

# GNSS-R'08

## Workshop

Call for Papers  
Abstracts accepted up until 1 Sept 2008

First day – course on GNSS Reflectometry:  
Principles, Mission, Errors, Applications  
Second day – presentations and  
discussions on potential  
mission

24-25 September 2008

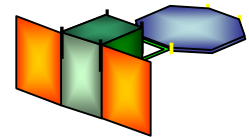
ESTEC

Noordwijk

The Netherlands



To register, submit abstract, contact:  
[Christopher.Buck@esa.int](mailto:Christopher.Buck@esa.int)



**Day One – Course on GNSS Reflectometry**  
**Conference Room “Einstein”**

**08:30 - 09:00 Registration**

**09:00 Welcome** - *Philippe Pérol (ESA)*

**09:10 Introduction** - *Christopher Buck (ESA)*

**09:20 Basic Principles of GNSS-R** – *Stephen Lowe (JPL)*

**09:55 Requirements of the Oceanographic Community** - *Christine Gommenginger (NOCS)*

**10:35 Coverage** - *Salvatore D'Addio (ESA)*

**10:45 Coffee**

**11:15 GNSS-R Data Processing** - *Antonio Rius (IEEC)*

Information Contained in Reflected Signal  
Altimetric Accuracy and Precision

**11:45 Sources of Error**

Ionosphere, Troposphere - *Nicolas Floury (ESA)*  
Speckle, Error Mitigation - *Marco Caparrini (Starlab)*

**12:30 Lunch**

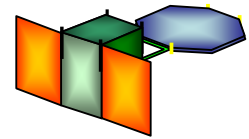
**13:45 GSTP-5 Element 4 – In Orbit Demonstrators** - *Udo Becker (ESA)*

**14:00 In-Orbit Demonstrator** - *Christopher Buck, Salvatore D'Addio, Manuel Martín-Neira (ESA)*

System Concept  
Preliminary Design  
Link Budget  
Performance  
On-board Processing  
Downlink  
Launcher  
Realization

**15:30 Coffee**

**16:00 Practical Results from Campaigns and Lessons Learnt** - *Antonio Rius (IEEC),  
Martin Unwin (SSTL), Marco Caparrini (Starlab)*



**16:45 Galileo Signal Structure and Evolution** - *Riccardo Dellago (ESA)*

**17:00 Overview of Other Applications** - *Christopher Buck (ESA)*

Scatterometry  
Ice Freeboard  
Soil Moisture  
Biomass

**17:20 Discussion** - *All*

**18:00 Drink**

***Day Two – Workshop***  
**Conference Room “Einstein”**

**Session 1: Theory, Techniques and Calibration**

Chairs: *Stephen Lowe (JPL), Alan Thompson (ESA)*

09:00 A Role of Orbit Errors in Bi-static Satellite Altimetry, *Jaroslav Klokočník (Czech Academy of Science)*

09:20 Predicting the Altimetric Precision of PARIS Using the Galileo E5 Signal, *Salvatore D'Addio (ESA)*

09:40 Three Geometrical Approaches to the Bi-static Altimetry on the Ellipsoid, *Milada Kočandrlová (Czech Academy of Science)*

10:00 The Delay-Doppler Map as a Means of Assessing the Performance of Space-based GNSS-R Scatterometry, *Salvatore D'Addio, (ESA)*

10:20 *Coffee*

**Session 2: Systems and Hardware**

Chairs: *Achim Helm (GFZ), Martin Unwin (SSTL)*

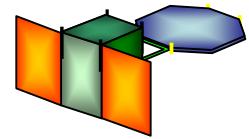
10:40 Plans for New GNSS Reflectometry Instrument Selected for SMOSops, *Martin Unwin (SSTL)*

11:00 "Namuru" the University of NSW Designed GNSS Research Receiver, *Peter Mumford (UNSW)*

11:20 GNSS-R Carrier Phase Altimetry with GPS L2C Signals and Status of the GORS and GORS Follow-on Space Receiver Prototypes, *Achim Helm (GFZ)*

# GNSS-R'08 – Advance Programme

## ESTEC – 24/25 September 2008



11:40 Requirements, Design and Test of the ASAP Front End, *Serni Ribó (CSIC/IEEC)*

12:00 GALILEO on board the International Space Station, *Drazen Svelha (TUM)*

12:20 The PARIS Airborne Demonstrator, *Ray Dunster (Astrium)*

12:40 Recent Results from UK-DMC Experiment – Ice Sensing and Reception of Galileo Signals,  
*Philip Jales (SSTL)*

13:00 *Lunch*

### Session 3: Applications

Chairs: *Marco Caparrini (Starlab), Nicolas Floury (ESA)*

14:20 Simulation of GNSS-R Tsunami Detection from Space Applied to the 2004 Sumatra Tsunami Event, *Ralf Stosius (GFZ)*

14:40 GNSS-R from the UK-DMC Satellite for Remote Sensing of the Ocean Surface, *Maria Paola Clarizia (NOCS)*

15:00 GNSS Scatterometry for Soil Moisture and Vegetation Biomass Monitoring, *Leila Guerriero (Tor Vergata University of Rome)*

15:20 Application using GNSS Reflections: Fresh Water Management in Mountainous Water Reservoir, *Matthieu Delas (Star2Earth)*

15:40 Soil Moisture Retrieval Using GNSS Reflected Signals: Theoretical Approach and First Experimental Results, *Alejandro Ejido (Starlab)*

16:00 *Coffee*

16:20 General Discussions and Wrap-up - *All*

17:00 End of Workshop

Conference Centre  
Rooms  
Newton, Einstein, Galilei

Restaurant

Lunch corners

Library

Personnel Division

MAIN ENTRANCE  
RECEPTION

Travel Office

Medical Centre

1st floor : Fresnel Meeting Rooms

NORTH

Main entrance  
Security/Gate house

Disabled parking

Training Centre

Social Centre :  
ESCAPE

SPACE  
EXPO

Car Parks

SOUTH

Test Centre  
Hydra Facility

Goods in transit area

Parking long term

ERASMUS  
building

ESTEC  
European Space  
Research and Technology  
Centre, Noordwijk  
The Netherlands

