

Monday, 12 November 2007

Mo1.1 Welcome and Keynote Address

Chair: Yiannis Vardaxoglou, *Loughborough University, UK*

Co-Chair: Juan Mosig, *Ecole Polytechnique Federale de Lausanne, Switzerland*

Welcome Address 09.00 – 09.30

Yiannis Vardaxoglou, *Loughborough University, UK*

Juan Mosig, *Ecole Polytechnique Federale de Lausanne, Switzerland*

Mo1.1.1 09.30 – 10.00

Keynote Address – Knowledge Creation and Exploitation – Changes and Challenges to Deliver Value

J Murphy, *BAE Systems, UK*

Mo1.1.2 10.00 – 10.30

Keynote Address – A Second Century of Wireless

W Tuttlebee, *Mobile VCE, UK*

Mo2.1 Plenary Talks

Chair: Antoine Roederer, *ESTEC, European Space Agency, Netherlands*

Co-Chair: Jean-Louis Guiraud, *ENSICA, France*

Mo.2.1.1 11.00 – 11.40

Plenary Talk – ACE and the Future of Antenna Research in Europe

P Ingvarson, *Saab Space, Sweden*

Mo2.1.2 11.40 – 12.20

Plenary Talk – Advances in RF-MEMS and RF-Microsystem Technology through AMICOM NoE

R Sorrentino, *University of Perugia, Italy*

Mo2.1.3 12.20 – 12.50

Plenary Talk – The European School of Antennas: Results and Perspectives

S Maci, *Universita' degli Studi di Siena, Italy, et al.*

Mo3.2 Invited Papers

Chair: Peter Hall, *University of Birmingham, UK*

Co-Chair: Per Ingvarson, *Saab Space, Sweden*

Mo3.2.1 14.00 – 14.45

Invited Paper - Recent Antenna Technology for Medical Applications

K Ito, *Chiba University, Japan*

Mo3.2.2 14.45 – 15.30

Invited Paper - Antennas and Security

R Appleby, R N Anderton, *QinetiQ, UK*

Mo3.3 Invited Papers

Chair: Thomas Kürner, *Braunschweig Technical University, Germany*

Co-Chair: Ken Craig, *Rutherford Appleton Laboratory, UK*

Mo3.3.1 14.00 – 14.45

Invited Paper – Advanced Radio Channel Modelling, Sounding & Emulation

E Zollinger, *EB Bubikon, Switzerland*, T Jämsä, J Ylitalo, P Kyösti, *EB Oulu, Finland*

Mo3.3.2 14.45 – 15.30
Invited Paper – **The Mobile to Mobile (C2C) Communication Channel**
W Wiesbeck, *Karlsruhe University, Germany*

Mo4.2 Convened Session – Reflectarrays I

Chair: Rolf Jakoby, *Institut für Hochfrequenztechnik, Germany*

Co-Chair: George Eleftheriades, *University of Toronto, Canada*

Mo4.2.1 16.00 – 16.20

Convened - Design of a TX/RX Reflectarray Antenna for Space Applications

J A Encinar, M Arrebola, *Universidad Politécnica de Madrid, Spain*, G Toso, *ESTEC, European Space Agency, Netherlands*

Mo4.2.2 16.20 – 16.40

Convened - Wideband Reflectarray Antennas using True-Time Delay Lines

E Carrasco, J A Encinar, M Barba, *Universidad Politécnica de Madrid, Spain*

Mo4.2.3 16.40 – 17.00

Convened - 77 GHz Reconfigurable Reflectarray with Nematic Liquid Crystal

R Marin, A Moessinger, F Goelden, S Mueller, R Jakoby, *Darmstadt University of Technology, Germany*

Mo4.2.4 17.00 – 17.20

Convened - Satellite Antennas based on MEMS Tunable Reflectarrays

H Legay, Y Cailloce, O Vendier, G Caille, *Thales Alenia Space, France*, J Perruisseau-Carrier, *Laboratoire d'Electromagnétisme et d'Acoustique, Switzerland*, M Lathi, *VIT, Finland*, J P Polizzi, *CEA-LETI-Minatec, France*, U Oestermann, *Fraunhofer Institute for Reliability and Microintegration, Germany*, P Pons, *LAAS-CNRS, France*, N Raveu, *LAME INPT-ENSEEIH, France*

Mo4.2.5 17.20 – 17.40

Convened - Contoured-Beam Gregorian Antenna with a Reflectarray as Subreflector

M Arrebola, L de Haro, J A Encinar, *Universidad Politécnica de Madrid, Spain*, L F de la Fuente, *EADS-CASA Espacio, Spain*

Mo4.3 Propagation Models for Automatic Network Planning

Chair: Emanuel van Lil, *KU Leuven, Belgium*

Co-Chair: Yves Lostanlen, *SIRADEL, France*

Mo4.3.1 16.00 – 16.20

Applicability of Deterministic Propagation Models for Mobile Operators

O C Mantel, J C Oostveen, M P Popova, *TNO Information and Communication Technology, Netherlands*

Mo4.3.2 16.20 – 16.40

Design of an Indoor Wireless Network with Neural Prediction Model

I Vilovic, N Burum, *University of Dubrovnik, Croatia*, Z Šipuš, *University of Zagreb, Croatia*

Mo4.3.3 16.40 – 17.00

Analysis of the Influence of Different Resolutions on Radio Propagation Models at 900 and 1800 MHz

M Neuland, T Kürner, *Braunschweig Technical University, Germany*

Mo4.3.4 17.00 – 17.20

Ray-Tracer for Outdoor Microcellular Propagation Modelling and Channel Characterisation

M H Unar, I A Glover, *University of Strathclyde, UK*, G Vaccaro, *Grenoble National Superior School, France*

Mo4.3.5

17.20 – 17.40

Graphics Hardware Accelerated Field Strength Prediction for Rural and Urban Environments

M Reyer, T Rick, R Mathar, *RWTH Aachen University, Germany*

Mo4.4 Convened Session – ACE - Active, Integrated and -mm Wave Antennas, MEMS I

Chair: Ronan Sauleau, *University of Rennes, France*

Co-Chair: Makoto Ando, *Tokyo Institute of Technology, Japan*

Mo4.4.1

16.00 – 16.20

Convened - Polarisation Independent Submillimetre Wave Annular Slot Frequency Selective Surface

R Dickie, R Cahill, H S Gamble, V F Fusco, *Queen's University Belfast, UK*, P G Huggard, B Moyna, M Oldfield, *Rutherford Appleton Laboratory, UK*, N Grant, *EADS Astrium, UK*, P de Maagt, *European Space Agency, Netherlands*

Mo4.4.2

16.20 – 16.40

Convened - Textured Surface Assisted Active Antenna Performance

V F Fusco, H I Cantu, S Simms, *Queen's University Belfast, UK*

Mo4.4.3

16.40 – 17.00

Convened - Beam-Switching Single-Layer Post-Wall Waveguide Slot Array Controlling Crossover and Sidelobes

J Hirokawa, K Morimoto, M Ando, *Tokyo Institute of Technology, Japan*

Mo4.4.4

17.00 – 17.20

Convened - Linearly-Polarized Tunable Antenna

F Ferrero, C Luxey, R Staraj, G Jacquemod, *Laboratoire d'Electronique, Antennes et Télécommunications (LEAT), France*, V F Fusco, *Queen's University Belfast, UK*

Mo4.4.5

17.20 – 17.40

Convened - MEMS-Based Reconfigurable Antenna for Ka Band Applications

B Poussot, J-M Laheurte, O Picon, *Université de Marne-La-Vallée, France*, K Kannappan, G Lissorgues, *ESIEE, France*

MoPA – Antenna Poster Session 1: Small, Mobile and Wideband Antennas 08.30 – 18.00

Chair: Marta Martinez, *IMST GmbH, Germany*

Co-Chair: Cyril Luxey, *University of Nice-Sophia Antipolis, France*

Small Antennas and Elements

MoPA.001

Miniature Antenna for Circularly Polarized Quasi Isotropic Coverage

M Huchard, C Delaveaud, *CEA-LETI MINATEC, France*, S Tedjini, *LCIS/ESISAR-INPG, France*

MoPA.002

Signal and Noise Analysis of Small Antennas Terminated with High-Impedance Amplifiers

K F Warnick, M A Jensen, *Brigham Young University, USA*

MoPA.003

A Comparative Study of Fractal Patch Antennas based on an Aperture Coupled Feed

D Townend, J A Flint, C B Mulenga, *Loughborough University, UK*

MoPA.004

An Optimised Stacked E-Shaped Patch Antenna

V Devaraj, K K Ajayan, M R Baiju, *College of Engineering, Trivandrum, India*

MoPA.005

Double Semi-Rings Patch Antenna

W J Krzysztofik, *Wroclaw University of Technology, Poland*

MoPA.006

Bandwidth Investigation on Low Profile Stacked Patch Antennas with Slot Coupling

T Noro, *Chiba University & Japan Radio Co. Ltd, Japan*, M Takahashi, K Ito, *Chiba University, Japan*

MoPA.007

Slotted PIFA for GSM Band

D Bonefačić, B Rapinac, J Bartolić, *University of Zagreb, Croatia*

MoPA.008

PIFA Extended Cavity Model

C Redondo, L de Haro, *Universidad Politécnica de Madrid, Spain*

MoPA.009

Input Impedance-Tuning Slots of PIFA Antennas

H Wang, M Zheng, *Nokia UK Limited, UK*

MoPA.010

Design of Printed Dipole with Reflector

J M Floc'h, F Queudet, E Fourn, *IETR, France*

MoPA.011

Improved Design Equations for Asymmetric Coplanar Strip Folded Dipoles on a Dielectric Slab

H J Visser, *Holst Centre-TNO, Netherlands*

MoPA.012

Wideband Balanced Folded Dipole Antenna for Mobile Handsets

D Zhou, R A Abd-Alhameed, P S Excell, *University of Bradford, UK*

MoPA.013

Bandwidth Limitations of Dipoles Matched with Non-Foster Impedances

M Hirvonen, A Hujanen, J Holmberg, J C-E Sten, *VTT Technical Research Centre of Finland, Finland*

MoPA.014

Why Does Reflector Enhance the Gain of Helical Antennas?

A R Djordjevic, M M Ilic, D I Olcan, M M Nikolic, *University of Belgrade, Serbia*, A G Zajic, *Georgia Institute of Technology, USA*

MoPA.015

A Double Tapered Microstrip Leaky Wave Antenna

O Losito, *University of Salento, Italy*

MoPA.016

Dual Frequency Leaky-Wave Antenna Analysis and Design

J R Kelly, A P Feresidis, J C Vardaxoglou, *Loughborough University, UK*, G Passalacqua, *Loughborough University & University of Siena, Italy*, F Capolino, M Albani, *University of Siena, Italy*

MoPA.017

Design of a Stripline Leaky-Wave Antenna for Broadside Radiation

N Gagnon, A Petosa, A Ittipiboon, *Communications Research Centre Canada, Canada*

MoPA.018

A Novel Dual-Ring Multi-Layer Circular Polarized Antenna

A D Abeygunasekera, C E Free, T Brown, *University of Surrey, UK*

MoPA.019

Shielding Effectiveness Measurement of Small Enclosures using Linearly and Circularly Polarized Antennas

T Korinek, M Mudroch, M Mazanek, *Czech Technical University in Prague, Czech Republic*

Mobile Antennas

MoPA.020

A Frequency-Tunable Planar Monopole Antenna for Mobile Terminals

V K Palukuru, M Komulainen, M Berg, H Jantunen, E Salonen, *University of Oulu, Finland*

MoPA.021

Mobile Communication Antennas in Uniform and Gaussian Propagation Channels

C A Tounou, C Decroze, D Carsenat, T Monédière, B Jecko, *University of Limoges, France*

MoPA.022

Speed Up of Effective SINR Mapping Calculations for System Level Simulations

A Oborina, *Helsinki University of Technology, Finland*, M Moisio, *Nokia Research Center, Finland*

MoPA.023

Low-Profile High-Gain Sub-Wavelength Resonant Cavity Antennas for WiMAX Applications

J R Kelly, A P Feresidis, *Loughborough University, UK*

MoPA.024

A New Design for WLAN Antennas: Synthesis of Parabolic Forms in the Band of 5-6GHz

M Khoury, C Monsef, E A Rachid, *Saint Josoph University, Lebanon*

MoPA.025

Design of Built-In Penta-Band Chip Antenna for GSM850/GSM900/GPS/KPCS/USPCS Mobile Handset

H Choi, D Shin, S Park, H Kim, H Kim, *Hanyang University, Korea*

MoPA.026

Miniaturized Antennas for Sensor RFID Applications

G Marrocco, C Calabrese, *University of Roma Tor Vergata, Italy*

MoPA.027

A Stamped Antenna for Tolling Application at 5.8GHz

F Gallee, E Goron, S Chainon, L Le Garrec, Y Toutain, H Lattard, *Antennessa, France*

MoPA.028

RF-Design, Characterization and Modelling of Tyre Pressure Sensors

M Brzeska, *Siemens VDO Automotive AG & Universität Karlsruhe, Germany*, G-A Chakam, *Siemens VDO Automotive AG, Germany*, J Pontes, W Wiesbeck, *Universität Karlsruhe, Germany*

MoPA.029

Radio-Electric Characterizations of Jeans' Buttons

J M Floc'h, F Queudet, E Fourn, *IETR, France*

MoPA.030

One-Layer GPS Antennas Perform Well Near a Human Body

T Kellomaki, J Heikkinen, M Kivikoski, *Tampere University of Technology, Finland*

MoPA.031

Electromagnetic Heating of a Human Head Model by a Half-Wavelength Dipole Antenna

M A García-Fernández, J F Valenzuela Valdés, A M Martínez-González, D Sánchez-Hernández, *Universidad Politécnica de Cartagena, Spain*

MoPA.032

The Effects of Hand Phantom on Mobile Phone Antenna OTA Performance

C-H Li, N Kuster, *IT'IS Foundation, Switzerland*, E Ofli, N Chavannes, *Schmid & Partner Engineering, Switzerland*

MoPA.033

The SAR Effects of Popular Jewellery on the Human Head

W G Whittow, C J Panagamuwa, R M Edwards, J C Vardaxoglou, *Loughborough University, UK*

MoPA.034

User Interaction Studies on Handset Antennas

T Huang, K R Boyle, *NXP Semiconductors, UK*

MoPA.035

A Study of the Effects of Metallic Pins on SAR using a Specific Anthropomorphic Mannequin (SAM) Head Phantom

C J Panagamuwa, W G Whittow, R M Edwards, J C Vardaxoglou, *Loughborough University, UK*

Diversity and MIMO Antennas

MoPA.036

Optimization of Antenna Diversity Gain by Combining Full-Wave and Circuit Simulations

K Karlsson, *SP Technical Research Institute of Sweden, Sweden*, J Carlsson, *SP Technical Research Institute of Sweden & Chalmers University of Technology, Sweden*, I Belov, *Jönköping University, Sweden*, G Nilsson, *Ascom Wireless Solutions, Sweden*, P-S Kildal, *Chalmers University of Technology, Sweden*

MoPA.037

The Effect of Mutual Coupling on the Correlation of Spatial Diversity Schemes using Conformal Antennas

T N Kaifas, *Technological and Educational Institute of Thessaloniki, Greece*, A Georgiadis, *Centre Tecnologic de Telecomunicacions de Catalunya, Spain*, C Kalialakis, *Hellenic Telecommunications and Post Commission, Greece*

MoPA.038

Envelope Correlation Coefficient and Mean Effective Gain for Multiple Antennas in Different Use Cases

M Pascolini, S Oh, C DiNallo, *Motorola Corporate EME Research Labs, USA*, M Midrio, *Università di Udine, Italy*

MoPA.039

Compact Diversity Antenna for DCS-UMTS Indoor Environments

M J Ben-Constenla, M Arias, A García Pino, O. Rubiños, *Universidad de Vigo, Spain*

MoPA.040

Space and Pattern Diversity for On-Body Communication Channels in an Indoor Environment at 2.45 GHz

I Khan, L Yu, Y I Nechayev, P S Hall, *University of Birmingham, UK*

MoPA.041

Angle of Arrival Estimation of On-Body Channels

M R Kamarudin, Y I Nechayev, P S Hall, *University of Birmingham, UK*

MoPA.042

Hardware Implementation of Adaptive Beamformers used for Smart Antennas

H Wang, M Mohr, T. Hollstein, M Glesner, *Darmstadt University of Technology, Germany*

MoPA.043

Novel Smart Antenna based on Half-Wavelength Dipoles

S Savov, V Vasileva, M Doneva, *Technical University of Varna, Bulgaria*

MoPA.044

Measured Performances of a SIMO Multi-Standard Receiver

P F Morlat, X Gallon, G Villemaud, J M Gorce, *CITI-INSa Lyon, France*

MoPA.045

Compact and Low-Profile MIMO Terminal Antenna Employing Bidirectional Yagi-Uda Array

N Honma, K Nishimori, Y Takatori, A Ohta, S Kubota, *NTT Corporation, Japan*

MoPA.046

Largest Eigenvalue Analysis in Correlated MIMO Rayleigh Channels

T Taniguchi, S Sha, Y Karasawa, *University of Electro-Communications, Japan*

MoPA.047

Performance Evaluation of Adaptive Active Signal Processing Algorithms and MIMO Antenna System for the Reduction of Electromagnetic Field Density

T Hult, A Mohammed, *Blekinge Institute of Technology, Sweden*

MoPA.048

Dependency of MIMO Channel Capacity on XPR around Mobile Terminals for Multi-Band Multi-Antenna

Y Okano, K Cho, *NTT DoCoMo, Inc., Japan*

MoPA.049

New Definitions of Antenna Correlations without Channel Estimation

S Avrillon, F Nivole, C Brousseau, *Université de Rennes, France*

MoPA.050

Decorrelation of a Closely Spaced Antenna Array and its Influence on MIMO Channel Capacity

S Dumanli, C Railton, D L Paul, *University of Bristol, UK*

MoPA.051

Performance Evaluation of OFDMA RRM Algorithms with Total Spectrum Reuse

D Zarbouti, D I Kaklamani, *National Technical University of Athens, Greece*, G Tsoulos, *University of Peloponnese, Greece*

Multiple Band, Wideband and UWB Antennas

MoPA.052

A Novel Coplanar and Wideband Fractal Antenna

M Jahanbakht, A A Lotfi Neyestanak, *Islamic Azad University, Iran*, M N Moghaddasi, *Islamic Azad University of Science and Research, Iran*, H Fathi, *Nonprofit University of Kish, Iran*

MoPA.053

A Design of Multi Band Chip Antenna with the Shorting Pin for Mobile Handsets

S Park, H Kim, H Choi, J Cho, H Kim, *Hanyang University, Korea*

MoPA.054

Dielectric Loaded Monopole Trans-Receive Wideband Antenna System with Mutual Coupling Study

A Roy, S Ghosh, A Chakrabarty, *Indian Institute of Technology Kharagpur, India*

MoPA.055

Wideband Rectangular Microstrip Patch Antenna with U-Slot

A M Hadian, H R Hassani, *Shahed University, Iran*

MoPA.056

The Bode-Fano Integral as an Objective Measure of Antenna Bandwidth

N J McEwan, R A Abd-Alhameed, M B Child, D Zhou, *University of Bradford, UK*, A Ghorbani, *Amir-kabir University of Technology, Iran*

MoPA.057

New Multi-Band Design for a Microstrip Patch Antenna

J Costantine, C G Christodoulou, *University of New Mexico, USA*, K Y Kabalan, A El Hajj, *American University of Beirut, Lebanon*

MoPA.058

Broad-Band Folded Patch Antenna with Shorts and Slots

S Vikan, J A Aas, *Norwegian University of Science and Technology, Norway*

MoPA.059

Design of a Directive Ultra-Wideband Antenna

F Merli, J F Zurcher, A K Skrivervik, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*, A Freni, *University of Florence, Italy*

MoPA.060

Optimization of the Profile of a Planar Ultra Wide Band Monopole Antenna in Order to Minimize Return Losses

J Martínez-Fernández, J M Gil, J Zapata, *Universidad Politécnica de Madrid, Spain*

MoPA.061

Small UWB Coplanar Monopole Antenna Design

E Pancera, C Sturm, W Wiesbeck, *Universität Karlsruhe (TH), Germany*

MoPA.062

A Printed Rugby Ball Monopole Antenna for UWB Applications

H Faezi, K Mohammadpour-Aghdam, A R Gholipour, R Faraji-Dana, *University of Tehran, Iran*

MoPA.063

UWB Slot Antenna on a Folded Finite Ground Plane

M Leal, C Boaventura, A A Moreira, *Instituto de Telecomunicações, Portugal*

MoPA.064

A Novel Spherical Bifurcated UWB Antenna for Ultra Wideband Communications

A Mehdipour, K Mohammadpour-Aghdam, R Faraji-Dana, *University of Tehran, Iran*

MoPA.065

Performances Analysis of LNA-Antenna Co-Design for UWB System

S Bories, M Pelissier, C Delaveaud, R Bourtoutian, *CEA-LETI MINATEC, France*

MoPA.066

Design, Simulation and Implementation of UWB Antenna Array and Its Application in GPR Systems

M Soliman, Z Wu, *University of Manchester, UK*

MoPA.067

On Small UWB Antennas

L Guo, S Wang, C C Chiau, X Chen, C G Parini, *Queen Mary, University of London, UK*

MoPA.068

Differential, Shorted Dipole Antenna for European UWB Applications

R Bourtoutian, C Delaveaud, *CEA-LETI MINATEC, France*, S Toutain, *IREENA, France*

MoPA.069

Analysis of UWB Antennas for Carrier-based UWB Impulse Radio

G Quintero Díaz de León, A K Skrivervik, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

MoPA.070

Ultra-Wideband Monopole Antenna with Rounded Disc Element on Finite Ground Plane

T Hori, M Fujimoto, *University of Fukui, Japan*

MoPA.071

Coplanar-Waveguide Fed Circular Disc Monopole Antenna with Improved Radiation Characteristics

N-W Chen, Y-C Liang, *National Central University, Taiwan*

MoPA.072

An UWB Folded Dipole Antenna: Time and Frequency Domain Characterization

L Babour, *INP & Radiall, France*, E Fond, S Perrot, *Radiall, France*, R Tamas, *INP & Naval Research Centre, Romania*, P Saguet, *INP, France*, S Bories, *CEA-LETI, France*

MoPA.073

Low-Cost, Compact UWB Antenna with Frequency Band-Notch Function

H J Visser, *Holst Centre - TNO, Netherlands*

MoPP – Propagation Poster Session

08.30 – 18.00

Chair: F Perez-Fontan, *University of Vigo, Spain*

Co-Chair: R Prieto Cerdeira, *ESTEC, European Space Agency, Netherlands*

MoPP.001

Tropical Weather Effects on Foliage Propagation

Y H Lee, Y S Meng, *Nanyang Technological University, Singapore*

MoPP.002

Distress Beacons for Maritime Accidents: Measurements of Coastal Sea Coverage

A Vázquez Alejos, I Cuiñas, M García Sánchez, J A Gay Fernández, *Universidade de Vigo, Spain*

MoPP.003

Rain Drop Size Distribution Modelling in Singapore – Critical Diameters

Y H Lee, S Lakshmi, J T Ong, *Nanyang Technological University, Singapore*

MoPP.004

An Approach to Relate to Each Other Different Propagation Parameters, based on Physical Models of Tropospheric Attenuation

M J Lucas, J M Riera, *Universidad Politécnica de Madrid, Spain*

MoPP.005

Propagation Impairments Mitigation Techniques for Broadband WLANS

A Vázquez Alejos, M García Sánchez, I Cuiñas, *Universidade de Vigo, Spain*

MoPP.006

Further Statistics Related to Over-Sea Propagation of UHF Radio Waves in the British Channel Islands

S D Gunashekar, E M Warrington, D R Siddle, *University of Leicester, UK*

MoPP.007

The Simulation of Phase Synchronization of Reference Oscillators through Atmospheric Channel

I B Shirokov, I V Serdyuk, *Sevastopol National Technical University, Ukraine*

MoPP.008

Equivalent Rain Volume Parameters to Describe Wave Propagation

V Schejbal, D Cermak, *University of Pardubice, Czech Republic*, O Fiser, *Institute of Atmospheric Physics, Czech Republic*

MoPP.009

Clear-Air Propagation Simulations for High Altitude Platforms (HAPs) using Radiosonde Data
M Grábner, V Kvičera, *TESCOM, Czech Republic*

MoPP.010

Performance Study of Dual-Hop Transmissions in Millimeter Wireless Mesh Networks
V A Sakarellos, A D Panagopoulos, J D Kanellopoulos, *National Technical University of Athens, Greece*

MoPP.011

Natural Resonant Frequency Extraction for Concealed Weapon Detection at Millimetre Wave Frequencies
L Zhang, Y Hao, C G Parini, *Queen Mary, University of London, UK*

MoPP.012

Application of Doppler Spectrum for Retrieval of Statistical Parameters of Sea Waves
V Y Karaev, M B Kanevsky, E M Meshkov, *Institute of Applied Physics RAS, Russia*

MoPP.013

Assessment of Millimeterwave Propagation Over Sea by Experiment and Simulation
H Essen, H-H Fuchs, A Pagels, S Stanko, *FGAN Research Institute for High Frequency Physics and Radar Techniques, Germany*, J Förster, *Forschungsanstalt für Wasserschall und Geophysik, Germany*, V Fabbro, R Douvenot, *ONERA, France*

MoPP.014

Optimization of Beam Focusing into the Stark's Cell for MM-Wave Spectroscopy
P Piksa, P Cerny, S Zvanovec, M Mazanek, *Czech Technical University in Prague, Czech Republic*

MoPP.015

Spatial Spectrum Analysis for Measurement of Beam Aberration by FSS
A Yamsiri, R S Donnan, *Queen Mary, University of London, UK*

MoPP.016

Microwaves Scattering on Fractal Surfaces as a New Line of Investigations
A A Potapov, A V Laktyunkin, *Russian Academy of Sciences, Russia*

MoPP.017

Effects of Human Body Interference on the Performance of a GPS Antenna
M Ur Rehman, Y Gao, X Chen, C G Parini, *Queen Mary, University of London, UK*, Z Ying, *Sony Ericsson Mobile Communications AB, Sweden*

Tuesday, 13 November 2007

Tu1.2 – Convened – ACE - Advanced Numerical Methods

Chair: Raphaël Gillard, *Institut National des Sciences Appliquées de Rennes, France*

Co-Chair: John Volakis, *Ohio State University, USA*

Tu1.2.1

08.30 – 08.50

Convened - The Electromagnetic Data Exchange Much More than a Common Data Format
P E Frandsen, *TICRA, Denmark*, M Ghilardi, *ITLink, Italy*, F Mioc, *SATIMO, Italy*, M Sabbadini, *ESA, Netherlands*

Tu1.2.2

08.50 – 09.10

Convened - A Novel Domain Decomposition Technique for Solving Very Large Problems in Frequency and Time Domains
R Mittra, *Pennsylvania State University, USA*

Tu1.2.3 09.10 – 09.30
Convened - **Fast Analysis of Large Finite Arrays with a Combined MultiResolution - Fast MoM based Techniques**
F De Vita, P De Vita, A Freni, *University of Florence, Italy*, P Pirinoli, F Vipiana, G Vecchi, *Politécnico di Torino, Italy*

