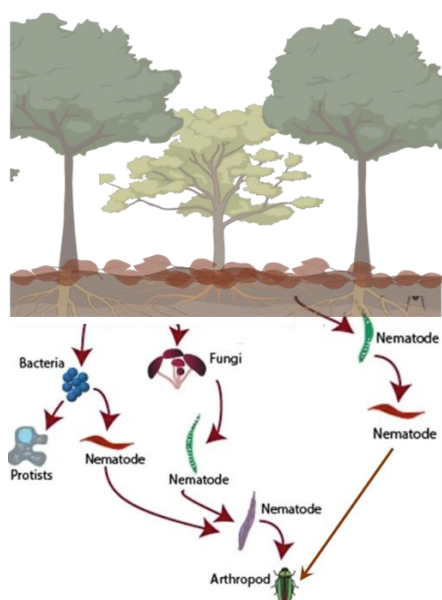


Bachelor/Master thesis: The effects of tree diversity and mycorrhizal types on the composition and diversity of nematode communities

Background:

Tree diversity is a key facet of the forest, making it crucial to understand how it affects animal communities, in particular cryptic soil animals that form a complex food web and regulate essential ecosystem functions. At the same time, mycorrhizal symbiosis of trees is able to mediate plant-soil-animal interactions. Therefore, mycorrhizal types are likely to shape soil animal communities, as well as influence the effects of tree diversity on soil animals. Nematodes, as the most abundant animals, span across all trophic levels. Investigating the mechanisms underlying their diversity and community structure could provide valuable insights into the entire soil food web. We have good reasons to believe that tree diversity and mycorrhizal types co-determine the soil food web structure, which is reflected by nematode communities. However, the empirical evidence is still lacking.



Projects:

The experimental platform [MyDiv](#) enables us to concurrently explore the impacts of tree diversity and mycorrhizal association types. In May and September of 2021, we conducted soil nematode samplings and identified them at the genus level. The aim of this project is to investigate the influence of tree diversity and mycorrhizal types on (1) nematode diversity

index and (2) associated ecosystem functions, such as herbivore control, resistance to environmental disturbance, and the complexity of the soil food web. We welcome any additional research ideas based on your interests and expertise.

Qualifications:

- Interest in disclosing the black box of soil animals
- Passionate about trees and/or mycorrhizal fungi
- Basic statistical skills in R
- Enjoy data analysis (or have a strong motivation to learn it)

Benefits:

- Receive close supervision on scientific conduct
- Join a group of like-minded individuals who share enthusiasm with you
- Contribute to publications related to your thesis work
- Access the MyDiv database to further explore your interests
- Enjoy a flexible working place and hours

Contact: The project will be supervised by [M.Sc. Huimin Yi](#) (Huimin.yi@idiv.de) and [Prof. Dr. Nico Eisenhauer](#). Please contact Huimin Yi if you are interested in discussing the options.

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iDiv is a central facility of Leipzig University within the meaning of Section 92 (1) of the Act on Academic Freedom in Higher Education in Saxony (Sächsisches Hochschulfreiheitsgesetz, SächsHSFG). It is run together with the Martin Luther University Halle-Wittenberg and the Friedrich Schiller University Jena, as well as in cooperation with the Helmholtz Centre for Environmental Research – UFZ. The following non-university research institutions are involved as cooperation partners: the Helmholtz Centre for Environmental Research – UFZ, the Max Planck Institute for Biogeochemistry (MPI BGC), the Max Planck Institute for Chemical Ecology (MPI CE), the Max Planck Institute for Evolutionary Anthropology (MPI EVA), the Leibniz Institute DSMZ–German Collection of Microorganisms and Cell Cultures, the Leibniz Institute of Plant Biochemistry (IPB), the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) and the Leibniz Institute Senckenberg Museum of Natural History Görlitz (SMNG).

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