
Resolution concerning the Tandem mission

June 8 – 10 an EARSeL workshop on “Topography from Space” took place at Chalmers University of Technology, Göteborg, Sweden, with approximately 50 participants. The workshop covered questions from the need for topographical information from space to optical and radar techniques and the combination of techniques. On the final day a panel discussion took place with Professor Konecny, Dr Massonnet, Professors Nüesch and Petrie, and with myself as chairman. The auditorium participated freely in the discussion with comments from e.g. Professors. Madsen, Mulder, Moccia and Prati. The need for and importance of the ERS-1/2 tandem mission was discussed with the intention to send a resolution to ESA.

It was agreed that the tandem mission would be an important and unique possibility to determine topographic properties from space.

Among areas of special interest for DEM production the Antarctic area and glacier areas such as Greenland were mentioned as examples of areas with little available information. In this case a one day delay between ERS-1 and ERS-2 would be preferred.

Updating of older DEMs was also stressed as an important application.

It was stressed that the combined lifetime of ERS-1 and ERS-2 is also very important (e.g. for studies of small movements by means of differential InSAR over very long periods) and that the number of orbit cycles for the tandem mission should be limited by this constraint. The optimal baselines should be further analysed.

The data acquisition is only the first step. Efforts should be made for the operational use of InSAR products from the tandem mission and the data should be produced without too much delay. (In the discussion the possibility for public domain software programs were mentioned and this would of course increase the number of users considerably.)

For the evaluation of various techniques for DEM production, test sites should be selected and acquisitions made routinely.

Göteborg June 15, 1994

Jan Askne
Conference organiser

(Comment: This resolution was sent to Mr. Guy Duchossois, ESA)

The EARSeL 14th Symposium ended with a common part with the workshop, which similarly opened with a common part. The common part of the symposium and the workshop is published in the Proceedings of the symposium published as

“Sensors and Environmental Applications of Remote Sensing”, J. Askne editor, A.A. Balkema, Rotterdam, 1995.

COMMON PART OF SYMPOSIUM AND WORKSHOP

Wednesday, 8 June PM

Ses.	Field	Lecture Room	Time	Chairman
9	Cartographic Aspects	HC 4	14.00 – 15.20	Petrie
K. U. Kaufmann, M.F. Buchroithner, N. Prechtel	Inst. Cartography, Dresden, Germany	New possibilities in generation and application of combined image maps using Landsa-TM and Russian KWR data		
T. Toutin	CCRS, Ottawa, CA	Multisource data integration with an integrated and unified geometric modelling.		
D. Sloggett <i>et al.</i>	E.O.S. Farnham, UK	CINTEX		
R. Kostka, W. Kramer	Graz Univ. Technology Austria	Maps and remote sensing in mountainous areas of Third World countries – the example of the Upper Mustang District in Nepal		
9	Remote Sensing Methodology	HC 3	14.00 – 15.20	Megier
V. Cappellini <i>et al.</i>	Fondazione Scienza per l’Ambiente, Florence, I	Neural networks in remote sensing multisensor data processing		
L. Vasiliev	Institute Geography Russian Academy, Moscow	Scaling in the fractal spatial structure of environment and implementation for imagery interpretation		
J. Hill, W. Mehl S. Sommer, Hervas de Diego pres. by Megier	IRSA/EMAP/JRC Ispra, I	Concepts for evaluating time series of satellite images for long-term monitoring of land degradation processes		

COMMON PART OF WORKSHOP AND SYMPOSIUM

10	WS – overview, session 10	HC 4	15.30 – 17.30	Askne
Ph. Hartl	Institute of Navigation Univ. Stuttgart, D	SAR-interferometry with ERS-1: Basic concept and some results		

A Moccia	CORISTA, Naples, I	An overview of existing and future techniques for topographic space observations.
G. Konecny	IPI, Univ. Hannover, D	Current status and future possibilities for topographic mapping from space
G. Petrie	Univ. Glasgow, UK	Needs for topographic mapping in developing countries - Can space imagery deliver solutions?

THURSDAY, 9 JUNE WORKSHOP

11	WS – radar methods 1	HC 4	9.00 – 10.20	Nüesch
F. Adragna	CNES, Toulouse, F	SAR interferometry applied to DEM generation at CNES		
D. Small et al.	R. Sensing Labs. University Zurich, CH	Geocoding of ERS-1 INSAR-derived digital elevation models		
L. Polidori	Aerospatiale, Cannes, F	On the use of SAR image simulation for the validation of topographic mapping techniques		
C. Prati, F. Rocca, and A. Monti Guarnieri	Dip. di Elettronica del Politecnico, Milano, I	Measuring volumetric scattering effects with SAR interferometry		
12	WS – radar methods 2	HC 4	11.00 – 12.20	Ulander
L. Gray	CCRS, Canada	Results from CCRS interferometric campaigns?		
L. Polidori <i>et al.</i>	Aerospatiale, Cannes, F	Simulation-based assessment of the sensitivity of an interferometric SAR to small terrain changes		
J.O. Hagberg, L. Ulander	Chalmers Univ. Technology Göteborg, S	Calibration of interferometric SAR images		
A. Moccia <i>et al.</i>	Fac. Engineering, Univ. Naples, I	Twin satellite orbital and Doppler parameters for global topographic mapping		
13	WS – optical methods 1	HC 4	14.00 – 15.20	Buchroithner
T. V. Vereshchaka	Moscow State Univ. of Geodey and Cartography	Applications of space information to updating and improving topographic maps		
A. Sharov	Moscow State University and Graz Univ. Technology	Three-dimensional topographic modelling of mountainous and glaciated areas through Russian spaceborne photographs		

14	WS – optical methods 2	HC 4	15.50 – 17.10	Vereshchaka
J. Bodechtel <i>et al.</i>	A.G.F. Univ. Munich, D	First results of MOMS-02 data and future geoscientific applications		
P. Antonio <i>et al.</i>	CNES, Toulouse, F	Effect of acquisition and processing parameters of images on the accuracy of automatic correlation		
R. Kaczynski J. P. Donnay	IGIK, Warsaw, Poland Surfaces Lab. Liège, Belg.	Satellite image map of Warsaw in the scale 1:25,000		
L. Renouard, F. Perlant ISTAR, Valbonne, F presented on Thursday		Comparison of the SPOT DEM and the ERS		

FRIDAY, 10 JUNE

15	WS – optical and radar combined	HC 4	9.00 – 10.00	Konecny
T. Toutin	CCRS, Ottawa, CA	Generating DEM from stereo images with a photogrammetric approach: Example with SPOT, airborne SAR and ERS-1		
V. Kaufmann, U. Fastner	Inst. Applied Geodesy and Photogramm., Graz	Some experiments on relief mapping from space using microwave and optical image data: looking at the badlands in southern Italy		

16	WS – radar methods – future	HC 4	10.30 – 11.50	Askne
D. Massonet	CNES, Toulouse, F	Limitations to SAR interferometry due to instrument, climate or target geometry unstabilities.		
S. Madsen	Tech. Univ. Denmark	An overview of Airborne Across-track Interferometry.		
Tom Farr, D.J. Harding JPL, Pasadena & G.S.F.C.		TOPSAT: The Global Topography Mission		

17	WS – panel discussion	HC 4	12.00 – 13.00	Askne/Buchroithner
Konecny				
Massonet				
Nüesch				
Petrie				