



**UNIVERSITY OF LEEDS**

## **CANDIDATE BRIEF**

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



**Salary: Grade 7 (£39,355 – £46,735 p.a.) Due to funding restrictions, an appointment will not be made higher than £40,497 p.a.**

**Reference: EPSMA1127**

**Location: Leeds main campus**

**Closing date: Sunday 01 June 2025**

**Fixed-term for up to 36 months**

**We are open to discussing flexible working arrangements**

## Research Fellow in Astrophysical Fluid Dynamics, School of Mathematics.

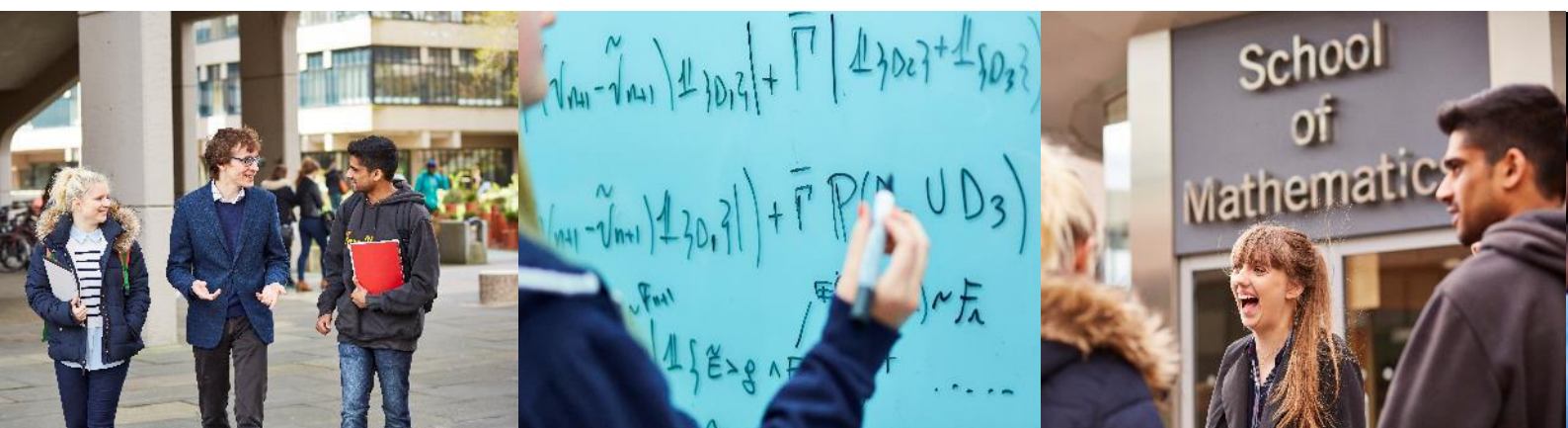
**Are you interested in astrophysical fluid dynamics, and how advanced computational methods can be used to investigate the dynamics of tidal flows in stars and planets? Would you like to feel part of a strong supportive group at the University of Leeds?**

We are looking for a Research Fellow to join our Science and Technology Facilities Council (STFC) funded project for 36 months, 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 or magnetohydrodynamical simulations to study tidal flows in spherical or ellipsoidal geometry, 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 for future observations.

You will work in close contact with Professors [Adrian Barker](#) and [Rainer Hollerbach](#) in the Department of Applied Mathematics, and you will join the [Astrophysical and Geophysical Fluid Dynamics research group](#), which is one of the largest and strongest such groups in the world. This project will strongly complement and benefit from other related projects at Leeds, including one in magnetic and thermal evolution of magnetars. The post is currently available for a start date as soon as possible from 1st July 2025 but later start dates can be negotiated.

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.

The School of Mathematics is committed to Equity, Diversity, and Inclusion, and to an environment free of any type of discrimination, where everyone can reach their full potential. We strive to support the career development of the Post-doctoral Research Fellows that we recruit, and to provide them with the flexibility and support needed in their development as the future generation of world-leading researchers.



The School of Mathematics also offers a number of family-friendly employment practices that are designed to enable a good work-life balance and to be responsive to support personal circumstances. In many roles we offer flexible working and part-time working, and we have a range of services to help support staff through work and personal challenges.

