Final Program 2

Monday, 8 09:00 – 13:00 room 1 Federico

09:00 - 10:40 Formal Opening
10:40 - 11:00 Coffee break
11:00 - 13:00 Plenary Lectures
13:00 - 14:20 Buffet lunch

01) Recent advancement of electromagnetic theory - ICEAA, Organized by H. Shirai

chair 1 H. Shirai chair 2 Monday, 8 14:20 – 15:20 room 1 Federico

14:20 – 14:40 Comparison of the edge diffraction coefficients for dielectric wedges

145

H. Shirai, D.M. Nguyen, Chuo University, Japan

14:40 – 15:00 A study on the errors of estimates obtained from scatterer information estimation method

131

K. Goto, T. Kawano, R. Seito, M. Kitaguchi,The National Defense Academy of Japan, Japan

15:00 – 15:20 An Efficient RCS Data Generation Strategy Based on Divide and Interpolation for SAR Image Simulations

228

H. Suenobu, Mitsubishi Electric Corporation, Japan; K. Nishimoto, Mitsubishi Electric Corporation, Japan; Y. Inasawa, Mitsubishi Electric Corporation, Japan

02) Electromagnetic theory - ICEAA

chair 1 E. Heyman chair 2 H. Shirai Monday, 8 15:20 – 18:40 room 1 Federico

15:20 – 15:40 Calculation of TM modes of an open cylindrical resonator located inside a coaxial infinite waveguide using the Wiener-Hopf method

405

S. Sautbekov, Al-Farabi Kazakh National University, Kazakhstan; G. Bairova, Al-Farabi Kazakh National University, Kazakhstan; M. Sautbekova, Kazakh-British Technical University, Kazakhstan; G. Alkina, Al-Farabi Kazakh National University, Kazakhstan

15:40 – 16:00 Phase behaviour of an anisotropic radially stratified circular waveguide

611

M. N. Georgieva-Grosse, Consulting and Researcher in Physics, Mathematics and Computer Sciences, Bulgaria; G. N. Georgiev, Consulting and Researcher in Physics, Mathematics and Computer Sciences, Bulgaria

16:00 – 16:20 Complex-source beam diffraction by a surface of impedance discontinuity: Exact and uniform asymptotic solutions

148

M. Katsav, E. Heyman, TEL AVIV UNIVERSITY, Israel

16:40 – 17:00 Towards an All-Optical Analog Experiment of Light Modulation by Gravitational Waves

221

S. F. Koufidis, Imperial College London, United Kingdom; M. W. McCall, Imperial College London, United Kingdom

17:00 – 17:20 A Spacetime Energy-Density Approach to Circuit Modeling of Cylindrical EM Structures: Capacitive, Inductive, and Mutual Coupling Effects

459

A. Pirisi, Politecnico di Milano, Italy; R. E. Zich, Politecnico di Milano, Italy

17:20 – 17:40 Closed-form Expression for the Radiation of an Arbitrarily-Oriented Stochastic Elementary Dipole

502

E.M. Djelloul, ENAC, France; A. Chabory, ENAC, France; C. Morlaas, ENAC, France; R. Douvenot, ENAC, France

17:40 – 18:00 Estimating Electric Fields from B1 maps in Circular and Elliptic Cylinders with Deep Learning

627

G. Carluccio, University Federico II of Napoli, Italy; E. Montin, New York University, United States; C. M. Collins, New York University, United States; R. Lattanzi, New York University, United States; D. Riccio, University Federico II of Napoli, Italy; G. Ruello, University Federico II of Napoli, United States

18:00 – 18:20 Impact of the reactive attenuation constant in the efficiency of uniform/quasi-uniform leaky-wave antennas radiating at broadside

629

M. Poveda-Garcia, Technical University of Cartagena, Spain; A. Algaba-Brazalez, Technical University of Cartagena, Spain; D. Comite, Sapienza University of Rome, Italy; J. L. Gomez-Tornero, Technical University of Cartagena, Spain

18:20 – 18:40 Optimum High-Permittivity Materials with Parallel Imaging Applications in MRI

639

G. Carluccio, University Federico II of Napoli, Italy; V. Miranda, University Federico II of Napoli, Italy; C. M. Collins, New York University, United States; D. Riccio, University Federico II of Napoli, Italy; G. Ruello, University Federico II of Napoli, Italy

---

03) EMC/EMI/EMP - ICEAA

chair 1 R. L. Gardner chair 2 A. Monorchio Monday, 8 14:20 – 17:40 room 2 Enrico

---

14:20 – 14:40 RF effects and coupling simulation for electronic systems

344

R. L. Gardner, Consultant, United States

14:40 – 15:00 Anti-active Deception Jamming Based on Adaptive Likelihood Ratio Test in Distributed Radar System

156

K.L. Yang, Beijing Jiaotong University, China ; M.J. Wang, Beijing Jiaotong University, China ; Y.H. Wen, Beijing Jiaotong University, China

15:00 – 15:20 A Cost-Effective Method for Radiated HPM Testing of CMOS Circuits in a GTEM Cell

210

S. Haydon, Curtin University, Australia; A.T. Sutinjo, Curtin University, Australia; J. Cook, Curtin University, Australia

15:20 – 15:40 Human Head Exposure to Bluetooth Frequency - Thermal Response

278

H. Dodig, Faculty of Maritime Studies, University of Split, Croatia, Croatia; K. Vidak, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia, Croatia; M. Škiljo, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia, Croatia; D. Poljak, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia, Croatia

15:40 – 16:00 A Note on Different Source Models for Dipole Antennas in GHz Frequency Range

287

D. Poljak, University of Split, FESB, Croatia; V. Doric, University of Split, FESB, Croatia

16:00 – 16:20 A graph-theory-based spectrum allocation method for EMI mitigation

288

F. Feng, Beihang University (BUAA), China ; D.Y. Wang, Beihang University (BUAA), China ; H.J. Xv, Beihang University (BUAA), China ; M. Guan, Beihang University (BUAA), China ; M.Y. Li, Beihang University (BUAA), China ; A.X. Chen, Beihang University (BUAA), China

16:40 – 17:00 Human Head Exposure to Bluetooth Frequency - Electromagnetic Dosimetry

320

K. Vidjak, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia; M. Škiljo, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia; V. Doric, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia; D. Poljak, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia

17:00 – 17:20 5G vs 6G: Advances in Cellular Planning and Their Impact on Population Exposure

392

P. Usai, Dip. Ingegneria dell'Informazione - University of Pisa, Italy; D. Brizi, Dip. Ingegneria dell'Informazione - University of Pisa, Italy; A. Monorchio, Dip. Ingegneria dell'Informazione - University of Pisa, Italy

17:20 – 17:40 Shielding Effectiveness of Metal Plates with Apertures: Simulation and Analytical Model in Reverberation Chambers

394

M.U. Imtiaz, Eindhoven University of Technology, Netherlands; R. Serra, Eindhoven University of Technology, Netherlands

---

04) Frontiers in bioelectromagnetic research: methods, models, and applications - ICEAA, Organized by F. Apollonio, M. Liberti

chair 1 F. Apollonio chair 2 M. Liberti Monday, 8 17:40 – 18:40 room 2 Enrico

---

17:40 – 18:00 5G exposure and cancer in animal studies: update of Systematic Reviews meta-analysis on skin data

621

L.A. Ardoino, ENEA, Italy; R.P. Pinto, ENEA, Italy

18:00 – 18:20 Computational Electromagnetic Exposure Assessment of Augmented Reality Smart Glasses Operating at 26 GHz

576

L. Bellosono, Sapienza University of Rome; Italian National Institute of Health, Italy; M. Colella, Sapienza University of Rome, Italy; S. D'Agostino, Sapienza University of Rome, Italy; G.M. Contessa, Italian National Institute of Health, Italy; A. Polichetti, Italian National Institute of Health, Italy; M. Liberti, Sapienza University of Rome, Italy; F. Apollonio, Sapienza University of Rome, Italy

18:20 – 18:40 Effects of 3.5 GHz RF-EMF on TRPM8 Ion Channel: A Computational Study

616

C. Pisano, Sapienza University of Rome, Italy; L. Caramazza, Sapienza University of Rome, Italy; L. Ferri, Sapienza University of Rome, Italy; N. Alvieri, Sapienza University of Rome, Italy; P. Marracino, Rise Technology S.r.l., L.re Paolo Toscanelli 170, Rome, Italy; F. Del Signore, Sapienza University of Rome, Italy; M. Liberti, Sapienza University of Rome, Italy; F. Apollonio, Sapienza University of Rome, Italy

---

05) New paradigm and strategies for inverse scattering problems - ICEAA, Organized by M.T. Bevacqua, L.Di Donato, P. Mojabi

chair 1 M.T. Bevacqua chair 2 L.Di Donato, P. Mojabi Monday, 8 14:20 – 17:20 room 3 Angelica

---

14:20 – 14:40 A Wideband S-Domain Algorithm for Microwave Imaging Within Resonant Chambers Using Dispersive Eigenfunction Expansions

560

A. Attar, University of Manitoba, Canada; J. LoVetri, University of Manitoba, Canada

14:40 – 15:00 Investigation of Microwave Quantitative Imaging vs. Machine Learning for Shoulder Injury Detection

312

C. Migliaccio, Université Côte d'Azur, France; S. Borzooei, Université Côte d'Azur, France; V. Dolean, Eindhoven University, Netherlands; P.H. Tournier, Sorbonne Université, France; H. Roussel, Sorbonne Université, France; N. Joachimowicz, Sorbonne Université, France

15:00 – 15:20 Indoor localization of moving targets using opportunistic sensors

647

A. Dell'Aversano, Department of Engineering, Università degli Studi della Campania Luigi Vanvitelli, Italy; E. Akbari Sekehravani, IREA-CNR, Italy; L. Crocco, IREA-CNR, Italy; R. Solimene, Department of Engineering, Università degli Studi della Campania Luigi Vanvitelli, Italy; R. Scapaticci, IREA-CNR, Italy

15:20 – 15:40 Sensor Deployment in mm-Near Field Monostatic Radar Imaging

435

M. Del Prete, Università degli Studi della Campania, Italy; M.A. Maisto, Università degli Studi della Campania, Italy; R. Solimene, Università degli Studi della Campania, Italy

15:40 – 16:00 Reconstruction of objects at cell scale from microscope images with inverse scattering algorithm

262

Y. Qin, UiT The Arctic University of Norway, Norway; Y. Zhong, UiT The Arctic University of Norway, Norway; K. Agarwal, UiT The Arctic University of Norway, Norway

16:00 – 16:20 Preliminary Investigation on Inverse Scattering-Based Design of Dielectric Superstrates for Beam Shaping

204

A. Ciociola, Università degli studi della campania "L.Vanvitelli", Italy; R. Solimene, Università degli studi della campania "L.Vanvitelli", Italy

16:40 – 17:00 Improving object classification accuracy from electromagnetic data using attention mechanisms

124

E. Simsek, H. R. Manyam, University of Maryland Baltimore County, United States

17:00 – 17:20 Novel Effective Possibilities in 2D Inverse Scattering through the Virtual Experiments Paradigm

657

M. Bevacqua, Universita Mediterranea di Reggio Calabria, Italy; T. Isernia, Universita Mediterranea di Reggio Calabria, Italy; L. Di Donato, Università di Catania, Italy

---

06) Radar and Imaging techniques - ICEAA

chair 1 I. Akduman chair 2 L.Di Donato Monday, 8 17:20 – 18:40 room 3 Angelica

---

17:20 – 17:40 ISAR Algorithm for Detecting Target Scatters: An Enhanced Range-Doppler Approach with Interference Suppression

245

T. Chellan, Stellenbosch University, South Africa; L.L. Grootboom, Stellenbosch University, South Africa

17:40 – 18:00 Imaging of Payload Drone Using Millimeter-Wave MIMO Radar with SAR Processing

359

Y. Igarashi, National Defense Academy of Japan, Japan; K. Ogawa, National Defense Academy of Japan, Japan; R. Nakamura, National Defense Academy of Japan, Japan

18:00 – 18:20 Calibration of a MIMO Radar for 3-D Near-Field Scattering Imagery

486

T. J. Liu, School of Electronic and Information Engineering, Beihang University, China ; B. L. Zhao, School of Electronic and Information Engineering, Beihang University, China ; X. J. Xu, School of Electronic and Information Engineering, Beihang University, China

18:20 – 18:40 Wide-band Antenna Design for Sub-Surface Microwave Imaging

520

S. Joof, Istanbul Technical University, Turkey; M. Çayören, Istanbul Technical University, Turkey; H. Sahintürk, Yildiz Technical University, Turkey; I. Akduman, Istanbul Technical University, Turkey

---

07) Innovative multi-antenna techniques for 6G wireless networks - IEEE APWC, Organized by G. Alfano, D.G. Riviello

chair 1 G. Alfano chair 2 D.G. Riviello Monday, 8 14:20 – 16:20 room 4 Guglielmo

---

14:20 – 14:40 Performance analysis of coded slotted ALOHA in a cell-free scenario using stochastic geometry

545

L. Valentini, University of Bologna, Italy; E. Paolini, University of Bologna, Italy; M. Chiani, University of Bologna, Italy

14:40 – 15:00 Energy-Efficient MIMO Communication Assisted by Metasurfaces with Global Reflection Constraints

390

A. I. Tunali, CNIT, Italy; R. K. Fotock, University of Cassino and Southern Lazio, Italy, Italy; A. Zappone, University of Cassino and Southern Lazio, Italy, Italy; G. Taricco, Politecnico di Torino, Italy; H. A. Cirpan, Istanbul Technical University, Turkey

15:00 – 15:20 AI-Assisted DoA estimation for MIMO Radar Applications

276

I. Bari, Military Technological College, Oman; S.U. Rehman, National University of Computer & Emerging Sciences, Peshawar Campus, Pakistan; S. Mir, National University of Computer & Emerging Sciences, Peshawar Campus, Pakistan; B. Hussain, SICOYA, Germany; M.M. Khan, National University of Computer & Emerging Sciences, Peshawar Campus, Pakistan; Y.Y.O. AlBalushi, Military Technological College, Oman

15:20 – 15:40 Joint Graph-based User Scheduling with LFoV Beamforming Design For B5G/6G NTN Systems

518

M.R. Dakkak, University of Bologna, Italy; D.G. Riviello, CNR-IEIIT, Consiglio Nazionale delle Ricerche, Italy; A. Guidotti, National Inter-University Consortium for Telecommunications (CNIT), Italy; A. Vanelli-Coralli, University of Bologna, Italy

15:40 – 16:00 Experimental verification of the sub-THz channel model with application to IRS-aided communications

557

F. Paonessa, National Research Council, Italy; D. G. Riviello, National Research Council, Italy; M. Riaz, Politecnico di Torino, Italy; A. Tarable, National Research Council, Italy; A. Nordio, National Research Council, Italy; G. Virone, National Research Council, Italy

16:00 – 16:20 Software-defined Radio Experimental Setup for Multi-Antenna Spectrum Sensing Algorithms

683

D.G. Riviello, CNR-IEIIT, Italy; G. Alfano, University of Cassino and Southern Lazio, Italy

---

08) Computational Electromagnetics - ICEAA

chair 1 P.L. Cordel chair 2 A. Z. Elsherbeni Monday, 8 16:40 – 18:40 room 4 Guglielmo

---

16:40 – 17:00 Matched waveguide ports in PMCHWT formulation

150

P. Soudais, Dassault Aviation, France

17:00 – 17:20 Human Skin Thickness Effect on Absorbed Power Density for Frequencies from 10 to 100 GHz

219

F. Kaburcuk, Sivas University of Science and Technology, Turkey; A. Z. Elsherbeni, Colorado School of Mines, United States

17:20 – 17:40 A Neural Network Embeddable Algorithm Based on Inherent Characteristic Parameters for RCS Calculation of 3D Objects

273

B. L. Zhao, School of Electronics and Information Engineering, Beihang University, China ; T. J. Liu, School of Electronics and Information Engineering, Beihang University, China ; X. J. Xu, School of Electronics and Information Engineering, Beihang University, China

17:40 – 18:00 A Nonuniform Meshing Scheme for a FDTD in Spherical Coordinates

541

S. B. Perry, Auburn University, United States; W. C. Snider, Auburn University, United States

18:00 – 18:20 Semi-Analytical Computation of the Diffraction Coefficients for Arbitrarily Shaped Semi-Infinite Cones

623

I. Sarigiannidis, Sorbonne, France; M. Casaletti, Sorbonne Universite, France; M. Albani, University of Siena, Italy

18:20 – 18:40 Time-domain Dual Surface Electric Field Integral Equation

712

P.L. Cordel, Thales DMS, France; F.P. Andriulli, Politecnico di Torino, Italy

---

09) Quantum electromagnetics – From photonics to quantum computing - ICEAA, Organized by A. Boag, G. Gradoni

chair 1 A. Boag chair 2 G. Gradoni Monday, 8 14:20 – 18:00 room 5 Basile

---

14:20 – 14:40 The bistability phase diagram for quantum dot supercrystals subject to continuous radiation

488

I. Neuhart, Michigan State University, United States; C. Piermarocchi, Michigan State University, United States; C. L. Baldwin, Michigan State University, United States

14:40 – 15:00 Layered Ferroelectricity: from Geometric Measures to First-Principles Calculations

347

O. Hod, Tel Aviv University, Israel

15:00 – 15:20 Localization Methods For the Efficient Calculation of Fock Exchange in Large Nanostructures.

538

R. T. Ahdoot, Tel Aviv University, Israel; A. Boag, Tel Aviv University, Israel; A. Natan, Tel Aviv University, Israel

15:20 – 15:40 Quantum Hamiltonian Simulation of Time-Domain Electromagnetic Fields

352

E. Colella, University of Surrey, United Kingdom; L. Bastianelli, Universita Politecnica delle Marche, Italy; V. Mariani Primiani, Universita Politecnica delle Marche, Italy; F. Moglie, Universita Politecnica delle Marche, Italy; G. Gradoni, University of Surrey, United Kingdom

15:40 – 16:00 Characteristic Modes of Quantum Light for Applications in Quantum Metrology

365

A. Boag, Tel Aviv University, Israel; I. Levie, Tel Aviv University, Israel; D. Mogilevtsev, National Academy of Sciences of Belarus, Belarus; G. Slepyan, Tel Aviv University, Israel

16:00 – 16:20 A Theoretical Proposal for a Unified Modeling Approach for Superconducting Parametric Amplifiers

408

Y. Yuan, Technical University of Munich, Germany; O. Asirim, Technical University of Munich, Germany; M. Haider, Technical University of Munich, Germany; C. Jirauschek, Technical University of Munich, Germany

16:40 – 17:00 A Review of RF and Microwave Measurement Strategies for Characterizing Cryo-CMOS Technologies in Quantum Computing

187

M. Stanley, National Physical Laboratory, United Kingdom; M. Celep, National Physical Laboratory, United Kingdom; X. Shang, National Physical Laboratory, United Kingdom; N. Ridler, National Physical Laboratory, United Kingdom

17:00 – 17:20 Optimization of Space-Time Coding Metasurface by a Quantum Annealing-Inspired Algorithm

138

S. S. A. Yuan, Y. Jiang, W. E. I. Sha, Zhejiang University, China

17:20 – 17:40 The Hidden Variables in the Future of Quantum Computing in 6G

711

R. Bassoli, Technische Universität Dresden, Germany

17:40 – 18:00 Semiclassical Modeling of Plasmonic Nanostructures in the Quantum Regime

704

P.Y. Chen, University of Illinois Chicago, United States

---

10) RFID technologies - IEEE APWC

chair 1 I. Bakri chair 2 A. Boag Tuesday, 9 08:20 – 09:20 room 1 Federico

---

08:20 – 08:40 Enhancing High-Frequency RFID Sensing Through PEDOT-Enabled Technologies

462

G. A. Casula, Department of Electrical and Electronic Engineering, Italy; P. Cosseddu, Department of Electrical and Electronic Engineering, Italy; A. Mascia, Department of Electrical and Electronic Engineering, Italy; G. Sforazzini, Department of Chemical and Geological Sciences, Italy; G. Montisci, Department of Electrical and Electronic Engineering, Italy; G. Mura, Department of Electrical and Electronic Engineering, Italy; E. Mattana, Department of Electrical and Electronic Engineering, Italy; P. Maxia, INAF—Osservatorio Astronomico di Cagliari, Italy

08:40 – 09:00 Underwater UHF RFID Tag for Tracking of Pebbles or Similar Things

602

F. Ferretti, A. Di Carlofelice, E. DiGiampaolo, P. Tognolatti, Universita' degli Studi dell'Aquila, Italy

09:00 – 09:20 Chipless RFID Multi-Reader System Utilizing Spatial Diversity and Combining Techique

612

I. Bakri, RheinMain University of Applied Sciences, Germany; M. El Hadidy, RheinMain University of Applied Sciences, Germany

---

11) Fast computational methods - ICEAA, Organized by A. Boag

chair 1 A. Boag chair 2 Tuesday, 9 09:20 – 11:40 room 1 Federico

---

09:20 – 09:40 Subspace Projection Methods for Interpolation and Self-Correcting Solution of Multiple Right-Hand Sides in MoM Scattering Problems

592

A. Gomez-Rodriguez, Universidad de Extremadura, Spain; V.F. Martin, Universidad Rey Juan Carlos, Spain; L. Landesa, Universidad de Extremadura, Spain; F. Obelleiro, Universidad de Vigo, Spain; J.M. Taboada, Universidad de Extremadura, Spain

09:40 – 10:00 Measurement-Computation Fusion with Near-Field-Based Source Reconstruction and its Applications in Computational Electromagnetics

676

H. Zhao, UESTC, China ; J. Hu, UESTC, China

10:00 – 10:20 A beam propagation algorithm for UWB long-range propagation in guiding environments

366

T. Paley, Tel Aviv University, Israel; E. Heyman, Tel Aviv University, Israel; A. Boag, Tel Aviv University, Israel

10:20 – 10:40 Beam summation algorithm for UWB-analysis of scattering from large smooth objects in inhomogeneous propagation channel

