Professur für Land Surface-Atmosphere Interactions
Fakultät Wissenschaftszentrum Weihenstephan für Ernährung, Landnutzung und Umwelt
Technische Universität München

TUM

Opportunities for Talents

The professorship for *Land Surface-Atmosphere Interactions* at the TUM School of Life Sciences Weihenstephan invites applications for a

PhD position in Forest Ecology and Dendroecology (TV-L E13, 65%, 36 months)

for the research project "BEECHDECLINE - Drought-induced tree mortality of European beech affected by legacy effects and small-scale heterogeneity in soil properties and tree neighbourhood composition", funded by the Deutsche Forschungsgemeinschaft (DFG).

The project

The extreme 2018/19 drought resulted in large-scale vitality loss, partial crown dieback and tree mortality in European beech (Fagus sylvatica), the most important tree species of Central Europe's natural forest vegetation. At affected sites, a high heterogeneity was observed with individuals showing strong drought responses – including death – occurring next to vital and seemingly unaffected individuals. Most likely, complex interactions of various abiotic and biotic factors are responsible for this uneven distribution of drought response within beech stands. The successful candidate will quantify and compare the loss of vitality among trees through decline indicators derived from radial growth and tree-ring stable isotopes, and develop a novel strategy for risk assessment by establishing the biogeographic context for drought-related patterns of growth decline and recovery across the distributional range of European beech. In a companion study, using remote-sensing and soil analysis, the small-scale heterogeneity in abiotic factors and their connection to soil water availability within the stand as well as intra-specific competition as a critical biotic factor will be quantified.

About us

The Zang-Lab at the professorship for *Land Surface-Atmosphere Interactions* investigates impacts of climate change and climatic extremes on the process dynamics of forest ecosystems. Our goal is the development of statistical models for stress dose-response relations and their process-based integration in a state-of-the-art ecosystem model, aiming at improved forecasting of ecosystem dynamics under climate change conditions.

Your profile

You have an excellent degree (M.Sc. or comparable) in (geo)ecology, landscape ecology, environmental sciences, forest sciences, or a related discipline. You have profound skills in statistical data analysis with R. You are fluent in English and have excellent writing skills. You are a team worker. You have a driver's license (European category B) and are willing to independently carry out field work across Bavaria. Experience in Bayesian statistics and/or dendroecology is an asset.

Our offer

We offer a PhD position (TV-L E 13 65%, limited to three years, but at most until June 30, 2024) in an interdisciplinary team. The conditions of employment follow the rules of the German tariffs of public services (TV-L). As member of the Graduate Center Weihenstephan you profit from an attractive qualification programme during your doctoral project. Furthermore, through close collaboration with our project partner at the Julius-Maximilian-University of Würzburg (Prof. Dr. Bernhard Schuldt), you exchange experiences with other doctoral students in the field of forest ecology and climate change.
As an equal opportunity and affirmative action employer, TUM explicitly encourages nominations of and applications from women as well as from all others who would bring additional diversity dimensions to the university's research and teaching strategies. Preference will be given to disabled candidates with essentially the same qualifications.

Application

Please send your application, including a cover letter, CV, and contact information of two referees, as a **single PDF document** until **30th of April 2021** to Dr. Christian Zang (christian.zang@wzw.tum.de). Please note that we explicitly prefer digital documents by email, and do not return any original documents sent to us by mail; these will be shredded after a decision has been made.

The planned starting date of the position is 1st of July 2021. For further inquiries please contact Dr. Christian Zang, (+49 8161 71 4766, christian.zang@wzw.tum.de).

Data Protection Information:
When you apply for a position with the Technical University of Munich (TUM), you are submitting personal information. With regard to personal information, please take note of the Datenschutzhinweise gemäß Art. 13 Datenschutz-Grundverordnung

(DSGVO) zur Erhebung und Verarbeitung von personenbezogenen Daten im Rahmen Ihrer Bewerbung (data protection information on collecting and processing personal data contained in your application in accordance with Art. 13 of the General Data Protection Regulation (GDPR)). By submitting your application, you confirm that you have acknowledged the above data protection information of TUM.