



Job Title: Postdoctoral Research Associate in Applied Mathematics
Grade: 7
Salary: £38,205 to £41,732 per annum due to funding restrictions
Department: School of Computing and Mathematical Sciences
Hours/Contract: Full time or job share considered, fixed term contract until 31 January 2027
Job Family: Teaching and Research
Reference: 9612

Role Purpose

We are looking for an interdisciplinary early career researcher for a position of PDRA in Applied Mathematics. The post is funded by HorizonEurope ClimTIP collaborative project and entails research on tipping points in the Earth system by developing theory and software tools, and by performing data analysis of large data sets coming from climate models and observations. The post-holder will be embedded in a world-class research environment and candidate will combine response theory with data-driven methods for developing rigorous early warning indicators flagging the occurrence of tipping points. The post entails visits to academic partners in the UK and overseas, scientific presentation of the obtained results in international conferences, and the preparation of reports and scientific publications.

Main Duties and Responsibilities

Research Activities

- Develop or oversee the development of theoretical tools aimed at advancing our understanding of critical transitions in the Earth's system, contributing to the choice of techniques, critiques, approaches, models and methods.
- Producing robust data-driven methods that can be used for linking natural variability and response in stochastic dynamical systems.
- Lead in the analysis and processing of large sets of data.
- Producing user-friendly software in matlab and/or python.
- Lead in writing up research developments for dissemination amongst the research team and broader international community, and develop ideas and contributions for future grants, technical outputs.
- Represent the research group by disseminating results/findings at national and international conferences and broader community.

Impact and Knowledge Exchange:

- To work, contribute and collaborate with current and potential academic partners.
- To engage positively and pro-actively in research impact of the university.

Professional Development:

- Attend conferences, seminars and workshops to engage in work that supports your own professional development.





- Write, publish and present research papers in leading academic venues.

Leadership and Citizenship:

- Provide mentorship, support and guidance to other team members, research staff, students, and early career researchers.

Internal and External Relationships

- Work with other university staff and students, act as a mentor for junior researchers
- Investigate and propose new research ideas related to critical transitions in the Earth system and other complex systems
- Interact, collaborate and build partnership with external university linkages, industry partners and academic institutes.
- Present research to potential industry partners and academic venues such as conferences, workshops and seminars.

Planning and organising

You will be required to effectively manage your time to plan your research activity and to deliver on the priorities of the project:

- Must prioritize tasks within agreed work schedules. The candidate should be able to work independently and also with the principal investigator if needed to prioritize tasks and come up with realistic work schedules.
- Must plan for specific aspects of research incorporating issues such as deadlines, project milestones and overall research aims.
- Adapt daily and weekly plans to accommodate new developments and be flexible to the changing priorities of the research project.

Qualifications, Knowledge and Experience

Essential

- Achieved a PhD in mathematics, physics, Earth sciences, or cognate discipline*
- Strong knowledge of mathematical models behind critical transitions*
- Advanced knowledge of climate dynamics *
- Good writing and presentation skills
- Good communication skills.

Desirable

- Experience with funded research projects





Skills, Abilities and Competencies

Essential

- Research experience. *

Desirable

- Experience with large datasets and data-driven methods.

****Criteria to be used in shortlisting candidates for interview***

Reason for Fixed Term Contract

The reason for the fixed term contract is stated in section 1.9 in the summary of contractual terms in your contract of employment.

Criminal Declaration

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

Supporting University Activities

As a University of Leicester citizen, you are expected to support key university activities such as clearing, graduation ceremonies, student registration and recruitment open days. We expect all staff as citizens to work flexibly across the University if required.

University Values

Inclusive - We are diverse in our makeup and united in ambition. Our diversity is our strength and makes our community stronger.

Inspiring - We are passionate about inspiring individuals to succeed and realise their ambitions. We challenge our community to think differently, to get involved, and to constantly embrace new ideas.

Impactful - As Citizens of Change we will generate new ideas which deliver impact and empower our community

Equality and Diversity

We believe that equality, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equality support our efforts to attract a diverse range of high-quality staff and students, and identify our university as a progressive and innovative workplace that mainstreams equality, diversity and inclusion.

