



2020 IEEE INTERNATIONAL WORKSHOP ON

METROLOGY FOR AGRICULTURE AND FORESTRY



UNIVERSITÀ DI TRENTO

04-06 NOVEMBER 2020

CALL for PAPERS

for the Special Session on

AGRICULTURAL METEOROLOGY FOR WATER RESILIENCE IN AGROECOSYSTEMS



ABSTRACT

The effect of microclimate may buffer against climate change or may amplify its effects, being them temperature peaks, droughts, irregular or late rainfall. There are several interventions that can affect the micro- (and meso-) climate and hence the ability of an area to cope with a large climate change. The management of microclimate is a powerful frontier, but not well understood, to smoothen out the impacts of climate change and at the same time create more resilience through more stable agroecosystems. Most of the adaptation and mitigation options are going in the same way but trade-offs will have to be addressed. This will be a challenge for designing agroecosystems in a multifunctional perspective. Microclimate should be considered in cropping systems design in order to reducing greenhouse gas (GHG) emissions, adapting to changing and fluctuating climate and environment, and securing food production sustainably.

Manipulation of micro-climatic variables such as solar radiation, soil and air temperature, wind, air humidity, soil moisture and CO2 concentration could result in a modified microclimate and improved conditions for crop growth. The first important intervention that can affect microclimate is to improve water retention and water use by plants from local farmers up to water-scheme managers, by water conservation, harvesting, distribution and by water erosion control. Changing factors in microclimate are thus affecting crop water, crop development, evapotranspiration and growth, and can improve crop water use efficiency. In this context development of sustainable irrigation practices, including smart irrigation tools requires a better understanding of the biophysical processes of root-water uptake in soil, and transpiration from plant canopies and their relationship.

The session is open to a wide range of new studies in agricultural meteorology for a water-use efficiency with focus on microclimate in relation to cropping systems and water use by plant.

ORGANIZERS



Filiberto Altobelli
Research Centre for Agricultural Policies and Bioeconomy, (CREA), Italy
filiberto.altobelli@crea.gov.it



Anna Dalla Marta
University of Florence, Italy
anna.dallamarta@unifi.it



Giulio Castelli
University of Florence, Italy
giulio.castelli@unifi.it

TOPICS

Such contributions include, but are not limited to, studies on:

- the role of microclimate in crop modelling and applications for crop growth
- hydrological processes that improve soil water balance and soil moisture regime and reduce evapotranspiration
- remote sensing applications that allow understanding the within and among fields variability of parameters related to crop water requirements, e.g. ET and Kcb
- energy and water balance of irrigated crops
- agricultural techniques for improving soil moisture conservation and water harvesting

MORE INFORMATION

SPECIAL SESSION #11

www.metroagrifor.org/special-session-11



www.metroagrifor.org



info@metroagrifor.org

