

COMMISSION F

During the triennium 2011-2014 Commission F has been involved with the organization of two specialist meetings: one concentrating on propagation characteristics for microwave and millimeter wave communication systems (to be held in Ottawa, Canada) and another treating microwave remote sensing of the earth, oceans, ice and atmosphere (to be held in Espoo, Finland). These symposiums initiated many of the session topics for the URSI Commission F General Assembly and Scientific Symposium (GASS) scheduled in Beijing, China, August 16-23, 2014. There Dr. Simonetta Paloscia of Florence, Italy will become the next URSI Commission F chair.

In Memoriam

During this triennium, five well known Commission F members passed away. Four of them have had their obituaries noted in issues of the Radio Science Bulletin (RSB). They are listed in order of the date of their death:

David H. Staelin (1938-2011) early development of microwave-imaging orbital spectrometers for atmospheric monitoring (see RSB, December 2011).

Gert Brussaard (1942-2012) propagation research in support of microwave communication and remote sensing. Chair of URS Commission F 1990-1993, President of URSI 2008-2009 (see RSB, June, 2012).

Hans Liebe (1934-2012) developed reliable expressions for the complex refractivity of moist air which is basic to all millimeter and submillimeter wave propagation (see RSB, September, 2012).

Martin Hall (1937-2012) one of the pioneers of dual polarization radar for remote sensing of precipitation. Chair of URSI Commission F 1996-1999 (see RSB, March 2013).

Richard Moore (1923-2012) implemented radar technology for microwave remote sensing of land, sea, ice and atmosphere; developed both the theory and the experiment; founder of the interdisciplinary Remote Sensing Laboratory at the University of Kansas, elected to US National Academy of Engineering and Chair of URSI Commission F 1993-1996.

Commission F Symposium

At the Commission F business meeting in Istanbul, Turkey 2011 it was agreed that the Commission would host two symposia during the triennial. The first "URSI Commission F Triennial Symposium on Radiowave Propagation and Remote Sensing" was held in Ottawa and chaired by Robert Bultitude. The second symposium "URSI Commission F Specialist Symposium on Microwave Remote Sensing of the Earth, Oceans, Ice, and Atmosphere 2013" was held in Espoo, Finland and chaired by Martti Hallikainen. Meeting reports are given below.

URSI Commission F Triennial Symposium on Radiowave Propagation and Remote Sensing, Ottawa, April 30 – May 2, 2013

Planning for the Ottawa symposium, proposed at the URSI General Assembly in Istanbul, began in earnest during the spring of 2012. Since planning discussions at the General Assembly involved only Canadian researchers from the Radio Propagation field, initial steps involved seeking partners from the Ottawa Remote Sensing community. This was easily accomplished. By May, 2012, an organizing committee was formed, but because of the difficult economic conditions worldwide it was difficult to obtain both sponsorship funding and the promise of participation from those who would have to travel to Ottawa from a great distance. URSI's Canadian National Committee was eventually, nevertheless, able to lend us sufficient funds to hire a conference organizer, and to begin making arrangements with various venue providers. Soon afterward, a web site was launched, and email invitations to attend were sent to scientists worldwide.

As anticipated responses to invitations were slow, and submissions accompanied by early registrations were nonexistent. Critical mass for symposium attendance was not achieved until early spring, 2013; the new conference facilities at Carleton University then became the symposium's venue. This process - and its parsimonious achievement - was greatly aided by the skill and hard work of the conference organizer, namely, a small Ottawa based consulting company named, CHC.

In addition to helping with symposium planning, personnel from CHC also manned the registration desks at the symposium, and coordinated with the A-V staff and other service providers. At the close of registration, we had nearly fifty participants, some of whom were able to attend through funding assistance in the total amount of 4000 euros provided by URSI at the international level. Participants arrived at the symposium from eighteen different administrations worldwide¹. Others who could not attend personally - some from NASA in the US - presented papers via webex. Care was taken that there were an equal number of sessions from the Radio Propagation and Remote Sensing disciplines, including two Keynote speakers from each area, who delivered fascinating presentations in their subject areas, including: Backscatter from Precipitation, Mobile Radio Channel Modelling, Rain Attenuation on Terrestrial Line of Sight Radio Paths, and two different aspects of Radar Remote Sensing. In all, there were six half-day technical sessions in each of the two areas, with an average of eight, 20 minute oral presentations per session. There were no poster presentations.

