UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Earth System Modelling,

School of Earth & Environment/Faculty of Environment

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

Reference: ENVEE1861

Location: Met Office, Exeter (with scope for hybrid working)

Fixed term: 3 years to complete specific time limited work.

We are open to discussing flexible working arrangements

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Would you like to join a team assessing the main risks associated with global climate change?

Would you like to apply your scientific expertise to understand the risks and consequences of tipping points in the global climate system?

Would you like to be part of a team developing the next generation of UK global climate and Earth system models?

We seek a postdoctoral research scientist to work within the ARIA-funded, multi-centre project PROMOTE (Progressing Earth System Modelling for Tipping Point Early Warning Systems). The successful candidate will join the UKESM core team, contributing to the development, evaluation, and application of a new hybrid-resolution version of the 2nd UK Earth system model (UKESM2). The key aim of PROMOTE is to develop and apply a high-resolution ESM to investigate the risks, consequences, and potential interactions between abrupt changes in the North Atlantic subpolar gyre (SPG) and the Greenland ice sheet. The resulting modelling system may act as an early-warning system for abrupt change in both phenomena.

PROMOTE consists of 7 partner institutes: the universities of Leeds, Reading, Edinburgh and Bristol, as well as the Met Office, the National Oceanography Centre, and the British Antarctic Survey. Staff at Leeds and Reading are also members of the National Centre for Atmospheric Science (NCAS). The successful candidate will be fully integrated into this consortium, as well as becoming a member of the UKESM core team. To increase integration with the UKESM team, while this is a University of Leeds position, the successful candidate will be physically based at the Met Office in Exeter, where the bulk of the UKESM team are located.

What does the role entail?

The role will entail a range of model development activities, spanning any of the ocean, atmosphere, and cryosphere components of the model. A key feature of the hybrid model will be the ability run different components of the atmosphere and ocean models at different resolutions, increasing the computational speed of the model, allowing

higher model resolution to be attained for those components benefitting most from such an increase. The postholder will contribute to tuning the performance of different model components to cope with a hybrid resolution, help with coupling of multiple models running at multiple resolutions, and take an active role in evaluating of the resulting model against observations. Finally, the postholder will be encouraged to apply the model in various ways to increase our understanding of the SPG and Greenland ice sheet, and their potential for rapid, abrupt change. The postholder will also be encouraged to communicate their research through conferences and peer reviewed publications.

As a Research Fellow, your main duties will include:

- Contributing to the development of the hybrid resolution model, UKESM2-hybrid.
- Working with others in PROMOTE to bring new ocean and ice sheet model developments into UKESM2-hybrid.
- Evaluating the performance of UKESM2-hybrid, with an emphasis on key processes controlling the behaviour and stability of the subpolar gyre and Greenland ice sheet.
- Developing and running model experiments to increase our understanding of the potential for rapid change in either the subpolar gyre or Greenland ice sheet.
- Developing and running model experiments to investigate the broader consequences for the Earth system of rapid change in either the subpolar gyre or Greenland ice sheet.
- Playing an active role in the PROMOTE consortium and the overall project activities.
- Communicating findings at scientific conferences and by authoring science publications.
- Maintaining an active commitment to your own continuing professional development.

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 one of; maths, physics, climate science, meteorology, oceanography or a closely related discipline.
- A strong background in climate or Earth system science.
- Experience developing numerical models.
- Proficiency in suitable computing languages (e.g. Fortran, Python, Linux etc).
- 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 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 developing climate or Earth system models (including component models).
- Experience working with high performance computing (HPC) systems.
- Experience in analysing climate or Earth system models (including component models).
- Experience using remote sensing or satellite data products.

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.

Interview Date: mid-February

Contact information

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

Professor Colin Jones, Head of UK Earth System Modelling, Professor Colin Jones | School of Earth and Environment | University of Leeds
Tel: +44 782 690 3925
Email: colin.jones@metoffice.gov.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.

As the candidate will be based at the Met Office building in Exeter, they will need to go through Met Office security clearance.

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 of Environment

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