



The University of Hong Kong
School of Biological Sciences

Public
Seminar

'The ant in the room': spatial and temporal assembly of ants from a forest to a planet

Date: 27 November 2024

Time: 4:30 pm

Venue: 6N-11 + zoom



About the speaker:

Runxi Wang is a PhD candidate supervised by Prof. Benoit Guénard, focusing on biogeography and community ecology of ants.



Abstract:

Insufficient understanding of fundamental patterns and dynamics in insect biodiversity impedes the effectiveness of their conservation. In this thesis, I use ants as a model system to address different knowledge shortfalls, integrating large-scale databases and modeling of their distributions and phylogeny, as well as small-scale observations and measurements of their activities and vulnerabilities. At the regional and global scales, I produce the first maps of biogeographic regions for ants in Europe and globally, respectively, presenting fundamental descriptions for their distribution and evolution. By comparing the global regionalization of ants to those of tetrapod groups and vascular plants, I demonstrate that ants share similarities with plants that are not captured by tetrapods. At the local scale, I show the widespread but heterogenous diel dynamics of species compositions in subtropical ant communities and uncover the varied thermal constraints on ants' ubiquitous foraging from day to night. By conducting a comprehensive assessment of their thermal tolerance and realised exposure, I further demonstrate that common species, rather than rare ones, are vulnerable to temperature warming. The findings also reveal the importance of behavioral regulations and vegetation cover in mitigating thermal stress on ants. In summary, this thesis presents an integrated framework that addresses 'the ant in the room' at different scales and facilitates the understanding and conservation of biodiversity for ants, paving the way for other groups of invertebrates.