The University of Hong Kong
School of Biological Sciences

Public Seminar

Multi-scale fundamental phenology mechanism in response to global climate change

Date: 9 Sep 2024 (Mon)

Time: 15:15 PM

Venue: KBSB 3N-01 & Zoom

About the speaker:

Yating Gu is a PhD candidate from Dr Jin Wu's lab, interested in studying spring plant phenology and the driving factors. Her work focuses on investigating the basic phenology mechanisms on multiple scales in response to global climate change.

Abstract:

Plant phenology, which involves the timing of life cycle events in plants, is a sensitive bio-indicator of global climate change and is integral to numerous crucial ecological processes and functions of ecosystems. While temperature and photoperiod have been taken into account in current prognostic phenology models, whether other variables such as solar radiation, vapor pressure deficit also play a significant role and whether they remain consistent across the region and different ecosystems remain uninvestigated. To address these knowledge gaps, we first evaluated the existing prognostic models and uncovered the underappreciated factors in the Northern and Eastern United States. Subsequently, we expanded the scope to the hemispheric scale (>30°N) and included more biome types. Lastly, we tested whether incorporating the Farquhar-Medlyn photosynthesis model led to a more precise simulation of the spring phenology photosynthesis process. Collectively, these studies advance our understanding of plant phenology and its driving factors across both spatial and temporal dimensions, emphasizing the basic biophysical mechanisms that underlie the diverse spring phenology strategies observed worldwide. The insights gained from these investigations can guide future plant phenology research and aid in the development of more accurate and comprehensive models for predicting plant ecosystem responses to climate change.