The microclimatic patterns and drivers in tropical mountain forests of East Africa under climate change
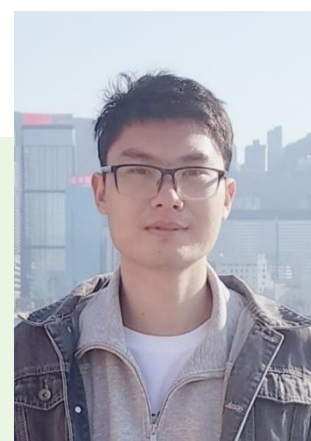
Date: 16 Jan. 2024

Time: 15:00

Venue: KBSB 6N11

About the speaker:

Jinlin Jia is a PhD candidate in Dr Alice Hughes' lab. His research focuses on spatiotemporal patterns of microclimate in tropical mountain forests of East Africa under climate change, as well as the drivers.

Abstract:

Tropical mountain forests play a significant part in biodiversity and carbon storage. However, the causes of the disproportionally high biodiversity observed in tropical mountains are still unclear. As the direct environment in which organisms live, microclimate has great potential to explain biodiversity. While we still have a limited understanding on how microclimate varies spatially and temporally across the tropical mountain forests, and what are the drivers of microclimatic variability. This research will use terrestrial laser scanning data, monitored microclimate data, and high-resolution satellite imagery to quantify the structural and microclimatic patterns along elevational gradients of tropical mountain forests in East Africa, as well as microclimatic drivers. Based on estimates of forest structures and microclimate, the study will establish and map microclimatic heterogeneity using a stratified cluster procedure. Finally, this thesis will analyze how these clusters vary with and respond to climate change, aiming to elucidate the key factors contributing to high biodiversity in tropical mountains.