

Human Resources

Vacancy reference:	SRF16617
Post Title:	Post-doctoral in Atmospheric Model Development
Grade:	6
School/Department:	Meteorology
Reports to:	Dr Hilary Weller
Responsible for:	none

Purpose

A post-doctoral research assistant is sought to work on the "Moving meshes for global atmospheric modelling" project. This project is joint with Imperial College London and the University of Bath and lead by the University of Reading. We are developing adaptive mesh techniques for use in weather and climate prediction models, developing novel mathematical techniques involving optimal transport and solving partial differential equations using an advanced C++ library (OpenFOAM). The use of adaptive meshes could enable more accurate and efficient weather prediction models and predictions of the regional impacts of climate change.

Main duties and responsibilities

- Develop and implement numerical techniques for generating adaptive meshes using optimal transport.
- Develop and implement finite volume techniques for solving the equations of atmospheric motion on moving meshes, considering conservation properties and maintenance of atmospheric balances.
- Preparing scientific papers for publication.
- Attending national and international conferences to promote the work of the project.
- Reading widely in the areas of numerical modelling, atmospheric dynamics, optimal transport and weather forecasting.
- Interacting with colleagues at the University of Bath and Imperial to ensure that complementary work is undertaken at the three universities working on the project.
- Arranging project meetings.
- Interacting with Met Office collaborators on the project.

Supervision received

Supervision will be provided by the lead PI of the moving mesh project, Dr Hilary Weller. Hilary will provide scientific, mathematical and technical support to the post holder. The post holder will also benefit from interactions with the PIs at Bath and Imperial who are leading mathematicians in their fields.

Supervision given

There are opportunities for the post holder to be involved in teaching graduate and undergraduate courses and supervising PhD, MSc and undergraduate projects.

Contact

There will be frequent contact with staff on the project working in the mathematics departments of the University of Bath and Imperial College London. There will also be interactions with the UK Met Office.

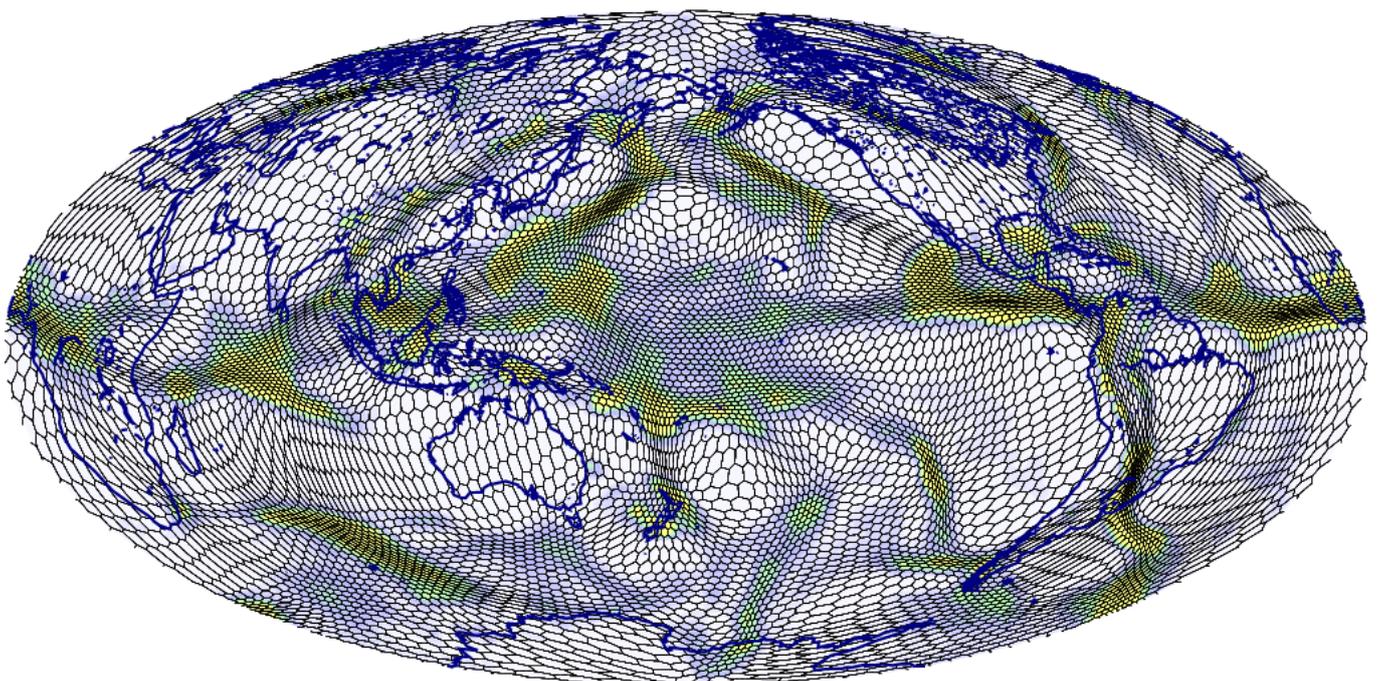
Terms and conditions

35 hours per week, normal terms and conditions for a post-doc. 35 hours per week, normal terms and conditions for a post-doc. Salary range £29,301 to £38,183 depending on experience, fixed term for 18-24 months depending on salary.

Expected start date, 1 April 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
Post-doc in atmospheric model development	Meteorology

Criteria	Essential	Desirable
Skills Required	<ul style="list-style-type: none"> Numerical model development Excellent programming 	<ul style="list-style-type: none"> C++ programming OpenFOAM experience Numerical analysis
Attainment	<ul style="list-style-type: none"> PhD in mathematics, physics, engineering or a closely related subject 	<ul style="list-style-type: none"> Publication record appropriate to length of research career.
Knowledge	<ul style="list-style-type: none"> Numerical solution of PDEs representing fluid flow Geophysical fluid dynamics 	<ul style="list-style-type: none"> Optimal transport Finite volume technique Mimetic methods in atmospheric modelling
Relevant Experience	<ul style="list-style-type: none"> See above 	<ul style="list-style-type: none">
Disposition	<ul style="list-style-type: none"> Collaborative Independent Takes initiative 	<ul style="list-style-type: none">
Other	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

Completed by: Hilary Weller	Date: 21 Nov 2016
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