according to the [CERESMIP](#) protocol;
- Processing and sharing the climate model output data with international colleagues;
- Analysing energy budget diagnostics and other forcing and feedback outputs in these simulations and other CERESMIP models, and comparing against observations;
- Preparing papers for publication in leading international journals in time of the IPCC submission deadline and disseminating research results through other recognised forms of output;
- 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;
- Working both independently and also as part of a larger team of researchers within the CERESMIP project, sharing research 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, climate science or a closely allied discipline;



- Experience of running a comprehensive global climate or earth system models on high performance computing (HPC) systems;
- Proficiency in processing and analysing climate model output, including multi-model datasets such as CMIP;
- Knowledge of large-scale climate forcing and feedback processes.
- 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 developing track record of peer reviewed publications in 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.

Desirable

- Experience running the UKESM1 or HadGEM3 climate models on UK HPC architecture (e.g. Monsoon);
- Knowledge on the Earth's energy balance and how climate forcing (e.g. GHGs, aerosols) and feedbacks (e.g. clouds) alter it.

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 [Physical Climate Change](#) group.

Find out more about our [Faculty of Environment | University of Leeds](#).



Find out more about our [School of Earth, Environment and Sustainability | University of Leeds](#)

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

Find out more about [Equality 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, those 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 under the 'Accessibility' heading on our [How to Apply](#) information page or by getting in touch by [emailing HR via 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.