Tu1.2.4 09.30 – 09.50
Convened - **Applications of the DG-FDTD Method**
G Godi, R Pascaud, R Gillard, R Loison, *IETR, France*, J Wiart, M F Wong, *Telecom R&D, France*, B Lindmark, *Royal Institute of Technology, Sweden*, L Garcia-Garcia, *University of Madrid, Spain*

Tu1.2.5 09.50 – 10.10
Convened - **Multiphysics Tools for Load Bearing Antennas Incorporating Novel Materials**
J L Volakis, K Sertel, S Ghosh, *The Ohio State University, USA*

Tu1.3 Convened Session – AMTA - Generic Antenna Measurements I

Chair: Carlo Rizzo, *MI Technologies (Europe)/AMTA, UK*

Co-Chair: Ivan Boswell, *QinetiQ, UK*

Tu1.3.1 08.30 – 08.50
Convened - **Far Field Pattern Analysis and Measurement of a Digital Beam Forming 8x8 Antenna Array Transmitting at 29.5 to 30 GHz**
S Holzwarth, O Litschke, W Simon, *IMST GmbH, Germany*, K Kuhlmann, A F Jacob, *Technical University of Hamburg-Harburg, Germany*

Tu1.3.2 08.50 – 09.10
Convened - **Calculated and Measured In-Flight Antenna Patterns on an ATR 72 Aircraft**
A Thain, *EADS, France*, D Clerc, S Fredj, S Gerbal, *ATR, France*

Tu1.3.3 09.10 – 09.30
Convened - **The IsoFilter™ Technique: Isolating an Individual Radiator from Spherical Near-Field Data Measured in a Contaminated Environment**
D W Hess, *MI Technologies, USA*

Tu1.3.4 09.30 – 09.50
Convened - **The Impact on Measurement Accuracy of Specifying a Compact Antenna Test Range for High Power Testing**
J McCormick, J Boyce, J Sayers, J Murray, *Selex Sensors and Airborne Systems, UK*

Tu1.3.5 09.50 – 10.10
Convened - **Application of Displaced Beam Method on Antenna Radiation Pattern Measurement**
H Bartik, F Kondapaneni, *Czech Technical University in Prague, Czech Republic*

Tu1.4 Convened Session – Time Series as Channel Modeling for Satcom and Navigation Systems

Chair: Danielle Vanhoenacker-Janvier, *Université catholique de Louvain, Belgium*

Co-Chair: Joel Lemorton, *ONERA, France*

Tu1.4.1 08.30 – 08.50
Convened - **Modeling of the Land Mobile Satellite Channel using a Virtual City Approach**
F P Fontan, B Montenegro, B Sanmartin, P Valtr, *University of Vigo, Spain*, A Abele, V Fabbro, L Castanet, *ONERA, France*, F Lacoste, *CNES, France*

Tu1.4.2 08.50 – 09.10
Convened - **Time Series-based Prediction of Fade Dynamics and Shadowing Correlation Statistics for Navigation Systems**
C Oestges, D Vanhoenacker-Janvier, *Université Catholique de Louvain, Belgium*

Tu1.4.3 09.10 – 09.30
Convened - **Time Series Generators to Simulate Earth Satellite Links Affected by Scintillations**
Y Béniguel, J-P Adam, *IEEEA, France*

Tu1.4.4 09.30 – 09.50
Convened – **The Dynamics of Rain Attenuation in Northern Italy**
M M J L van de Kamp, *University of Bath, UK*

Tu1.4.5 09.50 – 10.10
Convened - **Time Series Multipath Modeling of Suburban Environments in Landmobile Satellite Navigation**
A Lehner, A Steingass, *Institute for Communications and Navigation, Germany*

Tu1.5 Convened Session – ACE – Active, Integrated and –mm Wave Antennas, MEMS II
Chair: Ronan Sauleau, *University of Rennes 1, France*
Co-Chair: Makoto Ando, *Tokyo Institute of Technology, Japan*

Tu1.5.1 08.30 – 08.50
Convened – **Harmonic-Tuned Patch Active Integrated Antenna for a High-Efficiency Ku-Band Transmitter**
P Baccarelli, P Burghignoli, F Frezza, A Galli, P Lampariello, S Paulotto, G Valerio, *University of Rome, Italy*

Tu1.5.2 08.50 – 09.10
Convened - **Tests of a 1.5-M Reflector Antenna in a 650 GHz Hologram CATR**
J Ala-Laurinaho, J Häkli, A Karttunen, T Koskinen, A Lönnqvist, J Mallat, E Noponen, A Tamminen, M Vaaja, V Viikari, A Räisänen, *TKK, SMARAD Radio Laboratory MilliLab, Finland*, J Lemanczyk, *ESTEC, European Space Agency, Netherlands*

Tu1.5.3 09.10 – 09.30
Convened - **Non-Contact Coupling between Antenna and Circuit Front-Ends**
K M Chan, P Gardner, P S Hall, *Birmingham University, UK*, E Lee, *M/ACom Eurotec Operations, Ireland*

Tu1.5.4 09.30 – 09.50
Convened - **A Compact MultiFunction Automotive Antenna**
R I Henderson, W M A Qureshi, B Kumar, *BAE Systems Advanced Technology Centre, UK*

Tu1.5.5 09.50 – 10.10
Convened - **Integrated Imaging Lens Antenna with Broadband Feeds**
J R Costa, *ISCTE, DCTI & Instituto de Telecomunicações, Portugal*, C A Fernandes, *Instituto de Telecomunicações, Portugal*

Tu1.6 Convened Session – ACE - Small Antennas and Terminals
Chair: Marta Martinez Vázquez, *IMST GmbH, Germany*
Co-Chair: Nicholas Buris, *Motorola, USA*

Tu1.6.1 08.30 – 08.50
Convened - **Optimal Multiantenna Structures for Maximum Capacity in Wireless Compact Systems**
R Serrano, S Capdevila, S Blanch, J Romeu, L Jofre, *Universitat Politècnica de Catalunya, Spain*, A Diallo, C Luxey, P Le Thuc, R Staraj, *University of Nice-Sophia Antipolis, France*

Tu1.6.2 08.50 – 09.10
Convened - **Radiation Q and Radiation Efficiency of Wideband Small Antennas and their Relation to Bandwidth and Cut-Off of Spherical Modes**
D Nyberg, P-S Kildal, *Chalmers University of Technology, Sweden*, J Carlsson, *SP Technical Research Institute of Sweden, Sweden*

Tu1.6.3 09.10 – 09.30
Convened - **Theory of Characteristic Modes and its Applications for Analysis of Fractal Microstrip Patch Antennas**
P Hazdra, P Hamouz, M Mazanek, *Czech Technical University in Prague, Czech Republic*

Tu1.6.4 09.30 – 09.50
Convened - **Channel Capacity Evaluation of UMTS Multi-Antenna Systems in Indoor and Outdoor Environments**
A Diallo, C Luxey, P Le Thuc, R Staraj, G Kossiavas, *University of Nice-Sophia Antipolis, France*,
P Suvikunnas, M Mustonen, C Icheln, P Vainikainen, *Helsinki University of Technology, Finland*

Tu1.6.5 09.50 – 10.10
Convened - **A Comparison of Electrically Small Spherical Helix and Spherical Resonator Antennas**
S R Best, *The MITRE Corporation, USA*

Tu1.7 Convened Session – ACE - GPR Antennas and Medical Imaging
Chair: Ian Craddock, *University of Bristol, UK*
Co-Chair: Paul Meaney, *Dartmouth College, USA*

Tu1.7.1 08.30 – 08.50
Convened - **GPR Absorbing Material Characterisation Using an Open-Ended Coaxial Probe**
Y Huang, *University of Liverpool, UK*, A Sarri, *IDS, Italy*

Tu1.7.2 08.50 – 09.10
Convened - **On the Design of a Thin-Wire Bow-Tie Antenna for GPR using Evolutionary Optimization Algorithms**
C Moreno de Jong Van Coevorden, M Fernández Pantoja, S G García, A Rubio Bretones, R Gómez Martín, *University of Granada, Spain*, K Palmer, *University of Stellenbosch, South Africa*

Tu1.7.3 09.10 – 09.30
Convened - **Balanced Antipodal Vivaldi Antenna for Breast Cancer Detection**
J Bourqui, M Okoniewski, E C Fear, *University of Calgary, Canada*

Tu1.7.4 09.30 – 09.50
Convened - **The Design of Wide Slot Antenna for the Transmission of UWB Signals into the Human Body using FDTD Simulation**
D R Gibbins, M Klemm, I J Craddock, G S Hilton, D L Paul, *University of Bristol, UK*

Tu1.7.5 09.50 – 10.10
Convened - **Methods for Dielectric Reconstruction in Microwave Tomography**
A Fhager, A Voronov, C Chen, M Persson, *Chalmers University of Technology, Sweden*

Tu1.8 Convened Session – ACE - Array Antennas
Chair: Gerard Caille, *Thales Alenia Space, Belgium*
Co-Chair: Yahya Rahmat-Samii, *UCLA, USA*

Tu1.8.1 08.30 – 08.50
Convened - **Large Multibeam Array Antennas with Reduced Number of Active Chains**
G Caille, Y Cailloce, C Guiraud, *Alcatel Alenia Space, France*, D Auroux, T Touya, M Masmousdi, *Paul Sabatier University, France*

Tu1.8.2 08.50 – 09.10
Convened - **Orthogonally-Arranged Center-Feed Single-Layer Slotted Waveguide Array Antennas for Polarization Division Duplex**
Y Tsunemitsu, K Kojima, G Yoshida, M Nagayasu, *Japan Radio Co., Ltd. Japan*, G Naohisa, *Radial Antenna Laboratory, Japan*, J Hirokawa, M Ando, *Tokyo Institute of Technology, Japan*

Tu1.8.3 09.10 – 09.30
Convened - **Power Pattern Synthesis of Given Sources Exploiting Array Methods**
O M Bucci, M D'Urso, *University Federico II of Naples, Italy*

Tu1.8.4 09.30 – 09.50
Convened - **Analysis of Curved Frequency Selective Surfaces**
Z Šipuš, M Bosiljevac, S Skokic, *University of Zagreb, Croatia*

Tu1.8.5 09.50 – 10.10
Convened - **Voltage Controlled Steerable Array for Wireless Sensors Networks**
G Dassano, M Orefice, *Politécnico di Torino, Italy*

Tu1.9 Convened Session – Radio Propagation Measurements, Data Analysis and Measurement-based Channel Modelling

Chair: Pertti Vainikainen, *Helsinki University of Technology, Finland*

Co-Chair: Ernst Zollinger, *EB Bubikon, Switzerland*

Tu1.9.1 08.30 – 08.50
Convened - **Analysis of Scattering in Physically Nonstationary Mobile Radio Channels**
M R J A E Kwakernaat, M H A J Herben, *Technische Universiteit Eindhoven, Netherlands*

Tu1.9.2 08.50 – 09.10
Convened - **Experimental Characterization of the MIMO Channel Temporal Behavior**
M A Jensen, *Brigham Young University, USA*, J W Wallace, *Jacobs University Bremen, Germany*

Tu1.9.3 09.10 – 09.30
Convened - **Testing for Kronecker Separability in Measured Channels**
W A Th Kotterman, R S Thomä, *Technical University Ilmenau, Germany*

Tu1.9.4 09.30 – 09.50
Convened - **On the Influence of Data Models on Estimated Angular Distributions in Channel Characterisation**
M Landmann, W A Th Kotterman, R S Thomä, *Technical University Ilmenau, Germany*

Tu1.9.5 09.50 – 10.10
Convened - **Simultaneous Characterization of Peer-to-Peer and Cellular Channels in Indoor Environments**
P Kyritsi, P C F Eggers, *Aalborg University, Denmark*

Tu1.10 Convened Session – ACE - Smart and Signal Processing Antennas (MIMO...)

Chair: Angeliki Alexiou, *Alcatel-Lucent, UK*

Co-Chair : Yoshio Karasawa, *University of Electro-Communications, Japan*

Tu1.10.1 08.30 – 08.50
Convened - **An Enhanced Transmit Diversity Scheme for MIMO MC-CDMA Systems using Three Antennas**
A Marousis, P Constantinou, *National Technical University of Athens, Greece*

Tu1.10.2 08.50 – 09.10
Convened - **Spatial Sharing for Multibeam Opportunistic Beamforming Techniques**
N Zorba, M Navarro, *Centre Tecnologic de Telecomunicacions de Catalunya (CTTC), Spain*, A I Pérez-Neira, *Universitat Politècnica de Catalunya, Spain*

Tu1.10.3 09.10 – 09.30
Convened - **A New Antenna Shuffling Method for Hybrid Transmission Scheme**
K Yu, A Alexiou, *Bell Labs Research, Alcatel-Lucent, UK*

Tu1.10.4 09.30 – 09.50
Convened - **Reducing Hardware Complexity of MIMO Systems with Antenna Subarray Formation**
P Theofilakos, A G Kanatas, *University of Piraeus, Greece*

Tu1.10.5 09.50 – 10.10
Convened - **The Impact of the User's Body on the Performance of a MIMO Terminal in "Pocket Position"**
A Michalopoulou, *National Centre for Scientific Research "Demokritos" & National Technical University of Athens, Greece*, T Zervos, A A Alexandridis, K Peppas, F Lazarakis, K Dangakis, *Institute of Informatics & Telecommunications, National Centre for Scientific Research "Demokritos", Greece*, D I Kaklamani, *National Technical University of Athens, Greece*

Tu1.11 Convened - Memorial Session Honouring Prof J R James

Chair: Kyohei Fujimoto, *University of Tsukuba, Japan*

Co-Chair: Jean-Pierre Daniel, *ADVANTEN, France*

Tu1.11.1 08.30 – 08.50
Convened - **Professor Jim James... A Great Researcher and Motivator in the Field of Antennas**
W G Whittow, M I Kitra, J C Vardaxoglou, C J Panagamuwa, P McEvoy, J R James, *Loughborough University, UK*

Tu1.11.2 08.50 – 09.10
Convened – **The Contribution of J R James to Dielectric Rod and Other Novel Antennas**
I L Morrow, J S Dahele, *Cranfield University, UK*, P S Hall, *University of Birmingham, UK*

Tu1.11.3 09.10 – 09.30
Convened - **The Contribution of J R James to Printed Antennas**
P S Hall, *University of Birmingham, UK*

Tu1.11.4 09.30 – 09.50
Convened - **Review of Small Antennas and Antennas for Mobile Systems in Memory of Professor J R James**
K Fujimoto, *University of Tsukuba, Japan*

Tu1.11.5 09.50 – 10.10
Convened - **Small Antennas for Hyperthermia**
K Ito, *Chiba University, Japan*

Tu2.2 Convened Session – ACE - Advanced Numerical Methods (Cont)

Chair: Raphaël Gillard, *Institut National des Sciences Appliquées de Rennes, France*

Co-Chair: John Volakis, *Ohio State University, USA*

Tu2.2.6 10.40 – 11.00
Convened - **The Generalized Moment Method for Analysis of Structures with Varying Feature Sizes**
N V Nair, M Vikram, B Shanker, L C Kempel, *Michigan State University, USA*

Tu2.2.7 11.00 – 11.20
Convened - **Parallelisation of the MLFMM for Distributed Memory Systems**
J J van Tonder, U Jakobus, *EM Software & Systems – S.A. (Pty) Ltd., South Africa*

Tu2.2.8 11.20 – 11.40

Convened - Integration of UPC-UAB Fast Solvers into the Antenna Simulation Software of UNEX-UPM, KUL, UPV and EPFL ACE Partners

A Heldring, J M Rius, J M Tamayo, *Universitat Politècnica de Catalunya, Spain*, J Rubio, *Universidad de Extremadura, Spain*, J Zapata, *Universidad Politécnica de Madrid, Spain*, V Volski, G Vandenbosh, *Katholieke Universiteit Leuven, Belgium*, M Mattes, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*, A Valero, *Universitat Politècnica de Valencia*, J Parrón, *Universitat Autònoma de Barcelona, Spain*

Tu2.2.9 11.40 – 12.00

Convened - The Antenna Software Initiative (ASI) within ACE: Results and Future

G A E Vandenbosch, *Katholieke Universiteit Leuven, Belgium*, R Gillard, *IETR-INSA, France*

Tu2.2.10 12.00 – 12.20

A New Sparsification and Compression Technique for High Frequency MoM by Means of Wavefront Basis Functions

F Vico, M Ferrando, *Universidad Politécnica de Valencia, Spain*, G Vecchi, *Politécnico di Torino, Italy*

Tu2.3 Convened Session – AMTA - Generic Antenna Measurements I (Cont)

Chair: Carlo Rizzo, *MI Technologies (Europe)/AMTA, UK*

Co-Chair: Ivan Boswell, *QinetiQ, UK*

Tu2.3.6 10.40 – 11.00

Convened - Economic and Time Efficient Test Systems of Next-Generation Multi-Beam Antennas and Payloads

J Hartmann, J Habersack, H-J Steiner, H Wolf, W Seitz, *Astrium GmbH, Germany*

Tu2.3.7 11.00 – 11.20

Convened - RCS Reduction in a Chessboard Like Structure using AMC Cells

J C Iriarte, I Ederra, R Gonzalo, *Public University of Navarra, Spain*, M Paquay, P de Maagt *ESTEC, European Space Agency, Netherlands*

Tu2.3.8 11.20 – 11.40

Convened - Diagnostics of the SMOS Radiometer Antenna System at the DTU-ESA Spherical Near-Field Antenna Test Facility

C Cappellin, *TICRA & Technical University of Denmark, Denmark*, A Frandsen, *TICRA, Denmark*, S Pivnenko, O Breinbjerg, *Technical University of Denmark, Denmark*, G Lemanczyk, *European Space Research and Technology Centre, Netherlands*

Tu2.3.9 11.40 – 12.00

Convened - A Modified Θ -Scanning Technique for Mitigation of Probe Correction Errors in Spherical Near-Field Antenna Measurements

T A Laitinen, *Helsinki University of Technology, Finland*

Tu2.3.10 12.00 – 12.20

Convened - A New Balun for Antenna Measurement using Photonic Sensor

S Kurokawa, M Hirose, *National Metrology Institute of Japan, Japan*

Tu2.4 Convened Session – Time Series as Channel Modeling for Satcom and Navigation Systems (Cont)

Chair: Danielle Vanhoenacker-Janvier, *Université catholique de Louvain, Belgium*

Co-Chair: Joel Lemorton, *ONERA, France*

Tu2.4.6 10.40 – 11.00

Convened - Stochastic Spatio-Temporal Modelling of Rain Attenuation for Propagation Studies

N Jeannin, L Castanet, J Lemorton, *ONERA-DEMR, France*, L Feral, H Sauvageot, *Université Paul Sabatier, France*, F Lacoste, *CNES, France*

Tu2.4.7 11.00 – 11.20
Convened - **Channel Modelling using Time Series – An Efficient Method for Modelling Slow Fading Effects**
E Eberlein, A Heuberger, C Keip, *Fraunhofer IIS, Germany*

Tu2.4.8 11.20 – 11.40
Convened - **Test of the Model for the Generation of Attenuation Time Series based on ITALSAT Measurements**
S Bertorelli, A Paraboni, C Riva, *Politecnico di Milano, Italy*

Tu2.4.9 11.40 – 12.00
Convened - **A Space-Time Model for Reproducing Rain Field Dynamics**
A Núñez, V Pastoriza, P Mariño, F P Fontán, *University of Vigo, Spain*, U-C Fiebig, *German Aerospace Center, Germany*

Tu2.4.10 12.00 – 12.20
Convened - **Fading Channel Models for the Assessment of GNSS Receivers**
R Prieto Cerdeira, ESTEC, *European Space Agency, Netherlands*

Tu2.5 Convened Session – ACE - Active, Integrated and –mm Wave Antennas, MEMS II (Cont)
Chair: Ronan Sauleau, *University of Rennes 1, France*
Co-Chair: Makoto Ando, *Tokyo Institute of Technology, Japan*

Tu2.5.6 10.40 – 11.00
Convened - **Time-Varying Matching Networks for Antennas**
X Wang, D Peroulis, *Purdue University, USA*, L Katehi, *University of Illinois, USA*

Tu2.5.7 11.00 – 11.20
Convened - **MEMS-based Reconfigurable Reflectarrays**
R Sorrentino, *University of Perugia, Italy*

Tu2.5.8 11.20 – 11.40
Convened - **5 GHz Monolithic CMOS Transmitter and Antenna for Short-Range Communications**
A Shamim, M Arsalan, L Roy, *Carleton University, Canada*

Tu2.5.9 11.40 – 12.00
Convened - **Broadband FERMI Antenna and its Application to MM-Wave Imaging**
K Sawaya, H Sato, Y Wagatsuma, K Mizuno, *Tohoku University, Japan*

Tu2.5.10 12.00 – 12.20
Convened - **Digital Beam-Forming for Passive Millimetre Wave Security Imaging**
N A Salmon, J Beale, J Parkinson, S Hayward, *QinetiQ Ltd, UK*, P S Hall, *University of Birmingham, UK*, R Macpherson, *ALPS UK Electric, UK*, R Lewis, *Circuit Consultants Ltd, UK*, A Harvey, *Heriot Watt University, UK*

Tu2.6 Convened Session – ACE - Small Antennas and Terminals (Cont)
Chair: Marta Martinez Vázquez, *IMST GmbH, Germany*
Co-Chair: Nicholas Buris, *Motorola, USA*

Tu2.6.6 10.40 – 11.00
Convened - **Broadband Tuning of Mobile Terminal Antennas**
R Valkonen, J Holopainen, C Icheln, P Vainikainen, *Helsinki University of Technology, Finland*

Tu2.6.7 11.00 – 11.20
Convened - **Electromagnetic Human Interaction with ISM 2.4GHz Laptop Antennas**
J Guterman, A A Moreira, C Peixeiro, *Instituto de Telecomunicações, Portugal*, Y Rahmat-Samii, *University of California, USA*

Tu2.6.8 11.20 – 11.40
Convened - **Slot Antenna Design for Wireless Communications Systems**
N Behdad, *University of Central Florida, USA*, M Schamberger, N Buris, *Motorola Labs, USA*

Tu2.6.9 11.40 – 12.00
Convened - **Internal Active Antenna for FM Radio Reception in Mobile Handsets**
P Lindberg, A Kaikkonen, *Laird Technologies, Sweden*

Tu2.6.10 12.00 – 12.20
Convened - **Analysis of the Transmitted Field Amplitude and SAR Modification due to Mobile Terminal – Flat Phantom Multiple Interactions**
B Derat, *SAGEM Communication, France*, A Cozza, *SUPELEC, France*

Tu2.7 Convened Session – ACE - GPR Antennas and Medical Imaging (Cont)

Chair: Ian Craddock, *University of Bristol, UK*

Co-Chair: Paul Meaney, *Dartmouth College, USA*

Tu2.7.6 10.40 – 11.00
Convened - **Realistic Breast Models for Second Generation Tissue Sensing Adaptive Radar System**
J M Sill, T C Williams, E C Fear, R Frayne, M Okoniewski, *University of Calgary, Canada*

Tu2.7.7 11.00 – 11.20
Convened - **Implications of Reduced Measurement Data Sets on Overall Microwave Tomographic Image Quality**
P M Meaney, T Zhou, S A Geimer, K D Paulsen, *Dartmouth College, USA*

Tu2.7.8 11.20 – 11.40
Convened - **Breast Cancer Detection using Symmetrical Antenna Array**
M Klemm, I J Craddock, J Leendertz, A W Preece, R Benjamin, *University of Bristol, UK*

Tu2.7.9 11.40 – 12.00
Convened - **Application of the Log-Phase Formulation for Three-Dimensional Microwave Imaging**
T Rubæk, P Meincke, O S Kim, *Technical University of Denmark, Denmark*, P M Meaney, K D Paulsen, *Dartmouth College, USA*

Tu2.7.10 12.00 – 12.20
Convened - **Reconstruction of the Field Radiated by GPR Antenna into Ground**
A G Yarovoy, W Qiu, B Yang, P J Aubry, *Delft University of Technology, Netherlands*

Tu2.8 Convened Session – ACE – Array Antennas (Cont)

Chair: Gerard Caille, *Thales Alenia Space, Belgium*

Co-Chair: Yahya Rahmat-Samii, *UCLA, USA*

Tu2.8.6 10.40 – 11.00
Convened - **Structuring Research on Conformal Antennas - A European Collaboration**
Z Šipuš, *University of Zagreb, Croatia*, P Persson, *Ericsson AB, Sweden*, M Lanne, *Saab Microwave Systems, Sweden*, M Heckler, *German Aerospace Center, Germany*, S Maci, *University of Siena, Italy*, J L Masa-Campos, *Polytechnic University of Madrid, Spain*, P Knott, *Research Institute for High Frequency Physics and Radar, Germany*, V Ertürk, *Bilkent University, Turkey*, G Vandenbosch, *Catholic University of Leuven, Belgium*

Tu2.8.7 11.00 – 11.20
Convened - **Integral Equation based Method for the Fast Analysis of Irregularly Contoured Large Finite Phased Arrays**
V B Ertürk, *Bilkent University, Turkey*, Ö Aydın Çivi, *Middle East Technical University, Turkey*

Tu2.8.8 11.20 – 11.40
Convened - **Microwave Holographic Tuning of a Dual-Polarized Ku-Band Microstrip Antenna Array**
N Jin, Y Rahmat-Samii, *University of California, USA*

Tu2.8.9 11.40 – 12.00
Convened - **Design Considerations for Compact Mobile Ku-Band Satellite Terminals**
R Baggen, *IMST GmbH, Germany*, S Vacarro, D Llorens del Río, *JAST SA, Switzerland*

Tu2.8.10 12.00 – 12.20
Planar Microstrip Antenna Array for Wide-Scan Angle Active Phased Arrays
K S Beenamole, P N S Kutiyal, A Kedar, M Garg, S O Kundukulam, U K Revankar, *Electronics and Radar Development Establishment, India*

Tu2.9 Convened Session – Radio Propagation Measurements, Data Analysis and Measurement-based Channel Modelling (Cont)

Chair: Pertti Vainikainen, *Helsinki University of Technology, Finland*

Co-Chair: Ernst Zollinger, *EB Bubikon, Switzerland*

Tu2.9.6 10.40 – 11.00
Convened - **Small Terminal MIMO Channels with User Interaction**
G F Pedersen, J B Andersen, P C F Eggers, J Ø Nielsen, H Ebert, *Aalborg University, Denmark*, T Brown, *University of Surrey, UK*, A Yamamoto, T Hayashi, K Ogawa, *Matsushita Electric Industrial Co., Ltd, Japan*

Tu2.9.7 11.00 – 11.20
Convened - **Dynamic Multi-Link Indoor MIMO Measurements at 5.3 GHz**
J Koivunen, V-M Kolmonen, J Salmi, A Richter, P Suvikunnas, P Vainikainen, *Helsinki University of Technology, Finland*, P Almers, F Tufvesson, *Lund University, Sweden*, A F Molisch, *Lund University, Sweden & Mitsubishi Electric Research Laboratories (MERL), USA*

Tu2.9.8 11.20 – 11.40
Convened - **Experimental Investigation of Frequency Dependence in Spatio-Temporal Propagation Behaviour**
K Haneda, *Helsinki University of Technology, Finland & Tokyo Institute of Technology, Japan*, J Takada, *Tokyo Institute of Technology & National Institute of Information and Communications Technology, Japan*, T Kobayashi, *Tokyo Denki University, Japan*

