

PhD Opportunity

Space Environment and Radio Engineering (SERENE) Group, University of Birmingham

Supervisor(s)	Prof. Matthew Angling
Application Deadline:	1 March 2016
Project Title:	Wideband radio sounding of the ionosphere using CubeSats
Institution:	University of Birmingham
School:	School of Engineering, Space Environment and Radio Engineering (SERENE) group
Funding availability:	Directly funded PhD project (UK/EU students only)
Research interests/description of main research theme:	<p>The Defence Science and Technology Laboratory (Dstl) and the Royal Academy of Engineering (RAEng) sponsor a Chair at the University of Birmingham with the aim of developing a programme of internationally recognised research in the field of Space Environment and Radio Engineering. As part of the plan to develop the group, an opportunity has arisen for a fully funded PhD studentship.</p> <p>There are considerable challenges to be overcome in order to develop future space based UHF wideband radio systems. Such systems include space based foliage penetrating synthetic aperture radar systems and wideband UHF satcom. One area of uncertainty is the impact of the ionosphere on the wideband radio signal. Consequently, the SERENE group is developing the Wideband Ionospheric Sounder Cubesat Experiment (WISCER). WISCER comprises a 3U CubeSat which hosts a wideband radio beacon operating at low UHF frequencies. The design of such a sounder on a small platform presents a considerable challenge. Therefore, we are recruiting a full time research student to continue this work. Research areas may include sounding waveform design, wideband ionospheric modelling, and wideband receiver signal processing.</p> <p>The successful student will have the opportunity to participate in the SERENE group's wider activities as well as his/her own research project.</p> <p>UK and EU students with interests in space system design and ionospheric radio propagation are invited to apply for this fully funded post. Applications are open to students that have, or expect to obtain, a 1st class degree (or equivalent) in a wide variety of scientific disciplines including engineering, mathematics, and physics. Due to the nature of the project, the applicant must be able to demonstrate good numerical (simulation, analysis), programming (matlab, VHDL) and practical skills.</p> <p>To find out more about studying for a PhD at the University of Birmingham, including full details of the research undertaken in the School, the funding opportunities available for your subject, and guidance on making your application, you can order a copy of our Doctoral Research Prospectus, at: www.birmingham.ac.uk/drps</p>
Funding notes:	The studentship covers University fees plus a stipend (tax-free maintenance grant) of £14k p.a. for the first year, and at least this amount for a further two years. UK and EU students only.
Notes:	Applicants who do not have English as a first language will have to meet the requirements described at: http://www.birmingham.ac.uk/postgraduate/requirements-pgt/international/index.aspx
Contact for enquiries	Prof. Matthew Angling m.angling@bham.ac.uk