UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Geothermal Seismology, Faculty of Environment

Salary: Grade 7 (£41,064 – £48,822 p.a. depending on experience)

Reporting to: Dr Adam Booth

Reference: ENVEE1830

Fixed term until 30 November 2025 (to complete specific time limited work)

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

We are open to discussing flexible working arrangements

Research Fellow in Geothermal Seismology
Faculty of Environment

Overview of the Role

Are you an ambitious geophysicist looking for an innovative research challenge? Would you like to apply seismic expertise to the exploration and development of urban geothermal resources? This could be the research position for you.

Funded by the UK Natural Environment Research Council (NERC), our SmartRes project (*Smart assessment, management and optimsation of urban geothermal resources*) advances our understanding of geothermal systems and ultimately aims to broaden their uptake for urban energy supply. Working as part of a multi-disciplinary project team, featuring engineers, hydrologists, numerical modellers and policy liaisons, you will contribute your expertise in seismic acquisition and analysis to the understanding of how geothermal systems evolve under realistic production scenarios.

Based in the University of Leeds School of Earth and Environment (SEE), and working closely with its School of Civil Engineering, you will use various seismic datasets – including data already recorded with fibre-optic distributed sensing systems and nodal seismometers – to understand two geothermal test sites in the UK. These include a site in Berkshire that considers the properties of a chalk aquifer, and the British Geological Survey's UKGEOS Cheshire site, a cutting-edge facility that explores the geothermal potential of the Sherwood Sandstone.

You will liaise with the project team to integrate your seismic observations with hydrological and thermal models of aquifer evolution, and ultimately lead research papers and/or conference presentations that promote our conclusions to the broadest community of energy-invested parties. As a member of SEE, you will join a dynamic research climate, which also provides access to research expertise in our various institutes – for example, Geosolutions, water@leeds and energy@leeds centres.

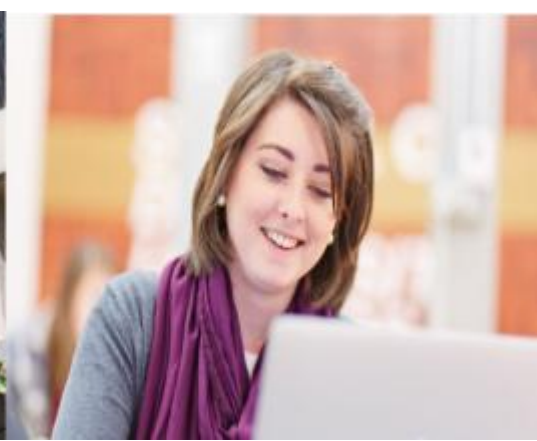


Main duties and responsibilities

- Leading analysis of seismic data to characterise two shallow geothermal reservoirs, including under controlled production scenarios. The data comprise pre-recorded archives of nodal seismic recordings and fibre-optic distributed acoustic sensing (DAS), which could be used to build reservoir images and velocity models through a range of analytic techniques;
- Supplying relevant observations of reservoir properties to numerical models of the hydrological and thermal evolution of the geothermal reservoir, as developed by other parts of the project;
- 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 assessing results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Contributing to authorship of research articles, and dissemination of research highlights via conference presentations and (where appropriate) public engagement and social media activities;
- 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 Geophysics, Physics, or other cognate discipline;
- Experience with the analysis of seismic data using a range of different approaches (e.g., reflection processing, velocity model building, ambient noise analysis);
- Familiarity with seismic processing software (e.g., SeisSpace, Reveal) and/or competency with programming languages (e.g., Matlab, Python);
- 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

- Experience of working with distributed acoustic sensing (DAS) and/or nodal seismometers;
- Experience of using geophysical methods to understand geothermal reservoirs;
- A track record of pursuing external funding to support your own research vision.

How to apply

You can apply for this role online; more guidance can be found on our How to Apply information page. 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:

Adam Booth, Associate Professor of Applied Geophysics



Email: A.D.Booth@leeds.ac.uk

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 our School.

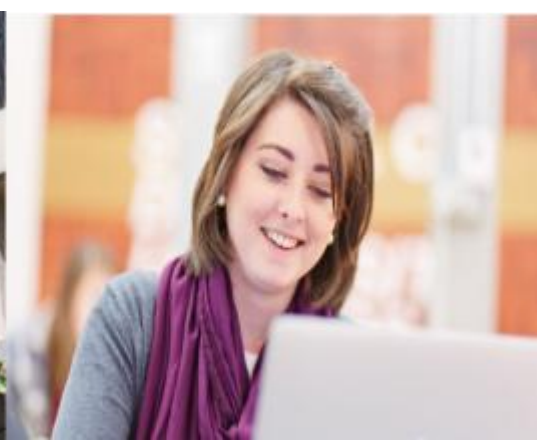
Find out more about our Research and associated facilities.

Find out more about Equality in the Faculty.

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 and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.

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

We are a campus based community and regular interaction with 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.

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.