AMERICAN SOCIETY OF AGRICULTURAL AND BIOLOGICAL ENGINEERS, THE PENNSYLVANIA STATE UNIVERSITY, USDA FOREST SERVICE, USGS

Present

THE 2ND GLOBAL EVAPOTRANSPIRATION SYMPOSIUM: ADVANCES, CHALLENGES, AND FUTURE NEEDS IN MEASUREMENT, MODELING, AND APPLICATIONS

OCTOBER 23-27, 2023

THE PENN STATER HOTEL; THE PENNSYLVANIA STATE UNIVERSITY

UNIVERSITY PARK, PA, USA

CALL FOR ABSTRACTS

Who Should Attend: Scientists, researchers, engineers, land and water managers, planners, academicians, consultants, producers, policy- and decision-makers, industry professionals, federal and state agency personnel, Extension professionals, and public officials are welcome to attend.

Background

In the 21st century, increasing population growth, demand for energy consumption, agricultural expansion, groundwater extraction, and global climate change are placing enormous pressure on limited water resources resulting in environmental and social crises in many parts of the world. Evapotranspiration (ET) is a major component of the hydrologic cycle that directly or indirectly links to water resources availability and use, water quality, ecosystem productivity, food and fiber production, and Earth's energy balance and climate system. Evapotranspiration science is central to understanding the consequences of environmental, ecosystems and agricultural systems change and human adaptation to global change. Measuring and modeling ET at multiple scales is not only resource intensive, but also technically and practically challenging. Under broad climatic controls, ET is influenced by parameters that vary across multiple scales – from site-specific variables such as soil, topography, vegetation type, soil moisture status, snow, agronomic and soil management practices, and microclimatic conditions, to the spatial heterogeneity of land use and management at landscape scales, and ultimately to regional and/or global climate/weather patterns. ET processes at the smaller and medium scales (e.g., leaf to landscape) have important controls/feedbacks to the regional and global climate systems through complex interactions among Earth's atmospheric, hydrological, and biogeochemical cycles. Emerging innovative methods, models, tools, and technologies offer promises in advancing both our ability to accurately quantify ET and our understanding of plant water use at different scales; such knowledge will be critical for developing effective management strategies to cope with emerging water resource and related challenges.

Symposium Objectives

This 2nd international symposium on evapotranspiration (ET) is built upon the success of the first symposium held in Raleigh, NC USA, in April 2014. The 2023 symposium will bring together a diverse range of stakeholders in the same platform to exchange ideas, establish/foster collaborations, and work together to address grand challenges related to energy, water resources, food production, ecosystem management, climate change, and environmental services. We will continue a tradition providing symposium participants a lively platform to share the advancements of ET sciences and applications and enhance global communication and collaboration.

Key Themes

- Innovative ET measurement/quantification methods and technologies, including remote sensing and surface energy, and soil and watershed water balance, climate and ecosystem models
- ET dynamics, processes, and feedback mechanisms across terrestrial ecosystems (agriculture, forest, wetlands/drylands, urban areas)
- Scaling and integrating ET processes at multiple spatial and temporal scales with new techniques such as machine learning, artificial intelligence, geospatial technology etc.
- Applications of ET sciences in assessing impacts of global change (global warming, precipitation change, deforestation/afforestation, urbanization, etc.), ecohydrological processes and ecosystem services.
- Applications of ET science in irrigation engineering, agricultural water management, watershed management, ecosystem planning and management, urban planning and management, and climate change adaptation.

We have invited world's renowned scholars/experts who conduct ET research in various settings, ranging from boreal to tropical, arid to humid, mountains to coastal plains, from agricultural cropping systems to forest ecosystems, and from natural to controlled environments. A full-day field trip is planned to allow participants to visit research sites managed by the local universities and research institutions.

Proceedings

Authors are encouraged to submit high quality abstracts for the submission review process by the Program Committee. Accepted abstracts will be distributed at the symposium and published online in ASABE's Technical Library. We also plan to organize special issues in *Journal of the ASABE*, *Agricultural and Forest Meteorology*, *Irrigation Science*, and *Agricultural Water Management*.

Abstract Submission Deadline: February 15, 2023

Author Notifications: March 15, 2023

Final Program Agenda Available: October 10, 2023

Early bird registration deadline: August 15, 2023

Online Registration deadline: October 10, 2023

Details of the Symposium can be found at:
American Society of Agricultural and Biological Engineers (ASABE) Web site: www.asabe.org/ET2023

Symposium Chair: Suat Irmak (USA), Ph.D., Professor and Department Head, *Department of Agricultural and Biological Engineering, The Pennsylvania State (Penn State) University, University Park, PA USA* (sfi5068@psu.edu)

Symposium Co-Chair: Ge Sun (USA), Ph.D., Research Hydrologist and Center Director, Eastern Forest Environmental Threat Assessment Center, Southern Research Station, USDA Forest Service (ge.sun@usda.gov)

Symposium Co-Chair: Jessica Bell (USA), *ASABE* Meetings and Conferences Coordinator (bell@asabe.org)