### **ALEMU GONSAMO**



#### Biography

My research area is on ground, airborne, and satellite remote sensing of vegetation from the leaf level to the globe scale. I particularly focus on plant structural and photosynthetic traits, plant and carbon uptake phenology, and terrestrial ecosystem primary productivity and greenness. Using long-term global satellite observations, ground measurements and mechanistic models, I also study the impacts of climate change and variability on terrestrial ecosystems, and related feedbacks to the atmosphere through carbon cycle.

- BSc in Forestry 2002 Debub University, Ethiopia
- MSc in Geo-Information Science 2006 Wageningen University, the Netherlands
- PhD in Geography (Remote Sensing & GIS) 2010 University of Helsinki, Finland
- Postdoctoral fellow and research associate (2010-2019) Department of Geography and Planning, University of Toronto
- Assistant Professor and Tier II Canada Research Chair in Remote Sensing of Terrestrial Ecosystems (2019-present) School of Earth, Environment & Society, McMaster University

## Terrestrial ecosystem productivity and phenology response to global change during the satellite era

#### Abstract

Climate control on global vegetation productivity and seasonality has intensified in response to recent global warming. With increasing threats and pressure exerted on Earth's terrestrial ecosystems, there are now greater demands for more quantitative, timely, and accurate information on their state, functioning, and responses to climate variability and change. Challenges remain in separating the long-term relative roles of natural climatic variation and anthropogenic forcing on vegetation productivity, and Earth system models do not always capture the observed impact of climate change. Satellite remote sensing offers an effective way of



measuring and monitoring vast vegetated areas in a consistent manner. Therefore, integration of close-range, air-borne, and space-borne observations with statistical and physical models is essential for the retrieval of useful land surface variables at various spatial and temporal scales to attribute the observed impacts. In this talk, I will present the development and application of improved land remote sensing variables for global change studies. The particular focus will be on the remote sensing of plant productivity, and seasonality at regional and global scales. I will also address circumpolar vegetation dynamics in relation to climate variability and change, and their impacts on atmospheric  $CO_2$  seasonality using an improved satellite data product.

# SPEAKER SERIES

### DEPARTMENT OF Geography & Environment

Open to all interested individuals

Date: Friday, October 15<sup>th</sup> , 2021 Time: 3-4pm Location: Zoom format Meeting ID: 920 1911 8555 Passcode: SPEAKER