CANDIDATE BRIEF

Research Fellow in Earth Observation of the Polar Regions, Faculty of Environment

Salary: Grade 7 (£39,105 – £46,485 p.a.)

Reference: ENVEE1790

Fixed-term for 2 years   - to complete specific time limited work

Location: University of Leeds (with scope for hybrid working)

We are open to discussing flexible working arrangements and hybrid working

Overview of the Role

Research Fellow in Earth Observation of the Polar Regions
School of Earth and Environment, Faculty of Environment

Are you an ambitious scientist looking for your next challenge? Do you have a PhD (or near to completion) in a quantitative subject, an interest in Polar research and the skills to develop our Earth observation capability?

We are seeking to recruit a research fellow in Earth observation of the Polar regions at the University of Leeds, to investigate historical and ongoing changes in the Arctic and Antarctica.

You will join a team of glaciologists at the University of Leeds, using satellite data to improve our understanding of ice sheet-ocean interactions, and the processes driving recent change. This group uses state-of-the-art Earth observation data and advanced computer techniques to study the Polar regions. We specialise in using Synthetic Aperture Radar (SAR) and altimetry satellite data to measure important glaciological parameters such as the speed of glacier flow, ice shelf thickness change and the filling and draining of sub-glacial lakes. The group receives research funding on major projects from the Natural Environment Research Council (NERC) and the European Space Agency (ESA). We collaborate closely with many international research partners on funded projects, providing a fantastic opportunity to make connections and broaden your network. Professor Anna E. Hogg is co-director of the NERC SENSE Centre for Doctoral Training, in partnership with the British Antarctic Survey (BAS), the National Oceanography Centre (NOC), and the University of Edinburgh, providing a network of Earth observation researchers distributed across the UK.

You will work with Prof Hogg to investigate ice sheet dynamics, and the impact of ice-ocean interactions on ice mass loss and sea level rise. You process satellite data to produce new glaciological and oceanographic geophysical datasets, including ice speed, which will enable us to examine the relationship between rapidly evolving regions of the Antarctic and Greenland Ice Sheets, and the Polar oceans which drive this change. You will lead author peer review publications reporting these findings, and present your work at international science conferences. Your research at Leeds will form a central role of a large international consortium project lead by Prof Hogg, in collaboration with other leading institutions across Europe and the UK, including two international space agencies. You will have opportunity to work on multiple research projects, and to travel to leading international institutions to present your work, growing

your network of collaborators. Travel will mainly be within Europe, with the possibility of wider international travel where relevant.

You will have or be close to obtaining a PhD in a relevant subject such as remote sensing, physics, mathematics, computer science or environmental science. Experience of processing satellite datasets for cryosphere, oceanographic or other disciplines is highly desirable. In addition, you will demonstrate an enthusiasm for scientific research and problem-solving, excellent communication and interpersonal skills, and the ability to work as part of an international research team. You will have a strong commitment to publishing scientific results at an international level.

Main duties and responsibilities

- Leading a programme of research on ice – ocean interactions, using satellite radar altimetry and SAR data;
- Expertise in processing ice velocity measurements from satellite data;
- Expertise in applying AI and ML methods to satellite data;
- Pursuing original research ideas, identifying interesting new topics, develop new research methods as appropriate;
- Working with and in support of Prof Hogg to ensure project objectives and deliverables are successfully met;
- Contributing to the direction of research projects in close collaboration with NERC, ESA and our international partners;
- Publishing results in peer reviewed journals and presenting your work at national and international meetings;
- Working both independently and also as part of a larger team of researchers;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the research culture of the School in the University of Leeds;
- Contributing information to research proposals and funding applications as required;
- Assisting with media and public engagement efforts.

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.

Qualifications and skills

<u>Essential</u>

- A PhD or near completion - i.e. the initial thesis needs to have been handed in at the point of application, in remote sensing, physics, mathematics, computer science or environmental science, or a closely allied discipline;
- Experience of processing and analysing complex satellite datasets;
- Expertise in processing ice velocity measurements from satellite data;
- Experience of using advanced computer techniques, such as Artificial Intelligence and Machine Learning;
- Experience of using high performance computer facilities;
- A strong background in scientific programming (e.g. Matlab, Python);
- Experience of authoring relevant publications in high-impact journals;
- Ability to independently develop and successfully carry out own research ideas;
- Good time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure;
- Excellent written and verbal communication skills including presentation skills;
- Excellent interpersonal skills with the ability to work as part of a team;
- A strong commitment to your own continuous professional development;

<u>Desirable</u>

- Expertise in software engineering and automation of processing chains;
- Knowledge of the Polar regions, including its glaciology and oceanography;
- Experience of working with synthetic aperture radar data;
- Experience of collaborating with external and international research partners;
- Experience of contributing to or leading funding proposals;
- Experience of project management, or of managing junior staff;

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.

Please note that this post may be suitable for sponsorship under the Skilled Worker visa route but first-time applicants might need to qualify for salary concessions. For more information please visit: www.gov.uk/skilled-worker-visa

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information please visit: https://www.gov.uk/global-talent

Find out more about the Faculty.

Find out more about our School.

Find out more about our Research and associated facilities.

Find out more about Athena Swan in the Faculty.

A diverse workforce

We welcome applications from suitably qualified candidates with a diverse range of backgrounds, ethnicities, and experience. 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

Find out more about the benefits of working at the University and what it is 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 on our [Accessibility](#) information page 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.