

JOB DESCRIPTION

Vacancy reference:	SRF31914
Post Title:	Postdoctoral research assistant
Grade:	Grade 6
School/Department:	SMPCS/Meteorology
Reports to:	Dr Chris Westbrook
Responsible for:	n/a

Purpose

To conduct research investigating the aerodynamics of ice crystals and snowflakes in the atmosphere using 3D-printed analogues. For further information, see preprint (http://www.met.reading.ac.uk/~sws04cdw/TRAIL1_submitted.pdf), blog post (<http://blogs.reading.ac.uk/weather-and-climate-at-reading/2019/laboratory-experiments-investigating-falling-snowflakes/>) and media coverage (<https://www.theguardian.com/news/2019/feb/15/weatherwatch-how-when-and-why-does-a-snowflake-fall>).

Main duties and responsibilities

The role of the post-holder is to undertake research into the sedimentation of ice particles, under the guidance of the PI, Dr. Chris Westbrook. This work is part of a NERC-funded project and the post-holder can expect to contribute work towards some or all of the following activities:

- *Data analysis*: use of existing experimental data sets to improve the representation of ice sedimentation and growth processes in numerical models and remote sensing algorithms
- *Experimental work*: working with colleagues at the University of Leeds to assist with the collection of Particle Imaging Velocimetry data, and contributing to new experiments observing the free-fall of micromachined snowflake analogues in air and a vertical wind tunnel
- *Collaboration with modellers and project partners*: the post-holder will collaborate with partners in Switzerland, Germany and the UK
- It is expected that the post-holder will publish their results in peer-reviewed journal articles and present their work at suitable conferences/meetings.

Supervision received

Dr Westbrook will provide guidance on the work through weekly meetings and provide input and guidance on the experimental work, subsequent analysis, and writing papers.

Supervision given

None.

Contact

The post holder will be in contact with collaborators the Universities of Leeds and external partners in Switzerland and Germany; they will also work within the “remote sensing and clouds” research group in our department.

Terms and conditions

This is a full time, fixed term post. Initially the contract will run until 30 November 2020, however an extension into the summer of 2021 should be possible, subject to approval from NERC. Flexible working arrangements will be considered. Part time working may also be possible, subject to flexibility in the grant award.

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: 20.6.20

PERSON SPECIFICATION

Job Title	School/Department
Postdoctoral research assistant	SMPCS/Meteorology

Criteria	Essential	Desirable
Skills Required	<ul style="list-style-type: none"> • Ability to analyse data using tools such as MATLAB and visualise the results • Ability to interpret results physically and systematically identify avenues for the next experiment • High standard of note-keeping and ability to keep a detailed record of data collected, with appropriate contextual information 	
Attainment	<ul style="list-style-type: none"> • A PhD (or expectation that one will soon be awarded) in a physical, mathematical or engineering science 	<ul style="list-style-type: none"> • PhD or higher level research experience in a topic relevant to this project

Knowledge	<ul style="list-style-type: none"> • Programming and data analysis in an environment such as MATLAB, Python, IDL or similar 	<ul style="list-style-type: none"> • An understanding of the fluid mechanics of falling particles • Appreciation of numerical modelling methods, especially for fluid dynamics and Monte Carlo problems
Relevant Experience	<ul style="list-style-type: none"> • Some research experience involving the analysis of data to obtain insight into physical problems 	<ul style="list-style-type: none"> • Research experience in cloud physics • Research experience in fluid dynamics • Appreciation of ice microphysical processes in the atmosphere • Experience of laboratory work
Disposition	<ul style="list-style-type: none"> • Willingness to work collaboratively with other researchers, and with technical support staff, both at Reading and at Leeds • Willingness to adopt MATLAB as primary data analysis tool • Willingness to work in laboratory setting • Enthusiasm to share your progress at regular research group meetings, through conferences and through peer-reviewed publications 	<ul style="list-style-type: none"> • Enthusiasm for the topic • Desire to develop ideas and experiments independently to make the project your own

Completed by: Chris Westbrook	Date: 20.6.20
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