

Studying Responses of Eco-hydrological Processes to Global Environmental Changes Using Remote Sensing and Biosphere Modeling

Dr. ZHANG Ke

Department of Organismic and Evolutionary Biology, Harvard University

Date: 24 January 2014 (Friday)

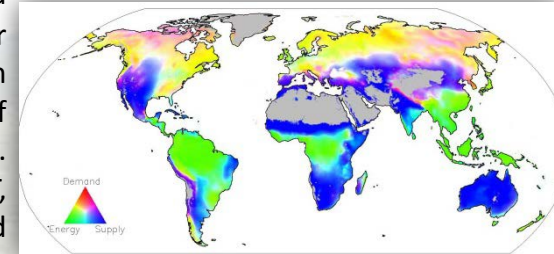
Time: 11:00a.m. – 12:00noon

Venue: Rm. 128, Science Centre North Block

Registration: [Click Here](#)



Abstract Global climate change and direct anthropogenic disturbances have imposed perturbations on terrestrial biosphere and caused big challenges to regional and global-scale water cycles and vegetation dynamics. In this talk, I will present two studies that illustrate the application of satellite remote sensing and terrestrial biosphere modeling to study the impacts of environmental changes on eco-hydrological processes across different spatial and temporal scales. First, I will present a unique evapotranspiration (ET) algorithm for quantification of global land ET, assess changes in the global ET and associated water balance in the past three decades, and identify the causes of these changes. Second, I will explore the fate of Amazonian ecosystems under projected climate and land-use changes in the 21st century using three state-of-the-art terrestrial biosphere models, and analyze the relative roles of climate change, CO₂ fertilization, land-use change, and fire in driving the projected Amazonian biomass and forest extent. Both studies highlight the critical roles of climate change and anthropogenic disturbances on regulating regional and global eco-hydrological processes. Future research will seek to improve quantification of environmental changes and understanding of terrestrial ecosystem responses to these changes.



~ All are Welcome! ~