

## Airborne remote sensing for monitoring essential biodiversity variables in forest ecosystems (RS4forestEBV)

TO BE HELD IN THE BAVARIAN FOREST NATIONAL PARK & THE GERMAN AEROSPACE AGENCY (DLR) IN OBERPFAFFENHOFEN, 3 - 14 JULY 2017

ORGANISED BY THE UNIVERSITY OF TWENTE AND EUFAR, WITH FUNDING FROM EUFAR - A PROJECT FINANCED BY THE EU'S 7TH FRAMEWORK PROGRAMME (2014 -2018)

Forest management requires the use of comprehensive remote sensing data which enable monitoring biodiversity changes. Bio-physical and biochemical vegetation parameters can characterise changes in biodiversity through changes in ecosystem structure and function.

In this training course, the special skills required for processing the new generation of airborne hyperspectral, thermal, and LiDAR data for retrieving **essential biodiversity variables in forest ecosystems** will be presented.

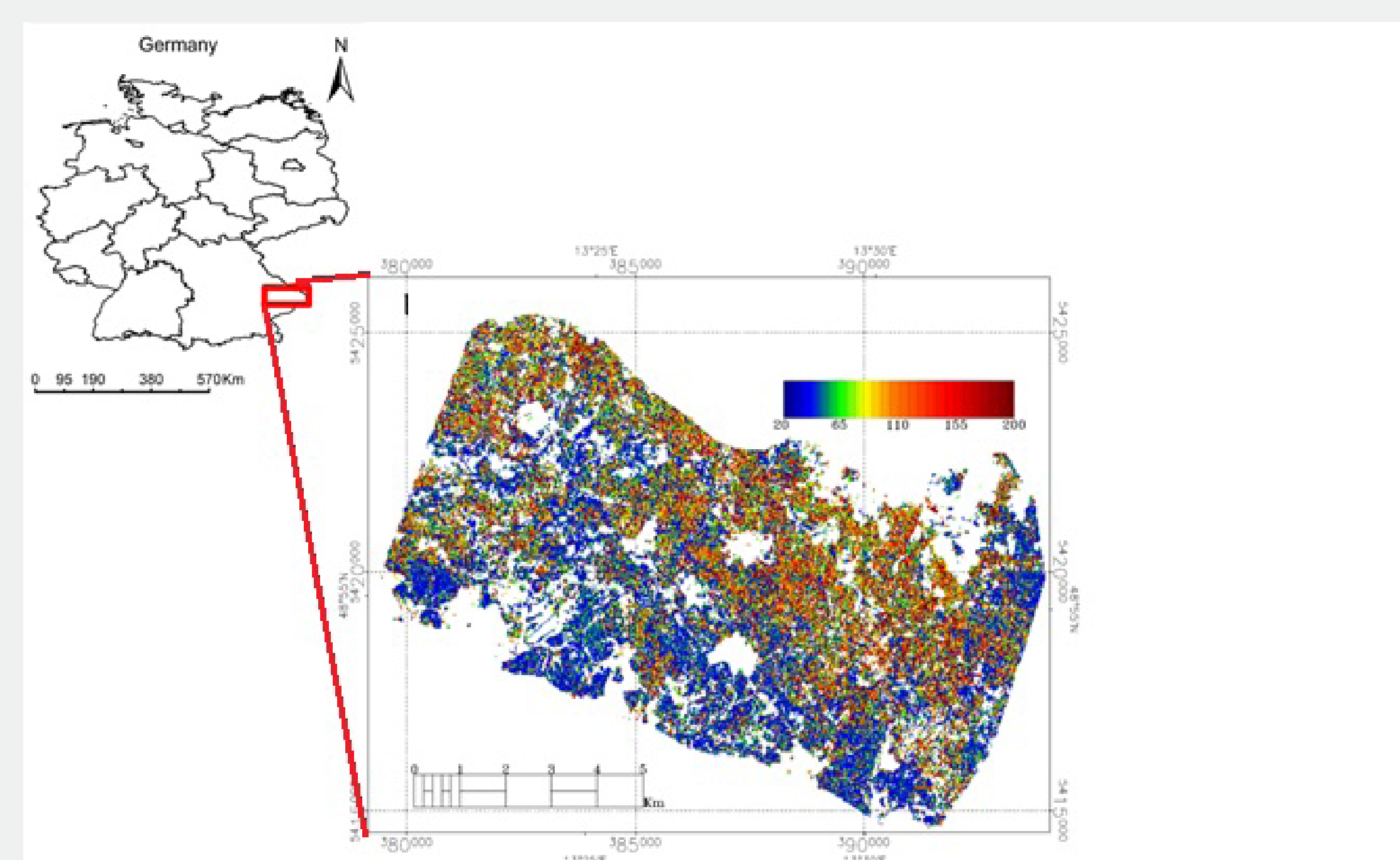
The ground data collection that will be performed during the first week of the training course at the Bavarian Forest National Park aims to provide the participants (PhD students, post-docs and university lecturers) with knowhow on tools (field spectroscopy, thermal spectrometry and terrestrial LiDAR) and measurement techniques to collect different vegetation variables. In addition, an airborne campaign with a NERC Twin Otter for the concurrent acquisitions of hyperspectral imaging data in visible, near-infrared, shortwave-infrared and longwave-infrared (thermal) wavelengths as well as LiDAR data (with full wave form component) will be organised during the training course if the weather conditions allow.

Data acquired during the training course as well as archived data will be processed and analysed in the hands-on sessions with the support of experienced users of airborne facilities and form the basis for the final scientific report. RS4forestEBV data will also be made available after the training course via the EUFAR website, accessible to all EUFAR registered members.

Furthermore, during the second week, participants will be able to attend certain sessions of the **2nd International Conference on Airborne Research for the Environment (ICARE)** that will be held simultaneously on the DLR premises from 10 -13 July 2017.

### THROUGH THE RS4forestEBV TRAINING COURSE, PARTICIPANTS WILL SPECIFICALLY:

- learn how to set up field and airborne campaigns
- become familiarised with different field instruments
- learn how to map different vegetation parameters using hyperspectral visible/NIR/SWIR/thermal and LiDAR data
- understand the advantage of each data source and the best combinations of them for retrieving vegetation parameters
- understand data processing chains
- understand the challenge of collecting and integrating forest field data with remote sensing imagery



Map of Specific Leaf Area (SLA) in  $\text{cm}^2/\text{g}$  derived from the HySpex imagery of July 22, 2013.

Retrieved from:

Ali, A.M., Skidmore, A.K., Darvishzadeh, R., van Duren, I.C., Holzwarth, S. and Mueller, J. (2016) Retrieval of forest leaf functional traits from HySpex imagery using radiative transfer models and continuous wavelet analysis. In: ISPRS Journal of Photogrammetry and Remote Sensing, 122, pp. 68-80

**Applicants:** PhD students, post-docs & university lecturers (number of participants is limited to 20)

**Fee:** no registration fee

**Travel & subsistence:** 100% funded by EUFAR for selected applicants working in an institution established in a European Member State or Associated State

**Information & Registration:**

[www.eufar.net/projects/education-and-training/](http://www.eufar.net/projects/education-and-training/)

**Deadline: 31 March 2017**

Selected participants will be notified by 30 April 2017

**For information, contact:** EUFAR Office - [bureau@eufar.net](mailto:bureau@eufar.net)

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EUFAR brings together operators of instrumented aircraft and remote-sensing instruments, and experts in airborne measurements in the field of environmental in the atmospheric, marine, terrestrial and Earth Sciences.

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[www.eufar.net](http://www.eufar.net).