

Commission Report on GASS Commission Business Meetings

Commission F

prepared by **Simonetta Paloscia (Chair 2014-2017)**

Three business meetings were planned at the URSI GASS 2014 (August 17-23, Beijing, China) by Roger Lang, Chair of Commission F: Monday August 18, 17:40-19:00; Wednesday August 20, 17:40-19:00; Friday August 22, 17:40-19:20. During these business meetings, several topics were discussed by the members of Commission F, as described in the following.

1. Results of Election of Vice Chair

The candidates for Vice Chair for 2014-2017 were T. Tanzi (France) and V. Chandrasker (USA). V. Chandrasker (Colorado State University, Fort Collins, CO 80523 USA; e-mail: chandra@engr.colostate.edu) was elected Vice Chair.

2. Results of Election of Early Career Representative

The candidates were S. Das (India), D. Swain (India), S. Ambroziak (Poland), and M. Kurum (Turkey). M. Kurum (TUBITAK-BILGEM, Information Technologies Institute, Gebze, Kocaeli, PK: 74, 41470 - Turkey; e-mail: mehkurum@hotmail.com) was elected ERC.

3. Appointment of Associate Editor for Radio Science Bulletin

The past Associate Editor was Simonetta Paloscia (Vice Chair 2011-2014), who handled the review of a couple of papers for publication in the Radio Science Bulletin. The new Associate Editor for the Radio Science Bulletin is now V. Chandra, assisted by M. Kurum.

4. Updates/Status of Working Groups

The existing working groups of Commission F are the following:

4.1 Working Group on Mitigation of Ionospheric and Tropospheric Effects on GNSS

Chair: Bertram Arbesser-Rastburg

A short report is provided on the activities of Joint Working Group FG "Atmospheric Remote Sensing Using Satellite Navigation Systems" for the 2014-2017 triennium. The Co-Chair for Commission F is B. Arbesser-Rastburg (Netherlands); the Co-Chair for Commission G is C. Mitchell (United Kingdom).

Several scientific symposia with relevant topics have been held in the last URSI triennium under the auspices of URSI:

- ICTRS 2014, 26-27 June 2014 in Luxembourg (Keynote Speaker Francois Lefevre)
- The URSI Commission F Triennial Open Symposium, 30 April to 3 May 2013 in Ottawa, CA (Local Chair: Dr. Cesar Amaya) This Symposium covered all scientific areas of interest to URSI Commission F - this includes remote sensing of the troposphere by GNSS signals.
- Three events were directly organized by the Co-Chairs of WG FG:
 - The 3rd International Colloquium on Scientific & Fundamental Aspects of the Galileo Programme: This colloquium was held at the Danish Design Centre in Copenhagen, Denmark,

from August 31 to September 2, 2011, and had sessions on the troposphere and ionosphere, with emphasis on topographic retrieval techniques.

- The 2013 Beacon Satellite Symposium (<http://people.bath.ac.uk/ee3jarr/beaconsatellite2013/>). This symposium, which has a 40-year-long tradition, was organized by URSI Commission G, WG G2: “Studies of the Ionosphere Using Beacon Satellites.” The 2013 edition was held from July 8-12, 2013, in Bath, UK, and the local chair was Prof. Cathryn Mitchell. It attracted over 150 people, and included topics on measurements of ionospheric quantities such as TEC and scintillation index using GNSS signals. It featured seven oral sessions and one poster session. A selection of papers will be published in a special issue of Radio Science.
- The 4th International Colloquium on Scientific & Fundamental Aspects of the Galileo Programme (<http://congrexprojects.com/2013-events/13c15/>). This colloquium was held at the Ministry of Transport in Prague from December 4-6, 2013. It had specific sessions on the ionosphere, the troposphere, and on remote sensing with GNSS signals. The event was attended by 97 participants from 23 countries.

Bertram Arbesser considered it a great honor to be asked to continue to lead URSI Working Group FG. However, realizing that the Matera Workshop was 11 years ago, and considering that he is now retired and no longer on the Dutch National URSI Committee, Bertram suggested giving somebody else an opportunity. In particular, he suggested a person who has the right profile for this task: Nicolas Floury, the head of the Wave Interaction and Propagation Section at ESA, who is an expert in remote sensing and has an intimate knowledge of ionospheric physics. Moreover, he is the Commission F representative on the Dutch National URSI Committee, and he has experience with organizing workshops. Nicolas was contacted by Simonetta Paloscia, and he accepted with great enthusiasm the role of working group coordinator.