Tu2.9.9 11.40 – 12.00
Statistical Technique to Identify Clusters from Multi-Dimensional Measurement Data
H Xiao, A Burr, *University of York, UK*, L Hentilä, P Kyösti, *Elektrobit Testing Ltd., Finland*

Tu2.9.10 12.00 – 12.20
Convened - **An Advanced IEEE 802.11b Channel Sounder based on PN Correlation and High Resolution Algorithms**
J Jemai, T Kürner, *Braunschweig Technical University, Germany*

Tu2.10 Convened Session – ACE - Smart and Signal Processing Antennas (MIMO...) (Cont)

Chair: Angeliki Alexiou, *Alcatel-Lucent, UK*

Co-Chair : Yoshio Karasawa, *University of Electro-Communications, Japan*

Tu2.10.6 10.40 – 11.00
Convened - **Macro-Cellular MIMO with Dual Polarized Base Station Antennas and Different Spacing**
B Lindmark, *KTH School of Electrical Engineering & Powerwave Technologies Inc, Sweden*
P Zetterberg, *KTH School of Electrical Engineering, Sweden*, L Garcia-Garcia, *Universidad Politecnica de Madrid, Spain*

Tu2.10.7 11.00 – 11.20
Performance of WCDMA Networks with Space-Time Block Coding and Multiuser Detection
P Gkonis, D Kaklamani, *National Technical University of Athens, Greece*, G Tsoulos, *University of Pelloponnese, Greece*

Tu2.10.8 11.20 – 11.40
Cooperative Interference Cancellation for Multiuser Transmission
K Nishimori, K Riichi, Y Takatori, A Ohta, S Kubota, *NTT Corporation, Japan*

Tu2.10.9 11.40 – 12.00
Performance of Different Adaptive Beamforming Concepts in Cellular UMTS-FDD Networks using Realistic Base Station Antenna Elements
S Bieder, L Häring, A Czylik, *University of Duisburg-Essen, Germany*

Tu2.10.10 12.00 – 12.20
Design, Influence in Space-Time Coding and Implementation of MIMO Planar Antennas for WLAN Applications
C Gómez-Calero, L González, J Calvo, R Martínez, *Universidad Politécnica de Madrid, Spain*

Tu2.11 Convened - Memorial Session Honouring Prof J R James (Cont)

Chair: Jean-Pierre Daniel, *ADVANTEN, France*

Co-Chair: Kyohei Fujimoto, *University of Tsukuba, Japan*

Tu2.11.6 10.40 – 11.00
Convened - **Experimental Approach of the Electromagnetic Effects in Vivo Due to the Solitary-Waves Radiated by a Confined Plasma Antenna**
G Dubost, A Bellossi, *University of Rennes 1, France*

Tu2.11.7 11.00 – 11.20
Convened - **Challenges in Full Wave Electromagnetic Simulation of Very Compact Planar Antennas**
A Vasylychenko, *Katholieke Universiteit Leuven & IMEC Leuven, Belgium*, Y Schols, G A E Vandenbosch, *Katholieke Universiteit Leuven, Belgium*, W De Raedt, *IMEC Leuven, Belgium*

Tu2.11.8 11.20 – 11.40
Convened - **15 Years of Terminal Antenna Design at LEMA: An Overview**
A K Skriversvik, J F Zürcher, *École Polytechnique Fédérale de Lausanne, Switzerland*

Tu2.11.9 11.40 – 12.00
Convened - **EBG Structures for Low Profile Antenna Designs: What have we Learned?**
Y Rahmat-Samii, *University of California Los Angeles, USA*

Tu2.11.10 12.00 – 12.20
Convened - **Vivaldi Antenna Arrays for Wide Bandwidth and Electronic Scanning**
D H Schaubert, S Kasturi, A O Boryssenko, *University of Massachusetts, USA*, W M Elsallal, *University of Massachusetts & Rockwell Collins Advanced Technology Center, USA*

Tu3.2 Invited Papers

Chair: John Arnold, *University of Glasgow, UK*

Co-Chair: Peter de Maagt, *European Space Research and Technology Centre, Netherlands*

Tu3.2.1 14.00 – 14.45
Invited Paper – **Metamaterials in Antenna Applications**
S Tretyakov, *Helsinki University of Technology, Finland*

Tu3.2.2 14.45 – 15.30

Invited Paper – **Recent Trends in Computational Electromagnetics**

W C Chew, *The University of Hong Kong, China*, Y A Liu, M-K LI, A J Hesford, C P Davis, Z-G Qian, *University of Illinois at Urbana Champaign, USA*

Tu3.3 Invited Papers

Chair: Werner Wiesbeck, *University of Karlsruhe, Germany*

Co-Chair: Mark Beach, *Bristol University, UK*

Tu3.3.1 14.00 – 14.45

Invited Paper - **UWB Sensor Networks for Position Location and Imaging of Objects and Environments**

R S Thomä, O Hirsch, J Sachs, R Zetik, *Technische Universität Ilmenau, Germany*

Tu3.3.2 14.45 – 15.30

Invited Paper - **Link Budgeted Performance Taking into Account Fading Phenomena and Radio Maps Design in Space, AOA, TD and Frequency Domains for Various Outdoor Scenarios**

N Blaunstein, *Ben-Gurion University of the Negev, Israel*

Tu4.2 Convened Session – Reflectarrays II

Chair: Rolf Jakoby, *Institut für Hochfrequenztechnik, Germany*

Co-Chair: George Eleftheriades, *University of Toronto, Canada*

Tu4.2.1 16.00 – 16.20

Convened - **Acceleration Methods for Full-Wave Modelling of Reflectarrays**

M Bercigli, M Bandinelli, *IDS Ingegneria Dei Sistemi S.p.A, Italy*, P De Vita, A Freni, *Università di Firenze, Italy*, G Vecchi, *Politecnico di Torino, Italy*

Tu4.2.2 16.20 – 16.40

Convened - **A Broadband Low-Cost Single-Layer Printed Reflectarray**

P De Vita, A Di Maria, A Freni, *Università di Firenze, Italy*, G L Dassano, P Pirinoli, *Politecnico di Torino, Italy*, R E Zich, *Politecnico di Milano, Italy*

Tu4.2.3 16.40 – 17.00

Convened - **Shaped Beam Reflectarray using Aperture-Coupled Delay Lines for LMDS Central Station**

E Carrasco, M Arrebola, J A Encinar, *Universidad Politecnica de Madrid, Spain*

Tu4.2.4 17.00 – 17.20

Convened - **Adjustable High Impedance Surface for Active Reflectarray Application**

P Ratajczak, P Brachat, *France Telecom R&D, France*, J-M Baracco, *MARDEL, France*

Tu4.2.5 17.20 – 17.40

Convened - **Beam Switching Reflectarray using RF MEMS Technology**

O Bayraktar, K Topalli, M Unlu, O Aydin Civi, S Demir, T Akin, *Middle East Technical University, Turkey*

Tu4.9 Computational Methods for Complex Systems I

Chair: Paolo Lampariello, *University of Rome, Italy*

Co-Chair: Makoto Ando, *Tokyo Institute of Technology, Japan*

Tu4.9.1 16.00 – 16.20

Convened - **Synergic Application of Advanced Modelling Methods to Space Antenna Design**

A Freni, *Università di Firenze, Italy*, S Maci, *Università di Siena, Italy*, G Vecchi, *Politecnico di Torino, Italy*, M Bandinelli, *IDS, Italy*, F Mioc, *SATIMO, Italy*, S B Sørensen, *TICRA, Denmark*, M Sabbadini, *ESTEC, European Space Agency, Netherlands*

Tu4.9.2 16.20 – 16.40
Convened - Synthetic-Functions Analysis of Antennas with Slots and Apertures
M Bercigli, M Bandinelli, *Politecnico di Torino, Italy*, L Matekovits, G Vecchi, *IDS Ingegneria Dei Sistemi S.p.A, Italy*

Tu4.9.3 16.40 – 17.00
Stable FDTD on Disjointed Domains - A Discrete Green's Function Diakoptics Approach
B P de Hon, *Eindhoven University of Technology, Netherlands*, J M Arnold, *University of Glasgow, UK*

Tu4.9.4 17.00 – 17.20
Diakoptic Surface Integral-Equation Formulation Applied to Large 2-D Scattering Problems
D I Olcan, A R Djordjevic, *University of Belgrade, Serbia*, I M Stevanovic, *Freescale Semiconductor, Switzerland*, J R Mosig, *Ecole Polytechnique Federale de Lausanne, Switzerland*

Tu4.9.5 17.20 – 17.40
Field Estimation and Assessing Accuracy using Kriging
I L Morrow, *Cranfield University, UK*, A N Wraight, *QinetiQ, UK*

Tu4.10 Mobile Propagation

Chair: Hajme Suzuki, *CSIRO, Australia*

Co-Chair: Mir Goraishi, *Tokyo Institute of Technology, Japan*

Tu4.10.1 16.00 – 16.20
Estimation of Electric Field Distribution in Wireless Office LANs using the FDTD Method
L Harris, T Hikage, T Nojima, *Hokkaido University, Japan*

Tu4.10.2 16.20 – 16.40
Indoor Radio Coverage Optimization for WLAN
L Nagy, *Budapest University of Technology and Economics, Hungary*

Tu4.10.3 16.40 – 17.00
The Prediction of Indoor Radio Channel Impulse Response
R F Rudd, *University of Surrey, UK*

Tu4.10.4 17.00 – 17.20
Polarization Behaviour in Urban Macrocell Environments at 2.2 GHz
A Dunand, J-M Conrat, *France Telecom, France*

Tu4.10.5 17.20 – 17.40
Electromagnetic Wave Depolarization Behaviour at Different Frequencies for Various Dielectric Material
Y Lostanlen, T Tenoux, *SIRADEL, France*

Tu4.11 Lens Antennas

Chair: Ronan Sauleau, *University of Rennes, France*

Co-Chair: Zvonimir Šipuš, *University of Zagreb, Croatia*

Tu4.11.1 16.00 – 16.20
Lens Analysis Methods for Quasioptical Systems
S B Sørensen, K Pontoppidan, *TICRA, Denmark*

Tu4.11.2 16.20 – 16.40
Modeling, Design and Performances of Half Maxwell Fish-Eye Lens Antennas
B Fuchs, O Lafond, M Himdi, S Palud, L Le Coq, *University of Rennes 1, France*, S Rondineau, *University of Colorado, USA*

Tu4.11.3 16.40 – 17.00
Design of Dielectric Dome Antennas with Shaped and Pencil Beams at Millimeter Waves
G Godi, N T Nguyen, D Thouroude, R Sauleau, *University of Rennes 1, France*

Tu4.11.4 17.00 – 17.20
Lens Shaping Aimed at Improvement of the Beam-Switching Antenna Off-Axis Properties
A V Boriskin, A I Nosich, *Institute of Radiophysics and Electronics NASU, Ukraine*, R Sauleau, *University of Rennes 1, France*

Tu4.11.5 17.20 – 17.40
Analysis of Spherical Lens Antennas using Spectral Domain Approach
Z Šipuš, *University of Zagreb, Croatia*, N Burum, I Vilovic, *University of Dubrovnik, Croatia*

TuPA – Antenna Poster Session 2: Active Antennas and Metamaterials 08.30 – 18.00
Chair: Richard Langley, *University of Sheffield, UK*
Co-Chair: Yi Huang, *University of Liverpool, UK*

Active, Integrated and Reconfigurable Antennas

TuPA.001
Active Integrated Antenna with Low Noise Amplifier Design at 5 GHz
T Peter, M K A Rahim, J Din, T Masri, *Universiti Teknologi Malaysia, Malaysia*

TuPA.002
Double Injection Locking Active Antenna
C Thongsopa, *Suranaree University of Technology, Thailand*, A Intarapanich, *National Electronic and Computers Technology Center, Thailand*

TuPA.003
Active Integrated Antenna with Image Reject Mixer Design
M K A Rahim, W K Chong, T Masri, *Universiti Teknologi Malaysia, Malaysia*

TuPA.004
Simultaneous Transmit and Receive Circular Polarized Active Integrated Antenna
M K A Rahim, Q X Feng, T Masri, M N A Karim, *Universiti Teknologi Malaysia, Malaysia*

TuPA.005
Tunable Active EBG
H-J Lee, R J Langley, K L Ford, *University of Sheffield, UK*

TuPA.006
A Grid Amplifier Improved Model
I Russo, L Boccia, G Amendola, G Di Massa, *University of Calabria, Italy*

TuPA.007
Oblique Incidence Performance of an Active Square Loop Frequency Selective Surface
G I Kiani, K P Esselle, A R Weily, *Macquarie University Sydney, Australia*, K L Ford, *University of Sheffield, UK*

TuPA.008
Design of Notched Dielectric Resonators for Harmonic Tuning in Active Antennas
G Valerio, A Galli, *University of Rome, Italy*

TuPA.009
A Transmitting Active Array with Spatially Selective Linearization
N Amar, L Cabria, J A García, A Tazón, A Mediavilla, *Universidad de Cantabria, Spain*, F Marante, *Instituto Superior Politécnico José A. Echeverría, Cuba*

TuPA.010

Phased Array based on Mutually Coupled Harmonic Self-Oscillating Mixers

S Ver Hoeye, L-F Herrán, M Fernández, F Las Heras, *University of Oviedo, Spain*

TuPA.011

Substrate Integrated Radiating Waveguides with a Coaxial Feed

E Arnieri, G Amendola, L Boccia, G Di Massa, *University of Calabria, Italy*

TuPA.012

Equivalent Length Design Equations for Right-Angled Microstrip Bends

H J Visser, *Holst Centre, Netherlands*

TuPA.013

Tunable Stub Resonators on KTN Ferroelectric Thin Films

A-G Moussavou, *IETR & Université de Rennes 1, France*, G Legeay, R Sauleau, X Castel, R Benzerga, K Mahdjoubi, *IETR, France*, S Députier, A Perrin, M Guilloux-Viry, *Université de Rennes 1, France*

TuPA.014

Optically Reconfigurable Dual-Band Compact Branch-Line Couplers

D Draskovic, D Budimir, *University of Westminster, UK*

TuPA.015

Integrated Antenna in Composite Material

J M Floc'h, X Castel, T Le Guillerm, *IETR/INSA, France*

TuPA.016

Optimization of the Photoconductive Antenna Gap

D Li, Y Huang, C Yang, X Tian, *University of Liverpool, UK*

TuPA.017

Continuous Beam-Steering Leaky-Wave Antenna based on Substrate Integrated Waveguide

Y Weitsch, T F Eibert, *Universität Stuttgart, Germany*

TuPA.018

Inset-Fed Microstrip Patch Antenna with Integrated Polycrystalline Photovoltaic Solar Cell

S V Shynu, M J Roo Ons, M J Ammann, *Dublin Institute of Technology, Ireland*, S Gallagher, B Norton, *Dublin Energy Lab, Focas Institute, Ireland*

TuPA.019

Investigation on Proximity-Coupled Microstrip Integrated PV Antenna

M J Roo Ons, S V Shynu, M J Ammann, *Dublin Institute of Technology, Ireland*, S McCormack, B Norton, *Dublin Energy Lab, Focas Institute, Ireland*

TuPA.020

Integrated Schottky-Contact in 2-Layer Inductive Grid Array

E T Doumanis, J C Vardaxoglou, *Loughborough University, UK*, D P Korfiatis, K A Thoma, *University of Patras, Greece*

TuPA.021

GEODA: Adaptive Antenna Array for Satellite Signal Reception

M Sierra-Perez, I Montesinos, *Universidad Politécnica de Madrid Spain*, A Torres, M Gomez, *Ingeniería y Servicios Aeroespaciales S.A (INSA), Spain*, J-L Masa, *Universidad Autónoma de Madrid, Spain*

TuPA.022

Experimental Characterization of a Polarization/Pattern Reconfigurable Antenna in an Indoor Environment

B Poussot, J-M Laheurte, L Cirio, D Delcroix, O Picon *Université de Marne La Vallée, France*

TuPA.023

Development of a Reconfigurable Antenna System for Ku Band Applications

E Chiavaccini, R Cioni, G Bernardini, M Pasotti, *Ingengeria dei Sistemi spa, Italy*

Metamaterials – 1 D

TuPA.024

Composite Right/Left-Handed Leaky Wave Antenna with 45-Degree Inclined Linear Polarization

S-I Matsuzawa, K Sato, *Toyota Central Research & Development Laboratories Inc., Japan*

TuPA.025

Electronic Beam Steering of an Active Metamaterial-based Directive Subwavelength Cavity

A Ourir, S N Burokur, A de Lustrac, *Université Paris-Sud, France*

TuPA.026

Optimized Design of a Miniaturized Waveguide with SRR-Loaded Lateral Walls

E Rajo-Iglesias, O Quevedo-Teruel, *Universidad Carlos III de Madrid, Spain*, M Ng Mou-Kehn, *University of Manitoba, Canada*

TuPA.027

Frequency-Scanned Leaky-Wave Antenna from Negative Refractive Index Transmission Lines

C Liu, *Sichuan University, China*, W Menzel, *University of Ulm, Germany*

TuPA.028

New Radiating Structures based on Applying CRLH Concepts in Short Circuited Rings

D Castro, D Segovia Vargas, *Universidad Carlos III de Madrid, Spain*, V González-Posadas, *Universidad Politécnica de Madrid, Spain*

TuPA.029

A Low-Profile Monopole-Like Small Antenna with Embedded Metamaterial Spiral-based Matching Network

T Kokkinos, A P Feresidis, J C Vardaxoglou, *Loughborough University, UK*

TuPA.030

Compact Fully Integrated GAAS Left-Handed Bandpass Filter for Ultrawide Band Wireless Applications

W Tong, Z Hu, *University of Manchester, UK*, H Yang, H Zhang, *Chinese Acadmey of Sciences, China*

TuPA.031

FSS Characteristics of a Coplanar Waveguide Left Handed Transmission Line on Ferrite Substrate

M A Abdalla, Z Hu, *University of Manchester, UK*

TuPA.032

Novel Metawaveguide Bandpass Filters

D Budimir, F Kamal, *University of Westminster, UK*

TuPA.033

A Magnetic Frill Current Model for the Excitation of a Carbon Nano Tube (CNT) Dipole Antenna

H T Anastassiou, E G Ladis, *Hellenic Aerospace Industry, Greece*

TuPA.034

Frequency Dependence of Bloch Impedance in Left-Handed Transmission Line

C Sabah, *University of Gaziantep, Turkey & University of Texas at Brownsville, USA*, F Urbani, *University of Texas at Brownsville, USA*, S Uckun, *University of Gaziantep, Turkey*

TuPA.035

Direct Verification of Backward-Wave Propagation in Subwavelength Waveguide Filled with Split-Ring Resonators

S Hrabar, D Zaluski, I Paskovic, *University of Zagreb, Croatia*

TuPA.036

Limitations in Bandwidth and Unit Cell Size of Composite Right-Left Handed Transmission Line based Leaky-Wave Antenna

A Rahman, Y Lee, Y Hao, C G Parini, *Queen Mary, University of London, UK*

TuPA.037

A Dual Band Circularly Polarized Antenna based on a Microstrip Patch Filled with Left-Handed Structures

F J Herraiz-Martínez, D Segovia-Vargas, *Universidad Carlos III de Madrid, Spain*, V González-Posadas, *Universidad Politécnica de Madrid, Spain*

TuPA.038

Series-Fed Microstrip Patch Arrays Employing Metamaterial Transmission Lines: A Comparative Study

T Kokkinos, A Katsounaros, A P Feresidis, *Loughborough University, UK*

TuPA.039

Microstrip Patch Antenna for a Retinal Prosthesis

S Raghavan, G Anantha Kumar, *National Institute of Technology, India*

TuPA.040

Microstrip Patch Antenna Incorporating Negative Permittivity Metamaterial for Harmonic Suppression

A Ali, Z Hu, *University of Manchester, UK*

Metamaterials – 2 D

TuPA.041

Measurements of the Radiation Performance of a Planar Meta-surface based on Dipoles and Wires

E Saenz, R Gonzalo, I Ederra, *Public University of Navarra, Spain*, P de Maagt, *European Space Research and Technology Centre, Netherlands*

TuPA.042

Design of Compact Multi-Band EBG Structures

X L Bao, M J Ammann, *Dublin Institute of Technology, Ireland*

TuPA.043

Investigation of Resonant Frequencies of High Impedance Surface Structure

G Niyomjan, Y Huang, *University of Liverpool, UK*

TuPA.044

Synthesis of New Artificial Magnetic Conductors for Wideband Ultra Compact Antennas

C Kossiavas, J-L Dubard, *University of Nice-Sophia Antipolis, France*

TuPA.045

A Novel 2D Minkowski Gasket Electromagnetic Band Gap Structure for Multiband Microstrip Antenna

T Masri, M K A Rahim, M N A Karim, *Universiti Teknologi Malaysia, Malaysia*

TuPA.046

Modified Slotted Patch Electromagnetic Band Gap Structure for Antenna Array Application

O Ayob, M K A Rahim, T Masri, M N A Karim, *Universiti Teknologi Malaysia, Malaysia*, M Z A Abdul Aziz, *Universiti Teknikal Malaysia Melaka, Malaysia*

TuPA.047

Wideband Slot Antenna using a Novel PBG Structure

S Moeini, H R Hassani, *University of Shahed, Iran*

TuPA.048

4x90 Degree Sectorial Metallic EBG Antenna for High Gain Omnidirectional Coverage

H Chreim, E Pointereau, B Jecko, *University of Limoges, France*

TuPA.049

Metallic EBG Sectorial Antenna for a Base Station with Horizontal Polarization

M Hajj, E Rhodes, D Serhal, M Thévenot, T Monédière, B Jecko, *University of Limoges, France*

TuPA.050

Novel EBG Structure for Antenna Miniaturization

M Elayachi, P Brachat, *France Telecom R&D, France*, J M Ribero, *University of Nice-Sophia Antipolis, France*

TuPA.051

EBG Navigation Antenna for Geosynchronous Satellite Applications

J C Iriarte, I Ederra, R Gonzalo, *Public University of Navarra, Spain*, J D Lacasse, J J Laurin, *École Polytechnique de Montréal, Canada*, A Fourmault, Y Brand, Y Demers, *MDA Space Mission, Canada*, P de Maagt, *ESTEC, European Space Agency, Netherlands*

TuPA.052

High Impedance Cylindrical Surface based on Periodically Modulated Microstrip-Line

L Matekovits, G C Vietti Colomé, M Orefice, *Politecnico di Torino, Italy*

TuPA.053

Compact EBG Surface based on Capacitively Loaded Loop Resonators with Grounded Vias

L Inclán-Sánchez, J L Vázquez-Roy, E Rajo-Iglesias, E García-Muñoz, *University Carlos III of Madrid, Spain*

TuPA.054

A Simplified Green Function for an AMC-Backed Substrate

L Deias, G Mazzarella, *University of Cagliari, Italy*

TuPA.055

Analysis of a Metamaterial based Leaky Wave Antenna with Laterally Shielded Planar Technology

M Padilla, J C Vardaxoglou, *Loughborough University, UK*

TuPA.056

Tunable Bandgap Metamaterials using Low Cost Dielectric Grids

E J Sartori, *Universidade Estadual de Campinas & Instituto de Pesquisas Eldorado, Brazil*, H E Hernández-Figueroa, *Universidade Estadual de Campinas, Brazil*, J E Bertuzzo, *Instituto de Pesquisas Eldorado, Brazil*

TuPA.057

Figure-of-Merit Analysis of Resonant Particles for Construction of Practical Metamaterials

Y Lee, Y Hao, *Queen Mary, University of London UK*, S Zumoberhaus, J R Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

TuPA.058

Bounds on Metamaterials in Scattering and Antenna Problems

C Sohl, M Gustafsson, G Kristensson, *Lund University, Sweden*

TuPA.059

Far Field Model for a Dipole Antenna over Artificial Impedance Surfaces

M Zhou, A Sutinjo, M Potter, M Okoniewski, *University of Calgary, Canada*

TuPA.060

The Impact of Metallic Scatterers on the Performance of a Class of Shielded Structures

S López-Peña, M Mattes, J R Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

TuPA.061

Rigorous Representations of Antenna Fields in Cylindrically Stratified Unbounded Gyrotropic Media

A V Kudrin, E Yu Petrov, T M Zaboronkova, *University of Nizhny Novgorod, Russia*

Metamaterials – 3 D

TuPA.062

Hexagonal Metallo-Dielectric Periodic Structure: Characterization and Application

D Segovia-Vargas, S Arcas, F J Herraiz-Martínez, F Iñigo, *Universidad Carlos III de Madrid, Spain*, V González-Posadas, *Universidad Politécnica de Madrid, Spain*

TuPA.063

Magnetism in High-Contrast Dielectric Photonic Crystals

T Lepetit, E Akmansoy, *Université Paris-Sud, France*

TuPA.064

Computational Analysis of Complicated Metamaterial Structures using MLFMA and Nested Preconditioners

Ö Ergül, T Malas, Ç Yavuz, A Ünal, L Gürel, *Bilkent University, Turkey*

TuPA.065

UAPO based Diffraction Coefficients for Lossless Double-Negative Metamaterial Slabs

G Gennarelli, G Riccio, *University of Salerno, Italy*

TuPA.066

Analysis of Dielectric Resonator Antenna Arrays with Supporting Perforated Rods

Y Zhang, A A Kishk, *University of Mississippi, USA*

TuPP - Propagation Poster Session

08.30 – 18.00

Chair: Vaclav Kvicera,

Co-Chair: Lajos Nagy, *KFKI Research Institute for Particle and Nuclear Physics, Hungary*

TuPP.001

Fluctuations Effects of GPS signals on High Latitude Transionospheric Links

I I Shagimuratov, I E Zakharenkova, I I Ephishov, N Yu Tepenitzina, *West Department of Izmiran, Russia*

TuPP.002

Simulation Model of Ionospheric Communication Channel

B G Barabashov, M M Anishin, O Y Pelevin, *South Federal University, Russia*

TuPP.003

Matching Limits for Single-Band and Dual-Band Mobile Phone Antennas

Y Li, *SAGEM Communication, ENSEA & SUPELEC, France*, B Derat, T Cantin, O Tiennault, J De Oliveira, *SAGEM Communication, France*, D Pasquet, *ENSEA, France*, J-C Bolomey, *SUPELEC, France*

TuPP.004

Consolidation of a Multi-State Narrowband Land Mobile Satellite Channel Model

F P Fontan, I Lago, *University of Vigo, Spain*, R Cerdeira, A Bolea Alamañac, *ESTEC, European Space Agency, Netherlands*

TuPP.005

Satellite Ionosphere Monitoring from Ultralow Heights

N P Danilkin, N G Kotanaeva, K A Alferov, *Institute of Applied Geophysics, Russia*, M M Anishin, *Rostov State University, Russia*

TuPP.006

Analysis of Fade Duration along Earth-Space Paths in the Tropics

C Amaya, *Communications Research Centre Canada, Canada*

TuPP.007

Ka Band Scintillation Results: Meteorological Dependencies and Modelling

R Teixeira, A Rocha, *Instituto de Telecomunicações, Portugal*

TuPP.008

Correlation between Speed of Rain Storms and Temporal Properties of Precipitation: Applications to the Synthetic Storm Technique

E Matricciani, *Politecnico di Milano, Italy*

TuPP.009

Time Diversity in Satellite Links Affected by Rain: Prediction of the Gain at Different Localities

