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MDDE Seminar

Thermal Evolution Shapes the Thermal Effects on Predator-Prey Interaction

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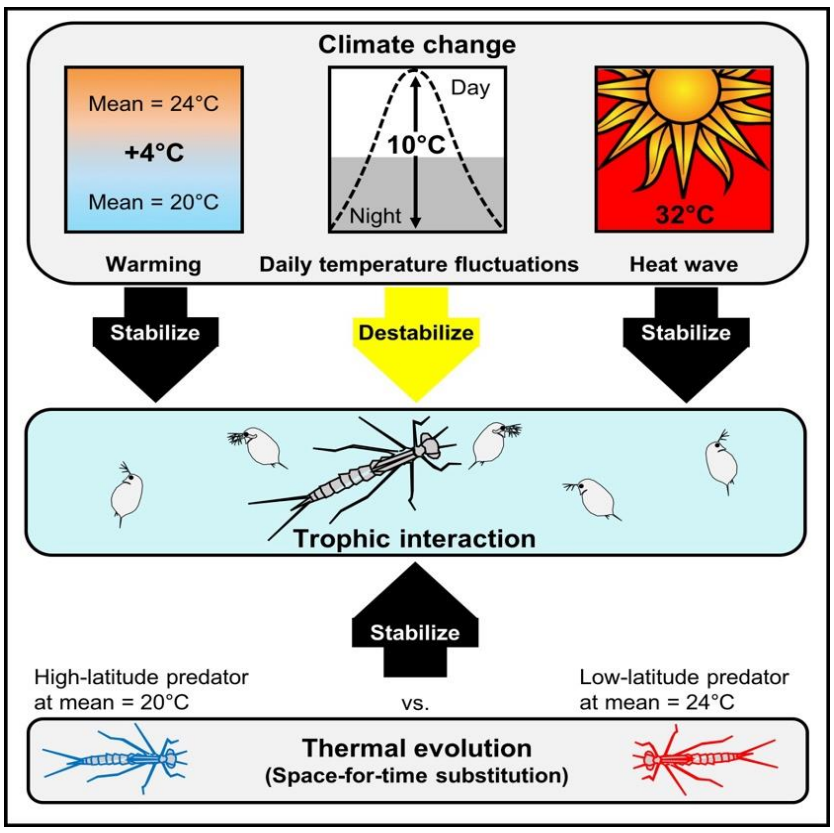
June 25h, 2024, at 12:00,
Seminar room no. 9

How thermal evolution may affect trophic interaction and its implications for trophic system stability are important yet poorly studied. Using the approaches of common-garden experiments, latitudinal space-for-time substitution and analytical modelling, we tested how increases in temperature mean and variations affect the interaction strength between the freshwater predators (larvae of the damselfly *Ischnura elegans*) and their prey (the water flea *Daphnia magna*), and how predator thermal evolution modulate these responses. We found a weakened long-term interaction strength under warming, except for the high-latitude trophic system under increased temperature variations where plastic responses therefore may not stabilize the system. We also found that the underlying mechanisms weakening long-term interaction strength under warming differed between latitudes, and that gradual thermal evolution may further weaken the long-term interaction strength of the high-latitude system. These results underscore the importance of temperature variations in shaping predator-prey interaction and suggest an overall stabilizing role of predator thermal evolution.



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