

The Second EARSeL Workshop on Imaging Spectroscopy

ITC, ENSCHEDE, 11-13 July 2000.

Introduction

The second EARSeL Workshop on Imaging Spectroscopy was held from 11 to 13 July 2000 at the International Institute for Aerospace Surveys and Earth Sciences ITC in Enschede (the Netherlands) as a follow-up of the first of its kind held in the fall of 1998 at Remote Sensing Laboratories of the Technical University of Zurich (ETHZ). The first workshop was organized by the EARSeL special interest group on Imaging Spectroscopy attracting around 150 specialists mainly from Europe and overseas (5 continents). At the meeting 71 papers were presented on the complete spectrum of issues in airborne imaging spectrometry with an outlook to future spaceborne missions. The second EARSeL workshop on Imaging Spectroscopy was organized by EARSeL's special interest groups on Imaging Spectroscopy (Chaired by Andreas Mueller from DLR) and Geological Applications (Chaired by Freek van der Meer from ITC). ITC acted as host organization, however the meeting was organized in collaboration with the DLR, RSL and ESA. The workshop was attended by 92 participants (we regret to have had 40 cancellations) representing 23 countries of which many outside of Europe. In total 26 oral papers and 32 posters were presented in 8 thematic sessions. Seven key-notes were given on the various topics by renowned international experts in the field. During the closing session, a resolution was adopted to be send to ESA on behalf of the imaging spectroscopy community.



The Venue: auditorium in the ITC building in Enschede.

Theme and justification

The turn of the millennium marks the onset of a new era for imaging spectroscopy as the first measurements from spaceborn instruments become available to the science community. To name a few examples, ESA is preparing the ENVISAT mission carrying MERIS and the CHRIS Proba mission, NASA has ASTER and MODIS launched on the Terra platform and is preparing hyperspectral missions under the New Millennium Program, the Australian' ARIES should be operational at the beginning of the next century and also DLR is developing a spaceborne mission. These missions open a new era for space-related remote sensing making high-spectral resolution imagery readily available all over the globe and to all on the globe. Hence the motto of the meeting: *From air to space*. The synergy between field-based, airborne and spaceborn spectroscopy formed the red line of the meeting. Furthermore, the possibilities of sensor integration were explored which are now feasible with these multi-sensor mission.



Oral presentation by Hans Hakvoort.

The scientific programme

The scientific committee drafted the programme during a meeting in May. The committee consisted of Andrew Skidmore (workshop chairman), Freek van der Meer (workshop chairman, Michael Schaepman, Daniel Schlaepfer, Klaus Itten, Andreas Mueller, Franz Lanzl, Allan Nielsen, Mike Rast, Steven de Jong, Ingrid Janssen and Robin Vaughan. The scientific committee was assisted by the local organising committee consisting of Andrew Skidmore, Freek van der Meer, Madeleine Godefroy, Karin Schmidt, Wim Bakker, Daniela Semeraro, Bert Riekerk, Edith Howard and Hendrik Prins. The scientific programme was divided into eight thematic sessions each preceded by a key-note lecture and followed by oral presentations. Much room was given to poster presentations and the poster presenters were invited to highlight their poster contribution in a two-minute oral presentation at the end each mornings session. This set-up turned up to be a success and the poster session were rated

amongst the best of the meeting. Key-note addresses that were presented included (in alphabetical order):

- Mike Abrams (NASA-JPL); ASTER.
- Frederique Baret (INRA Avignon); Biophysical modeling
- Paul Curran (University of Southampton): Vegetation monitoring and imaging spectrometry
- Andreas Mueller (DLR); European imaging spectrometry campaigns
- Mike Rast (ESA): ESA's activities in imaging spectrometry
- Michael Schaepman (RSL); Imaging spectrometry sensor calibration
- Freek van der Meer (ITC/TUD), Andrew Skidmore (ITC), Steven de Jong (WUR/UU) and Jan Clevers (WUR): New analytical approaches, the Dutch perspective.

Unfortunately, the key-note address of Terry Cocks (Integrated Spectronics) had to be cancelled.



Lively exhibition

The three-day meeting featured the following sessions:

Tuesday, 11 July 2000:

- Opening session
- Radiometric calibration and sensor simulation
- European Imaging Spectrometer activities

Wednesday, 12 July 2000:

- Geological resource management
- Natural resource management
- Water and atmosphere modelling and interaction

Thursday, 13 July 2000:

- New analytical approaches
- Vegetation modelling
- Discussion and closing

On each day, an interactive poster session was planned during which over 2 hours of discussion time at the posters was scheduled and 1 hour for short oral poster introductions. A small exhibition was also part of the workshop. At the exhibition were Analytical Spectral Devices with their line of field spectrometers, Creaso GMBH demonstrating ENVI and IDL and the Netherlands Remote Sensing Board (BCRS) presenting various remote sensing projects. A interactive demo of the parametric geocoding software PARGE was given in the exhibition room as well.