E Matricciani, *Politecnico di Milano, Italy*

TuPP.010

Full-Wave Methods for RF Sources Location

Y Alvarez, F Las-Heras, M R Pino, *Universidad de Oviedo, Spain*

TuPP.011

Implementation Issues of the Matched Field Processing Method of Refractivity Structure Sounding

P Valtr, P Pechac, *Czech Technical University in Prague, Czech Republic*, V Kvicera, M Grabner, *TESTCOM, Czech Republic*

TuPP.012

The Improvement of the Quality of Images Observed by the Turbulent Earth Atmosphere

A A Pakhomov, A A Potapov, *Russian Academy of Sciences, Russia*

TuPP.013

An Enhanced Method based on ILDC Theory for the Computation of Near Fresnel Zone Diffraction from Finite Edged Scatterers

E G Papkelis, P V Frangos, *National Technical University of Athens, Greece*, H T Anastassiou, *Hellenic Aerospace Industry, Greece*

TuPP.014

Comparison of Shape Imaging between Pulse Integration, Correlation and Adaptive Filter

B Cheeseman, Y Huang, *University of Liverpool, UK*

TuPP.015

The Accuracy of a Radiowave Simulation Model at 20.7 GHz

D D Hodges, R J Watson, *University of Bath, UK*

TuPP.016

Estimation of Loran-C Ionospheric Signal Parameters via Esprit Algorithm

A Mohammed, *Blekinge Institute of Technology, Sweden*

TuPP.017

Far-Field Scattering with Fast Hybrid Integral Equation based – Ray Optical Method

A Tzoulis, T Vaupel, *Institute of High Frequency Physics and Radar Techniques, FGAN e. V., Germany*, T F Eibert, *Universität Stuttgart, Germany*

Wednesday, 14 November

We1.2 Convened Session – Antennas for Space Communications and Navigation

Chair: Simon Stirland, *EADS Astrium, UK*

Co-Chair: Eric Amyotte, *MacDonald, Dettwiler and Associates Ltd, Canada*

We1.2.1 08.30 – 08.50

Convened - **ROSA: Radio Occultation Sounder Antenna for the Atmosphere**

P Valle, L Carinci, D Trenta, P Ghibaudi, *Thales Alenia Space Italia, Italy*, V Catalano, *ASI, Italian Space Agency, Italy*

We1.2.2 08.50 – 09.10

Convened - **Antenna Reflectors for Telecommunication Satellites at EADS Astrium Space Transportation Les Mureaux**

N Elie, L Ravelli, A Lacombe, B Ollivier, *EADS Astrium, France*

We1.2.3 09.10 – 09.30

Convened - **Galileo System Navigation Antenna for Global Positioning**

A Montesano, C Montesano, R Caballero, M Naranjo, *EADAS CASA Espacio, Spain*, F Monjas, *CTEA S.L. Spain*, L Cuesta, P Zorrilla, L Martinez, *TTI Norte S.L, Spain*

We1.2.4 09.30 – 09.50

Convened - **Thales Alenia Space France Antennas: Recent Achievements and Future Trends for Telecommunications**

P Lepeltier, J Maurel, C Labourdette, F Croq, G Navarre, J F David, *Thales Alenia Space, France*

We1.2.5 09.50 – 10.10

Convened – **Multi beam and Flexible Antenna Programs Supported by CNES**

I Albert, N J G Fonseca, C Apert, J M E Lopez, P Dumon, *CNES, France*

We1.3 Convened Session – Metamaterials and their Applications to Antennas

Chair: Clive Parini, *Queen Mary's University, London, UK*

Co-Chair: Filiberto Bilotti, *University Roma Tre, Italy*

We1.3.1 08.30 – 08.50

Convened - **Densely Packed Arrays of Metamaterial-Inspired Antennas**

R W Ziolkowski, A Erentok, E Okay, *University of Arizona, USA*

We1.3.2 08.50 – 09.10

Convened - **Leaky-Wave Metamaterial Antennas: Conical and Pencil Beam Radiation**

F Bilotti, L Vegni, *University of Roma Tre, Italy*, A Alù, N Engheta, *University of Pennsylvania, USA*

We1.3.3 09.10 – 09.30

Convened - **An EBG Antenna with Integrated Optical Transducer**

X Wang, S Tse, Y Hao, C G Parini, *Queen Mary, University of London, UK*, C-P Liu, C-H Chuang, T Ismail, A Seeds, *University College London, UK*, P Huggard, *Rutherford Appleton Laboratory, UK*

We1.3.4 09.30 – 09.50

Convened - **Meta-Surfaces for Antenna Applications**

R Gonzalo, E Saenz, I Ederra, *Public University of Navarra, Spain*, P M T Ikonen, S A Tretyakov, *Helsinki University of Technology, Finland*, P de Maagt, *ESTEC, Netherlands*

We1.3.5 09.50 – 10.10

Convened - **Synthesis of Electromagnetic Bandgap Structures using Polar Curves and Mapping Functions**

C B Mulenga, J A Flint, *Loughborough University, UK*

We1.4 Radar, Remote Sensing and GPR

Chair: Alain Bourdillon, *University of Rennes, France*

Co-Chair: Andrea Vallecchi, *Università degli Studi di Firenze, Italy*

We1.4.1 08.30 – 08.50

A Shaped-Beam Hybrid Coupling Microstrip Planar Array Antenna for X-Band Dual Polarization Airport Surveillance Radars

A Vallecchi, G B Gentili, *University of Florence, Italy*

We1.4.2 08.50 – 09.10

Design and Measurements of a Planar Microstrip Array Antenna for L-Band Remote Sensing

A Cucini, F Mariottini, *WaveComm S R L, Italy & University of Siena, Italy*, G Macelloni, C Riminesi, *CNR – IFAC, Italy*, A Toccafondi, *University of Siena, Italy*,

We1.4.3 09.10 – 09.30

A Novel Vertically Polarized Slotted Waveguide Array Antenna

L P Oliveira, A M P Alves S, H E Hernández-Figueroa, *Universidade Estadual de Campinas, Brazil*

We1.4.4 09.30 – 09.50

Vertical Beam Shaping with Metal Strips in a Linear Edge Slot Array

J C Young, M Sugano, Y Shibuya, A Takahashi, T Itagaki, *Japan Radio Corporation Ltd, Japan*

We1.4.5 09.50 – 10.10

Implementation and Measurements of Monopulse Scanning Beam Planar Array in L Band for a IFF System

S Sánchez-Sevilleja, J L Masa-Campos, C Domínguez-Grano-De-Oro, M Sierra-Pérez, J L Fernández-Jambrina, *Polytechnic University of Madrid, Spain*

We1.5 Convened Session – Integral Equation Methods for Antenna Analysis

Chair: Juan Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

Co-Chair: K A Michalski, *Texas A & M University, USA*

We1.5.1 08.30 – 08.50

Convened - Discrete Complex Image Method Planar Multilayers with Uniaxial Anisotropy

K Michalski, *Texas A&M University, USA*, M I Aksun, *Koc University, Turkey*

We1.5.2 08.50 – 09.10

Convened - Layered Media Green's Function Approximation in Terms of Spherical and Cylindrical Waves

V Kourkoulos, A Cangellaris, *University of Illinois, USA*

We1.5.3 09.10 – 09.30

Convened - The MDA-SVD Algorithm for Fast Direct or Iterative Solution of Discrete Integral Equations

J M Rius, A Heldring, J M Tamayo, *Universitat Politècnica de Catalunya, Spain*, J Parron, *Universitat Autònoma de Barcelona, Spain*

We1.5.4 09.30 – 09.50

Convened - Near-Singular and Near-Hypersingular Surface Integral Evaluation by an Adaptive Singularity Cancellation Technique

I Ismatullah, T F Eibert, *Universität Stuttgart, Germany*

We1.5.5 09.50 – 10.10

Convened - The State-Space Integral-Equation Approach to the Modeling of Scattering in Waveguides

M Bressan, G Conciauro, W Eyssa, *University of Pavia, Italy*

We1.6 Antennas for MIMO Systems

Chair: Manuel Sierra-Perez, *Universidad Politécnica de Madrid, Spain*

Co-Chair: Tetsuki Taniguchi, *University of Electro Communications, Japan*

We1.6.1 08.30 – 08.50

Performance Evaluation of Mobile WiMAX with AMC and MIMO Tradeoffs

N Hathi, A Lodhi, P Nahi, *AIRCOM International, UK*

We1.6.2 08.50 – 09.10

Quadruple Co-Channel Transmission in Point to Point Microwave Links

S Wales, *Roke Manor Research Ltd, UK*

We1.6.3 09.10 – 09.30

Heterogeneous Combination for Compact Integrated Diversity Multi Antenna System

L Rudant, C Delaveaud, *CEA-LETI, France*

We1.6.4 09.30 – 09.50

High Performance WiMAX Architecture using MIMO Technology in Line-of-Sight

I Sarris, *Mitsubishi Electric Inf. Tech. Centre Europe B.V, UK*, A Nix, A Doufexi, *University of Bristol, UK*

We1.6.5 09.50 – 10.10

Optimization of Linear Wire Antenna Arrays to Increase MIMO Capacity using Swarm Intelligence

U Olgun, C A Tunc, D Aktas, V B Ertürk, A Altintas, *Bilkent University, Turkey*

We1.7 Convened Session – Terrain and Building Diffraction

Chair: Saul R Torrico, *Comsearch, USA*

Co-Chair: Rainer Großkopf, *Institut fuer Rundfunktechnik, Germany*

We1.7.1 08.30 – 08.50

Convened - Radiowave Propagation Study in Urban Environment using the Fourier Split-Step Parabolic Equation

P Valtr, P Pechac, *Czech Technical University in Prague, Czech Republic*, V Kvicera, M Grabner, *TESTCOM, Czech Republic*

We1.7.2 08.50 – 09.10

Convened - Wave Propagation in an Inhomogeneous Atmosphere using the Fresnel-Kirchhoff Approximation

S A Torrico, *Comsearch, USA*, H L Bertoni, *Polytechnic University of New York, USA*

We1.7.3 09.10 – 09.30

Convened - Signal Power Distribution in Time Delay in Tokyo City Experimental Sites

M Hayakawa, Y Sanoh, *University of Electro-Communications, Japan*, D Katz, N Blaunstein, *Ben Gurion University of the Negev, Israel*

We1.7.4 09.30 – 09.50

Convened - The Spectral Method of the Decision of Problems of Propagation, Diffraction and Reflection of Narrow Millimeter Waves Radiobeams

G A Andreyev, D Korbakov, *Russian Academy of Sciences, Russia*

We1.7.5 09.50 – 10.10

Convened - Diffraction by Terrain Irregularities: A Review and New Results

M S Assis, *Fluminense Federal University, Brazil*, J Cerqueira, *Military Institute of Engineering, Brazil*

We1.8 Time Domain Methods

Chair: John Arnold, *University of Glasgow, UK*

Co-Chair: Michel Ney, *Laboratory of Electronics and Systems for Telecommunications, France*

We1.8.1 08.30 – 08.50

FDTD Approach for the Characterization of Electromagnetic Wave Propagation in Plasma for Application to Plasma Antennas

G Cerri, V Mariani Primiani, P Russo, E Vecchioni, *Università Politecnica delle Marche, Italy*

We1.8.2 08.50 – 09.10

Full Wave Synthesis of Integrated Lens Antennas using FDTD and Genetic Algorithms

A Rolland, R Sauleau, M Drissi, *University of Rennes 1, France*

We1.8.3 09.10 – 09.30

Time-Domain Equivalent Edge Current (TD-ECC's) Technique to Improve a TLM-Physical Optics Hybrid Procedure

J Lanoë, M M Ney, S Le Maguer, *GET-ENST Bretagne / University of Western Brittany, France*

We1.8.4 09.30 – 09.50

Hybrid Non-Uniform Grid based Fast Global Boundary Conditions for Electromagnetic Simulations for Concave Scatterers

U Shemer, *ORBIT/FR, Israel*, A Boag, R Kastner, *Tel Aviv University, Israel*

We1.8.5 09.50 – 10.10

Fast Time Domain Physical Optics for Non Linear Scattering

A Shlivinski, *Ben-Gurion University, Israel*, C Letrou, *INT/GET, France*, A Boag, *Tel Aviv University, Israel*

We1.9 Convened Session – Stochastic and Deterministic Radio Propagation Modelling

Chair: Vittorio Degli-Esposti, *Università di Bologna, Italy*

Co-Chair: Natan Blaunstein, *Ben Gurion University, Israel*

We1.9.1 08.30 – 08.50

Convened - Scattering Models for One-Dimensional Periodic and Random Surfaces at 5.8 Ghz

E Van Lil, A van de Capell, *K U Leuven, Belgium*, I Cuiñas, *Universidade de Vigo, Spain*

We1.9.2 08.50 – 09.10

Convened - Understanding Geometrically based Multiple Bounce Channel Models

B W M Kuipers, L M Correia, *Technical University of Lisbon, Portugal*, M Maćkowiak, *Warsaw University of Technology, Poland*

We1.9.3 09.10 – 09.30

Convened – Azimuth-Power-Spectrum Prediction by Site-Specific Stochastic Channel Modelling In a Micro cell Line-Of-Site Scenario

M Ghoraishi, J Takada, T Imai, *Tokyo Institute of Technology, Japan*

We1.9.4 09.30 – 09.50

Convened - Cluster Parameters for Time-Variant MIMO Channel Models

N Czink, *Technische Universität Wien, Austria & FTW, Austria*, R Tian, S Wyne, F Tufvesson, *Lund University, Sweden*, G Eriksson, *Lund University, Sweden & FOI Swedish Defence Research Agency, Sweden*, T Zemen, *FTW, Austria*, J Ylitalo, *Elektrobit Corp., Finland*, A F Molisch, *Lund University, Sweden & Mitsubishi Electric Research Labs, UK*

We1.9.5 09.50 – 10.10

Convened - Impact of the Introduction of Diffuse Scattering on Radio Channel Parameters in Urban Environments

G Gougeon, Y Corre, Y LOSTANLEN, *SIRADEL, France*

We1.10 Convened Session – AMTA - Generic Antenna Measurements II

Chair: Thomas Eibert, *Institut für Hochfrequenztechnik, Germany*

Co-Chair: Daniel Van Rensburg, *Nearfield Systems Inc., Canada*

We1.10.1 08.30 – 08.50

Convened - Ka-Band Standard Gain Horn Measurement on Spherical Near-Field Scanners

R Wansch, *Fraunhofer Institute for Integrated Circuits, Germany*, R Flamini, *Alcatel Alenia Space Italia, Italy*

We1.10.2 08.50 – 09.10

Convened - Characterization of Aeronautical Earth Station Antennas for Communication using INMARSAT Satellites

S Mishra, J Smithson, P Charron, *Canadian Space Agency, Canada*

We1.10.3 09.10 – 09.30

Convened - High Resolution Scattering Centre Distributions at Millimetrewave Frequencies Derived by Broad Band ISAR

H Essen, M Haegelen, A Wahlen, R Sommer, W Johannes, T Brehm, S Stanko, *FGAN Research Institute for High Frequency Physics and Radar Techniques, Germany*

We1.10.4 09.30 – 09.50

Convened - An Equivalent Source Method to Determine Complex Excitation Levels of Antenna Arrays from Near-Field Measurements

M M Leibfritz, F N Landstorfer, T F Eibert, *Universität Stuttgart, Germany*

We1.10.5 09.50 – 10.10

Convened - Probe Corrected Plane Bi-Polar Near-Field Antenna Measurements

S F Gregson, *Nearfield Systems Inc, USA*, C G Parini, J Dupuy, *Queen Mary, University London, UK*

We1.11 Earth-Space Propagation

Chair: Claude Oestges, *Université catholique de Louvain, Belgium*

Co-Chair: Yannick Beniguel, *IEEA, France*

We1.11.1 08.30 – 08.50

EHF Propagation Experiment with Syracuse 3 Satellite: First Results

T Marsault, J D Hermant, J C Penn, *DGA Celar, France*, L De Montera, L Barthes, C Mallet, P Gole, *CETP, France*

We1.11.2 08.50 – 09.10

Slant-Path Propagation Experiment at Ka-Band in Madrid

P García, J M Riera, A Benarroch, *Universidad Politécnica de Madrid, Spain*, J M García, *Universidad de Jaén, Spain*

We1.11.3 09.10 – 09.30

Results of Inmarsat BGAN-X Land Vehicular Propagation Tests

E Gambaruto, *Orizzonti Ltd, UK*, M Richharia, E Trachtman, *Inmarsat Ltd, UK*

We1.11.4 09.30 – 09.50

Calculations of XPD Spread for 20 GHz Fixed Satellite Systems using 2-D Video Disdrometer Data

M Thurai, G J Huang, V N Bringi, *Colorado State University, USA*, M Schöenhuber, *Joanneum Research, Austria*

We1.11.5 09.50 – 10.10

Fast Determination of Phase Advance, Path Delay and Ray Path Curvature between Satellites through a 3D Ionosphere for L-Band Transmissions

H J Strangeways, *University of Leeds, UK*, V E Gherm, N N Zernov, *University of St. Petersburg, Russia*

We2.2 Convened Session – Antennas for Space Communications and Navigation (Cont)

Chair: Simon Stirland, *EADS Astrium, UK*

Co-Chair: Eric Amyotte, *MacDonald, Dettwiler and Associates Ltd, Canada*

We2.2.6 10.40 – 11.00

Convened - **Phased Arrays for Satellite Communications: Recent Developments at Astrium Ltd**
S J Stirland, A D Craig, *EADS Astrium, UK*

We2.2.7 11.00 – 11.20

Convened - **Recent Satellite Antenna Developments at MDA**

S Richard, Y Demers, E Amyotte, Y Brand, V Dupessey, P Markland, J Uher, A Liang, *MDA Space Missions, Canada*, J C Iriarte, I Ederra, R Gonzalo, *Public University of Navarra, Spain*, P de Maagt, *ESTEC, European Space Agency, Netherlands*

We2.2.8 11.20 – 11.40

Convened - **Monopulse Tracking Performance of Multi-port Eleven Antenna for use in Satellite Communications Terminals**

J Yin, J A Aas, *Norwegian University of Science and Technology, Norway*, J Yang, P-S Kildal, *Chalmers University of Technology, Sweden*

We2.2.9 11.40 – 12.00

Convened - **European Large Deployable Antenna: Development Status and Applications**

F Mini, G L Scialino, M Milano, V Lubrano, *Thales Alenia Space Italia, Italy*, P Pellegrino, *Alcatel Alenia Space Italia, Italy*, D Caswell, J Santiago Prowald, K Van't Klooster, *ESTEC, European Space Agency, Netherlands*, A Cherniavsky, V Korneev, *Rocket and Space Corporation ENERGIA, Russian Federation*, I Vorobey, A Fedoseev, *SPC SDS, Russia*

We2.2.10 12.00 – 12.20

Convened - **Control and Minimization of Multi-Path Problems on the GPS R.O.S.A. Antenna Installed Onboard Oceansat-2 Spacecraft**

Gi Vecchiarelli, R Guidi, *IDS Ingegneria Dei Sistemi S.p.A, Italy*, P Valle, S Vatta, *Alcatel Alenia Space Italia, Italy*, V De Cosmo, V Catalano, *Agenzia Spaziale Italiana, Italy*

We2.3 Convened Session – Metamaterials and their Applications to Antennas (Cont)

Chair: Clive Parini, *Queen Mary's University, London, UK*

Co-Chair: Filiberto Bilotti, *University Roma Tre, Italy*

We2.3.6 10.40 – 11.00

Convened - **2-D Anisotropic Textured Surfaces: Properties and Advanced Antenna Applications**

V F Fusco, A G Schuchinsky, *Queen's University Belfast, UK*

We2.3.7 11.00 – 11.20

Convened - **Applications of Negative-Refractive-Index Transmission-Line (NRI-TL) Metamaterials in Planar Antennas and their Feed Networks**

M A Antoniadou, G V Eleftheriades, *University of Toronto, Canada*

We2.3.8 11.20 – 11.40

Convened - **Analysis and Design of 2D Planar, Metallic, Periodic Structures using the Coupled Field Expansion Method**

Y Li, K P Esselle, *Macquarie University, Australia*

We2.3.9 11.40 – 12.00

Convened - **Emulating Anisotropy to Form Novel Low Cost Printed Metamaterial Antennas**

J L Volakis, K Sertel, G Mumcu, *Ohio State University, USA*

We2.3.10 12.00 – 12.20
Convened - **Low Frequency Tunable Metamaterial Small Antenna Structure**
D H Lee, W S Park, *Pohang University of Science and Technology, South Korea*, A Chauraya,
J C Vardaxoglou, *Loughborough University, UK*

We2.4 Radar, Remote Sensing and GPR

Chair: Alain Bourdillon, *University of Rennes 1, France*

Co-Chair: Andrea Vallecchi, *Università degli Studi di Firenze, Italy*

We2.4.6 10.40 – 11.00
Ultra Wideband Antennas for In-Pipe Ground Penetrating Radar
S R Pennock, M A Redfern, *University of Bath, UK*

We2.4.7 11.00 – 11.20
UWB Time Domain Measurements
B Levitas, *Geozondas Ltd, Lithuania*

We2.4.8 11.20 – 11.40
A Tapered-Slot Antenna with Emulated Continuous Resistive Loading
V Mikhnev, Ye Maksimovitch, *Institute of Applied Physics, Belarus*, P Vainikainen, *Helsinki University of Technology, Finland*

We2.4.9 11.40 – 12.00
An Advection Compensation Algorithm for High-Resolution Imaging with Atmospheric Radar
K Nishimura, *National Institute of Polar Research, Japan*, T Kimura, T Sato, *Kyoto University, Japan*,
K Sato, *University of Tokyo, Japan*

We2.4.10 12.00 – 12.20
An Elliptically Polarized Axial-Mode Helical Antenna with a Conformal Polarizer
M Secmen, S Demir, A Hizal, O A Civi, *Middle East Technical University, Turkey*

We2.5 Convened Session – Integral Equation Methods for Antenna Analysis (Cont)

Chair: Juan Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

Co-Chair: K A Michalski, *Texas A & M University, USA*

We2.5.6 10.40 – 11.00
Convened - **Fast Impedance and Pattern Evaluation for Phased Arrays made of Complex Elements Involving Finite Dielectric Material**
C Craeye, X Dardenne, R Sarkis, *Université catholique de Louvain, Belgium*, T Gilles, *Belgium Royal Military Academy, Belgium*

We2.5.7 11.00 – 11.20
Convened - **Approximate Green's Function for a Finite and Electrically Thick Dielectric Slab**
A Parsa, R Paknys, *Concordia University, Canada*

We2.5.8 11.20 – 11.40
Convened - **On the Surface Integral Equation Formulations for Electromagnetic Scattering and Radiation Problems**
P Ylä-Oijala, M Taskinen, *Helsinki University of Technology, Finland*

We2.5.9 11.40 – 12.00
Convened - **Alternate Expressions for the Transmission Line Model in Layered Green's Functions**
P Crespo-Valero, J R Mosig, *École Polytechnique Fédérale de Lausanne, Switzerland*

We2.5.10 12.00 – 12.20
Convened - **Advanced Fast Hybrid MM/FE/MoM CAD Techniques for Antennas and Feed-Networks**
F Arndt, V Catina, *University of Bremen, Germany*, J Brandt, *MiG Microwave Innovation Group, Germany*

We2.6 Antennas for MIMO Systems (Cont)

Chair: Manuel Sierra-Perez, *Universidad Politécnica de Madrid, Spain*

Co-Chair: Tetsuki Taniguchi, *University of Electro Communications, Japan*

We2.6.6 10.40 – 11.00
The Intelligent Quadrifilar Helix: A Compact MIMO Antenna for IEEE 802.11n
T W C Brown, S R Saunders, *University of Surrey, UK*

We2.6.7 11.00 – 11.20
A 4-Port Antenna for MIMO Channels
C Oikonomopoulos-Zachos, B Rembold, *RWTH Aachen University, Germany*

We2.6.8 11.20 – 11.40
Performance Analysis of Adaptive Arrays based on Minimum BER Algorithms
S Denno, D Umehara, *Kyoto University, Japan*, S Sakaguchi, *NTT Data, Japan*

We2.6.9 11.40 – 12.00
Compensation Network for Optimizing Antenna System for MIMO Applications
A Nilsson, P Bodlund, A Stjernman, M Johansson, A Derneryd, *Ericsson AB, Sweden*

We2.6.10 12.00 – 12.20
The Performance of MIMO Communication Systems Utilising Different Water Filling Strategies
R Landqvist, A Mohammed, *Blekinge Institute of Technology, Sweden*

We2.7 Convened Session - Terrain and Building Diffraction (Cont)

Chair: Saul R. Torrico, *Comseach, USA*

Co-Chair: Rainer Großkopt, *Institut für Rundfunktechnik GmbH, Germany*

We2.7.6 10.40 – 11.00
Convened - **On the Improvements in Multiple Edge Transition Zone Diffraction**
M B Tabakcioglu, A Kara, *Atilim University, Turkey*

We2.7.7 11.00 – 11.20
Convened – **The Prediction of the Indoor Radio Channel Impulse Response**
R F Rudd, *Aegis Systems Ltd, UK*

We2.7.8 11.20 – 11.40
Convened - **Efficient Finite Difference Method for Simulating Radio Propagation in Dense Urban Environments**
G de la Roche, G Villemaud, J M Gorce, *CITI / INSA-Lyon, France*

We2.7.9 11.40 – 12.00
Convened - **Time Domain Model of Multiple Convex Objects Transition Zone Diffraction**
P Górniak, W Bandurski, *Poznan University of Technology, Poland*

We2.7.10 12.00 – 12.20
Convened - **Comparison of Different Diffraction Models using ITU-R Study Group 3 Database**
A Kholod, M Liniger, *Federal Office of Communications, Switzerland*, M Rohner, *LStelcom, Germany*

We2.8 Convened Session - Memorial Session Dedicated to Prof J R James

Chair: Kyohei Fujimoto, *University of Tsukuba, Japan*

Co-Chair: Jean-Pierre Daniel, *ADVANTEN, France*

We2.8.1 10.40 – 11.00

Convened - **Fundamental Directivity and Efficiency Limitations of Single and Multi-Port Antennas**

P-S Kildal, *Chalmers University of Technology, Sweden*

We2.8.2 11.00 – 11.20

Convened - **The “Monopolar Wire Patch Antenna” Concept**

B Jecko, *University of Limoges, France*

We2.8.3 11.20 – 11.40

Convened - **Microstrip Fractal-Shaped Antennas: A Review**

J Anguera, C Borja, C Puente, *Fractus, Spain*

We2.8.4 11.40 – 12.00

Convened - **Trend of Multiple Antenna Beamforming Technology in Mobile Wireless Communication Field**

Y Kusano, K Iimuro, K Murakami, R Canchi, S Kimura, *Kyocera Corporation., Japan*

We2.8.5 12.00 – 12.20

Convened - **Antenna Developments using Polymers and Metallized Foam**

J-P Daniel, H Havot, K Sayegrih, *Advanten, France*

We2.9 Convened Session - Stochastic and Deterministic Radio Propagation Modelling (Cont)

Chair: Vittorio Degli-Esposti, *Università di Bologna, Italy*

Co-Chair: Natan Blaunstein, *Ben-Gurion University, Israel*

We2.9.6 10.40 – 11.00

Convened - **A 3D Ray Tracing Model for Macrocell Urban Environments and its Verification with Measurements**

