University of Reading

Human Resources

Job Description

Title	Details
Job title	Postdoctoral Research Associate (Land–Atmosphere Interactions)
Department/Unit	Department of Geography and Environmental Science, School of Archaeology, Geography and Environmental Science
Job Type	Fixed term (24 months)
Grade	Grade 6
Accountable to	Dr Akash Koppa, Principal Investigator of the ERC Starting Grant LAMDA
Accountable for	No line management responsibilities.
Vacancy reference	SRF54770

Purpose

The postdoctoral scientist will conduct research on land–atmosphere interactions within the ERC Starting Grant LAMDA (Land–atmosphere interactions as a mechanism of dryland formation). The primary objective of the project is to develop a new theory of how humid regions turn into drylands. Specifically, it will combine paleoclimatic reconstructions with Earth system, ecosystem demographics, and atmospheric transport models to trace how drylands, vegetation, and land–atmosphere fluxes have co-evolved since 850 CE. The postdoctoral scientist will have the freedom to choose one more research directions including (a) constraining Earth system model simulations of the last millennium with paleoclimatic proxy records through data assimilation, (b) quantifying how the function, structure, and demography of vegetation respond to long-term drying and feed back to the atmosphere, and (c) assessing how human modification of the land surface, such as deforestation, afforestation, and irrigation, changes the rate at which drylands form. Furthermore, the position enables opportunities to closely collaborate with research groups in University of Bern (Switzerland) and Ghent University (Belgium), including extend research stays.

Team Structure

The research team is led by Dr Akash Koppa and will eventually include two postdoctoral researchers and two PhD students. The team is based in the Department of Geography and Environmental Science at the University of Reading.

Main duties and responsibilities

- Plan and conduct research in one or more of the research directions described above, from the design of numerical experiments to the analysis of results.

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- Set up, run, and evaluate Earth system or ecosystem demographic model simulations on high-performance computing facilities at multi-centennial scales.
- Manage and document the resulting datasets and code in line with FAIR and open science principles.
- Publish research findings as lead author in high-quality peer-reviewed journals.
- Present research at international conferences, workshops, and project meetings.
- Contribute to the day-to-day supervision of PhD students in the group, including guidance on methods, code, and scientific writing.
- Contribute to grant applications led by the Principal Investigator and develop proposals for independent funding, such as fellowships.
- Collaborate with project partners at the University of Bern and Ghent University, including research visits where appropriate.
- Contribute to the research culture of the Department of Geography through seminars and group meetings.
- Undertake other duties commensurate with the grade of the post, as reasonably requested by the Principal Investigator.

Supervision received

The postholder will report to Dr Akash Koppa. The postholder will work with considerable independence in planning and conducting their research and will receive general guidance through regular meetings with the Principal Investigator. These meetings will also cover career development, including preparation of the postholder's own grant and fellowship applications. Furthermore, the postholder will have the opportunity to work with collaborators at the University of Bern and Ghent University.

Supervision given

The postholder will have no line management responsibilities. The postholder will provide day-to-day guidance to PhD students in the group, under the formal supervision of the Principal Investigator, and may co-supervise undergraduate and Master's research projects.

Contact

Frequent contact with the Principal Investigator and members of his research group. Regular contact with collaborators at the University of Bern and Ghent University, with high-performance computing support staff, and with the Research Services office for grant applications. Occasional contact with the wider scientific community at conferences and workshops.

Terms and conditions

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Full time, 35 hours per week, fixed term for 24 months with the possibility to extend for a further 12 months. Occasional travel within the UK and abroad for conferences and research visits is required.

This document outlines the duties required for the time being of the post to indicate the level of responsibility. It is not a comprehensive or exhaustive list and the line manager may vary duties from time to time which do not change the general character of the job or the level of responsibility entailed.

Date assessed:

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Person Specification

Job Title	School/Department
Postdoctoral Research Associate in Land–Atmosphere Interactions	**Department of Geography and Environmental Science, School of Archaeology, Geography and Environmental Science**

Which stage these Criteria be assessed
A = Application
I = Interview
P = Presentation at interview

Criteria	Essential	Desirable
Skills Required	• Ability to plan and conduct independent research and deliver results on time (A, I) • Proficiency in scientific programming, for example Python, Julia, or Fortran, and in the analysis of large gridded datasets (A, I) • Excellent written and oral communication skills in English (A, P) • Ability to work collaboratively in an international and interdisciplinary team (I)	• Experience of running numerical models on high-performance computing systems (A) • Ability to guide and support junior researchers (A, I)
Attainment	• PhD (or near completion) in atmospheric science, climate science, Earth system science, ecology, hydrology, physical geography, physics, or a closely related field (A)	
Knowledge	• Knowledge of land–atmosphere interactions and the climate system (A, I) • Specialist knowledge in at least one of (a) paleoclimatic data assimilation and Earth system modelling, (b) vegetation–climate interactions, ecosystem demography, or vegetation response to drying, or (c) land use and land cover change and its effects on regional climate (A, I)	• Knowledge of dryland climatology or paleoclimatic proxy records (A) • Familiarity with models such as CESM, ED, FATES, or FLEXPART (A)

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Relevant Experience	• Record of peer-reviewed publications appropriate to career stage, including first-author papers (A) • Experience of developing or applying numerical models of the Earth system, vegetation, or atmosphere (A, I)	• Postdoctoral research experience (A) • Contribution to the preparation of grant or fellowship proposals (A, I) • Experience of co-supervising students (A, I) • Experience of working in international research collaborations (A)
Other	• Willingness to travel within the UK and abroad for conferences and research visits (I)	• Commitment to open science and FAIR data practices (I)

Completed By Akash Koppa

Date 28-10-2026

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