Chatting at the poster session.

Time to relax!

The scientific programme incorporated room for informal get-together's during the various coffee and tea breaks and during the discussions over the posters. In addition, participants were invited to the icebreaker reception on Tuesday evening hosted by the Mayor of the City of Enschede, Mr. Jan Mans. Unfortunately, Mr. Mans could not be present himself to address the delegates due to unforeseen travel in view of the recent fireworks disaster in Enschede. However, the Vice Councilor Mr. Marco Swart acted as a perfect hosts and excellent replacement of the Mayor. Mr. Swart addressed the delegates and wished them a warm welcome to Enschede. He explained some of the difficulties the city is presently in as a result of the firework disaster and apologized for absence of Mr. Mans. Mr. Swart showed to be remarkably well informed about the scope of the meeting and pointed out the use of remote sensing to local communities and cities such as Enschede. On behalf of the scientific and local organising committee, Freek van der Meer thanked the Vice Councilor for his hospitality and for hosting the reception. In the Café of the Schouwburg (the local musical theatre) the delegates continued their evening programme with wine, beer and refreshments, remotely

thinking and discussing the topic of the workshop. Many continued in one of the many bars and restaurants in the lively center of Enschede afterwards.

The conference dinner was organised in the restaurant “de jaargetijden” situated in the “Volkspark”, the recreational park of Enschede. The name of the restaurant stands for seasons in Dutch, reflecting the trend toward more opera(tionalisation) in remote sensing. During the typical Indonesian style dinner, Andrew Skidmore addressed the delegates to thank those that contributed to the success of the meeting. He extended his gratitude to prof. Itten by offering him a bottle of (presumed) Australian wine. Michael Schaepman was offered a ruler in view of his excellent work in sensor calibration, Karl Staenz received a pocket calculator to assist his work in CPU calculations for atmospheric correction procedures. The Chairman of the Special Interest Group on Imaging Spectroscopy received a bottle of local beer from the Grolsch brewery situated in Enschede to help him overcome his homesickness on leave from Bavaria. Again, until late in the evening the delegates used the time to relax and discuss research, projects and any other business in the informal setting of the Jaargetijden.



Conference dinner.

The resolution

In the first EARSeL Workshop on Imaging Spectroscopy, a resolution was accepted by the delegates and sent to ESA. During the present workshop, the delegates worked toward a resolution during the closing session. Several important issues were raised during the closing session including the need to have more user support and interaction in imaging spectroscopy and the need for operationalisation of the techniques and products. The issue of improving collaboration by common test sites in Europe was accepted by a democratic vote. It was considered important to define common test sites for various applications, however leaving ample space for individual user groups to work on other selected areas. The data (including remote sensing and ancillary data sets) at the common test sites should be made publicly available through a coordinating effort. Finally, the Chairman of the SIG-IS indicated that several countries have shown interest in organizing the third EARSeL workshop on Imaging Spectroscopy in 2002. The date will be fixed shortly and timed in March because efforts are

being undertaken to get AVIRIS to Europe! The third of it's kind meeting would than also serve as a preparatory meeting for AVIRIS flight campaign planning.

The Proceedings

Enclosed you find the proceedings of the meeting. We hope you will enjoy reading the material. Unfortunately only few participants took the effort of submitting a full paper. Those that did will find their contribution on the Cdrom. All other contributions are included as abstracts. At the moment of writing this we are also preparing two special issues including some 15 selected high quality papers. One special issue on sensors and calibration will appear in the ISPRS journal of photogrammetry and remote sensing hopefully in one of the 2002 issues. A issue of the International Journal of Applied Earth Observation and Geoinformation (formerly known as the ITC journal) will be devoted to prospective applications. Ones again allow us to express our gratitude to those that made this meeting a success! We look forward to meeting you again at the third meeting whenever and wherever that may be.

A handwritten signature in black ink, appearing to read 'Freek van der Meer', written over a light grey background.

Freek van der Meer (ITC/TUD)

A handwritten signature in black ink, appearing to read 'Andrew Skidmore', written on a white background.

Andrew Skidmore (ITC)