T Fügen, S Knörzer, W Wiesbeck, *Universität Karlsruhe, Germany*, M Landmann, R S Thomä, *Technische Universität Ilmenau, Germany*

We2.9.7 11.00 – 11.20

Convened - **Signal-Processing Perspective to Radio Channel Modelling**

A Richter, J Salmi, V Koivunen, *Helsinki University of Technology, Finland*

We2.9.8 11.20 – 11.40

Convened - **Analysis and Ray Tracing Modelling of Co- and Cross-Polarization Radio Propagation in Urban Environment**

V Degli-Esposti, E Vitucci, F Fuschini, *University of Bologna, Italy*, V-M Kolmonen, P Vainikainen, *Helsinki University of Technology, Finland*

We2.9.9 11.40 – 12.00

Convened - **Prediction Propagation Characteristics in Indoor Wireless Communication Environments**

N Yarkony, N Blaunstein, *Ben-Gurion University of the Negev, Israel*

We2.9.10 12.00 – 12.20

Convened - **A Hybrid Physical Spatio-Temporal Model for Radio Propagation in Urban Environments**

Y-J Ren, J H Tarng, *National Chiao-Tung University, Taiwan*

We2.10 Convened Session – AMTA - Generic Antenna Measurements II (Cont)

Chair: Thomas Eibert, *Institut für Hochfrequenztechnik, Germany*

Co-Chair: Daniel Van Rensburg, *Nearfield Systems Inc., Canada*

We2.10.6 10.40 – 11.00

Convened - In-Orbit Antenna Pattern Measurements on Engineering Test Satellite VIII

Y Imaizumi, Y Suzuki, K Ohata, *NTT Corporation, Japan*

We2.10.7 11.00 – 11.20

Convened - Efficient and Fast Results Assessment During Telecom Satellite Antenna Test Campaigns

B P Pinsard, *EADS Astrium, France*, G Puissant, *Télécom INT, France*

We2.10.8 11.20 – 11.40

Convened - Quality Assessment of W-Band Corrugated Horn Antennas

P Fürholz, A Murk, *University of Berne, Switzerland*

We2.10.9 11.40 – 12.00

Convened - Evaluation of Absorber Reflectivity using a Directive Antenna Array

B B Janic, M M Kostic, *WIPL-D d.o.o., Serbia*, B M Kolundzija, *University of Belgrade, Serbia*

We2.10.10 12.00 – 12.20

Convened - Comparative Investigation of Four Antenna Gain Determination Techniques

S Burgos, M Sierra-Castañer, *Universidad Politécnica de Madrid, Spain*, S Pivnenko, O Breinbjerg, *Technical University of Denmark, Denmark*

We2.11 Earth-Space Propagation (Cont)

Chair: Claude Oestges, *Université catholique de Louvain, Belgium*

Co-Chair: Yannick Beniguel, *IEEA, France*

We2.11.6 10.40 – 11.00

Performance of Time-Diversity Satellite Communication Systems Investigated through Radar Simulation

C Capsoni, M D'Amico, *Politecnico di Milano, Italy*, R Nebuloni, *IEIIT, CNR, Italy*

We2.11.7 11.00 – 11.20

Electromagnetic Waves Fluctuations in Random Fractal Media

T Arsenyan, P Korolenko, M Maganova, I Tanachev, *M.V. Lomonosov Moscow State University, Russia*

We2.11.8 11.20 – 11.40

Concurrency of Rain Rate and Rain Attenuation Statistics in Slant Paths: Tests with the Synthetic Storm Technique

E Matricciani, C Riva, *Politecnico di Milano, Italy*

We2.11.9 11.40 – 12.00

Characterization of the Satellite to Indoor Channel at S-band

F Perez-Fontán, *University of Vigo, Spain*, V Hovinen, *Centre for Wireless Communications, Finland*, E Kubista, R Wack, M Schönhuber, *Joanneum Research, Austria*, R Prieto-Cerdeira, *European Space Agency, Netherlands*

We2.11.10 12.00 – 12.20

An Enhanced Version of the SC Excell Model Considering Cells Movement

L Borroni, C Capsoni, L Luini, C Riva, *Politecnico di Milano, Italy*

We3.2 Invited Papers

Chair: Dirk Manteuffel, *IMST GmbH, Germany*

Co-Chair: Christian Pichot, *University of Nice at Sophia-Antipolis, France*

We3.2.1 14.00 – 14.45

Invited Paper – **Advanced Wireless Product Design from Components to Smart Antenna Systems**

N E Buris, *Motorola Labs, USA*

We3.2.2 14.45 – 15.30

Invited Paper – **Smart Antennas for Next Generation Wireless Systems**

A Alexiou, *Alcatel-Lucent, UK*

We3.3 Invited Papers

Chair: Bertram Arbesser-Rastburg, *ESTEC, European Space Agency, Netherlands*

Co-Chair: David Eden, *QinetiQ, UK*

We3.3.1 14.00 – 14.45

Invited Paper – **Delivering Digits to Rural Radios: Making Digital Radio Mondiale Work**

O P Haffenden, *BBC, UK*

We3.3.2 14.45 – 15.30

Invited Paper – **Research on Tropospheric Propagation Modelling in Satellite Radio-Links**

A Paraboni, Carlo Riva, *Politecnico di Milano, Italy*, A Martellucci, *ESTEC, European Space Agency, Netherlands*

We4.2 Antennas for RF-ID

Chair: Patrice Brachet, *France Telecom, France*

Co-Chair: Nicholas Buris, *Motorola, USA*

We4.2.1 16.00 – 16.20

Permittivity Passive RFID Sensor for Non-Cooperating Objects

G Marrocco, D Scarana, *University of Tor Vergata, Italy*

We4.2.2 16.20 – 16.40

Electrically Shortened Wire RFID Antennas Closely Spaced to a PEC

M Polivka, *Czech Technical University in Prague, Czech Republic*, R E Ambemou, *Université Pierre et Marie Curie, France*

We4.2.3 16.40 – 17.00

Backscattering Measurement from a RFID based on Artificial Magnetic Conductors

R M Mateos, C Craeye, *Université catholique de Louvain, Belgium*, J M González, J Romeu, *Universitat Politècnica de Catalunya, Spain*

We4.2.4 17.00 – 17.20

Dualband Wearable UHF RFID Antenna

M Svanda, M Polivka, *Czech Technical University in Prague, Czech Republic*,

We4.2.5 17.20 – 17.40

Rectangular Dielectric Resonator Antenna for RFID Application

L Z Thamae, Z Wu, *University of Manchester, UK*, W Konrad, *Siemens AG, Austria*

We4.9 Convened Session – Antennas for Cognitive Radio

Chair: Anil Shukla, *QinetiQ, UK*

Co-Chair: Peter Hall, *University of Birmingham, UK*

We4.9.1 16.00 – 16.20

Convened - Cognitive Radios – What are they and why are the Military and Civil Users Interested in Them

A Shukla, E Burbidge, I Usman, *QinetiQ, UK*

We4.9.2 16.20 – 16.40

Convened - Reconfigurable Antennas for SDR and Cognitive Radio

K R Boyle, Z Liu, T Huang, *NXP Semiconductors, UK*, P G Steeneken, Y Sun, A Simin, E Spits, O Kuijken, T Roedle, F van Straten, *NXP Semiconductors, Netherlands*

We4.9.3 16.40 – 17.00

Convened - Enabling Antenna Technologies for the Software Definable Radio

A Faraone, C Di Nallo, G Bit-Babik, S L Ooi, M Pascolini, *Motorola Labs, USA*

We4.9.4 17.00 – 17.20

Convened - Design of an Adaptive Antenna Array Test-Bed based on Software Radio for Tracking LEO Satellites

M A Salas Natera, R Martínez Rodríguez-Osorio, I García-Rojo López, *Universidad Politécnica de Madrid, Spain*

We4.9.5 17.20 – 17.40

WLAN Preamble Detection Methods in a Multi-Antenna, Multi-Standards Software Defined Radio Architecture

L Alaus, G Villemaud, P F Morlat, J-M Gorce, *CITI INSA, France*

We4.10 MM/Sub-MM Wave Propagation

Chair: Antti Raisänen, *Helsinki University, Finland*

Co-Chair: Martin Grabner, *Testcom, Czech Republic*

We4.10.1 16.00 – 16.20

A Reduced Markov Channel Modelling of Vegetation in the Forward Scattering Region at 40 GHz

S Morgadinho, *Instituto de Telecomunicações, Portugal*, R F S Caldeirinha, *Instituto de Telecomunicações, Portugal & University of Glamorgan, UK*, I Cuiñas, M Sánchez, *University of Vigo, Spain*

We4.10.2 16.20 – 16.40

Depolarization Effect by Wind Incidence on Vegetation at 40 GHz

A Vázquez Alejos, M García Sánchez, I Cuiñas, P Gómez, *Universidade de Vigo, Spain*

We4.10.3 16.40 – 17.00

Measurement and Ray-Tracing Simulation of the 60 GHz Indoor Broadband Channel: Model Accuracy and Parameterization

M Peter, W Keusgen, *Heinrich-Hertz-Institut, Germany*, R Felbecker, *RWTH Aachen University, Germany*

We4.10.4 17.00 – 17.20

Reflection and Transmission Properties of Building Materials in W-Band

R Piesiewicz, J Schöbel, T Kürner, *Technical University of Braunschweig & Terahertz Communications Lab, Germany*, R Geise, *Technical University of Braunschweig, Germany*

We4.10.5 17.20 – 17.40

Gas Attenuation Measurement by Utilization of Fabry-Perot Resonator

S Zvanovec, P Piksa, P Cerny, M Mazanek, P Pechac, *Czech Technical University in Prague, Czech Republic*

We4.11 RCS, Scattering and Microwave Imaging

Chair: Dimitra Kaklamani, *National Technical University of Athens, Greece*

Co-Chair: Frank Weinmann, *Research Institute for High Frequency Physics and Radar Techniques, Germany*

We4.11.1 16.00 – 16.20

Techniques for Measurement of Radar Signatures

S J Hutton, G Jepps, *Thales Land and Joint Systems, UK*

We4.11.2 16.20 – 16.40

Ferromagnetic Nanoparticles in Broad Band Radar Absorbers

D Sjöberg, *Lund University, Sweden*

We4.11.3 16.40 – 17.00

The Influence of Surface Curvature on High-Frequency RCS Simulations

F Weinmann, *Institute of High Frequency Physics and Radar Techniques, Germany*

We4.11.4 17.00 – 17.20

Transmittance and Monostatic Reflectivity of Radar Absorbing Materials for CATR

A Tamminen, J Mallat, A V Räisänen, *Helsinki University of Technology, Finland*, A Lönnqvist, *VTT Technical Research Centre of Finland, Finland and Helsinki University of Technology, Finland*

We4.11.5 17.20 – 17.40

Radar Cross Section Modelling of RFID Tag Antennas for Paper Reel Identification

L Ukkonen, L Sydänheimo, M Kivikoski, *Tampere University of Technology, Finland*

WePA - Antenna Poster Session 3:

08.30 – 18.00

Aerospace Antennas, Reflectors, Lenses and Arrays

Chair: Rob Lewis, *BAE Systems, UK*

Co-Chair: Ronan Sauleau, *University of Rennes, France*

Aerospace Antennas

WePA.001

Turnstile Antenna for Saddle Pattern Generation in LEO Satellite Applications

J M Baabuei, K Keyghobad, T Heydari, M Barari, *Islamic Azad University, Iran*

WePA.002

Optimization of Return Loss Parameter of Feed Network of Turnstile Antenna in LEO Satellites Application

K Keyghobad, J M Baabuei, T Heydari, *Islamic Azad University, Iran*

WePA.003

Dual-Frequency Antenna Circularly Polarized for GPS-SDARS Operation

G Beddeleem, *Université de Nice-Sophia-Antipolis, France & Radiall, France*, J M Ribero, G Kossiavas, R Staraj, *Université de Nice-Sophia-Antipolis, France*, E Fond, *Radiall, France*

WePA.004

Design of a Dichroic Sub-Reflector for an Antenna Operating at S and X Bands

C Tienda, M P Garcia, *INDRA Space, Spain*, P Otero, *University of Málaga, Spain*

WePA.005

Pyramidal Adaptive Antenna of Planar Arrays for Satellite Communications

I Montesinos-Ortego, J L Masa-Campos, M Sierra-Pérez, J L Fernández-Jambrina, *Universidad Politécnica de Madrid, Spain*

WePA.006

Modelling of a Complex Beam Forming Network for a Phased Array Antenna

G G Maxwell-Cox, S V Potter, *Astrium Ltd, UK*

WePA.007

A New Quadrifilar Helix Antenna Family with Flexible Coverage for Space Applications

J Bäck, J Zackrisson, M Öhgren, P Ingvarson, *Saab Space, Sweden*

WePA.008

Full-Wave Modelling of the Antennas for the Galileo Satellite

G G Maxwell-Cox, M S Smith, *Astrium Ltd, UK*

WePA.009

Investigation of Flat Plate Reflectors

D Gray, H Tsuji, M Suzuki, R Miura, *NICT, Japan*

WePA.010

Portable Patch Array for a Geostationary Satellite Communications System in X Band

E Casla-Sanz, J L Masa-Campos, M Sierra-Pérez, *Technical University of Madrid, Spain*

WePA.011

A GPS Antenna for Precise Orbit Determination of the SWARM Satellites

P Ingvarson, M Bonnedal, J Wettergren, *Saab Space, Sweden*, B Wästberg, *Efield AB, Sweden*

WePA.012

Highly Accurate SLC Image Coregistration in InSAR Processing Technique

X Tian, Y Wang, *University of Hunan, China*, Y Huang, D Li, C Yang, *University of Liverpool, UK*

Reflectors, Feeds and Lenses

WePA.013

Shaping Reflectors using Hybrid Techniques

M Graña, M Arias, O Rubiños, A García-Pino, *University of Vigo, Spain*

WePA.014

Efficient Simulation of Reconfigurable Reflectors based on Squared Elements

J Gutiérrez-Ríos, *Universidad Politécnica de Madrid, Spain*, J Vassallo Sanz, *Instituto de Física Aplicada, Spain*

WePA.015

A Novel Multiband Coaxial Feed System with Low Cross-Polar Radiation

F F Dubrovka, Yu A Ovsianyk, *National Technical University of Ukraine, Ukraine*, R F Dubrovka, *Queen Mary, University of London, UK*

WePA.016

Optimization of 200-800MHz Eleven Feed for GMRT

Y B Karandikar, P-S Kildal, *Chalmers University of Technology, Sweden*

WePA.017

Optimal Number of Elements and Element Spacing of Wide-Band Focal Plane Arrays for a New Generation Radio Telescope (SKA)

M V Ivashina, *Astron, Netherlands*, M Ng Mou Kehn, *University of Manitoba, Canada*, P-S Kildal, *Chalmers University of Technology, Sweden*

WePA.018

An Exact Line Integral Representation of the Physical Optics Radiation from a Perfectly Conducting Cylindrical Reflector of Arbitrary Cross Section Illuminated by a Plane Wave

A Vallecchi, *University of Florence, Italy*

WePA.019

Multi-Frequency Feeds for Earth Observation Applications

L Costes, J C Orlhac, J-M Goutoule *EADS Astrium, France*, J-P Adam, Y Beniguel, A Berthon, *IEEA, France*, M Van der Vorst, *ESTEC, European Space Agency, Netherlands*

WePA.020

Septum Horn Antennas at 47/48 GHz for High Altitude Platform Stations

Z Hradecky, P Pechac, M Mazanek, R Galuscak, *CTU Prague, Czech Republic*

WePA.021

Performance Improvement of Conical Horn by using Inserted Metallic Sphere

C Y Tan, K T Selvan, T Cross, *The University of Nottingham Malaysia Campus, Malaysia*

WePA.022

Reduced-Size Lenses for Flat-Top Pattern Antennas

N T Nguyen, G Godi, R Sauleau, *University of Rennes 1, France*

WePA.023

Application of A Periodic Fourier Modal Method to Metal-Plate Lens Antennas

K Edee, I Fenniche, G Granet, J P Plumey, *Université Blaise Pascal, France*, E Jehamy, M Ney, *Laboratory of Electronics and Systems for Telecommunications, France*

WePA.024

Characterization of Radoms for Millimetrewave Radar Applications

H Essen, D Nuessler, R Brauns, T Brehm, S Sieger, S Stanko, *FGAN Research Institute for High Frequency Physics and Radar Techniques, Germany*

Arrays

WePA.025

Continuous Study of Closely Coupled Dipoles with Matching Networks

Y Fei, J S Thompson, *University of Edinburgh, UK*

WePA.026

The Capacity of Matched Compact Linear Antenna Arrays

Y Fei, J S Thompson, *University of Edinburgh, UK*

WePA.027

Reconfigurable Microstrip Patch Array Antenna with Beam Shaping

A Mohd Tarmizi, M T Mohd Nor, A R Tharek, *Universiti Teknologi Malaysia, Malaysia*

WePA.028

Sum Pattern Synthesis by using Planar Arrays with Square Lattices and Circular Boundaries

J Fondevila-Gomez, J A Rodriguez-Gonzalez, E Moreno, F Ares, *University Santiago de Compostela, Spain*, G Toso, *European Space Agency, Netherlands*

WePA.029

Design of a Finite Array with a Radome Incorporating a Frequency Selective Surfaces

D L Raynes, *Ansoft UK, UK*, J DeLap, *Ansoft Corporation, USA*

WePA.030

On the Microstrip Array Design by using a Partially Reflective Surface

A A Nanos, K Siakavara, J N Sahalos, *Aristotle University of Thessaloniki, Greece*

WePA.031

Evolutionary Algorithms Applied to Microstrip Antennas Design

J R Brianeze, H E H Figueroa, C H S Santos, *State University of Campinas, Brazil*

WePA.032

Optimization of Efficiency and Gain of Magnetized Circular Ferrite Microstrip Antenna using Genetic Algorithm

N Chatteraj, J S Roy, *Birla Institute of Technology, India*

WePA.033

Compact Planar Microstrip Antenna Element for Wide-Scan Angle Active Phased Arrays

K S Beenamole, N S Kutiyal, U K Revankar, *Electronics and Radar Development Establishment, India*,
V M Pandharipande, *Osmarnia University, India*

WePA.034

Mutual Coupling in Large Finite Phased Arrays for Wideband Applications

G M Lewis, R I Henderson, R F Guy, R A Lewis, *BAE Systems Advanced Technology Centre, UK*

WePA.035

A Multi-Path Algorithmic Approach to Phased Array Calibration

J McCormack, T Cooper, R Farrell, *National University of Ireland Maynooth, Ireland*

WePA.036

On the Accuracy and Hardware Requirements of Cordic based Phased Array Calibration

L Barrandon, J McCormack, T S Cooper, R Farrell, *National University of Ireland, Maynooth, Ireland*

WePA.037

Power Losses in Time Modulated Linear Arrays

J C Brégains, J Fondevila-Gómez, F Ares, *University of Santiago de Compostela, Spain*, G
Franceschetti, *University of Naples, Italy*

WePA.038

Holographic Surfaces Realized by Curvilinear Strip Gratings

F Caminita, M Nannetti, S Maci, *University of Siena, Italy*

WePA.039

Mutual Coupling and Chassis-Mode Coupling in Small Phased Array on a Small Ground Plane

C T Fandie, K Solbach, *University Duisburg-Essen, Germany*

WePA.040

An Improved Hemispherical Antenna Array Design for Breast Imaging

I J Craddock, M Klemm, J Leendertz, A W Preece, R Benjamin, *University of Bristol, UK*

Beamformers

WePA.041

On the Design of Feeding Networks using Coherently Radiating Structures and Genetic Algorithms

M A Panduro, *Universidad Autónoma de Tamaulipas, Mexico*, C del Río, *Universidad Pública de Navarra, Spain*

WePA.042

A Beamforming Network for Multibeam Antenna Arrays based on Coherent Radiating Periodic Structures

D Betancourt, C del Río, *Universidad Pública de Navarra, Spain*

WePA.043

Triangular Grid Multibeam Array and Beam Forming Networks

S Lei, M Sierra-Perez, *Universidad Politécnica de Madrid, Spain*

WePA.044

Beam Steering Grids with Scanning in Two Planes

A E Martynyuk, N A Martynyuk, *National Autonomous University of Mexico, Mexico*, A Iturri-Hinojosa, *Instituto Politecnico Nacional, Mexico*

WePA.045

The Dynamics of Signals with Spread Spectrum in Sensor Arrays, Some Aspects of Digital Beamforming

T Ruuben, *Tallinn University of Technology, Estonia*

WePA.046

Multibeam Antenna Array with Butler Matrix for WLAN Applications

S Z Ibrahim, M K A Rahim, T Masri, M N A Karim, *Universiti Teknologi Malaysia, Malaysia*, M Z A Abdul Aziz, *Universiti Teknikal Malaysia Melaka, Malaysia*

WePA.047

UMTS WCDMA Radio Network Planning using Beamforming Techniques

D Ch Tsilimantos, D I Kaklamani, *National Technical University of Athens, Greece*, G Tsoulos, *National Technical University of Peloponnese*

WePA.048

Cooperative Beamforming for Wireless Sensor Networks

T Hult, A Mohammed, *Blekinge Institute of Technology, Sweden*

WePA.049

Coupled Microwave/Thermal Finite Element Model for High Power Ferrite Phase Shifter

J Zafar, A P Gibson, *University of Manchester, UK*

WePA.050

Multi Beam Antenna System for Portable 3-D Surveillance Radar

A K Singh, S E Avirah, P Kumar, *Electronics & Radar Development Establishment, India*

WePA.051

Planar Beam-Forming Array for Broadband Communication in the 60 GHz Band

J A G Akkermans, M H A J Herben, *Technische Universiteit Eindhoven, Netherlands*

WePA.052

Substrate Integrated Non-Radiative Dielectric Waveguide Resonators for Millimeter Wave Applications

S Niranchana, D Budimir, *University of Westminster, UK*

Reflectarrays

WePA.053

Design, Manufacture and Performance of Monolithic Pin Diodes for Beam Steered Reflectarray

P V Rainey, M Bain, R Jackson, N S J Mitchell, D Linton, V F Fusco, H S Gamble, *Queens University Belfast, UK*

WePA.054

Broad-Beam Microstrip Reflectarray using Gaussian Backscatter Function

P Krachodnok, R Wongsan, *Suranaree University of Technology, Thailand*

WePA.055

Performance Improvement for a Varactor Loaded Reflectarray Element

L Boccia, G Amendola, G Di Massa, *University of Calabria, Italy*

WePA.056

Requirements and Challenges in the Design of High-Performance MEMS Reconfigurable Reflectarray (RRA) Cells

J Perruisseau-Carrier, A K Skrivervik, *École, Polytechnique Fédérale de Lausanne, Switzerland*

WePA.057

Parametric Analysis of Bandwidth Features for Aperture-Coupled Reflectarrays

S Costanzo, F Venneri, G Di Massa, *University of Calabria, Italy*

WePA.058

A Dual Linear Polarized Printed Reflectarray using Slot Loaded Patch Elements

D Cadoret, L Marnat, R Loison, R Gillard, *IETR, France*, H Legay, B Salomé, *Thales Alenia Space, France*

WePA.059

PSTD-FDTD Analysis for Complex Irregular Fresnel Zone Plates

B L Ooi, Y J Fan, M S Leong, *National University of Singapore, Singapore*, X C Shan, A Lu, *Singapore Institute of Manufacturing Technology, Singapore*, H D Hristov, D Feick, *Universidad Tecnica Federico Santa Maria, Chile*

WePA.060

A Design Technique of Reflectarrays with Improved Frequency Performances

A Capozzoli, C Curcio, G D'Elia, A Liseno, S Sparice, *University of Naples Federico II, Italy*

WePA.061

Transmitarray for Ku Band

P Padilla de la Torre, M Sierra Castañer, *Universidad Politécnica de Madrid, Spain*

WePA.062

Electronically Reconfigurable Monopulse Reflectarray Antenna with Liquid Crystal Substrate

W Hu, M Y Ismail, R K Cahill, V F Fusco, H S Gamble, R Dickie, D Linton, *Queen's University, Belfast UK*, J A Encinar, *Universidad Politécnica de Madrid, Spain*, N Grant, S P Rea, *EADS Astrium, UK*

WePP - Propagation Poster Session

08.30 – 18.00

Chair: Wim Kottermann, TU Ilmenau, Germany

Co-Chair: Matti Herben, *Eindhoven University of Technology, Netherlands*

WePP.001

Modelling Radiowave Propagation through Vegetation Media: A Comparison between the RET and dRET Models

T R Fernandes, R F S Caldeirinha, *Instituto de Telecomunicações, Portugal & University of Glamorgan, UK*, M O Al-Nuaimi, J H Richter, *University of Glamorgan, UK*

WePP.002

Ray Tracing with Fresnel Zone Theory for Fixed Wireless Access Channels Characterization

G E Athanasiadou, G V Tsoulos, *University of Peloponnese, Greece*

WePP.003

Tree-Lines against Electromagnetic Pollution at Mobile Phone Bands

I Cuiñas, A Vázquez Alejos, M García Sánchez, P Gómez, *Universidade de Vigo, Spain*

WePP.004

Analysis of Propagation Effects for HAP 3G Networks in Urban Areas

J Holis, P Pechac, *Czech Technical University in Prague, Czech Republic*

WePP.005

In Situ Propagation Measurements for Mobile Applications in the C-Band

E Van Lil, D Trappeniers, A van de Capelle, *K.U.Leuven, Belgium*, J Verhaever, *Hogeschool Gent, Belgium*

WePP.006

Vectorial Characterization of DVB-T Propagation Channel - Application to Radio-Mobile Communications: the "Cavite" Project

C Brousseau, S Avrillon, F Nivole, L Bertel, *University of Rennes 1, France*

WePP.007

Measurements of Propagation Loss and Multipath Delay Profiles at 593 MHz in a Dense Urban Area in Brazil

L A R da Silva Mello, R S L de Souza, *Center for Telecommunication Studies, Brazil & National Institute of Metrology – INMETRO, Brazil*, P V Gonzalez Castellanos, *Center for Telecommunication Studies*, C E S Dantas, *Mackenzie University, Brazil*

WePP.008

Uplink Performance Evaluation of WiMAX Broadband Services via High Altitude Platforms (HAP'S)

Z Yang, A Mohammed, T Hult, *Blekinge Institute of Technology, Sweden*

WePP.009

Full-Wave Domain Decomposition Method to Analyze Corridors

J Laviada, M R Pino, F Las-Heras, *University of Oviedo, Spain*

WePP.010

WCDMA Capacity and Coverage Enhancement from Multiple High Altitude Platform Configurations

T Hult, A Mohammed, *Blekinge Institute of Technology, Sweden*, D Grace, *University of York, UK*

WePP.011

A Geometric Interpretation of Indoor MIMO Systems using a Deterministic Model

A Grennan, C Downing, *Dublin Institute of Technology, Ireland*, B Foley, *Trinity College, Ireland*

WePP.012

2G/3G Inter-Rat Handover Performance Analysis

A Mohammed, *Blekinge Institute of Technology, Sweden*, S AddelWahaab, H Kamal, *Alcatel, Egypt*

WePP.013

A Generic Space-Time-Frequency Correlation Model and it's Corresponding Simulation for Narrowband MIMO Channels

X Cheng, C X Wang, *Heriot-Watt University, UK*, D I Laurensen, *University of Edinburgh, UK*

