Joint TreeDì – MultiTroph Conference

13–17 October 2025

German Centre for Integrative Biodiversity Research (iDiv)
Halle-Jena-Leipzig, Puschstr. 4, 04103 Leipzig
Germany

Programme	
Monday, 13 October: Arrival in Leipzig	
17:00	Guided city tour in Leipzig (meeting point: Mendebrunnen/Augustusplatz)
18:30	Dinner (individually organized)
Tuesday, 14 October	
09:00	Welcome (Spokespersons TreeDì & MultiTroph)
09:15	Keynote 1 (TreeDì/MultiTroph) **Associate Prof. Dr. Yi Li** Institute of Botany, Chinese Academy of Sciences **Multitrophic biodiversity and ecosystem function: from productivity to multifunctionality**
10:00	Coffee Break
10:30	**Session 1: Temporal dynamics and long-term time series in forest BEF research** (Talks by doctoral and postdoctoral researchers)
12:00	Lunch Break
13:00	**Session 2: Ecological interaction networks: connecting topics and approaches** (Talks by doctoral and postdoctoral researchers)
14:15	Keynote 2 (MultiTroph) **Dr. Benoit Gauzens** German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig **Linking food web structure to community and ecosystem responses to environmental change** Food webs are networks that represent species as nodes and their interactions as links. They depict the pathways through which energy flows from one species to another within a community, forming the basis for many ecological principles related to species coexistence and ecosystem functioning. I aim to present how changes in environmental conditions can affect food web structure, and how these structural

	responses can be linked to community- and ecosystem-level outcomes, discussing current limitations and opportunities.
15:00	Coffee Break and Group Picture
15:30	**Parallel Workshops (1-4)** **WS 1: Analysis of energy flows in multitrophic networks** **Lecturer: Dr. Benoit Gauzens (iDiv/FSU)** The workshop will explore the basic concepts of energy flow in ecological systems and consider their potential relevance for projects like BEF-China. We will discuss about possible approaches to implement these concepts, followed by an introduction to using the fluxweb R package for practical applications related to energy flux estimation in food webs. **WS 2: Introduction to meta-analysis** **Lecturer: Dr. Finn Rehling (University of Freiburg, MultiTroph)** We will begin by going over standard meta-analytic models (i.e., equal/fixed-effects, random-effects models and meta-regression) in brief, with an emphasis on fitting and interpreting these models in R. This will then serve as the foundation for delving into more complex data structures that one would come across in practice and thinking about suitable models for data analysis. **WS 3: Building your career strategy in academia & beyond: the lucky mindset** **Lecturer: Dr. Anne Schreiter** When you're considering your next career step – whether within academia or beyond – clarity is key. You need to understand what matters to you, what you're good at, and how to connect those insights to real opportunities. In this workshop, designed for PhDs and postdocs in biodiversity research, we'll focus on helping you identify your values, work-related expectations, and strengths – including your transferable skills. You'll learn how to communicate these effectively and begin shaping a career strategy that feels authentic and adaptable. We'll also provide an overview of potential career paths both inside and outside academia, with examples relevant to your field. You'll discover where to start looking for information and how networking and visibility can help to position you for opportunities – both planned and unexpected. Whether you have a clear direction or are still exploring possibilities, this session will offer practical tools, fresh perspectives, and time to reflect on what comes next. **WS 4: Critical Reasoning and Logic (Part 1)** **Lecturer: Kai Hüwelmeyer** Scientists need to be able to provide scientific arguments. In other words, they need to back their beliefs with solid reasoning. This workshop teaches basic concepts and principles of logic that help you to argue better and draw the correct conclusions from your research. We introduce the distinction between premises and conclusions of arguments, validity and soundness of arguments, deductive vs. inductive reasoning, and common types of inferences and fallacies. The idea of the course is to use these concepts as a toolbox which provides useful techniques for everyday scientific work.
18:30	Dinner buffet Table-tennis /KTV (to be confirmed)
Wednesday, 15 October	
06:30	**Very early morning run** with Prof. Alexandra-Maria Klein
08:30	Keynote 3 (MultiTroph) **Prof. Dominique Gravel** Université de Sherbrooke, Canada **Title: TBA**