¹ Including Canada, U.S., U.K., Germany, Italy, France, Greece, Nigeria, Netherlands, Belgium, China, Japan, Korea, India, Finland, Norway, Sweden, and Denmark

A symposium dinner was held on the evening before the close of the symposium, where a moment was taken to remember our recently deceased Commission F Colleagues, Gert Brussaard and Martin Hall.

Feedback from participants reflects that the symposium was enjoyed by all, with much exchange of both scientific and social communications. Figure 1 below portrays a conversation between Robert Bultitude and Roger Lang. Figure 2 is a group photo taken along the side of the very famous Rideau Canal that runs beside Carleton University. This canal was designed and constructed by the British Army's Royal Engineers and is the oldest continuously operated canal in North America. The many locks, which raise and lower water traffic going from one section of the canal to another are operated today much as they were when the canal first opened in 1832.

The symposium web site, which includes the technical program and a copy of papers presented, remains open at www.ursi-f-ts.com. This will be accessible until approximately September this year (2014). Presenters at the symposium were asked to consider submissions for a special issue of Radio Science that included extended papers from the symposium. It was understood that this special issue will be published late in 2014.



Fig. 1 A conversation over food and drink.



Fig. 2. Group photo near one of the locks on the Rideau Canal.

Microwave Signatures 2013 October 28-31, 2013, Espoo, Finland

The URSI Commission F Specialist Symposium on Microwave Remote Sensing of the Earth, Oceans, Ice, and Atmosphere 2013 (Microwave Signatures 2013 for short) was held on the campus of Aalto University in Espoo, Finland, October 28-31, 2013. The meeting was the 11th of a series of meetings held with the first one organized in Berne, Switzerland, in 1974.

Microwave Signatures 2013 provided an international forum for reporting and discussing recent achievements in instrumentation, methodology, and applications in the field of land, ocean, ice, and atmosphere sensing. The meeting attracted professionals from around the world and consisted of a serial sequence of oral and poster sessions.

The following invited sessions were organized:

- GNSS Reflectometry (organiser: Manuel Martin-Neira)
- L-band Active/Passive Land Surface Retrievals and SMAP (Thomas Jackson and Andreas Colliander)
- Microwave Propagation in Vegetated and Snow Covered Soils: A Session in Honor of Paolo Pampaloni (Simonetta Paloscia)
- Remote Sensing of Snow and Ice: A Session in Memory of Richard K. Moore (Martti Hallikainen)
- Remote Sensing of Precipitation (V. Chandrasekar).

Other topics included:

- Radiometers and Calibration
- RFI in Remote Sensing
- Soils and Soil Moisture
- Remote Sensing of Forest and Vegetation
- Remote Sensing of Atmosphere.



Figure 1: Symposium attendees. First row, middle: Commission F Vice Chair Simonetta Paloscia and on her right Commission F Chair Roger Lang and Professor Martti Tiuri; on her left Symposium General Chair Martti Hallikainen and TPC Co-chair Juha Kainulainen.

A total of 71 scientists attended the conference and a total of 61 oral presentations and 18 poster presentations were given. A welcome reception was held on October 28 in the Symposium venue. The banquet held on October 30 in Helsinki; was attended by 32 persons.

URSI Commission F provided travel stipends for several attendees. The Symposium was sponsored also by Aalto University, with IEEE Geoscience and Remote Sensing Society as a technical co-sponsor.

Link to Symposium home page: <http://frs2013.ursi.fi>

URSI General Assembly and Scientific Symposium Beijing, China 2014

The URSI General Assembly will be held In Beijing, China from August 17-23, 2014. Commission F has 153 accepted oral and poster papers. The tutorial will be given by Paolo Pampaloni of Florence, Italy on “Looking at the Earth as a Planet: Passive Remote Sensing of Land Surfaces”. Commission F has 9 sessions and 3 joint sessions. These sessions represent a balance between Remote Sensing and Wave Propagation. The session titles are:

- Remote Sensing of Ice and Snow
- Millimeter Wave Propagation and Remote Sensing
- Advances in Spaceborne SAR Imaging and Applications
- Fixed Terrestrial Links: Measurements, Models and Planning Procedures
- Remote Measurement of Precipitation at Local, Regional and Global Scales
- Microwave Remote Sensing of Vegetation and Terrestrial Snow
- Radio Frequency Interference (RFI)
- Remote Sensing of Biomass
- Remote Sensing of Land and Sea at L band

The joint sessions are:

- Electromagnetic Modeling and Application of Underground Imaging (with B)
- Communications and Remote Sensing in Disaster Scenarios (with C)
- Trends in THz Communications (with D & C)