WePP.014

An Efficient Implementation for the Analysis of Periodic Microstrip Lines Excited by Nonperiodic Sources

G Valerio, P Baccarelli, P Burghignoli, A Galli, *University of Rome, Italy*, R Rodríguez-Berral, F Mesa, *University of Seville, Spain*

Thursday, 15 November

Th1.2 Convened Session – Reconfigurable and Multiple Beams Space Antennas

Chair: Cyril Mangenot, *ESTEC, European Space Agency, Netherlands*

Co-Chair: Rob Lewis, *BAE Systems, UK*

Th1.2.1

08.30 – 08.50

Convened - On Reflector Surface Compensation by Minimal Probing of Subreflector Field in Dual Reflector Antennas

V Jamnejad, W Imbriale, *California Institute of Technology, USA*

Th1.2.2

08.50 – 09.10

Convened - Dynamic Link Improvements using a Reconfigurable Reflector Antenna

K Pontoppidan, H-H Viskum, *TICRA, Denmark*

Th1.2.3 09.10 – 09.30
Convened - **A Parabolic Reflectarray for a Bandwidth Improved Contoured Beam Coverage**
J A Encinar, M Arrebola, *Universidad Politécnica de Madrid, Spain*, G Toso, *ESTEC, European Space Agency, Netherlands*

Th1.2.4 09.30 – 09.50
Convened - **Reflectarrays for Satellite Telecommunication Antennas**
H Legay, B Salomé, E Labiole, *Thalès Alenia Space, France*, M A Milon, D Cadoret, R Gillard, *IETR, France*, R Chaharmir, J Shaker, *CRC, Canada*

Th1.2.5 09.50 – 10.10
Convened - **Digital Beamforming Antenna for Synthetic Aperture Radar**
C Fischer, C Schaefer, C Heer, *EADS Astrium, Germany*

Th1.3 Convened Session – MIMO Channel Models

Chair: Andreas Molisch, *Lund University, Sweden*

Co-Chair: Yoshio Karasawa, *University of Electro-Communications, Japan*

Th1.3.1 08.30 – 08.50
Convened - **An Insight into the Estimation of MIMO Propagation Parameters using the SAGE Algorithm**
M Matthaiou, D I Laurenson, *University of Edinburgh, UK*, N Razavi-Ghods, *University of Cambridge, UK*, S Salous, *University of Durham, UK*

Th1.3.2 08.50 – 09.10
Convened - **Comparison of MIMO Channel Characteristics Computed by 3D Ray Tracing and Statistical Models**
R Hoppe, O Stäebler, G Wöelfle, *AWE Communications GmbH, Germany*, J Ramulu, H Buddendick, *University of Stuttgart, Germany*

Th1.3.3 09.10 – 09.30
Convened - **Modeling the Time-Variant MIMO Channel**
M A Jensen, *Brigham Young University, USA*, J W Wallace, *Jacobs University Bremen, Germany*

Th1.3.4 09.30 – 09.50
Convened - **Advances in “Winner” Wideband MIMO System-Level Channel Modeling**
M Naranđić, C Schneider, R S Thomä, *Technische Universität Ilmenau, Germany*, P Kyösti, J Meiniälä, L Hentilä, *Elektrobit, Finland*, M Alatossava, *University of Oulu, Finland*, T Rautiainen, *Nokia Research Center, Finland*, Y L C Jong, *Communications Research Centre, Canada*

Th1.3.5 09.50 – 10.10
Convened - **Multi-Keyhole Model for MIMO Radio-Relay Systems**
Y Karasawa, M Tsuruta, T Taniguchi, *University Electro-Communications, Japan*

Th1.4 Metamaterials

Chair: Caroles Martin-Pascual, *Universidad Carlos III de Madrid, Spain*

Co-Chair: Richard W. Ziolkowski, *University of Arizona, USA*

Th1.4.1 08.30 – 08.50
Improvements for the EBG Resonator Antenna Technology
M Thévenot, J Drouet, R Chantalat, E Arnaud, T Monédière, B Jecko, *University of Limoges, France*

Th1.4.2 08.50 – 09.10
Dipole with Left Handed Loading with Optimised Efficiency
Q Liu, P S Hall, A Lucas Borja, *University of Birmingham, UK*

Th1.4.3 09.10 – 09.30
Numerical and Experimental Investigation of Inductively Loaded Thin-Wire-based Metamaterial
S Hrabar, *University of Zagreb, Croatia*, G Pavlakovic, *RIZ Transmitter Factory, Croatia*

Th1.4.4 09.30 – 09.50
Cylindrical Radome In X Band using a Controllable Electromagnetic Band Gap Material
S Haché, S N Burokur, F Gadot, A de Lustrac, A Lustrac, *Université de Paris-Sud & EADS-CCR, France*, P Cailleu, G P Piau, *EADS-CCR, France*

Th1.4.5 09.50 – 10.10
Investigations on Volumetric Layered Transmission Line Metamaterials for Antenna Applications
F Bongard, J R Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*, M Van der Vorst, *ESTEC, European Space Agency, Netherlands*

Th1.5 Convened Session – ACES Session

Chair: Atef Elsherbeni, *University of Mississippi, USA*

Co-Chair: Juan Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

Th1.5.1 08.30 – 08.50
Convened - **Modal Characterization of Lossy Metamaterial Slab Waveguides**
H A Olanigan, A B Yakovlev, *University of Mississippi, USA*, G Lovat, P Burghignoli, *“La Sapienza” University of Rome, Italy*, G W Hanson, *University of Wisconsin-Milwaukee, USA*

Th1.5.2 08.50 – 09.10
Convened - **Particle Swarm Optimization for Correlator Antenna Array Designs in Radio Astronomy Applications**
N Jin, Y Rahmat-Samii, *University of California, USA*

Th1.5.3 09.10 – 09.30
Convened - **Conformal Antennas on Singly-Curved Surfaces**
J Villa-Giron, B Shanker, L C Kempel, *Michigan State University, USA*

Th1.5.4 09.30 – 09.50
Convened - **Efficient Jacobian Computation for High-Frequency Inverse Problem Solutions**
Y Song, N K Nikolova, *McMaster University, Canada*

Th1.5.5 09.50 – 10.10
Convened - **Study of Nonlinearly Loaded Microwave Circuits by an Innovative Multiresolution Time-Frequency Analysis**
S Barmada, A Musolino, M Tucci, *University of Pisa, Italy*

Th1.6 Convened Session – Antennas and Propagation for Body Centric Wireless Communications

Chair: Yang Hao, *Queen Mary's University, London, UK*

Co-Chair: Raj Mittra, *Penn State University, USA*

Th1.6.1 08.30 – 08.50
Convened - **Dual Band Body Worn Antenna**
S Zhu, R J Langley, *University of Sheffield, UK*

Th1.6.2 08.50 – 09.10
Convened - **Textile Antennas for On-Body Wireless Communications: Techniques and Properties**
J G Santos, A Alomainy, Y Hao, *Queen Mary, University of London, UK*

Th1.6.3 09.10 – 09.30

Convened - Textile Antennas, A Practical Approach

H J Visser, *Holst Centre & TNO Science and Industry, Netherlands*, A C F Reniers, *TNO Science and Industry, Netherlands*

Th1.6.4 09.30 – 09.50

Convened - Efficient Modeling of Body Area Networks using the Parallized FDTD, its Serial Parallel Extension and the Time Domain Green's Function Method

J N Bringuier, R Mittra, *Pennsylvania State University, USA*, J Wiart, *France Telecom, CNET, France*

Th1.6.5 09.50 – 10.10

Convened - Measurements and Simulations for On-Body Antenna Design and Propagation Studies

Z H Hu, Q Bai, Y I Nechayev, P S Hall, *University of Birmingham, UK*, M Gallo, M Bozzetti, *Politecnico di Bari, Italy*

Th1.7 Convened Session – AMTA/ACE - Wireless and Small Antenna Measurements

Chair: Doren Hess, *MI Technologies, USA*

Co-Chair: Jan Carlsson, *SP Technical Research Institute of Sweden, Sweden*

Th1.7.1 08.30 – 08.50

Convened - Theoretical and Experimental Validation of a Generalized Wheeler Cap Method

C Mendes, *Instituto Superior de Engenharia de Lisboa, Portugal & Instituto de Telecomunicações, Portugal*, C Peixeiro, *Instituto de Telecomunicações, Portugal*

Th1.7.2 08.50 – 09.10

Convened - Fast Global Characterization of 2G and 3G Mobile Phones using a Reverberation Chamber

V Monebhurrin, *Supélec, France*

Th1.7.3 09.10 – 09.30

Convened - Measurement of Embedded Element Efficiencies of Wideband Dense Arrays in Reverberation Chamber

P-S Kildal, *Chalmers University of Technology, Sweden*, M Franzén, *Bluetest AB, Sweden*, M V Ivashina, W van Cappellen, *Astron Institute, Netherlands*

Th1.7.4 09.30 – 09.50

Convened - Very Fast Measurements of Effective Polarization Diversity Gain in a Reverberation Chamber

M Andersson, C Orlenius, M Franzén, *Bluetest AB, Sweden*

Th1.7.5 09.50 – 10.10

Convened - Measurements of Total Radiated Power of UMTS Phones in Reverberation Chamber

C Orlenius, M Franzén, *Bluetest AB, Sweden*, P Lioliou, P-S Kildal, *Chalmers University of Technology, Sweden*

Th1.8 Convened Session – UWB Antennas for Radar and Sensing

Chair: Alex Yaravoy, *International Research Centre for Telecommunications-transmission and Radar, Netherlands*

Co-Chair: Dan Schaubert, *University of Massachusetts Amherst, USA*

Th1.8.1 08.30 – 08.50

Convened - On UWB Transient Generation System Architectures: Consequences on Antenna Design

A Godard, S Vauchamp, J Andrieu, M Lalande, *IUT GEII, France*, V Bertrand, *CISTEME, France*, B Jecko, *Université de Limoges, France*

Th1.8.2 08.50 – 09.10
Convened - **Transmissions and Polarisation from Pulse based UWB Antenna and Array**
M Y W Chia, A E C Tan, *Institute for Infocomm Research, Singapore*

Th1.8.3 09.10 – 09.30
Convened - **An Approach to Design Antennas and Arrays for Broadband Communication and Sensor Systems**
A O Boryssenko, D H Schaubert, *University of Massachusetts, USA*

Th1.8.4 09.30 – 09.50
Convened - **UWB MIMO Radar Arrays for Small Area Surveillance Applications**
A Martinez-Vazquez, J Fortuny-Guasch, *Joint Research Centre, European Commission, Italy*

Th1.8.5 09.50 – 10.10
Convened - **Eight - Element UWB Coplanar Monopole Array for Radar Applications**
E Pancera, W Wiesbeck, *Universität Karlsruhe (TH), Germany*

Th1.9 Convened Session – Spatial Properties of the Troposphere in Propagation Modelling

Chair: Aldo Paraboni, *Politecnico di Milano, Italy*

Co-Chair: César Amaya, *Communications Research Centre, Canada*

Th1.9.1 08.30 – 08.50
Convened - **Microwave Modelling of Rain Attenuation Fields using Disdrometer Measurements and Stochastic Methods**
F S Marzano, *Sapienza University of Rome, Italy*, M Montopoli, *University of L'Aquila, Italy*

Th1.9.2 08.50 – 09.10
Convened - **Results from a Very Short Distance Dynamic Diversity Experiment**
F Machado, P Mariño, F P Fontán, *University of Vigo, Spain*, E Vilar, *University of Portsmouth, UK*

Th1.9.3 09.10 – 09.30
Convened - **Rain Measurement for Improved Propagation Modelling in Czech Republic**
O Fiser, D Rezacova, *Institute of Atmospheric Physics, Czech Republic*

Th1.9.4 09.30 – 09.50
Convened - **Spatial Correlation Analysis of Rainfall Rates for Advanced Attenuation Mitigation Technologies**
H Fukuchi, T Saito, *Tokyo Metropolitan University, Japan*

Th1.9.5 09.50 – 10.10
Convened - **A New Satellite Experiment in the Q/V Band for the Verification of Fade Countermeasures based on the Spatial Non-Uniformity of Attenuation**
A Paraboni, *Politecnico di Milano, Italy*, A Vernucci, *Space Engineering SpA, Italy*, L Zuliani, *ASI, Italy*, E Colzi, A Martellucci, *ESTEC, European Space Agency, Netherlands*

Th1.10 Antennas as for Mobile Terminals and RFID Applications

Chair: Yiannis Vardaxoglou, *Loughborough University, UK*

Co-Chair: Kyohei Fujimoto, *University of Fukui, Japan*

Th1.10.1 08.30 – 08.50
Multi-Band Printed Monopole Antenna for Ubiquitous Module in Mobile Station
Y Kimura, T Imai, *NTT DoCoMo, Inc, Japan*, Y Ebine, *DoCoMo Technology, Inc. Japan*

Th1.10.2 08.50 – 09.10
Triple-Band WLAN Monopole Antennas
H Wang, M Zheng, *Nokia UK Limited, UK*

Th1.10.3 09.10 – 09.30

A Textile Antenna based on High-Performance Fabrics

C Hertleer, H Rogier, L Vallozzi, F Declercq, *Ghent University, Belgium*

Th1.10.4 09.30 – 09.50

Multiple Antenna Concept based on Characteristic Modes of Mobile Phone Chassis

S K Chaudhury, *Siemens, Germany*, W L Schroeder, *mimoOn GmbH, Germany*, H J Chaloupka, *Bergische Universitaet Wuppertal, Germany*

Th1.10.5 09.50 – 10.10

Convened - Virtual Prototyping & Failure Mode and Effect Analysis (FMEA) in Industrial Design Processes on the Basis of Mobile Device Terminals

N Chavannes, N Kuster, *IT'IS Foundation, Switzerland*, R Tay, *Motorola Mobile Devices Design Centre, Singapore*, F Núñez, F Ofli, *SPEAG, Switzerland*,

Th1.11 AMTA - Near Field Measurements and Antenna Diagnostics

Chair: Ron Lyon, *SELEX Sensors and Airborne Systems, UK*

Co-Chair: Lance Bamford, *Quintel, UK*

Th1.11.1 08.30 – 08.50

Error Corrections in Outdoor Cylindrical Near Field Radar Antenna Measurement System

F Martín, *Indra Sistemas, South Africa*, S Burgos, M Sierra Castañer, C Vicente Pou, J L Besada Sanmartín, *Universidad Politécnica de Madrid, Spain*

Th1.11.2 08.50 – 09.10

Antenna Modelling by Infinitesimal Dipoles based on Near Field Measurements

M Serhir, P Besnier, M Drissi, *IETR-INSA, France*

Th1.11.3 09.10 – 09.30

Optoelectronic System for Near Field Antennas Measurements

Y Yashchyshyn, J Modelski, P Wegrzyniak, *Warsaw University of Technology, Poland*

Th1.11.4 09.30 – 09.50

An Improved Holographic Technique for Medium-Gain Antenna near Field Measurements

M P Leach, D Smith, S P Skobelev, M Elsdon, *Northumbria University, UK*

Th1.11.5 09.50 – 10.10

Non-Isotropic Scattering Environments with Reverberation Chambers

J F Valenzuela-Valdés, M A García-Fernández, A M Martínez-González, D Sánchez-Hernández, *Universidad Politécnica de Cartagena, Spain*

Th2.2 Convened Session – Reconfigurable and Multiple Beams Space Antennas (Cont)

Chair: Cyril Mangenot, *ESTEC, European Space Agency, Netherlands*

Co-Chair: Rob Lewis, *BAE Systems, UK*

Th2.2.6 10.40 – 11.00

Convened - Sparse and Thinned Arrays for Multiple Beam Satellite Applications

G Toso, C Mangenot, A G Roederer, *ESTEC, European Space Agency, Netherlands*

Th2.2.7 11.00 – 11.20

Convened – Reconfigurable Transmit Antenna Concepts for Ku Band Flexible Innovative Payloads

F Croq, P Voisin, *Thales Alenia Space, France*, I Albert, C Laporte, C Bazile, *CNES, France*

Th2.2.8 11.20 – 11.40

Convened - Advanced Optimization Techniques for Satellite Multi-Beam and Reconfigurable Antenna and Payload Systems

P Gabellini, N Gatti, *Space Engineering S.p.A, Italy*

Th2.2.9 11.40 – 12.00
Convened - **Development of a Direct Radiating Arrays for Future Ku Band TELECOM Applications**
A W J Dawkins, W J Gulloch, D J Morris, H K Patel, R C Thaker, S S Stirland, *Astrium Ltd, UK*

Th2.2.10 12.00 – 12.20
Convened - **RF-MEMS for Reconfigurable Satellite Antenna**
T Hirano, K Miyazaki, M Hatamoto, R Yasumitsu, *Mitsubishi Electric Corporation, Japan*, K Hama, F Watanabe, *Institute for Unmanned Space Experiment Free Flyer, Japan*

Th2.3 Convened Session – MIMO Channel Models (Cont)

Chair: Andreas Molisch, *Lund University, Sweden*

Co-Chair: Yoshio Karasawa, *University of Electro-Communications, Japan*

Th2.3.6 10.40 – 11.00
Convened - **Performance Considerations on MIMO Spatial Multiplexing from the Viewpoint of Antennas and Propagation**
Y Ogawa, H P Bui, H Nishimoto, T Nishimura, T Ohgane, *Hokkaido University, Japan*

Th2.3.7 11.00 – 11.20
Convened - **Dynamics of Spatial Eigen Modes in Measured Mimo Channels with Different Antenna Modules**
M A Beach, M W Webb, *Fujitsu Laboratories Europe Ltd., UK*, M Hunukumbure, *University of Bristol, UK*

Th2.3.8 11.20 – 11.40
Convened - **Multi-Antenna Channel Model for Space-Polarization Systems**
T Hult, A Mohammed, *Blekinge Institute of Technology, Sweden*, E Falletti, F Sellone, *Politecnico di Torino, Italy*

Th2.3.9 11.40 – 12.00
Convened - **Multi-User MIMO Capacity from Measurements in Indoor Environment with In- and Outdoor Base Stations**
L Garcia-Garcia, L de Haro, *Universidad Politecnica de Madrid, Spain*, B Lindmark, N Jaldén, *KTH, Sweden*

Th2.3.10 12.00 – 12.20
Convened - **An Experimental Investigation into the Feasibility of MIMO Techniques within the HF Band**
S D Gunashekar, E M Warrington, H Zhang, N Abbasi, *University of Leicester, UK*, S Salous, W Kassem, *University of Durham, UK*, L Bertel, D Lemur, *University of Rennes 1, France*

Th2.4 Metamaterials (Cont)

Chair: Caroles Martin-Pascual, *Universidad Carlos III de Madrid, Spain*

Co-Chair: Richard W Ziolkowski, *University of Arizona, USA*

Th2.4.6 10.40 – 11.00
Comparison of EBG Substrates with and without Vias for GALILEO/GPS Applications
R Baggen, M Martínez-Vázquez, J Leiß, S Holzwarth, *IMST GmbH, Germany*

Th2.4.7 11.00 – 11.20
Design and Fabrication of a Cross-Polarising AMC Surface
P J Ferrer, J M González-Arbesú, J Romeu, *Universitat Politècnica Catalunya, Spain*, C Craeye, *Université Catholique de Louvain, Belgium*

Th2.4.8 11.20 – 11.40
EBG Antenna Performance Enhancement using Conducting Element FSS
L Moustafa, B Jecko, M Thévenot, T Monédière, *University of Limoges, France*, R Gonzalo, *Public University of Navarra, Spain*

Th2.4.9 11.40 – 12.00
New Process of Circularly Polarized EBG Antenna by using Meander Lines
E Arnaud, R Chantalat, M Koubeissi, C Menudier, T Mondiere, M Thévenot, B Jecko, *University of Limoges, France*

Th2.4.10 12.00 – 12.20
A Novel Technique to Eliminate the Open Stopband in 1-D Periodic Printed Leaky-Wave Antennas
S Paulotto, P Baccarelli, F Frezza, *“La Sapienza” University of Rome, Italy*, D R Jackson, *University of Houston, USA*

Th2.5 Convened Session – ACES Session (Cont)
Chair: Atef Elsherbeni, *University of Mississippi, USA*
Co-Chair: Juan Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

Th2.5.6 10.40 – 11.00
Convened - **Mode Characterization in Electrically Large Waveguides using Compact FDTD Algorithm**
M F Hadi, S F Mahmoud, *Kuwait University, Kuwait*

Th2.5.7 11.00 – 11.20
Convened - **EH Antenna**
E Hart, *EH Antenna Systems, USA*

Th2.5.8 11.20 – 11.40
Convened - **Enhanced Performance of Corner Reflector Antennas using Metamaterial Cylinders**
B H Henin, A Z Elsherbeni, *University of Mississippi, USA*, M H Al Sharkawy, *Arab Academy for Science and Technology and Maritime Transport, Egypt*

Th2.5.9 11.40 – 12.00
Convened - **Prediction of Large Array Characteristics from Small Array Parameters**
A A Kishk, *University of Mississippi, USA*

Th2.5.10 12.00 – 12.20
Convened - **Integration of Taguchi's Method and Particle Swarm Optimization for Electromagnetic Global Optimization**
W C Weng, F Yang, A Z Elsherbeni, *University of Mississippi, USA*

Th2.6 Convened Session – Antennas and Propagation for Body Centric Wireless Communications (Cont)
Chair: Yang Hao, *Queen Mary's University, London, UK*
Co-Chair: Raj Mittra, *Penn State University, USA*

Th2.6.6 10.40 – 11.00
Convened - **Characterization of Received Pulses by Antennas in Proximity of Human Body**
T S P See, Z N Chen, *Institute for Infocomm Research, Singapore*

Th2.6.7 11.00 – 11.20
Convened - **Body Implant Communication – Making it Possible**
H Higgins, *Zarlink Semiconductor, UK*

Th2.6.8 11.20 – 11.40
Convened - **Wearable and Implantable Antennas in Body-Centric Communications**
Y Rahmat-Samii, *UCLA, USA*

Th2.6.9 11.40 – 12.00
Convened - **An Analytical Model for Intravascular MR Antennas**
H J Visser, *TNO Science and Industry & Eindhoven University of Technology, Netherlands*, N A A Op den Kamp, M J H Aben, *University Medical Center Utrecht, & Eindhoven University of Technology, Netherlands*, J-H Seppenwoolde, L W Bartels, C J G Bakker, *University Medical Center Utrecht, Netherlands*, A G Tijhuis, *Eindhoven University of Technology, Netherlands*

Th2.6.10 12.00 – 12.20
Convened - **Human Body Phantoms for Evaluation of Wearable and Implantable Antennas**
K Ito, *Chiba University, Japan*

Th2.7 Convened Session –AMTA/ACE Wireless and Small Antenna Measurements (Cont)
Chair: Doren Hess, *MI Technologies, USA*
Co-Chair: Jan Carlsson, *SP Technical Research Institute of Sweden, Sweden*

Th2.7.6 10.40 – 11.00
Convened - **Optimization of the Size and the Shape of a Wheeler Cap for Mobile Phone Antenna Efficiency Measurements**
T M Vu, *LAAS-CNRS, France*, A Diallo, C Luxey, G Kossiavas, *University of Nice-Sophia Antipolis, France*

Th2.7.7 11.00 – 11.20
Convened - **From the Radiation Pattern Measurements Towards True Performance Evaluation of Mobile Terminal Antennas**
T A Laitinen, M Mustonen, P Suvikunnas, J Villanen, C Icheln, P Vainikainen, *Helsinki University of Technology, Finland*, J Krogerus, *Nokia, Finland*

Th2.7.8 11.20 – 11.40
Convened - **Small Antenna Measurements in Spherical Nearfield Systems**
L J Foged, *SATIMO, Italy*, L Duchesne, L Durand, F Herbinier, N Gross, *SATIMO, France*

Th2.7.9 11.40 – 12.00
Convened - **Efficiency Measurement of UWB Small Antennas in Reverberation Chambers**
A Sharaiha, P Besnier, G Le Fur, *IETR, France*

Th2.7.10 12.00 – 12.20
Measurement of Radar Cross Section for Passive UHF RFID Tag
A Pouzin, *LCIS 50 & Laboratoire National d'Essais, France*, T-P Vuong, S Tedjini, *LCIS 50, France*, J Perdureau, L Dreux, *Laboratoire National d'Essais, France*

Th2.8 Convened Session – UWB Antennas for Radar and Sensing (Cont)
Chair: Alex Yarovoy, *International Research Centre for Telecommunications-transmission and Radar, Netherlands*
Co-Chair: Dan Schaubert, *University of Massachusetts Amherst, USA*

Th2.8.6 10.40 – 11.00
Convened - **Wideband and Wide Scan Phased Array Microstrip Patch Antennas for Small Platforms**
R Erickson, R Gunnarsson, T Martin, L-G Huss, L Pettersson, P. Andersson, A Ouacha, *Swedish Defence Research Agency, Sweden*

Th2.8.7 11.00 – 11.20
Convened - **Performance Analysis of UWB Antenna Array for Short-Range Imaging**
B Yang, A G Yarovoy, L P Ligthart *Delft University of Technology, Netherlands*

Th2.8.8 11.20 – 11.40
Convened - **Planar UWB Dipole Antennas Optimization using PSO Method**
P Cerny, J Nevrlý, M Mazanek, *Czech Technical University in Prague, Czech Republic*

Th2.8.9 11.40 – 12.00
Convened - **An FDTD-based Subsurface Imaging Virtual Tool for Testing UWB Antenna Array Characteristics**
E Karpat, *Uuludağ University, Turkey*, M Cakir, *Kocaeli University, Turkey*, L Sevgi, *Doğus University, Turkey*

Th2.8.10 12.00 – 12.20
A New Low-Profile Wide-Scan Phased Array for UWB Applications
D Tallini, A Galli, *Sapienza University of Rome, Italy*, M Ciattaglia, L Infante, A De Luca, M Cicolani, *Selex Sistemi Integrati S.p.A., Italy*

Th2.9 Convened Session – Spatial Properties of the Troposphere in Propagation Modelling (Cont)
Chair: Aldo Paraboni, *Politecnico di Milano, Italy*
Co-Chair: César Amaya, *Communications Research Centre, Canada*

Th2.9.6 10.40 – 11.00
Convened - **Radar-Derived Joint Statistics of Rain Attenuation in Multiple Locations at Various Distances: Data, Models and Applications**
S Bertorelli, M Buti, *Politecnico di Milano, Italy*

Th2.9.7 11.00 – 11.20
Convened - **Satellite Downlink Power Control Interference Effects in WiMAX Networks**
A D Panagopoulos, T D Kritikos, P-D M Arapoglou, J D Kanellopoulos, P G Cottis, *National Technical University of Athens, Greece*

Th2.9.8 11.20 – 11.40
Convened - **Modelling the Spatial Distribution of Precipitations, Clouds and Atmospheric Water Vapour for the Design of Advanced Satellite Communication Systems**
S Bertorelli, L Luini, C Capsoni, *Politecnico di Milano, Italy*, A Martellucci, *ESTEC, European Space Agency, Netherlands*

Th2.9.9 11.40 – 12.00
Convened - **Future Technology for Measuring Precipitation & Cloud Dynamics from Space: Part 1. Measurement from Low Earth Orbit (LEO)**
A Mugnai, *Italian National Research Council, Italy*, E A Smith, *NASA/Goddard Space Flight Center, USA*

