University of Reading

JOB DESCRIPTION

Vacancy reference:	SRF17618
Post Title:	Research Scientist in High Resolution Global Climate Modelling
Grade:	Grade 6
School/Department:	National Centre for Atmospheric Science, School of Mathematical, Physical and Computational Sciences
Reports to:	Prof P.L. Vidale
Responsible for:	N/A

Purpose

We seek a post-doctoral Research Scientist for the High Resolution Global Climate Modelling core programme, a key aspect of strategic research developed at the National Centre for Atmospheric Science in Reading. We will develop and exploit advanced configurations of the Met Office global climate model suitable for investigation of scale interactions in the climate system.

The project will involve close collaboration with the Met Office and various international partners. Multiple collaborative opportunities are offered at the international level: HRCM lead large programmes (e.g. the EU Horizon-2020 PRIMAVERA and the CMIP6 HighResMIP protocol) and engage internationally in the co-design of modelling systems that span conceptual models, all the way to state-of-the-art numerical models (examples are found within our collaborations in ENES, ESIWACE, the US-CLIVAR Hurricane Working Group). HRCM are also world-leaders in the use of High-Performance Computing worldwide, including mining Large Data (order of PB).

Main duties and responsibilities

- Contribute to designing and executing major HRCM-group climate model simulations, including the analysis and management of associated data.
- Assess model skill in reproducing a wide range of phenomena across scales, including the finest mesoscale (mesoscale-gamma, 2-20km).
- Identify and quantify interactions between phenomena that emerge at high resolution and the large-scale environment, which underpin the dynamics of the global climate state. Examples of such phenomena include tropical cyclones, mesoscale convective systems, air-sea interactions around boundary currents. See also the further particulars.
- Design, perform and evaluate sensitivity studies to elucidate the role of specific phenomena in the climate system.
- Prepare scientific papers for publication.
- Attend national and international conferences to promote the results of the project.
- Interact with collaborators at the Met Office and internationally, through project meetings and other collaborative mechanisms.
- Maintain an awareness of current progress in relevant research areas, to ensure that the research carried out remains at the cutting edge.

Supervision received

Supervision will be provided by the Principal Investigator of the project, Prof Pier Luigi Vidale, as well as Dr Malcolm Roberts (MO) and Dr Grenville Lister (CMS). The PI will provide extensive support to develop and implement the model configurations. Prof Vidale and Dr Roberts have decades of expertise in weather and climate modelling at high resolution.

Supervision given

There are opportunities for the post-holder to be involved in teaching graduate and undergraduate courses, and to supervise or co-supervise M.Sc. and B.Sc. research projects. The post-holder is also expected to substantially contribute to the bi-annual NCAS Climate Modelling Summer School

Contact

The post-holder will be based in NCAS-Climate and the Department of Meteorology at the University of Reading. The post-holder will work closely with project partners at the Met Office.

Terms and conditions

Full-time post, initially for three-years, but with potential for extension.

Expected start date: 1 June 2017.

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
Research Scientist	**MPCS/NCAS-Climate**

Criteria	Essential	Desirable
Skills Required	- Strong scientific analytical skills. - Ability to perform analysis of Large Data - Strong computer programming skills. - Good writing and communication skills.	- Fortran/Python programming - Unix shell scripting - Data manipulation/analysis using standards (e.g. NetCDF4, HDF5, GRIB2)
Attainment	- Ph.D. in Mathematics, Physics, Physical Science, or equivalent research experience. - A publication record appropriate to experience.	- A Ph.D. in climate, Earth system or atmospheric science. - A track record in atmospheric modelling
Knowledge	- Knowledge of, or evidence of a serious interest in, atmospheric dynamics and atmospheric physics. - Understanding of physical processes relating to weather and climate.	- Knowledge of tropical cyclones, particularly in the Atlantic. - Knowledge of modes of tropical climate variability and their teleconnections.

Relevant Experience	• Research in a physical science. If the science is not climate-related, then evidence of the ability to acquire relevant knowledge. • Experience in numerical modelling, preferably in a High-Performance Computing (HPC) environment • Experience of analysis and visualisation of large and complex scientific datasets.	• Climate system research, particularly in tropical meteorology. • Experience of working with large, complex environmental simulation systems and underlying infrastructure, • Running the Met Office Unified Model. • Process-based and/or statistical analysis of weather/climate model output.
Disposition	• Self-motivated and capable of independent work • Capable of working within a team to deliver common goals. • Willingness to travel to relevant institutions and events.	• Enjoy working as part of a team.
Other	• Clear potential to deliver an outstanding research record.	

Completed by: P.L. Vidale   Date: March 2017