



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Numerical Simulation of Planetary Magnetic Fields,
Faculty of Environment



Salary: Grade 7 (£37,099 - £44,263 p.a. depending on experience)

Reporting to: Professor Chris Davies, Professor of Theoretical Geophysics

Reference: ENVEE1754

Fixed term for 36 months to complete specific time limited work.

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

We are open to discussing flexible working arrangements.

Overview of the Role

We are seeking a Research Fellow to fulfil a key role in a project investigating the dynamo process that generates large-scale planetary magnetic fields. In this role you will focus on enhancing the performance of the existing Leeds Dynamo Code as well as performing and analysing numerical dynamo simulations to gain fundamental insight into the dynamics of rotating convection and dynamo action. You will be based in the [Deep Earth Research Group](#) within the School of Earth and Environment at the University of Leeds and work closely with [Professor Chris Davies](#). This work is funded by the Natural Environment Research Council (NERC) Pushing the Frontiers grant "[Earth's Core as a Layered System](#)".

Main duties and responsibilities

- Designing, planning and undertaking a program of research in collaboration with Professor Chris Davies as part of the NERC Pushing the Frontiers grant "[Earth's Core as a Layered System](#)";
- Improving the serial and parallel performance of the Fortran-based Leeds Dynamo Code;
- Running and analysing dynamo simulations to gain fundamental insight into the dynamics of rotating convection and dynamo action;
- Working both independently and collaboratively with a team of researchers;
- Generating and pursuing research ideas in relevant subject areas;
- Evaluating methods and techniques used and results obtained by other researchers and relating such evaluations appropriately to your own work;
- Preparing papers for publication in international journals and disseminating research results through other recognised forms of output;
- Contributing to knowledge transfer or public outreach activities as appropriate;
- Contributing to the research culture of the School;
- 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, where appropriate, 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 - i.e. the initial thesis needs to have been handed in at the point of application in geophysics, physics, applied mathematics, computer science, or a similar discipline;
- A strong background in the modelling of planetary magnetic fields, or geophysical fluid dynamics;
- Experience designing or adapting computational fluid dynamics code;
- Experience using High-Performance Computing facilities;
- Good time management and planning skills, with the ability to meet tight deadlines and work effectively under pressure without close support;
- Excellent written and verbal communication skills;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.

Desirable

- Programming experience with Fortran;
- A background in computational fluid dynamics, preferably involving rotating convection and magnetic field generation;
- Evidence of peer-reviewed publications in international journals.

Additional information

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](#).



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. 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.

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 foehr@leeds.ac.uk.

Criminal record information

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.

