UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Astrophysical Fluid Dynamics, Faculty of Engineering & Physical Sciences

Salary: Grade 7 (£33,797 – £40,322 p.a.) Due to funding constraints an offer will not be made above £33,797

Reference: EPSMA1005

Fixed-term for 24 months, available from 01 April 2020

We will consider job share / flexible working arrangements

Research Fellow in Astrophysical Fluid Dynamics
School of Mathematics

Are you an ambitious researcher looking for your next challenge? Do you have an established background in Astrophysical Fluid Dynamics? Do you want to further your career in one of the UK's leading research intensive Universities?

We are looking for a Research Fellow to join our Science and Technology Facilities Council (STFC) funded project, which will investigate tidal flows in stars and giant planets, with the goal to understand the mechanisms of tidal dissipation. The project will involve performing hydrodynamical and magnetohydrodynamical simulations to study tidal flows in spherical, ellipsoidal or Cartesian geometries, using and extending one or more existing codes. The results from these calculations will be applied to interpret current observations of extrasolar planets and close binary stars, and to make predictions.

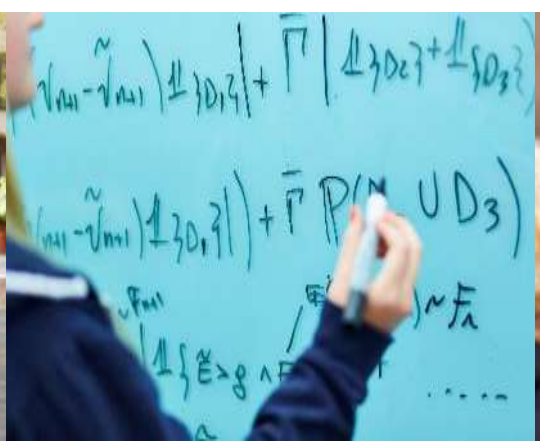
You will work in close contact with Dr Adrian Barker in the Department of Applied Mathematics, and you will join the Astrophysical and Geophysical Fluid Dynamics research group, which is one of the largest such groups in the world. This project will strongly complement and benefit from other STFC-funded projects at Leeds, such as those in planetary/stellar dynamos, and magnetic and thermal evolution of magnetars. The post will be available from 1st April 2020.

You will have a PhD in a relevant discipline (e.g. Astrophysics, Applied Mathematics, or Planetary Sciences), together with experience in large-scale computing. You will also have the ability to conduct independent research and a developing track record of publications in international journals. In addition, you will have excellent communication, planning and team working skills.

What does the role entail?

As a Research Fellow, your main duties will include:

- Designing, planning and conducting a programme of investigation, in consultation and collaboration with Dr Adrian Barker;
- Generating and pursuing independent and original research ideas in Astrophysical Fluid Dynamics, with an aim to extend the Astrophysical & Geophysical Fluid Dynamics Group research portfolio;


- 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.

What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or have submitted your thesis before taking up the role) in Astrophysics, Applied Mathematics, Planetary Sciences, or a closely allied discipline;
- A strong background in large-scale scientific computation, particularly computational magnetohydrodynamics or fluid dynamics;
- 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 proven track record of peer-reviewed publications in high impact factor 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.

You may also have:

- Experience of pursuing external funding to support research;



- Experience in programming and running simulations on parallel computers;
- Experience in simulating astrophysical or geophysical flows in spherical geometry;
- Experience in studying tidal flows.

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:

Dr Adrian Barker, Lecturer in Applied Mathematics
Tel: +44 (0)113 343 5165
Email: A.J.Barker@leeds.ac.uk

Additional information

Faculty and School Information

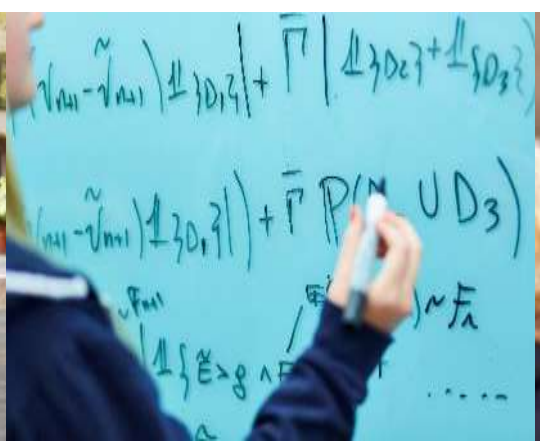
Further information is available on the research and teaching activities of the School of Mathematics.

A diverse workforce

The Schools in the Faculty of Engineering & Physical Sciences are proud to have been awarded the Athena SWAN Bronze or Silver Award from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our equality and inclusion webpage provides more information.

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.

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.