

JOB DESCRIPTION

Vacancy reference:	SRF17835
Post Title:	Postdoctoral Research Associate in Space Plasma Physics
Grade:	Grade 6
School/Department:	Mathematical, Physical and Computational Sciences
Reports to:	Dr Clare E. J. Watt
Responsible for:	n/a

Purpose

We seek a post-doctoral researcher to work on a 4-year NERC-funded project investigating the nonlinear plasma physics of wave-particle interactions in Earth's Radiation Belts. The project forms part of a large UK consortium to study the physics of Earth's Radiation Belts and improve physics-based modelling of important wave-particle interactions. The consortium is led by the British Antarctic Survey and includes the University of Reading, Mullard Space Science Laboratory (UCL), Imperial College London and the University of Sheffield. We welcome applications from strongly-motivated individuals who wish to be part of this exciting new collaboration.

Main duties and responsibilities

The aim of this project is to explore the fundamental science of kinetic wave-particle interactions in Earth's magnetosphere, with the long-term goal of improving the theoretical description of particle diffusion. The post-holder will:

- design and carry out numerical experiments using kinetic plasma physics simulations that study the nature of wave-particle interactions and phase space diffusion occurring in the magnetosphere;
- in collaboration with scientists at the British Antarctic Survey, investigate conditions where quasilinear theory is an appropriate description of wave-particle interactions;
- where necessary, develop new theoretical descriptions of wave-particle interactions, using the results from numerical experiments as a guide;
- take active part in consortium meetings to explore new physics-based modelling of Earth's Radiation Belts and new scientific results;
- communicate research outputs through the publication of scientific journal articles and participation at international conferences.

Supervision received

Dr Clare Watt will be your line manager, providing guidance and supervision on scientific and organisational activities, via regular meetings.

Supervision given

N/A

Contact

Biannual meetings with other researchers in the consortium are planned that will include stakeholders from industry in addition to the scientists in the consortium. Regular communication and meetings with other Space Physics researchers at Reading will be expected and encouraged.

Terms and conditions

Full time, fixed term initially for a period of four years. There may be opportunities to extend this post contingent upon your satisfactory performance and the acquisition of sufficient research funding.

There are no specified hours of work, but you will be required to work such hours as are necessary to carry out the duties associated with the post. Overtime is not payable.

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.

The University aspires to be an "Employer of Choice" and recognises that success is not simply determined by a competitive suite of terms and conditions of service, but by fostering a working environment that protects the physical and mental well-being of its staff. Full details of the University's Health and Well-being policy are available from through the [HR website](#). The University is committed to work-life balance and supportive of flexible working arrangements, and the School's website gives examples of excellent practices in respect of [flexible work](#) as well as for [maternity/parental leave](#) within the School. The University supports its staff in many other ways:

its [Centre for Quality Support and Development](#),

its excellent [Nursery facilities](#),

its [SportsPark](#),

its membership of [Childcare+](#).



The School of Mathematical and Physical Sciences was awarded an Athena SWAN Silver award in 2010, [renewed in 2014](#), in recognition of its good employment practices in relation to women working in science, engineering and technology (SET).

Please follow the [link](#) for more information.

Date assessed:

PERSON SPECIFICATION

Job Title	School/Department
Postdoctoral Research Associate in Space Plasma Physics	SMPCS/Meteorology

Criteria	Essential	Desirable
Skills Required	<ul style="list-style-type: none"> Ability to communicate scientific ideas effectively in person as well as on paper Ability to program in a scientific computing language such as Fortran, C++, Matlab, Python etc Ability to manage time effectively 	<ul style="list-style-type: none"> Ability to write and/or modify computer simulations of plasma processes Data management skills Familiarity with UNIX operating systems
Attainment	<ul style="list-style-type: none"> PhD in Space Plasma Physics or related discipline 	
Knowledge	<ul style="list-style-type: none"> Space Plasma Physics 	<ul style="list-style-type: none"> Kinetic Plasma Physics Wave-particle interactions Numerical plasma experiments
Relevant Experience	<ul style="list-style-type: none"> Research experience in a physical or mathematical science 	
Disposition	<ul style="list-style-type: none"> Must be able to work successfully in a large team Must be motivated to work independently Strong motivation to learn new techniques relevant to the project 	
Other		

Completed by: Clare E. J. Watt	Date: 31 st March 2017
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