

BayCEER Kolloquium

Lectures in Ecology and
Environmental Research



UNIVERSITÄT
BAYREUTH

Winter 2023/24

Donnerstag/Thursday

09.11.2023

12:15 in H6, GEO



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From the forest to the city: understanding tree interactions with the urban microclimate

A future warmer and drier climate will heavily restrict tree water uptake, transpiration and photosynthesis, and thereby affect the whole soil-plant-atmosphere continuum. Trees can acclimate to environmental change, but the extent to which they are capable to modify leaf physiology, leaf anatomy or whole-plant morphology under heat and drought stress are not well known.

In this colloquium I will lay out where we are in our current understanding of acclimation responses of trees to these stresses. The study systems include experimental set-ups, as well as field studies in forest ecosystems. In several recent research projects, we have been observing acclimation in a number of tree functional traits, but many traits also seem to be relatively static. Using mechanistic soil-plant-atmosphere models I've been studying the consequences this has on the whole-plant carbon and water budget. I will conclude the talk by going from the forest to the city and present the challenges trees face in this environment, as well as their benefits and how we can better understand them to improve urban green infrastructure.

