UNIVERSITY OF LEEDS

Faculty of Environment
School of Earth and Environment
Institute for Climate and Atmospheric Science

Research Fellow in Aerosol-Cloud Interaction

Fixed term for 2.5 years

You will work as part of an EU Integrated Project BACCHUS (Impact of Biogenic versus Anthropogenic emissions on Clouds and Climate: towards a Holistic Understanding). BACCHUS involves twenty European institutes and aims to quantify key processes controlling clouds and climate and their feedbacks (http://www.bacchus.ethz.ch/).

This position focuses on the role of aerosol-cloud interactions in the Arctic and how these processes will respond to, and alter, future climate with reduced sea ice cover. The research will exploit a new version of the Met Office Unified Model that includes aerosol coupling with cloud microphysics and surface emissions. The model will be used, together with existing measurements, to understand the processes that control the generation of cloud-active aerosols from local and remote sources, how these aerosols are affected by clouds, and how changes in sea ice will affect aerosol sources as well as humidity and boundary layer dynamics.

The research project is led by Professor Ken Carslaw and Professor Paul Field, who has a joint position between the University of Leeds and the Met Office.

You will have a PhD (or close to submitting) and expertise in a relevant area of atmospheric modelling. You will be able to demonstrate commitment to publication of original results at an international level.

The University of Leeds' commitment to women in science has been recognised with a national accolade. The University has received the Athena Swan Bronze Award in recognition of our success in recruiting, retaining and promoting women in Science, Engineering and Technology (SET). The Faculty of Environment are in the process of preparing an application for an Athena Swan award to recognise our commitment and work in these areas.

The University also offers family friendly policies including generous maternity and paternity leave; full details of the policies can be found here http://hr.leeds.ac.uk/homepage/4/policies.

University Grade 7 (£30,728 - £36,661 p.a.)

Informal enquiries to Prof Ken Carslaw, email k.s.carslaw@leeds.ac.uk, tel +44 (0)113 343 1597.

Closing Date: 22 May 2014

Ref: ENVEE0238

Click here for further information about working at the University of Leeds
www.leeds.ac.uk/info/20025/university_jobs

Job Description

Responsible to: Head of School
Reports to: Professor Ken Carslaw

Main duties and responsibilities

- Application of a suite of cloud-resolving regional and global models to simulate the interaction of aerosols with clouds over Arctic regions
- The design and execution of model experiments to understand the behaviour of Arctic clouds and their response to changing climate
- Evaluation of the model performance against existing measurements
- Collaboration with project partners to help define model experiments and interpret the results and their relevance to the project's aims
- Publication of the results in high quality, peer reviewed journals or other appropriate outlets and presentation of results at national and international meetings
- Use own initiative to identify areas for research, develop new research methods and extend the research approach as dictated by initial results
- Where appropriate contribute to the development of follow-on research funding applications
- Plan and manage your own research activity in collaboration with the project investigators and other members of the research team
- Ensure satisfactory compliance in your work with respect to safety etc
- Carrying out any other duties commensurate with the grade and purpose of the post as directed by Head of School

The School of Earth and Environment is a green impact award holder, and expects all staff to go about their duties in a resource efficient way, minimising impacts to the environment wherever possible.

Career Expectations

The University of Leeds is committed to developing its staff. All staff participate in the Staff Review and Development scheme and we continue to work with individuals, supporting them to maximise their potential.

Progression to a higher grade is dependent on an individual taking on an increased level of responsibility. Vacancies that arise within the area or across the wider University are advertised on the HR website - http://jobs.leeds.ac.uk - to allow staff to apply for wider career development opportunities.

University Values

All staff are expected to operate in line with the University's values and standards, which work as an integral part of our strategy and set out the principles of how we work together. More information about the University's strategy and values is available at http://www.leeds.ac.uk/comms/strategy/.

