MINGYU LUO

Department of Ecology and Evolutionary Biology, University of California, Los Angeles.
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RESEARCH INTERESTS

Dynamics, complexity and stability of ecosystems. Theory of biodiversity and species coexisitence. Food webs and energy flow. Directions of ecosystems evolution. Ecological modelling and data analysis. Complex systems. Applied mathematics and statistics.

EMPLOYMENT

University of California, Los Angeles (UCLA) *2024-present*
Postdoctroal Researcher (Supervised by Dr. Chuliang Song)

EDUCATION

Peking University, China *2019-2024*
Ph.D. in Ecology (Supervised by Dr. Shaopeng Wang)
Thesis: The intrinsic connections among temporal variability, resilience, and productivity in complex ecosystems.

Peking University, China *2015-2019*
B.S. in Pure and Applied Mathematics

TEACHING ASSITANTS

Ecological Statistics (Lecturer: Shaopeng Wang) *2020 (spring)*
Theoretical Ecology (Lecturer: Shaopeng Wang) *2019 (fall)*

PUBLICATIONS

# = Equal contribution.
* = Corresponding author.

2025

Luo, M., Hallet, L.M., Reuman, D., Shoemaker L., Zhao, L., Jiang, L., Loreau, M., Reich, P.B., Tilman, D., & Wang, S.*. Time series length obscure compensatory dynamics in ecological communities. *Nature Ecology & Evolution*, in Production.

Meng, B., **Luo, M.**, Loreau, M., Hong, P., Craven, D., Eisenhauer, N., Isbell, F., Liang, M., Reuman, D., Wilsey, B., van Ruijven, J., Zhao, L., & Wang, S.*. Stablizing effects of biodiversity arise from species-specific dynamcis rather than interspecific interacctions in grasslands. *Nature Ecology & Evolution*, in Production.

Zhou, L,, **Luo, M.**, Hong, P., Leroux, S., Chen, F., & Wang, S,*. Energy transfer efficiency rather than productivity determines trophic cascades. *Ecology*, 106(1), e4482.

2024

Larjavaara, M.*#, Chen, X.#, & **Luo, M.**# (2024). A temperature-based model of biomass accumulation in humid forests of the world. *Frontiers in Forests and Global Change*, 7, 1142209.

2023

Li, J.#, **Luo, M.**#, Wang, S.*, Gauzens, B., Hirt, M.R., Rosenbaum, B., & Brose, U. (2023). A size-constrained feeding-niche model distinguishes predation patterns between aquatic and terrestrial food webs. *Ecology Letters*, 26(1), 76-86.

Chen, X.#, **Luo, M.#**, & Larjavaara, M.* (2023). Effects of climate and plant functional types on forest above-ground biomass accumulation. *Carbon Balance and Management*, 18(1), 1-11.
Chen, X.*, **Luo, M.**, Kang, Y., Zhao, P., Tang, Z., Meng, Y., Huang, L., Guo, Y., Lu, X., Ouyang, L., & Larjavaara, M. (2023). Comparison between the stem and leaf photosynthetic productivity in Eucalyptus urophylla plantations with different age. *Planta*, 257(3), 56.
Nie, S., Zheng, J., **Luo, M.**, Loreau, M., Gravel, D., & Wang, S.* (2023). Will a large complex system be productive? *Ecology Letters*, 26, 1325–1335.
Feng, S., Liu, H.*, Peng, S., Dai, J., Xu, C., Luo, C., Shi, L., **Luo, M.**, Niu, Y., Liang, B., & Liu, F. (2023). Will drought exacerbate the decline in the sustainability of plantation forests relative to natural forests? *Land Degradation & Development*, 34(4), 1067-1079.

2022

Luo, M., Wang, S.*, Saavedra, S., Ebert, D., & Altermatt, F. (2022). Multispecies coexistence in fragmented landscapes. *Proceedings of the National Academy of Sciences*, 119(37), e2201503119. **Faculty Opinions recommended**.
Wang, S.*, **Luo, M.**, Feng, Y., Chu, C., & Zhang, D. (2022). Theoretical advances in biodiversity research. *Biodiversity Science*, 30(10), 22410. (In Chinese)
Yang, Q., Hong, P., **Luo, M.**, Jiang, L., & Wang, S.* (2022). Dispersal increases spatial synchrony of populations but has weak effects on population variability: a meta-analysis. *The American Naturalist*, 200(4), 544-555.
Cao, X.*, Tian, F., Herzschuh, U., Ni, J., Xu, Q., Li, W., Zhang, Y., **Luo, M.**, & Chen, F. (2022). Human activities have reduced plant diversity in eastern China over the last two millennia. *Global Change Biology*, 28(16), 4962-4976.

2021

Luo, M., Reuman, D.C., Hallett, L.M., Shoemaker, L., Zhao, L., Castorani, M.C.N., Dudney, J.C., Gherardi, L.A., Rypel, A.L., Sheppard, L.W., Walter, J.A., & Wang, S.* (2021). The effects of dispersal on spatial synchrony in metapopulations differ by timescale. *Oikos*, 130(10), 1762-1772.
Zheng, J., Brose, U., Gravel, D., Gauzens, B., **Luo, M.**, & Wang, S.* (2021). Asymmetric foraging lowers the trophic level and omnivory in natural food webs. *Journal of Animal Ecology*, 90(6), 1444-1454.

CONTRIBUTED CONFERENCE PRESENTATIONS

Luo, M. (2023). Spectral theory of population fluctuations. *Annual Meeting of Theoretical Ecology.* (Oral presentation. Xi'an, China.)
Luo, M. (2020). Does dispersal always increase metapopulation's spatial synchrony? *PKU-Annual Ecology Symposium.* (Oral presentation. Beijing, China.)
Luo, M., Reuman, D. C., Hallett, L. M., Shoemaker, L., Cottingham, K., Zhao, L., & Wang, S. (2020).Why time series length matter in ecological studies? Insights from a spectral perspective on metapopulation dynamics. *ESA Annual Meeting.* (Poster presentation. Virtual.)

SERVICE

Reviewer for journals: Ecological Monographs. Ecology Letters. Proceedings of the Royal Society B. Oikos. Journal of Physics: Complexity. Biodiversity Science (in Chinese).

HONORS

Peking University's Lin-Chao Young Scholar Award (2024). Peking University's Outstanding doctoral dissertation (2024).
Peking University's President Scholarship (2023).
Peking University's Award for Scientific Research (2022).
S.-T. Yau College Student Mathematics Contest: written test winning prize in Probability and Statistics. (2017).
Chinese Mathematical Olympiad: second prize. (2014).