09:30	**Session 3: Interacting above- and belowground processes and soil functions** (Talks by doctoral and postdoctoral researchers)
10:45	Coffee Break
11:00	**Session 4: Integrating leaf traits, herbivory, and tree interactions** (Talks by doctoral and postdoctoral researchers)
12:00	Lunch Break
13:00	Keynote 4 (TreeDì/iDiv Seminar Series) **Dr. Anna Mrazova** Institute of Entomology, Biology Centre, Czech Academy of Sciences, Ceske Budejovice, Czechia BIOGECO, INRAE, University Bordeaux, Cestas, France https://www.mrazova.net/ **Methods used in multitrophic interaction research: where we stand and what the future holds** Multitrophic interactions shape ecosystem dynamics, and our tools to measure them are evolving. This presentation reviews our current status and future directions regarding plant-arthropod-predator interactions. I will synthesise insights from established approaches, beginning with plasticine caterpillars: an inexpensive, standardised proxy for predation that uncovered global patterns but also well-known biases. I then evaluate emerging alternatives, including lifelike silicone prey and mechanistic assays that better capture sensory and behavioural dimensions of attack. Turning to passive monitoring, I showcase recent advances in autonomous acoustic and video systems, with a focus on smart cameras we are developing for continuous, minimally invasive observation of predator–prey encounters. Finally, I outline a road map for field-ready AI: from robust detection and species attribution to uncertainty quantification, edge–cloud workflows, and open, ethically responsible datasets. Together, these methods promise a new generation of reproducible, scalable evidence on how multitrophic networks respond to environmental change across habitats and gradients.
14:00	Keynote 5 (MultiTroph/TreeDì) **Dr. Georg Albert** Göttingen University **Multitrophic interactions mediate biodiversity effects on ecosystem multifunctionality** Biodiversity loss threatens the multifunctionality of ecosystems on which human well-being ultimately depends. Changes in multitrophic species interactions may be key to explaining the ecological consequences of biodiversity loss, but research explicitly linking species interactions and ecosystem multifunctionality remains rare. Based on comprehensive species interaction and ecosystem functioning data from BEF-China, I show how the structure of species interaction networks modifies ecosystem multifunctionality and mediates biodiversity effects. I will discuss potential mechanisms that underpin these findings and highlight research directions to improve our understanding of species interactions in biodiversity-ecosystem functioning research.
14:45	Coffee Break
15:15	**Parallel Workshops (5-8)** **WS 5: Structural Equation Modeling (SEM)** **Lecturer: Dr. Georg Albert** (University of Göttingen/MultiTroph) Structural equation models (SEMs) have become ubiquitous in ecological research as they allow the integration of complex ecological relationships into a joint analytical framework. In this hands-on introductory workshop, I will guide participants through the steps of implementing a SEM in R, using the piecewiseSEM package. I will explain key concepts, discuss limitations, and highlight some potential

pitfalls of SEMs, providing a starting-point for participants to learn how to assess and implement SEMs themselves.

WS 6: Introduction to good coding practice and tips and tricks in R
Lecturer: Sebastian Mader (iDiv/FSU/TreeDì)

In this workshop, I want to share some general coding practices that can be used to establish easy-to-follow standards in your day-to-day programming and may help you build up your projects in a coherent structure. Afterwards, we will dive into ways to implement them using R and RStudio. We will cover all levels of software development, from code-project management down to single lines of code that we all have seen before and keyboard shortcuts that may very well change your life.
I invite you to share your own experiences and discuss the ideas that I will share. There is no single golden rule but I hope that these practices can help you programme with less headaches.

WS 7: Introduction to functional trait diversity and how to measure it
Lecturer: Dr. Pablo Castro Sánchez-Bermejo (TreeDì)

Functional diversity is a key facet of biodiversity that relates to ecosystem functioning. Typically, functional diversity is addressed by using a set of different functional indices which capture distinct aspects of it. This workshop provides an introduction to functional diversity and how to measure it. We will delve into how to work with trait data, calculate phenotypic dissimilarities, explore trait spaces and compute functional indices in R.

WS 8: Critical reasoning and logic (Part 2)
Lecturer: Kai Hüwelmeyer

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18:15	Poster Session and Reception

Thursday, 16 October

Morning	**Excursion to the Research Aboretum Arbofun in Großpösna** Prof. Christian Wirth The arboretum ARBOfun is a research platform that allows to carry out functional biodiversity research comparing functional traits of many different tree species. It harbors 100 different tree species mostly representing species in Central Europe each replicated 5 times. The arboretum was established between 2012 and 2014 in an area of ~ 2.5 ha where we planted 500 trees in a randomized block design with 5.8m distance between individuals. ARBOfun serves two functions: science and environmental education – it provides the unique opportunity to investigate diversity effects of 100 woody species in one single area under the same environmental conditions. And it also allows the perception of morphological, anatomical and physiological differences between various species for pupils, students and other interested persons. 09:00 Departure from iDiv 09:45 -12:00 Visit to the Arboretum Arbofun near Großpösna 12:15: Return trip to iDiv

13:00	**Lunch Break**
A) 09:00 -18:00	**MultiTroph Strategy Meeting (internal)** 10:30: Coffee Break 13:00: Lunch Break 16:00: Coffee Break
B) 14:00 -14:45	**Introduction to and functionality of the BEF-China Data Portal** Dr. Tobias Proß
B) 15:00- 18:00	**BEF-China Data Portal Help Desk: Achieving and retrieving data (Dr. Tobias Proß)**
Friday, 17 October	
Morning	**MultiTroph Strategy Meeting (internal)**
Noon	Farewell