Person Specification

Essential

- A PhD (or close to submitting) and research experience in a relevant area of atmospheric modelling
- Proven skills in numerical modelling in fortran and data visualisation software
- Experience of developing and running complex numerical models
- A demonstrable commitment to publication of original results at an international level
- Excellent organisational skills
- Effective communication skills and ability to collaborate with partners in diverse research fields
- Evidence of innovation in research and initiative in tackling research problems
- Proven ability to work accurately and carefully, meet deadlines and maintain a professional approach to all aspects of the role
- Ability to use own initiative
- Ability to work as part of a team

Additional Information

Details of the terms and conditions of employment for all staff at the University, including information on pensions and benefits, are available on the Human Resources web pages accessible at http://hr.leeds.ac.uk/

The Partnership

To be aware of and work in line with The Partnership working with students as members of a learning community to provide world class education and an excellent student experience. More information about the Partnership is available at http://partnership.leeds.ac.uk

Disclosure and Barring Service checks

A Disclosure and Barring Service (DBS) Check is not required for this position. However, applicants who have unspent convictions must indicate this in the 'other personal details' section of the application form and send details to the Recruitment Officer at disclosure@leeds.ac.uk.

Disabled Applicants

The post is located in the School of Earth and Environment. Disabled applicants wishing to review access to the building are invited to contact the department direct. Additional information may be sought from the Recruitment Officer, email disclosure@leeds.ac.uk or tel + 44 (0)113 343 1723.

Disabled applicants are not obliged to inform employers of their disability but will still be covered by the Equality Act once their disability becomes known.

Further information for applicants with disabilities, impairments or health conditions is available in the applicant guidance.

Further information

The University of Leeds is one of the largest universities in Britain, with over thirty thousand students and more than six thousand staff, including over two thousand academic and academic-related staff. The University has departments in all major disciplines and is committed to developing a number of research areas as world class centres of excellence. This has involved identifying a number of `gold peaks' of high quality research and developing strategic investment initiatives for these areas to enable them to develop further. The University has recently invested over £23 million in a new/refurbished building for the School of Earth and Environment.

School of Earth and Environment

The School of Earth and Environment is established as one of the leading centres of international excellence across the Earth and Environmental Sciences. In the UK RAE 2008, we ranked second nationally in terms of research power (the amount of internationally excellent and world-leading research outputs) for Earth and Environmental Sciences. The School comprises +90 academic staff and +80 postdoctoral researchers. In 2011/12 we attracted £11.2million in research funding and this figure is expected to exceed £13 million in 2014/15.

The School mission is "to lead internationally in research, to deliver a high quality of learning and teaching in Earth and Environmental Sciences and hence to beneficially impact society". This is supported by a School Strategy that aims to achieve international recognition for frontier research of global impact and influence and by building strong dynamic academic communities across the School. Strong research – teaching linkages are central to this aim with the School being home to over 1,000 students spread across a portfolio of undergraduate, masters and PhD programmes.

Earth Surface Science Institute

This is an institute of earth science researchers with a broad range of expertise falling into four natural groupings: Process Sedimentology; Palaeontology; Environmental Geochemistry; and Engineering Geology and Hydrogeology. Research endeavours encompass the study of past and present environmental and climatic conditions and the processes that control them and produce change. Thus, we model river and turbidity current flow dynamics, study deep-sea vent communities, quantify groundwater systems, constrain nutrient fluxes in oceans, assess the causes of ancient mass extinctions and much more! Work ranges across all scales from the microscopic study of mineral growth and weathering to the global-scale study of iron cycling and the sulphur isotopic system of the oceans. The Institute also includes a strong group working on Engineering Geology and Hydrogeology whose interests overlap the Geochemists in the field of contaminated land and groundwater. From January 2014, the Earth Surface Science Institute will become focussed primarily on Palaeontology and Environmental Geochemistry, with other areas of applied geoscience moving to the new Institute of Applied Geosciences (see below).
http://www.see.leeds.ac.uk/research/essi/

Institute of Applied Geosciences

The new Institute of Applied Geosciences will be established at the beginning of 2014 to promote and support world-class applied research and its underpinning fundamental research, focused on energy, environmental and industrial applications leading to: high quality publications; strong impact case studies; enhanced income; attracting and training of

top quality students; enhancement of research-led teaching for employment orientated UG and PG courses.