Th2.9.10 12.00 – 12.20
Convened - **Future Technology for Measuring Precipitation & Cloud Dynamics from Space: Part 2. Measurement from Geostationary Earth Orbit (GEO)**
A Mugnai, B Bizzarri, *Italian National Research Council, Italy*, C V Chandra, *Colorado State University, USA*, E Im, S Tanelli, *NASA/Jet Propulsion Laboratory, USA*, F Marks, *NOAA/Atlantic Oceanographic & Meteorological Laboratory, USA*, E A Smith, *NASA/Goddard Space Flight Center, USA*, G J Tripoli, *University of Wisconsin, USA*

Th2.10 Antennas as for Mobile Terminals and RFID Applications (Cont)
Chair: Yiannis Vardaxoglou, *Loughborough University, UK*
Co-Chair: Kyohei Fujimoto, *University of Fukui, Japan*

Th2.10.6 10.40 – 11.00
Gain and Efficiency Enhanced Flip-up Antennas for 3D Integrated Wireless Sensor Applications
S Cheng, E Ojefors, S Ogden, K Hjort, A Rydberg, *Uppsala University, Sweden*

Th2.10.7 11.00 – 11.20
Compact Multi-Frequency PIFA Antenna based on Backward Modes
O Quevedo-Teruel, E Rajo-Iglesias, *Universidad Carlos III de Madrid, Spain*

Th2.10.8 11.20 – 11.40
GA/MoM Optimization of PIFA Antennas with Meandering Slits
M Kisangiri, A A Kucharski, *Wroclaw University of Technology, Poland*

Th2.10.9 11.40 – 12.00
Convened - Multi-Goal (S-Parameter, OTA, SAR) Optimization of Industrial Mobile Phones using Genetic Algorithms
F Núñez, E Ofli, N Chanvannes, *SPEAG, Switzerland*, N Kuster, *IT'IS Foundation, Switzerland*

Th2.10.10 12.00 – 12.20
Comparison of Key-Fob Antennas for Vehicle Access System
G-A Chakam, M Brzeska, A Schäfer, M Weinberger, *Siemens, Germany*

Th2.11 AMTA - Near Field Measurements and Antenna Diagnostics (Cont)
Chair: Ron Lyon, *SELEX Sensors and Airborne Systems, UK*
Co-Chair: Lance Bamford, *Quintel, UK*

Th2.11.6 10.40 – 11.00
Equi-Spaced-Points-Method (ESPM) for Antenna Radiation Pattern (ARP) Measurements with 3D-Rotation
S Ullah, J A Flint, R D Seager, *Loughborough University, UK*

Th2.11.7 11.00 – 11.20
Differential Phase Measurement Method for Determining Scanner Planarity at Submillimeter Wavelengths
T Koskinen, J Mallat, J Ala-Laurinaho, M Vaaja, A Karttunen, V Viikari, A V Räisänen, *Helsinki University of Technology, Finland*

Th2.11.8 11.20 – 11.40
Neural Network Approach to Diagnose Faults of Antenna Arrays
D Vakula, N V S N Sarma, *National Institute of Technology, India*

Th2.11.9 11.40 – 12.00
A Comparison Among Several Techniques for Finding Defective Elements in Antenna Arrays
J A Rodríguez, M Fernández-Delgado, J Brégains, R Iglesias, S Barro, F Ares, *University Santiago de Compostela, Spain*

Th2.11.10 12.00 – 12.20
Wave Diffraction Phenomenon via Measurement
G G Cheng, Y Zhu, *Allwave Corporation, USA*

Th3.2 Invited Papers
Chair: Rob Lewis, *BAE Systems, UK*
Co-Chair: Yang Hao, *Queen Mary University of London, UK*

Th3.2.1 14.00 – 14.45
Invited Paper - Challenges of Terahertz
A V Räisänen, *TKK Helsinki University of Technology, Finland*

Th3.2.2 14.45 – 15.30
Invited Paper – Subarray Technology for Large Scanning Arrays
R J Mailloux, *University of Massachusetts, USA*

Th3.3 Invited Papers

Chair: Carlo Rizzo, *MI Technologies (Europe)/AMTA, UK*

Co-Chair: Bruno Casali, *IDS, Italy*

Th3.3.1 14.00 – 14.45

Invited Paper - **Antenna Research in China**

W X Zhang, *Southeast University, China*

Th3.3.2 14.45 – 15.30

Invited Paper - **Applications of Advanced Shielded Planar EM Analysis Techniques to Antenna Analysis**

J C Rautio, *Sonnet Software, USA*

Th4.3 17.00 – 18.00

The Life of James Clerk Maxwell

Lecture by James C Rautio, *Sonnet Software, USA*

Chair: Juan Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

Co-Chair: Ron Lyon, *SELEX Sensors and Airborne Systems, UK*

Th4.9 Analysis and Modelling

Chair: Guy Vandenbosch, *Katholieke Universiteit Leuven, Belgium*

Co-Chair: K A Michalski, *Texas A & M University, USA*

Th4.9.1 16.00 – 16.20

Parallel-MLFMA Solution of CFIE Discretized with Tens of Millions of Unknowns

Ö Ergül, L Gürel, *Bilkent University, Turkey*

Th4.9.2 16.20 – 16.40

Accurate Solutions of Scattering Problems Involving Low-Contrast Dielectric Objects with Surface Integral Equations

Ö Ergül, L Gürel, *Bilkent University, Turkey*

Th4.9.3 16.40 – 17.00

Compression of the Fast Multipole Method using the Singular Value Decomposition

J M Taboada, L Landesa, *Universidad de Extremadura, Spain*, J L Rodríguez, M G Araújo,

I García-Tuñón, F Obelleiro, *Universidad de Vigo, Spain*

Th4.9.4 17.00 – 17.20

On the Application of Characteristic Modes for the Analysis of Large Scale Antenna Problems

M Cabedo-Fabrés, E Antonino-Daviu, D Sánchez-Escuderos, V M Rodrigo-Peñarrocha, *Universidad Politécnica de Valencia, Spain*

Th4.9.5 17.20 – 17.40

Application of Agate (A Finite-Difference Time-Domain Tool) to Antennas on Complex Platforms

S P Benham, T J Murphy, D J Knights, *SELEX Communications, UK*, J A Lord, *BAE Systems UK, UK*

Th4.10 Modelling MIMO and Spatial Channels

Chair: Andreas Richter, *Helsinki University, Finland*

Co-Chair: Reiner Thomä, *Technical University Ilmenau, Germany*

Th4.10.1 16.00 – 16.20

The Accuracy of Tensor and Directional Methods for MIMO Channel Modeling

J W Wallace, *Jacobs University, Bremen, Germany*, B T Maharaj, *University of Pretoria, South Africa*

Th4.10.2 16.20 – 16.40
Analysis of Practical MIMO-OFDM Performance Inside a Bus based on Measured Channels at 5.24 GHz
H Suzuki, Z Chen, I B Collings, *CSIRO, Australia*

Th4.10.3 16.40 – 17.00
Frequency-Selective Wallpaper for Reducing Interference while Increasing MIMO Capacity in Indoor Environments
J-V Rodríguez, L Juan-Llácer, *Universidad Politécnica de Cartagena, Spain*, M Gustafsson, F Tufvesson, A Karlsson, *Lund University, Sweden*

Th4.10.4 17.00 – 17.20
Sounding, Channel Characterisation and Cellular Handset Positioning in a Large Indoor Environment at 2 GHz
W I Kassem, *Durham University, UK*, H J Strangeways, M Ghogho, *University of Leeds, UK*

Th4.10.5 17.20 – 17.40
Effect of the Polarization Diversity on the DOA Estimation using Multiple Antennas
J Mora-Cuevas, C Gómez-Calero, L García-García, L de Haro Ariet, *Universidad Politécnica de Madrid, Spain*

Th4.11 Imaging and Scattering

Chair: P Frangos, *National Technical University of Athens, Greece*

Co-Chair: Andrea Vallecchi, *Università degli Studi di Firenze, Italy*

Th4.11.1 16.00 – 16.20
Inverse Scattering and Radar Cross Section of Heterogeneous Hydrometeor Ensemble
F J Yanovsky, V V Marchuk, Y P Ostrovsky, A A Pitertsev, *National Aviation University, Ukraine*, L P Ligthart, *Delft University of Technology, Netherlands*

Th4.11.2 16.20 – 16.40
A Clutter Reduction Technique for Microwave Reconstruction of Shallow Underground Targets
V A Mikhnev, *Institute of Applied Physics, Belarus*, P Vainikainen, *Helsinki University of Technology, Finland*

Th4.11.3 16.40 – 17.00
Correction of the Off-Axis Reflector Beam Squint in Passive Images of the Fourth Stokes Parameter at 91 GHz
A Durić, B Hitz, A Murk, C Mätzler, *University of Bern, Switzerland*

Th4.11.4 17.00 – 17.20
Fast and High-Resolution 3-D Imaging Algorithm with Spectrum Shift for UWB Pulse Radars
S Kidera, T Sakamoto, T Sato, *Kyoto University, Japan*

Th4.11.5 17.20 – 17.40
Closed-Form Physical Optics Formulas for the Far-Field Scattering from Finite Cylindrical Metallic Shells with a Conical-Section Profile
A Vallecchi, *University of Florence, Italy*

ThPA - Antenna Poster Session 4: Analytic and Computational Methods 08.30 – 18.00

Chair: John Arnold, *University of Glasgow, UK*

Co-Chair: Yang Hao, *Queen Mary University of London, UK*

Integral Equation Methods

ThPA.001
Integral Equation Macromodel of a Cavity-Backed Aperture

A A Kucharski, *Wroclaw University of Technology, Poland*

ThPA.002

Use of Advanced Truncated-Array Green's Function in MOM Analysis of Large Finite Arrays

A Polemi, *University of Modena and Reggio Emilia, Italy*, F Vipiana, G Vecchi, *Politecnico di Torino, Italy*, F Mariottini, S Maci, *University of Siena, Italy*

ThPA.003

Asymptotic MFIE for Optimizing Dual Reflectors Pattern

M Graña, M Arias, O Rubiños, A García-Pino, *University of Vigo, Spain*

ThPA.004

The Solution of Large EFIE Problems via Preconditioned Multilevel Fast Multipole Algorithm

T Malas, L Gürel, *Bilkent University, Turkey*

ThPA.005

Effective Preconditioners for Large Integral-Equation Problems

T Malas, Ö Ergül, L Gürel, *Bilkent University, Turkey*

ThPA.006

PO-MLFMA Hybrid Technique for the Solution of Electromagnetic Scattering Problems Involving Complex Targets

L Gürel, A Manyas, Ö Ergül, *Bilkent University, Turkey*

ThPA.007

Conditions for Solution Convergence in Integral Equation Analysis of Thin, Circular Loop Antennas

G Fikioris, P J Papakanellos, *National Technical University of Athens, Greece*, H T Anastassiou, *Hellenic Aerospace Industry, Greece*

ThPA.008

EM Far-Field of Vertical Dipole Antenna above Real Ground: Two-Image Approximation (TIA) of Sommerfeld's Integral

M P Rančić, P D Rančić, *University of Niš, Serbia*

ThPA.009

Surface Current Distribution on Closely Parallel Wires within Antennas

R A Abd-Alhameed, P S Excell, *Bradford University, UK*

ThPA.010

Evaluation of Singular Potential Integrals in the Method of Moments using Linearly Phased RWG Basis Functions

M G Araújo, F Obelleiro, J L Rodríguez, I García-Tuñón, *Universidad de Vigo, Spain*, J M Taboada, *Universidad de Extremadura, Spain*

ThPA.011

Closed Form Asymptotic Expressions for Slot Mutual Admittance to speed up MoM Matrix Filling Time in RLSA Full Wave Analysis

M Albani, *University of Siena, Italy*, A Mazzinghi, A Freni, *University of Florence, Italy*

ThPA.012

Structure Decomposition Technique and Impedance Matrix Interpolation for Efficient Broad Band Analysis by Method of Moments

M Surma, D Wójcik, *Silesian University of Technology, Poland*

ThPA.013

Frequency Domain Surface Integral Equations of Picard's Extended Maxwell System

M Taskinen, P Ylä-Oijala, *Helsinki University of Technology, Finland*, S Vänskä, *University of Helsinki, Finland*

ThPA.014

Interpolation of Green's Functions with 2D Periodicity in Layered Media

V Volski, G A E Vandenbosch, *Katholieke Universiteit Leuven, Belgium*, P Baccarelli, F Frezza, A Galli, S Paulotto, G Valerio, *University of Rome, Italy*

ThPA.015

A Benchmarking of Six Software Packages for Full-Wave Analysis of Microstrip Antennas

A Vasylychenko, *Katholieke Universiteit Leuven, Belgium & IMEC, Belgium*, Y Schols, G A E Vandenbosch, *Katholieke Universiteit Leuven, Belgium*, W De Raedt, *IMEC, Belgium*

Analysis, Synthesis, Modelling and Scattering

ThPA.016

Analysis of Isolation of Two-Port Antenna Systems using Simultaneous Matching

J Rahola, J Ollikainen, *Nokia Research Center, Finland*

ThPA.017

Efficient, Semi-Analytical Characterization of a Double - Loop Antenna Array

A I Sotiropoulos, L C Tatalopoulos, *Hellenic Air Force Academy, Greece*, H T Anastassiou, *Hellenic Aerospace Industry, Greece*

ThPA.018

Full Wave Analysis of Electric and Magnetic Line Sources in the Presence of a Strip Grating over a Grounded Dielectric Slab Structure

Y Kaganovsky, R Shavit, *Ben-Gurion University of the Negev, Israel*

ThPA.019

Analysis of Space and Surface Waves Excitation in Layered Magnetodielectric and Metamaterial Structures in the Context of Radiation and Diffraction Problems

S Knyazev, L Lesnaya, S Shabunin, *Ural State Technical University, Russia*

ThPA.020

The Method of Analytical Regularization in the Electromagnetic Wave Scattering Wave by Thin Disks

M V Balaban, *NASU, Ukraine*

ThPA.021

A Study on Received and Re-radiated Power of a Receiving Antenna

H Onuki, K Umebayashi, Y Kamiya, K Hirasawa, Y Suzuki, *Tokyo University of Agriculture and Technology, Japan*

ThPA.022

An Interferometric Approach to Radar Doppler Analysis: Theory and Results

G De Pasquale, A Sarri, C Bonopera, L Fiori, *IDS Ingegneria Dei Sistemi S.p.A., Italy*

ThPA.023

Direct Calculation Antenna's Characteristics of Nonuniform Strip Dipole

G V Igithanjan, *Ural Technical Institute of Communication, Russia*, B A Panchenko, *Ural State Technical University, Russia*

ThPA.024

Dispersion Properties of an Array of Slots Etched at the Interface between Two Infinite Dielectric Materials

A Neto, G Gerini, *TNO Defense Safety and Security, Netherlands*, S Bruni, *Calearo, Italy*, S Maci, *University of Siena, Italy*

ThPA.025

Influence of Conducting Body on the Biconical Electrode Field

Z Ž Cvetković, S R Aleksić, M T Perić, B R Petković, *University of Niš, Serbia*

ThPA.026

Vertical Ground-based Antenna with Reinforced Concrete Foundation as Counterpois

M P Rančić, P D Rančić, *University of Niš, Serbia*

ThPA.027

Comprehensive Synthesis Method for Coupled Antenna Array Design

J Drouet, M Thevenot, R Chantalat, T Monediere, B Jecko, *University of Limoges, France*

ThPA.028

Synthesis of Plane and Curved Multilayer Electromagnetic Absorbers

B A Panchenko, E N Glotov, *Ural State Technical University, Russia*, M G Gizatullin, *Ural Technical Institute of Communication, Russia*

ThPA.029

Modelling of a Periodic Quasi-3D Array using an Asymptotic Extraction Technique

V Volski, Y Schols, G A E Vandebosch, *Katholieke Universiteit Leuven, Belgium*

ThPA.030

Multiport Network Modeling of a Complex Canonically Shaped Patch Antenna

A Holub, M Polívka, *Czech Technical University in Prague, Czech Republic*

ThPA.031

Mathematical and Physics Modelling of Fractal Antennas and Fractal Frequency Selective Surfaces and Volumes for the Fractal Radio Systems

A A Potapov, E N Matveev, V A Potapov, A V Laktyunkin, *Russian Academy of Sciences, Russia*

ThPA.032

Physical Limitations on Scattering and Absorption of Antennas

M Gustafsson, C Sohl, G Kristensson, *Lund University, Sweden*

ThPA.033

System Simulations based on Antenna and Scattering Analysis - Capabilities and Limitations

G Greving, W D Biermann, *NAVCOM Consult, Germany*

ThPA.034

Plane-of-Scattering Bistatic Scattering Matrix of Simply Shaped Targets

E Kemptner, A Osipov, *German Aerospace Center, Germany*

Computational Methods

ThPA.035

Finding the Incidence Angle for Rays Refracted Through Multiple Dielectric Layers

Y Ahmed, Y Hao, *Queen Mary, University of London, UK*

ThPA.036

Generation of Wide-Band Data from MM-PO Hybrid Method by [Z] Matrix Interpolation

A Noga, A Karwowski, *Silesian University of Technology, Poland*

ThPA.037

Fast Physical Optics Method for Very Large Parabolic PEC Surfaces with Polygonal Contour

F Vico, E Alfonso, D Gonzalez, M Ferrando, *Universidad Politécnica de Valencia, Spain*

ThPA.038

Geometrical Optics Expression by the MER Line Integrals and the Necessary Convergence Condition

L Rodriguez, K Yukimasa, T Shijo, M Ando, *Tokyo Institute of Technology, Japan*

ThPA.039

Hybrid Vector-Scalar Finite Elements for Curved-Triangle Meshes Applied to the Study of Electromagnetic Resonance

J M Gil, *Universidad Politécnica de Madrid, Spain*, J P Webb, *McGill University, Canada*

ThPA.040

On the Minimization of Numerical Dispersion in Time-Domain Finite Element Method

E Martini, *Technical University of Denmark, Denmark*, A Monorchio, *University of Pisa, Italy*

ThPA.041

A Methodology for Parameter Space Sweep via the Finite Element Method in Microwave Circuits and Antennas

V de la Rubia, J Zapata, *Universidad Politécnica de Madrid, Spain*

ThPA.042

Accurate and Fast Computation of Antenna Coupling using Stationary Iteration Techniques in the Context of the FE-BI Method

A C Polycarpou, A Serghiou, M Vraka, *Intercollege, Cyprus*

ThPA.043

A Robust 3D Mesh Generator for the Dey-Mitra Conformal FDTD Algorithm

G Junkin, J Parrón, *Universidad Autónoma de Barcelona, Spain*

ThPA.044

Efficient 2D Interpolation Technique for Evaluation of Equivalence Principle-Sources in MoM-FDTD Method

T Topa, A Karwowski, *Silesian University of Technology, Poland*

ThPA.045

Parallel Implementation of ADI-FDTD on Shared Distributed Memory Computer

T Stefański, T D Drysdale, *University of Glasgow, UK*

ThPA.046

Efficient Body-of-Revolution (BOR) FDTD Solver Applied to the Analysis and Synthesis of Focusing and EBG Antennas

A Rolland, R Sauleau, M Drissi, *University of Rennes 1, France*, M-S Tong, *Chung-Ang University, South Korea*

ThPA.047

Two-Stage TLM Modelling Approach for More Efficient Analysis of Vehicle Antenna Installations

A R Ruddle, *MIRA Ltd, UK*

ThPA.048

Integration of CBD Solver in the Finite Array GSM Code

J Rubio, *Universidad de Extremadura, Spain*, A Heldring, J M Rius, *Universidad Politécnica de Catalunya, Spain*, M A González, J Zapata, *Universidad Politécnica de Madrid, Spain*

ThPA.049

High Scalability Codes for the Fast Multipole Method

L Landesa, J M Taboada, *Universidad de Extremadura, Spain*

ThPA.050

Currents Reconstruction by Means of a New 2D Extrapolation Matrix

D Sanchez, M Baquero, F Vico, B Bernardo, *Polytechnic University of Valencia, Spain*

Optimisation

ThPA.051

Optimization of the Elliptical E-Shaped Patch Antenna using Particle Swarm Method
M N Moghaddasi, A A Lotfi Neyestanak, *Islamic Azad University, Iran*

ThPA.052

A Modified Particle Swarm Optimizer Applied to Linear Array Synthesis
J R Pérez López, J Basterrechea, *University of Cantabria, Spain*

ThPA.053

Speeding up of GA Optimization Process for Patch Antenna Design
K Michael, A A Kucharski, *Wroclaw University of Technology, Poland*

ThPA.054

On the Optimization of Mobile Terminal Antenna Isolation using the Genetic Algorithm Technique
A Arkko, J Rahola, *Nokia Research Center, Finland*

ThPA.055

Performance Optimization of Monopole Four-Square Array Antenna using the Method of Genetic Algorithms
P Yazdanbakhsh, K Solbach, *University Duisburg-Essen, Germany*

ThPA.056

Global Optimization of a Dual-Band Coaxial Feed using Multidimensional Piecewise Kriging Interpolation
É Choinière, *Defence Research and Development Canada, Canada*

ThPA.057

Optimization of Phased Arrays Integrated with FSS and Feeding Elements based on Parametric Models
D J Bekers, S Monni, N Fiscante, G Gerini, *TNO Defence, Security and Safety, Netherlands*, S M van den Berg, F van de Water, B J Morsink, G H C van Wekhoven, *Thales Nederland, Netherlands*, C Alboin, J-P Martinaud, *Thales Airborne Systems, France*, V Ducros, M Celikas, J Blanche, M Rochette, *Ansys France, France*

ThPA.058

Global Multi-Objective Optimization in the Design of Frequency Selective Surfaces
Z Lukes, J Lacik, Z Raida, *Brno University of Technology, Czech Republic*

ThPP - Propagation Poster Session 08.30 – 18.00

Chair: Leandro-Juan Llacer, *Technical University of Cartagena, Spain*

Co-Chair: Markus Liniger, *Federal Office of Communications, Switzerland*

ThPP.001

Indoor Propagation Modeling for Short Range Devices
L Nagy, *Budapest University of Technology and Economics, Hungary*

ThPP.002

Accuracy of Algorithms for UWB Localization in NLOS Scenarios Containing Arbitrary Walls
M Porebska, G Adamiuk, C Sturm, W Wiesbeck, *Universität Karlsruhe (TH), Germany*

ThPP.003

Joint Probability Density Function of the SSC Combiner Output Signal at Two Time Instants in the Presence of Rayleigh Fading
M Č Stefanović, D S Krstić, M Petrović, D Bandjur, *University of Niš, Serbia*

ThPP.004

Multi-Frequencies Characterization of Buildings Materials: Angular and Polarization Analysis
G Tesserault, N Malhouroux, P Pajusco, *France Telecom Research and Development, France*

ThPP.005

Electromagnetic and System Level Co-Simulation for RFID Radio Link Modeling in Real Environment

F Fuschini, *Marconi Wireless Consortium, Italy*, C Piersanti, F Paolazzi, G Falciasecca, *University of Bologna, Italy*

ThPP.006

An Experimental Consideration on Spatial Correlation and Minimum Eigenvalue for MIMO System using Polarization

H Hirayama, A Hayashi, N Kikuma, K Sakakibara, *Nagoya Institute of Technology, Japan*

ThPP.007

Particle Swarm Optimization for Sage Maximization Step in Channel Parameter Estimation

H Bodur, C A Tunc, D Aktas, V B Erturk, A Altintas, *Bilkent University, Turkey*

ThPP.008

Comparison of Antennas Performances for COFDM DVB-T System - Application to Channel Sounding

F Nivole, C Brousseau, S Avrillon, D Lemur, F Marie, L Bertel, *Université de Rennes 1, France*

ThPP.009

Windowed Oscillatory Integral: An Approach to Compute High-Frequency Wave Fields

V E Grikurov, *St. Petersburg University, Russia*

ThPP.010

UWB Multipath Response Analysis and Ranging Accuracy Improvement

C Yang, Y Huang, D Li, X Tian, *University of Liverpool, UK*

ThPP.011

Multiple Antenna Gain in Ultra-Wideband Indoor Propagation

C Sturm, M Porebska, E Pancera, W Wiesbeck, *Universität Karlsruhe (TH), Germany*

ThPP.012

Achieving Long Range Communication in Cars

G-A Chakam, M Brzeska, *Siemens, Germany*

ThPP.013

Ultra-Wideband Indoor Channel Estimation using a Signal Model based on Measurements

N Iwakiri, T Kobayashi, *Tokyo Denki University, Japan*

ThPP.014

A Component-based Time Domain Wideband Channel Sounder and Measurement Results for the 60 GHz In-Cabin Radio Channel

M Peter, W Keusgen, *Heinrich-Hertz-Institut, Germany*

ThPP.015

Design and Calibration of Antenna Arrays Outdoor MIMO Channel Measurements at 3.5 GHz

G El Zein, H Farhat, *IETR-INSa, France*

Friday, 16 November

Fr1.2 Integrated and MM Wave Antennas

Chair: Jorge Rodrigues da Costa, *Instituto Superior de Ciências do Trabalho e da Empresa, Portugal*

Co-Chair: Wenxun Zhang, *Southeast University, China*

Fr1.2.1

08.30 – 08.50

Packaging of Antenna Modules for Digital Beam Forming at Ka-Band

A Geise, K Kuhlmann, A F Jacob, *TU Hamburg-Harburg, Germany*, O Litschke, W Simon, *IMST GmbH, Germany*

Fr1.2.2 08.50 – 09.10

A Cavity based High Gain MEMS Antenna for Microwave and Millimetre Wave Applications

S K Pavuluri, C H Wang, A J Sangster, *Heriot-Watt University, UK*

Fr1.2.3 09.10 – 09.30

Circularly Polarized Antenna on SOI for the 60 GHz Band

M Barakat, *French Atomic Energy Commission, France & Institute of Microelectronics, Electromagnetism and Photonics, France*, C Delaveaud, *French Atomic Energy Commission, France*
F Ndagijimana, *Institute of Microelectronics, Electromagnetism and Photonics, France*

Fr1.2.4 09.30 – 09.50

Active Integrated Circulating Antenna based on Non-Reciprocal Active Phase Shifters

A Ohlsson, *Chalmers University of Technology, Sweden*, V González-Posadas, *Universidad Politecnica de Madrid, Spain*, D Segovia-Vargas, *Universidad Carlos III de Madrid, Spain*

Fr1.2.5 09.50 – 10.10

Varactor Tunable Helical Antenna

M Sonkki, M Berg, J Pihlaja, S Karhu, E Salonen, *University of Oulu, Finland*, H Jantunen, *University of Oulu, Finland & EMPART Research Group Infotech Oulu, Finland*,

Fr1.3 Convened Session – UWB Propagation Modelling

Chair: Alain Sibille, *ENSTA, France*

Co-Chair: Michael Jensen, *Brigham Young University, USA*

Fr1.3.1 08.30 – 08.50

Convened - Ultra-Wideband Spatial Channel Characterization for Body Area Networks

S Van Roy, F Horlin, Ph De Doncker, *Université Libre de Bruxelles, Belgium*, C Oestges, *Université Catholique de Louvain, Belgium*

Fr1.3.2 08.50 – 09.10

Convened - Study of UWB Multipath Clusters based Signal Array Processing

K Makaratat, S Stavrou, T W C Brown, *University of Surrey, UK*

Fr1.3.3 09.10 – 09.30

Convened - Ultra Wideband Path Loss Modelling in a Line-of-Sight Office Environment

