



UNIVERSITY OF LEEDS

## CANDIDATE BRIEF

Research Fellow in Modelling Fog Over India

School of Earth and Environment, Faculty of Environment



**Salary: Grade 7 (£33,199 – £39,609 p.a.)** Due to funding restrictions this post will not be appointed higher than spine point 32 - £35,211 p.a.

**Reference: ENVEE1355**

**Closing date: 25 August 2019**

**Fixed-term until 31 March 2021**

**Job share and flexible working arrangements will be considered**



## Research Fellow in Fog Modelling over India

### School of Earth and Environment, Faculty of Environment

**Are you an ambitious researcher looking for your next challenge? Do you have a background in boundary-layer meteorology, fog and cloud modelling, 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?**

FOGGI (Fog Over the Indo-Gangetic plains of India) is a collaborative project between University of Leeds and the University of East Anglia and is funded under the Met Office Weather and Climate Science for Services Partnership (WCSSP) India Programme. The project is led by Dr Andrew Ross at Leeds. The post-holder will work closely with other members of the FOGGI project at the Universities of Leeds and East Anglia as well as with partners in India.

Fog is a significant wintertime hazard over Northern India. It directly disrupts aviation, leads to road traffic delays and accidents and is linked with periods of poor air quality. Fog forecasting remains a challenge due to the small scale of many of the important processes, and the subtle interactions between surface energy exchange, boundary layer turbulence, local scale flows and fog microphysics. This project will focus in particular on the roles of aerosol and urbanization in modifying fog over India, and the extent to which these processes are adequately represented in forecast models.

You will have a PhD (or close to obtaining) in a quantitative physical science, such as Atmospheric Science, Physics, Applied Mathematics or Meteorology, and have experience in dynamical and/or tropical meteorology. You will be experienced in the analysis of large observational and/or numerical model datasets within a programming language such as NCL or Python, have excellent communication skills and an ability and willingness to travel to India.

### What does the role entail?

As a Research Fellow, your main duties will include the following:

- Using observational in-situ and remote sensing data to identify interesting and well documented cases of fog over India for further study;



- Conducting idealised simulations of fog cases based on the observations using MONC (Met Office – NERC Cloud model) coupled with the CASIM (Cloud Aerosol Interacting Microphysics) scheme;
- Conducting sensitivity tests to identify key sensitivities and uncertainties in the prediction of fog;
- Evaluating the performance of the MetUM in more realistic simulations of fog based on the results of the idealised modelling;
- Drafting internal reports on findings for the funder;
- Communicating or presenting research results through publication or other recognized forms of output;
- Willingness and ability to travel to India (for 1-2 weeks) and within the UK for project meetings;
- Present your results at an international conference;
- Work closely with the project partners in the UK and India, and develop new external research links where possible;
- Maintain your own continuing professional development and act as a mentor to less experienced colleagues as appropriate;
- Evaluate existing methods, techniques and results, and relate them appropriately to your own work;
- Contribute to the research culture of the Institute, where appropriate.

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 completion or close to be obtaining- i.e. the initial thesis needs to have been handed in at the point of application) in a related



quantitative physical science, such as Atmospheric Science, Physics, Applied Mathematics or Meteorology;

- A background or interest in tropical or dynamical meteorology;
- Experience in scientific programming in a language such as NCL or Python and experience with the Linux operating system;
- Willingness and ability to travel to India (for 1-2 weeks) and within the UK for project meetings;
- A strong commitment to delivering high impact research;
- 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;
- 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 continuous professional development.

You may also have:

- A track record of successful, high quality, publications on fog/cloud modelling or boundary layer meteorology;
- Experience in atmospheric dynamics or microphysics;
- Experience of handling and analysing large volumes of observational or numerical model data;
- Experience of using observations to evaluate weather or climate models.

## 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 Andrew Ross, Associate Professor in Dynamical Meteorology**

Tel: +44 (0)113 343 7590

Email: [a.n.ross@leeds.ac.uk](mailto:a.n.ross@leeds.ac.uk)

## Additional information

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

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

### Working at Leeds

Find out more about the benefits of working at the University and what it's like to live and work in the Leeds area on our [Working at Leeds](#) information page.

### 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](mailto: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](#).

