

March 2024

ZALF (Leibniz Center for Agricultural Landscape Research) offers a Master Thesis project in the Working groups Microbial Biogeochemistry (MIC) and Isotope Biogeochemistry & Gas Fluxes (IBG) at ZALF e.V.

## **Master Thesis Project VOCs Dynamics in Agroecosystems – Crop Rotation and Stressors**

Volatile organic compounds (VOCs) are formed by a complex and often not resolved biological processes in plant soil systems. VOCs formation is linked to specific metabolic synthesis pathways of microbes and plants. However, there is lack of understanding these processes in response to typical stress situations in agroecosystems.

In the Master Thesis project, the candidate will establish methods and measure such VOCs and CO dynamics in a field trial with divergent crop rotation systems.

We are looking for a highly motivated candidate who has methodological experiences and understanding in gas and chemical analytics and interest in system biology techniques to assess microbiomes. A background in agroecosystems and soil biogeochemistry is helpful. Knowledge in using R and implementable packages for data and ecological statistics is required.

### **Tasks:**

- Sampling of gas samples at the experimental site of the AgroFlux sensor platform in NE Brandenburg, near Prenzlau
- Measurements of VOC patterns by SIFT Mass spectrometry
- Assessment of changes in microbiome by using RNA based techniques
- Statistical analyses of data
- Writing the thesis

**Please send your application to both email addresses below (one single pdf that contains a CV, and information on your study program and achievements)**

The working place is Müncheberg close to Berlin on the main Campus of ZALF and in the working group MIC. A financial support of the successful candidate to cover some daily costs is foreseen.

If you have any questions, please do not hesitate to contact us:

**PD Dr. Maren Dubbert** (IGB) ([maren.dubbert@zalf.de](mailto:maren.dubbert@zalf.de); [LINK IGB](#))

**Prof. Dr. Steffen Kolb** (MIC) ([kolb@zalf.de](mailto:kolb@zalf.de); [LINK MIC](#))

We look forward to you joining our team!