## 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 [Profs Adrian Barker](#) and [Rainer Hollerbach](#);
- 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 research;
- Making a significant contribution to the dissemination of research results by publication in the leading international peer-reviewed journals and by presentation at national and international meetings;
- Working independently and as part of a larger team of researchers, both internally and externally, to develop new research links and collaborations and engage in knowledge transfer activities where appropriate;
- 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:

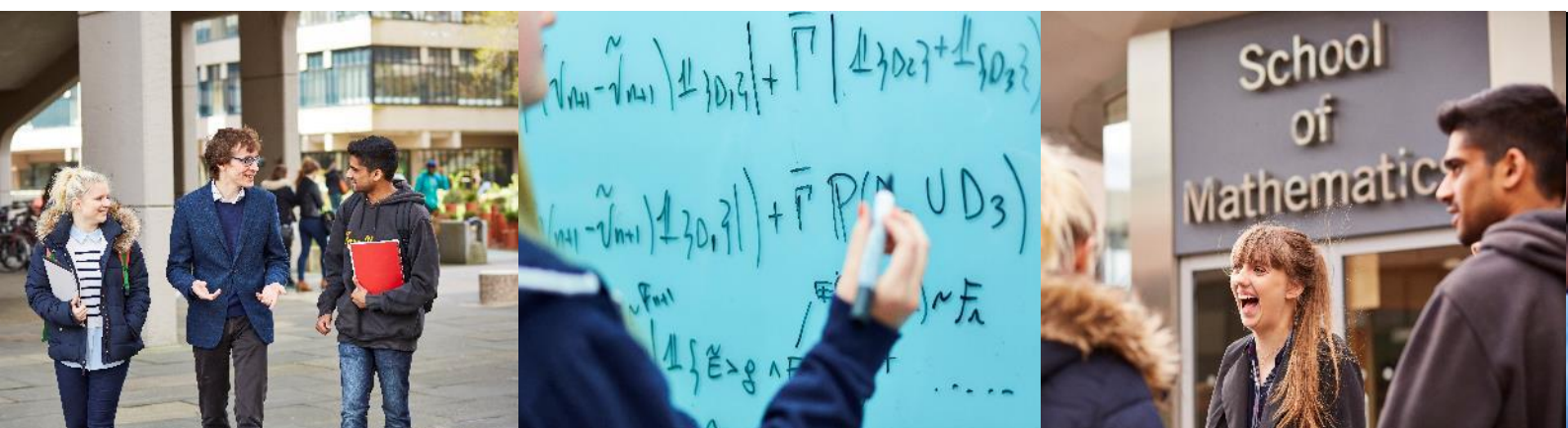
- A PhD (or have submitted your thesis before taking up the role) in Astrophysics, Applied Mathematics, Planetary Sciences, or a closely allied discipline;
- A strong background in scientific computation, particularly computational magnetohydrodynamics or fluid dynamics;
- The ability to rapidly acquire expertise in unfamiliar areas in both numerical methods and astrophysics;
- Good time management and planning skills, with the ability to meet tight deadlines and manage competing demands effectively without close support;
- A developing track record of peer-reviewed publications in international journals;
- Excellent communication skills both written and verbal, and the ability to communicate your research at national and international conferences;
- A proven ability to work well both independently 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 or tidal interactions more generally.

## 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:

**[Prof Adrian Barker](#)**, Professor of Applied Mathematics

Tel: +44 (0)113 343 5165

Email: [A.J.Barker@leeds.ac.uk](mailto:A.J.Barker@leeds.ac.uk)

## Additional information

### Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering & Physical Sciences](#), and the [School of Mathematics](#).

### 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.

### A diverse workforce

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 Engineering and Physical Sciences 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 Engineering and Physical Sciences are proud to have been awarded the Athena SWAN [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.



### Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found under the 'Accessibility' heading on our [How to Apply](#) information page or by getting in touch by emailing HR via [hr@leeds.ac.uk](mailto: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.

### Salary Requirements of the Skilled Worker Visa Route

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 [the Government's Skilled Worker visa page](#).

For research and academic posts, we will consider eligibility under the Global Talent visa. For more information, please visit [the Government's page, Apply for the Global Talent visa](#).

