Technische Universität München · TUM School
of Life Sciences · Alte Akademie 8 · 85354 Freising

Ph.D. Junior Researcher in Tree Physiology
and Forest Ecology (m/f/d)

15.06.2024, *Wissenschaftliches Personal*

**The future Chair of Tree Growth and Wood Physiology at the TUM School of Life Sciences, Technical University of Munich, is looking for a doctoral student in the field of Tree Physiology and Forest Ecology. As part of an international research group, you will work on understanding how to identify drought stress in trees and investigate its effects on growth. You will utilize state-of-the-art sensor technologies, including high-precision point dendrometers, across a wide range of research plots in Germany and Switzerland.**

## About us

The new Chair of Tree Growth and Wood Physiology, effective from September 1st 2024, focuses on studying tree growth and their responses to climate change, from individual trees to entire forest stands. Our research aims to understand the mechanisms that govern tree and forest stand growth, as well as wood physiological processes, which are essential for explaining forest resilience to changing environmental conditions and their role in the global carbon budget. To advance this field, our research group employs a unique combination of innovative sensor technologies at the tree level with sub-hourly resolution, along with forest inventory data, tree ring analysis, and quantitative wood anatomy. Our findings will provide crucial insights for science-based forest management decisions and conservation actions, aimed at enhancing forest ecosystem resilience to climate change.

## The project

This PhD project, funded by TUM, focuses on using state-of-the-art automated sensors, known as dendrometers, which are installed on tree bark to provide continuous drought stress and growth signals. However, methods to properly disentangle and quantify such signals for various European tree species need to be developed and validated.

You will gather data from multiple sites across Europe, including the VPDrought experiment in Valais, Switzerland; the Swiss Canopy Crane II site near Basel, Switzerland; the Kroof experiment near Freising, Germany; and the FeMoPhys monitoring site in Demmin, Germany. The primary experimental work will be conducted at the Kroof site, where you will work on a rain manipulation experiment to simulate different intensities of drought stress.

Once the methods to disentangle dendrometer signals have been established, we will implement these across a European-wide dendrometer network to map drought stress behaviour across Central Europe and identify hotspots of vulnerability.

**Your profile**
We are seeking a highly motivated PhD student to join our team. The ideal candidate should possess:

- An MSc degree in Forest Ecology, Forest Science, Natural Sciences, Tree Physiology, or related disciplines;
- Strong analytical and methodological skills, with a focus on quantitative data analysis (e.g., statistics, time-series analyses, model fitting);
- Proficiency in programming with R and the ability to handle large datasets;
- A keen interest in forest ecosystems and natural resource management;
- High motivation and the ability to work independently, while also demonstrating strong team orientation;
- Excellent spoken and written English skills.

The Technical University of Munich (TUM) aims to increase the proportion of women and therefore strongly encourages suitably qualified women to apply. The position is suitable for individuals with severe disabilities. Applicants with severe disabilities will be given preferential consideration if they have essentially the same qualifications, skills, and professional performance as other candidates.

**Our offer**
The new Chair of Tree Growth and Wood Physiology offers an international working environment focused on research related to whole-tree drought responses, tree growth modeling, and forest monitoring. We provide a three-year funded researcher position, with a salary in accordance with the German state-regulated public service salary scale (TV-L E13; part-time 65%). The position is available from October 2024 (or until filled).

**Application**
Please send a cover letter explaining your interest in the position and how this PhD project aligns with your experiences and goals. Additionally, include your curriculum vitae with contact information for two references, all in a single PDF. We look forward to receiving your detailed application documents by July 31, 2024. Please send them via email to the secretary of the Chair of Forest Growth Science, Ms. Beate Felsl (beate.felsl@tum.de), or by mail to: *Technical University of Munich, Chair of Forest Growth Science Ms. Beate Felsl, Hans-Carl-von-Carlowitz-Platz 2, 85354 Freising*. For additional information about the project, please contact the new head of the Chair Dr. Richard L. Peters at richard.peters@unibas.ch.

**Data Privacy Notice**
As part of your application for a position at the Technical University of Munich (TUM), you will transmit personal data. Please take note of our data privacy information in accordance with Article 13 of the General Data Protection Regulation (GDPR) regarding the collection and processing of personal data as part of your application. By submitting your application, you confirm that you have taken note of TUM's data privacy information.