



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Tropical Meteorology, Faculty of Environment



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

Reference: ENVEE1360

Closing date: 17 October 2019

Fixed term until 31 March 2021

This post is open to flexible working and job share

Research Fellow in Tropical Meteorology, Institute of Climate and Atmospheric Sciences, School of Earth and Environment, Faculty of Environment

Do you have a background in tropical meteorology, dynamical meteorology, weather forecasting, convection, climate and weather model evaluation, or a related field? Do you want to further your career in one of the UK's leading research intensive Universities and gain teaching experience in an international context?

An exciting opportunity has arisen for a postdoctoral researcher to investigate the influence of model resolution and coupling on the development and prediction of extreme weather and its impacts over India, as part of the **Coupled Air-Sea Prediction of Extreme Rainfall (CASPER)** project, part of Weather and Climate Science for Service Partnership (WCSSP) Southeast Asia. CASPER is a collaborative project between the University of Leeds, the University of Reading and the Centre for Hydrology and Ecology (CEH) funded through the Met Office Newton Fund, and is led by the University of Reading. The project's institutional lead at Leeds is Juliane Schwendike, working with co-investigators Cathryn Birch and Simon Peatman.

As part of this project you will investigate the representation of high-impact weather events over India and the surrounding ocean in a numerical weather prediction model. In particular, you will demonstrate the potential added value of the inclusion of atmosphere-ocean and atmosphere-land interactions, and of convection-permitting atmospheric and eddy-resolving oceanic horizontal resolutions. You will investigate case studies of monsoon depressions and tropical cyclones which develop over the Bay of Bengal before making landfall in South Asia. You will analyse the storms' horizontal and vertical structure, including how they evolve as they make landfall. You will evaluate forecasts against observations, and determine the effects of atmosphere-ocean and atmosphere-land coupling, as well as atmospheric and oceanic horizontal resolutions, on predictions of storm dynamics.

You will join one of the most research-active universities for atmospheric science in the UK (Leeds is rated 7th in the world in the Shanghai global rankings for atmospheric science, and 1st in the UK). Within the Institute for Climate and Atmospheric Science (ICAS), you will join a large group of tropical meteorologists and dynamicists, who together have an outstanding track record on India, the tropics and convection. Together with the opportunity to work with world-leading scientists at the University of



Reading, CEH, the Met Office and in India, this provides an excellent opportunity for an individual with a long-term interest in this field.

You will have a PhD (or close to obtaining) in a quantitative physical science, such as physics, applied mathematics or meteorology, and have experience in dynamical or tropical meteorology. You will be experienced in the analysis of large observational and/or numerical model datasets using a programming language such as NCL or Python, have excellent written and oral communication skills, and a willingness to travel to India to attend project meetings.

What does the role entail?

As a Research Fellow your main duties will include:

- In-depth process-based research into the dynamics of tropical cyclones and monsoon depressions;
- Investigation of the representation of tropical cyclones and monsoon depressions in global and convection-permitting simulations, as well as in simulations using the Met Office environmental prediction system;
- Advanced and innovative model analysis and diagnostic techniques to analyse numerical model data;
- Diagnosis of key deficiencies in weather models through observation-based process model evaluation and comparison of models of differing complexity;
- Development of collaborations with WCSSP-India partners and new external research links where possible; and assisting other WCSSP-India partners in their use and interpretation of the model data, notably in the areas of impact modelling and socio-economic analysis;
- Working closely with the project partners in the UK and in India;
- Disseminating research results through project meetings, reports, the project webpage, national and international conferences, and preparing papers for publication in leading international journals;
- Working both independently and as part of a large multidisciplinary team, including international researchers, and engaging in knowledge-transfer activities where appropriate and feasible;
- Continuing your own professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the research culture of the atmospheric dynamics and cloud research group and the School, where appropriate;



- 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.

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 close to obtaining i.e the initial thesis needs to have been handed in at the point of application) in a quantitative physical science, such as atmospheric science, physics, applied mathematics or meteorology;
- A strong background in tropical or dynamical meteorology;
- Experience of analysing and interpreting state-of-the-art numerical weather prediction forecasts at a range of different resolutions to evaluate atmospheric processes;
- An interest in convection, storm dynamics and/or weather forecasting;
- Experience of handling and analysing large volumes of observational or numerical model data;
- Experience of scientific programming in a language such as NCL or Python and experience with the Linux operating system;
- Evidence of innovation in research;
- An excellent track record of publication in high-quality journals;
- Willingness to travel to Southeast Asia to organise and deliver training workshops in tropical meteorology;
- A strong commitment to delivering high-impact research which builds capacity in partner countries;
- Good time management and planning skills, with the ability to meet tight deadlines and work effectively under pressure;
- Excellent written and verbal communication skills including presentation skills, and the ability to collaborate and communicate effectively with a wide range of project partners;



- A proven ability to work well both individually and in a team;
- A strong commitment to your own professional development.

You may also have:

- Knowledge of the dynamics of tropical cyclones;
- Experience in using observations to evaluate processes in weather or climate models;
- Experience using radar data;
- Knowledge of statistical analysis methods;
- Knowledge of forecast evaluation methods and metrics.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information. 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 Juliane Schwendike, Lecturer in Meteorology

Email: J.Schwendike@leeds.ac.uk

Additional information

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

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

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

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

Find out more about [National Centre for Atmospheric Science \(NCAS\)](#)

Find out more about the [Met Office Academic partnership](#)



Working at Leeds

You can find out more about our generous benefits package and more about what it is like to work at the University and live in the Leeds area in our [Working at Leeds](#) information.

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found in our [Accessibility](#) information 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.

