

## Rapid transformations of terrestrial ecosystems and the carbon cycle by intensifying wildfire: cases in Canada and California

**Date** 23<sup>rd</sup> Nov

**Time** 14:00 (UTC+8)

**Venue** 6N11 & Zoom



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### Abstract

Climate change and wildfires are driving hot spots of ecosystem change in climate-sensitive regions, potentially transforming once reliable carbon sinks into new carbon sources. Using time series remote sensing, I characterized land cover, carbon, and disturbance dynamics across multiple decades and at high resolutions in two sensitive regions: the temperature-limited northern areas and water-limited Californian mountains. In Alaska and Western Canada, wildfires have initiated widespread shifts in forest composition and a suppression of the aboveground carbon sink that is not captured by Earth system models. In California, recent megafires have reversed decades of forest growth and may initiate biome shifts as severe burns threaten forests. Shifts fire regimes and forest demography will alter regional carbon dynamics, threatening the sustainability of carbon offsets programs intended to reduce net fossil fuel emissions.

**All are welcome!**



**Jon Wang** is an incoming assistant professor at the School of Biological Sciences at the University of Utah. His research primarily uses time series remote sensing and high-performance computation to quantify the impacts of climate change, disturbances such as wildfire, and human activity on terrestrial ecosystems and the carbon cycle. Jon's research has included quantifying land and carbon change in Alaska and western Canada, mapping forest and fire dynamics in California, and measurements of urban ecosystem function. Overall, his research aims to evaluate natural climate solutions and understand the carbon and land dynamics in a range of disturbed ecosystems.