367

P. Chopde, Tel Aviv University, Israel; E. Heyman, Tel Aviv University, Israel; A. Boag, Tel Aviv University, Israel

11:00 – 11:20 Direct solver for systems of hypersingular integral equations in elasto-acoustics

368

E. Chernokozhin, Tel Aviv University, Israel; A. Boag, Tel Aviv University, Israel

11:20 – 11:40 Spectral analysis of discretized boundary integral operators in 3D: a high-frequency perspective

717

V. Giunzioni, Politecnico di Torino, Italy; A. Merlini, IMT Atlantique, France; F.P. Andriulli, Politecnico di Torino, Italy

---

12) Novel mathematical methods in electromagnetics - ICEAA, Organized by K. Kobayashi, G. Lombardi, Y. Shestopalov

chair 1 K. Kobayashi chair 2 G. Lombardi, Y. Shestopalov Tuesday, 9 11:40 – 18:00 room 1 Federico

---

11:40 – 12:00 Helicoidal modes in coaxial lines with concave polygonal cross-section

121

P.L.E. Uslenghi, University of Illinois Chicago, United States

12:00 – 12:20 Noise tolerance of scatterer information estimation method using the numerical data of backward transient scattering waves

130

K. Goto, T. Kawano, M. Kitaguchi, R. Seito, The National Defense Academy of Japan, Japan

12:20 – 12:40 How shall we upgrade the ray asymptote to the exact solution

134

B.V. Budaev, University of California at Berkeley, United States

12:40 – 13:00 Evaluation of the Maximum Reflection Direction of a RIS for Varying Incidence Angles

211

L. H. W. Loeser, Technische Universität Braunschweig, Germany; T. Kürner, Technische Universität Braunschweig, Germany

14:20 – 14:40 A Numerical and Analytical Study of the Electric Fields Excited In Cylindrical Cavities with Multiple Longitudinal Apertures

263

S. E. Dogan, The Ohio State University, United States; J. T. Johnson, The Ohio State University, United States; R. J. Burkholder, The Ohio State University, United States

14:40 – 15:00 Nyström Discretization of an Integral Equation Based Electromagnetic Scattering Formulation for Composite Structures

307

B. Hofmann, University of Southern California, United States; C. Sideris, University of Southern California, United States

15:00 – 15:20 Towards Boundary Element Methods for Resistive Boundary Conditions Compatible with the Global Multi-trace and Multi-Screen Frameworks

416

J. Prakash, Ghent University, Belgium; K. Cools, Ghent University, Belgium

15:20 – 15:40 Electrodynamics and Spectral Properties of Rotating Scatterers

443

T. Geva, Tel-Aviv University, Israel; B. Z. Steinberg, Tel-Aviv University, Israel

15:40 – 16:00 A leaky-wave approach to directive radiation in 3-D dielectric woodpile lattices

510

A. Romano, Roma Tre University, Italy; V. Jandieri, University of Duisburg-Essen, Germany; L. Tognolatti, Roma Tre University, Italy; G. Valerio, Sorbonne Universitè, France; P. Baccarelli, Roma Tre University, Italy

16:00 – 16:20 Radar Cross Section Analysis of the Two Canonical, Parallel-Plate Waveguide Cavities with Three-Layer Material Loading

543

K.W. He, Chuo University, Japan; K. Kobayashi, Chuo University, Japan

16:40 – 17:00 Analytical Study of a PTD Waveguide Realized by Bed of Nails Metasurfaces

549

X. Mitsalas, University of Siena, Italy; N. Castro, University Carlos III of Madrid, Spain; E. Rajo-Iglesias, University Carlos III of Madrid, Spain; S. Maci, University fo Siena, Italy

17:00 – 17:20 Transmissive Metasurfaces for Beam-Steering Applications

570

A. Monti, Roma Ter University, Italy; S. Vellucci, Niccolò Cusano University, Italy; M. Barbuto, Roma Tre University, Italy; A. Toscano, Roma Tre University, Italy; F. Bilotti, Roma Tre Universiy, Italy

17:20 – 17:40 Novel Mathematical Methods for Uncertainty Quantification in Analysis of Electromagnetic Scattering and Radiation Problems

648

B. M. Notaroš, Colorado State University, United States; J. J. Harmon, Colorado State University, United States; S. Kasdorf, Colorado State University, United States; C. Erickson, Colorado State University, United States

17:40 – 18:00 The Regularized Wiener-Hopf Method Applied to EM Scattering Problems Involving Entire Unknowns

721

V. Daniele, Politecnico di Torino, Italy; G. Lombardi, Politecnico di Torino, Italy

---

13) Microwave antennas, components and devices - ICEAA

chair 1 X. Gao chair 2 S.K. Khamas Tuesday, 9 08:20 – 15:40 room 2 Enrico

---

08:20 – 08:40 Fractal Antenna Design and Analysis in Ansys-HFSS: A Julia Script-Based Approach

282

M. Tamer, TUBITAK Defense Industries Research and Development Institute, Ankara, Turkey, Turkey; G. Kalender, Department of Electrical-Electronics Engineering, University of Dokuz Eylül, Izmir, Turkey, Turkey; S. Günel, Department of Electrical-Electronics Engineering, University of Dokuz Eylül, Izmir, Turkey, Turkey; E. Y. Zoral, Department of Electrical-Electronics Engineering, University of Dokuz Eylül, Izmir, Turkey, Turkey

08:40 – 09:00 Quadrature hybrid coupler in microstrip technology: development, optimization, and characterization

301

F.C. Andrade, Federal University of Minas Gerais, Brazil; R.D.F. Junior, Institute of Technological Sciences, Federal University of Itajuba, Brazil; R.J. Velásquez G., Federal University of Minas Gerais, Brazil; C.G. Rego, Federal University of Minas Gerais, Brazil; J.C. Ramirez, Federal University of Minas Gerais, Brazil; G. Medeiros-Ribeiro, Federal University of Minas Gerais, Brazil; D. Tami, Institute of Technological Sciences, Federal University of Itajuba, Brazil

09:00 – 09:20 A Novel Slot-Coupled Microstrip Antenna for Wide-Angle Scanning Phased Arrays

348

J.T. Ma, Southeast University, China ; Z.X. Cao, Southeast University, China

09:20 – 09:40 Design and Performance Study of Via Interconnection Structures in Multilayer Flexible LCP Circuits

349

X. Gao, southeast university, China ; W.B. Wang, southeast university, China ; Z.X. Cao, southeast university, China

09:40 – 10:00 Measurements of slot-fed circularly polarized layered cylindrical DRA for X-band applications

400

W. Albakosh, University of Sheffield, United Kingdom; R. Asfour, University of Essex, United Kingdom; M. Alsabah, Al-Farahidi University, Iraq; S.K. Khamas, University of Sheffield, United Kingdom

10:00 – 10:20 Dual band frequency reconfigurable X-band rectangular dielectric resonator antenna

401

A. Soltan, University of Sheffield, United Kingdom; R. Asfour, University of Essex, United Kingdom; M. Alsabah, Al-Farahidi University, Iraq; S.K. Khamas, University of Sheffield, United Kingdom

10:20 – 10:40 Filtenna Based on a Ridged Waveguide Filter Integrated with a Vivaldi Antenna for 5G Applications

450

L. Bodenstein, Stellenbosch University, South Africa; P. Meyer, Stellenbosch University, South Africa

11:00 – 11:20 Dual Band Dual Radiation Pattern Mm-Wave Hemispherical DRA for On-Body Communication

465

T.S. Abdou, Electrical and Electronic Eng., Higher Inst. of Eng, Libyan Arab Jamahiriya; R. Asfour, Essex University, United Kingdom; D. Mirshekar-Syahkal, Essex University, United Kingdom; M. Alsabah, Medical Technical College, Al-Farahidi University, Iraq; S.K. Khams, University of Sheffield, United Kingdom;

11:20 – 11:40 Compact 6x6 Nolen matrix with lumped elements in UHF band

471

C. Ramos, Universitàt Politècnica de Valencia, Spain; M. Baquero, Universitàt Poitècnica de Valencia, Spain; F. Carrera-Suárez, Escuela Politécnica Nacional, Ecuador

11:40 – 12:00 A reflectionless bandpass filter using LTCC technology

473

K.D. Xu, University of Alcala, Spain; A. Liu, Xi'an Jiaotong University, China ; D.X. Wang, Xi'an Jiaotong University, China

12:00 – 12:20 Printed Bidirectional Stretch Antenna Sensor

514

M. Fawaz, The university of Kent, United Kingdom; S. Philips, The university of Kent, United Kingdom; R. Horne, The university of Kent, United Kingdom; B. Sanz-Izquierdo, The university of Kent, United Kingdom

12:20 – 12:40 Hybrid RF Antenna–Solar Cell for Ground-Based Space Solar Power Systems

601

J. T. Kabangu, University of Kent, United Kingdom; H. Wang, Beijing University of Posts and Telecommunications, China ; Z. Chen, Beijing University of Posts and Telecommunications, China ; S. Phillips, University of Kent, United Kingdom; B. SANZ-IZQUIERDO, University of Kent, United Kingdom; J.C. Batchelor, University of Kent, United Kingdom

12:40 – 13:00 Design and evaluation of polarization switching reflective electromagnetic surfaces across microwave to terahertz bands

651

D.A. Nurmantris, Institut Teknologi Bandung, Indonesia; Z. Zulfi, Institut Teknologi Bandung, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

14:20 – 14:40 Comparative investigation on feeding technique usage for improving characteristics of spiral resonator antenna

655

Y. Tan, University of Pakuan, Indonesia; M.F. Maulana, Universitas Sangga Buana, Indonesia; D.A. Nurmantris, Institut Teknologi Bandung, Indonesia; T. Firmansyah, Universitas Sultan Ageng Tirtayasa, Indonesia; M. Yunus, University of Pakuan, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

14:40 – 15:00 25W GaN Power Amplifier for 7.9–8.4 GHz Radar and Communication Applications

661

T. H. Ergin, Yeditepe University, Turkey; E. Polat, Yeditepe University, Turkey; I. Sisman, Profen Communication Technologies, Turkey

15:00 – 15:20 Design and Optimization of a Low-Loss Ka-Band Rotary Joint for SOTM Applications

665

B. Ilgaz, Yeditepe University, Turkey; I. Sisman, Profen Communication Technologies, Turkey; T. Haykir Ergin, Yeditepe University, Turkey

15:20 – 15:40 Compact Dual-Cavity Horn Antenna for Ku-Band SatCom Systems

668

S. Sarikazal, Yeditepe University, Turkey; B. ILGAZ, Yeditepe University, Turkey; I. Sisman, Yeditepe University, Turkey; T. Haykir Ergin, Yeditepe University, Turkey

---

14) Communication satellite antennas - IEEE APWC

chair 1 E. Polat chair 2 P. Tognolatti Tuesday, 9 15:40 – 18:00 room 2 Enrico

---

15:40 – 16:00 K/Ka Dual-Band Dual-Polarization Feed System for Compact Transmit-Array SOTM Antennas

492

S. A. Matos, Instituto de Telecomunicacoes, Instituto Universitário de Lisboa (ISCTE-IUL), Portugal; P. Naseri, University of Toronto, Canada; J. Felicio, Instituto de Telecomunicações, Instituto Superior Técnico, Portugal; J.R. Costa, Instituto de Telecomunicacoes, Instituto Universitário de Lisboa (ISCTE-IUL), Portugal; C. A. Fernandes, Instituto de Telecomunicações, Instituto Superior Técnico, Portugal; N. J. G. Fonseca, 3SPACE Innovation, France

16:00 – 16:20 Phased Antenna Array Concept for Flexible Satellite Communications in Ka-Band

530

A. Di Carlofelice, E. DiGiampaolo, P. Tognolatti, Universita' degli Studi dell'Aquila, Italy; L. Pascali, Planetek Italia, Bari, Italy; L. Amoruso, Planetek Italia, Bari, Italy; E. Arnieri, Univ. of Calabria, Italy; g. Amendola, Univ. of Calabria, Rende, Italy; L. Boccia, Univ. of Calabria, Rende, Italy; S. Moscato, SIAE MICROELETTRONICA, Cologno Monzese, Italy; A. Fonte, SIAE MICROELETTRONICA, Cologno Monzese, Italy; M. Oldoni, Politecnico di Milano, Milano, Italy

16:40 – 17:00 Compact, dual circularly polarized satellite horn antenna and feed network covering full SATCOM Ka-band

590

S. Oksay, Ozyegin University, Turkey; A. Akgiray, Ozyegin University, Turkey

17:00 – 17:20 Broadband Sinuous Antenna Design for 3U/6U CubeSat Applications

662

E. Polat, Yeditepe University, Turkey; I. Sisman, Profen Communication Technologies, Turkey; T. Haykir Ergin, Yeditepe University, Turkey

17:20 – 17:40 Dual-Circularly Polarized X-Band Isoflux Antenna for LEO Payload Telemetry Applications

664

B. Ilgaz, Yeditepe University, Turkey; I. Sisman, Profen Communication Technologies, Turkey; T. Haykir Ergin, Yeditepe University, Turkey

17:40 – 18:00 Dual Polarized Aperture Fed Antenna for Sub6 GHz 5G Applications

667

S. Sarikazal, Yeditepe University, Turkey; I. Sisman, Profen Communication Technologies, Turkey; T. Haykir Ergin, Yeditepe University, Turkey

---

15) Antennas and wireless systems - IEEE APWC

chair 1 D. Segovia-Vargas chair 2 M. Salazar-Palma Tuesday, 9 08:20 – 10:40 room 3 Angelica

---

08:20 – 08:40 High Power Symmetrical Switch Topology for Direct Antenna Modulated (DAM) Transmitters

271

J.P. Santos, NAVAIR, United States; K.D. Bhakta, NAVAIR, United States; Y.E. Wang, UCLA, United States

08:40 – 09:00 A coplanar super wide-band monopole antenna based on volcano smoke radiator

334

J.A. Ortiz-Fuentes, UC3M, Spain; J. Silva-Montero, MCOMM, Mexico; G. Galvan-Tejada, CINVESTAV, Mexico; K.A. Abdalmalak, UC3M, Spain; M. Salazar-Palma, UC3M, Spain; D. Segovia-Vargas, UC3M, Spain

09:00 – 09:20 Design and Analysis of a Metasurface Enhanced Wideband Antenna for Polarization Conversion and RCS Reduction

415

T. Islam, North Carolina A&T State U, United States; A. Eroglu, State University of New York Polytechnic, United States

09:20 – 09:40 Improvement of a 2x2 Port Super Wideband MIMO Antenna with a Volcano Smoke Ground Plane

425

J.A. Ortiz-Fuentes, UC3M, Spain; K.A. Abdalmalak, UC3M, Spain; M. Salazar-Palma, UC3M, Spain; D. Segovia-Vargas, UC3M, Spain

09:40 – 10:00 Exploring feasibility and efficiency of a WPT system comprising a flat spiral coil nested within a large helical coil

439

M. Joler, University of Rijeka, Faculty of Engineering, Croatia

10:00 – 10:20 Broadband Blended Multi-Taper Antipodal Vivaldi Antenna for Partial Discharge Detection

442

B. Habib, Khalifa University, United Arab Emirates; O. Al Zaaabi, Khalifa University, United Arab Emirates; N. Harid, Khalifa University, United Arab Emirates; K. Al Hosani, Khalifa University, United Arab Emirates

10:20 – 10:40 Design of a wirelessly powered S-band backscatter edge sensing platform

480

C. J. Sands, Franklin W. Olin College of Engineering, United States; C. Goenka, Franklin W. Olin College of Engineering, United States

---

16) Propagation models - IEEE APWC

chair 1 W. Keusgen chair 2 E. Plouhinec Tuesday, 9 11:00 – 12:40 room 3 Angelica

---

11:00 – 11:20 Human body shadowing modeling based on rotatable screens and uniform theory of diffraction

231

E. Plouhinec, CReC Saint-Cyr/IETR, France; B. Uguen, IETR UMR CNRS 6164, University of Rennes, France

11:20 – 11:40 Challenges and potential approaches in propagation modeling of high frequencies for 6G networks

316

E. Greenberg, Rafael, Israel; E. Klodzh, Rafael, Israel

11:40 – 12:00 Optimised via design and modeling for a radio astronomy receiver

429

M.A. Johnston, South African Radio Astronomy Observatory, South Africa; E. Theunissen, South African Radio Astronomy Observatory, South Africa; J. Malan, South African Radio Astronomy Observatory, South Africa

12:00 – 12:20 Deep Learning Approach to Line of Sight Detection in Urban Environments

452

M. Hossein zadeh, University of Bologna, Italy; M. Barbiroli, University of Bologna, Italy; F. Fuschini, University of Bologna, Italy

12:20 – 12:40 Instantaneous directional channel measurements at 14 GHz and 160 GHz via a virtual circular array

499

W. Keusgen, Technical University of Berlin, Germany; T. Eichler, Rohde & Schwarz, Germany

---

17) Management of electromagnetic scattering for wireless and radar applications - ICEAA, Organized by A. Boag, P. Ginzburg

chair 1 A. Boag, chair 2 P. Ginzburg Tuesday, 9 14:20 – 16:20 room 3 Angelica

---

14:20 – 14:40 A 1-bit shape-morphing unit cell design for photothermally reconfigurable reflectarrays

360

B.A. Scott, University of Exeter, United Kingdom; F. Burton, British Telecom, United Kingdom; K.E. Evans, University of Exeter, United Kingdom; A.W. Powell, University of Exeter, United Kingdom

14:40 – 15:00 Permittivity mode expansions for thermal emission calculations from non-isothermal systems

213

P. Chen, Ben-Gurion University, Israel; C. Khandekar, Purdue University, United States; Z. Jacob, Purdue University, United States; Y. Sivan, Ben-Gurion University, Israel

15:00 – 15:20 Advancing Radar Technology: High-resolution chain home radar on optical fiber

685

T.S. Salgals, Riga Technical university (RTU), Latvia; D.V. Vovchuk, Riga Technical University (RTU), Latvia; M.P. Parfjonovs, Riga Technical University (RTU), Latvia; N.M. Muracova, Riga Technical University (RTU), Latvia; P.G. Ginzburg, Tel Aviv University (TAU), Israel; V.B. Bobrovs, Riga Technical University (RTU), Latvia

15:20 – 15:40 Advanced Metasurfaces for Next-Generation Wireless Communication Networks

117

S. K. R. Vuyyuru, Aalto University, Finland; R. Valkonen, Nokia Bell Labs, Finland; D. H. Kwon, University of Massachusetts Amherst, United States; V. S. Asadchy, S. A. Tretyakov, Aalto University, Finland

15:40 – 16:00 Inverse Design of Free-Form Dielectric Resonators with Engineered Scattering Properties

687

V. Igoshin, ITMO Unviersity, Russian Federation; A. Kokhanovskity, ITMO University, Russian Federation; M. Petrov, ITMO University, Russian Federation

16:00 – 16:20 Superscatterers on a Target for Tailoring Collective Electromagnetic Responses

309

P. Ginzburg, D. Vovchuk, S. Geyman, A. Mikhailovskaya, M. Tsukerman, K. Grotov, TA. Kharchevskii, A. Machnev, D. Kolchanov, D. Dobrykh, Tel Aviv University, Israel

---

18) Scattering methods in complex environments - ICEAA, Organized by C. Ponti, L. Tognolatti, G. Schettini

chair 1 C. Ponti chair 2 L. Tognolatti, G. Schettini Tuesday, 9 16:40 – 18:00 room 3 Angelica

---

16:40 – 17:00 Scattering from cylinders in Π/N PEC dihedral corners: an effective approach

677

R. Abdullin, University Mediterranea of Reggio Calabria, Italy; G.M. Battaglia, University Mediterranea of Reggio Calabria, Italy; L. Crocco, IREA-CNR, Italy; A.F. Morabito, University Mediterranea of Reggio Calabria, Italy; T. Isernia, University Mediterranea of Reggio Calabria, Italy; R. Palmeri, University Mediterranea of Reggio Calabria, Italy

17:00 – 17:20 A Study on Spectral-Domain Approach to Plane Electromagnetic Wave Scattering by Finite-Periodic Lamellar Grating

259

K. Watanabe, Fukuoka Institute of Technology, Japan

17:20 – 17:40 Electromagnetic Modelling for Non-Destructive Diagnostics of Olive Trees

505

A. Fedeli, University of Genoa, Italy; G. D'Agostino, University of Genoa, Italy; A.A. Casazza, University of Genoa, Italy; M. Omki, University of Genoa, Italy; A. Randazzo, University of Genoa, Italy

17:40 – 18:00 VNA-based real-time ground penetrating radar imaging for unmanned aerial vehicles

239

A. Salari, University of Illinois Chicago, United States; A. Ravanrooy, Droneasure, LLC, United States; G. Esposito, Institute for Electromagnetic Sensing of the Environment, National Research Council of Italy, Italy; I. Catapano, Institute for Electromagnetic Sensing of the Environment, National Research Council of Italy, Italy; F. Soldovieri, Institute for Electromagnetic Sensing of the Environment, National Research Council of Italy, Italy; D. Erricolo, University of Illinois Chicago, United States

---

19) Emerging approaches, future trends, and applications of electromagnetic inverse scattering - ICEAA, Organized by A. Randazzo, A. Massa, M. Salucci

chair 1 A. Randazzo chair 2 A. Massa, M. Salucci Tuesday, 9 08:20 – 10:40 room 4 Guglielmo

---

08:20 – 08:40 Investigating the Regularization Properties of the Virtual Veselago Lens for Inverse Problems

537

J. LoVetri, University of Manitoba, Canada; M.T. Bevacqua, Università degli Studi Mediterranea di Reggio Calabria, Italy; V. Okhmatovski, University of Manitoba, Canada; T. Isernia, Università degli Studi Mediterranea di Reggio Calabria, Italy

08:40 – 09:00 On the exploitation of deep reinforcement learning for microwave inverse scattering

