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DLR – DAAD Fellowships

Fellowship No. 643

Research Area :	Space/Aeronautics
Research Topic:	**Ionospheric characterisation by means of polarimetric and/or interferometric SAR measurements**
DLR Institute:	Microwaves and Radar Institute (IHR), Radar Concepts Department, Oberpfaffenhofen, Germany
Position:	Graduate
Openings:	1

Job Specification: The increasing importance of spaceborne SAR missions operating at lower frequencies requires the development of effective and robust ionospheric calibration algorithms. However, the increasing ionospheric impact with degreasing frequency in combination with more complex instrument modes and the higher data quality requirements make ionospheric calibration a challenge. Facing this challenge in the last years improved drastically the understanding of the ionospheric impact on multi-parameter SAR data.

Parallel to the development of advanced ionospheric calibration algorithms, the progress in understanding the interconnections between ionospheric and SAR image parameters triggered a paradigm shift: Instead of looking at the ionosphere as a "disturbing" medium only, the potential of SAR configurations to characterize the ionosphere and estimate important ionospheric parameters, with unprecedented accuracy and on spatial scales that where impossible before, was recognized. The Institute is one of the first pioneers in this direction forerunning the estimation of ionospheric parameters from SAR data.

In this framework, the master thesis can focus on the estimation of spatial (2D and 3D) / temporal characterisation of the electron distribution by means of multi-parameter SAR data.

We are looking for a highly motivated candidate preferably with background in remote sensing, electromagnetics, signal processing and/or parameter estimation. Analytical skills and basic programming experience in Python, Matlab, or equivalent are preferable.

Required Qualification: University level courses in a technical / engineering or scientific discipline with emphasis on electromagnetics, physics, and/or signal processing.

Applicants should have good interpersonal and communication skills and should be able to work in an international and interdisciplinary environment, both independently and as part of a team.

Advantageous Skills: Experience in radar (SAR) remote sensing, multi-parameter SAR data processing and inversion, electromagnetics, signal processing and/or parameter estimation. Analytical skills and basic programming experience in Python, IDL, Matlab or equivalent.

English competence: The working language is English. A good speaking/writing knowledge is required.

Earliest Start Date: As soon as possible

Duration: 7 months

Application Deadline: Until position filled

Further Information: www.dlr.de/hr/en/
www.daad.de/dlr

Technical Contact:

More information may be obtained by contacting:

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Thank you for your attention!
We look forward to receiving your application!