

Program

URSI XXV National Convention on Radio Science
Säätytalo and Tieteiden talo, Helsinki, Finland
September 21–22, 2000

Thursday 21.9.2000

09.00–09.30: *Registration + Coffee* (Säätytalo)

09.30–10.15: *Opening Session* (Säätytalo)

Risto Pellinen (Director of FMI/GEO)

Martti Hallikainen (Chairman of the Finnish URSI)

Risto Pirjola (Chairman of the Organizing Committee)

10.15–11.30: *Plenary Session* (Chair: Risto Pirjola) (Säätytalo)

10.15–10.45

Martti Tiuri (invited): Scientists and science policy in the knowledge society

10.45–11.30

Heikki Huomo (invited): Wireless Internet

11.30–13.00: *Lunch Break*

13.00–17.00: *Parallel Sessions* (Tieteiden talo)

1. *Radars and Remote Sensing* (Chair: Tapio Tuomi)

13.00–13.30

M. Uspensky (invited): SuperDARN: A global-scale network of HF and VHF radars for sensing backscatter from ionospheric irregularities in the E- and F-regions of the high-latitude ionosphere

13.30–14.00

R. King, A. Huuskonen, K. Leminen and H. Kärki (invited): Luosto: a new generation weather radar in Finland

14.00–14.30

M. Hallikainen (invited): Future trends in spaceborne radar technology and applications

14.30–15.00: *Coffee Break*

15.00–15.30

M. Lehtinen (invited): Development of new radar methods based on mathematical modelling of radar coding

15.30–15.45

J. Koistinen: The effect of bird migration on Doppler weather radar measurements

15.45–16.00

M. Engdahl: Helsinki and its surroundings seen with multitemporal INSAR

16.00–16.15

A. N. Arslan, J. Koskinen, J. Pulliainen and M. Hallikainen: The use of synthetic aperture radar data on modeling of forest canopy covered by snow

16.15–16.30

A. N. Arslan, W. Huining, J. Pulliainen and M. Hallikainen: Effective permittivity of wet snow

16.30–16.45

J. Praks: Polarimetric SAR image classification with normalized coherency matrix

16.45–17.00

Y. Zhang, S. Koponen, J. Pulliainen and M. Hallikainen: Turbidity detection using AVHRR satellite imagery in the Gulf of Finland

2. *Electromagnetic Theory* (Chair: Ismo Lindell)

13.00–13.30

S. Dudorov, D. Lioubtchenko, J. Mallat, J. Tuovinen and A. V. Räisänen: Low loss dielectric waveguides at 75–110 GHz frequency range

13.30–14.00

V. S. Möttönen, P. Piironen and A. V. Räisänen: Low-loss bias-T for 4–15 GHz

14.00–14.30

A. Hazmi, J. Rinne and M. Renfors: Transmission of DVB-T signal over cable TV network

14.30–15.00: *Coffee Break*

15.00–15.30

A. Viitanen: Chiral soft and hard surface waveguide mode transformers

15.30–16.00

S. Tretyakov and A. Sihvola: Onsager–Casimir principle and reciprocity of complex composite media

16.00–16.30

T. Uusitupa and K. Kärkkäinen: Studying photonic bandgap waveguides using FDTD

16.30–17.00

I. V. Lindell: Ideal boundary conditions in electromagnetics

Poster viewing during coffee breaks

18.00–20.00: *Cocktail Party at FMI/GEO*

All participants are welcome!

Address: Vuorikatu 15A, 3rd floor (close to the Kaisaniemi Metro station)

Friday, 22.9.2000

09.00–11.30: *Parallel Sessions* (Tieteiden talo)

1. *Wireless Communication – Part I* (Chair: Veikko Porra)

09.00–09.20

P. Eskelinen and H. Eskelinen: Improvements of welded RF components through computer simulations

09.20–09.40

P. Eskelinen: Performance limitations of tactical mobile VHF antennas

09.40–10.00

P. Eskelinen and P. Sjöman: A short performance evaluation of the Metsähovi clock arrangement for VLBI measurements

10.00–10.30: *Coffee Break*

10.30–10.50

J. Häkli, J. Säily, J. Ala-Laurinaho, J. Tuovinen and A. V. Räisänen: Current status of the sub-millimetre wave hologram compact antenna test range

10.50–11.10

J. Säily, J. Mallat and A. V. Räisänen: Development of a phase-locking system for submillimetre wave backward-wave oscillators

11.10–11.30

M. Kärkkäinen, J. Riska, P. Kangaslahti and V. Porra: LNA and mixer circuits for a 60 GHz Radio Front End

2. *Space Weather* (Chair: Hannu Koskinen)

09.00–09.30

S. Korpela and F. von Schoultz (invited): New European satellite navigation service Galileo

09.30–10.00

M. Poutanen (invited): Ionospheric effects in GPS observations

10.00–10.30: *Coffee Break*

10.30–11.00

T. Nygrén, M. Lehtinen and E. D. Tereshchenko (invited): Determination of ionospheric electron density by means of satellite radiotomography

11.00–11.15

J. Mannermaa, K. Kalliomäki and T. Mansten: Detection of tracking loops performance of GPS receivers from PPS measurements

11.15–11.30

K. Kauristie, O. Amm, E.I. Kallio, P. Janhunen and A. Viljanen: Ground-based space weather observations using the MIRACLE system

11.30–11.45

J. Elovaara: Geomagnetically induced currents and their effects in the Finnish power system

11.45–12.00

A. Pulkkinen, K. Pajunpää, A. Viljanen, R. Pirjola, D. Boteler and L. Trichtchenko: Project on geomagnetically induced currents in the Finnish natural gas pipeline network

12.00–13.00: *Lunch Break*

13.00–16.30: *Parallel Sessions* (Tieteiden talo)

1. *Wireless Communication – Part II* (Chair: Martti Hallikainen)

13.00–13.40

J. Lähteenmäki (invited): Radiowave propagation aspects of mobile location techniques

13.40–14.05

H. Laitinen, T. Nordström and J. Lähteenmäki: Location of GSM terminals using a database of signal strength measurements

14.05–14.30

J. Saijets, M. Åberg and M. Andersson: CMOS RF models for mobile radio IC design

14.30–15.00: *Coffee Break*

15.00–15.25

V. Golikov, S. Hienonen, T. Sehm and P. Vainikainen: A passive intermodulation phenomenon in base station antenna design for mobile networks

15.25–15.50

C. Icheln and P. Vainikainen: Designing a dual–frequency balun to eliminate the effect of RF feed cables in measurements of small antennas

15.50–16.15

N. Y. Ermolova: Multiple–signal intermodulation in the nonlinear radio devices

2. Natural Electromagnetic Fields (Chair: Heikki Nevanlinna)

13.00–13.25

T. J. Tuomi: Multichannel lightning flashes detected in Finland in 1998–2000

13.25–14.00

J. Elovaara (invited): Co–operation of Fingrid and Finnish Meteorological Institute in questions related to natural electromagnetic fields

14.00–14.30

A. Väänänen: New research radars in Sodankylä

14.30–15.00: *Coffee Break*

15.00–15.25

N. Partamies, K. Kauristie, P. Eglitis and M. Uspensky: Sudden impulse events observed by magnetometers and coherent radars

15.25–15.50

R. Pirjola: Geoelectromagnetic modelling at the Finnish Meteorological Institute

15.50–16.15

J. J. Hänninen, I. V. Lindell and R. Pirjola: Exact image theory applied to geophysics

16.30–17.00: *Closing Session including Young Scientist Award (Tieteiden talo)*

Poster viewing during coffee breaks