

PhD position in SAR remote sensing at Simon Fraser University

The Industrial Research Chair in Synthetic Aperture Radar at the School of Engineering Science of Simon Fraser University (SFU) is offering a 4-year PhD student position studying "Microwave scattering from inhomogeneously moist soils". The preferred starting date is summer 2017.

The overall aim of the PhD research is to provide a first quantitative understanding of how soil moisture causes coherent phase shifts in polarimetric and interferometric microwave signals, with a particular focus on the influence of soil moisture inhomogeneities (in the form of vertical gradients and/or random asperities). To reach this goal, the student will:

- develop a Finite Difference Time Domain simulation (FDTD) in 3D (+ time) of tapered microwave beams scattered by realistic (inhomogeneous) moisture distribution scenarios;
- carry out numerical analysis of the influence of the coherent microwave imaging process using synthetic apertures on the FDTD simulation results;
- perform experiments in the anechoic chamber using a moving microwave transmitter/receiver over a sand box with controlled watering and dry-out conditions.

Applicants are required to have, or be about to obtain, a Master degree, or equivalent, in electrical engineering, physics or geophysics. Candidates with the following qualifications are encouraged to apply:

- Strong academic background (a minimum GPA of A [85%]);
- Passionate research interest and a background in remote sensing;
- Solid programming skills (including C++ and Python);
- Strong scientific writing skills and high motivation to produce publishable results;
- A very good command of English, both spoken and written, i.e. TOEFL IBT (overall score of 88 or better, minimum score of 20 in each of the four components: listening, speaking, writing, reading) or TOEFL PBT (paper based test, minimum score of 570, minimum essay score of 5).

Expression of interest including CV, academic transcript and the names of three references should be sent to Prof. Bernhard Rabus (btrabus@sfu.ca) by February 17, 2017.