The University of Hong Kong
School of Biological Sciences

Seminar

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

Date: 15th July 2022

Time: 11 AM

Venue: Zoom

About the speaker:

Yating Gu is a PhD student in the Global Ecology and Remote Sensing (GEARS) lab supervised by Dr. Jin Wu. Her research focuses on uncovering plant phenology mechanism in response to climate change leveraging multi-scale datasets.

Abstract:

Climate change has been well documented to influence the earth system models (ESMs). Phenology is a direct indicator of how ecosystem function and services influence the plant life processes across multi-scale ecosystems. Trees in spring follow the optimized trade-off strategy to avoid the frost damage to the tender buds as well as extend the growing season length (GSL) to achieve. Meanwhile, not only remote sensing but also onboard observation has expanded the monitor angles of phenology mechanism with the development of data-driven and prognostic models. However, how well the conventional models can capture the plant physiological process and the interaction between different environmental cues in temperate forests has not been fully excavated.

My PhD research aims to understand the plant phenology mechanism and its relationship with global carbon cycle temporally and spatially. Specifically, the Ph.D. dissertation chapter includes: (1) understanding the important role of photosynthesis gain in controlling spring phenology of temperate forests in the United States; (2) quantifying the phenology sensitivity to environmental cues across temperate forests; (3) exploring the temporal and spatial application of phenology from ecosystems to global pattern; (4) evaluate leaf phenology's relationship with global carbon cycle.