300

P. Rosatti, ELEDIA@UniTN - DICAM, Italy; A. Benoni, ELEDIA@UniTN - DICAM, Italy; M. Salucci, ELEDIA@UniTN - DICAM, Italy; A. Massa, ELEDIA@UniTN - DICAM, Italy

09:00 – 09:20 Preliminary analysis of a Microwave Imaging System for detecting inclusions in non-planar hosting media

230

A. Cuccaro, University of Calabria, Italy; A. Fedeli, University of Genoa, Italy; R. Marcelli, Institute for Microelectronics and Microsystems, National Research Council of Italy, Italy; C. Ponti, Roma Tre University, Italy; E. Proietti, Institute for Microelectronics and Microsystems, National Research Council of Italy, Italy; A. Randazzo, University of Genoa, Italy; G. Schettini, Roma Tre University, Italy; R. Solimene, University of Campania "Luigi Vanvitelli", Italy

09:20 – 09:40 A New Two-Step Quantitative Microwave Imaging Approach Based on the Contraction Integral Equation

451

M. T. Bevacqua, Università Mediterranea di Reggio Calabria, Italy; T. Isernia, Università Mediterranea di Reggio Calabria, Italy; L. Crocco, CNR-IREA, National Research Council of Italy, Italy

09:40 – 10:00 A Wigner-based migration technique for target detection and localization

172

D. Santagata, Università degli Studi della Campania "Luigi Vanvitelli", Italy; M. A. Maisto, Università degli Studi della Campania "Luigi Vanvitelli", Italy; R. Solimene, Università degli Studi della Campania "Luigi Vanvitelli", Italy

10:00 – 10:20 AI-Driven Method for Wideband GPR Microwave Imaging of Buried Scatterers

286

P. Rosatti, ELEDIA@UniTN - DICAM, Italy; M. Salucci, ELEDIA@UniTN - DICAM, Italy; A. Massa, ELEDIA@UniTN - DICAM, Italy

10:20 – 10:40 Using spherical harmonics to model mutual coupling effects on embedded element patterns

469

T. Dash, Delft University of Technology, Netherlands; N.B. Onat, Delft University of Technology, Netherlands; Y. Aslan, Delft University of Technology, Netherlands; A. Yarovoy, Delft University of Technology, Netherlands

---

20) Analysis design and applications of GRIN media and metalenses - ICEAA, Organized by S. Maci, M. Albani

chair 1 S. Maci chair 2 M. Albani Tuesday, 9 11:00 – 12:40 room 4 Guglielmo

---

11:00 – 11:20 Overview of Lens Antennas from Transformation Optics

669

Y. Hao, Queen Mary University of London, United Kingdom

11:20 – 11:40 Innovative Fabrication Techniques for Transmitarray and Printed Lens Antennas

660

Y. Rahmat-Samii, University of California at Los Angeles (UCLA), United States

11:40 – 12:00 Folded Meta-Optics for Compact Submillimeter-Wave Radiometric Instruments

624

T. Thuroczy, M. Robin, O. de Sagazan, X. Morvan, R. Sauleau, D. González Ovejero, Institut d'Électronique et des Technologies du numéRique, IETR - UMR CNRS 6164, France

12:00 – 12:20 An Explicit GO-Based Inversion Approach for Designing Inhomogeneous Dielectric Lens Antennas

580

I. Gashi, University of Siena, Italy; S. Maci, University of Siena, Italy; M. Albani, University of Siena, Italy

12:20 – 12:40 Prior Knowledge in Deep Learning-enabled Generative Design of Metalens Antennas

198

Z. N. CHEN, National University of Singapore, Singapore; P. Liu, National University of Singapore, Singapore; Y. Lyu, National University of Singapore, Singapore

---

21) Electromagnetic models and geophysical products for microwave signal-of-opportunity reflectometry - ICEAA, Organized by J. Campbell, D. Comite, M. Moghaddam

chair 1 J. Campbell chair 2 D. Comite, M. Moghaddam Tuesday, 9 14:20 – 17:20 room 4 Guglielmo

---

14:20 – 14:40 Advanced Circulation Model Storm Surge Predictions Informed By CYGNSS Measurements

249

M. M. Al-Khaldi, The Ohio State University, United States; J. T. Johnson, The Ohio State University, United States; E. J. Kubatko, The Ohio State University, United States; A. Sines, The Ohio State University, United States; S. Nepal, The Ohio State University, United States

14:40 – 15:00 Detection and Analysis of GPS L1 Band Radio Frequency Interference Using Spaceborne Global Navigation Satellite System Reflectometry Receivers

327

M. M. Al-Khaldi, The Ohio State University, United States; J. T. Johnson, The Ohio State University, United States

15:00 – 15:20 Ionospheric delays in PRETTY mission data: an opportunity to study ionospheric F-layer structure

632

M. Semmling, Institute for Solar-Terrestrial Physics DLR-SO, Germany; M. Moreno, Institute for Solar-Terrestrial Physics DLR-SO, Germany; F. Zus, Helmholtz Centre for Geosciences GFZ, Germany; J. Wickert, Helmholtz Centre for Geosciences GFZ, Germany; A. Dielacher, Beyond Gravity Austria BGA, Austria; H. Nahavandchi, Norwegian Univ. of Science and Technology NTNU, Norway

15:20 – 15:40 Polarimetric GNSS-R for sea ice monitoring: preparing for ESA HydroGNSS

361

G. González, Institute of Space Sciences (ICE-CSIC, IEEC), Spain; E. Cardellach, Institute of Space Sciences (ICE-CSIC, IEEC), Spain; W. Li, Institute of Space Sciences (ICE-CSIC, IEEC), Spain

15:40 – 16:00 Joint Retrieval of Soil Moisture and Vegetation Properties from GNSS-R Observations: A Preliminary Study

395

A. Melebari, University of Southern California, United States; M. Moghaddam, University of Southern California, United States

16:00 – 16:20 Inversion of remote rensing synthetic data for essential climate variables characterization

649

A. Veneri, Sapienza University, Italy; P. Burghignoli, Sapienza University, Italy; D. Comite, Sapienza University, Italy

16:40 – 17:00 Towards assimilation of GNSS-R land observables in NWP models: prototype forward operator

357

E. Cardellach, Institute of Space Sciences (ICE-CSIC, IEEC), Spain; J. Peng, Institute of Space Sciences (ICE-CSIC, IEEC), Spain

17:00 – 17:20 Integration of GNSS-R Delay-Doppler Maps into a Land Data Assimilation System

680

J.D. Campbell, University of Southern California, United States; A. Kannan, University of Southern California, United States; M. Moghaddam, University of Southern California, United States; C.S. Ruf, University of Michigan, United States

---

22) Natural and stimulated emissions and related phenomena in space and astrophysical plasmas - ICEAA, Organized by G. Ganguli

chair 1 G. Ganguli chair 2 Tuesday, 9 08:40 – 17:20 room 5 Basile

---

08:40 – 09:20 Ensuring a Sustainable Future in Low Earth Orbit

129

D.N. Baker, LASP, University of Colorado Boulder, United States

09:20 – 09:40 Weak turbulence analysis on dynamic spectra of solar radio emissions

163

L. F. Ziebell, Universidade Federal do Rio Grande do Sul, Brazil; M. Lazar, KU Leuven and Ruhr University Bochum, Belgium; P. H. Yoon, University of Maryland, United States; R. A. López, Comisión Chilena de Energi´a Nuclear and Universidad Andres Bello, Chile; S. Poedts, University of Maria Curie-Sklodowska and KU Leuven, Belgium

09:40 – 10:00 Effect of debris charging dynamics on the formation of precursor ion acoustic solitons

171

A. Sen, Institute for Plasma Research, India; A. Mir, Institute for Plasma Research, India; P. Bandyopadhyay, Institute for Plasma Research, India; S. Tiwari, Indian Institute of Technology Jammu, India; C. Crabtree, Naval Research Laboratory, United States; G. Ganguli, Naval Research Laboratory, United States

10:00 – 10:20 Radio and plasma wave emissions from Jupiter: Quasilinear analysis of Juno spacecraft data

174

P. H. Yoon, University of Maryland College Park, United States

10:20 – 10:40 Stimulated emission in space plasma

223

R. Bingham, STFC Rutherford Appleton Laboratory, United Kingdom

11:00 – 11:20 Ion Landau Damping Of Ion Acoustic Solitons Using Particle-In-Cell Simulations

266

A. Sam, Stanford University, United States; A. Fletcher, NASA, United States; C. Crabtree, US Naval Research Laboratory, United States; S. Elschot, Stanford University, United States

11:20 – 11:40 Characteristics of Energetic Electron Precipitation: Probing Magnetospheric Processes

274

R.M. Millan, Dartmouth College, United States; K.A. Cantwell, Dartmouth College, United States; L. Gan, Boston University, United States; A.Y. Ukhorskiy, Johns Hopkins Applied Physics Lab, United States

11:40 – 12:00 Modeling the evolution of plasma-fragments clouds from hypervelocity impacts for remote characterization of small space debris

330

Y. Zhang,N. O. Renno, C. Li, M. Akhavan-Tafti, T. Atilaw, Department of Climate & Space Sciences and Engineering, University of Michigan, Ann Arbor, United States

12:00 – 12:20 Space debris Identification and Tracking (SINTRA)

332

A. Truitt, IARPA, United States

12:20 – 12:40 Using Hypervelocity Impact Signals to Track and Characterize Space Debris

337

N. O. Renno, University of Michigan, United States; Y. Zhang, University of Michigan, United States; T. Atilaw, University of Michigan, United States; M. Akhavan-Tafti, University of Michigan, United States; R. Backhus, University of Michigan, United States

12:40 – 13:00 Cross-Scale Radiation Belt Modeling: From Global Stormite Evolution to Local Wave-Particle Interactions

338

A. Ukhorskiy, JHU/APL, United States;A.T. Michael, K. Sorathia, V.G. Merkin, Johns Hopkins University, Laurel, MD, USA; J. Albert, X. Shen, W. Li, Air Force Research Laboratory, Albuquerque, NM, USA;R.M. Millan, Dartmouth College, Hanover, NH, USA

14:20 – 14:40 Understanding stormtime geospace as a complex system: Recent progress from the Center for Geospace Storms

378

K. Sorathia, JHUAPL, United States; V. Merkin, JHUAPL, United States; K. Pham, NCAR, United States; D. Lin, NCAR, United States; S. Bao, Rice University, United States; A. Sciola, JHUAPL, United States; A. Michael, JHUAPL, United States; M. Wiltberger, NCAR, United States

14:40 – 15:00 Theory and simulation of electromagnetic nonlinear structures produced by charged orbital debris

453

C. E. Crabtree, US Naval Research Laboratory, United States; A. R. Soto-Chavez, US Naval Research Laboratory, United States; G. Ganguli, US Naval Research Laboratory, United States; E. M. Tejero, US Naval Research Laboratory, United States; W. Amatucci, US Naval Research Laboratory, United States; A. Sen, Institute for Plasma Research, India

15:00 – 15:20 Plasma wave conversion processes in space environments: new insights into solar flare physics*

456

A. R. Soto-Chavez, US Naval Research Laboratory, United States; C. Crabtree, US Naval Research Laboratory, United States; G. Ganguli, US Naval Research Laboratory, United States

15:20 – 15:40 Characterization of plasma structures produced by orbital space debris

481

W. Scales, Virginia Tech, United States; M. Idso, University of Washington, Seattle, United States; B. Srinivasan, University of Washington, Seattle, United States

15:40 – 16:00 Plasma signatures of orbital debris in LEO

525

G.L. Delzanno, P.A. Resendiz Lira, J. C. Holmes, S. Janhunen, D. Svyatsky, Los Alamos National Laboratory, United States

16:00 – 16:20 Plasma Waves Generated by Resident Space Objects: Theory and Observation

544

S. Thaller, I. Collett, Orion Space Solutions , United States; J. Hughes, NWRA, United States; C. Nasr, A. Newheart, R. Kelly, R. Patel, J. Wilson, Orion Space Solutions , United States; N. Re, B. Tatman, Advanced Space, United States; Y. Kasahara, S. Matsuda, Kanazawa University, Japan; F. Tsuchiya, A. Kumamoto, Tohoku University, Japan; A. Matsuoka, Kyoto University, Japan; M. Teramoto, Kyushu Institute for Technology, Japan; T. Hori, Nagoya University, Japan; I. Shinohara, JAXA, Japan; Y. Miyoshi, A. Shinbori, K. Yamamoto, Nagoya University, Japan

16:40 – 17:00 Linear and nonlinear wave propagation in plasma -- a quantum computing perspective

595

A. K. Ram, Massachusetts Institute of Technology, United States; E. Koukoutsis, National Technical University of Athens, Greece; G. Vahala, William & Mary, United States; M. Soe, Rogers State University, United States; K. Hizanidis, National Technical University of Athens, Greece; L. Vahala, Old Dominion University, United States

17:00 – 17:20 The Lower Ionospheric Response to the Great American Solar Eclipse (April 8, 2024) from Observation by the VLF Receivers Network Deployed Across the Totality Path

671

O.V. Agapitov, SSL, UC Berkeley, United States; M. Golkowski, University of Colorado Denver, United States

23) Electromagnetics in biomedical applications: advances in nervous system stimulation - ICEAA, Organized by G. Bonmassar, A. Paffi, L. Golestani Rad

chair 1 G. Bonmassar chair 2 A. Paffi, L. Golestani Rad Tuesday, 9 08:40 – 10:40 room 6 Ruggero

08:40 – 09:00 Nerve response simulations in electromagnetic modeling and design of MRI gradient coils

412

M. Davids, V. Klein, B. Guerin, L.L. Wald, Massachusetts General Hospital, United States;

09:00 – 09:20 Sensitivity Analysis of a 300 MHz Twisted Pair RF Coil for Capturing Conductivity Changes in a Dynamic Anthropomorphic Head Phantom

269

Y. Qian, Northwestern University, United States; P.P. Sanpitak, Northwestern University, United States; L.I. Navarro de Lara, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, United States; L.L. Wald, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard-MIT Division of Health Sciences and Technology, Harvard Medical School, United States; M.G. Bright, Northwestern University, United States; L. Golestanirad, Northwestern University, United States

09:20 – 09:40 Pulsed electric fields for regeneration of injured spinal cord: multiphysic and multiscale modeling of virtual stem cells

540

S. Fontana, Sapienza University of Rome, Italy; A. Paffi, Sapienza University of Rome, Italy; L. Caramazza, Sapienza University of Rome, Italy; M. Colella, Sapienza University of Rome, Italy; N. Dolciotti, Sapienza University of Rome, Italy; F. Apollonio, Sapienza University of Rome, Italy; M. Liberti, Sapienza University of Rome, Italy

09:40 – 10:00 Physics-informed neural networks for efficient electric field modelling in deep brain stimulation

444

T. Almeev, University of Rostock, Germany; J.P. Payonk, University of Rostock, Germany; S. Spors, University of Rostock, Germany; U. van Rienen, University of Rostock, Germany

10:00 – 10:20 High-Frequency Trans-Spinal Magnetic Stimulation (HF-TSMS) for Chronic Neuropathic Pain Treatment: A Numerical Optimization Study in a Porcine Model

236

F. Marturano, Massachusetts General Hospital, Harvard Medical School, United States; C. Z. Cooley, Massachusetts General Hospital, Harvard Medical School, United States; G. Bonmassar, Massachusetts General Hospital, Harvard Medical School, United States

10:20 – 10:40 Theoretical Distance Constraints in Multi-Site Short-Pulsed Microscopic Magnetic Stimulation: How Close is Too Close?

626

G. Bonmassar, Harvard Medical School, United States

---

24) Electromagnetic applications to biomedicine - ICEAA

chair 1 R. L. Gardner chair 2 C. Pisano Tuesday, 9 11:00 – 15:40 room 6 Ruggero

---

11:00 – 11:20 RF coupling and effects simulation for biological systems

696

R. L. Gardner, Consultant, United States

11:20 – 11:40 H1N2 Swine Flu Inactivation in Aerosol by Means of Radiated Microwaves

173

M. Losardo, Elettronica SpA, Italy; P. Bia, Elettronica SpA, Italy; A. Manna, Elettronica SpA, Italy; G.P. Privitera, University of Pisa, Italy; S. Brusaferro, University of Udine, Italy

11:40 – 12:00 Sensing and wireless powering performance assessment of magnetic resonance-based bioelectronic sensors

391

I.V. Soares, Electrical & Electronic Engineering, School of Engineering, University of Galway, Ireland; M. Farooq, Electrical & Electronic Engineering, School of Engineering, University of Galway, Ireland; M.J. Krasny, Electrical & Electronic Engineering, School of Engineering, University of Galway, Ireland; M. O'Halloran, School of Medicine, University of Galway, Ireland; A. Elahi, Electrical & Electronic Engineering, School of Engineering, University of Galway, Ireland

12:00 – 12:20 Flexible slotted patch antenna for non-invasive detection of blood glucose

449

B. Tlili, Rochester Institute of Technology, Dubai, United Arab Emirates; N. R. Rishani, Rochester Institute of Technology, Dubai, United Arab Emirates; M. Keshkar, Rochester Institute of Technology, Dubai, United Arab Emirates; F. Fatani, King Abdullah University of Science and Technology (KAUST), Saudi Arabia; M. Vaseem, King Abdullah University of Science and Technology (KAUST), Saudi Arabia; A. Shamim, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

12:20 – 12:40 Highly anisotropic unit cells for EEG head phantoms

466

P. Kadera, Brno University of Technology, Czech Republic; J. Lacik, Brno University of Technology, Czech Republic

12:40 – 13:00 Tracking elbow angles with printed dipole antennas through the passive extraction of S11 parameter and resonant frequency: a pilot study

563

J. Seignard,CNRS, University Grenoble Alpes, France; M. Petit, University of Applied Sciences Western Switzerland, HES-SO University of Applied Sciences and Arts Western Switzerland, Switzerland; F. Moissenet, Geneva University Hospital and University of Geneva, Switzerland; J. Beaulieu, Faculty of Medicine and Trauma Surgery, Switzerland; D. Bechevet, University of Applied Sciences Western Switzerland, Switzerland; G. Déprès, Fedrigoni, France; N. Reverdy-Bruas, CNRS, Fedrigoni, CNRS, University Grenoble Alpes, France;

14:20 – 14:40 Microdosimetry of 3D virtual stem cells inside an electro-pulsed biohybrid device for spinal cord regeneration

603

S. Fontana, Sapienza, University of Rome, Italy; N. Dolciotti, Sapienza, University of Rome, Italy; L. Caramazza, Sapienza, University of Rome, Italy; M. Colella, Sapienza, University of Rome, Italy; A. Paffi, Sapienza, University of Rome, Italy; V. Moreno Manzano, Centro de Investigacion Principe Felipe, Spain; F. M. Andre, CNRS, Universite´ Paris-Saclay, Gustave Roussy, France; L. Mir, CNRS, Universite´ Paris-Saclay, Gustave Roussy, France; C. Consales, Division of Health Protection Technologies, ENEA, Italy; F. Apollonio, Sapienza, University of Rome, Italy; M. Liberti, Sapienza, University of Rome, Italy

14:40 – 15:00 Modeling Electroporation Dynamics in Liposomes and Cells Exposed to Nanosecond Pulsed Electric Fields for Optimized Drug Delivery

619

C. Pisano, Sapienza University of Rome, Italy; L. Caramazza, Sapienza University of Rome, Italy; V. Isoldi, Sapienza University of Rome, Italy; G. Risca, Sapienza University of Rome, Italy; A. Paffi, Sapienza University of Rome, Italy; F. Apollonio, Sapienza University of Rome, Italy; M. Liberti, Sapienza University of Rome, Italy

15:00 – 15:20 Deep Learning-enabled reconstruction of electrical conductivity and transcranial electromagnetic field distributions

641

R. J. Sadleir, Arizona State University, United States; S. Z. K. Sajib, Arizona State University, United States; M. L. Manning, Arizona State University, United States

---

25) Technologies for mm waves and photonics - ICEAA

chair 1 M. Beccaria chair 2 P. Pirinoli Tuesday, 9 15:40 – 17:40 room 6 Ruggero

---

15:40 – 16:00 Photonic-assisted RF self-interference cancellation utilizing optical frequency comb for amplitude and arrival time matching

167

R.G. Feng, Y.M. Tian, Y.H. Song, M.L. Yang, Y.C. Wang, X.Y. Zhang, S.G. Xie, School of Electronic Information Engineering,Beihang University , Beijing, China

16:00 – 16:20 Radio frequency signal sensing method based on wideband light source electro-optic modulation and optical integrator

168

Y.H. Song, Beihang University, China ; X.Y. Zhang, Beihang University, China ; Q.W. Zhang, Beihang University, China ; Y.M. Tian, Beihang University, China

16:40 – 17:00 High-performance millimeter-wave notch filters for fusion plasma diagnostics

496

L. Jing, Huazhong University of Science and Technology, China ; D.H. Xia, Huazhong University of Science and Technology, China

17:00 – 17:20 Optimization-based Design of Dielectric-only Transparent Smart Electromagnetic Surfaces

587

L. Bricco, Politecnico di Torino, Italy; M. Beccaria, Politecnico di Torino, Italy; P. Pirinoli, Politecnico di Torino, Italy

17:20 – 17:40 Line Waves in Plasmonic-Dielectric Multiport Networks for Nanophotonic Interconnects

638

I.L. Ruiz, Universidad Nacional de Colombia, Colombia; S. Asadulina, ITMO University, Russian Federation; J.D. Baena, Universidad Nacional de Colombia, Colombia

---

26) Nonlinear media, resonances, and inverse problems - ICEAA, Organized by Y. Shestopalov

chair 1 Y. Shestopalov chair 2 Wednesday, 10 08:20 – 10:00 room 1 Federico

---

08:20 – 08:40 Radiative heat transfer through narrow gaps

125

B. Budaev, University of California at Berkeley, United States

08:40 – 09:00 Inverse Problems and Qualitative Theory of Three-Dimensional Polynomial Dynamical Systems

