

JOB DESCRIPTION

Vacancy reference:	JTR00138 – R1
Post Title:	Postdoctoral research associate (PDRA)
Grade:	6
School/Department:	National Centre for Atmospheric Science, Department of Meteorology, School of Mathematical, Physical and Computational Sciences
Reports to:	Prof Jonathan Gregory (principal investigator and line manager)
Responsible for:	None

Purpose

To produce refined projections of 21st-century dynamic sea level change and ocean heat uptake, by combining the results of atmosphere-ocean general circulation models (AOGCMs) with observational data for the uptake of passive tracers within the ocean, in order to reduce uncertainty in future regional sea level change, which is among the most severe consequences of anthropogenic climate change.

This work is funded by a NERC large grant as part of a collaborative project (TICTOC) of six UK institutions, led by the National Oceanography Centre at Southampton.

Main duties and responsibilities

- Use results from AOGCMs of the international Coupled Model Intercomparison Project Phases 5 and 6, especially the newly designed flux-anomaly-forced experiments of the CMIP6 FAFMIP subproject, to investigate and evaluate methods for estimating the propagation of heat added at the surface into the ocean interior, and the redistribution of existing heat content.
- Devise and apply methods for adjusting or weighting AOGCM projections of sea level change using estimates constrained by observations of passive tracers.
- Report on progress and results of this research through appropriate methods, including papers for submission to scientific journals, presentation of results at project meetings, conferences, workshops and to the public.
- Maintain awareness of current progress in relevant research areas, to ensure that the research remains at the cutting edge.
- Contribute to the maintenance of an active scientific environment in the Department through group meetings, seminars etc.

Supervision received

Prof Gregory will provide general guidance and specific scientific and technical direction as required through regular meetings.

Supervision given

There are no responsibilities for supervision of staff. There may be opportunities for MSc project supervision or co-supervision of PhD students,

Contact

There will be annual meetings of all partners in TICTOC, and contact will be maintained throughout, especially with Profs Laure Zanna and Samar Khatiwala at the University of Oxford, and their PDRA working on this project. Our two groups also meet a couple of times per year with the Met Office sea level group, whose manager Dr Matt Palmer is also a partner in this project, as is Dr Jan Zika of the University of New South Wales. This project is relevant to the aims of FAFMIP, whose steering committee is chaired by Prof Gregory, and it will be important and valuable to keep in touch with the ten groups worldwide who are participating in FAFMIP.

This project is closely related to another project, concerned with investigation of the spread of AOGCM projections of dynamic sea level change and ocean heat uptake, funded by a NERC standard grant to Prof Gregory and Prof Zanna. Prof Gregory will supervise a PDRA at Reading on that project (post advertised with this one). Exchange of ideas and collaboration in the two projects will be mutually beneficial.

Terms and conditions

This is a full-time post for three years.

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:

PERSON SPECIFICATION

Job Title	School/Department
Postdoctoral Research Associate	National Centre for Atmospheric Science, Department of Meteorology, SMPCS

Criteria	Essential	Desirable
Skills Required	Strong physical insight and analytical ability. Good facility with relevant statistical and mathematical methods. Designing and carrying out climate model experiments. Good communication skills, both written and oral. Maintaining productive relationships with collaborators. Programming in Fortran and in a suitable language for data analysis.	Programming in Linux shell.
Attainment	PhD in physical or mathematical science. Publication record comensurate with experience.	PhD in climate, ocean, atmospheric or Earth system science.
Knowledge	Knowledge of and interest in climate change science, especially ocean climate and sea level change. Understanding of essential physical and dynamical oceanography.	Science of atmospheric climate change, climate sensitivity, Earth energy budget.
Relevant Experience	Research involving AOGCM or 3D ocean modelling. Computer programming. Analysis of large datasets.	Use and development of AOGCMs.
Disposition	Motivated, conscientious and creative. Communicative. Collaborative. Willing to undertake visits.	Enjoy working with others.

Completed by: Jonathan Gregory	Date: 6.9.17
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