Next generation remote sensing radars (M. Chandra, J. Isnard, T. Tanzi and W. Keydel)

4.2 Next-Generation Remote-Sensing Radars

Co-Chairs: M. Chandra, J. Isnard, T. Tanzi, and W. Keydel

4.3 RFI Working Group

This is a joint working group of Commissions F, G, H, and J. They will hold a two-day meeting at AT-RASC. The organizer is Willem Baan.

5. Updates to the Terms of Reference of the Commission

The focus of Commission F is on wave propagation and remote sensing.

The goal of the Commission is to study wave propagation and remote sensing in a non-ionized environment.

Specific focus areas include:

- Propagation of waves through Earth and planetary atmospheres and wave interaction with Earth and planetary surfaces, including oceans, land, ice and sub-surfaces.
- Wireless propagation in natural and man-made environments.
- Remote sensing of Earth and planetary environments using active and passive techniques.
- Propagation and remote sensing using Global Navigation Satellite Systems (GNSS) and satellite communication links.

- Applications of these studies, particularly to Earth and planetary sciences, climate studies, and communications.

6. Meetings Proposed to be Supported in the Coming Triennium

Past Commission F Meetings were held in Ottawa (URSI Commission F Triennial Open Symposium, April 30-May 3, 2013) and in Helsinki (Microwave Signatures in November 2013).

Coming meetings are

- AT-RASC meeting in Gran Canaria in May 2015 and AP-RASC meeting
- International Symposium on Signals & Systems (ISSS, Commission C Meeting) that was combined with AT-RASC

A proposal for a further meeting on microwave signatures was made by Simonetta Paloscia. This could be organized in France in 2016 by Monique Dechambre, who is the URSI France national representative.

7. Report and Comments on the Scientific Program of the Commission for the Current GASS

The Commission thinks that the scientific program of the current URSI GASS was well articulated and well representative of all fields of wave propagation and remote sensing.

8. Proposed Sessions for the Next GASS

Setting up a scientific program for a triennium is the prime activity of an URSI Commission in order to achieve an exchange of ideas and research results among individual scientists throughout the world. This is carried out at General Assemblies and other meetings. The main goal of URSI is to give opportunities, especially to young scientists, to present their results.

The members of Commission F will consider the list of sessions already organized for URSI GASS 2014, and will focus on a list of future sessions by taking into consideration the new developments in all fields regarding wave propagation and remote sensing in a non-ionized environment.

The Commission encourages:

- a. The study of all frequencies in a non-ionized environment:
 - i. wave propagation through planetary, neutral atmospheres and surfaces;
 - ii. wave interaction with the planetary surfaces (including land, ocean, and ice), and sub-surfaces;
 - iii. characterization of the environment as it affects wave phenomena;
- b. The application of the results of these studies, particularly in the areas of remote sensing and communications;
- c. The appropriate cooperation with other URSI Commissions and other relevant organizations.

To further these objectives, the Commission collaborates with other URSI Commissions and with other concerned organizations and scientific unions.

9. Proposed Sessions for the AT-RASC

The new elected Vice Chair proposed the organization of a session for the AT-RASC meeting on “Atmospheric Propagation: Advanced Concepts in Propagation and Remote Sensing of Precipitation from Earth and Space.”

10. Other Business:

Representatives to Other Organizations

Some members of Commission F are representatives of other international organizations:

- IEEE GRS: Steve Reising
- ISPRS: Callisto Tanzi
- SCOR: Scientific Commission on Ocean Research: Roger Lang
- IUCAF: Scientific Commission on Frequency Allocations: Steve Reising
- CoSPAR: Commission on Space Research: Bertram Arbesser-Rastburg
- ITU: Jean Isnard

Chair: Simonetta Paloscia

IFAC-CNR

via Madonna del Piano, 10 – 50019 Firenze, Italy

Tel: +39 055 5226494; E-mail: s.paloscia@ifac.cnr.it