180

Y.V. Shestopalov, Russian Technological University MIREA, Moscow, Russian Federation; A.H. Shakhverdiev, Russian State Geological Prospecting University, Moscow, Russian Federation

09:00 – 09:20 A method of damping waveguide eigenmodes in solving axisymmetric diffraction problems

218

S. S. Sautbekov, Al-Farabi Kazakh National University, Kazakhstan; Y. V. Shestopalov, Institute of Information Technologies, Russian Technological University, Russian Federation; M. S. Sautbekova, Kazakh-British Technical University, Kazakhstan; G. K. Alkina, Al-Farabi Kazakh National University, Kazakhstan; G. D. Bairova, Al-Farabi Kazakh National University, Kazakhstan

09:20 – 09:40 Finite element 3D models of melanoma growth and time-dependent backscattered data for dielectric properties of melanoma at 6 GHz

317

E.Lindström, L. Beilina, University of Gothenburg, Chalmers University of Technology, Sweden

09:40 – 10:00 Reconstructing the dielectric properties of melanoma in 3D using real-life melanoma model

321

G. Kyhn, Chalmers University of Technology and University of Gothenburg, Sweden; E. Lindström, Chalmers University of Technology and University of Gothenburg, Sweden; L. Beilina, Chalmers University of Technology and University of Gothenburg, Sweden

---

27) Numerical methods in electromagnetics - ICEAA, Organized by R.D. Graglia, D.R. Wilton

chair 1 R.D. Graglia chair 2 D.R. Wilton Wednesday, 10 10:00 – 18:40 room 1 Federico

---

10:00 – 10:20 A hybrid time-frequency approach for broadband modeling of highly resonant microwave and RF devices

114

J.M. Jin, University of Illinois at Urbana-Champaign, United States; K.D. Zhang, Apple Inc., United States

10:20 – 10:40 Extending the MPIE Galerkin MoM Thin Wire Formulation to include Curvilinear Wires

122

D.B. Davidson, Curtin University, Australia; D.R. Wilton, University of Houston, United States

11:00 – 11:20 Advantages and FDTD Integration of Focused Beams for RCS Computations

152

J. Diener, Colorado School of Mines, United States; A. Elsherbeni, Colorado School of Mines, United States; V. Demir, Northern Illinois University, United States

11:20 – 11:40 Simplified analytic expressions for the line integrals over perimeters of a pair of triangular facets in the Laplacian representation of ithe layered medium Green functions

253

E. Bleszynski, monopole research, United States; M. Bleaszynski, monopole research, United States; T. Jaroszewicz, monopole research, United States; W.A. Johnson, consultant, United States; J. Rivero, Laboratorio Antenne e Compatibilità Elettromagnetica, Istituto Superiore Mario Boella, Italy; F. Vipiana, Dipartimento di Elettronica e Telecomunicazioni, Politecnico di Torino, Italy; D. Wilton, Dept. of Electrical and Computer Engineering, University of Houston, United States

11:40 – 12:00 Comparison of MoM Solvers for Analysing Wire Coupling

289

W.R. Dommisse, Stellenbosch University, South Africa; M.M. Botha, Stellenbosch University, South Africa; T. Rylander, Chalmers University of Technology, Sweden; J. Carlsson, Provinn AB, Sweden

12:00 – 12:20 Handling the shape-dependent problem in the numerical evaluation of 2D and 3D nearly singular integrals

297

M. D. Zhu, Xidian University, Xi’an, Shaanxi 710071, China, China

12:20 – 12:40 Investigation of a Local Refinement Strategy for a B-Spline Based Discretization of the Electric Field Integral Equation

311

M. Mirmohammadsadeghi, Technical University of Munich, Germany; B. Hofmann, University of Southern California, United States; T.F. Eibert, Technical University of Munich, Germany; S.B. Adrian, Universität Rostock, Germany

12:40 – 13:00 A Data-Driven Framework for 3D Shape Reconstruction from Phaseless Scattering Data

340

T. Crane, The Ohio State University, United States; D. Dikbayir, Michigan State University, United States; M. Nadeem, The Ohio State University, United States; H. M. Aktulga, Michigan State University, United States; N. V. Nair, Applied Research Associates, United States; B. Shanker, The Ohio State University, United States

14:20 – 14:40 Low-Frequency Solution of Electric Field Integral Equation Based on Nystrom Discretization

363

S.J. He, Tongji University, China ; S.R. Wang, Tongji University, China ; M.S. Tong, Tongji University, China

14:40 – 15:00 Applications of MPIE Based Theory of Characteristic Modes

402

C. F. Wang, Nanjing University of Science and Technology, China ; Z. H. Ning, Nanjing University of Science and Technology, China ; M. Li, Nanjing University of Science and Technology, China ; J. Gu, Nanjing University of Science and Technology, China ; D. Z. Ding, Nanjing University of Science and Technology, China

15:00 – 15:20 Degrees of Freedom and Shadow Area with Applications in Wireless Communication, Inverse Scattering, and Numerics

410

M. Gustafsson, Lund University, Sweden

15:20 – 15:40 Fast and Accurate Meshless EM Analysis of Small Defects in a MoM Scheme

479

A. Mazzinghi, University of Florence, Italy; A. Mori, IDS Ingegneria dei Sistemi, Italy; M. Bercigli, IDS Ingegneria dei Sistemi, Italy; M. Bandinelli, IDS Ingegneria dei Sistemi Spa, Italy; A. Freni, University of Florence, Italy

15:40 – 16:00 Hierarchical grid-robust discretization of the Electric-Field Integral Equation by the Method of Moments

483

E. Ubeda, Universitat Politècnica de Catalunya (UPC), Spain; J. M. Rius, Universitat Politècnica de Catalunya (UPC), Spain

16:00 – 16:20 On a Resonance-Free Rapidly Converging Single-Trace Method for the Transmission Problem

522

K. Cools, Ghent University, Belgium

16:40 – 17:00 A new pivoting heuristic for the construction of H^2-matrices

531

J. M. Tetzner, Universität Rostock, Germany; S. B. Adrian, Universität Rostock, Germany

17:00 – 17:20 Effective 3D EM Simulation of Electrically Large Cosite Scenarios

551

B. M. Ninkovic, , T. S. Milosevic, M. M. Stevanetic, J. E. Music, B. M. Kolundzija, WIPL-D d.o.o., Serbia

17:20 – 17:40 On the Use of Huygens' Encapsulation for Confidential Electromagnetic Modelling

588

V.F. Martin, Universidad Rey Juan Carlos, Spain; A. Gomez-Rodriguez, Universidad de Extremadura, Spain; M. Parejo, EM3WORKS, Spain; L. Landesa, Universidad de Extremadura, Spain; M.G. Araujo, Universidad de Vigo, Spain; F. Obelleiro, University of Vigo, Spain; J.M. Taboada, University of Extremadura, Spain

17:40 – 18:00 Adjoint-Based Error Estimation and Control and Anisotropic Automatic Adaptive hp-Refinement for Numerical Methods in Electromagnetics

646

B. M. Notaroš, Colorado State University, United States; J. J. Harmon, Colorado State University, United States

18:00 – 18:20 Assessing the Impact of Quadrature Accuracy in Test Integrals for Field Integral Equations

658

V.F. Martin, Universidad Rey Juan Carlos, Spain; J. Rivero, Politecnico di Torino, Italy; D.R. Wilton, University of Houston, United States; W.A. Johnson, Consultant, United States; F. Vipiana, Politecnico di Torino, Italy

18:20 – 18:40 Evolution of pyramidal elements from low order to higher arbitrary order

722

R.D. Graglia, Politecnico di Torino, Italy

---

28) Advances in radio astronomy antennas and systems - ICEAA, Organized by D. de Villiers, R. Lehmensiek, D. Davidson, P. Bolli

chair 1 D. de Villiers chair 2 R. Lehmensiek, D. Davidson, P. Bolli Wednesday, 10 08:20 – 15:20 room 2 Enrico

---

08:20 – 08:40 Characteristic current mode analysis for an array of mutually coupled identical antennas

299

J. Cumner, University of Cambridge, United Kingdom; O.S.D. O'Hara, University of Cambridge, United Kingdom; Q. Gueuning, University of Cambridge, United Kingdom; D. Anstey, University of Cambridge, United Kingdom; A. Brown, Queen Mary, University of London, United Kingdom; F. Dulwich, University of Cambridge, United Kingdom; A. Faulkner, University of Cambridge, United Kingdom; E. de Lera Acedo, University of Cambridge, United Kingdom

08:40 – 09:00 Subarrays for Phased Aperture Arrays Radio Telescopes

527

P. Di Ninni, National Institute for Astrophysics, Italy; T. D. Carozzi, Onsala Space Observatory, Sweden; G. Comoretto, National Institute for Astrophysics, Italy

09:00 – 09:20 Efficient storage of embedded element patterns for the SKA-Low radio telescope

383

D.B. Davidson, Curtin University, Australia; A.T. Sutinjo, Curtin University, Australia

09:20 – 09:40 Embedded Element Length of Receiving Antennas

617

T. D. Carozzi, Onsala Space Observatory, Chalmers Uni, Sweden, Sweden

09:40 – 10:00 Determining Uniform Planar Array Mutual Coupling Terms Through Multi-Exponential Analysis

196

J. Gilmore, Stellenbosch University, South Africa

10:00 – 10:20 A Dual Linearly-Polarized Active Cross-Dipole Antenna for Radio Astronomy

521

M. Ansari, Space and Astronomy, CSIRO, Australia; A. Dunning, Space and Astronomy, CSIRO, Australia; K. Bannister, Space and Astronomy, CSIRO, Australia; Y. Chung, Space and Astronomy, CSIRO, Australia; J. Pathikulangara, Space and Astronomy, CSIRO, Australia

10:20 – 10:40 A wideband proposal for SKA-mid band 345 feed package

561

A. Dunning, J. Athimannil, M. Bowen, S. Castillo, Y. Chen, Y. Chung, P. Doherty, D.B. Hayman, J. Kanapathippillai, S. Mackay, P. Roush, S. Severs, K.W. Smart, S.L. Smith, CSIRO Space and Astronomy, Australia

11:00 – 11:20 Band 5B Receiver allowing for Enhanced Observations at frequency 8.3-15.4 GHz with the MeerKAT Radio Telescope

323

M. G. Labate, INAF, Italy; P. Bolli, INAF, Italy; S. Celliers, SARAO, South Africa; U. Di Giammatteo, INAF, Italy; S. Heyminck, Max Planck Institute for Radio Astronomy, Germany; C. Kasemann, Max Planck Institute for Radio Astronomy, Germany; S. Malan, SARAO, South Africa; C. Trigilio, INAF, Italy; G. Umana, INAF, Italy; G. Wieching, Max Planck Institute for Radio Astronomy, Germany

11:20 – 11:40 DSA-2000 Antenna System Characterization and Design Overview

693

J. Flygare, Caltech Owen's Valley Radio Observatory, United States

11:40 – 12:00 A Quad-Ridge Feed Horn for ngVLA Covering an Octave Bandwidth

303

D. Henke, National Research Council Canada, Canada; R. Lehmensiek, National Radio Astronomy Observatory, United States; N. Tasouji, University of Victoria, Canada; S. Salem Hesari, National Research Council Canada, Canada; L.B.G. Knee, National Research Council Canada, Canada

12:00 – 12:20 Preliminary baseline antenna design for the Black Hole Explorer (BHEX) mission

477

R. Lehmensiek, NRAO, United States; T.K. Sridharan, NRAO, South Africa

12:20 – 12:40 Dichroic dual-angle refractor: multi-cell Huygens' Metasurface-based circuit approximation

577

G. Kyriakou, University of Rome La Sapienza, Italy; G. Pisano, University of Rome La Sapienza, Italy

12:40 – 13:00 Towards an updated feed antenna for the HIRAX telescope

524

M. Crews, Stellenbosch University, South Africa; S. Gaddam, University of KwaZulu-Natal, South Africa; D.I.L. De Villiers, Stellenbosch University, South Africa; K. Moodley, University of KwaZulu-Natal, South Africa

14:20 – 14:40 Antenna simulation verification for low-frequency radio astronomy

224

L. Kalkman, Eindhoven University of Technology (TU/e), Netherlands; D.S. Prinsloo, Netherlands Institute for Radio Astronomy (ASTRON), Netherlands; M.J. Arts, Netherlands Institute for Radio Astronomy (ASTRON), Netherlands

14:40 – 15:00 Balun circuit modelling for global 21-cm experiments

315

G.V.C. Allen, Stellenbosch University, South Africa; D.I.L. de Villiers, Stellenbosch University, South Africa; S. Pegwal, Stellenbosch University, South Africa

15:00 – 15:20 A Preliminary Study for a Compensated Large Spherical Reflector Antenna Using Sub-reflectarrays

137

L. Olmi, IR. Nesti, INAF, Italy

---

29) Advanced modeling techniques for the space plasma electromagnetic environment - ICEAA, Organized by W. Scales

chair 1 W. Scales chair 2 Wednesday, 10 15:20 – 18:40 room 2 Enrico

---

15:20 – 15:40 Advancements in Magnetosphere-Ionosphere-Thermosphere Simulations: Preliminary Findings from OpenGGCM and AROTHRON Coupling

305

B. Ferdousi, Air Force Research Laboratory, United States; J. V. Eccles, Space Dynamic Laboratory, United States; M. David, Space Dynamic Laboratory,, United States; J. Raeder, University of New Hampshire, United States; S. Kavosi, Air Force Research Laboratory, United States, J. Holmes, Air Force Research Laboratory, United States;

15:40 – 16:00 Global modeling of the mesoscale buildup of the ring current and its role in magnetosphere-ionosphere coupling

377

K. Sorathia, JHUAPL, United States; D. Lin, NCAR, United States; A. Sciola, JHUAPL, United States; S. Bao, Rice University, United States; A. Michael, JHUAPL, United States; K. Pham, NCAR, United States; M. Wiltberger, NCAR, United States; V. Merkin, JHUAPL, United States

16:00 – 16:20 Advances in Auroral Conductance Modeling using the Space Weather Modeling Framework

628

D. T. Welling, University of Michigan, United States; A. Gottesman, University of Michigan, United States; P. Dredger, University of Michigan, United States; A. Mukhopadhyay, University of Michigan, United States

16:40 – 17:00 Electromagnetic Waves and Their Effects on Energetic Electrons in the Inner-magnetosphere

681

D. Wang, Y. Y. Shprits, Gfz German Research Centre For Geosciences, Germany

17:00 – 17:20 AI-Driven Advances in Physical Insights: Exploring the Near-Earth Space Environment

354

X.N. Chu, Laboratory for Atmospheric and Space Physics, United States; J. Bortnik, Q.L. Ma, D. Ma, Department of Atmospheric and Oceanic Sciences, University of California, Los Angeles, CA, USA, United States; N. Maruyama, L. Jia, E. McPherson, J. Mallina, Laboratory for Atmospheric and Space Physics, United States; W. Li, X. C. Shen, Center for Space Physics, Boston University, Boston, MA, USA, United States; D. Malaspina, Laboratory for Atmospheric and Space Physics, United States; S. Huang, Center for Space Physics, Boston University, Boston, MA, USA, United States

17:20 – 17:40 TIDAS: High-definition reconstruction of 3-D spatial variations of the regional ionospheric electron density with large gradients

382

S.R. Zhang, MIT Haystack Observatory, United States; E. Aa, MIT Haystack Observatory, United States; P.J. Erickson, MIT Haystack Observatory, United States; A.J. Coster, MIT Haystack Observatory, United States

17:40 – 18:00 Thomson scattering forward model for non-Maxwellian plasmas

205

C. R. Skolar, New Jersey Institute of Technology, United States; W. J. Longley, New Jersey Institute of Technology, United States; L. V. Goodwin, New Jersey Institute of Technology, United States

18:00 – 18:20 MAGE Simulations of Thermosphere and Ionosphere Responses to Subauroral Polarization Streams (SAPS)

714

W. Wang, HAO/NCAR, United States; D. Lin, HAO/NCAR, United States; K. Pham, HAO/NCAR, United States; V. Merkin, APL, Johns Hopkins Unviersty, United States

18:20 – 18:40 Kinetic Modeling of the Magnetosphere — Global Hybrid Simulation

715

Y. Lin, Auburn University, United States

30) Metasurfaces with symmetry properties - ICEAA, Organized by R. Kastner

chair 1 R. Kastner chair 2 R. Shavit Wednesday, 10 08:20 – 13:00 room 3 Angelica

08:20 – 08:40 Permittivity mode expansions for metasurface design

215

G. Rosolen, Mons University, Belgium; S. Rao, Ben-Gurion University, Israel; Y. Sivan, Ben-Gurion University, Israel

08:40 – 09:00 Rotation Induced Symmetries in Rest-Frame Electrodynamics of Rotating Structures

441

T. Geva, Tel-Aviv University, Israel; B. Z. Steinberg, Tel-Aviv University, Israel

09:00 – 09:20 Zero-reflection funneling and sculpting of optical waves through non-magnetic metasurfaces

645

N. Mohammadi Estakhri, Chapman University, United States; N. M. Estakhri, Chapman University, United States

09:20 – 09:40 Modal analysis of leaky modes supported by planar metallic complex shaped corrugations

620

B. Ambrogi, Sapienza University of Rome, Italy; G. Flaviani, Sapienza University of Rome, Italy; Y. Tong, Sorbonne Universite, CNRS, Laboratoire GeePs, France; G. Valerio, Sorbonne Universite, CNRS, Laboratoire GeePs, France; D. Comite, Sapienza University of Rome, Italy

09:40 – 10:00 A Radial Glide-Symmetric Corrugated Sectorial Leaky-Wave Antenna

622

M. Perrone, Politecnico di Torino, Italy; J. Sarrazin, Sorbonne Université, France; G. Valerio, Sorbonne Université, France; G. Lombardi, Politecnico di Torino, Italy

10:00 – 10:20 Dynamic Phase Modulation of THz Guided Waves Using MEMS-Integrated Valley Photonic Crystals

553

H. Zaravashan, University of Surrey, United Kingdom; S.E. Hosseininejad, University of Surrey, United Kingdom; A.M. Bagheri, University of Surrey, United Kingdom; G. Gradoni, University of Surrey, United Kingdom; M. Khalily, University of Surrey, United Kingdom

10:20 – 10:40 Directions of Reflection and Polarization in PTD- Symmetric Structures in Response to Arbitrary Incident Angles

343

R. Geva, Tel Aviv University, Israel; M. G. Silveirinha, University of Lisbon, Portugal; R. Kastner, Tel Aviv University, Israel

11:00 – 11:20 PTD-Symmetric Double Edge Line

552

N. Castro, University Carlos III of Madrid, Spain; E. Martini, University of Siena, Italy; S. Maci, University of Siena, Italy; E. Rajo-Iglesias, University Carlos III of Madrid, Spain

11:20 – 11:40 Analysis of a rectangular metallic cavity with metasurface walls

494

R. Shavit, Ben-Gurion University of the Negev, Israel

11:40 – 12:00 Modular Synthesis of Dual-Band Metagratings for Co-directed Anomalous Reflection

491

A. Pikalov, Technion - Israel Institute of Technology, Israel; A. Epstein, Technion - Israel Institute of Technology, Israel

12:00 – 12:20 Reconfigurable spatial power splitter using single layer cylindrical plasma discharges

199

M.G.H. Alijani, Roma Tre University, Italy; A. Monti, Roma Tre University, Italy; S. Vellucci, Niccolò Cusano University, Italy; M. Barbuto, Roma Tre University, Italy; A. Toscano, Roma Tre University, Italy; F. Bilotti, Roma Tre University, Italy

12:20 – 12:40 From chiral to omega response: symmetry breaking in bianisotropic knot-particles

292

N. Goshen, Tel Aviv University, Israel; Y. Mazor, Tel Aviv University, Israel

12:40 – 13:00 Overcoming the uniformity Defects in Two-Dimensional Beam-Multipliers via Dammann metasurfaces

314

R. P. Chaudhary, Ben-Gurion University of the Negev, Israel; R. Gutin, Ben-Gurion University of the Negev, Israel; A. Reiner, Ben-Gurion University of the Negev, Israel; N. Shitrit, Ben-Gurion University of the Negev, Israel

---

31) Scattering and radiation engineering with metastructures: fundamentals and applications - ICEAA, Organized by A. Monti, F. Bilotti

chair 1 A. Monti chair 2 F. Bilotti Wednesday, 10 14:20 – 18:40 room 3 Angelica

---

14:20 – 14:40 Superdirective and Unidirectional Spherical Dielectric Lens Antennas

380

S. Arslanagic, Technical University of Denmark, Denmark; A.T. Birch, Technical University of Denmark, Denmark; R. W. Ziolkowski, University of Arizona, United States

14:40 – 15:00 Design of a Metasurface Luneburg Lens for 2-D Wavefront Shaping

182

A. U. Khan, University of Catania, Italy; F. Anfuso, University of Catania, Italy; S. C. Pavone, University of Catania, Italy; G. Sorbello, University of Catania, Italy

15:00 – 15:20 Enabling 2-D angular signal routing in smart radio environments through surface-wave-based metasurface design

264

T. Arshed, University of Siena, Italy; S. Maci, University of Siena, Italy; E. Martini, University of Siena, Italy

15:20 – 15:40 Emerging solutions and design paradigms for electromagnetic wave manipulation using EM skins

283

G. Oliveri, ELEDIA@UniTN - DICAM, Italy; M. Salucci, ELEDIA@UniTN - DICAM, Italy; G. Gottardi, ELEDIA@UniTN - DICAM, Italy; A. Salas, ELEDIA@UniTN - DICAM, Italy; A. Massa, ELEDIA@UniTN - DICAM, Italy

15:40 – 16:00 Boosting Data Encoding into Passive Metastructures Using Machine Learning Predictive Models

