



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

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



Salary: Grade 7 (£39,355 – £46,735 p.a. depending on experience)

Reporting to: Anna Hogg

Reference: ENVEE1821

Fixed term for 24 months to complete specific time limited work

Location: University of Leeds

We are open to discussing flexible working arrangements

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

Overview of the Role

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 Professor 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;
- Providing expertise in processing ice velocity measurements from satellite data;
- Providing expertise in applying AI and ML methods to satellite data;
- Contributing to the direction of research projects in close collaboration with NERC, ESA and our international partners;
- Contributing information to research proposals and funding applications as required;
- Assisting with media and public engagement efforts;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;



- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, 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.

Qualifications and skills

Essential

- 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 without close support;
- A developing track record of peer reviewed publications in international journals;
- Excellent written and verbal communication skills including presentation skills;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.

Desirable

- 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 of Environment](#)

Find out more about the [School of Earth and Environment](#)

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

Find out more about Equality and Inclusion in the [faculty](#)

Working at Leeds

We are a campus-based community and regular interaction on campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.

Our University

As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Environment we are dedicated to diversifying our



community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to Black, Asian, people who belong to a minority ethnic community; people who identify as LGBT+; and disabled people.

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.

Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at hr@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 page.