K Haneda, *Tokyo Institute of Technology, Japan*, J Takada, *Tokyo Institute of Technology, Japan & National Institute of Information and Communications Technology, Japan*, K Takizawa, *National Institute of Information and Communications Technology, Japan*

Fr1.3.4 09.30 – 09.50

Convened - An UWB Channel Model Considering Angular Antenna Impulse Response and Polarization

M El-Hadidy, T Kaiser, *Leibniz Universität Hannover, Germany*

Fr1.3.5 09.50 – 10.10

Convened - Deterministic Indoor UWB Radio Channels with Diffuse Scattering

Y Lostanlen, G Gougeon, *SIRADEL France*

Fr1.4 Multiband and UWB Antennas

Chair: Christian Sturm, *Universität Karlsruhe (TH), Germany*

Co-Chair: Yi Huang, *University of Liverpool, UK*

Fr1.4.1 08.30 – 08.50

Miniaturized Reconfigurable UWB Antennas for the Integration into Consumer Electronic Products

I Makris, R D Seager, *Loughborough University, UK*, D Manteuffel, *IMST GmbH, Germany*

Fr1.4.2 08.50 – 09.10

On the Calculation of Time-Domain Response of Antennas Mounted on Large Platforms

D I Olcan, B M Kolundzija, *University of Belgrade, Serbia*, D S Sumic, *WIPL-D d.o.o, Serbia*

Fr1.4.3 09.10 – 09.30

Active UWB Antenna with Tunable Band-Notched Behaviour

E Antonino-Daviu, M Cabedo-Fabrés, M Ferrando-Bataller, V M Rodrigo-Peñarrocha, *Universidad Politécnica de Valencia, Spain*

Fr1.4.4 09.30 – 09.50

Comparison of UWB Antennas According to Systems Performances

F Tchoffo-Talom, S Bories, C Delaveaud, S de Rivaz, *CEA-LETI-MINATEC, France*, B Uguen, *Université de Rennes 1, France*

Fr1.4.5 09.50 – 10.10

Reconfigurable PIFA Antenna with UltraWideband Tuning

S Loizeau, A Sibille, *Ecole Nationale Supérieure de Techniques Avancées, France*

Fr1.5 Reflectors and Feeds

Chair: Antoine Roederer, *ESTEC, European Space Agency, Netherlands*

Co-Chair: Jose Ricardo Descardec, *CNPq, Brazil*

Fr1.5.1 08.30 – 08.50

Reflector Surface Modelling – A European Collaboration

M Albani, M Ettorre, S Maci, *University of Siena, Italy*, P Balling, *ASC, Denmark*, G Gerini, *TNO, Netherlands*, K Pontoppidan, *TICRA, Denmark*, Z Šipuš, *University of Zagreb, Croatia*, D Sjöberg, *University of Lund, Sweden*, G Vecchi, F Vipiana, *Politecnico di Torino, Italy*,

Fr1.5.2 08.50 – 09.10

Reflector Options for MIRANDa (Australian Ska Pathfinder)

C Granet, J S Kot, A R Forsyth, S G Hay, *CSIRO ICT Centre, Australia*, M J Kesteven, J D O'Sullivan, *Australia Telescope National Facility, Australia*

Fr1.5.3 09.10 – 09.30

Enhanced Two Level EBG Antenna for a High F/D Multibeam Reflector Antenna in Ka Band: Design and Characterization

R Chantalat, C Menudier, M Troubat, E Arnaud, T Monédière, M Thévenot, B Jecko, *University of Limoges, France*, P Dumon, *CNES, France*

Fr1.5.4 09.30 – 09.50

Optical Design for a Compact 22 GHz Radiometer for Middle Atmospheric Water Vapor

C Straub, A Murk, N Kämpfer, *University of Bern, Switzerland*, J Teniente, *Public University of Navarra, Spain*

Fr1.5.5 09.50 – 10.10

Experimental Results on Interference Mitigation with a 19 Element Array Feed

K F Warnick, J Waldron, J Landon, M Lilrose, B D Jeffs, *Brigham Young University, USA*, J R Fisher, R Bradley, *National Radio Astronomy Observatory, USA*

Fr1.6 Antennas for Aerospace Applications

Chair: Cyril Mangenot, *ESTEC, European Space Agency, Netherlands*

Co-Chair: William Imbriale, *National Aeronautics and Space Administration, USA*

Fr1.6.1 08.30 – 08.50

Numerical Modelling of Aircraft Antenna Installations

A Thain, G Peres, J-P Estienne, G Sylvand, P Cailleu, P Benjamin, I Terrasse, G-P Piau, G Sabanowski, *EADS Innovation Works, France*

Fr1.6.2 08.50 – 09.10

Analysis of Planar 4x4 Microstrip Antenna Arrays Installed on Airframes

M V T Heckler, A Dreher, *German Aerospace Center, Germany*

Fr1.6.3 09.10 – 09.30

A Novel High Performance Antenna for GNSS Applications

A E Popugaev, R Wansch, S Urquijo, *Fraunhofer Institute for Integrated Circuits, Germany*

Fr1.6.4 09.30 – 09.50

Medium Gain Antenna for Radio Monitoring from Manned Airship

D Gray, *NICT, Japan*, H. Tsuji

Fr1.6.5 09.50 – 10.10

Design of Broadband Antenna Elements and Phased Arrays for Applications in the GPS Frequency Region

T Vaupel, *Institute for High Frequency Physics and Radar Techniques, Germany*

Fr1.7 Convened - Antenna Numerical Modelling and Software Algorithms

Chair: Juan Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

Co-Chair: H Nakano, *Hosei University, Japan*

Fr1.7.1 08.30 – 08.50

Convened - On the Geometry Synthesis of Uniformly Excited Conformal Arrays by the Orthogonal Method

T N Kaifas, J N Sahalos, *Aristotle University of Thessaloniki, Greece*

Fr1.7.2 08.50 – 09.10

Convened - Marrying Circuit Simulation and Electromagnetics to Speed Antenna Design

R C Hall, D Zheng, F Pradeau, Z Cendes, *Ansoft Corporation, USA*

Fr1.7.3 09.10 – 09.30

Convened - Computational Electromagnetics for Broadband Antenna Arrays: A Domain Decomposition Approach

M N Vouvakis, G N Paraschos, D H Schaubert, *University of Massachusetts Amherst, USA*

Fr1.7.4 09.30 – 09.50

Convened - New Parallel Approaches for Fast Multipole Solvers

J Peeters, J Fostier, F Olyslager, D De Zutter, *Ghent University, Belgium*

Fr1.7.5 09.50 – 10.10

Convened - Frequency-Dependent Locally One-Dimensional FDTD Analysis of Plasmonic Waveguide Devices

J Shibayama, R Takahashi, J Yamauchi, H Nakano, *Hosei University, Japan*

Fr1.8 Planar and Conformal Arrays and Imaging Arrays

Chair: Rob Lewis, *BAE Systems, UK*

Co-Chair: Keith Palmer, *University of Stellenbosch, South Africa*

Fr1.8.1 08.30 – 08.50

Improvement of a Broadband Circularly Polarized Planar Array

G León, M R Pino, F Las-Heras, *Universidad de Oviedo, Spain*

Fr1.8.2 08.50 – 09.10

Design of a Large Bandwidth Planar Antenna using Inductive Frequency Selective Surfaces

M Pasian, M Bozzi, L Perregrini, *University of Pavia, Italy*

Fr1.8.3 09.10 – 09.30

A Partially Driven Array Antenna with Parasitic Elements of 60% in Number

T Takano, Y Kazama, *Institute of Space & Astronautical Science / JAXA, Japan*, T Imura, *University of Tokyo, Japan*, M Okumura, *Tokai University, Japan*

Fr1.8.4 09.30 – 09.50

Optimization of Hard Surfaces within Parallel-Plate Waveguides Applied to Slot-Array Antennas

E Alfonso, A Valero-Nogueira, J I Herranz, F Vico, *Universidad Politécnica de Valencia, Spain*

Fr1.8.5 09.50 – 10.10

Design of Radome-Covered Slot-Array Antennas Loaded with Parasitic Dipoles for Circular Polarization at Ka Band

D González-Ovejero, J I Herranz-Herruzo, A Valero-Nogueira, J V Balbastre-Tejedor, *Universidad Politécnica de Valencia, Spain*

Fr1.9 Convened – ACE / AMTA Error Estimation, Correction and Reduction

Chair: Lars Foged, *SATIMO, Italy*

Co-Chair: Manuel Sierra-Castaner, *Universidad Politécnica de Madrid, Spain*

Fr1.9.1 08.30 – 08.50

Convened - Sources of Uncertainty for Near-Field Measurements

M H Francis, R C Wittmann, *National Institute of Standards and Technology, USA*

Fr1.9.2 08.50 – 09.10

Convened – Time-Domain Measurements of Broadband Antennas

Y Huang, S Maqbool, Y Lu, *University of Liverpool, UK*, M Bury, Y Yashchyshyn, *Warsaw University of Technology, Poland*, A Yaravoy, R V De Jongh, *Delft University of Technology, Netherlands*

Fr1.9.3 09.10 – 09.30

Convened - Techniques for Reducing the Effect of Measurement Errors in Near-Field Antenna Measurements

A C Newell, G Hindman, *Nearfield Systems Inc, USA*

Fr1.9.4 09.30 – 09.50

Convened - On the Application Range of General High-Order Probe Correction Technique in Spherical Near-Field Antenna Measurements

T A Laitinen, *Technical University of Denmark, Denmark & Helsinki University of Technology, Finland*, J M Nielsen, S Pivnenko, O Breinbjerg, *Technical University of Denmark, Denmark*

Fr1.9.5 09.50 – 10.10

Convened – Small Antenna Pattern Testing - The Antenna-to-Range Interface

T Hong Loh, M Alexander, P Miller, *National Physical Laboratory, UK*, T Palmer, *Antenna Ltd, UK*

Fr1.10 Terrestrial Propagation

Chair: Mauro Assis, *Fluminense Federal University, Brazil*

Co-Chair: Balázs Héder, *Budapest University of Technology and Economics, Hungary*

Fr1.10.1 08.30 – 08.50

Prediction of Rain Attenuation in Terrestrial Links with the Full Rainfall Rate Distribution

L A R da Silva Mello, M S Pontes, *Catholic University of Rio de Janeiro & INMETRO, Brazil*

Fr1.10.2 08.50 – 09.10

Spatial Markov Model of Fade Duration on Terrestrial Radio Links

L Csurgai-Horváth, J Bitó, *Budapest University of Technology and Economics, Hungary*

Fr1.10.3 09.10 – 09.30

Angle Dependent N-State Markov Model for Rain Attenuation Time Series Generation

B Héder, J Bitó, *Budapest University of Technology and Economics, Hungary*

Fr1.10.4 09.30 – 09.50

On the Use of ECMWF-Scale Meteorological Estimates for Statistical and Real-Time Radiowave Propagation Prediction

R J Watson, D D Hodges, *University of Bath, UK*

Fr1.10.5 09.50 – 10.10

A Site Diversity Provision at 20.7 GHz

D D Hodges, R J Watson, *University of Bath, UK*

Fr1.11 AMTA - Automotive, Cellular and UWB Antenna Measurements

Chair: Matthias Geissler, *IMST GmbH, Germany*

Co-Chair: Ivor Morrow, *Cranfield University, UK*

Fr1.11.1 08.30 – 08.50

Experimentation and Validation of Spherical Near-Field Techniques for Vehicle-Mounted Antenna Measurements

L Le Danvic, *Renault Technocentre, France & INSA Rennes, France*, M Huard, E Lardjane, *Renault Technocentre, France*, P Besnier, M Drissi, *INSA Rennes, France*

Fr1.11.2 08.50 – 09.10

Automotive Antenna Simulation

S Savia, A Walbeoff, *Harada Industries Europe, UK*, R Langley, *University of Sheffield UK*

Fr1.11.3 09.10 – 09.30

RF Modelling and Characterization of a Tyre Pressure Monitoring System

M Brzeska, G-A Chakam, *Siemens VDO Automotive AG, Germany*

Fr1.11.4 09.30 – 09.50

Convened - Pre-Compliance Over-the-Air Performance Testing on Wireless Devices

M A K Wiles, *ETS-Lindgren, UK*

Fr1.11.5 09.50 – 10.10

New Wireless Technologies and OTA Measurements

C von Gagern, *Rohde & Schwarz GmbH & Co. KG, Germany*

Fr2.2 Integrated and MM Wave Antennas (Cont)

Chair: Jean-Marc Laheurte, *Universite de Marnes La Vallee, France*

Co-Chair: Wenxun Zhang, *Southeast University, China*

Fr2.2.6 10.40 – 11.00

A 2:1 Band Frequency-Agile Active Microstrip Patch Antenna

L Le Garrec, *Antennessa, France*, R Sauleau, M Himdi, *University of Rennes 1, France*

Fr2.2.7 11.00 – 11.20

Two Port Reconfigurable Circular Patch Antenna for MIMO Systems

D Piazza, *Politecnico di Milano, Italy & Drexel University, USA*, P Mookiah, K R Dandekar, *Drexel University, USA*, M D'Amico, *Politecnico di Milano, Italy*

Fr2.2.8 11.20 – 11.40

Experimental Study of Reactively Loaded Parasitic Microstrip Array Antenna for Circular Polarization

A Miura, W Luo, M Taromaru, M Ueba, *ATR Wave Engineering Laboratories, Japan*, T Ohira, *ATR*

Fr2.2.9 11.40 – 12.00

Micromachined Reconfigurable Planar Reflectarray Antenna

V Srigengan, S J N Mitchell, V F Fusco, H S Gamble, *Queen's University Belfast, UK*

Fr2.2.10 12.00 – 12.20

Convened - Efficient Software Tool for the Analysis of Planar-based Metamaterial Structures

F J Pérez-Soler, F D Quesada-Pereira, A Álvarez Melcón, *Universidad Politécnica de Cartagena, Spain, Universidad Politécnica de Valencia, Spain*, V Boria-Esbert, B Gimeno-Martínez, *Universidad de Valencia, Spain*

Fr2.3 Convened Session - UWB Propagation Modelling (Cont)

Chair: Alain Sibille, *ENSTA, France*

Co-Chair: Michael Jensen, *Brigham Young University, USA*

Fr2.3.6 10.40 – 11.00

Convened - UWB Propagation Modelling of Building Penetration using Ray Tracing and FDTD Techniques

S R Pennock, P R Shepherd, *University of Bath, UK*

Fr2.3.7 11.00 – 11.20

Convened - Super Wideband Channel Responses: A Spatial Improvement of the Multipath Model

D Porrat, *Hebrew University, Israel*

Fr2.3.8 11.20 – 11.40

Convened - Compact Body-Worn Coplanar Waveguide Fed Antenna for UWB Body-Centric Wireless Communications

A Rahman, A Alomainy, Y Hao, *Queen Mary, University of London, UK*

Fr2.3.9 11.40 – 12.00

Convened - Frequency Dependence of the UWB Indoor Propagation Channel

P Pajusco, P Pagani, *France Telecom, France*

Fr2.3.10 12.00 – 12.20

Convened - Wireless Sensor Positioning with Ultrawideband Fingerprinting

W K Malik, B Allen, *University of Oxford, UK*

Fr2.4 Multiband and UWB Antennas (Cont)

Chair: Christian Sturm, *Universität Karlsruhe (TH), Germany*

Co-Chair: Yi Huang, *University of Liverpool, UK*

Fr2.4.6 10.40 – 11.00

Pyramidal Dielectric Resonator Antenna for Wideband Applications

G Alpanis, C Fumeaux, R Vahldieck, *IFH ETH Zurich, Switzerland*

Fr2.4.7 11.00 – 11.20

Time-Domain Synthesis of UWB Arrays

M Ciattaglia, G Marrocco, *University of Roma Tor Vergata, Italy*

Fr2.4.8 11.20 – 11.40

Cavity-Backed UWB Antenna for Impulse Radio Applications

A V Vorobyov, A G Yarovoy, P Aubry, L P Ligthart, *Delft University of Technology, Netherlands*

Fr2.4.9 11.40 – 12.00

Integrated Antennas for Future Wireless Communication Applications

K C L Chan, X Tian, Y Huang, *University of Liverpool, UK*

Fr2.4.10 12.00 – 12.20

Development of a Broadband ESPAR Antenna Utilizing the Genetic Algorithms Technique

S C Panagiotou, T D Dimousios, C N Capsalis, *National Technical University of Athens, Greece*

Fr2.5 Reflectors and Feeds (Cont)

Chair: Antoine Roederer, *ESTEC, European Space Agency, Netherlands*

Co-Chair: Jose Ricardo Descardec, *CNPq, Brazil*

Fr2.5.6 10.40 – 11.00

A Dual Polarized Wide Band Feed Chain for FSS and BSS Satellite Services

C Hartwanger, R Gehring, U Hong, H Wolf, *Astrium GmbH, Germany*, L S Drioli, *ESTEC, European Space Agency, Netherlands*

Fr2.5.7 11.00 – 11.20

Overlapped Feeds in Multi Beam Reflector Antennas

A Neto, G Gerini, *TNO Defence Security and Safety, Netherlands*, N Llombart, *Jet Propulsion Laboratory, USA*, M Bonnedal, *Saab Space, Sweden*, P De Maagt, *ESTEC, European Space Agency, Netherlands*

Fr2.5.8 11.20 – 11.40

Focal Plane Array Development for ASKAP (Australian SKA Pathfinder)

S G Hay, J S Kot, C Granet, A Grancea, A R Forsyth, D B Hayman, *CSIRO ICT Centre, Australia*, J D O'Sullivan, *Australia Telescope National Facility, Australia*

Fr2.5.9 11.40 – 12.00

New Wave-Objects for Efficient Treatment of Complex Multi-Reflector Systems

S Skokic, *University of Zagreb, Croatia*, G Carluccio, S Maci, *University of Siena, Italy*

Fr2.5.10 12.00 – 12.20

A Metallized Plastic Feed Horn with Optimized Smooth-Walled Profile and Low Cross Polarization at 20/30 GHz

I Jensen, *SINTEF ICT, Norway*, J A Aas, *Norwegian University of Science & Technology, Norway*

Fr2.6 Antennas for Aerospace Applications (Cont)

Chair: Cyril Mangenot, *ESTEC, European Space Agency, Netherlands*

Co-Chair: William Imbriale, *National Aeronautics and Space Administration, USA*

Fr2.6.6 10.40 – 11.00

Transmit-Receive L/S-Band Feed Chain for Array-Fed Unfurlable Reflector Antennas

W Steffè, R Mizzoni, *Thales Alenia Space, Italy*, N Sidiropoulos, S A Kosmopoulos, *Space Engineering, Italy*

Fr2.6.7 11.00 – 11.20

A Compact and Lightweight Inter-Satellite Antenna for S-Band

R Lundin, J Letschnik, U Walter, *Technical University of Munich, Germany*, N Nathrath, M Trümper, *NTP, Germany*, D Fasold, *Munich University of Applied Sciences, Germany*

Fr2.6.8 11.20 – 11.40

Secured Link TT & C Antennas

C Wyllie, D Gould, G Richards, R Guy, *BAE Systems Advanced Technology Centre, UK*, J Fernandez, P Closas, *Universitat Politècnica de Catalunya, Spain*, P Rinous, F Coromina, *ESTEC, European Space Agency, Netherlands*

Fr2.6.9 11.40 – 12.00

Theory, Design and Testing of the Broadband Naval Structural Antenna

L Mattioni, D Di Lanzo, G Marrocco, *University of Roma Tor Vergata, Italy*

Fr2.6.10 12.00 – 12.20

The Shorted Annular Patch as a Multi-Path Suppressing Antenna

G J K Moernaut, *Orban Microwave Products, Belgium*, G A E Vandenbosch, *KULeuven, Belgium*

Fr2.7 Convened Session - Antenna Numerical Modelling and Software Algorithms (Cont)

Chair: Juan Mosig, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

Co-Chair: H Nakano, *Hosei University, Japan*

Fr2.7.6 10.40 – 11.00

Convened - A Methodology for Antenna Design via the Finite Element Method

V de la Rubia, J Zapata, *Universidad Politécnica de Madrid, Spain*

Fr2.7.7 11.00 – 11.20

Convened - Adaptive Antenna Array Processing using Kernels

M Martínez-Ramón, A Navia-Vázquez, A R Figueiras-Vidal, *Universidad Carlos III de Madrid, Spain*,

C G Christodoulou, *University of New Mexico, NM, USA*

Fr2.7.8 11.20 – 11.40

Convened - Finite-Volume Time-Domain Modeling of the Mutual Coupling Between Dielectric Resonator Antennas in Array Configurations

C Fumeaux, G Alpanis, K Sankaran, R Vahldieck, *IFH ETH Zurich, Switzerland*, D Baumann, *A*STAR, Singapore*

Fr2.7.9 11.40 – 12.00

Convened - FDTD Subcell Models Powering Computational Antenna Optimization

S Benkler, *SPEAG, Switzerland*, N Chavannes, N Kuster, *ETH Zurich, Switzerland*

Fr2.7.10 12.00 – 12.20

Convened - Applications of Advanced Shielded Planar EM Analysis Techniques to Antenna Analysis

J C Rautio, *Sonnet Software, Inc., USA*

Fr2.8 Planar and Conformal, Scanning and Imaging Arrays (Cont)

Chair: Rob Lewis, *BAE Systems, UK*

Co-Chair: Keith Palmer, *University of Stellenbosch, South Africa*

Fr2.8.6 10.40 – 11.00

Support Vector Multi-Regression and Equivalent 2D Modelling for 3D Antenna Array Synthesis

R G Ayestarán, F Las-Heras, *Universidad de Oviedo, Spain*

Fr2.8.7 11.00 – 11.20

Multiple Null Synthesis for Cylindrical Microstrip Patch Array Antenna using Least Squares Method

E Ebrahimi, *University of Birmingham, UK & Tarbiat Modarres University, Iran*, K Forooraghi, *Tarbiat Modarres University, Iran*

Fr2.8.8 11.20 – 11.40

Convened - New Optimizing Techniques in Conformal Array Antenna Design

L I Vaskelainen, *VTT Technical Research Centre of Finland, Finland*

Fr2.8.9 11.40 – 12.00

Planar Microstrip Antenna Array for Radar System with Surveillance Applications

N S Kutiyal, A Kedar, M Garg, K S Beenamole, S O Kundukulam, U K Revankar, *Electronics & Radar Development Establishment, India*

Fr2.8.10 12.00 – 12.20
Mechanical Beam Scanning Microstrip Crank-Line Antenna Loaded Movable Dielectric
K Kitatani, T Terada, Y Okamura, *Osaka University, Japan*

Fr2.9 Convened – ACE / AMTA - Error Estimation, Correction and Reduction (Cont)

Chair: Lars Foged, *SATIMO, Italy*

Co-Chair: Manuel Sierra-Castaner, *Universidad Politécnica de Madrid, Spain*

Fr2.9.6 10.40 – 11.00
Convened - **A Convergence Criterion for the Iterative Gerchberg-Papoulis Algorithm Applied to Truncation Error Reduction in Planar Near-Field Measurements**
E Martini, O Breinbjerg, *Technical University of Denmark, Denmark*, S Maci, *University of Siena, Italy*

Fr2.9.7 11.00 – 11.20
Convened - **Effectiveness of Software Solutions in Reducing Errors due to Multi-Path in Spherical Near Field Measurements**
M Giles, S Mishra, *Canadian Space Agency, Canada*

Fr2.9.8 11.20 – 11.40
Convened - **Spherical Near-Field Antenna Measurements: A Review of Correction Techniques**
D W Hess, *MI Technologies, USA*

Fr2.9.9 11.40 – 12.00
Convened - **Procedure and Process Optimization for Reduction of Measurement Uncertainties in RF Test Facilities**
J Habersack, *Astrium GmbH, Germany*

Fr2.9.10 12.00 – 12.20
Convened - **Error Calculation Techniques and their Application to the Antenna Measurement Facility Comparison within the European Antenna Centre of Excellence**
L Foged, B Bencivenga, L Durand, *Satimo, Italy*, O Breinbjerg, S Pivnenko, *Technical University of Denmark, Denmark*, C Sabatier, *France Telecom R&D, France*, H Ericsson, B Svensson, *SAAB Microwave Systems, Sweden*, A Alexandridis, *National Centre for Scientific Research, Greece*, S Burgos, M Sierra-Castañer, *Technical University of Madrid, Spain*, J Zackrisson, *Saab Space AB, Sweden*, M Boettcher, *IMST GmbH, Germany*

Fr2.10 Terrestrial Propagation (Cont)

Chair: Mauro Assis, *Openlink, Brazil*

Co-Chair: Balázs Héder, *Budapest University of Technology and Economics, Hungary*

Fr2.10.6 10.40 – 11.00
Results from a Long Term Propagation Measurement Campaign
M J Willis, K H Craig, *Rutherford Appleton Laboratory, UK*

Fr2.10.7 11.00 – 11.20
A Model for the Correlation of Signal Fading and Enhancement
K H Craig, *Rutherford Appleton Laboratory, UK*

Fr2.10.8 11.20 – 11.40
Hiperlan and Wi-MAX Propagation Experiments over Huge Distances
D Trinchero, R Stefanelli, A Galardini, F Cambiotti, C Arnelli, E Guariso, *Politecnico di Torino, Italy*, D Della Monica, E Ragno, *Andrew srl, Italy*, F Troisi, L Baldacci, *Ministero delle Comunicazioni, Italy*

Fr2.10.9 11.40 – 12.00
Path Diversity Characteristics on Two Nearly Perpendicular MM Wave Paths
V Kvicera, M Grabner, *TESTCOM, Czech Republic*, O Fiser, *IAP AS CR, Czech Republic*

Fr2.10.10 12.00 – 12.20
Influence of Rain Event Area on PMP System Performance

S Zvanovec, P Pechac, *Czech Technical University in Prague, Czech Republic*

Fr2.11 AMTA - Automotive, Cellular and UWB Antenna Measurements (Cont)

Chair: Matthias Geissler, *IMST GmbH, Germany*

Co-Chair: Ivor Morrow, *Cranfield University, UK*

Fr2.11.6 10.40 – 11.00

Radiation Efficiency of Several Handset Antennas Obtained with a Modified Wheeler Cap Method

C Mendes, *Instituto de Telecomunicações & Instituto Superior Técnico, Portugal*, C Peixeiro, *Instituto Superior Técnico, Portugal*

Fr2.11.7 11.00 – 11.20

Pulse Response of UWB Antenna: Meaning and Simple Measurement Procedure

M Bury, Y Yashchyshyn, *Warsaw University of Technology, Poland*

Fr2.11.8 11.20 – 11.40

Measurement Methods of Impulse Radiation Characteristics for Ultra Wideband Antennas

P Cerny, M Mazanek, M Mudroch, *Czech Technical University in Prague, Czech Republic*

Fr2.11.9 11.40 – 12.00

Uncertainty Considerations in Spherical Near-Field Antenna Measurements

P Miller, *NPL, UK*

Fr2.11.10 12.00 – 12.20

Standard Gain Horn Calibration: Pattern Integration Technique versus Three-Antenna Technique

S Burgos, M Sierra-Castañer, *Universidad Politécnica de Madrid, Spain*, S Pivnenko, O Breinbjerg, *Technical University of Denmark, Denmark*