593

Y. Zhao, College of Information and Communication Engineering, Harbin Engineering University, Harbin, China, China ; S. Genovesi, University of Pisa, Italy; T. Jang, College of Information and Communication Engineering, Harbin Engineering University, Harbin, China, China ; G. Manara, Dipartimento di Ingegneria dell'Informazione, Università di Pisa, Italy; F. Costa, Dipartimento di Ingegneria dell'Informazione, Università di Pisa, Italy

16:00 – 16:20 Dual-band transmitarray architecture for low-profile design

214

R. De Marco, University of Calabria, Italy; A. Bordbar, University of Calabria, Italy; M. Gokdemir, University of Calabria, Italy; E. Arnieri, University of Calabria, Italy; G. Amendola, University of Calabria, Italy; L. Boccia, University of Calabria, Italy

16:40 – 17:00 Modal analysis of a center-symmetric line waveguide

424

M. Madji, Sapienza University of Rome, Italy; P. Baccarelli, Roma Tre University, Italy; A. Monti, Roma Tre University, Italy; A. Toscano, Roma Tre University, Italy; F. Bilotti, Roma Tre University, Italy; P. Burghignoli, Sapienza University of Rome, Italy

17:00 – 17:20 Parametric model order reduction for fast dielectric material and frequency sweep in huygens metasurfaces

634

M. Ortega, Universidad Politecnica de Madrid, Spain; C. Iglesias-Tesouro, Universidad Politecnica de Madrid, Spain; C. Taboada, Universidad Politecnica de Madrid, Spain; R. Medeiros, Universidad Politecnica de Madrid, Spain; V. de la Rubia, Universidad Politecnica de Madrid, Spain

17:20 – 17:40 Scattering matrix extraction of objects with non-canonical shapes

633

R. Palmeri, University Mediterranea of Reggio Calabria, Italy; R. Abdullin, University Mediterranea of Reggio Calabria, Italy; G.M. Battaglia, University Mediterranea of Reggio Calabria, Italy; A.F. Morabito, University Mediterranea of Reggio Calabria, Italy; L. Crocco, IREA-CNR, Italy; T. Isernia, University Mediterranea of Reggio Calabria, Italy

17:40 – 18:00 Graded temporal metamaterials using hyperbolic tangent profile

385

M. Dalarsson, KTH Royal Institute of Technology, Sweden; B. Rana, KTH Royal Institute of Technology, Sweden

18:00 – 18:20 Third order nonlinearties in nonlocal metasurfaces

285

A. Tognazzi, University of Palermo, Italy; P. Franceschini, University of Brescia, Italy; E. Menshikov, University of Brescia, Italy; L. Y. Beliaev, Department of Electrical and Photonics Engineering, Technical University of Denmark, Denmark; R. Malureanu, Department of Electrical and Photonics Engineering, Technical University of Denmark, Denmark; O. Takayama, Department of Electrical and Photonics Engineering, Technical University of Denmark, Denmark; I. Alessandri, University of Brescia, Italy; A. C. Cino, University of Palermo, Italy; D. de Ceglia, University of Brescia, Italy; A. Lavrinenko, Department of Electrical and Photonics Engineering, Technical University of Denmark, Denmark; C. De Angelis, University of Brescia, Italy

18:20 – 18:40 Nonlinear-nonlocal flat optics for space-time image processing

246

C. De Angelis, Universita' di Brescia, Italy; D. de Ceglia, Universita' di Brescia, Italy

---

32) Signal processing antennas and systems - IEEE APWC

chair 1 A. Saleem chair 2 A. Toccafondi Wednesday, 10 08:20 – 10:40 room 4 Guglielmo

---

08:20 – 08:40 Near field transmission using Hermite-Gaussian modes

153

C. Zhu, Lenovo Research, China

08:40 – 09:00 Optical undersampling-based estimation of frequency and DOA for multi-band signals

256

Y.C. Wang, Beihang University, China ; R.G. Feng, Beihang University, China ; Y.H. Song, Beihang University, China ; S.G. Xie, Beihang University, China

09:00 – 09:20 A switched beam antenna with pattern diversity for Wi-Fi applications

428

S. Maddio, University of Florence, Italy; G. Giannetti, University of Florence, Italy; S. Selleri, University of Florence, Italy

09:20 – 09:40 Fast and precise direction of arrival estimation based on space and frequency division multiple access

434

S. Maddio, University of Florence, Italy; G. Giannetti, University of Florence, Italy; S. Selleri, University of Florence, Italy; G. Collodi, University of Florence, Italy; M. Righini, University of Florence, Italy; A. Cidronali, University of Florence, Italy

09:40 – 10:00 Device-Free Localization with Multiple Antenna Receivers: Simulations and Results

535

V. Rampa, CNR-IEIIT, Italy; F. Fieramosca, DEIB-POLIMI, Italy; S. Savazzi, CNR-IEIIT, Italy; M. D'Amico, DEIB-POLIMI, Italy

10:00 – 10:20 Realistic Analysis of RIS-Enhanced V2V Communication in the Presence of Environmental Effects and Vehicle Mobility

565

A. Saleem, Anhui Xinhua University, China ; T. E. Komolafe, Shanghai University of Medicine & Health Sciences, Shanghai, China, China ; L. Zhou, Central Hospital Affiliated to Shanghai University of Medicine & Health Sciences , Jiangning Hospital Affiliated with Nanjing Medical University, China

10:20 – 10:40 Analysis and Optimization of Unilateral Stacked Intelligent Metasurfaces by using a Multi-Port Network Model

666

A. Abrardo, University of Siena - Dept. on Information Engineering and Mathematics, Italy; G. Bartoli, University of Siena - Dept. on Information Engineering and Mathematics, Italy; A. Toccafondi, University of Siena - Dept. on Information Engineering and Mathematics, Italy; M. Di Renzo, Université Paris-Saclay, CNRS, CentraleSupélec, Laboratoire des Signaux et Systémes, Gif-sur-Yvette, France., France

---

33) Artificial intelligence and novel optimization techniques applied to electromagnetics - ICEAA, Organized by F. de Flaviis

chair 1 F. de Flaviis chair 2 L. Katehi Wednesday, 10 11:00 – 16:20 room 4 Guglielmo

---

11:00 – 11:20 Inverse design of electromagnetic devices via learning-assisted approaches

631

R. Palmeri, University Mediterranea of Reggio Calabria, Italy; S. Zumbo, University Mediterranea of Reggio Calabria, Italy; A. Yago Ruiz, MiWendo Solutions, Spain; R. Scapaticci, IREA-CNR, Italy; T. Isernia, University Mediterranea of Reggio Calabria, Italy; L. Crocco, IREA-CNR, Italy

11:20 – 11:40 Crosstalk optimization in striplines based on computational time domain for electromagnetic compatibility-interference

652

N. Rahayu, Institut Teknologi Bandung, Indonesia; M.A. Wibisono, Institut Teknologi Bandung, Indonesia; A.D. Prasetyo, Institut Teknologi Bandung, Indonesia; M.F. Maulana, Universitas Sangga Buana, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

11:40 – 12:00 Antenna near-field reconstruction from far-field data using convolutional neural networks

342

S. Bagherkhani, University of California, Irvine, United States; J.C. Earls, University of California, Irvine, United States; F. De Flaviis, University of California, Irvine, United States; P. Baldi, University of California, Irvine, United States

12:00 – 12:20 Analogue In-Memory Computing for Wireless Communication System

690

C. He, Texas A&M University, United States; Y. Huang, University of Massachusetts Amherst, United States; Q. Xia, University of Massachusetts Amherst, United States; L.P.B. Katehi, Texas A&M University, United States

12:20 – 12:40 Adjoint optimization of high-performance reflectarrays and lens antennas

618

S. D. Campbell, The Pennsylvania State University, United States; P. L. Werner, The Pennsylvania State University, United States; D. H. Werner, The Pennsylvania State University, United States

12:40 – 13:00 Data-Efficient Supervised Learning for RF and mm-Wave Circuit Design: Techniques, Challenges, and Benefits

511

H. Aghasi, University of California Irvine, United States

14:20 – 14:40 Electromagnetic applications of machine learning in space technology

381

C. Christodoulou, The University of New Mexico, United States; E. Schamiloglu, The University of New Mexico, United States

14:40 – 15:00 Machine learning-assisted estimation of subsurface electrical properties in multilayer media with rough surfaces

341

S. Bagherkhani, University of California, Irvine, United States; S. Alamdar, University of California, Irvine, United States; F. De Flaviis, University of California, Irvine, United States

15:00 – 15:20 Physics-Driven intelligent design for metasurfaces by using MetaPhyNet

234

J.L. Su, Southeast University, China ; Z.X. Cai, Southeast University, China ; Y. Mao, Southeast University, China ; L. Chen, Southeast University, China ; J. Zhang, Southeast University, China ; Q. Ma, Southeast University, China ; J.W. You, Southeast University, China ; T.J. Cui, Southeast University, China

15:20 – 15:40 Topological optimization of electromagnetic structures based on physics-informed neural networks

232

X. Zheng, Southeast University, China ; Y. Zhang, Southeast University, China ; J. L. Su, Southeast University, China ; J. N. Zhang, Southeast University, China ; J. W. You, Southeast University, China ; T. J. Cui, Southeast University, China

15:40 – 16:00 Utilization of GA and CMA-ES optimizers in configuring ultra-wideband spline-based leaf-shaped patch monopole antenna

650

A.D. Prasetyo, Institut Teknologi Bandung, Indonesia; D.P. Setiawan, Telkom University, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

16:00 – 16:20 Efficient modeling of multi-purpose dual-band reflectarray cells using support vector regression

556

D. Martinez-de-Rioja, Universidad Politécnica de Madrid, Spain; J.A. Lopez-Fernandez, Universidad de Oviedo, Spain; J. Corcoles, Universidad Politécnica de Madrid, Spain; M. Arrebola, Universidad Politécnica de Madrid, Spain

---

34) AI in electromagnetic applications -IEEE APWC

chair 1 F. de Flaviis chair 2 L. Katehi Wednesday, 10 16:40 – 18:40 room 4 Guglielmo

---

16:40 – 17:00 Sparse Phased Array Optimization Using Deep Learning

335

D. Lu, University of California, Irvine, United States; L. Maman, Tel Aviv University, Israel; J. Earls, University of California, Irvine, United States; A. Boag, Tel Aviv University, Israel; P. Baldi, University of California, Irvine, United States

17:00 – 17:20 Predicting RCS of 2D Objects with Arbitrary Shapes using Gaussian Process Regression

398

N.N. Büyükgölcigezli, ASELSAN Inc., Turkey; E. Sever, ASELSAN Inc., Turkey

17:20 – 17:40 Recent development of neural network-based equalizers for high-speed circuits

419

H. Ma, Zhejiang University, China

17:40 – 18:00 WSPPSO Optimization Applied to Electromagnetic Problems

532

F. Chiaudani, Politecnico di Milano, Italy; E. L. Zich, Politecnico di Milano, Italy; F. Grimaccia, Politecnico di Milano, Italy; G. F. Martinez, Politecnico di Milano, Italy; R. E. Zich, Politecnico di Milano, Italy

18:00 – 18:20 Multi-Input 2D Convolutional Neural Network for Radar Target Identification

548

T. d'Angelo, Politecnico di Milano, Italy; M. Danesi, Politecnico di Milano, Italy; F. Drago, Politecnico di Milano, Italy; A. Croci, Politecnico di Milano, Italy; E. L. Zich, Politecnico di Milano, Italy; G. F. Martinez, Politecnico di Milano, Italy; R. E. Zich, Politecnico di Milano, Italy

18:20 – 18:40 Surrogate Modeling with Hybrid CNN-RNN and GAN Architectures for Antenna Designs

686

L. Kouhalvandi, Department of Electrical and Electronics Engineering, Dogus University, Istanbul, Turkiye, Turkey; S. Aygun, School of Computing and Informatics, University of Louisiana at Lafayette, USA, United States; S. Ozoguz, Department of Electronics and Communication Engineering, Istanbul Technical University, Istanbul, Turkiye, Turkey; L. Matekovits, Department of Electronics and Telecommunications, Politecnico di Torino, Turin, Italy, Italy; S. Karamzadeh, Millimeter Wave Technologies, Intelligent Wireless System, Silicon Austria Labs (SAL), Austria, Austria

---

35) Model order reduction in electromagnetics - ICEAA, Organized by R. Torchio

chair 1 R. Torchio chair 2 Wednesday, 10 08:20 – 10:00 room 5 Basile

---

08:20 – 08:40 Model order reduction in electromagnetics: a short survey

356

R. Torchio, University of Padova, Italy; M. Zorzetto, University of Padova, Italy; R. Basei, University of Padova, Italy

08:40 – 09:00 A reduced basis method for parametric fast frequency sweep in electromagnetic devices

581

M. Ortega, Universidad Politecnica de Madrid, Spain; R. Medeiros, Universidad Politecnica de Madrid, Spain; V. de la Rubia, Universidad Politecnica de Madrid, Spain

09:00 – 09:20 Nonlinear dimensionality reduction of electromagnetic models for surrogate modeling

379

M. Zorzetto, University of Padova, Italy; R. Torchio, University of Padova, Italy; F. Pase, Newtwen, Italy; F. Dughiero, University of Padova, Italy

09:20 – 09:40 Efficient generation of compact and stable equivalent circuits for large-scale multiports

423

T. Bradde, Politecnico di Torino, Italy

09:40 – 10:00 Structured neural ODE for MOR of nonlinear dynamic electromagnetic models

346

R. Basei, University of Padova, Italy; F. Pase, Newtwen, Italy; R. Torchio, University of padova, Italy

---

36) Electromagnetic modeling of devices and circuits - ICEAA

chair 1 P. Schulz chair 2 E. Simsek Wednesday, 10 10:00 – 12:20 room 5 Basile

---

10:00 – 10:20 Information in Electromagnetic Fields and Currents on the Surface of an Antenna Array

149

D. Badheka, J. J. Adams, B. L. Hughes, NC State University, United States

10:20 – 10:40 One-stop-shop for modeling optical frequency comb generation

203

E. Simsek, A. Niang, P. Shandilya, L. Courtright, R. Islam, G.M. Carter, C.R. Menyuk, University of Maryland Baltimore County, United States

11:00 – 11:20 Non-uniform Distribution Effects on Plasma-based Metasurfaces

217

O. Sergaeva, Università degli Studi di Brescia, Italy; M. A. Shameli, K. N. Toosi University of Technology, Iran, Islamic Republic of; M. Magarotto, Università degli Studi di Padova, Italy; A. Locatelli, Università degli Studi di Brescia, Italy; A. D. Capobianco, Università degli Studi di Padova, Italy; D. Rocco, Università degli Studi di Brescia, Italy

11:20 – 11:40 Model of Fabry–Perot resonator with flat metal and dielectric mirrors

475

V. Pazynin, Technical University of Berlin, Germany; K. Sirenko, O.Ya. Usikov Institute for Radiophysics and Electronics, Ukraine; W. Keusgen, Technical University of Berlin, Germany

11:40 – 12:00 Analysis of Microstrip Antennas Based on a Modal Approach

528

P. Schulz, Otto-von-Guericke University Magdeburg, Germany; M. Leone, Otto-von-Guericke University Magdeburg, Germany

12:00 – 12:20 Transitions in multilayer PCB technology for mmWave low loss transmission lines

539

S.G. Ballaera, Politecnico di Torino, Italy; J.D. Martinez Perez, Universitat Politècnica de València, Spain

---

37) Simulation and diagnostics of space plasma phenomena in the laboratory - ICEAA, Organized by W.E. Amatucci, E. Scime

chair 1 W.E. Amatucci chair 2 E. Scime Wednesday, 10 12:20 – 18:40 room 5 Basile

---

12:20 – 12:40 Characterization of Electric Field Sensor Instabilities Using Laboratory Measurements and Simulations

644

K.A. Greene,John W. Bonnell, University of California, Berkeley, United States; Erik M. Tejero, Naval Research Laboratory, USA; Justin Bowman, Katherine A. Goodrich, West Virginia University, USA

12:40 – 13:00 Laboratory investigation into electric field sensor instabilities: testing and first campaign analysis

238

J.L. Bowman, Dept. of Physics and Astronomy, West Virginia University, United States; E.M. Tejero, U.S Naval Research Laboratory, Plasma Physics Division, United States; K. Greene, Space Sciences Laboratory, University of California, United States; J.W. Bonnell, Space Sciences Laboratory, University of California, United States; W.E. Ammatucci, U.S Naval Research Laboratory, Plasma Physics Division, United States; K.A. Goodrich, Dept. of Physics and Astronomy, West Virginia University, United States

14:20 – 14:40 Development of the Ambipolar Electric Field in a Compressed Current Sheet with and without a Guide Field

393

A.M. DuBois, U.S. Naval Research Laboratory, United States; C. Crabtree, U.S. Naval Research Laboratory, United States; E. Lichko, U.S. Naval Research Laboratory, United States; G. Ganguli, U.S. Naval Research Laboratory, United States

14:40 – 15:00 Shear Alfvén wave antennas in the Large Plasma Device

635

S. Vincena, UCLA, United States; W. Gekelman, UCLA, United States

15:00 – 15:20 Solution of the wave equations for a cylindrical whistler duct

373

P. M. Bellan, Caltech, United States

15:20 – 15:40 Langmuir Waves at Comet 67P/Churyumov-Gerasimenko

372

H. Gunell, Umeå University, Sweden; G. Stenberg Wieser, Swedish Institute of Space Physics, Kiruna, Sweden; A. Moeslinger, Umeå University, Sweden; C. Goetz, Northumbria University, United Kingdom; R. Canu-Blot, Swedish Institute of Space Physics, Kiruna, Sweden; P. Henri, Laboratoire Lagrange, Observatoire de la Co^te d'Azur, Universite´ Co^te d'Azur (OCA), CNRS, Nice, France

15:40 – 16:00 Wave-Particle Correlations During Magnetic Reconnection in PHASMA

140

S. Yadav, WVU, United States

16:00 – 16:20 Search for enhanced scatter from plasma waves with space objects in orbit over the JRO VHF radar

675

P. A. Bernhardt, University of Alaska, United States; B. E. Eliasson, University of Strathclyde, United Kingdom; W. A. Scales, Virginia Tech, United States; J. D. Huba, Syntek Technologies, United States

16:40 – 17:00 Experimental investigation of orbital debris soliton generation

324

B. Amatucci, E. Tejero, A. DuBois, C.L. Enloe, D. Blackwell, C. Crabtree, G. Ganguli, Naval Research Laboratory, United States; A. Sen, Institute for Plasma Research, India

17:00 – 17:20 Particle Fueling in Multi-antenna Helicon Plasmas

200

M. Zepp, University of Wisconsin-Madison, United States; M. Granetzny, University of Wisconsin-Madison, United States; O. Schmitz, University of Wisconsin-Madison, United States

17:20 – 17:40 Using dust plasma interactions to shed light on magnetic field aligned electron density structures in the Magnetized Dusty Plasma eXperiment (MDPX)

329

S. Chakraborty Thakur, Auburn University, United States; E. Price, Auburn University, United States; S. Bachoti, Auburn University, United States; J. Avritte, Auburn University, United States; E. Thomas, Auburn University, United States

17:40 – 18:00 Helicon wave-plasma interaction in linear and toroidal geometries with birdcage resonant antennas

313

S. Vincent, R. Karimov, P. Guittienne, C. Sepulchre, P. Quigley, M. Alfazzaa, C. Stollberg, M. Baquero-Ruiz, R. Jacquier, A.A. Howling, I. Furno, EPFL, Switzerland

18:00 – 18:20 Experimental assessment of the performance of an Electron Cyclotron Resonance Acceleration (ECRA) thruster operated with iodine

720

S. Carere, Politecnico di Torino, Italy; F. Boni, ONERA, France; G. Lombardi, Politecnico di Torino, Italy; V. Désangles, ONERA, France

18:20 – 18:40 NRL SPADE-3 Experiment

268

B. Amatucci, Naval Research Laboratory, United States; E. Tejero, Naval Research Laboratory, United States; G. Gatling, Naval Research Laboratory, United States

---

38) Smart antennas and arrays - IEEE APWC

chair 1 R. Asfour chair 2 H. Nakano Thursday, 11 08:20 – 10:00 room 1 Federico

---

08:20 – 08:40 A novel equivalent circuit presentation for two-element 5G wideband dielectric resonator antenna

243

Z.Y. Shou, University of Manchester, United Kingdom; Z. Wu, University of Manchester, United Kingdom

08:40 – 09:00 Design of a High-gain Antenna System for MM-wave Full-duplex Communication

265

R. Asfour, Essex University, United Kingdom; S. Salarian, Essex University, United Kingdom; U. Jankovic, University of Westminster, United Kingdom; D. Budimir, University of Westminster, United Kingdom; M. dariush, Essex University, United Kingdom

09:00 – 09:20 Wide-Angle Beam Scanning Leaky-Wave Antenna with Built-in Bandstop Filtering for Sensing in ISAC Applications

318

P. Tang, City university of Hong Kong, Hong Kong; H. Wong, City university of Hong Kong, Hong Kong

09:20 – 09:40 Dual RIS configuration for Signal Enhancement in L-Shaped Corridors

659

A. Burladean, University of Florence, Italy; A. Freni, University of Florence, Italy; P. Pirinoli, Politecnico di Torino, Italy; A. Mazzinghi, University of Florence, Italy

09:40 – 10:00 Physically unclonable reflecting intelligent surfaces for cyber-physical security in smart wireless networks

718

D. A. Pham, University of Illinois Chicago, United States; P.Y. Chen, University of Illinois Chicago, United States; D. Erricolo, University of Illinois Chicago, United States

---

39) Wide/multiband antennas and innovative antenna technology - IEEE APWC, Organized by H. Nakano

chair 1 H. Nakano chair 2 Thursday, 11 10:00 – 18:00 room 1 Federico

---

10:00 – 10:20 A three-arm metaspiral antenna

123

H. Nakano, Hosei University, Japan; T. Abe, Hosei University, Japan; A. Mehta, Swansea University, United Kingdom

10:20 – 10:40 Artificial Material with Multiparameter to Control Effective Permittivity and Its Application in Resonant Cavity Antenna

