

JOB DESCRIPTION

Vacancy Ref: A2537

Job Title:	Senior Research Associate	Present Grade:	7
Department/College:	Lancaster Environment Centre		
Directly responsible to:	Dr. Mike James		
Supervisory responsibility for:	none		
Other contacts			
Internal:	Dr Steve Lane, Dr. Jennie Gilbert, Prof. Keith Beven. Other post-doctoral researchers, postgraduate and undergraduate students, technical and academic staff, central administration		
External:	Other institutions within the R4AsH project (universities of Cambridge, Oxford, Reading and St Andrews), and project partners. Stakeholders as necessary (e.g. UK Met Office).		
Major Duties:	<ol style="list-style-type: none"> 1. Determination of the radar reflectivity of falling volcanic ash particles at mm-wave frequencies through laboratory experiments. This will involve designing, constructing and using a laboratory particle fall chamber. Along with systems for control measurements (e.g. optical particle characterization), the chamber will be instrumented with a bespoke triple-frequency radar provided by the University of St Andrews, who will collaborate on its installation. 2. Exploration of the source term and epistemic uncertainties in volcanic ash transport and deposition models (such as FALL3D and Ash3D), and the effectiveness of radar constraints, using the Generalized Likelihood Uncertainty Estimation (GLUE) methodology. This will include assessment of model sensitivities to measurement constraints determined by practical radar deployments, and the determination of their significance with respect to other sources of uncertainty, such as from meteorological data. 3. Participation in R4AsH project meetings, preparation and presentation of talks, posters and reports to disseminate the results of these studies. 4. Participation in national and international conferences and workshops to present the results of the project to a wide audience and to learn about current advances in the field. 5. Preparation of journal papers for publication of project findings. 6. Participation in (and ultimately taking the lead in) writing new research proposals that build on the expertise developed in the R4AsH project. 7. Any other duties as may be reasonably required by the line manager. 		