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Remote Sensing for Agriculture, Ecosystems, and Hydrology XVIII

**Christopher M. U. Neale
Antonino Maltese**
Editors

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Daugherty Water for Food Institute (United States)

Introduction

This proceedings volume contains papers presented during the conference on Remote Sensing for Agriculture, Ecosystems, and Hydrology. The conference was part of the international symposium on Remote Sensing sponsored by SPIE — The International Society for Optics and Photonics. The symposium was held at the Edinburgh International Conference Centre, Edinburgh, United Kingdom, from the 26th to 29th of September 2016.

The 2016 conference was dedicated to honoring Manfred Owe, former chair of the Remote Sensing for Agriculture, Ecosystems, and Hydrology Conference of SPIE Remote Sensing. He passed away earlier this year in Baltimore, Maryland. Through his decade-long involvement from 2000 to 2009, Manfred made considerable contributions to the success of the event.

39 oral and 24 poster papers were presented during this year's conference, covering a broad range of topics in the field of remote sensing applications in environmental science.

The program was organized into 10 sessions according to major themes such as: Radar and Lidar Applications in Agriculture; Agricultural Monitoring; Irrigation Water Management; Spectroradiometry and Hyperspectral Applications; Vegetation Patterns and Dynamics; Hydrology; Precipitation Runoff and Flooding; Energy Balance and Evapotranspiration; and Rivers and Lakes.

A special session on Remote Sensing of Soil Moisture was dedicated in Manfred Owe's memory. Manfred was a senior scientist emeritus at NASA Goddard Space Flight Center (United States) and a dear colleague.

We extend our gratitude to Dr. Richard A.M. de Jeu the Managing Director at VanderSat (Netherlands) and close collaborator of Manfred Owe, for giving an invited presentation entitled "Deriving reliable soil moisture using passive microwave satellite instruments: a tribute to Dr. Manfred Owe" [9998-15]. We also thank Dr. Wim G. M. Bastiaanssen of UNESCO-IHE Institute for Water Education (Netherlands) – who also served as a program committee member and chaired two sessions – for giving an invited presentation on "Pixel-based surface runoff based on soil moisture variability as an input for global surface water accounting" [9998-16]. Dr. Bastiaanssen also gave a keynote address during the opening plenary session on Earth Observations for Improving Water and Food Security.

The poster sessions also had good representation from the above-mentioned themes. The presentations described both fundamental and applications-based research activities including modeling, laboratory and field experiments, and operational applications.

An SPIE Best Paper Presentation Award was designed to encourage and acknowledge excellence in student paper presentation. The 2016 conference award has been assigned to Mark N. Jeunnette from Massachusetts Institute of Technology (United States) for giving a presentation on a parameterized numerical model implemented to compare platform options for collecting aerial imagery to support agriculture electronic information services in developing countries. The corresponding awarded paper is entitled "Remote sensing for developing world agriculture: opportunities and areas for technical development" [9998-37].

Our appreciation and gratitude goes also to the presenters for their efforts and to the participants for their insightful questions and discussions. Special thanks are also due to the host city for the excellent venue, and to: Alexandra Pluchart Rusova (conference program coordinator), Margaret Grasseschi (conference proceedings coordinator), Karin Burger (Manager at SPIE Europe), and all the SPIE organizational staff for their support prior to, during, and after the symposium. We look forward to an even more successful conference in 2017 in Warsaw, Poland.

Christopher M. U. Neale
Antonino Maltese