208

Y. Zhang, Ryukoku University, Japan; Y. Toda, Ryukoku University, Japan

11:00 – 11:20 A dielectric antenna for leaky- and standing-wave radiations

255

H. Wong, City University of Hong Kong, Hong Kong; W.J. Sun, City University of Hong Kong, Hong Kong

11:20 – 11:40 Omnidirectional compact microstrip antenna in 920MHz band for ocean wireless sensor network

374

T. Fujimoto, Nagasaki University, Japan; K. Inoue, Nagasaki University, Japan; C.E. Guan, Nagasaki University, Japan; Y. Maemura, University of Nagasaki, Japan

11:40 – 12:00 Analysis of the Effects of Dielectric Media on Magnetic Coupling WPT Using Filter Theory

636

T. Maruyama, Hiroshima Institute of technology, Japan; A. Kamada, National Institute of Technology, Hakodate College, Japan; M. Nakatsugawa, National Institute of Technology, Hakodate College, Japan; I. Awai, Yamaguchi Laboratories, Fujiwaves, Corp., Japan; M. Oamoto, National Institute of Technology, Ube College, Japan; K. Nakahira, National Institute of Technology, Okinawa College, Japan

12:00 – 12:20 An Ultra-Wideband BOR-SPR Antenna Backed by a Conical Ground Plane

191

Y. Oishi, Toshiba Infrastructure Systems & Solutions Corporation, Japan; Y. Masuda, Toshiba Infrastructure Systems & Solutions Corporation, Japan; M. Tanabe, Toshiba Infrastructure Systems & Solutions Corporation, Japan; H. Nakano, Hosei University, Japan

12:20 – 12:40 Dual-Sense Circularly Polarized Waveguide Antenna Design Using Two Orthogonal Probes

376

T. Fukusako, Kumamoto University, Japan; R. Kuse, Kumamoto University, Japan

12:40 – 13:00 A Low-Profile Dual-Band Multi-Port Diversity Antenna

222

T.H. Bui, The University of Queensland, Australia; S.A. Rezaeieh, The University of Queensland, Australia; C. Fumeaux, The University of Queensland, Australia

14:20 – 14:40 Reconfiguring the operating frequency of a gallium-based liquid metal yagi-uda antenna by stretching

184

A. Maniar, Queen Mary University of London, United Kingdom; J.R. Kelly, Queen Mary University of London, United Kingdom

14:40 – 15:00 A 3D-SIW Circularly Polarized High Gain Horn Antenna for the Lower Sub-Terahertz Band

640

D. Pouhe, Reutlingen University, Germany

15:00 – 15:20 Millimeter-wave phased array antennas with mixed sub-arrays and single-elements for suppressed grating lobes

240

N. Guan, Fujikura Ltd., Japan; S. Kaushal, Fujikura Ltd., Japan

15:20 – 15:40 Low-Profile Wideband GNSS Antenna with Enhanced Front-to-Back-Ratio without Additional Ground Plane

164

H. Sakamoto, Mitsubishi Electric, Japan; K. Nishimoto, Mitsubishi Electric, Japan; Y. Inasawa, Mitsubishi Electric, Japan

15:40 – 16:00 Design of wideband antenna and antenna pair using the concept of building block

142

H. Y. Wang, Huawei Technologies, United Kingdom

16:00 – 16:20 Metaline array antenna using axial rotation technique

126

K. Sato, DKK Co., Ltd., Japan; H. Nakano, Hosei Univ., Japan

16:40 – 17:00 AI-Driven Optimization for Low-Profile Multi-Band Antennas for Direction Finding

189

A. Constantin, Constanta Maritime University, Romania; A. Heiman, Constanta Maritime University, Romania; R.D. Tamas, Constanta Maritime University, Romania

17:00 – 17:20 An Electrically Small Composite Monopole Antenna for Long-Wave Bands

207

X. Wang, Beijing Institute of Radio Metrology and Measurement, China ; S. Zhang, Beijing Institute of Radio Metrology and Measurement, China ; J. Liu, Beijing Institute of Radio Metrology and Measurement, China ; S. Ge, Yangtze Delta Region Academy of Beijing Institute of Technology, China ; Z. Shen, Yangtze Delta Region Academy of Beijing Institute of Technology, China ; Y. Qian, Ningbo University, China ; C. Hua, Ningbo University, China

17:20 – 17:40 Location dependence of WPT efficiency characteristics between a circuit-shaped leaky-waveguide and a λ/2 dipole antenna due to electric field distribution

517

M. Nakatsugawa, National Institute of Technology, Hakodate College, Japan; T. Goto, National Institute of Technology, Hakodate College, Japan; T. Maruyama, National Institute of Technology, Hakodate College, Japan; M. Omiya, Hokkaido university, Japan; Y. Tamayama, Nagaoka University of Technology, Japan

17:40 – 18:00 Hourglass Slot Antenna with Exponential Flare for Wideband and Direct Coaxial Cable Feed

550

M. Matsunaga, Shizuoka University, Japan

---

40) Antennas and electromagnetic systems with periodic and quasi-periodic structures - ICEAA, Organized by L. Matekovits, K. Esselle

chair 1 L. Matekovits chair 2 K. Esselle Thursday, 11 08:20 – 12:20 room 2 Enrico

---

08:20 – 08:40 Simplified Risley Prism-Inspired 2-D Beam Steering with a Tilted-Beam Resonant Cavity Antenna and Single Metasurface

498

K. Singh, University of Technology Sydney, Australia; D. N. Thalakotuna, University of Technology Sydney, Australia; K. P. Esselle, University of Technology Sydney, Australia

08:40 – 09:00 Metasurface-Based Circular Polarization Conversion for a Patch Antenna at 5.8 GHz

559

Z. Hamzavi-Zarghani, Graz University of Technology, Austria; B. Rezaee, Graz University of Technology, Austria; W. Bösch, Graz University of Technology, Austria; L. Matekovits, Politecnico di Torino, Italy

09:00 – 09:20 Automated FSS Design and Optimization with Time Series Forecasting Process through Combined CNN-RNN Model

495

L. Kouhalvandi, Dogus University, Turkey; M. Alibakhshikenari, University of Rome “Tor Vergata”, Italy; S. Ozoguz, Istanbul Technical University, Turkey; L. Matekovits, Politecnico di Torino, Italy

09:20 – 09:40 Mechanically Reconfigurable GRIN Lens Concept for Focusing and Beamforming Applications

136

K. Kaboutari, University of Aveiro, Portugal; X. Liu, Carnegie Mellon University, United States; A. Abraray, P. Pinho, University of Aveiro, Portugal; S. Shen, Carnegie Mellon University, United States; S. Maslovski, University of Aveiro, Portugal

09:40 – 10:00 Advanced Phase Rotation Unit Cells for Beam Steering and Polarization Conversion with Enhanced Sidelobe Performance

485

A. Thekedathu Raveendran, University of Technology Sydney, Australia; K. Singh, University of Technology Sydney, Australia; D. N. Thalakotuna, University of Technology Sydney, Australia; K. P. Esselle, University of Technology Sydney, Australia; S. Muzahir Abbas, GME, Australia

10:00 – 10:20 Holey photonic crystals as 3-D printed structures for leaky wave antennas in K-band

457

L. Tognolatti, Roma Tre University, Italy; S. Ceccuzzi, ENEA, Italy; V. Jandieri, University of Druisburg-Essen and CENIDE, Georgia; F. Pizarro, Pontificia Universidad Catolica de Valparaìso, Italy; C. Ponti, Roma Tre University, Italy; G. Schettini, Roma Tre University, Italy; P. Baccarelli, Roma Tre University, Italy

10:20 – 10:40 Experimental Characterization of the Traveling Wave Strength in Modulated Microstrip-Line-Based High Impedance Surface through Infrared Thermography

364

S. Miclaus, "Nicolae Balcescu" Land Forces Academy, Sibiu, Romania; M. Elisabeth, ENSIL-ENSCI Ecole d'Ingenieurs de Limoges, France; L. Matekovits, Politecnico di Torino, Italy

11:00 – 11:20 Analytical Design of Practical-Thickness Slab Devices Supporting Bound States in the Continuum

351

O. Lipan, Department of Physics, University of Richmond, Richmond, VA 23173, USA, United States; A. De Sabata, Department of Measurements and Optical Electronics, University Politehnica Timisoara, Timisoara, Romania, Romania; L. Matekovits, Department of Electronics and Telecommunications, Politecnico di Torino, Turin, Italy, Italy

11:20 – 11:40 Ultrathin Metasurface Design for Enhanced Wireless Power Transfer to Deep Tissue Implants

201

Y.B. Pan, University of Electronic Science and Technology of China, China ; L. Matekovits, Politecnico di Torino, Italy; Y. Yan, University of Electronic Science and Technology of China, China ; W.J. Fu, University of Electronic Science and Technology of China, China

11:40 – 12:00 Water Based Frequency Selective Surface Acting as an Absorber

178

C. Pescari, University Politehnica Timisoara, Romania; A.M. Silaghi, University Politehnica Timisoara, Romania; A. De Sabata, University Politehnica Timisoara, Romania; L. Matekovits, Politecnico di Torino, Italy

12:00 – 12:20 Tri-Band optically transparent absorption metasurface for RCS reduction

144

Z.H. Li, Y.J. Li, J.H. Wang, Beijing Jiaotong University, China

---

41) Metamaterials and metasurfaces - ICEAA

chair 1 F. Costa chair 2 C. A. Downing Thursday, 11 12:20 – 18:40 room 2 Enrico

---

12:20 – 12:40 Enhancing Device Authentication for RF-Fingerprinted Reconfigurable Intelligent Surfaces Via Convolutional Neural Network

694

E. Hamdan, University of Illinois Chicago, United States; D.A. Pham, University of Illinois Chicago, United States; P.Y. Chen, University of Illinois Chicago, United States; A.E. Cetin, University of Illinois Chicago, United States

12:40 – 13:00 Long-range interactions in metamaterials can induce unusual edge states

139

C. A. Downing, O. I. R. Fox, University of Exeter, United Kingdom

14:20 – 14:40 Exploring frequency stability of radiation patterns in antenna designs with nonlocal shielding

181

A. Zhuravlev, ITMO University, Russian Federation; S. Glybovski, ITMO University, Russian Federation

14:40 – 15:00 Magneto-Optical metasurfaces based on Bismuth Iron Garnet

193

F. Habibighahfarokhi, University of Brescia, Italy; O. Sergaeva, University of Brescia, Italy; C. D. Angelis, University of Brescia, Italy; D. Rocco, University of Brescia, Italy

15:00 – 15:20 A wideband active frequency selective rasorber based on hybrid absorptive-diffusive mechanism

375

Y. H. Feng, Southeast University, China ; S. C. Zhu, Southeast University, China ; Z. X. Cao, Southeast University, China

15:20 – 15:40 CSA algorithm-based design of a multifunctional metasurface lens for beamforming applications

404

I.J. Hwang, Korea Research Institute of Standards and Science, Korea, Republic of; Y.P. Hong, Korea Research Institute of Standards and Science, Korea, Republic of; I.H. Lee, Korea Research Institute of Standards and Science, Korea, Republic of; D.J. Yun, Korea Research Institute of Standards and Science, Korea, Republic of

15:40 – 16:00 Efficient surface impedance modeling of conformal metasurfaces for RCS reduction of drones

440

T. Bulteau, CEA, France; P. Aguilera, CEA, France; I. Moufid, CEA, France; R. Loison, IETR, France; S. Meric, IETR, France; R. Gillard, IETR, France

16:00 – 16:20 A Passive RF-Powered Metamaterial Sensor for Autonomous Soil Moisture Monitoring

487

M. Amiri, University of Technology Sydney, Australia

16:40 – 17:00 Microfabrication of Trasparent Electromagnetic Metasurfaces for 5G/6G Wireless Communications

578

G. Marchi, Fondazione Bruno Kessler, Italy; A. Bagolini, Fondazione Bruno Kessler, Italy; J. Iannacci, Fondazione Bruno Kessler, Italy; V. Mulloni, Fondazione Bruno Kessler, Italy; R. Marcelli, National Research Council, Italy; E. Proietti, National Research Council, Italy; G. Capoccia, National Research Council, Italy; L. Lorenzelli, Fondazione Bruno Kessler, Italy

17:00 – 17:20 Preliminary Results on a Hexagonal Lattice Meta-Lens for SatCom On The Move Applications

579

M. Cavallo, Politecnico di Torino, Italy; M. Beccaria, Politecnico di Torino, Italy; G. Giordanengo, Links Foundation, Italy; G. Vecchi, Politecnico di Torino, Italy; P. Pirinoli, Politecnico di Torino, Italy

17:20 – 17:40 Inferring surface susceptibilities for mask-based metasurface beam shaping using deep learning

608

C. Niu, University of Manitoba, Canada; M. Phaneuf, University of Manitoba, Canada; P. Mojabi, University of Manitoba, Canada

17:40 – 18:00 Sliding-Split-Strip Metamaterial with Tunable Dielectric and Plasmonic Properties

637

J.A. Enriquez, ITMO University, Russian Federation; A. Zhuravlev, ITMO University, Russian Federation; P.A. Belov, ITMO University, Russian Federation; J.D. Baena, Universidad Nacional de Colombia, Colombia

18:00 – 18:20 Backscattering Mechanical Sensing Through Metamaterials

656

S. Rodini, University of Pisa, Italy; S. Genovesi, University of Pisa, Italy; G. Manara, University of Pisa, Italy; F. Costa, University of Pisa, Italy

18:20 – 18:40 Novel Embedded Metal Via in Dielectric Split Ring Resonator Structure to Enhance Isolation for Full-Duplex Applications

700

J.M. Zaid, Huawei Technologies, Canada

---

42) mmWave sensors and devices - ICEAA, Organized by C. Baer, C. Schulz

chair 1 C. Baer chair 2 C. Schulz Thursday, 11 08:20 – 10:20 room 3 Angelica

---

08:20 – 08:40 How to Train Your Radar: AI-based Detection of Antenna Contamination

476

C. Schulz, KROHNE Messtechnik GmbH, Germany; P. Gembaczka, KROHNE Messtechnik GmbH, Germany; F. Dübler, KROHNE Messtechnik GmbH, Germany; P. Mück, KROHNE Messtechnik GmbH, Germany; C. Schmits, KROHNE Messtechnik GmbH, Germany

08:40 – 09:00 The Future of Autonomous Parking

573

A. Talai, Aptiv Services Deutschland GmbH, Germany; G. Vinci, Aptiv Services Deutschland GmbH, Germany

09:00 – 09:20 Evaluating integrated Automotive Radar Sensor performance utilizing Antenna Digital Twins

247

W. Simon, IMST GmbH, Germany; A. Lauer, IMST GmbH, Germany; T. Liebig, IMST GmbH, Germany; D. Schaefer, IMST GmbH, Germany; B. Derat, Rohde & Schwarz GmbH, Germany

09:20 – 09:40 Addressing the challenges of radar-based environmental sensing for autonomous ground vehicles in off-road terrain

197

C. Robbe, CLAAS E-Systems, Germany; C. Baer, Ruhr University Bochum, Germany

09:40 – 10:00 Histogram-based analysis of UAV-SAR data for agricultural vegetation classification

261

F. Bormuth, Ulm University, Germany; R. Riekenbrauck, Ulm University, Germany; J. Kanz, Ulm University, Germany; E. Sterk, Ulm University, Germany; D. Schmidt, Ulm University, Germany; R. F. H. Fischer, Ulm University, Germany; G. Krieger, German Aerospace Center (DLR), Germany; C. Waldschmidt, Ulm University, Germany; C. Damm, Ulm University, Germany

10:00 – 10:20 All-Ceramic mm-Wave Chipless Sensors for Wireless Temperature Sensing over 1000 °C in Cluttered and Obstructed Environments

572

A. Jiménez-Sáez, Technical University of Darmstadt, Germany; J. Sánchez-Pastor, Technical University of Darmstadt, Germany; M. Sakaki, University of Duisburg-Essen, Germany; P. Kadera, Brno University of Technology, Czech Republic; M. Schüßler, Technical University of Darmstadt, Germany; J. Lacik, Brno University of Technology, Czech Republic; R. Jakoby, Technical University of Darmstadt, Germany; N. Benson, University of Duisburg-Essen, Germany

---

43) Dielectric waveguides and polymer microwave fiber technology - ICEAA, Organized by C. Baer, C. Schulz

chair 1 C. Baer chair 2 C. Schulz Thursday, 11 10:20 – 15:20 room 3 Angelica

---

10:20 – 10:40 A Novel Dielectric Waveguide Based Material Characterization System for Non-Destructive Defect Detection

384

J. Schnarr, Institute of Electronic Circuits, Germany; T. Musch, Institute of Electronic Circuits, Germany; C. Baer, Institute of Electronic Circuits, Germany

11:00 – 11:20 Characterization of dielectric properties and anisotropy of 3D-printed dielectrics for mm-wave applications

226

R. Bord, University of Ulm, Germany; M. Hitzler, University of Ulm, Germany; M. Döring, University of Ulm, Germany; N. Riese, University of Ulm, Germany; V. Kienle, University of Ulm, Germany; C. Waldschmidt, University of Ulm, Germany

11:20 – 11:40 A multi-band transition from microstrip line to 3D-printed dielectric waveguide for the K- and E-band

220

N. Riese, Ulm University, Germany; F. Schmidt, Ulm University, Germany; A. Diepolder, Ulm University, Germany; R. Bord, Ulm University, Germany; C. Damm, Ulm University, Germany; C. Waldschmidt, Ulm University, Germany

11:40 – 12:00 Orthomode Transducer and Polarizer for the Practical Application of Circular Dielectric Waveguides in W Band and D Band

515

M. Schneider, University of Bremen, Germany

12:00 – 12:20 3D-Printed Dielectric Waveguide Connections for mmWave Frequencies: Solvent Bonding and Reflection Analysis

186

C. Baer, Ruhr University Bochum, Germany

12:20 – 12:40 Differential Substrate Integrated Waveguide Coupling for Whispering Gallery Mode Resonators in the 20 GHz Range

529

L. Kensbock, Ruhr University Bochum, Germany; L. Polzin, Ruhr University Bochum, Germany; T. Musch, Ruhr University Bochum, Germany; M. van Delden, Ruhr University Bochum, Germany

12:40 – 13:00 MMIC based YIG-Tuned Oscillators with Bond Wire Coupling Operating up to 47 GHz

507

M. van Delden, Ruhr University Bochum, Institute of Electronic Circuits, Germany; L. Polzin, Ruhr University Bochum, Institute of Electronic Circuits, Germany; N. Pohl, Ruhr University Bochum, Institute of Integrated Systems, Germany; K. Aufinger, Infineon Technologies AG, Germany; T. Musch, Ruhr University Bochum, Institute of Electronic Circuits, Germany

14:20 – 14:40 Power-efficient 173 GHz dual-modulus 4/5 prescaler with optimized clock distribution in 130 nm SiGe:C BiCMOS

421

L. Polzin, Ruhr University Bochum, Germany; L. Kensbock, Ruhr University Bochum, Germany; N. Pohl, Ruhr University Bochum, Germany; H. Rücker, Leibniz-Institut für innovative Mikroelektronik, Germany; T. Musch, Ruhr University Bochum, Germany; M. van Delden, Ruhr University Bochum, Germany

14:40 – 15:00 A Study on Molding Broadband Integrated Antennas for a G-Band Radar

225

V. Kienle, University of Ulm, Germany; M. Weißer, University of Ulm, Germany; M. Hitzler, University of Ulm, Germany; F. Matt, University of Ulm, Germany; R. Bord, University of Ulm, Germany; C. Waldschmidt, University of Ulm, Germany

15:00 – 15:20 Wheeler cap method efficiency estimation errors at antenna characteristic modes

135

C.G. Hynes, R.G. Vaughan, Simon Fraser University, Canada

---

44) Recent advances in measurement techniques for spatially distributed electromagnetic fields - ICEAA, Organized by O. Breinbjerg

chair 1 O. Breinbjerg chair 2 Thursday, 11 15:20 – 18:40 room 3 Angelica

---

15:20 – 15:40 Determination of the Supergain Criterion for Antennas

591

A.D. Yaghjian, Electromagnetics Research, United States

15:40 – 16:00 Dimensioning of flat radiating panels for plane-wave generation

594

A. Capozzoli, Università di Napoli Federico II, Dipartimento di Ingegneria Elettrica e delle Tecnologie dell'Informazione, Italy; C. Curcio, Università di Napoli Federico II, Dipartimento di Ingegneria Elettrica e delle Tecnologie dell'Informazione, Italy; L. Foged, Microwave Vision Group (MVG) Italy, via Castelli Romani, 59, Pomezia (Italy), Italy; A. Liseno, Università di Napoli Federico II, Dipartimento di Ingegneria Elettrica e delle Tecnologie dell'Informazione, Italy; F. Saccardi, Microwave Vision Group (MVG) Italy, via Castelli Romani, 59, Pomezia (Italy), Italy

16:00 – 16:20 Test setup and approach to obtain bistatic 2-D reflection patterns of reconfigurable intelligent surfaces based on monostatic measurements

279

F. T. Bette, Rohde & Schwarz GmbH & Co. KG, Germany; O. Kasap, Rohde & Schwarz GmbH & Co. KG, Germany; T. M. Gemmer, Rohde & Schwarz GmbH & Co. KG, Germany; H. Bartko, Rohde & Schwarz GmbH & Co. KG, Germany; B. Derat, Rohde & Schwarz GmbH & Co. KG, Germany; W. Keusgen, Technical University Berlin, Germany

16:40 – 17:00 Standoff weapon imaging using mm-wave inverse synthetic aperture radar and AI detection

157

C. Rappaport, Northeastern University, United States; M. Asri, Northeastern University, United States; M. Valipour, Northeastern University, United States; A. Morgenthaler, Northeastern University, United States

17:00 – 17:20 On the accuracy of simulation models for holographic indoor imaging

