



Specialist Meeting on Reflectometry using GNSS and other Signals of Opportunity

IEEE GNSS+R 2019

Meeting Science Requirements

Benevento, Italy / 20-22 May, 2019



CALL FOR PAPERS

ORGANIZERS

GNSS+R 2019 will provide an international forum for reporting and discussing recent achievements in Global Navigation Satellite System-Reflectometry (GNSS-R) and other signals of opportunity (SoOp-R). GNSS-R and SoOp-R are receiving increasing attention due to its capability to address a broad spectrum of Earth observation applications.

Signals of opportunity – mostly from navigation constellations but also from other satellites such as digital communication satellites – reflected from the surface of the Earth, are used to estimate a variety of geophysical parameters characterizing the reflecting surface. They provide geophysical information on land, ice, and ocean with high spatial and temporal resolution due to the existence of multiple receivers (satellite constellations) and their intrinsic capability to capture several reflections at any time. The meeting will focus on the latest advances in GNSS-R theory and modeling, instrumentation, algorithms and applications in the field of ocean, land and cryosphere remote sensing. It will also be an opportunity to learn about the status, main findings and products from the most recent GNSS-R spaceborne missions as well as the latest results obtained from airborne and in-situ GNSS-R experiments. Following numerous ground-based, balloon and airborne campaigns, the spaceborne GNSS-R experiments onboard the UK TechDemoSat-1 satellite and the most recent NASA CYGNSS mission are delivering valuable high-quality GNSS-R wind speed and mean square slope products over the ocean, and have provided and demonstrated a clear approach for GNSS-R Delay/Doppler Map calibration and validation.

Parameters retrieved from GNSS-R data are also being assimilated into ocean models in Observing System Simulation Experiments (OSSEs), showing an improvement in forecast skills for hurricane intensity and sea surface height.

Beside the success of GNSS-R, reflectometry-based remote sensing has more recently expanded to use digital communication satellite signals as well. These signals operate over a wider range of microwave frequencies, and have much higher transmitted power density levels, which expands the range of geophysical phenomenology and the dynamic range of scattered signals that can be sensed. As for GNSS-R, SoOp-R can sense ocean surface winds, sea surface height, soil moisture, ice properties, snow water equivalent, and vegetation biomass.

The conference theme "Meeting Science Requirements" is inspired by the needs of science and users community. An IEEE special issue of the Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS) is planned to collect and peer-review the proceedings of the conference.



TOPICS

The aim of the workshop is to bring together the scientists, engineers and researchers working with GNSS-Reflectometry or related field, with the scientific community interested in the applications of GNSS-R, to further stimulate improvements and developments of this powerful technique, and its utilization in a wide range of applications targeting advances in earth science. A GNSS+R InLab will also host training or demo sessions where authors can present and demonstrate their own software, developed for specific GNSS+R tools and applications. Therefore, we invite contributions that focus on all aspects of GNSS-Reflectometry, including, but not limited to:

- Theoretical modeling and signal processing techniques;
- Data calibration/validation and retrieval approaches;
- Ground and airborne experiments;
- Satellite missions;
- Instrumentation and technology;
- Data assimilation;
- Sea surface altimetry;
- Ocean, land, cryosphere and atmosphere applications
- Interactive Laboratory

COMMITTEE

GENERAL CHAIR

Maurizio di Bisceglie, *Università degli Studi del Sannio*

GENERAL CO-CHAIRS

Carmela Galdi, *Università degli Studi del Sannio*
Nazzareno Pierdicca, *Università degli Studi di Roma - La Sapienza*

TECHNICAL PROGRAM CO-CHAIRS

Estel Cardellach, *Institute for Space Sciences (ICE-CSIC IEEC)*
Scott Gleason, *UCAR – Boulder*

PUBLICATION AND PUBLICITY CO-CHAIRS

Maria Paola Clarizia, *DEIMOS Space UK*
Rashmi Shah, *NASA/JPL*

CONFERENCE TREASURER

Silvia Liberata Ullo, *Università degli Studi del Sannio*

MORE INFORMATION

For further information, please visit GNSS+R 2019 website at

 www.gnssr2019.org

 info@gnssr2019.org

BENEVENTO

Benevento, Santa Sofia's Church with its Cloister is part of UNESCO World Heritage Sites as "Longobards in Italy. Places of the power".

DATES

ABSTRACT SUBMISSION: Nov 19, 2018 - Feb 1, 2019

NOTIFICATION OF ACCEPTANCE: Mar 1, 2019

REGISTRATION OPENING: Mar 9, 2019