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 mechanisms in response to climate change by leveraging multi-scale datasets.

Abstract:

Spring phenology of temperate forests indicates the timing of leaf onset and has been shown with great sensitivity to recent global warming. The advance of spring phenology could further result in various ecological consequences, which ultimately feedbacks to local environment, community structure, and large-scale biogeochemical cycles. However, accurate mechanistic understanding and modelling of what drives the spring phenology variability over large vegetated ecosystems remains incomplete, resulting in large potential uncertainty in accurate projections of future climate change impacts on spring phenology and associated other phenology-related ecological processes.

My PhD research aims to understand the plant phenology mechanism and its relationship with the global carbon cycle temporally and spatially. Specifically, the Ph.D. dissertation chapter includes: (1) understanding the important role of photosynthetic carbon gain in constraining spring phenology of temperate forests in the United States; (2) quantifying phenology plasticity 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 the global carbon cycle.