202

A. H. Paulus, Technical University of Munich, Germany; F. Fieramosca, Politecnico di Milano, Italy; M. D'Amico, Politecnico di Milano, Italy; S. Savazzi, Consiglio Nazionale delle Ricerche, Italy

17:20 – 17:40 Recent Advances in Unified Phase Retrieval: From Far-Field to Near-Field Using a Single Measurement Surface

653

G. M. Battaglia, T. Isernia, A. F. Morabito, R. Palmeri, Università degli Studi Mediterranea di Reggio Calabria, Italy, Italy; R. Solimene, M. A. Maisto, Università degli Studi della Campania Luigi Vanvitelli, Italy

17:40 – 18:00 Antenna diagnostics using IR thermography planar phaseless near-field measurements

387

S. Faure, Anyfields, France; R. Carrizales-Juarez, Anyfields, France; N. Mézières, CNES, France; A. Laffont, Anyfields, France

18:00 – 18:20 A novel two-steps approach for the correction of 3-D position errors of the measuring probe in a non-redundant spherical scanning

166

F. D'Agostino, University of Salerno, Italy; F. Ferrara, University of Salerno, Italy; C. Gennarelli, University of Salerno, Italy; R. Guerriero, University of Salerno, Italy; M. Migliozzi, University of Salerno, Italy; L. Pascarella, University of Salerno, Italy

18:20 – 18:40 On-the-fly sampling of spatial fields with correction for signal-averaging smearing error

468

O. Breinbjerg, ElMaReCo, Denmark

---

45) Electromagnetic sensing and imaging technologies for health applications - ICEAA, Organized by L. Crocco, R. Cruz Conceição, F. Vipiana

chair 1 L. Crocco chair 2 R. Cruz Conceição, F. Vipiana Thursday, 11 08:20 – 15:40 room 4 Guglielmo

---

08:20 – 08:40 Empirical calibration method for a multistatic microwave sensing system

643

F. Eashour, University of Manitoba, Canada; S. Pistorius, University of Manitoba, Canada

08:40 – 09:00 Preliminary Analysis of Microwave Images of Breast Cancer Patients

682

R. Conceição, Universidade de Lisboa, Portugal; M. Alfaiate, NOVA University of Lisbon, Portugal; A. Simões, I. A. Correia, G. Canastra, PJ. Saraiva, R. Dias, Universidade de Lisboa, Portugal; L. Ramos, A. Andrade Junior, Hospital de Vila Franca de Xira, Portugal; D. M. Godinho, Universidade de Lisboa, Portugal

09:00 – 09:20 Differential permittivity modeling in biological phantoms via water temperature control

610

L. Cardinali, Politecnico di Torino, Italy; R. Aldana, Universitat Politecnica de Catalunya, Spain; D.O. Rodriguez-Duarte, Politecnico di Torino, Italy; J.A. Tobon Vasquez, Politecnico di Torino, Italy; F. Vipiana, Politecnico di Torino, Italy; L. Jofre-Roca, Universitat Politecnica de Catalunya, Spain

09:20 – 09:40 RBF Based ultrasound algorithm for generation of prior information in MW breast imaging

569

S.M. Trudeau, University of Manitoba, Canada; V. Khoshdel, University of Manitoba, Canada; J. LoVetri, University of Manitoba, Canada

09:40 – 10:00 Preservation of the Mechanical Properties of Multi Modal Tissue Mimicking Phantoms

418

S. Di Meo, Università degli Studi di Pavia, Italy; D. Diaferia, Università degli Studi di Pavia, Italy; A. Cannatà, Università degli Studi di Pavia, Italy; G. Matrone, Università degli Studi di Pavia, Italy; M. Pasian, Università degli Studi di Pavia, Italy

10:00 – 10:20 Microwave Imaging Evaluation of Prior Structural Information on the Inversion-Kernel Building Apply to a Brain Stroke Monitoring Scenario

598

A. R. Masaquiza Caiza, Politecnico di Torino, Italy; M. Gugliermino, Politecnico di Torino, Italy; D. O. Rodriguez-Duarte, Politecnico di Torino, Italy; F. Vipiana, Politecnico di Torino, Italy

10:20 – 10:40 Using Qualitative Inverse Scattering to Co-Register MR Images with a MW System

501

M. T. Bevacqua, Università degli Studi Mediterranea di Reggio Calabria, Italy; M. Ambrosanio, University of Naples Parthenope, Italy; J. LoVetri, University of Manitoba, Canada; V. Pascazio, University of Naples Parthenope, Italy; T. Isernia, Università degli Studi Mediterranea di Reggio Calabria, Italy

11:00 – 11:20 A Mild Data-Driven Approach for Brain Stroke Microwave Imaging

497

A. Fedeli, University of Genoa, Italy; C. Estatico, University of Genoa, Italy; A. Randazzo, University of Genoa, Italy

11:20 – 11:40 Generation of 3D MRI-Intensity Breast Images Using a Class Conditional Latent Diffusion Model

613

N. Abharian, University of Manitoba, Canada; J. LoVetri, University of Manitoba, Canada; V. Khoshdel, University of Manitoba, Canada

11:40 – 12:00 Model order estimation of Debye dielectric spectra: a numerical comparison

290

R. Dima, University of Campania, Italy; M.A. Maisto, University of Campania, Italy; R. Solimene, University of Campania, Italy

12:00 – 12:20 Liver and Kidney Tissue Phantoms in Hyperthermia and Microwave Thermal Ablation: a review

506

K. Vidjak, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia; F. Capitanio, Dept. of Information Engineering, Electronics, and Telecommunications, Sapienza University of Rome, Italy; M. Di Cristofano, Dept. of Information Engineering, Electronics, and Telecommunications, Sapienza University of Rome, Italy; F. Liporace, Medical Physics Department, Bambino Gesù Children's Hospital, IRCSS, Italy; M. Cavagnaro, Dept. of Information Engineering, Electronics, and Telecommunications, Sapienza University of Rome, Italy

12:20 – 12:40 Adaptive Skull Reconstruction Procedure for Microwave Imaging Applications

333

A. Kovacevic, School of Electrical Engineering, University of Belgrade, Serbia; D. Ninkovic, School of Electrical Engineering, University of Belgrade, Serbia; M. Stevanovic, School of Electrical Engineering, University of Belgrade, Serbia

12:40 – 13:00 Implantable Reconfigurable FSS for Wireless Protection of Implantable Cardiac Devices in the ISM Band

582

F. Lestini, University of Rome "Tor Vergata", Italy; F. Bassano, University of Rome "Tor Vergata", Italy; G. Marrocco, University of Rome "Tor Vergata", Italy; C. Occhiuzzi, University of Rome "Tor Vergata", Italy

14:20 – 14:40 Miniaturized Dual-Band Implantable Antenna for Controlled Drug Delivery

461

Y. Ding, King's College London, United Kingdom; P. Kosmas, National Center for Scientific Research “Demokritos”, Greece

14:40 – 15:00 Bone regeneration monitoring using electromagnetic imaging and magnetic scaffolds: role of the antenna array sizing

564

E. Akbari Sekehravani, IREA-CNR, Italy; R. Palmeri, DIIES - Università Mediterranea di Reggio Calabria, Italy; L. Crocco, IREA-CNR, Italy; R. Scapaticci, CNR-IREA, Italy

15:00 – 15:20 Preclinical testing procedure for ultra-wideband microwave breast scanner

306

A. Prokhorova, Technische Universität Ilmenau, Germany; B. Faenger, Jena University Hospital, Germany; I. Hilger, Jena University Hospital, Germany; M. Helbig, Technische Universität Ilmenau, Germany

15:20 – 15:40 Skin-mimicking phantom for near-body antenna characterization

403

R. Rizzo, IETR, University of Rennes, France; G. Ruello, DIETI, University of Naples "Federico II", Italy; M. Zhadobov, IETR, University of Rennes, France; G. Sacco, IETR, University of Rennes, France

---

46) Fast and efficient solvers and stable discretizations - ICEAA, Organized by F. Andriulli

chair 1 F. Andriulli chair 2 Thursday, 11 15:40 – 18:40 room 4 Guglielmo

---

15:40 – 16:00 Near-Field Curved-Beam Radiation through Ray-Caustic Synthesis at Microwaves and Millimeter Waves

179

F. Anfuso, University of Catania, Italy; A. U. Khan, University of Catania, Italy; G. Sorbello, University of Catania, Italy; S. C. Pavone, University of Catania, Italy

16:00 – 16:20 Investigation of a fast Fourier transform accelerated interpolatory H^2-method for the electric field integral equation

295

D. Jukic, Universität Rostock, Germany; B. Hofmann, University of Southern California, United States; T.F. Eibert, Technische Universität München, Germany; S.B. Adrian, Universität Rostock, Germany

16:40 – 17:00 Preconditioning of mixed systems of surface integral and surface differential equations

369

E. Chernokozhin, Tel Aviv University, Israel; A. Boag, Tel Aviv University, Israel

17:00 – 17:20 Stable Solutions of Time-Domain Integral Equations for Transient Electromagnetic Problems with Bodies of Revolution

484

S.R. Wang, Tongji University, China ; S.J. He, Tongji University, China ; M.S. Tong, Tongji University, China

17:20 – 17:40 Fast inverse design using the precomputed numerical Green function method

503

J. Sun, University of Southern California, United States; C. Sideris, University of Southern California, United States

17:40 – 18:00 Toward the design of the global multi-trace volume-surface vector-potential integral equations in Inhomogeneous dielectric media

534

P. Olyslager, Ghent University, Belgium; H. Rogier, Ghent University, Belgium; K. Cools, Ghent University, Belgium

18:00 – 18:20 Full Wave Indoor Propagation Modeling based on General Green’s Function Method of Moments

555

B. M. Kolundzija, WIPL-D d.o.o., Serbia; B. M. Ninkovic, WIPL-D d.o.o, Serbia; T. M. Milosevic, WIPL-D d.o.o, Serbia

18:20 – 18:40 On the Use of Generalized RWG Basis Functions for Curvature Fidelity in h-refinement methods

584

V.F. Martin, Universidad Rey Juan Carlos, Spain; L. Landesa, Universidad de Extremadura, Spain; J.L. Rodriguez, Universidad de Vigo, Spain; J.M. Taboada, Universidad de Extremadura, Spain; F. Vipiana, Politecnico di Torino, Italy

---

47) Beam methods and phenomena in the frequency and time domains - ICEAA, Organized by T. Melamed

chair 1 T. Melamed chair 2 Thursday, 11 08:20 – 10:00 room 5 Basile

---

08:20 – 08:40 The UWB phase-space beam-summation expansion in a non-uniform background

146

E. Heyman, Tel Aviv University, Israel

08:40 – 09:00 Representation of Electromagnetic Fields by means of Spin Spherical Wavelets

430

A. Chabory, ENAC, France; A. Quennelle, Formerly with ENAC lab, now with Thales Six GTS, France

09:00 – 09:20 New methods to reduce errors in precision polarimetry

446

J. del Hoyo, J. Andres-Porras, A. Soria-Garcia, I. M. Diaz-Garcia, I. Gonzalez-Martinez, K. P. Soto-Gonzalez, J. Alda, L. M. Sanchez-Brea, Universidad Complutense de Madrid, Spain

09:20 – 09:40 Focusing by leaky-wave Bessel-beam launchers: principles, design, and applications

241

E. Negri, CNR - IMM Rome, Italy; S. Ventucci, Sapienza University of Rome - DIET, Italy; W. Fuscaldo, CNR - IMM Rome, Italy; P. Burghignoli, Sapienza University of Rome - DIET, Italy; A. Galli, Sapienza University of Rome - DIET, Italy

09:40 – 10:00 Pulsed curved beam design

118

T. Melamed, Ben Gurion University of the Negev, Israel

48) EM protection in intelligent transportation systems - ICEAA, Organized by Y. Wen

chair 1 Y. Wen chair 2 Thursday, 11 10:00 – 11:40 room 5 Basile

10:00 – 10:20 Investigation of the impact of constant magnetic field on fixed balise

177

T.M. Meng, B. Yingjie, G. Zhiqiang, L. Dong, D. Geng, CRSC Research & Design Institute Group Co., Ltd., China

10:20 – 10:40 Application of Artificial Intelligence Technology in Electromagnetic Research of High-Speed Maglev Trains

422

S. Xiao, CRRC Qingdao Sifang Co., Ltd, China ; Z.Q. Zhang, CRRC Qingdao Sifang Co., Ltd, China ; Q.P. Feng, CRRC Qingdao Sifang Co., Ltd, China ; Y.X. Liu, Beijing Jiaotong University, China ; J.B. Zhang, Beijing Jiaotong University, China

11:00 – 11:20 AI-Driven Adaptive Port Selection for Fluid Antenna Multiple Access

420

S.H. Fan, Beijing Jiaotong University, China ; X.Y. Wang, Beijing Jiaotong University, China ; Y.X. Liu, Beijing Jiaotong University, China ; J.B. Zhang, Beijing Jiaotong University, China

11:20 – 11:40 Machine Learning Accelerated Nash Equilibrium Optimization for Wireless Network Resource Allocation

463

Q.C. Shi, Beijing Jiaotong University, China ; Z.L. Yue, Beijing Jiaotong University, China ; J. Ren, Beijing Jiaotong University, China

49) Mathematical advances in electromagnetics - ICEAA, Organized by P.D. Smith, E. Vynogradova

chair 1 P.D. Smith chair 2 E. Vynogradova Thursday, 11 11:40 – 13:00 room 5 Basile

11:40 – 12:00 Helicoidal modes in a coaxial line whose cross-section is a regular polygon

119

P.L.E. Uslenghi, University of Illinois Chicago, United States

12:00 – 12:20 Wave Propagation in an Inhomogeneous Dielectric Slab Containing Two Plane-Parallel Layers Separated by a Graphene Film

575

E. Smolkin, University of Gävle, Sweden; Y. Shestopalov, University of Gävle, Sweden

12:20 – 12:40 Scattering of TM- and TE-Plane Waves Obliquely Incident on Slotted PEC Cylinders with Surfaces Parameterized by the Super-Ellipse Equation

642

E.D. Vinogradova, Macquarie University, Australia

12:40 – 13:00 Regularized solution of 2D scattering from impedance-loaded cavities: the TE-case

490

P.D. Smith, Macquarie University, Australia; E.D. Vinogradova, Macquarie University, Australia

---

50) Remote sensing techniques and models for monitoring the impact of natural events on the Earth system - ICEAA, Organized by G. De Franceschi, V. Romano, S. Scollo

chair 1 G. De Franceschi chair 2 V. Romano, S. Scollo Thursday, 11 14:20 – 18:40 room 5 Basile

---

14:20 – 14:40 Towards detecting the area covered by tephra fallout combining ground-based and satellite-based sensors

353

L. Mereu, Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Bologna, Bologna, Italy; F. Romeo, Istituto Nazionale di Geofisica e Vulcanologia, Osservatorio Etneo, Catania, Italy; M. Prestifilippo, Istituto Nazionale di Geofisica e Vulcanologia, Osservatorio Etneo, Catania, Italy; S. Scollo, Istituto Nazionale di Geofisica e Vulcanologia, Osservatorio Etneo, Catania, Italy

14:40 – 15:00 A Feasibility Study on Opportunistic Tropospheric Sensing for Meteorological and Geophysical Applications using Microwave Satellite Downlinks

413

F. Sapienza, University of Pisa, Department of Information Engineering, Italy; F. Giannetti, University of Pisa, Department of Information Engineering, Italy; V. Lottici, University of Pisa, Department of Information Engineering, Italy; E.M. Sciortino, University of Pisa, Department of Information Engineering, Italy; A. Piras, University of Pisa, Department of Information Engineering, Italy

15:00 – 15:20 Marine Temperature Extremes in a Changing Climate: The CAREHeat Project

426

R. Santoleri, CNR, Italy

15:20 – 15:40 Relative sea level rise projections up to 2150 along the Italian coasts from geodesy, high resolution topography and climatic projections

698

M. Anzidei, D. Trippanera, Istituto Nazionale di Geofisica e Vulcanologia, Italy; A. Bosman, IGAG CNR, Italy; C.A. Brunori, T. Alberti, A. Vecchio, Radboud University Nijmegen, The Netherlands, Italy; E. Serpelloni, C. Tolomei, F. Iacono, M. Bisson, Istituto Nazionale di Geofisica e Vulcanologia, Italy

15:40 – 16:00 Lightweight architectures for binary segmentation of fresh mud deposits in UAV imagery

568

M. Guastella, Sapienza University, Italy; A. D'Alessandro, National Institute of Geophysics and Volcanology (INGV), Italy; A.F. Pisciotta, National Institute of Geophysics and Volcanology (INGV), Italy; R. Martorana, University of Palermo, Italy

16:00 – 16:20 Integrating satellite and ground-based data for monitoring volcanic unrest: The 2021-2022 unrest in Vulcano

455

F. Spina, INGV-OE, Italy; G. Bilotta, INGV-OE, Italy; I.S. Diliberto, INGV, Italy; G. Ganci, INGV-OE, Italy

16:40 – 17:00 Volcanic ash size and mass estimated by satellite passive radiometers: a comparison between two radiative transfer models

328

F. Romeo, Istituto Nazionale di Geofisica e Vulcanologia, Italy; L. Mereu, Istituto Nazionale di Geofisica e Vulcanologia, Italy; S. Corradini, Istituto Nazionale di Geofisica e Vulcanologia, Italy; L. Guerrieri, Istituto Nazionale di Geofisica e Vulcanologia, Italy; S. Scollo, Istituto Nazionale di Geofisica e Vulcanologia, Italy

17:00 – 17:20 Leveraging Copernicus Emergency Core Service products to support national institutions in earthquake emergency management

304

C. Casarotti, European Centre for Training and Research in Earthquake Engineering, EUCENTRE Foundation, Italy; I. E. Senaldi, European Centre for Training and Research in Earthquake Engineering, EUCENTRE Foundation, Italy

17:20 – 17:40 The PEOS e-Infrastructure Prototype: Natural Hazard Monitoring through Earth Observation from Space

407

C. Marcocci, E. Pica, M. Viola, N. Guglielmi, G. Sensale, Istituto Nazionale di Geofisica e Vulcanologia (INGV), Italy; M. Spina, Istituto Nazionale di Geofisica e Vulcanologia (INGV), Italy; C. Bignami, Istituto Nazionale di Geofisica e Vulcanologia (INGV), Italy; F. Pardini, Istituto Nazionale di Geofisica e Vulcanologia (INGV), Italy; V. Romano, Istituto Nazionale di Geofisica e Vulcanologia (INGV), Italy

17:40 – 18:00 The Economic Impact of Ionospheric Scintillations on Precision Agriculture in Brazil: the case of sugarcane and soybean industries

558

G. Abbati, Istituto Nazionale di Geofisica e Vulcanologia, Italy; S. Mainella, Istituto Nazionale di Geofisica e Vulcanologia, Italy; P. Vermicelli, Spacearth Technology s.r.l., Italy

18:00 – 18:20 Nowcasting volcanic ash clouds combining Deep Learning and Geostationary satellite data

597

L. Basile, A. Cocuzza, Università di Catania, Catania, Italy; C. Corradino, Istituto Nazionale di Geofisica e Vulcanologia, Italy; S. Palazzo, Università di Catania, Italy; F. Torrisi, S. Cariello, G.S. Di Bella, A.B. Malaguti, C. Del Negro, Istituto Nazionale di Geofisica e Vulcanologia,Italy

18:20 – 18:40 Relaying volcanic plume measurements in real time by using a balloon-borne multi-gas and particles sensors system

291

S. Corradini, INGV-ONT, Italy; S. Marcuccio, University of Pisa, Space Systems Laboratory, Dept. of Civil and Industrial Engineering, Italy; R. Biondi, CIMA Foundation, Italy; F. Ciancitto, INGV-OE, Italy; A. Filippeschi, University of Pisa, Space Systems Laboratory, Dept. of Civil and Industrial Engineering, Italy; M. Gemignani, University of Pisa, Space Systems Laboratory, Dept. of Civil and Industrial Engineering, Italy; G. Giudice, INGV-OE, Italy; L. Guerrieri, INGV-ONT, Italy; L. Lambertucci, INGV-ONT, Italy; I. Marsili, University of Pisa, Space Systems Laboratory, Dept. of Civil and Industrial Engineering, Italy; L. Merucci, INGV-ONT, Italy; C. Naranjo, INGV-ONT, Italy; S. Scollo, INGV-OE, Italy; D. Stelitano, INGV-ONT, Italy

---

51) Advances in time and frequency domain methods - ICEAA, Organized by F. Erden, H.A. Ülkü, E. Basaran

chair 1 F. Erden chair 2 H.A. Ülkü, E. Basaran Friday, 12 08:20 – 10:40 room 1 Federico

---

08:20 – 08:40 Evaluation of the Time Domain Equivalent Edge Currents Radiation Integral for NURBS Edges

684

A. Aktepe, Aselsan Inc., Turkey; H. A. Ulku, Yeditepe University, Turkey

08:40 – 09:00 Fast Multipole Method Implementation of Extended Boundary Condition Method for Wave Scattering by Dielectric Cylinders

159

M.E. Hatipoglu, Gebze Technical University, Turkey; F. Dikmen, Gebze Technical University, Turkey

09:00 – 09:20 Extended Boundary Condition Method for Wave Scattering by Dielectric Cylinders in Planar Layered Medium

158

M.E. Hatipoglu, Gebze Technical University, Turkey; F. Dikmen, Gebze Technical University, Turkey; A. Alparslan, Trakya University, Turkey

09:20 – 09:40 3-level discrete complex images method for the fast and accurate analysis of 2-D layered geometries

128

A. Alparslan, Trakya University, Turkey

09:40 – 10:00 Zenneck Surface Wave Excitation in FDTD Method

697

E. Basaran, Yeditepe University, Turkey; H. A. Ulku, Yeditepe University, Turkey; A. A. Ergin, Bahcesehir University, Turkey

10:00 – 10:20 A new look at analytical absorbing boundary conditions in the FDTD method

