



2019 IEEE INTERNATIONAL WORKSHOP ON

# METROLOGY FOR AGRICULTURE AND FORESTRY



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 **PORTICI – ITALY**  
University of Naples Federico II  
Department of Agricultural Sciences

## CALL *for* PAPERS



*For the special session on:*

## ADVANCED GROUND-BASED TECHNOLOGIES FOR ASSESSING VADOSE ZONE PROPERTIES AND PROCESSES

### ABSTRACT

Assessing vadose zone properties and processes is fundamental for the sustainable management of agro-forestry systems. Water and contaminant migration through the unsaturated soil is driven by fundamental physical principles of mass and energy conservation, but the actual behavior of these systems strongly depends on the space-time variability of soil properties, that in turn produce large variations in soil states such as moisture content and solute concentrations. New technologies are needed to increase the accuracy, the resolution and extent of the characterization of water flow and solute transport in soil as well as soil properties. The coupling of advanced data with accurate process modelling can provide major advances in this science.

This session aims at gathering studies presenting recent technological advances in assessing vadose zone properties and processes, with particular but non exclusive attention to minimally invasive techniques.

We welcome contributions about the development and the application of advanced techniques, such as:


- I. Electromagnetic Induction methods;
- II. Electrical Resistivity Tomography;
- III. Ground Penetrating Radar;
- IV. Time Domain Reflectometry;
- V. Dye tracing;
- VI. data driven modelling via data assimilation techniques.

### ORGANIZERS



**Giorgio Cassiani**

*University of Padua, Italy*

 [giorgio.cassiani@unipd.it](mailto:giorgio.cassiani@unipd.it)



**Antonio Coppola**

*University of Basilicata, Italy*

 [antonio.coppola@unibas.it](mailto:antonio.coppola@unibas.it)



**Paolo Castiglione**

*Meter Group, Inc., United States*

 [paolo@metergroup.com](mailto:paolo@metergroup.com)

### MORE INFORMATION

 [www.metroagrifor.org](http://www.metroagrifor.org)

 [info@metroagrifor.org](mailto:info@metroagrifor.org)

