

National Soil Moisture Workshop 2022

Byrd Polar and Climate Research Center
The Ohio State University
Columbus Ohio

Tuesday, August 9, 2022

7:30am **Registration Open**

8:30am – 10:00am **Keynote Address**

CFAES Ag Weather System's Soil Moisture Monitoring Potential
Aaron Wilson, Ohio Ag Mesonet

Soil Moisture Modelling at NOAA/NWS River Forecast Centers
Trent Schade and Brian Astifan, National Weather Service Ohio River Forecast Center

10:00am – 10:30am **Break**

10:30am – 12:00pm **Drought/Modeling**

Soil Moisture Flash Drought Early Warning
Trent Ford, Illinois State Water Survey, University of Illinois

Evaluations of Soil Moisture During Extreme Conditions
Ronald Leeper, NOAA National Centers for Environmental Information/NCICS/CISESS

Unifying Different Theories in Modeling Hydraulic Constraints of Plant Water Use: Plant Hydraulics, Supply-Demand Balance, and Soil Moisture Limitation
Yi Yang, University of Illinois

Which Soil Moisture Models Add Value to a Seasonal Water Supply Forecast in Western Colorado?
Peter Goble, Colorado State University

12:00pm – 1:30pm **NIDIS-Sponsored Lunch**

Discussion: Upper Missouri River Basin Soil Moisture and Snowpack Project

1:30pm – 3:00pm **Remote Sensing**

NASA SPoRT-Land Information System Climatology and Real-Time
Products for Soil Moisture Analysis
Jonathan Case, ENSCO, Inc./NASA SPoRT Center

On Soil Moisture Retrieval Using Radar, Radiometer, and GNSS-R Systems
Joel Johnson, The Ohio State University

Soil Moisture Mapping with Spire's GNSS-R Satellites Enhanced by the Fusion
of CYGNSS and SMAP Soil Moisture Data Products
Gary Scofield, Spire Global

Soil Moisture Monitoring for Satellite Calibration and Validation
Michael Cosh, USDA Agricultural Research Service

3:00 – 3:30pm **Break**

3:30pm – 4:30 pm **Poster Session**

5:00pm **No-Host Happy Hour** at Varsity Club (278 W. Lane Ave)

Wednesday, August 10, 2022

7:30 am **Registration Open**

8:30am – 10:00am **Keynotes**

A Forest in the Face of Climate Change
Claudia Cotton, USDA Forest Service Daniel Boone National Forest

Autonomy in Midwestern Production Agriculture
Scott Shearer, The Ohio State University

10:00am – 10:30am **Break**

10:30am – 12:00pm **Fire/Forest and Sensors**

Using Soil Moisture Information to Better Understand and Predict Wildfire Danger
Tyson Ochsner, Oklahoma State University

Ancillary Information to Improve Soil Moisture Mapping in Forests
Iliyana Dobрева, The Ohio State University

Function, Circuitry and Measurement Quality of Today, Electromagnetic
Water Content Sensors
Scott Jones, Utah State University

12:00pm – 1:30pm **Campbell Scientific–Sponsored Lunch**
Discussion: Open Research Questions

1:30pm – 3:00pm **Sensors**

Low-Cost Sensor System for Soil Moisture and Temperature Monitoring
Udaysankar S. Nair, University of Alabama in Huntsville

In-Situ Testbeds for Soil Moisture Sensing and Technology Transfer
Andres Patrignani, Kansas State University

3:00pm – 3:30pm **Break**

3:30pm – 5:00pm **Networks**

Developing High Resolution National Soil Moisture Maps
Steven Quiring, The Ohio State University

Protocol to Install in situ Soil Moisture Sensors in Undisturbed Soils
Todd Caldwell, U.S. Geological Survey

The Soil Climate Analysis Network (SCAN)
Kent Sutcliffe, USDA-NRCS-SCAN

The National Coordinated Soil Moisture Monitoring Network: Challenges and Opportunities
Marina Skumanich, NOAA/NIDIS

Wrap-Up

Posters

Evaluating the Field Performance of Eight In Situ Soil Moisture Sensors
Using a CPN 503DR Hydroprobe
William Brown, Oklahoma State University

Applying Machine and deep Learning Algorithm to Generate Fine Resolution
Soil Moisture Products
Eshita Eva, The Ohio State University

Remote Sensing Soil Moisture Data Improve Seasonal Streamflow Forecast Accuracy
Mingxiu Wang, Texas A&M University

Intra-Annual Variability of Satellite-Scale Roughness and Implications for Soil Moisture
Retrievals in the Corn Belt
Victoria Walker, ORISE (USDA)

Characterization of Soil Physical and Hydraulic Properties of TexMesonet Monitoring Sites
Bismark Osei, Texas A&M University

Utilizing the WRF in Gaining a Process-Based Understanding of the Effects of Soil Moisture
on Convective Initiation in the Great Plains
Joshua Steiner, The Ohio State University, Department of Geography
Anna Glodzik, The Ohio State University

Using COSMOS to Measure Progress in Wetland Restoration
Clarke Geagan, University of Massachusetts Amherst