183

T. P. Stefanski, Gdansk University of Technology, Poland; J. Gulgowski, University of Gdansk, Poland; K.L. Tsakmakidis, National and Kapodistrian University of Athens, Greece

10:20 – 10:40 Generalized reformulation of Maxwell's equations for time-domain electromagnetic simulations

161

F. Erden, National Defence University, Turkish Naval Academy, Turkey

---

52) Electromagnetic measurements - ICEAA

chair 1 S.G. Ballaera chair 2 M. Zahner Friday, 12 11:00 – 13:00 room 1 Federico

---

11:00 – 11:20 Time-frequency domain filtering method for optical down-conversion electric field measurement

176

Q.W. Zhang, Beihang University, China ; X.Y. Zhang, Beihang University, China ; Y.H. Song, Beihang University, China ; Y. Yang, Beihang University, China ; S.G. Xie, Beihang University, China

11:20 – 11:40 A Single-Channel Blind Source Separation Method for Down-converted Aliased Signals Based on Time-Frequency Map Preprocessing

185

X.Y. Zhang, Beihang University, China ; Q.W. Zhang, Beihang University, China ; M.L. Yang, Beihang University, China ; Y.H. Song, Beihang University, China ; Y. Yang, Beihang University, China ; S.G. Xie, Beihang University, China

11:40 – 12:00 Sensor Network for the Assessment of Spatiotemporal Dynamics of the Environmental Exposure of Adaptive Antennas

293

M. Zahner, Fields at Work GmbH, Switzerland; D. Haas, Grolimund + Partner AG, Switzerland; T. Ziegler, Grolimund + Partner AG, Switzerland; J. Fröhlich, Fields at Work GmbH, Switzerland

12:00 – 12:20 A UAV-Based Far-Field Measurement System for HF Antennas

355

J.L. He, Southeast University, China ; Z.X. Cao, Southeast University, China

12:20 – 12:40 High frequency characterization of ultra-thin transparent films

370

B.H. Mohamed, Technical University of Berlin, Germany; W. Keusgen, Technical University of Berlin, Germany; M. Widmaier, University of Stuttgart, Germany; H. Bauer, University of Stuttgart, Germany; N. Fruehauf, University of Stuttgart, Germany

12:40 – 13:00 Sustainable Biochar Coated Drywall with Electromagnetic Shielding Properties

703

G. Ruscica, Università di Bergamo, Italy; S.G. Ballaera, Politecnico di Torino, Italy; I. Natali Sora, Università di Bergamo, Italy; P. Savi, Politecnico di Torino, Italy

---

53) Reconfigurable Metasurfaces: Theory, Design and Applications - ICEAA, Organized by G. Manara, F. Costa

chair 1 G. Manara chair 2 F. Costa Friday, 12 08:20 – 13:00 room 2 Enrico

---

08:20 – 08:40 Toward reconfigurable plasma-based metasurfaces: experimental characterization via electrical and waveguide measurement techniques

523

M. Barbuto, Roma Tre University, Italy; A. Monti, Roma Tre University, Italy; S. Vellucci, Niccolò Cusano University, Italy; M.G.H. Alijani, Roma Tre University, Italy; T. Giagnacovo, Alma Sistemi srl, Italy; G. Laghi, University of Bologna, Italy; F. Capelli, University of Bologna, Italy; R. Filippone, Alma Sistemi srl, Italy; G. Di Iorio, Alma Sistemi srl, Italy; A. Di Iorio, Alma Sistemi srl, Italy; M. Gherardi, University of Bologna, Italy; F. Bilotti, Roma Tre University, Italy; A. Toscano, Roma Tre University, Italy

08:40 – 09:00 Effect of Phase Quantization on Shaped Near-Field Patterns in Reconfigurable Intelligent Surface

596

A.F. Vaquero, Universidad de Oviedo, Spain; S.M. Feito, Universidad de Oviedo, Spain; M. Arrebola, Universidad Politécnica de Madrid, Spain

09:00 – 09:20 System-level simulations for RIS applications in realistic THz-communications scenarios

298

C. Herold, Technische Universität Braunschweig, Germany; L. H. W. Loeser, Technische Universität Braunschweig, Germany; B. K. Jung, Technische Universität Braunschweig, Germany; G. Jensen, Technische Universität Braunschweig, Germany; T. Kürner, Technische Universität Braunschweig, Germany

09:20 – 09:40 Reconfigurable Metasurfaces for SatCom and 5G.

386

S. Maci, University of Siena, Italy

09:40 – 10:00 Sub-100 ms Response Times in Liquid Crystal Reconfigurable Intelligent Surfaces via the Delay-Line Architecture

604

A. Jiménez-Sáez, Technical Universiy of Darmstadt, Germany; R. Neuder, Technical University of Darmstadt, Germany; M. Späth, Technical University of Darmstadt, Germany; M. Schüßler, Technical University of Darmstadt, Germany

10:00 – 10:20 Green’s Function of Metasurface-Assisted Cavities

350

A. Torabi, University of Surrey, United Kingdom; G. Gradoni, University of Surrey, United Kingdom

10:20 – 10:40 Modal Analysis of All-Metal Waveguides with Glide-Symmetric Loading

654

G. Flaviani, Sapienza University, Italy; Y. Tong, Sorbonne University, France; B. Ambrogi, Sapienza University, Italy; G. Valerio, Sorbonne University, Italy; D. Comite, Sapienza University, Italy

11:00 – 11:20 Design of Low-Profile Scanning Transmitarrays by Virtual Focus Synthesis

519

A. Tummolo, Institut d'Électronique et des Technologies du numérique (IETR - UMR CNRS 6164), France; O. Koutsos, F. Foglia Manzillo, A. Clemente, CEA, Leti, Univ. Grenoble Alpes, Grenoble, France; R. Sauleau, Institut d'Électronique et des Technologies du numérique (IETR - UMR CNRS 6164), France

11:20 – 11:40 Assessment of "Reduced Basis" Formulations for Electromagnetic Finite Element Tearing and Interconnecting (FETI) frequency sweeps simulations of large reconfigurable Transmit Arrays Antennas

322

A. Barka, Onera The French Aerospace Lab, France; F. X. Roux, OneraThe French Aerospace Lab, France; A. DE Oliveira Cabral, Onera The French Aerospace Lab, France

11:40 – 12:00 Space-Time Modulated Metasurface-Based EM Tags for Coding Capacity Enhancement

345

Z. H. Ning, Nanjing University of Science and Technology, China ; Y. W. Wang, Nanjing University of Science and Technology, China ; M. Li, Nanjing University of Science and Technology, China ; D. Z. Ding, Nanjing University of Science and Technology, China

12:00 – 12:20 Reconfigurable Origami Nonlocal Scatterer for Analog Computing

280

E. Wu, Zhejiang University, China ; H. Yang, Zhejiang University, China ; X. Li, Zhejiang University, China ; B. Zhou, Zhejiang University, China ; H. Chen, Zhejiang University, China ; Z. Wang, Zhejiang University, China

12:20 – 12:40 Modal Analysis and Demonstration of Inhomogeneous Reconfigurable Metasurface-Loaded Beam Scanning Vertical-Polarized Antennas

170

M. Bie, Z.H. Jiang, Southeast University, China

12:40 – 13:00 Theoretical Evaluation of the Complex Scattered Floquet Harmonics in the Canonical Problem of Anomalous Reflection

554

F. Giusti, University of Siena, Italy; E. Martini, University of Siena, Italy; S. Maci, University of Siena, Italy; M. Albani, University of Siena, Italy

---

54) Method of moments for array-related problems - ICEAA, Organized by C. Craeye, M. Botha

chair 1 C. Craeye chair 2 M. Botha Friday, 12 08:40 – 10:40 room 3 Angelica

---

08:40 – 09:00 Domain Decomposition Analysis of Open-cavity-based Array Elements — Roadmap Toward Analyzing Large-Scale Reflectarrays and Reconfigurable Intelligent Surfaces

433

R. Maaskant, Chalmers University of Technology, Sweden; D. Lin, Chalmers University of Technology, Sweden; F. Maxharraj, Chalmers University of Technology, Sweden; M.G. Aram, Chalmers University of Technology, Sweden; L. Manholm, Ericsson Research, Sweden; P. Aghdam, Ericsson Research, Sweden; G. Gerini, TNO – Optics Department, Netherlands; T. Svensson, Chalmers University of Technology, Sweden; M.V. Ivashina, Chalmers University of Technology, Sweden

09:00 – 09:20 A Calderon preconditioner for large ground planes with arbitrary contours

310

A. Abazi, Université Catholique de Louvain (UCLouvain), Belgium; J. Cavillot, Université Catholique de Louvain (UCLouvain), Belgium; C. Craeye, Université Catholique de Louvain (UCLouvain), Belgium

09:20 – 09:40 Study of Far-Field Pivots in the ACA Algorithm With Array Analysis Application

482

K. Sewraj, Université des Mascareignes, Mauritius; M.M. Botha, Stellenbosch University, South Africa

09:40 – 10:00 Investigating active impedance in arrays with varying size using accelerated MoM

411

H. Hultin, KTH Royal Institute of Technology & Saab AB, Sweden; L. Åkerstedt, KTH Royal Institute of Technology, Sweden; B.L.G. Jonsson, KTH Royal Institute of Technology, Sweden

10:00 – 10:20 Preliminary Array Analysis Results With a New Semi-Reduced Solver Concept

229

A.S. Conradie, Stellenbosch University, South Africa; P.I. Cilliers, Stellenbosch University, South Africa; M.M. Botha, Stellenbosch University, South Africa

10:20 – 10:40 Fast Scattering Analysis of Large Open-cavity Based Reflectarrays Using a Hybrid Method of Moment and Physical Optics Approach

432

D. Lin, Chalmers University of Technology, Sweden; L. Manholm, Ericsson Research, Sweden; O. Talcoth, Ericsson Research, Sweden; S. Agneessens, Ericsson Research, Sweden; P. Aghdam, Ericsson Research, Sweden; R. Maaskant, Chalmers University of Technology, Sweden

---

55) Numerical methods for transient wave scattering - ICEAA, Organized by A. Zuccotti, K. Cools

chair 1 A. Zuccotti chair 2 K. Cools Friday, 12 11:00 – 13:00 room 3 Angelica

---

11:00 – 11:20 Combining FDTD and Kirchhoff integration with back-propagation for reflect-arrays design

709

G. Junkin, The Autonomous University of Barcelona, Spain

11:20 – 11:40 Impact of time step scaling in TDIE MOT-JVIE for metasurface analysis

165

S. Kumar, Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven, AP, Netherlands; P.W.N. Van Diepen, Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven, AP, Netherlands; G. Gerini, Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven & Optics Department, Netherlands Organization for Applied Scientific Research (TNO), Delft, Netherlands; M.C. Van Beurden, Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven, AP, Netherlands

11:40 – 12:00 Multi-class local time-stepping strategy for multi-methods/ multi-domains schemes to solve time domain Maxwell's equations

526

X. Ferrière, L.M. Mazzolo, N.A. Messai, ONERA, France;

12:00 – 12:20 TLM Method with Non-Orthogonal Hexahedral Meshing with Unconditional Stability

566

A. Ijjeh M. Cueille, A. Debard, J. Dubard, LEAT laboratory, university of cote d'azur, France; M. NEY, IMT-atlantique/Lab-STICC, France

12:20 – 12:40 Exact evaluation of TD-BEM matrix entries for scalar wave scattering over meshes containing parallel entities

464

A. Zuccotti, Ghent university, Belgium; K. Cools, Ghent university, Belgium

12:40 – 13:00 A Study on Electromagnetic Transient Analyses Based on Fast Inverse Laplace Transform and Discrete Inverse Fourier Transform

258

K. Watanabe, Fukuoka Institute of Technology, Japan

56) Modeling and characterization of thin film, ferroelectric and phase-change materials for RF devices - ICEAA, Organized by L. Pierantoni, D. Mencarelli

chair 1 L. Pierantoni chair 2 D. Mencarelli Friday, 12 08:20 – 09:40 room 4 Guglielmo

08:20 – 08:40 MIM diodes based on dielectric HfO2 and ZrO2: a comparative atomistic analysis

500

E. Pavoni, E. Mohebbi, M. Petroselli, D. Mencarelli, L. Pierantoni, P. Stipa, Università Politecnica delle Marche, Italy; C.H. Joseph, M. Aldrigo, National Institute for Research and Development in Microtechnologies, Romania; E. Laudadio, Università Politecnica delle Marche, Italy

08:40 – 09:00 Electronic properties of bare and vanadium-doped monolayer of WSe2: an atomistic study

546

E. Laudadio, E. Mohebbi, M. Petroselli, D. Mencarelli, L. Pierantoni, P. Stipa, E. Pavoni, Università Politecnica delle Marche, Italy

09:00 – 09:20 Spray-Deposited Graphite Nanoplatelet Metasurfaces for Chipless Wireless Strain Sensing

609

F. Cilento, National Research Council of Italy, Italy; P. Zarafshani, F. Esposito, A. Iadiccio, Department of Engineering, University of Naples "Parthenope", Italy; L. Zappelli, D. Mencarelli, L. Pierantoni, Università Politecnica delle Marche, Italy; M. Giordano, National Research Council of Italy, Italy

09:20 – 09:40 Multiphysics modeling of spin diode under the simultaneous excitation of spin transfer torque and strain.

689

R. Moukhader, Universita politecnica delle marche, Italy; D. Mencarelli, Universita politecnica delle marche, Italy; L. Pierantoni, Universita politecnica delle marche, Italy; A. Giordano, Universita degli studi di messina, Italy; G. Finocchio, Universita degli studi di messina, Italy

57) Wireless communications - IEEE APWC

chair 1 C. M. Andras chair 2 D. Lee Friday, 12 09:40 – 13:00 room 4 Guglielmo

09:40 – 10:00 MOS-Based Analysis of Audio Codec Performance in Simulated 5G Networks

206

J. J. Abularach Arnez, Sidia Institute of Science and Technology, Brazil; W. Acioli e Silva, Sidia Institute of Science and Technology, Brazil; G. H. Ramos e Silva, Sidia Institute of Science and Technology, Brazil; M. G. Lima Damasceno, Sidia Institute of Science and Technology, Brazil; M. Dalvino Marques, Sidia Institute of Science and Technology, Brazil

10:00 – 10:20 Analysis of Signal Coverage and Throughput Performance with Beam Pattern Variations in Private 5G Base Station Antennas for Railway Applications

216

D. Lee, Korea Railroad Research Institute, Korea, Republic of; I. Byun, Korea Railroad Research Institute, Korea, Republic of; R. Jeong, Korea Railroad Research Institute, Korea, Republic of

10:20 – 10:40 Massive MIMO in 5G: Capacity Trade-offs Between Open Loop and Closed Loop MIMO

237

C. M. Andras, G. Barb, M. Otesteanu, Universitate Politehnica Timisoara, Romania

11:00 – 11:20 Comparative Analysis of Multiple Access Techniques: NOMA vs OMA for 5G Networks

248

F. Danuti, Politehnica University Timisoara, Romania; A.M. Cismas, Politehnica University Timisoara, Romania; M. Laus, Politehnica University Timisoara, Romania; G.S. Martin, Politehnica University Timisoara, Romania; G. Barb, Politehnica University Timisoara, Romania

11:20 – 11:40 Comparative Analysis of Battery Consumption in 5G and 4G Networks for Video Streaming

260

C.M. Andras, D. Musteata, R. Neag, Continental Engineering Services, Romania; G. Barb, Universitatea Politehnica Timisoara , Romania

11:40 – 12:00 RCS Sequence Prediction for Multiple Scatterers Based on Characteristic Modes

277

J.M. Shi, Nanjing University of Science and Technology, China ; J.H. Gu, Nanjing University of Science and Technology, China ; Z.Y. Wang, Nanjing University of Science and Technology, China ; C.F. Wang, Nanjing University of Science and Technology, China ; D.Z. Ding, Nanjing University of Science and Technology, China

12:00 – 12:20 Voice over New Radio (VoNR) and SIP-Kamailio Server: Assessing Voice Performance with Software-Defined Radio (SDR)

399

J. J. Abularach Arnez, Sidia Institute of Science and Technology, Brazil; W. Acioli e Silva, Sidia Institute of Science and Technology, Brazil; M. G. Lima Damasceno, Sidia Institute of Science and Technology, Brazil; F. Falcao de Souza Oliveira, Sidia Institute of Science and Technology, Brazil; G. H. Ramos e Silva, Sidia Institute of Science and Technology, Brazil; M. Dalvino Marques, Sidia Institute of Science and Technology, Brazil

12:20 – 12:40 A High-Efficiency 10 W GaN HEMT Power Amplifier Optimized by Gravitational Search Algorithm for Wireless Communication

567

M.S. Soruri, University of Birjand, Iran; M.F. Forouzanfar, University of Birjand, Iran; A.G. Gulotta, University of Palermo, Italy; L.M. Mendola, University of Palermo, Italy; H.Z. Zakeri, Amirkabir University of Technology, Iran, Islamic Republic of; P.L. Livreri, University of Palermo, Italy

12:40 – 13:00 Improving radio-over-fiber systems using modulation instability phenomenon for satellite communication application

574

H. Zakeri, Amirkabir University of Technology, Iran, Islamic Republic of; R. Azizpour, Amirkabir University of Technology, Iran, Islamic Republic of; G. Moradi, Amirkabir University of Technology, Iran, Islamic Republic of; M. Alibakhshikenari, University of Rome "Tor Vergata", Italy; I. Huynen, Universite Catholique de Louvain, Belgium; P. Livreri, University of Palermo, Italy; M. Soruri, University of Birjand, Iran, Islamic Republic of; L. Kouhalvandi, Dogus University, Turkey; T. Saber, University of Galway, Ireland

---

58) Advanced electromagnetic technologies for biomedical applications - ICEAA, Organized by T. Nagaoka

chair 1 T. Nagaoka chair 2 Friday, 12 08:20 – 09:40 room 5 Basile

---

08:20 – 08:40 Minimizing Lateral Heating Spread in Microwave Surgical Energy Devices Using Waveguide Structures

212

T. Nishidate, Chiba University, Japan; K. Saito, Chiba University, Japan

08:40 – 09:00 Heating Experiment of Bilateral Knee Heating System for Thermal Rehabilitation

478

Y. Shindo, Toyo University, Japan; H. Taoda, Graduate School of Toyo University, Japan

09:00 – 09:20 Efficient Assessment of Whole-Body Exposure to Beams from mm-Wave Base Stations Using Low-Rank Approximation

600

Y. Kushiyama, National Institute of Information and Communications Technology, Japan; T. Nagaoka, National Institute of Information and Communications Technology, Japan

09:20 – 09:40 Exposure Characterization of a Spatially Synthesized 60 GHz System for Localized Millimeter-Wave Irradiation at Multiple Points on Human Skin

589

T. Hikage, Hokkaido University, Japan; S. Suzuki, Hokkaido University, Japan; H. Masuda, Kurume University School of Medicine, Japan; T. Ishitake, Kurume University School of Medicine, Japan; K. Li, University of Electro-Communications, Japan; A. Nagai, Aichi Gakuin University, Japan

59) Antennas - ICEAA

chair 1 Y.W. Chen chair 2 P. Pinho Friday, 12 09:40 – 13:00 room 5 Basile

09:40 – 10:00 A 5.8 GHz Antenna Radiation Pattern With Four-Leaf Clover For Vehicular Communications And Sensing

470

V.U. Oliveira, Instituto de Telecomunicações, Portugal; A.K. Baghel, Instituto de Telecomunicações, Portugal; P. Pinho, Instituto de Telecomunicações, Portugal

10:00 – 10:20 A Wideband Wide-Angle Scanning Dual-Polarized Phased Array Antenna Based on Asymmetric Orthomode Transducer

254

J.Y. Tan, Key Laboratory of All Optical Network and Advanced Telecommunication Network of MOE Beijing Jiaotong University, China ; Y.J. Li, Key Laboratory of All Optical Network and Advanced Telecommunication Network of MOE Beijing Jiaotong University, China ; Z.H. Li, Key Laboratory of All Optical Network and Advanced Telecommunication Network of MOE Beijing Jiaotong University, China ; J.H. Wang, Key Laboratory of All Optical Network and Advanced Telecommunication Network of MOE Beijing Jiaotong University, China

10:20 – 10:40 Inverse Problems for Reflector Systems

284

E. Hasanoglu, Isik University,, Turkey

11:00 – 11:20 Millimeter-wave ellipse antenna for 5G applications

362

A. A. Alshehri, KACST, Saudi Arabia; G. H. Alyami, KACST, Saudi Arabia; H. N. Shaman, KACST, Saudi Arabia

11:20 – 11:40 Analysis and design of reconfigurable GRIN liquid crystal lens.

508

B.H. Mohamed, Technical University of Berlin, Germany; J.M. Gispets, Technical University of Berlin, Germany; W. Keusgen, Technical University of Berlin, Germany

11:40 – 12:00 Frequency-Agile Super-Directive Parasitic Antenna Array Design

605

A. Touhami, CEA-Leti, France; M. Jadid, CEA-Leti, France; C. Delaveaud, CEA-Leti, France

12:00 – 12:20 Kapton Based 1x8 Flexible Microstrip Antenna Array at KA-Band

614

Z.Q. Wang, University of Sheffield, United Kingdom; S. Khamas, University of Sheffield, United Kingdom; R. Saad, University of Sheffield, United Kingdom

12:20 – 12:40 Beyond Hannan's Limit on Embedded Element Efficiency in Dense Arrays: Trade-off between Directivity and Efficiency

625

Y.w. Chen, University of Siena, Italy; S. Maci, University of Siena, Italy

12:40 – 13:00 Design and implementation of a dielectric rod using 3D printing for antenna gain optimization

716

S. Alvarez, Pontificia Universidad Católica del Perú, Peru; H. J. Martínez, Pontificia Universidad Católica del Perú, Peru; M. A. Yarlequé, Pontificia Universidad Católica del Perú, Peru