

Bayreuth, 14.01.21

## PhD position in Soil Ecology

We are looking for a PhD student to work with us on the DFG project “Carbon<sub>4</sub>D: A landscape-scale model of soil organic carbon mineralization in space, depth, and time”.

**The project:** Carbon<sub>4</sub>D is a joint research project of the department of Soil Ecology at the University of Bayreuth and the research group for Remote Sensing and Spatial Modelling at the University of Münster. Aim of the project is the development of a data-driven 4D (space, time, depth) model of soil organic carbon (SOC) mineralization at landscape scale, to support a better understanding of patterns and trends of the soil carbon cycle. Carbon<sub>4</sub>D serves **(1)** as a feasibility study to explore whether SOC mineralization rates can be reliably modelled in 4D by a machine learning approach, and **(2)** as a case study, to quantify and analyze 4D patterns of SOC mineralization rates and their controlling factors in a representative study area. Special emphasis will be on the analysis of the temperature and moisture sensitivity to derive assumptions how SOC mineralization patterns will respond to climate change.

**Your responsibilities:** The PhD candidate is expected to plan and carry out field work in the region of the Fichtelgebirge nearby Bayreuth to measure SOC mineralization rates in different soil depths, under various weather conditions, and in different land use types. Lab work includes incubation experiments as well as measurements of basic soil properties for large sample sets. These data will represent the basis for model development and validation. The candidate is expected to analyze the spatiotemporal patterns of SOC mineralization rates and their controlling factors. A close collaboration with the PhD student from Münster is intended for model development and analysis. The candidate will publish results in peer reviewed journals and present them at conferences.

**Requirements:** We are looking for a highly motivated candidate with a successfully completed Master’s degree in Soil Science / Geoecology / Geography, or a comparable programme with a focus on soil science.

Experience with soil gas measurements and lab work including chemical and biological analyses is desirable. Skills in data analysis (preferentially with R and ArcGIS) are of advantage. The willingness to conduct extensive field work is a prerequisite and requires a driver's license. Proficiency in English and very good writing skills are required. Proficiency in German is of advantage. The project relies on a close collaboration between soil science and geoinformatics and hence team skills are required.

The fixed-term position will start in June 2021 or later, and is limited to three years. Payment is 65% of a E13-position. The position offers the possibility to carry out research for a PhD thesis.

The University of Bayreuth is an equal opportunities employer and places particular emphasis on fostering career opportunities for women. Qualified women are therefore strongly encouraged to apply as they are underrepresented in this field. Disabled persons with equivalent aptitude will be favored.

Please send your application in English or German– including an application letter, CV, copies of records of your BSc and MSc, and contact information of one reference in electronic form as a single pdf file to Dr. Nele Meyer (nele.meyer@uni-bayreuth.de) by 05 March 2021.