



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Tropical Meteorology, Faculty of Environment



Salary: Grade 7 (£33,797 – £40,322 p.a.) due to funding restrictions we will not appoint above £36,914 p.a.

Reference: ENVVE1389

Fixed term until 31 March 2021

We will consider job share/flexible working arrangements

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 behaviour and development of mesoscale convective systems (MCSs) and their contribution to high-impact weather, as part of the **Severe Precipitation In South East Asia (SPISEA)** project, part of Weather and Climate Science for Service Partnership (WCSSP) South East Asia. SPISEA is a research project led by the University of Leeds in collaboration with the University of Reading, funded through the Met Office Newton Fund. The project's principal investigator is Dr Simon Peatman, working with co-investigators Dr Juliane Schwendike, Dr Cathryn Birch and Dr Sam Hardy at the University of Leeds, and Dr Thorwald Stein at the University of Reading.

As part of this project you will produce a five-year data set of MCSs over South East Asia from satellite observations. You will perform a statistical analysis to investigate how MCS characteristics depend on large-scale drivers such as the MJO, equatorial waves, Borneo vortices, and northerly and easterly surge events. You will carry out a physical interpretation of the results in order to provide forecasters with improved understanding of the development of MCSs. You will build on the knowledge gained to identify and investigate MCS case studies over South East Asia, analysing convection-permitting Met Office Unified Model (MetUM) forecasts. You will use the results to improve knowledge of the emergence of high-impact weather and, via the development of MCSs, its dependence on atmospheric conditions on both large and local scales.

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 South East Asia, the tropics and convection. Together with the opportunity to work with world-leading scientists at the



University of Reading, the Met Office and in South East Asia, this provides an excellent opportunity for an individual with a long-term interest in this field.

What does the role entail?

As a Research Fellow your main duties will include:

- In-depth process-based research into the development of MCSs over South East Asia including travel to the region for one week for a project meeting;
- Assistance in the development of an objective algorithm for identifying and tracking MCSs over South East Asia using geostationary satellite brightness temperature observations;
- Travel to the USA for one week for an international conference;
- Production of a complete data set, using five years of observations, of MCSs over South East Asia and their characteristics;
- A statistical analysis of the above data set to understand how the occurrence and characteristics of MCSs vary under a number of large-scale forcings, and a physical interpretation of the results in terms of the large-scale atmospheric conditions;
- In collaboration with UK and South East Asia partners, identification of MCS case studies for further investigation, based on their human impact and their representation in MetUM convection-permitting forecasts;
- Investigation into the physical mechanisms behind the development of case study MCSs and the emergence of high-impact weather, using MetUM convection-permitting forecasts;
- Development of collaborations with WCSSP South East Asia partners and new external research links where possible; and assisting other WCSSP South East Asia partners in their use of the tracking algorithm and their interpretation of observational and forecast data, notably in the areas of impact modelling and socio-economic analysis;
- Dissemination of research results through project meetings, reports, national and international conferences, and preparing papers for publication in leading international journals;
- Continuation of 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 near completion - 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, meteorology or a related discipline;
- A strong background in tropical or dynamical meteorology;
- Knowledge of the physics of tropical convection, storm dynamics and/or weather forecasting;
- Experience of analysing and interpreting state-of-the-art numerical weather prediction forecasts to understand the physical mechanisms of atmospheric processes;
- Experience of handling and analysing large volumes of observational or numerical model data;
- Experience of scientific programming in a language such as Python or NCL and experience with the Linux operating system;
- Evidence of innovation in research;
- An excellent track record of publication in high-quality journals;
- The willingness and ability to travel to South East Asia and to an international conference in the USA to present research results;
- 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:

- Experience of identifying and tracking convection or other weather features in satellite data;
- Knowledge of convective variability which affects the South East Asia region;
- Knowledge of statistical analysis methods;
- Experience of working with overseas partners to deliver new knowledge and capacity building.

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 Simon Peatman](#)

Email: earspe@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](#)

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

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.

