



2019 IEEE INTERNATIONAL WORKSHOP ON

METROLOGY FOR AGRICULTURE AND FORESTRY



 24-26 OCTOBER 2019

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

CALL *for* PAPERS



For the special session on:

MEASUREMENT OF REACTIVE GASES AND GHG IN THE AGRO-ECOSYSTEM

ABSTRACT

Managed agro-ecosystems are important sources and sinks of greenhouse gases (GHG) and reactive gases. The main pathways are represented by the direct exchange of gases between the soil-plant system (croplands, pasture and orchards) and the atmosphere. Agronomic practices such as fertilisation, grazing, irrigation, drainage, tillage and residue management, greatly influence the emission of reactive gases like ammonia (NH₃), biogenic volatile organic compounds (BVOCs), as well as GHG (N₂O, CH₄ and CO₂). The complexity of the measuring approaches together with the identification of simultaneous influences of environmental drivers is a major challenge to deeply understand all processes involved.

The session is open to studies focussing on measurements of gaseous exchange processes at field or plot scales, under controlled laboratory conditions and in livestock housing systems. We welcome a wide range of studies including development of new devices as well as observational approaches; the application of different techniques (enclosure, inferential or direct micrometeorological approaches as inverse dispersion modelling, aerodynamic gradient, eddy covariance, relaxed or disjunct eddy accumulation, etc.) for the quantification of agricultural sources and assessments of mitigation practices. Contributions on NH₃ and N₂O emissions from the management of fertilisers (e.g. raw or pre-treated livestock manures, digestate, mineral or green manure) are particularly welcome. In order to understand the effects of the agronomic practices in agro-ecosystems, related studies on other important gases as BVOCs, CO₂ and CH₄ are also encouraged. Evaluation of uncertainties, technical issues, and process description will be addressed and discussed within this session.

TOPICS

We welcome contributions that:

- assess the quality of the existing methods for gas measurements over agro-ecosystems;
- analyse the effects of agronomic management on gaseous exchanges at field and plot scale or under incubation conditions;
- introduce new approaches to quantify reactive and GHG gases;
- quantify gaseous emissions in animal housing and slurry-storage systems;
- inter-compare techniques and integrate different scales of monitoring.

ORGANIZERS



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