



**Deutsches Zentrum  
für Luft- und Raumfahrt e.V.**  
in der Helmholtz-Gemeinschaft

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# DAAD

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## **DLR – DAAD – Fellowships**

Fellowship - No. 649

<b>Research Area :</b>	Space, Aeronautics
<b>Research Topic:</b>	<b>3D Forest Structure Change</b>
<b>DLR Institute:</b>	Microwaves and Radar Institute (IHR), Radar Concepts Department
<b>Position:</b>	Doctoral Student
<b>Openings:</b>	1
<b>Job Specification:</b>	<p>In April and May 2023, the GABONX campaign was deployed in Gabon, Central Africa, flown by DLR's F-SAR airborne SAR system on board a Do 228-212 aircraft. The campaign was led by the Institute and carried out in cooperation with the Gabonese space agency AGEOS and the US and European space agency's NASA and ESA. GABONX revisited the same test sites that were also flown seven years ago during the AfriSAR 2016 campaign, acquiring fully polarimetric and (multi-baseline repeat-pass) interferometric/ tomographic data sets in L- and P-band in the same flight configurations as in 2016.</p>

At the same time with the SAR acquisitions, the NASA Goddard Space Flight Center conducted flights over the same test areas with their 'Land, Vegetation, and Ice Sensor' (LVIS) laser altimeter system providing very precise information about forest structure and underlying topography.

Both data sets together form a unique data basis that allows to investigate forest structural change in the context of polarimetric / interferometric and/or tomographic SAR measurements at L- and P-band. The master thesis shall address forest structure change questions within this framework. The fellowship is with the Information Retrieval research group in the Radar Concepts Department of DLR's Microwave and Radar Institute in Oberpfaffenhofen, Wessling. The candidate will work within an international and multi-disciplinary team with leading expertise in the field of geophysical parameter inversion from multidimensional 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:** Instantly

**Duration:** 3 years

**Application Deadline:** Until position filled

**Further Information:** [www.dlr.de/hr/en/](http://www.dlr.de/hr/en/)  
[www.daad.de/dlr](http://www.daad.de/dlr)

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