CHANG LONGXIAO

Faculty of Biology ⋄ Ludwig-Maximilians-Universität München
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EDUCATION

Ludwig-Maximilians-Universität München, Munich, Germany *September 2023 – present*
Master's program in Ecology, Evolution and Systematics

Zhejiang University, Zhejiang, China *October 2018 – June 2022*
College of Life Science & Chu Kochen Honors College
B.S. in Biological Sciences, Pursuit Science Class, GPA 3.86/4.00, Ranking 3/16

RESEARCH EXPERIENCE

LMU April 2025 – present
Supervisor: Prof. Dirk Metzler *Munich, Germany*

- *How Does Noise Shape the Structure of Gene Regulatory Networks?*
- If gene expression noise is not only inevitable but also beneficial what kinds of gene regulatory network structures are likely to evolve under these conditions, and which of them are more robust in the presence of noise?
- The key focus is on whether structural properties such as modularity and nestedness naturally arise during the evolutionary process

LMU Jan. 2025 – present
Collaborator: Dr. Yu Kailiang *Munich, Germany*

- *Bifurcation Analysis of Light-Dependent Forest Structure*
- Developed a differential equation model describing two-layer forest dynamics, where seedling, lower, and top layer transitions depend on light availability
- Analyzed system bifurcations; identified ranges of light conditions supporting bistability between top-layer- and lower-layer-dominated states

LMU October 2024 - present
Supervisor: Dr. Maria Stockenreiter *Munich, Germany*

- *Understanding Structural Stability in Modularly Designed Laboratory Plankton Communities*
- Observing laboratory community dynamics across time series
- Analyzing interaction matrices across species compositions using modular artificial community designs
- Exploring Structural Stability in Ecological Systems from the Perspectives of Community Dynamics and Composition

LMU October 2023 - June 2024
Supervisor: Prof. Dirk Metzler *Munich, Germany*

- *A Continuous Model of Hybrid Zone Dominated by Assortative Mating*
- Developed an advanced tension zone model incorporating assortative mating as a sexual selection term
- Investigated conditions for the maintenance and boundaries of clines
- Modeled and predicted the genetic dynamics of European crow populations using a continuous model

Zhejiang University September 2022 - October 2023
Collaborator: Dr. Zhu Chen *Zhejiang, China*

· Conducted a study on the structure stability and nestedness of species interaction network in the Thousand-Island Lake
· *Interconnecting fragmented forests: Small and mobile birds are cornerstones in the plant-frugivore meta-network*

Zhejiang University Sep. 2021 - June 2022
Supervisor: Prof. Yu Mingjian *Zhejiang, China*

· Investigated the stability maintenance mechanisms of plant species interaction networks in fragmented habitats
· Research exercise project in Chu Kochen Honors college

Zhejiang University Mar. 2020 - May 2021
Supervisor: Prof. Yu Mingjian *Zhejiang, China*

· *The Pattern and Formation Mechanism of the Plant Metacommunity in the Thousand Island Lake Region*
· Undergraduate student provincial innovative research project
· Modeled tree interaction networks using generated planar complete graphs

Zhejiang University Mar. 2019 - May 2019
Supervisor: Prof. Zhao Yunpeng *Zhejiang, China*

· Analyzed growth rate differences between genders of ginkgo on ZJU campus

INTERESTS

- Community ecology, theoretical ecology (species interaction network, biodiversity pattern, stability of community, biogeography)
- Complex system (self-organization, chaos, emergence, complex network)

ACTIVITIES EXPERIENCES

ZJU Campus Plant, Zhejiang University Sep. 2018 – June 2022

· student club about botany, horticulture and taxonomy
· write popular science article about plant and culture
· operated *ZJU Campus Plant*, the WeChat official account of our club as editor-in-chief in 2020

HONORS AND AWARDS

- ZJU Academic Excellent Student $\times 3$, Zhejiang University, 2019-2021
- ZJU Second-class scholarship $\times 2$, Zhejiang University, 2020-2021
- ZJU Third-class scholarship, Zhejiang University, 2019
- Second-class scholarship for outstanding undergraduate students in basic science, China, 2020
- Chu Kochen Honors degree, Zhejiang University, 2022

SKILLS

Using C, python and R programming language to do some basic statistical work and process simulation.

Set up dynamical model and stochastic model about ecology as well as evolution system.

Basic abilities of ecology field work and identifing the family or genus of normal plants, as well as the order of general mammals, birds and insects.