Institute for Climate and Atmospheric Science

ICAS, in the School of Earth and Environment at the University of Leeds, is an established and expanding group, representing one of the largest and most active Atmosphere and Climate research teams in Europe. We have around 100 research-active members, whose programme covers Atmospheric Dynamics, Aerosols, Cloud Microphysics, Atmospheric Composition and Climate Change. In each of these areas, the Institute makes use of theoretical and numerical modelling on the full spectrum of scales, from cloud microphysics to global dynamics and chemistry. We maintain a long-term commitment to field measurement of atmospheric phenomena, including aerosols and chemistry as well as the physics and dynamics of weather systems. We also have well-established research collaborations with several UK and international agencies, including the Met Office, and we host the Directorate of the UK National Centre for Atmospheric Research (NCAS).
http://www.see.leeds.ac.uk/research/icas

Institute of Geophysics and Tectonics

The Institute of Geophysics and Tectonics is dedicated to understanding the structure and evolution of the Earth and neighbouring planets. Detection and measurement of resources in the crustal layer and understanding of geological hazard also are principal aims. Measurement of gravity, magnetism, seismic waves and electrical properties, theoretical and computer modelling, surface structural mapping and petrological studies all contribute to these goals. Recently, in collaboration with the Faculty of Engineering, we have expanded applied research in petroleum engineering, seismology and structural geology.
http://www.see.leeds.ac.uk/research/igt

The Sustainability Research Institute

As a key part of the School of Earth and Environment, the Sustainability Research Institute (SRI) is home to a team of over 30 academic staff and 35 research students conducting inter-disciplinary research on the different dimensions of sustainability. Research within SRI is based largely on the environmental social sciences and draws upon aspects of geography, sociology, politics, planning, economics, management, development studies and science and technology studies. Our broader activities combine social and natural sciences in leading-edge, interdisciplinary research. SRI has received significant research funding from various sources, including the recent award of £5.5 million from the ESRC to establish the Centre for Climate Change Economics and Policy (in partnership with the LSE). As well as being a centre of excellence for inter-disciplinary research, SRI runs a range of postgraduate and undergraduate programmes on the different dimensions of sustainability.
http://www.see.leeds.ac.uk/research/sri

Research Laboratory Facilities

The School of Earth and Environment has recently invested in newly commissioned geochemical and atmospheric science laboratories as part of the new build. These world class research facilities embrace all aspects of earth and environmental science including atmospheric instrument and chemistry labs, laser facilities, geomicrobiology-, geochemistry instrument-, isotope geochemistry-, hydrochemistry-, clean- and radiochemistry- labs. Further, the co-location of these facilities in the new School facilitates access to a wide range of analytical services including ICPMS, XRD, IC and isotope analysis.
http://www.see.leeds.ac.uk/research/facilities/

Learning and Teaching

The School of Earth and Environment has a student population approaching 1000. We offer a wide range of undergraduate and MSc programmes within the broad areas of Earth Sciences, Environmental Science and Sustainability. We also offer two MRes courses and have a vibrant PhD community.

Our learning and teaching strategy is to:

1. Create learning opportunities for students to engage with Earth and Environmental research excellence.
2. Provide an exceptional student experience by delivering distinctive high quality modules and building academic communities.
3. Enhance student employability through building key skills and experience.

This strategy is delivered through high quality teaching supported by state-of-the-art equipment, facilities and resources. Strong links are made between research and teaching throughout the programmes, but in particular during projects and fieldwork.
http://www.see.leeds.ac.uk/study/undergrad/
http://www.see.leeds.ac.uk/study/masters/
http://www.see.leeds.ac.uk/study/phd/